



Analyst Version 3.46

Analyst PMR – Robot Dispensing

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An extract of the full Analyst manual containing:

Robot Dispensing

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Robot Dispensing

Analyst can be used as the dispensing front-end to a dispensing robot. Analyst can work with all of the major robot dispensing units used in the UK. These are: the Rowa Speedcase supplied by ARX Ltd., the Robopharma RP30 High Density Dispenser and the Consis dispensing solutions.

In each case the robot must be setup and configured as normal with all of the control software and peripherals as usual. Analyst will then communicate dispensing instructions to the robot over the network. The stock levels of items held within the robot are transmitted from the unit back to Analyst.



Rowa Speedcase from ARX



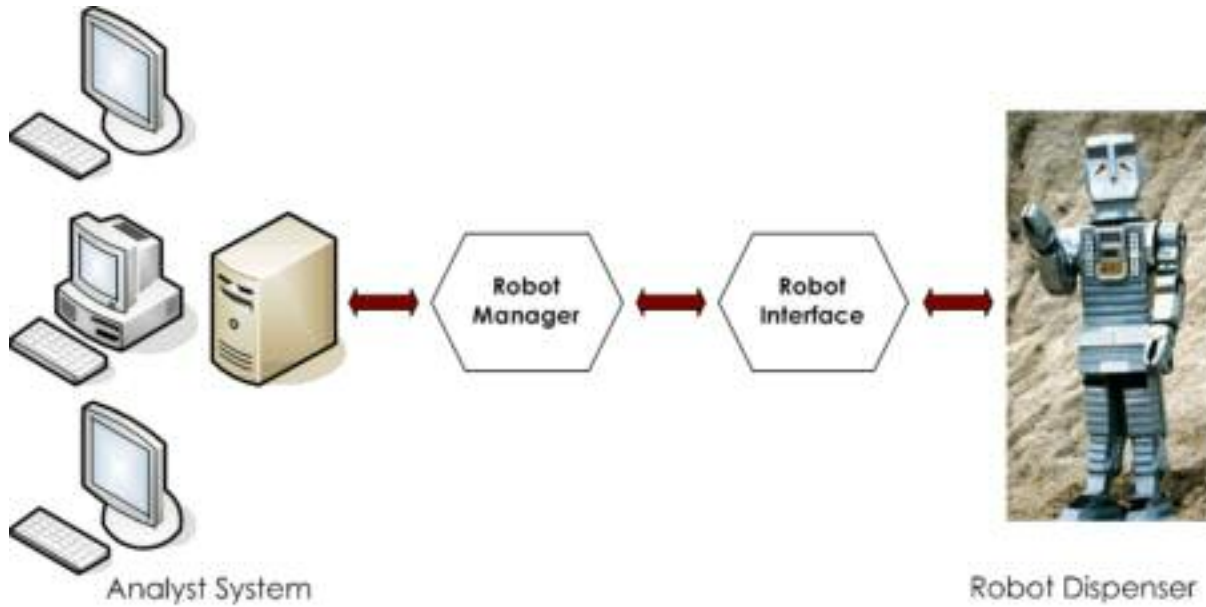
Robopharma RP30 High Density Dispenser



Consis.B Dispensing Robot

Robot Manager

The Robot Manager application is responsible for translating the actions of Analyst into a fairly common robot format. It is an application which is usually set to launch on the startup of the Analyst server. At the robot side of things there is another application which is responsible for converting this common format message into commands the robot will understand. Here is a diagram which explains the flow of information and instructions between Analyst and the robot.













Open the Robot Manager by clicking on the robot icon in the application tray at the bottom right of the screen or by selecting Start, Programs, Analyst and Robot Manager.

The main pane displays the detail of the communication between itself and the Robot interface.

