

## **How SmartWeigh works**

There are two core applications that come in SmartWeigh suite. WeighBridge interface application for the operator/supervisor and back-office for reporting and backoffice operations weighbridge interface software is mainly used to record weighments. Third application is used for maintenance of database and backing up data.

Smartweigh reads weight directly from the indicator, displays it in real-time and calculates the net weight by subtracting the empty weight from loaded weight.

## **Basic features**

1. Either empty or loaded vehicle can be weighed first, and then second weighment is done to arrive at the net weight.
2. If a vehicle has stored tare, then SmartWeigh can find the net weight from just one weighment. Using stored tare weight can be disabled globally or selectively for specific vehicles.
3. For scrap weighing, multiple materials in a single vehicle are allowed and net weight of each material is found by multiple loading/unloading and weighing.
4. Multiple weighbridges at one location on multiple locations can be networked together for weighment. Empty weight can be taken at one weighbridge and loaded weight at another weighbridge. Smartweigh supports two weighbridges per PC, and can support upto 8 weighbridges in a networked environment.
5. Indicator interface wizard can be used to connect to unknown indicators. Automatic detection of over 100 different brands of indicators supported. Interface can also be manually configured. If baud rate, databits and parity are known, then you can directly enable smart-sense mode without having to use wizard.
6. Tare can be disabled. Tare can be enabled for specific trucks.
7. Tare/ empty-weight change pattern report is provided for fraud detection. System can pop-up warnings if tare changes beyond configured limits.
8. Manual entry of weight without using indicator is supported. Manual entries are tracked by system and reported. You can provide access to an operator for manual entry.
9. Backoffice users can access weighment data from any PC in the network. All other operations like changing prices, reporting, inventory control etc can be carried out by staff at back-office while weighing is happening at weighbridge.
10. Short-cut buttons (function keys) are provided for starting a weighment , saving a weighment etc.
11. Keyboard-only (without mouse) operation is possible
12. You can change the data entry fields on the front screen. Fields not necessary for your operation can be removed with certain flexibility.
13. Five flexi-fields are supported for user-specific data entry. You can name the fields based on your requirements. You can specify pull-down values (standard values) for flexi-fields.
14. Using the weighbridge interface screen, operator can make weighments, and save them. To see weighments or to take a reprint of any ticket, user should go to weighment file. Supervisor can make corrections to the data, but this will be logged.
15. Weighment unit (Kgs, tons, long tons etc) can be changed irrespective of the unit used in indicator.
16. 10 Ready-made tickets are included in the application. You can select any ticket for your use. These tickets are designed using crystal reports – we can modify these tickets for you. You can also design tickets yourself using built-in ticket designer.
17. You can configure the ticket to be seen on the screen for previewing and printing. Or you can configure the ticket to be directly printed to the printer without preview.
18. Auto/manual ticket numbering is supported.

19. Invoicing a customer by clubbing multiple weighments is supported. Invoice currency is configurable.
20. Three levels of automatic pricing management are supported - PO wise, customer wise-material wise and general material wise. Pricing is can be fully handled without operator's intervention. Automatic pricing can be hidden from operator.
21. Pricing can be entered from back-office.
22. Date based pricing is supported for each customer. Back-office staff can change price of a material for a specific customer, effective from a future date.
23. Payment to Blaster services for mining operation can be managed by specifying blaster charges.
24. Purchase order / Requisition based tracking is supported. Delivered/Received/Pending quantity is managed by system.
25. Auto-filling customer/supplier/material/transport columns is possible if you are dealing with a single / few customer/supplier/material/transport.
26. Autofilling data fields with last weighment data is supported specific situations.
27. Weight correction for managing humidity/wastage etc is supported. Correction can be either a percentage or a value in system units. Correction can either be applied on both weight and price, or only on price.
28. Transporter payment can be managed using area-wise payment list.
29. Price can be hidden from operator. Operator can also be given permission to see/edit/enter prices at weighment stage.
30. Weighment service charges can be managed and reported. Service charges can be added for non-public weighbridges also.
31. Voice can be announced over speakers.
32. Inventory can be managed. Opening stock can be entered at the beginning of inventory period.
33. Production data entry is supported for inventory management. Recipe based production data updation is supported.
34. Email either summary or full data to specific addresses every time the operator logs out.
35. SMS/Email each weighment data in real time using SmartB SMS/Email server.
36. Smartcard based data entry is supported.
37. Smartcard based unmanned weighment is supported.
38. Camera snaps for each weighment supported. Multiple cameras can be used along with capture card.
39. Real-time data export in CSV format is supported. Field headings can be optionally inserted.
40. Each user has separate access control (rights) privileges. You can allow/block features to each user.
41. User log report is provided.
42. Shift based reporting is supported.
43. More than 100 reports available from the application for various purposes. Data exporting is supported. Addition of new reports by just adding templates is supported.

