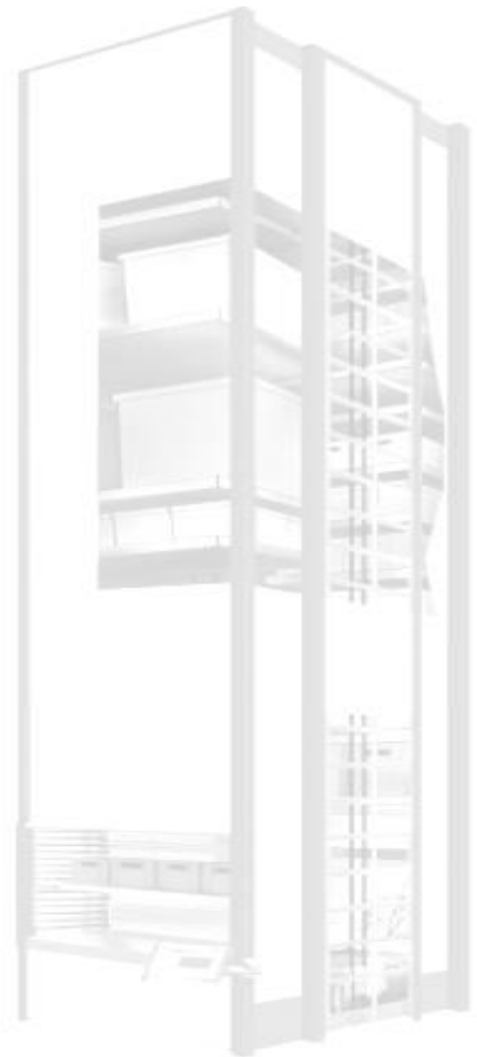
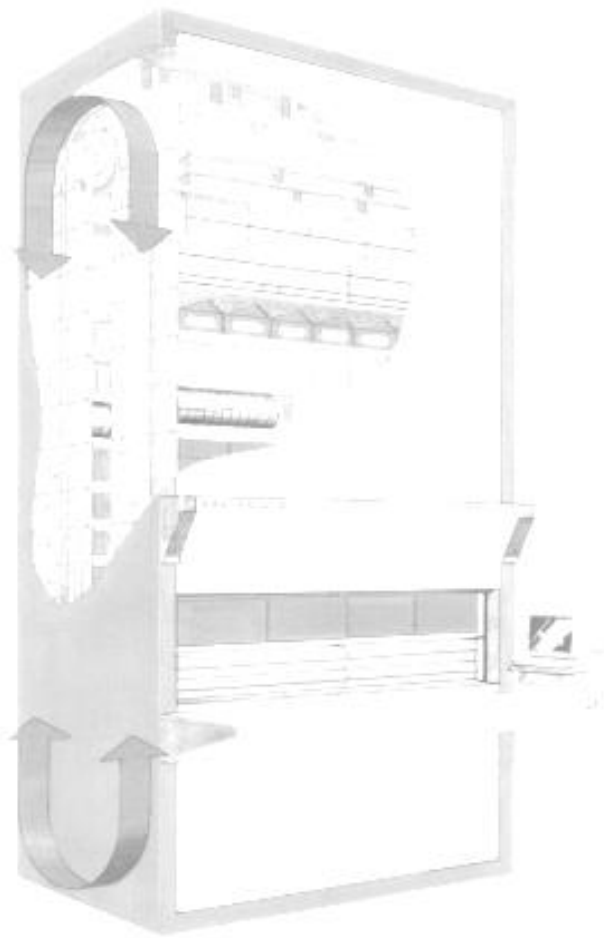




**K A R M A N L i t e**

# **O P E R A T O R S M A N U A L**

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Valid for KARMANLite Release 1.5.nn

**IMPORTANT NOTICE**

THE PC SUPPLIED WITH YOUR CAROUSEL IS AN INTEGRAL PART OF THE CAROUSEL CONTROL SYSTEM

IF THE PC **SOFTWARE IS CONFIGURED BY KARDEX VCA**, ITS OPERATION WILL BE CONFIRMED WITH THE CUSTOMER ON COMPLETION OF THE COMMISSIONING PROCESS

THE **WARRANTY WILL BE VOID** IF THE CUSTOMER OR THEIR REPRESENTATIVE CHANGES, MODIFIES OR MAKES ANY ADDITIONS TO THE HARDWARE AND/OR SOFTWARE OF THE CAROUSEL CONTROL SYSTEM WITHOUT THE WRITTEN PERMISSION OF KARDEX VCA




THE **CUSTOMER IS RESPONSIBLE** FOR THE MAINTENANCE OF ALL **DATA FILES**, INCLUDING BACKUP AND RESTORATION PROCEDURES.

## 1 Loading Your Storage System

If you are implementing a new storage system at your site, Kardex VCA will generally have conducted a site survey and provided a recommendation for the shelf configuration to be used in your system. We will set up KARMANLite™, prior to system delivery, based on the location size mix suggested in the sales proposal document. Kardex VCA has a range of 400mm and 600mm storage tote bins suitable for use in our Carousel and Shuttle® units. The number of bins per shelf is determined by the width of the shelf. Our Carousels will generally use a 3600mmW carrier for 12 Large bins and our Shuttles® will use a 3000mmW tray for 10 Large bins:

<i>Bin Type</i>	<i>Dimensions</i>	<i>Max. No. of Locs. / Bin</i>
Small	150mmW x 600mmD x 50mmH	12
Medium	150mmW x 600mmD x 100mmH	8
Large	300mmW x 600mmD x 150mmH	4

The maximum Tote Bins are shown in the following table:

<b>Tote Type:</b>	<b>VCT 01 (Small Tote)</b>	<b>VCT 02 (Medium Tote)</b>	<b>VCT 03 (Large Tote)</b>	
				
<b>Max. Compartments</b>	<b>12</b>	<b>8</b>	<b>4</b>	
<b>Length (mm)</b>	600	600	600	
<b>Width (mm)</b>	150	150	300	
<b>Height (mm)</b>	50	100	140	
<b>Max. Locs / Bin</b>	12	8	4	

Kardex VCA uses a location naming convention to identify the bin location sizes. The naming convention uses the base bin size plus the number of locations in the bin to identify the location size.

For example; a 'large' bin with 4 locations is termed a 'LARGE4'. Similarly, a 'medium' bin with 8 locations is termed a 'MEDIUM8'. The open locations are referred to as 'OPENHALF' or 'OPENFULL'. There are 12 of these locations across a shelf. 'OPENFULL' locations use the full clear height of the carrier and 'OPENHALF' locations use half the carrier clear height. An 'OPENFULL' location is equivalent to 65 litres of volume. An 'OPENHALF' location is equivalent to 32 litres of volume.

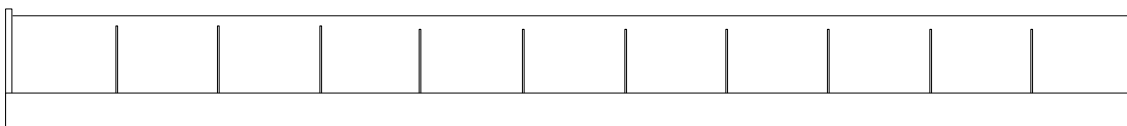
This terminology is used to describe the proposed bin configuration and is also used within the KARMANLite inventory software to identify location sizes during the initial loading and following replenishment process.

Use of Medium and Large tote bins is shown in the following picture:

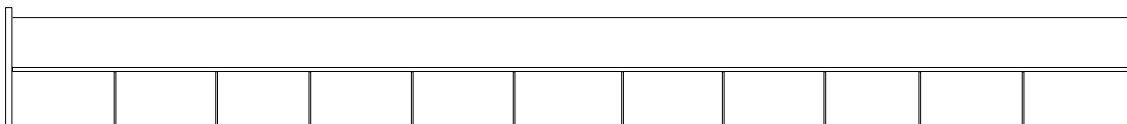


Each of the carrier / bin combinations is shown below:

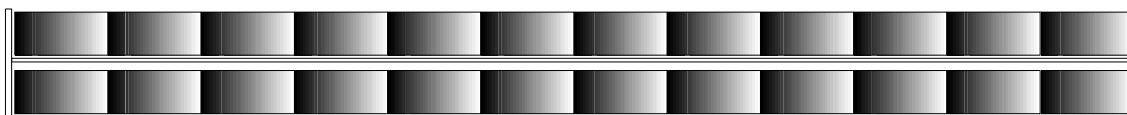
**Open Full – 1 Shelf / 12 Locations using upright dividers**



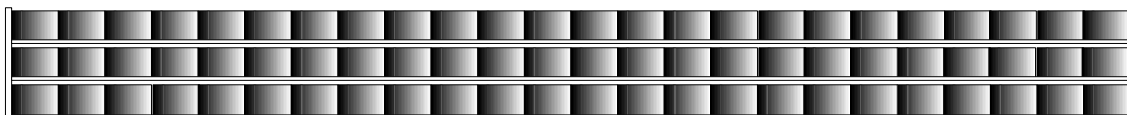
**Open Half – 2 Shelves / 24 Locations using upright dividers**