Time	Event	Details
21/03/07 10:03:52	StockLevel	49 x Anoxiclin Caps 250MG (Alphama) [DPS=21]
21/03/07 10:03:50	QueryStock	Anoxiclin Caps 250MG (Alphama) [DPS=21]
21/03/07 10:03:24	StockLevel	49 x Anoxiclin Caps 250MG (Alphama) [DPS=21]
21/03/07 10:03:32	QueryStock	Anoxiclin Caps 250MG (Alphama) [DPS=21]
21/03/07 10:03:20	StockLevel	49 x Anoxiclin Caps 250MG (Alphama) [DPS=21]
21/03/07 10:03:19	QueryStock	Anoxiclin Caps 250MG (Alphama) [DPS=21]
21/03/07 10:02:43	EndSession	29
21/03/07 10:02:25	StockDecrease	28 x Anoxiclin Caps 250MG (Bristol Labs) [DPS=500]
21/03/07 10:02:26	Depense	28 x Anoxiclin Caps 250MG (Bristol Labs) [DPS=500]
21/03/07 10:02:14	BeginSession	29
21/03/07 10:02:10	StockLevel	1500 x Anoxiclin Caps 250MG (Bristol Labs) [DPS=500]
21/03/07 10:02:09	QueryStock	Anoxiclin Caps 250MG (Bristol Labs) [DPS=500]
21/03/07 09:02:27	EndSession	28
21/03/07 09:02:20	StockDecrease	100 x Anoxiclin Caps 250MG (AAH) [DPS=100]
21/03/07 09:02:20	Depense	100 x Anoxiclin Caps 250MG (AAH) [DPS=100]
21/03/07 09:02:19	BeginSession	28
21/03/07 09:02:14	StockLevel	900 x Anoxiclin Caps 250MG (AAH) [DPS=100]
21/03/07 09:02:13	QueryStock	Anoxiclin Caps 250MG (AAH) [DPS=100]
21/03/07 08:59:32	StockUpdate	0 x Anoxiclin Caps 250MG [DPS=21]
21/03/07 08:59:32	StockUpdate	63 x Anoxiclin Caps 250MG (AAH) [DPS=21]

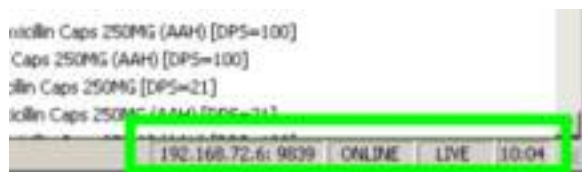
The first two columns display icons to show the type and status of the communication. These icons are:

	Start of dispensing session.
	Item dispensed.
	Stock decrease.
	End of dispensing session.
	Query stock held in robot.
	Response to stock query from robot.
	Stock update from robot.
	Query sent to robot.
	Response to query received.
	Response to query not received.

The Time column displays the data and time of the communications. The Event column explains the type of communication and the Details column provides more information about the event.

Status Bar










The status bar at the bottom provides information about the Robot Manager. The IP address and port of the terminal the manager is running on is displayed along with the status of the robot (online or offline) and whether the data displayed is live, live but filtered or historical ('LIVE', 'FILT' or 'HIST')



Toolbar

The toolbar across the top of the page contains icons to perform most of the functions of Robot Manager.



	Recall the communication events for a previous day or range of days.
	Find an event by searching for text in the Time, Event and Details column.
	Save the displayed list of events to file.
	Copy the displayed list of events to the clipboard.
	Email the displayed list of events.
	Print the list of events.
	Enter the configuration settings.
	About Robot Manger. Provides version and database information.
	Request a stock file from the Robot.

If you forget what the icons are the function is revealed by a 'tool tip' when the cursor is hovered over the icon. All of these functions are also available from the Log, Admin and Help options on the menu bar above the icons.

Configuring Robot Manager

After being initially installed, or after any major changes to the robot interface, the robot manager must be configured to operate with your robotic system. Open the robot manager by double clicking on the robot icon in the application tray at the bottom right and click the configuration icon on the toolbar. If the robot manager is not running launch it by clicking on Start, Programs, Analyst, Robot Manager.



Alternatively the setup options can be found in the Robot Tab of the Analyst PMR system configuration.



In the top portion of the screen enter the IP **address** of the terminal Robot Manager is running on (a loopback address must not be used). The **Port** number should remain at '9839' unless the robot engineers have had to make a change. In the **Driver** box select the model of robot you have. If this is the terminal which will run Robot Manager use the **Auto-start on this workstation** option to launch Robot Manager whenever this terminal starts up.

The main pane contains all of the configuration settings of your chosen robot. These can differ slightly depending on your unit. When an option is highlighted the bottom pane provides an overview of what each option does. They are listed and explained below:

Interface

Enter the IP address of the robot. The port number should remain as the default that appears but can be changed in line with any changes made in the robot software.

FTP Server

The Rowa Interface will post a daily stock file onto an FTP server. Enter the IP address of the server here. By default the user name and password are both 'robot'. Set the 'auto download' option to be true to download the stock file automatically every day and set the time for this to be done. This should be at least 30 minutes after the Rowa Interface is set to upload it.

Options

'Split pack dispensing' will enable the robot to dispense packs which have been split and returned to stock. Whether on (True) or off (False) this option must match the corresponding option in the Rowa software.

The 'split pack consolidation' option becomes available if the previous option is turned on. With this option enabled the robot will dispense split packs first where possible.