**Inventory and stock :** You can manage your inventory movement and stock using SmartWeigh. When a material is purchased, its stock is increased by a value equal to the net weight of the material. Similarly, when a material is sold, its stock is decreased by a value equal to the material weight. Stock gets tallied perfectly. **If you do not want to manage the inventory/stock with Smartweigh, you can disable inventory tracking using configurations menu.** Note that, a sales-weighment will always reduce stock. If you do not have stock, stock will become negative. Sales return will increase stock. Similarly, purchase weighment, Purchase return weighment, and Production weighment will also affect stock. When you start using SmartWeigh for the first time, you need to enter opening stock manually. If you do not want to manage the inventory/stock with Smartweigh, you can skip this step.

## **How to Install**

1. In windows 7/8, install the application using 'run as administrator' option' while executing setup.exe file.
2. Double-click on setup.exe to install the application. It is a 137-KB file. If you cannot see the extension, you can enable file extensions using folder options.
3. Install the application. A link will be created in start menu. Copy the link to the desktop if required.
4. In windows 7/8, it is recommended to set the 'run as administrator' option for smartw.exe file in the installation folder.
5. Execute the application by clicking on the link in the start-menu. Log in using 'trial' as password.
6. Mail us at support@smartbglobal.com if you need any help.

## **How to proceed - after installing SmartWeigh**

**1. Before you start:** Configure your windows 'short date' format. SmartWeigh uses windows short dates inside (Windows control panel - regional and language settings - date settings – customize –short date format). Set it as per your requirement. DD/MM/YY or MM/DD/YY or DD/MMM/YYYY or whatever. Short time format must be HH:mm:ss i.e.: 24-hour format.

**2. Logging in:** Log in with a password 'trial', without single quotes of course. Note that, 'trial' password cannot be used after the trial period, and access control cannot be defined for trial user.

### **3. Setting up indicator interface:**

As much as possible, try to get the indicator settings configured for serial port of the indicator (serial protocol). Continuous data mode is preferred. You must know the COM port number of the PC.

If you do not know the indicator settings: You can use the indicator interface wizard menu. Use a weight equal to the maximum capacity of the indicator during this process (you can also use a simulator pot meter instead of loadcells and vary the weight). . Indicator interface wizard can analyze the indicator output protocol and configure Smartweigh automatically. This can take 5 to 20 minutes.

b. If you know only the baud rate, databits and parity setting: Go to indicator settings Enable smart sense mode. Enter the baud rate, databits and parity.

b. If you know the baud rate, databits, parity and delimiter (end of data marker) setting: Go to indicator settings Enable manual mode. Enter the baud rate, databits, parity and delimiter string.

Weight will be displayed in real-time on the computer only when you open the port using 'open-port' menu option after setting the interface.

**4. Configuring System using system configuration menu:** Configure the system using system-configuration menu. Read each option, and then set up the system. You can press F1 to get help if you are stuck. You can change the settings any time later. After changing the system configuration, user has to log-out and then log-in back for the changes to be effective.

**5. Filling up data in Master databases (customer master, material master etc.):** Fill-up customer master, supplier master, Transporters master, Materials master etc. as much as possible. Only vehicle master data gets updated automatically, if a new vehicle is entered in the vehicle number column while weighing. All other masters are to be filled up manually. You can even enter masters by double-clicking the entry columns on the weighment screen. Usage of codes is supported. For example, you can either enter customer code, or short-name itself in the 'customer' field.

To add a new record in any module, press 'add' button, enter the details and then press update button. To search for records or to see all records, use the 'search' or 'query' button. While searching, you can filter the records as per requirements by specifying the filter conditions.

**6. Learning - Make weighment transaction by Playing around:** Enter weighment data and experiment with different conditions. To work with Smartweigh for learning purpose, you do not need an indicator, since manual entry of weights is supported for trial user. To enter weight manually, press a button (F3/F11 etc) to start the weighment, and then enable manual entry mode for the weighment by pressing ctrl-z or the manual-weight menu. Directly enter the weight on the machine data column (top right column) Enter weighment data and press the save or save-and-print button. During manual entry, indicator must be disconnected from PC – port must not be opened.

If you are using a different user login other than trial, then need to provide manual-data option for the user using access control module).

Allow the users to go to different modules and experiment by entering data, deleting data etc.

**7. Create more users:** Create users and passwords using access-control module. Create at least one super-user. If you don't mind logging in as trial, and if you do not want to understand how to control access to the features/modules in the software for different users, then you can skip this step for later. Before entering the licence key, you must create at least one super user.

**8. Going online with Smartweigh for actual truck weighments:** Delete the practice data in weighment file. For this, go to weighments file in back-office, change the dates for record-search and bring the entire data on the screen by pressing search button. Use 'wipe all records' option. Delete the junk data in masters like material master, vehicle master etc.