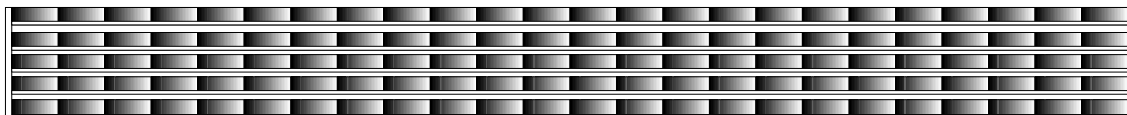
**Large Bins – 2 Shelves / 24 Bins per Carrier / Up to 96 Locations**



**Medium Bins – 3 Shelves / 72 Bins per Carrier / Up to 576 Locations**

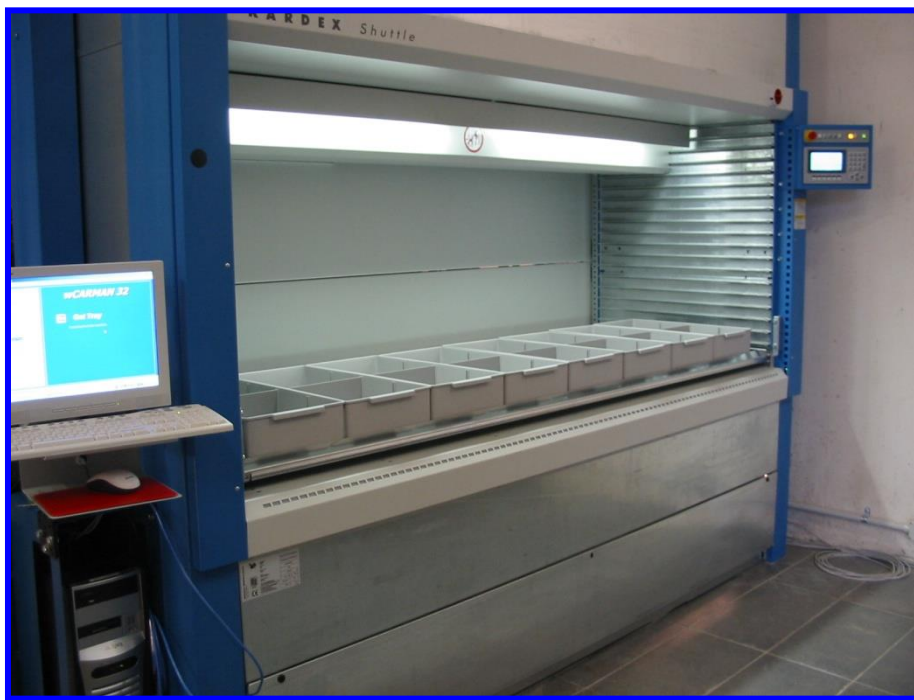


**Small Bins – 5 Shelves / 120 Bins per Carrier / Up to 1440 Locations**



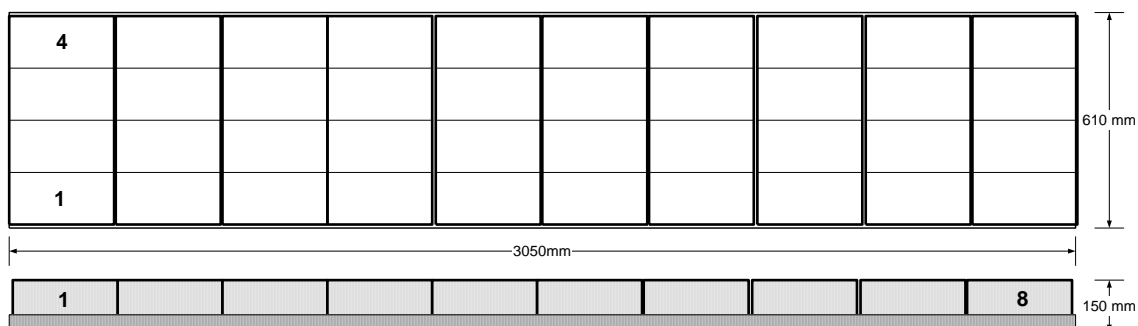
3600mm →

In the case of the Shuttle®, the storage totes sit on the tray and all locations are accessible from above the tray, as shown in the image below:

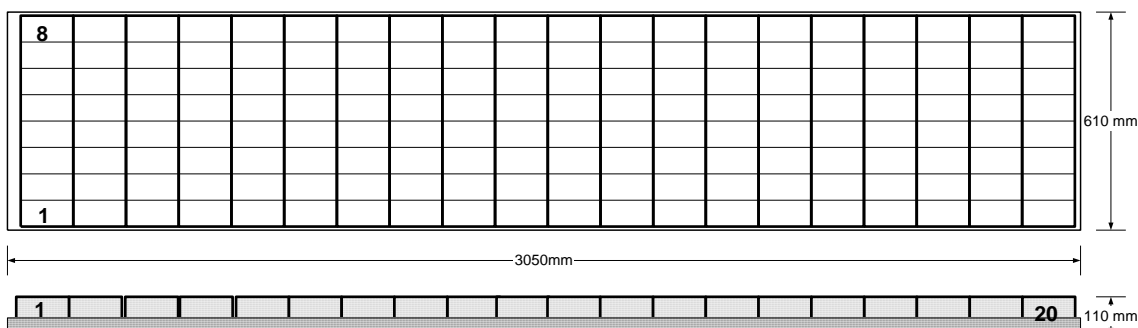


Locations in the bins would be accessible as shown below, when used with a 3050mmW Shuttle Tray:

### **Large4 Bins – 10 Bins per Tray / 40 Locations**



### **Medium8 Bins – 20 Bins per Tray / 80 Locations**



**NOTE:** If you do not have a copy of the suggested shelf configuration, please contact Customer Services on +61 2 6056 5173.



## 1.1 Vertical Carousel

Your vertical Carousel operates on the counter-balance principle. This means that both front and back carriers should be reasonably in balance throughout the entire cycle.

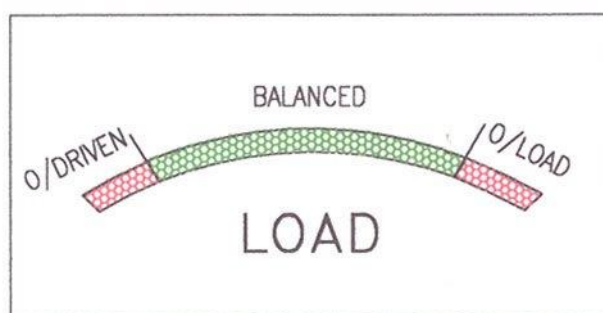
When initially loading your Carousel you should load opposite carriers and thus maintain a reasonable balance. For example, in a 20 carrier Carousel you should load in the following order:

1, 11, 2, 12, 3, 13, 4, 14, 5, 15, 6, 16, 7, 17, 8, 18, 9, 19, 10, 20

**The maximum out-of-balance tolerance is 20%.**

You will know if your Carousel is out-of-balance by the following symptoms:

- (i) The out-of-balance indicator will show an overload condition. The pointer will be in one of the red zones most of the time or is moving dramatically from one side of the indicator to the other.



- (ii) Motor noise indicates extra load at certain stages of the cycle.
- (iii) The unit starts and runs roughly and trips the electronic drive.

If any of these symptoms are noted, it is recommended that you adjust the load to ensure better balance.

## **CONSISTENTLY RUNNING YOUR CAROUSEL OUT-OF-BALANCE WILL CAUSE DAMAGE!**

### **WARNING:**

The capacity of each carrier in your Carousel is 100/250/500/750kg including any intermediate shelves. Check the Serial Number plate on the LHS of your machine for carrier rating.

Items stored in the carrier must lie within the bounds of the carrier. Items must not protrude over the front lip or exceed the height of the carrier side.

Failure to observe these conditions could damage your Carousel and is not covered under Kardex VCA warranty.