Turn on the 'Enable MAX support' option if you have a Max (channel system) attached to the SpeedCase.

'Query new drug stock' is a facility which allows the robot to tell Analyst the stock level of new items added to the system. This should initially be turned off (false) until a full stock list from the robot has been processed and then turned on (true).

The 'next message ID' is an internal sequential number and should normally not be changed. The exception to this is if an Analyst backup has been restored in which case the message ID should be advanced to avoid duplicate message numbers. Take advice from the CareDesk when doing this. (This option is not visible from the Analyst PMR system configuration)

Delivery Points

These settings determine which delivery chute to use for each terminal. Each terminal has an entry in the 'normal dispensing' and 'homes dispensing' section to allow a different chute to be used when dispensing to patient's in home. If a new terminal is added to the system the '(default)' option will apply to it until it is changed. Set the delivery points to suit your needs.

Dispensing with the Robot





Once configured and stocked, Analyst can be used to dispense items and instruct the robot where to deliver them. The use of Analyst is more-or-less as it would be without the robot, but for a few differences.

The Dispensing Screen

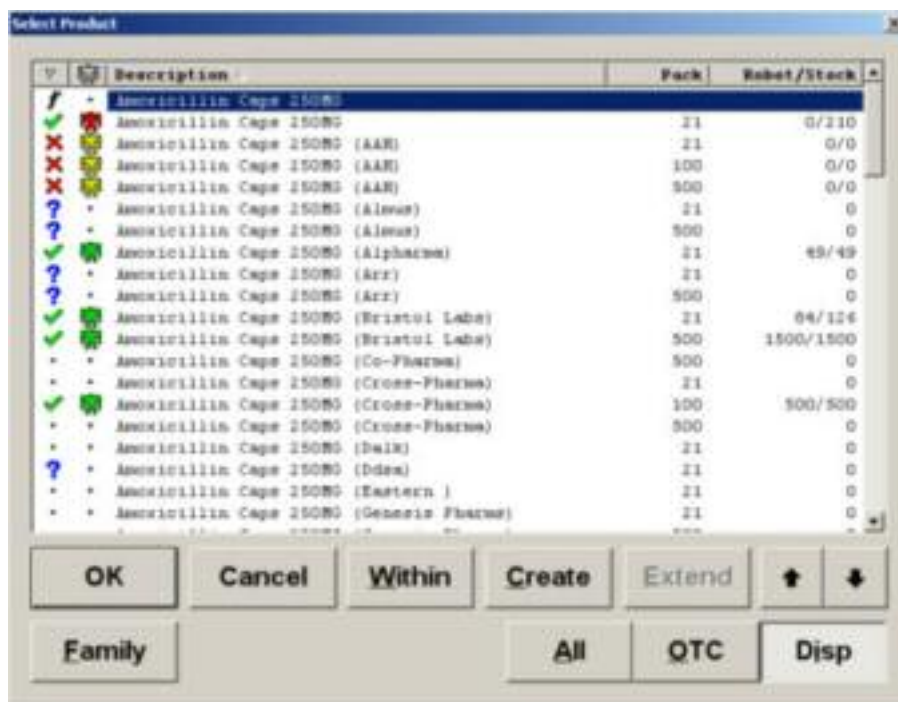
Once the patient has been identified and the dispensing screen appears the first difference to be noticed are the grey robots next to items in the dispensing history. Or not. These indicate items that have previously been dispensed with the robot. Lines without a robot next to them were dispensed by hand. For repeats this will provide an idea of which items will be delivered by the robot and which will need to be found manually.

Searching for Items

In the drug search an additional column appears to indicate if items are held within the robot and their stock status.

	This item is in stock in the robot.
	This item is normally stored in the robot but is out-of-stock.
	This item has been specified to require alternative brand selection.
	This item lies within a drug family which has been specified to require alternative brand selection.

The stock level is also presented differently. The number held in the robot and in the store as a whole are both given and are presented as a fraction, '42/63' indicating that there are 63 in the store as a whole and 42 of them are in the robot. Items not stored in the robot do not have their stock levels shown as a fraction.

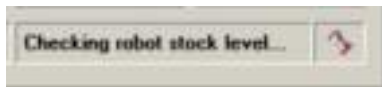


Drug Quantity Dialogue

If a robot held item is selected an extra bar appears at the bottom of the drug quantity dialogue. It holds two options and the stock level in the robot.



When it initially appears Analyst queries the stock level in the robot. Whilst waiting for a reply a spinning hourglass appears in the bottom right before being replaced with the stock level. If the robot stock is zero a warning will appear.