Additional steps if you need to track stock/inventory. Create opening stock entries by using 'create-opening-stock' menu in back-office. You have to fill-up opening-stock column for all materials and then press the button to create opening stock. All existing weighment-data, stock-adjustment, opening stock and production-log entries will be deleted automatically, and system creates fresh opening stock entries. Data in master files like vehicles, materials, BOM, users, Transporters, Orders, PRs etc. are not deleted. Opening stock entries are to be created only if you want to manage your inventory with SmartWeigh.

## **Making a weighment with SmartWeigh - just 4 steps.**

1. Log into SmartWeigh weighbridge interface module using log-in created for the user, or 'trial'.
2. Open the port using the menu option or by pressing CTRL+P. Weight will be displayed in real-time on the computer screen. When the display on the weighing indicator changes, the display on the PC screen also changes (You can configure the port to be opened automatically when Smartweigh is executed so that you don't have to open port every time).

**Step 1: Press the 'start weighment' button.** In the buttons/short-cuts menu, you will find all required short-cut options for different weighments modes like sales, purchase, production, public service weighment etc. Press the shortcut key or button on the weighment panel on the right side to start a weighment in the required mode. All fields get cleared and get enabled for data entry.

**Step 2: Enter data.** Enter the vehicle number, or double-click the vehicle column and select the vehicle. After you enter vehicle number, you can transfer the weights into either loaded or empty weight column and then enter other details like customer, transporter etc. Or you can continue entering other details and then transfer the weight into empty/loaded column. The important thing to note is that, vehicle number is to be entered first when you start a weighment operation. In case of unmanned operation using smart-cards, you have to just swipe the card. Press more (or F9) button to get another screen to enter or view more details.

**Step 3: Transfer the weight.** Using F4/F5 function keys, transfer the indicator weight to the empty/loaded weight column. You can also press the buttons to transfer the weight.

**Step 4: Save the transaction and/or print the ticket.** Press F7 / F8 keys or the buttons to save the transaction and /or print the ticket.

Note:

1. If this transaction was the first weighment, then, when the vehicle comes the next time, SmartWeigh would automatically pick-up the last weighment details.
2. Material selling-price is taken from PO, customer-wise-price list, and selling-price in materials-master in that order. If you do not need pricing, then do not fill up pricing.
3. Weighment column should be filled preferably from top to bottom, in that order. To some extent, you can configure the order in which the fields should appear on the screen. You can also configure 5 flexi-fields (free fields, which can be configured to suit your field requirement).

## **Security tips – using SmartWeigh for actual WeighBridge operations**

1. Make sure that the security is enabled and no user has more access rights than required
2. Block manual entry option, lock weight columns for all users weighment file and double check all security locks.
3. Provide record-deletion privileges only if it is absolutely necessary. For example, in weighments module, you should not allow a normal user to delete or alter the records. If the operator really wants to delete a record, let a higher authority do it for him (In the weighment screen, operator can only save the weighment. No deletion is possible at all). If you go to access control module and view a user's record, SmartWeigh will automatically warn you if any security lapses are found for that user's settings.

## **Users and Networking**

SmartWeigh is network enabled and can be used over a LAN/WAN network in a variety of scenarios. Up to 8 weighbridges can be managed centrally in client-server mode with SmartWeigh without much customization. Customized versions can manage hundreds of weighBridges and remote back office users. Offline data synchronization can be supported.<sup>1</sup>

## **Camera interface**

1-4 cameras can be connected to the PC. Any camera with a WDM driver for windows OS is supported. For attaching more than one camera, use a DVR with WDM driver, or use a capture card with DVR. Snaps are date-time stamped and stored in 'snaps' folder. You can check the snaps by going to the weighment file. If a snap has been taken during weighment, but deleted later, you will be able to detect.

## **Voice announcement**

Net-weight can be announced through PC speakers. You can opt for digits to be spoken separately, or in weighted manner.

## **Manufacturing (Optional):**

When a material is manufactured and sold, its stock will tally only if the manufactured-material is moved into stock. Ideally, manufactured item must be moved into stock immediately after manufacturing, and before sales. Otherwise, stock will not be on-line and may even go negative, since sales weighing will automatically reduce stock. If the manufactured material is manufactured from raw material in stock, then the stock of the raw material will be reduced when you move the manufactured material into stock (Recipe/BOM for manufacturing)

In some cases, it may not be possible to add a manufactured-material to stock before it is sold. For example, in the case if a plant that manufactures concrete-mix, immediately after manufacturing the mix, it is poured into waiting trucks, and carried away to be weighed and sold. In this case, when the material is taken away from the plant and weighed in sales mode, the stock of the material gets reduced, and may go negative. Later, the production manager can move the material to stock by taking the weight of the material from the batching software, and the stock gets tallied.