## 1.2 Vertical Lift Unit - Shuttle®

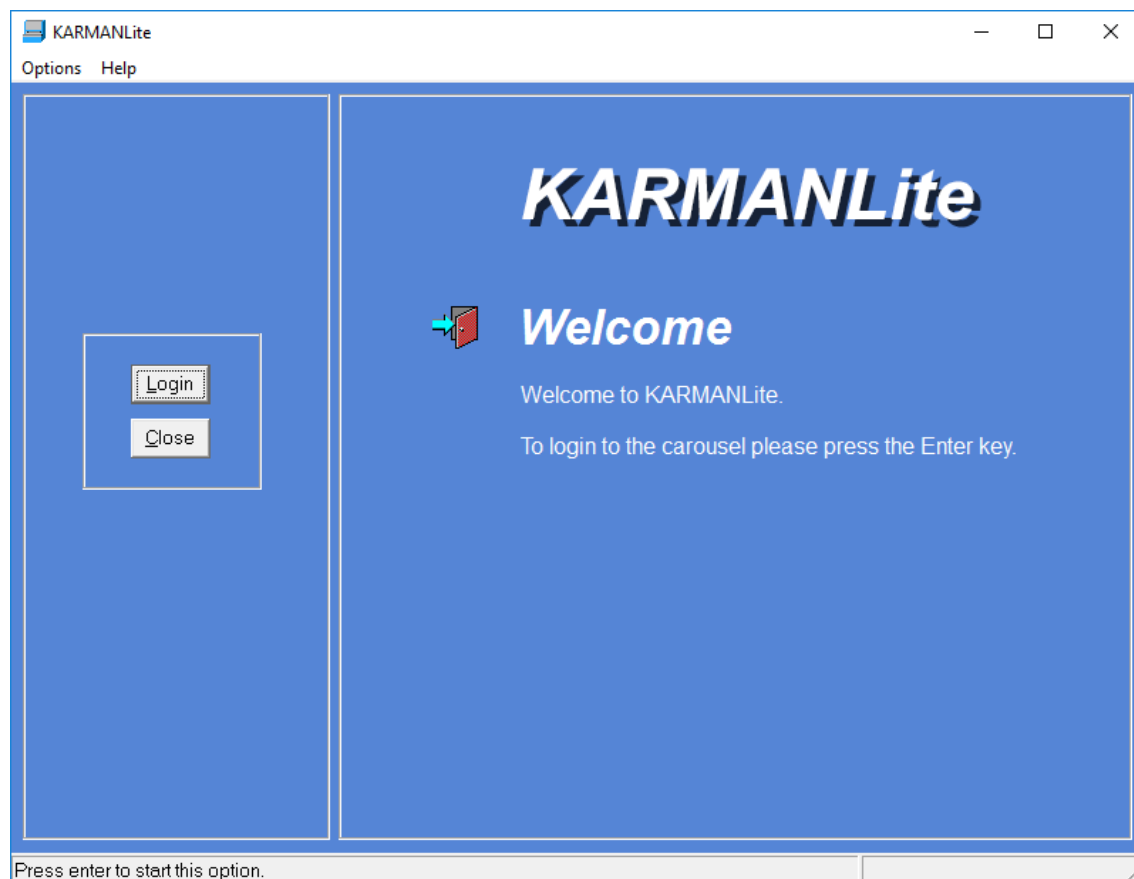
To be added.

## 2 GETTING STARTED

The Carousel can be turned ON or OFF using the Isolator Switch located on the right hand side of the machine and above the manual control panel. After the Carousel has been switched ON, the PC can then be started. KARMANLite automatically runs when Windows is started, however, it can be run from the following shortcuts:

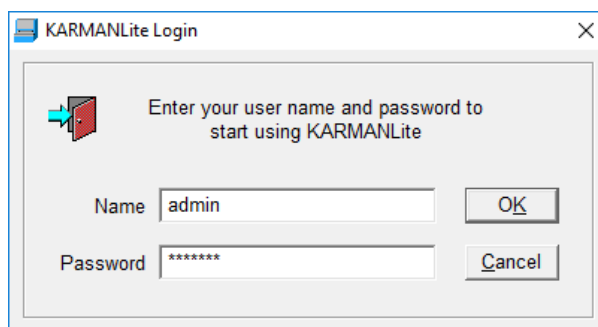
- C:\Windows\Desktop\ - For Easy Desktop Access
- C:\Windows\Start Menu\ - For Easy Start Menu Access

The Welcome screen is the first window seen in KARMANLite. It has two functions; one is to LOGIN to KARMANLite and the other is to CLOSE KARMANLite.



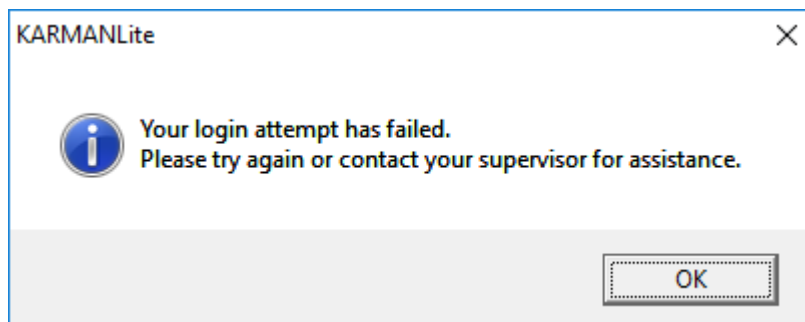
### 2.1 Logging in to KARMANLite

When KARMANLite is first started, the Login button is highlighted, press **Enter** on the keyboard to Login or alternatively press **Alt & L**.



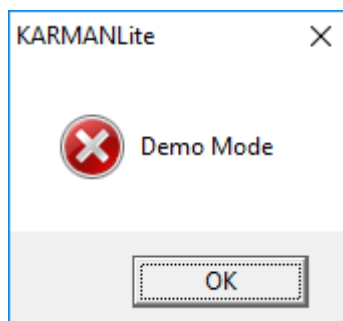
Type your user name in the Name box then **Tab** to the Password box and type your password then press **Enter**. The password and user names are not case sensitive so it makes no difference if you use capital letters or not.

If you type the incorrect user name or the incorrect password, the following error will appear.



To clear this error, press **Enter** and you will return to the Login screen. As the error box states, try to Login again and if you do not get it right after a few attempts then contact your supervisor for assistance.

If the Carousel PC has not been able to communicate with the machine Programmable Logic Controller (PLC), the following error will appear:



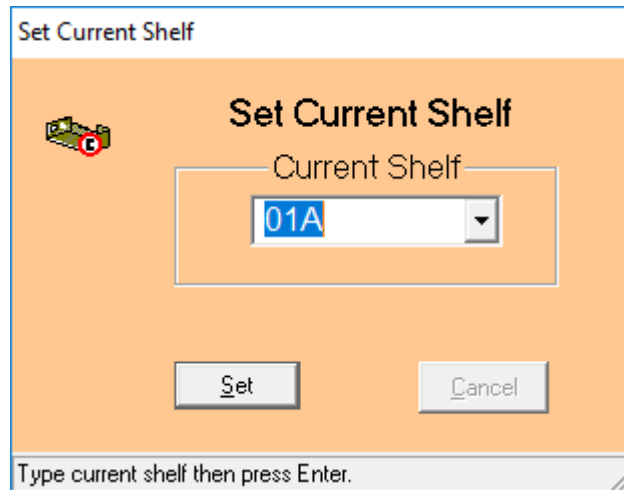
To clear this error, press **Enter** and the Main Menu will be displayed. You will need to Logout of KARMANLite and Login again. If this message is repeated, please contact your supervisor for assistance.

**NOTE:** *IF KARMANLITE IS USED IN DEMO MODE, THE CAROUSEL WILL NOT ROTATE.*

## 2.2 Set Current Shelf

**NOTE:** *THIS FUNCTION IS NOT AVAILABLE IN DEMO MODE.*

Each time you Login (or if you select this option from the Tools Menu) this screen will appear. If the shelf number displayed on this screen is different to the one seen at the carousel access level you should change it so that it displays the current shelf number seen at the carousel access level. This function can be used at any time if the carousel count is not correct.



**NOTE:** YOU CAN NOT ESCAPE FROM THIS SCREEN YOU MUST PRESS THE **ENTER** KEY ON THE CORRECT SHELF NUMBER TO PROCEED.

You can change the current shelf by over-writing the incorrect shelf number with the correct one or selecting the correct shelf number from the pull down menu. When the correct shelf number is seen press **Enter**.

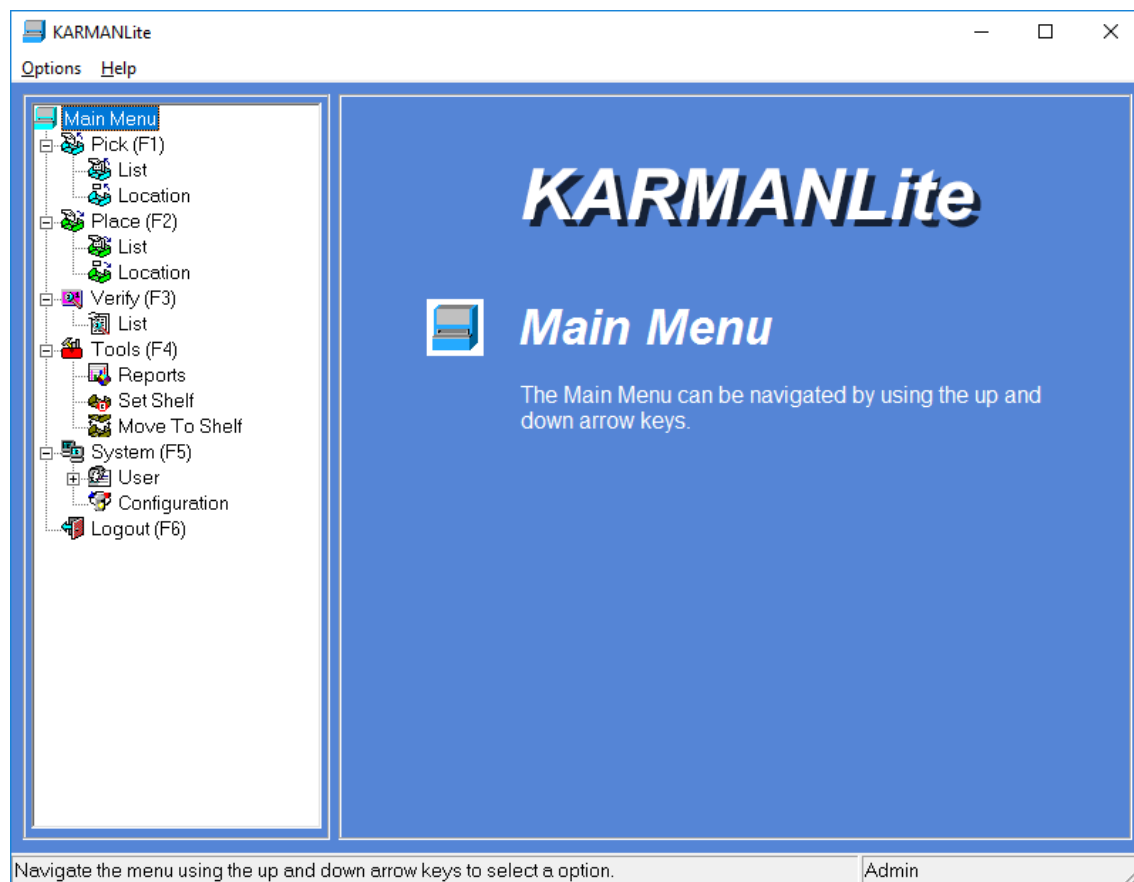
To access the pull down menu and see all the available shelves press **F4**. Use the **up(↑)** and **down(↓)** arrow keys to highlight the correct shelf then press **Enter**.