The option to **Dispense from robot** will be ticked automatically, but if for some reason the item will be dispensed manually remove the tick from this option. The **alternative brands** option allows another brand to be dispensed but the usage will be recorded against this item. Select this option to do this. Items which are preset to dispense an alternative brand will produce a slightly different looking dialogue with some of the buttons hidden. Read the Dispensing Alternative Brands topic for more information on this.

Enter the amounts prescribed and dispensed as usual and click **Accept**.

The item appears in the Dispensing screen with a yellow robot icon next to it indicating that the robot will dispense the items at the end of the session.

Out of Stock Messages

Occasionally the stock level reported by the robot can be wrong, usually due to manual removal of items or the arm not being able to pick a line. When this happens a pop-up message will appear on the Analyst terminal which sent the request that the item is actually out-of-stock.

Repeating Robot Dispensed Items

Lines which have been dispensed by the robot can be repeated as normal and will ordinarily be dispensed by the robot again if they were originally, and if there is enough stock. This dialogue will appear confirming that enough stock is available.



There are options to *not* dispense the item from the robot or to open the alternative brands dialogue, which would normally be used if there isn't enough of this brand in the robot. Rather than interrupting the natural flow of the dispense, this dialogue can automatically disappear if there is enough stock to satisfy the dispense by selecting an option in the system configuration. Even then this can be overcome by pressing the ALT button while clicking the **Repeat** button: this will keep this dialogue on screen.

Dispensing Without The Robot

If for some reason a terminal should not use the robot to dispense any item it can be excluded from robot use by de-selecting the 'Use robot when dispensing on this workstation' option on the Options Tab of the PMR System Configuration.

Dispensing Alternative Brands

One of the limitations of the robot is that it doesn't have the intuitive ability to make substitutions for items which are out of stock. This is why a special dispensing screen is used when dispensing with a robot. And consequently the normal drug quantity dialogue screen changes a little too.

The Drug Quantity Dialogue

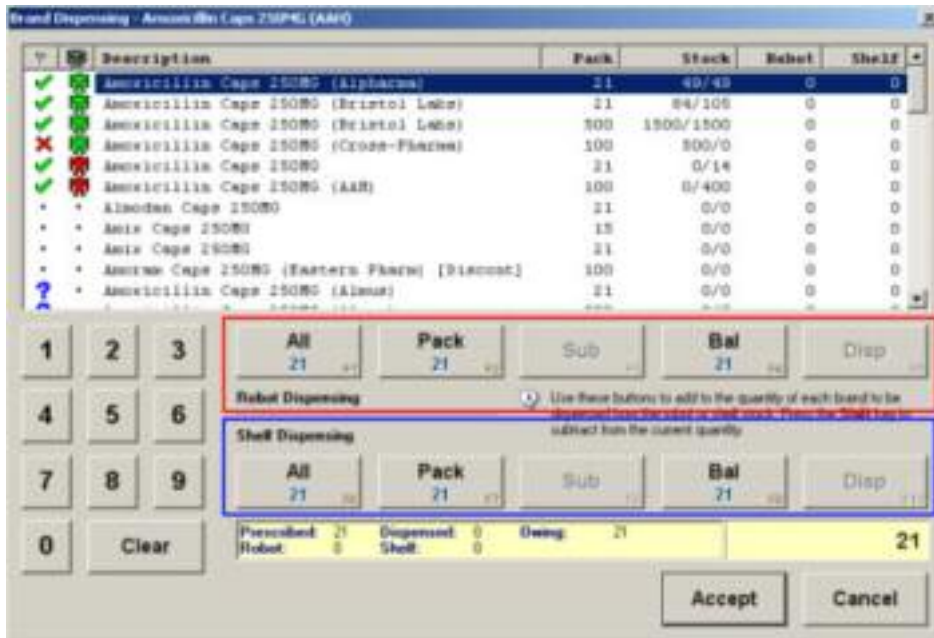
If the items was pre-selected to dispense an alternative brand some of the buttons are removed.



This screen now only requests the prescribed quantity as the dispensed brands and quantities are decided on the next screen. Type in the prescribed amount and click **Accept**.

Brands Selection screen

Once the prescribed quantity has been entered the Brand Selection screen will appear. It is from this screen that the actual brands and the quantity of each brand is selected.



The top portion of the screen contains the list of items which could be dispensed as a substitute for the items entered earlier in the dispensing procedure. The top row of buttons are for entering the quantities for robot dispensing whilst the bottom row of buttons are for entering the quantities for manual off the shelf dispensing.

Select the brand to be dispensed from the list in the top pane, type in the amount to be dispensed and click the **Disp** button on the robot row for robot dispensing or in the bottom row if it is to be dispensed manually. The **All**, **Pack**, **Sub** and **Bal** buttons on each row are shortcuts to help speed things up.

All	Dispense all of the prescribed amount with the highlighted brand.
Pack	Dispense a pack of the highlighted brand.
Sub	Dispense a sub-pack of the highlighted brand.
Bal	Make up the remaining balance of the prescribed amount with this brand.
Disp	Typed in amounts appear on these buttons. Click either the robot or shelf button to confirm the method of dispense.

A summary is displayed in the yellow section beneath the shelf buttons. The right hand side of that changes green when the prescribed amount is reached, or red if too many items have been selected.

The buttons are only illuminated if they are available to use. For example, if an item doesn't have a sub-pack the **Sub** button will not be available, or if an item is not stored in the robot none of the robot dispensing buttons will illuminate.

If an error is made the amount dispensed can be reduced. Press and hold the shift button on the keyboard. The buttons now display the amounts dispensed and if clicked they reduce the dispensed amounts.

Options

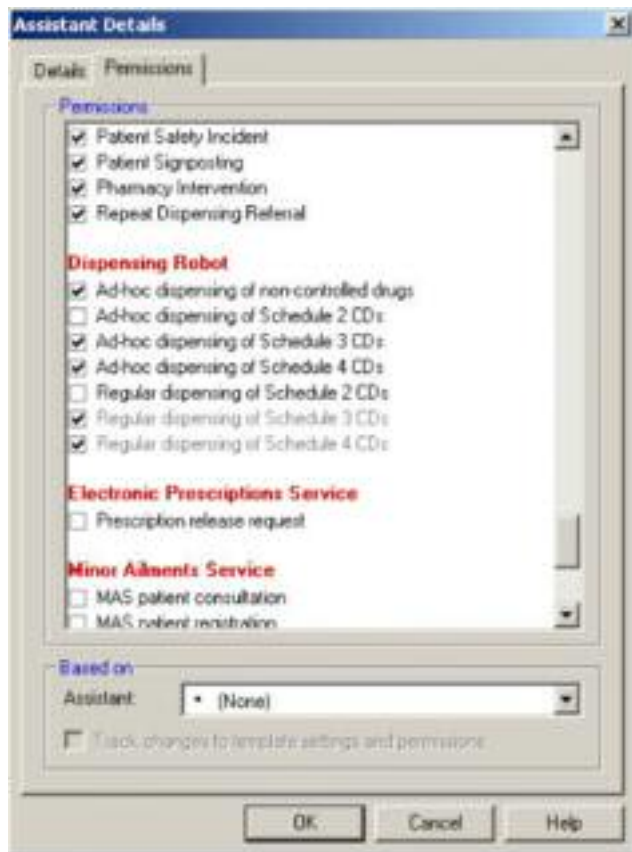
Only 'Robot lines' are displayed in this dialogue, but some may have zero robot stock level. These items can be omitted from the list by selecting the 'Omit out of stock lines from Alternative Brands dialogue' in the Robot section of the PMR system configuration.

Dispensing Controlled Drugs

All schedule 2 to 4 controlled drugs can be stored on the robot. There are assistant permission controls to permit or deny access to dispense them both regularly and on an ad-hoc basis.

Assistant Permissions

For each assistant, or assistant template, review the 'Dispensing Robot' section of the permissions tab.



Select which levels of drugs this assistant can dispense on an ad-hoc and regular basis. By selecting the ad-hoc permission the regular permission is implied.

If a template is amended then all assistants locked to track the changes in the template will be affected.

Daily Operation

An insufficient assistant permission level will not prevent the labelling of a CD line, but the robot will not be instructed to retrieve the item. This must be done by someone with the sufficient permission levels to retrieve on an ad-hoc basis.

This routine has been based on the idea that without a robot a normal dispenser can produce labels for the CD drugs but only the pharmacist or other authorised key holder can access the CD cupboard and actually dispense it.

Querying the Robot Stock Level

The stock level of items held in the robot is displayed in the product information window on the Details Tab of the product editor. It is also displayed in the stock column of product searches along with the total stock level.

Unlike the normal Stock Level field, which shows the level of stock in the store as a whole, the robot stock level cannot be edited. Analyst and the robot communicate regularly about stock levels, but if there is any doubt on the accuracy of the stock level Analyst is reporting click on the **[Check]** link next to the stock level information in the product information window.



Analyst will interrogate the robot interface...



..while the check is in progress the message changes.



When complete the stock level the robot has reported will be displayed and the legend will now read **(confirmed)**. If this figure still appears to be wrong a stock check might be required on the robot software.