**WARNING: IF CURRENT SHELF IS DIFFERENT TO THE ACTUAL SHELF AT THE CAROUSEL ACCESS LEVEL, THE CAROUSEL WILL NOT ROTATE TO THE CORRECT LOCATION.**

## 2.3 Getting around the Main Menu

The Main Menu is used to select the functions you wish to use in KARMANLite. The Status Bar at the bottom of the form provides information about how each function can be initiated and also shows the current user name.

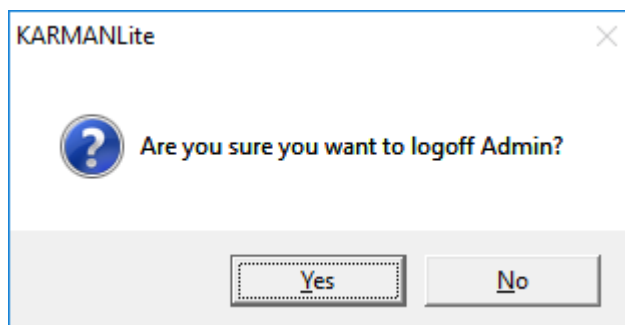
To navigate the Main Menu use the **up(↑)** and **down(↓)** arrow keys to highlight a function then press the **Enter** key. To expand a menu, press the **right(→)** arrow key and to collapse a menu press the **left(←)** arrow key.



The function keys (**F1 – F6**) can be used to move quickly from one main heading to another. It is also possible to select a function by pressing the alpha key that is the first letter of the word.

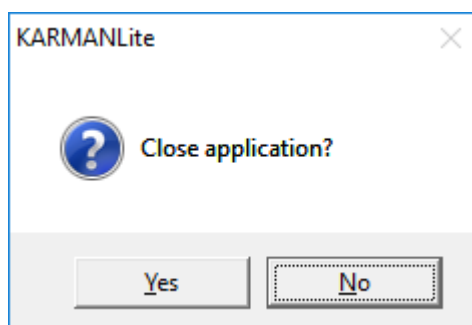
## 2.4 LOGOUT and CLOSE KARMANLite

Select Logout (**F6**) from the Main Menu and then press **Enter**.



At the confirm message press **Enter**.

At the Welcome screen, press **Alt & C** for Close, or **Tab** to Close button and press **Enter**.



Press **Alt & Y** for Yes to confirm. Or **Tab** to the Yes button then press **Enter** to confirm.

**NOTE:** *IT IS IMPORTANT TO SHUT DOWN THE CAROUSEL PC IN AN ORDERLY MANNER. THIS MUST BE DONE BEFORE THE CAROUSEL ISOLATOR IS TURNED TO THE OFF POSITION. AN ORDERLY SHUT DOWN IS DONE BY FOLLOWING THE WINDOWS SHUTDOWN PROCEDURE NOTED BELOW:*

After you have shut down KARMANLite:

Press **Ctrl & Esc** to open the Windows Start Menu, then press **u**.

Make sure Shut down is selected and then press **Enter** to shut down Windows and the carousel PC.

### 3 Pick Operation

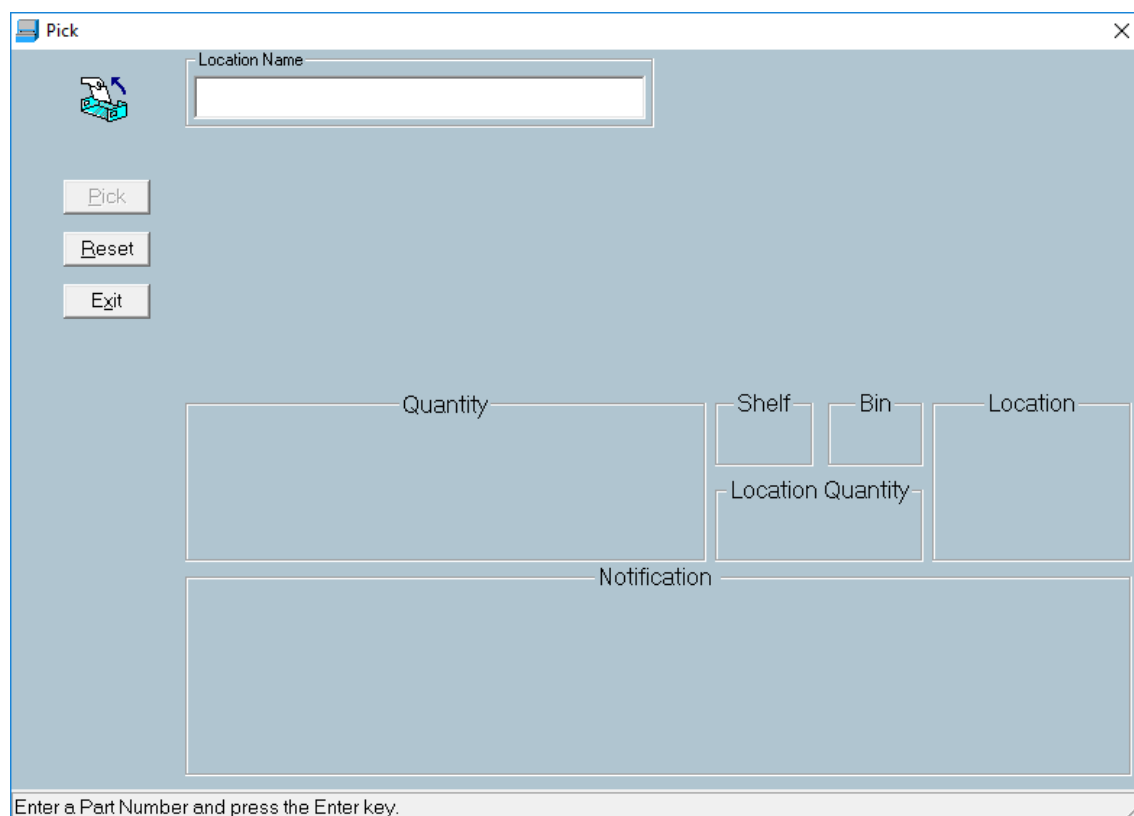
KARMANLite uses location information to Pick parts from the carousel. Two Pick methods are available from the Main Menu:



- *Pick By Location [Section 3.1]*  
Parts are picked from the carousel by entering the location name where the part is stored. This location information is obtained from the host system.
- *Pick By List [Section 3.2]*  
Parts are Picked by location based on the contents of an electronic list sent from the host system. This is the normal method of picking parts from the carousel. It is possible to Pick multiple lists, and parts will be picked in location order.

### 3.1 Pick \ Location

The Pick \ Location screen shows the following information:



	<i>Item</i>	<i>Description</i>
1	Part Number Box	Location Name is entered in this field
2	Small Quantity Box	Required Pick quantity is entered in this field.
3	Large Quantity Box	Shows the current quantity to Pick
4	Shelf Box	Displays required shelf
5	Bin Box	Displays required bin
6	Location Box	Displays required location
7	Notification Box	Displays current message
8	<u>P</u> ick Command Button	Will execute Pick after required quantity has been entered
9	<u>R</u> eset Command Button	Will clear the form
10	<u>E</u> xit Command Button	Will close the window
	Colour	Blue

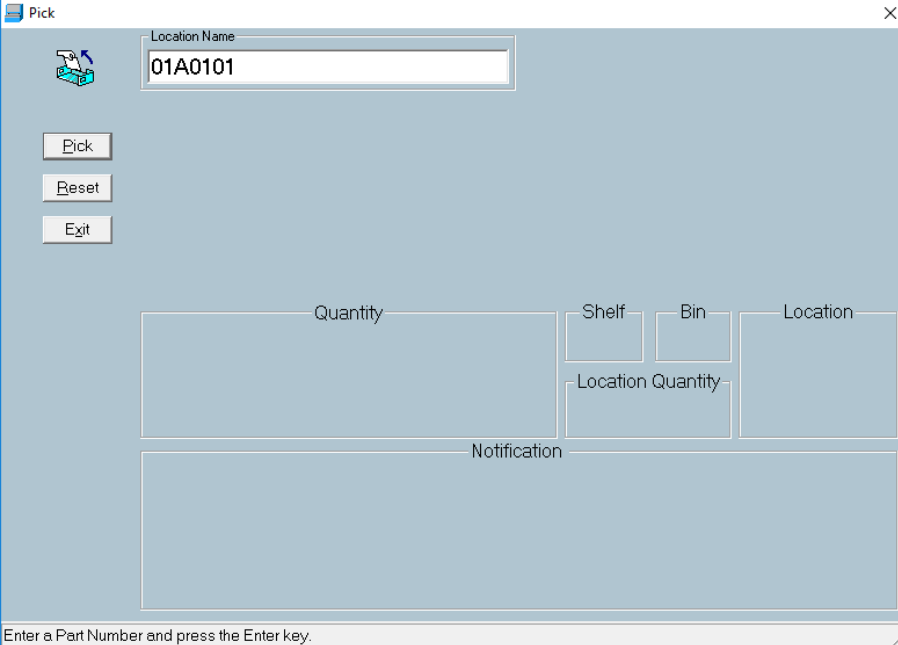




## **Pick By Location**

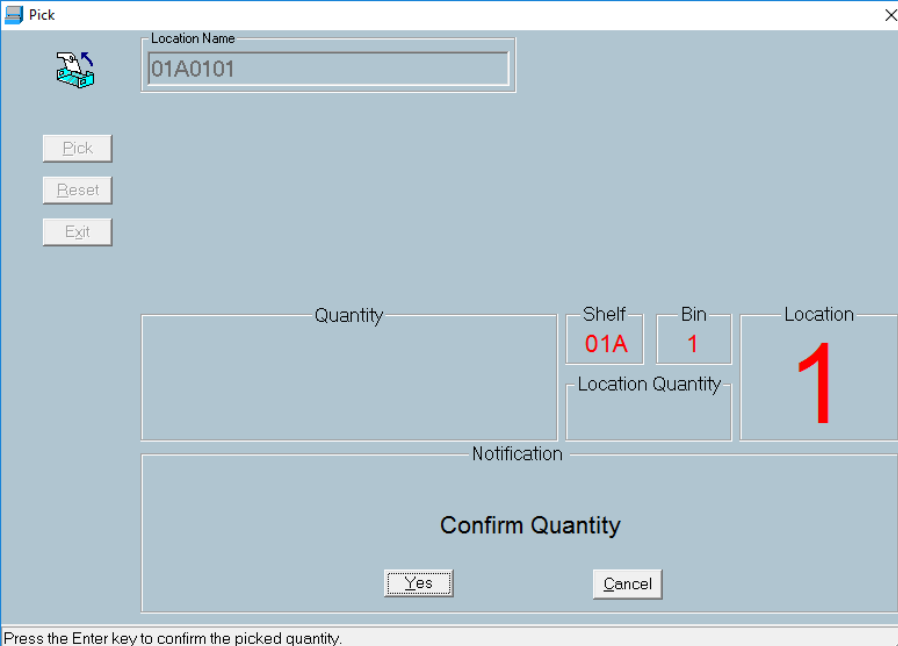
### **STEP 1 Enter Location Name**

Type in the location name to Pick from, then press **Enter**.



Enter a Part Number and press the Enter key.

The carousel will then rotate to the part location.



Press the Enter key to confirm the picked quantity.

### **STEP 2 Count and Pick Parts**

As the carousel rotates to the required shelf, a lamp will come on, indicating which bin to Pick from. The required location in the bin is shown in large red text on the screen.

When the carousel has finished rotating, count the parts as you Pick them from the bin.

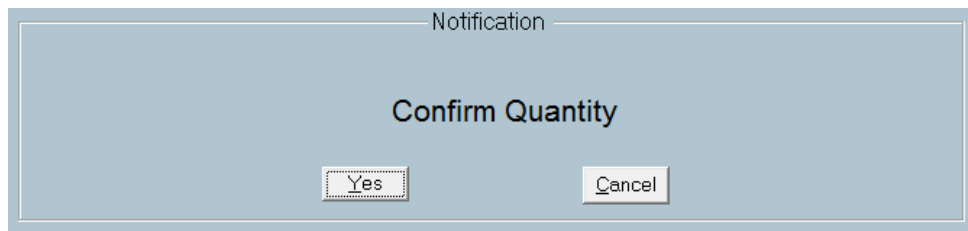
**STEP 3 Confirm Quantity**

Confirm the Pick quantity by pressing **Enter** or press a remote confirmation button on the carousel bench. The quantity to confirm is shown in large blue text on the screen.

**The Pick process is now complete.**

If there is insufficient stock for you to Pick, you will need to find the next location where stock is held. This information is available from your host system.

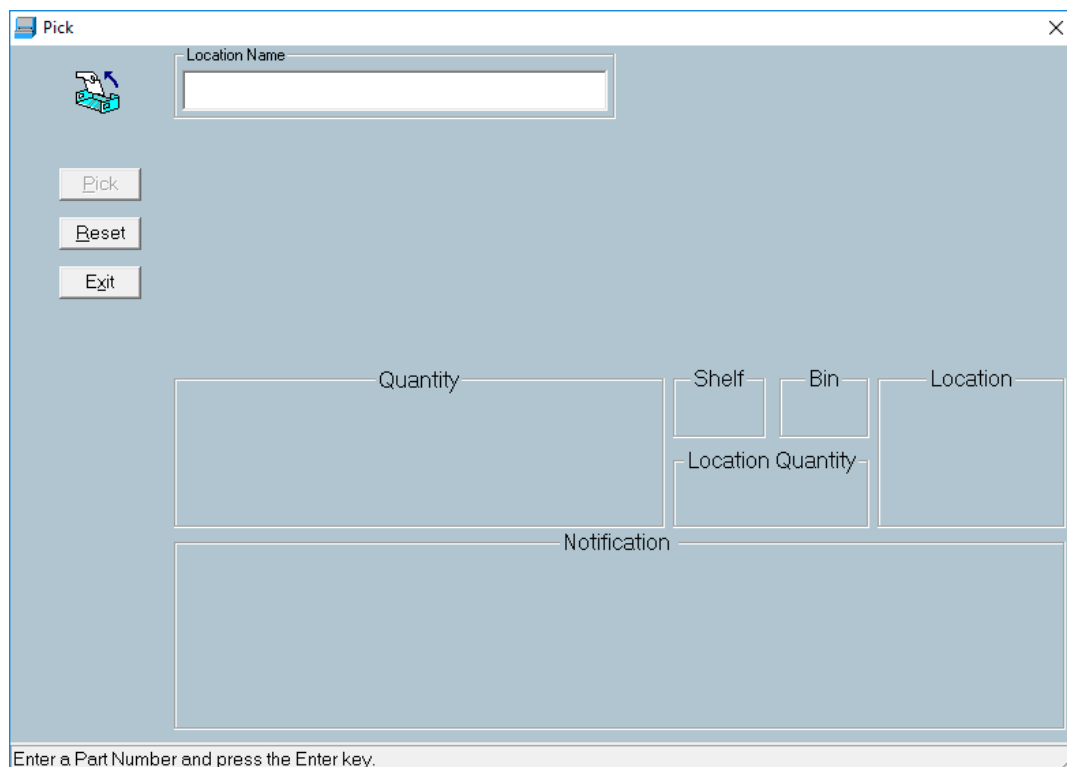
If the Pick empties a location proceed to **STEP 5**.



## 3.2 Pick \ List

NOTE: Refer to Section 6 for information regarding list selection method.

The Pick \ List screen shows the following information:



	<i>Item</i>	<i>Description</i>
1	Part Number Box	Displays part number
2	Description Box	Displays the part description
3	Small Quantity Box	Displays the total quantity to Pick
4	Large Quantity Box	Shows the current quantity to Pick
5	Location Quantity	Displays the quantity in the Location
6	List Identifier Box	Displays List Identifier for this Pick transaction
7	Shelf Box	Displays current shelf
8	Bin Box	Displays current bin
9	Location Box	Displays current location
10	Notification Box	Displays current message
11	<u>P</u> ick Command Button	Will execute Pick after required quantity has been entered
12	<u>R</u> eset Command Button	Will clear the form
13	<u>E</u> xit Command Button	Will close the window
14	Remaining x	Displays the number of Pick items left to process
	Colour	Blue



## Pick By List

### STEP 1 Select List(s)

Select the List or Lists you wish to use for the Pick operation. Refer to Section 6, Selecting Lists.

The first location part number and required quantity will be presented on the Pick form. The carousel will then rotate to the shown part location.

### STEP 2 Count and Pick Parts

As the carousel rotates to the required shelf, a lamp will come on, indicating which bin to Pick from. The required location in the bin is shown in large red text on the screen.

When the carousel has finished rotating, count the parts as you Pick them from the bin.