Note: Analyst refers to this stock level as the 'Robot Stock' and will not necessarily be the 'Analyst Stock Level' (held on the Details tab and used for re-ordering). Depending on your chosen path of stock control, you may choose to select the option in the Robot section of the PMR system configuration which will make the 'Analyst Stock Level' the same as the 'Robot Stock'.

If the option to make the Analyst stock equal the robot stock, then when the stock level is queried, Analyst will use the new robot figure. If however the robot has reported that there is no stock of this item and the update option is selected then Analyst will remove the tick from the 'Robot line' option on the user tab and will no longer regard this item as being held in the robot.

Using Placeholders

Some systems use 'placeholders' when dispensing and ordering. This is where an item is added to the system which doesn't actually exist. This item is used to consolidate the dispensing and ordering of a family or group of drugs by using Analyst to dispense this placeholder but to actually use any items from a range of manufacturers.

When dispensing manually, without a robot, this is fairly straightforward as the dispenser will know that the placeholder doesn't actually exist and will select a suitable alternative. A robot however cannot do such a thing on its own; this procedure allows placeholders to still be used.

Setting up an item as a placeholder

In the product record for the placeholder, click onto the User Tab. The section on the middle right of the tab contains the options for the robot.

Product Details (tab=48578, dfl=124976)

Details | Selling | Buying | Drug | User | Forms | Prices | Classes | Model | Web | Merge | Paste |

Full description: Amoxicillin Caps 500MG (Bratit Labs)

Dispensing Act

SP code: []

Dose: 1 []

ONE to be taken THREE times a day

Physical Attributes

Colour: [] Shape: []

Staking: []

Robot Dispensing (C0000005700)

Do not label gph robot Devent loading into robot

Shelf stock Always dispense all brands

Do not label gph robot

Never exclude from alternative brands []

Custom Disbursement

Label text: []

Miscellaneous

QTC line Dispensary line

Do not allow direct repeating

Do not remove from MDS after printing paperwork

Legend:

SF prescribed SS dispensed

SZ drug pack size SC container qty

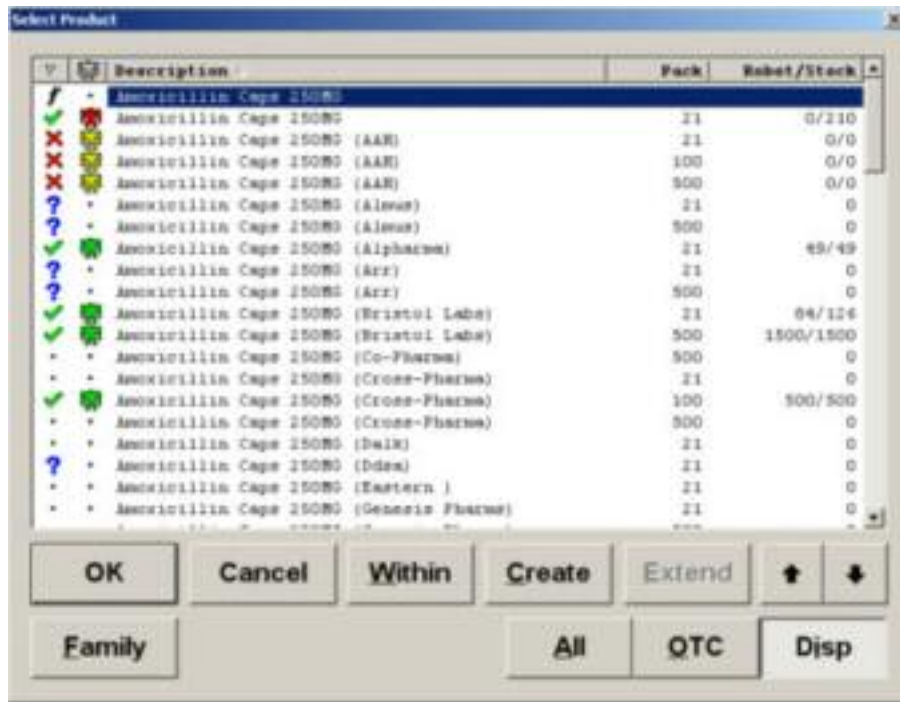
• amount • no endorsement

Copy Paste New Delete [] [] [] [] OK Cancel Help

The option to **Always dispense alternative brands** should be selected to prevent this dummy item being dispensed. The **Always exclude from alternative brands** should also be selected from the combo box to omit it from the list of drugs which can be dispensed.

Searching for the placeholders

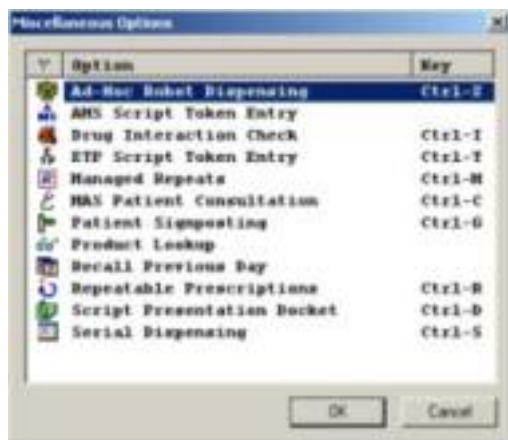
The placeholders should be searched for as normal. To help identify them in the search results list a yellow robot icon is placed next to items which require alternative brand selection, which will mostly be placeholders.



Ad-hoc Robot Dispensing

This facility allows stock to be retrieved from the robot without logging the dispense against any patient.

From the Script Queue screen click on the **Misc** button and select the **Ad-hoc Robot Dispensing** option or press CTRL+Z on the keyboard.



The drug search options will appear to search for the items to be dispensed.



The results will be displayed listing only items marked as being held in the robot. The stock level can optionally display by changing a setting in the Robot section of the PMR system configuration.

Once chosen the drug quantity will appear, and if you have selected an item which requires an alternative brand, the Brand Selection window will appear.

Once the dispensed quantity is entered the robot will deliver the items.

Dispensing Controlled Drugs

A special assistant permission is required to use the Ad-hoc Robot Dispensing of Schedule 2 controlled drugs. This is to reduce the possibility of counter staff who have not had the appropriate training to dispense CDs.

Split Packs

The solution for managing split packs is different depending which robot is used.

Rowa Speedcase

The Speedcase handles split packs well, as long as they are returned to the robot. The Analyst stock level includes all stock, robot and shelf and when dispensing lines it is easier to allow the robot to continue to dispense as usual.

Split packs can be returned to the robot by doing the following on the robot's visualisation machine.

1. Press P on the keyboard.
2. Type in the number of tablets/capsules which are being returned.
3. Scan the barcode of the drug pack.
4. Place the pack on the belt.

As long as the 'Split Pack Dispensing' option is set to 'True' splits will be dispensed where they can satisfy an order rather than a full new pack.

RoboPharma & Consis

The RoboPharma and Consis robots cannot yet deal with split packs so a separate area must be kept for them. When dispensing a split pack remove the 'Dispense from robot' option on the drug quantity screen, otherwise a new full pack will be requested from the robot.

Stock Control With Robots

Stock control in the dispensary can be made easier with the installation of a dispensing robot, especially the ARX Rowa Speedcase, but certain challenges remain and working practices and system setup might need to be adapted to suit the way both the robot and Analyst hold their stock levels.

Regardless of which dispensing robot is used, it will communicate at least on a daily basis with Analyst and inform Analyst of the stock levels held in the robot. It is imperative that the stock level stored by the robot software accurately reflect the stock held in the cabinet. The robot provider will provide specific instruction on how to maintain this with respect to the specific model installed, but in any case the manual removal and unrecorded addition of stock from the cabinet will create errors in this stock figure.

Analyst Stock vs. Robot Stock

Analyst Stock is the stock level which is stored in the business as a whole. This stock value will change as items are sold, dispensed and delivered among other less used methods. It is this value that Analyst uses to base the reordering decisions on or is used to influence the aggregated stock value, if appropriate.

The Robot Stock is the amount of stock the robot has held Analyst it holds. The robot is directly responsible for this value and will change only when the robot informs Analyst it has changed, regardless of what Analyst thinks has been dispensed from the robot.

The only time these two values should be the same is if all of the stock of an item is held in the robot cabinet. If all of the robot stock lines are always held in the cabinet in their entirety,

Analyst can link the robot and Analyst stock levels. This option is found in the Robot section of the System Configuration and is the last option: "Update local Analyst stock level on each robot stock level update"

This might still be a suitable option if only a small number of robot lines have splits or shelf stock stored outside the cabinet. Each robot line can be excluded on a product by product basis by selecting the "Shelf Stock" box on the User Tab of the product editor. This will break the link between the robot stock and Analyst stock. The Analyst stock will need to be total stock level of the item though, not just the shelf stock.

Deliveries

The way deliveries are accepted into Analyst, if at all, will depend on your robot and the way you control your stock.

If your Robot Stock and Analyst Stock are still independent then deliveries of robot lines will still need to be entered into Analyst just like non-robot stock.