### STEP 3 Confirm Quantity

Confirm the Pick quantity by pressing **Enter** or press a remote confirmation button on the carousel bench. The quantity to confirm is shown in large blue text on the screen.

**The Pick process is now complete.**

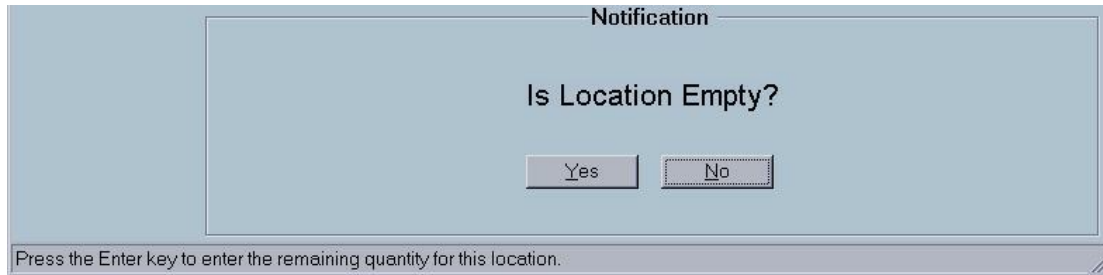
If there is insufficient stock for you to Pick, you will need to find the next location where stock is held. This information is available from your host system.

If the Pick empties a location, proceed to **STEP 4**.

**STEP 4 Is Location Empty?**

Confirm the location is empty by pressing **Enter** or press a remote confirmation button on the Carousel bench.

If there is stock left **Tab** to the No button and press **Enter**.



KARMANLite will remember if the location is free. This information is used in reports and also to speed up the Place process.

## 4 Place (Replenish) Operation

KARMANLite uses location information to Place parts in the carousel. Two Place methods are available from the Main Menu:



- *Place By Location [Section 4.1]*

Parts are placed in the carousel by entering the location name where the part is to be stored. The location name can be entered via the keyboard or by scanning a barcoded label which has the location name coded on the label. This location information is obtained from the host system. This is the normal method of placing parts in to the carousel.

- *Place By List [Section 4.2]*

Parts are Placed by location based on the contents of an electronic list sent from the host system.

### 4.1 Place \ Location

The Place \ Location screen shows the following information:

Item	Description
1 Part Number Box	Location Name is entered in this field
2 Small Quantity Box	Required Place quantity is entered in this field.
3 Large Quantity Box	Shows the current quantity to Place
4 Shelf Box	Displays required shelf
5 Bin Box	Displays required bin
6 Location Box	Displays required location
7 Notification Box	Displays current message
8 <u>Place</u> Command Button	Will execute Place operation after required quantity has been entered

<i>Item</i>	<i>Description</i>
9	<u>R</u> eset Command Button Will clear the form
10	<u>E</u> xit Command Button Will close the window
Colour	Green



## Place By Location

### STEP 1 Enter Location Name

Type in the location name to Pick from, then press **Enter**.

The screenshot shows a window titled 'Place'. On the left is a green icon of a terminal. To its right are three buttons: 'Place', 'Reset', and 'Exit'. The main area contains two input fields. The 'Part Number' field is filled with 'J0101A0101'. The 'Quantity' field is empty.

### STEP 2 Enter Quantity

Type in the quantity that you want to Place then press **Enter**.

The screenshot shows the same 'Place' window. The 'Part Number' field still contains 'J0101A0101'. The 'Quantity' field now contains the number '200'.

The carousel will then rotate to the part location.

The screenshot shows a software window titled "Place". At the top, there are input fields for "Part Number" (containing "J0101A0101") and "Quantity" (containing "200"). Below these are three buttons: "Place", "Reset", and "Exit". In the center, there are three boxes: "Quantity" (displaying "200" in large blue text), "Shelf" (displaying "01A" in red), "Bin" (displaying "01" in red), and "Location" (displaying "1" in large red text). Below these is a "Location Quantity" field. At the bottom, there is a "Notification" area with the text "Confirm Quantity" and three buttons: "Yes", "No", and "Cancel". A status bar at the very bottom says "Press the Enter key to confirm the place quantity."

### STEP 3 Count and Place Parts

As the carousel rotates to the required shelf, a lamp will come on, indicating which bin to Place to. The required location in the bin is shown in large red text on the screen.

When the carousel has finished rotating, count the parts as you Place them to the bin.

### STEP 4 Confirm Quantity

Confirm the Place quantity by pressing **Enter** or press a remote confirmation button on the carousel bench. The quantity to confirm is shown in large blue text on the screen.

This screenshot is similar to the previous one, showing the "Place" window. The "Quantity" field still displays "200" in large blue text. The "Shelf" is "01A" and "Bin" is "01" in red. The "Location" is "1" in large red text. The "Notification" area now only shows the "Confirm Quantity" text and the "Yes", "No", and "Cancel" buttons. The status bar at the bottom remains "Press the Enter key to confirm the place quantity."

If the quantity you have to Place in the location does not match the quantity displayed on the screen, you must change the Place quantity. Refer to Section 4.3.

**The Place process is now complete.**

If the location is too small for the quantity of stock you have to place, you will need to allocate another location. This information is available from your host system.



## 4.2 Place \ List

NOTE: Refer to Section 6 for information regarding list selection method.

The Place \ List screen shows the following information:

The screenshot shows the 'Place' screen with the following fields and values:

- Location Name:** 01A001002
- Quantity:** 12.000 GM
- Part Number:** T017801
- Lot Number:** (empty)
- Description:** MASTER BATCH (ORANGE)
- List Identifier:** 00047.GPL
- Quantity:** 12 (Large blue text)
- Shelf:** 01A
- Bin:** 01
- Location Quantity:** 200.000000
- Location:** 2 (Large red text)
- Notification:** Confirm Quantity
- Buttons:** Yes, No, Cancel
- Status Bar:** Press the Enter key to confirm the place quantity. Remaining: 2

	<i>Item</i>	<i>Description</i>
1	Location Name	Location designation in the machine
2	Small Quantity Box	Displays the total quantity to Place
3	Part Number Box	Displays part number from the HOST
4	Lot Number	Displays Lot Number if used from the HOST
5	Description Box	Displays the part description from the HOST
6	List Identifier Box	Displays the List Identifier information
7	Large Quantity Box	Shows the current quantity to Place
8	Location Quantity	Displays Location Quantity from the HOST
9	Shelf Box	Displays current shelf
10	Bin Box	Displays current bin
11	Location Box	Displays current location
12	Notification Box	Displays current message
	Colour	Green



## Place By List

### STEP 1

#### Select List(s)

Select the List or Lists you wish to use for the Place operation. Refer to Section 6, Selecting Lists.

The screenshot shows the 'Place' form with the following fields and values:

- Location Name: 01A001001
- Quantity: 12.000 GM
- Part Number: T017801
- Lot Number: (empty)
- Description: MASTER BATCH (ORANGE)
- List Identifier: 00047.GPL
- Quantity (large blue text): 5
- Shelf: 01A
- Bin: 01
- Location Quantity: 200.000000
- Location (large red text): 1
- Notification: Confirm Quantity
- Buttons: Yes, No, Cancel

At the bottom, a status bar reads: "Press the Enter key to confirm the place quantity." and "Remaining: 1".

The first location part number and required quantity will be presented on the Place form. The carousel will then rotate to the shown part location.

### STEP 2

#### Count and Place Parts

As the carousel rotates to the required shelf, a lamp will come on, indicating which bin to Place to. The required location in the bin is shown in large red text on the screen. When the carousel has finished rotating, count the parts as you Place them from the bin.

### STEP 3

#### Confirm Quantity

Confirm the Place quantity by pressing **Enter** or press a remote confirmation button on the carousel bench. The quantity to confirm is shown in large blue text on the screen.

This screenshot is a close-up of the 'Confirm Quantity' section of the 'Place' form. It shows:

- Quantity (large blue text): 5
- Shelf: 01A
- Bin: 01
- Location Quantity: 200.000000
- Location (large red text): 1
- Notification: Confirm Quantity
- Buttons: Yes, No, Cancel

The status bar at the bottom reads: "Press the Enter key to confirm the place quantity."

If the quantity you have to Place in the location does not match the quantity displayed on the screen, you must change the Place quantity. Refer to Section 4.3.

**The Place process is now complete.**

If the location is too small for the quantity of stock you have to place, you will need to allocate another location. This information is available from your host system.

### 4.3 Change Place Quantity

#### STEP A No to Confirm Quantity

To change the Place quantity, **Tab** to the No key then press **Enter**.

The screenshot shows the KARMANLite interface. At the top, there are three boxes: 'Quantity' with a large blue '5', 'Shelf' with '01A' and 'Bin' with '01'. Below these is a 'Location Quantity' box with '0'. To the right is a 'Location' box with a large red '1'. Below these boxes is a 'Notification' area with the text 'Confirm Quantity' and three buttons: 'Yes', 'No', and 'Cancel'. At the bottom of the interface, there is a status bar with the text 'Press the Enter key to enter the quantity for this location.' and a 'Remaining: 2' indicator.

#### STEP B Enter New Quantity

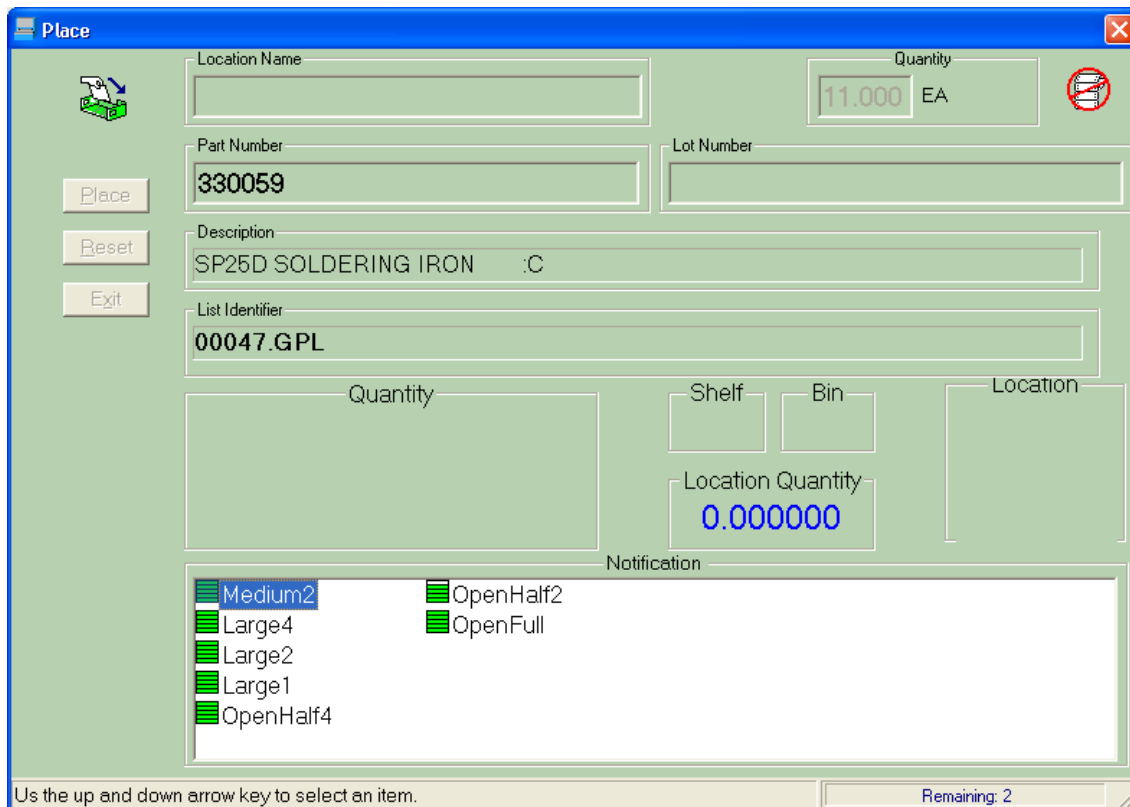
Type in the correct quantity and press **Enter**.

The screenshot shows a dialog box titled 'Quantity'. Inside the dialog, it says 'Enter New Quantity (Min: 1)'. There is a text input field containing the number '50'. Below the input field are two buttons: 'OK' and 'Cancel'.

Return to the next step in your Place process.

#### 4.4 Place To New Location

If the Place list contains an item that has not been placed in the Carousel before, KARMANLite will present all the locations available for selection:



Use the up and down arrow keys to select a bin size suitable for your inventory item. When the 'Automatic Location Selection' (ALS) parameter is set ON, KARMANLite will present the closest empty location of the selected size. Refer to the KARMANLite Technical Manual for an explanation of ALS.

If ALS is off, KARMANLite will present all the free locations of the selected size and you will need to select the actual bin location yourself.

The coloured icons to the left of the bin size indicate the number of free locations available for that size:

- Green > 80%
- Yellow > 20 % and < 80%
- Red < 20%

## 5 Verify Operation

'Verify' is Kardex VCA's terminology for the stocktake process. In addition to the mechanisms in place to maximise your stock accuracy, such as pick to zero confirmation, KARMANLite provides Verify \ List from the Main Menu.



Verify \ List is used to check the location quantities of multiple locations in the machine. The details of the each Verify operation are reported in the list confirmation file. If the list is retained after use, it can be used in an on-going manner. Verify By List can be used for perpetual stocktaking activities for locations with fast moving items or for a complete machine location Verify.

### 5.1 Verify \ List

NOTE: Refer to Section 6 for information regarding list selection method.

The Verify \ List screen shows the following information:

The screenshot shows the 'Verify' window with the following fields and data:

- Part Number: AB01342029
- Description: WIDGET 2029
- List Identifier: VERIFY5 / ABC
- Locations: (Empty list box)
- Quantity: (Empty box)
- Shelf: 01A
- Bin: 01
- Location: 1
- Locations Left: (Empty box)
- Notification: Please count the number of stock for this location.
- Buttons: Verify, Reset, Exit, Continue, Cancel
- Status bar: Press th, Remaining: 2

	Item	Description
1	Part Number Box	Displays the location part number
2	Description Box	Displays the part description
3	List Identifier Box	Displays the Verify List transaction information
3	Large Quantity Box	Shows the counted quantity
4	Locations Left	Not Used
6	Locations Box	Not Used
7	Shelf Box	Displays current shelf
8	Bin Box	Displays current bin
9	Location Box	Displays current location
10	Notification Box	Displays current message
	Colour	Pink



### Verify By List

- STEP 1 Select List(s)**  
Select the List or Lists you wish to use for the Verify operation. Refer to Section 6, Selecting Lists.
- The first location part number will be presented on the Verify form.
- STEP 2 Count Stock**  
When the carousel has finished rotating, count the quantity in the location and press **Enter**.

- STEP 3 Enter Quantity**  
Type the quantity that you counted then press **Enter**.

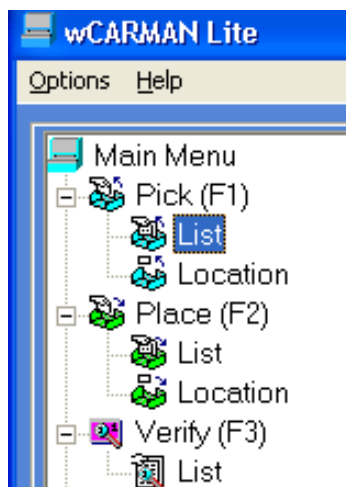
- STEP 4 Confirm Quantity**  
Press **Enter** to confirm the counted quantity.

**The Verify Process is now complete.**

If there are more locations to count, the carousel will rotate to the next location and repeat the process from **STEP 2**.

## 6 Selecting Lists

The method to select lists is the same for each of the Pick / Place / Verify operations. Highlight the list operation you require by using the mouse or arrow keys.

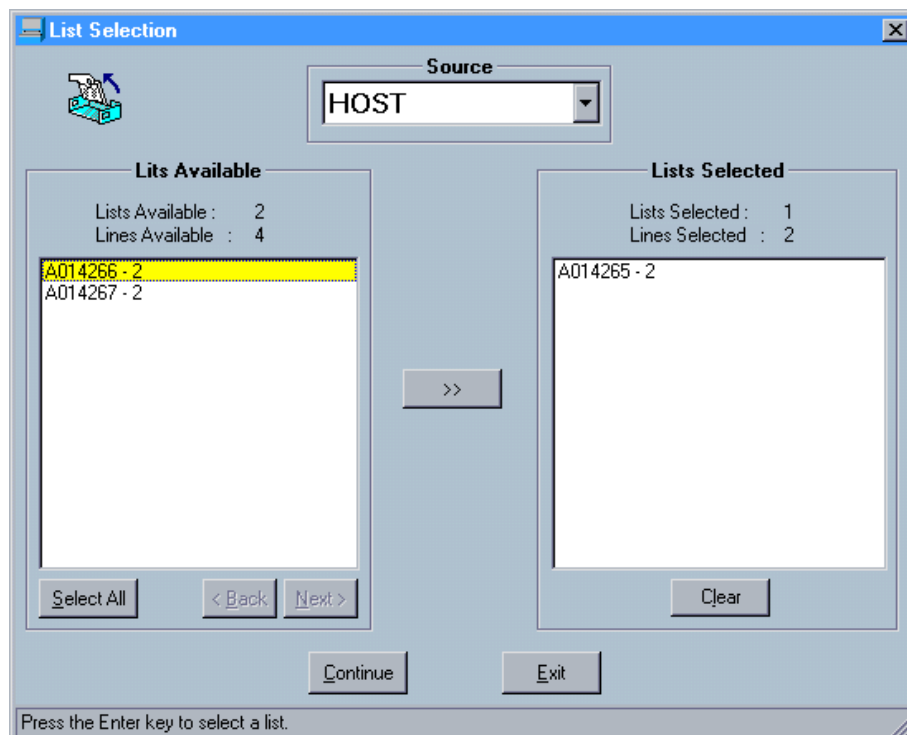


Once selected, press **Enter** to open the List Selection form (selection of a Pick list is used in the following example):

### STEP 1 Select List(s)

Press **Tab** to move the cursor into the Lists Available box, then use the **up(↑)** and **down(↓)** arrow keys to highlight the List you require and press **Enter**.