If the Robot Stock has been tied to the Analyst stock, then the robot will inform Analyst of the stock increase during its daily update and so there is no need to input the delivery into Analyst. In the stock is delivered the resulting Analyst Stock level will be overwritten when the Robot Stock is queried each day.

Robot Label Printing

At the time of writing (Version 3.46) only the Consis robot has the facility to print labels in a way that Analyst supports. Rather than delivering the picked item directly to a chute, the picking head takes it to a printer which receives the box freeing the head to pick the next item. The printer prints a label, sticks it onto the box and releases it onto a conveyor belt which delivers the item to the appropriate chute.

The robot will label all items it dispenses, unless that item has been opted out. Items which are not dispensed by the robot will continue to have their labels printed locally at the Analyst terminal.

Configuring the Robot Label

In the Robot Tab of the system configuration, with the Consis driver selected at the top right, there is a Labels section.



By selecting the 'Print Labels' option to be 'True', this indicates that there is a printer in the robot.

Browse through the rest of the options.



This expanded view shows them all. The text on the label is aligned by setting the physical dimensions of the labels and the gap from each edge. The barcode checking facility is still available by setting 'Print barcodes on labels' to 'True'. This is particularly useful as stocking errors are more frequent in robots of this nature than the chaotic type or on manual shelves.

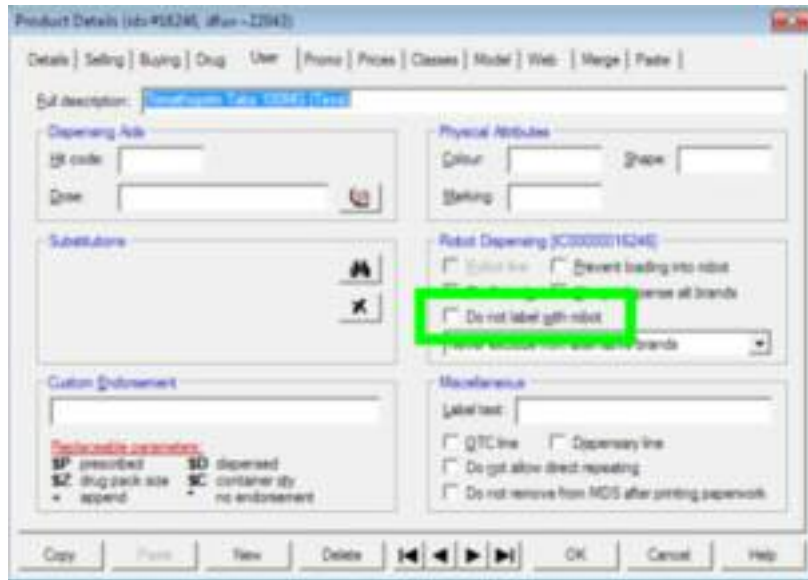
The labels can also print standard text line the pharmacy details and other warnings, like 'Keep out of sight and reach of children', by using the Boilerplate lines.

The pane at the bottom of the window provides an explanation of the selected option if your unsure.

Opting out of Robot Labelling

By Product

With the robot printer enabled every item dispensed by the robot will be labelled by its printer and not printed at the local Analyst workstation. This can be opted out of on a per-drug basis in User Tab of the item.

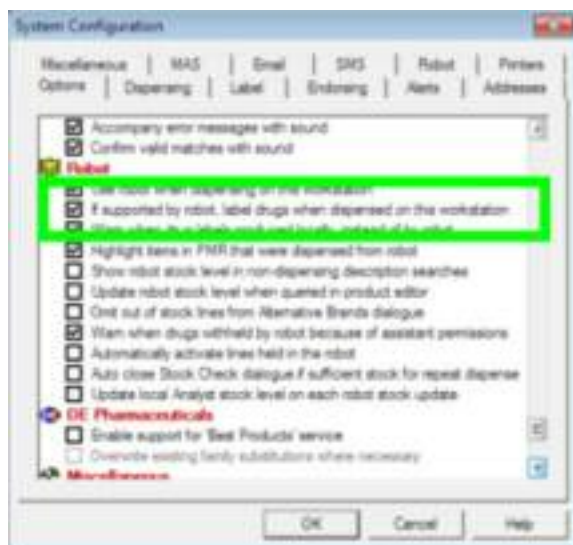


Select the 'Do not label with robot' option to print the labels locally instead.

By Terminal

If a particular terminal is used exclusively for Homes dispensing or is out of the way there is an option for the terminal to print all labels locally and disregard the facility for the robot to print it.

On the terminal to opt out, open the PMR System Configuration from the Admin menu. Scroll down to the Robot section and remove the option to 'If supported by robot, label drugs when dispensed on this workstation'.



Click **OK** when complete.

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