The List you have selected will move into the Lists Selected box. Repeat this process until you have selected all the Lists you are going to process.



To remove a List from the List Selected box, **Tab** to the List Selected box and use the **up(↑)** and **down(↓)** arrow keys to highlight the List you want to remove then press **Enter**.

**Select All** To select all available Lists press **Alt & S** or **Tab** to the Select All button and press **Enter**.

**Remove All** To remove all selected Lists press **Alt & L** or **Tab** to the Clear button and press **Enter**.

The List Selection screen above shows available HOST Lists. To view INTERRUPTED Lists, **Tab** to the Source box highlighting HOST and press the **down(↓)** arrow key to highlight INTERRUPTED then press **Enter**.

## STEP 2 Continue

Once you have selected the Lists you are going to process press **Alt & C** to Continue or press **Tab** and move the cursor to the Continue button and then press **Enter**.

## STEP 3 Return to Process

For Pick, Place or Verify by List operations, return to **STEP 2** in the relevant process you are using, as listed below.

Process	Section
Pick \ List	3.2
Place \ List	4.2
Verify \ List	5.1

When all lists have been completed, the following message will be displayed:



Press **Enter** to Clear the Message.



## 7 Manual Carousel Operations

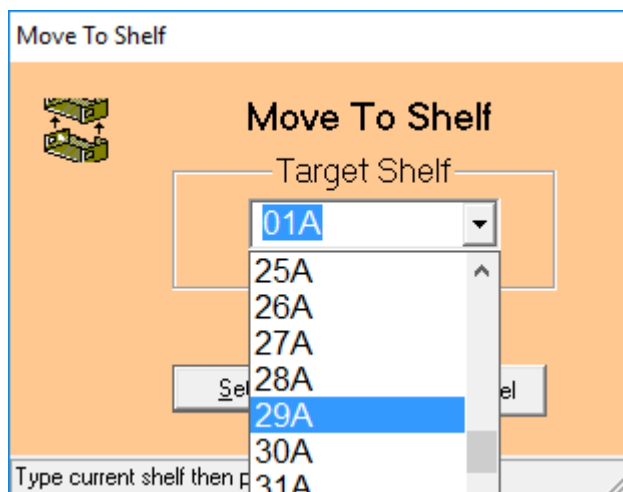
### 7.1 Move To Shelf

The Move To Shelf function allows the operator to rotate the carousel to a specific shelf number. This function has no input into the database and is primarily used to test the carousel operation.

You can select a target shelf by simply over-writing the current shelf number using the keyboard



Or, by selecting a target shelf number from the pull down menu, then press **Enter** to begin carousel movement.



To access the pull down menu and see all the available shelves press **F4**. Use the **up(↑)** and **down(↓)** arrow keys to highlight the target shelf then press **Enter** to accept the highlighted shelf.

You can then watch the carousels progress on the Move Carousel screen, which shows the current location and the target location.

## 7.2 Set Shelf

The Set Shelf function is used to update the KARMANLite shelf position with the actual Carousel shelf position. This function can be used at any time, and may be required periodically if the Carousel count gets out of sync with KARMANLite.

The Set Shelf function is presented on system start-up and must be acknowledged by the operator.

For a full description of Set Shelf please refer to Section 2.2.

## 8 SHORTCUT KEYS

F4	View pull down menu
Alt & C	<u>C</u> ancel
Alt & I	<u>I</u> no
Alt & F	<u>F</u> ind
Enter	Confirm operation
Esc	Go back a step
Tab	Move forward to command buttons
Shift & Tab	Move backward to command buttons

### Main Menu navigation:

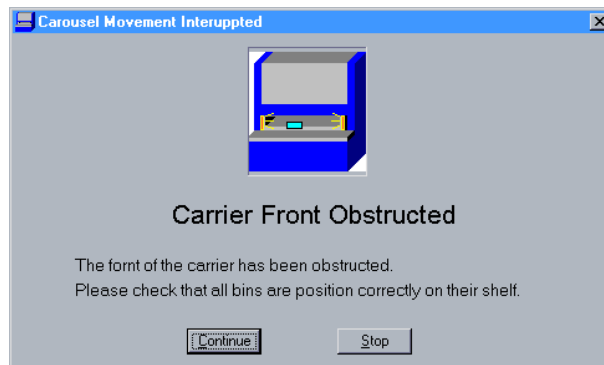
up(↑) and down(↓) arrow keys	Navigate Main Menu
right(→) arrow key	Expand a menu
left(←) arrow key	Collapse a menu
Enter	Select item

## 9 Trouble Shooting / Fault Messages

The Carousel is fitted with various safety devices, which operate regardless of the mode in which the carousel is being used. The devices are in place to provide personal protection to the users and protection for the inventory stored in the Carousel. A fault message is generated whenever one of the safety devices is activated. Fault messages can also be generated for different modes of operation.

### (i) Photocell Eyes

The access door area(s) are fitted with up to three photocell eyes. The photocell beam must be uninterrupted for the Carousel to operate. The photocells are positioned to detect if any trays or parts are outside the bounds of the carrier. If the photocell beam is interrupted, the carousel will stop. The problem must be fixed before the carousel can continue.



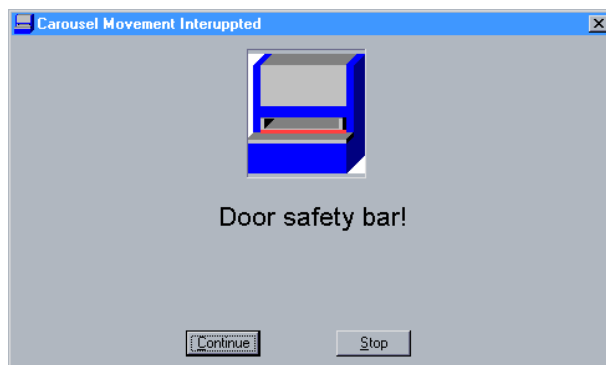
### (ii) Light Grid

The carousel access is fitted with a fail-safe light grid. This device is a self-checking personnel safety device and will stop the carousel immediately if the light grid is obstructed. The light grid will provide hand protection for the operator.

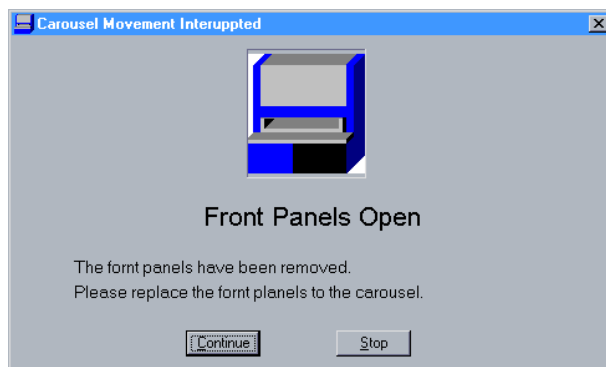


**(iii) Access Door Switches (Biparting door, if fitted)**

The carousel access doors are fitted with safety switches, which will stop the carousel from operating, if the doors are moved beyond the normal operating position. The doors must be returned to the normal position for the carousel to operate.

**(iv) Access Panel Switches**

All access panels are fitted with fail safe safety switches that prevent operation of the carousel when any panel is removed.

**(v) Emergency Stop Latching Pushbuttons**

One E-STOP pushbutton is fitted on each side of the access doors. When operated, the carousel will stop immediately and power will be isolated from the output circuit including the inverter. When operated, these buttons will latch and must be unlatched to be reset. Twisting the pushbuttons in a clockwise direction will unlatch them.

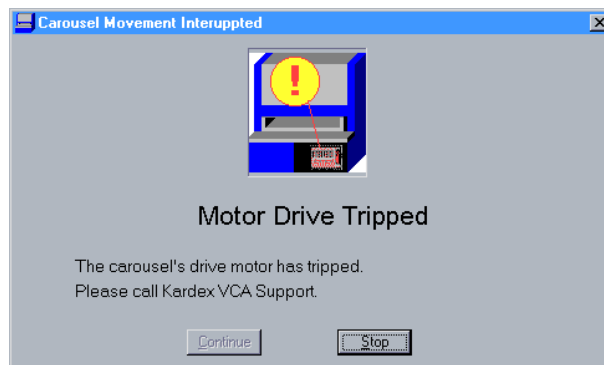


**(vi) User Stop**

If any button on the keyboard is pressed while the carousel is moving the movement will be stopped.

**(vii) Inverter Fault**

If the inverter trips, the carousel will stop immediately. The RESET pushbutton must be pressed to restart the inverter.

**(viii) Manual Mode Fault**

If the carousel mode is selected to MANual while KARMANLite 32 is in use, the following message will be displayed. The carousel mode must be selected to AUTO for KARMANLite 32 to operate correctly.



For any problems or assistance please contact:

Kardex VCA Customer Service

Wodonga Office [Australia]

Phone: +61 2 6056 5173

Fax: +61 2 6056 2422

Email: [support@kardex.com.au](mailto:support@kardex.com.au)

Where problems cannot be immediately resolved, a service call will be arranged.  
Kardex VCA has trained Service Agents in regional centres and all capital cities.