

BioRobotics

DECK MAPPING ON THE BIOMEK® FX

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The Biomek® FX automated liquid handling platform allows users the flexibility to configure the robot's deck configuration according to need. Due to this flexibility in deck configuration, it is likely that the deck used for writing a Biomek FX method will differ from an end-user's deck. Therefore, it may be necessary to map an imported method onto an end-user's deck configuration. Outlined below are the steps necessary to accomplish this task.

1. Evaluation for differences between the Starting Deck and Mapping Deck. The first step in deck mapping is to determine the differences between the Starting Deck (the deck on which the method was written) and the Mapping Deck (the end-user's deck). Follow the directions below and refer to the example for evaluating and recognizing differences between the Starting and Mapping Decks.
 - a. Check the number, types, and names of automated labware positioners (ALPs) on the original deck that was used with the method (Starting Deck).
 - b. Check the number, types, and names of ALPs on the deck onto which the method will be mapped (Mapping Deck).
 - c. Make sure the Mapping Deck has at least the same number and type of ALPs, both passive and active, as the Starting Deck.
 - d. Ensure that the ALP labels on the Mapping Deck are the same as those used on the Starting Deck. This is important because if the ALP position number is not present on the new deck, the labware will be lost. Techniques, etc., will automatically transfer with the labware and transfer steps.
 - e. If the ALPs are the same, proceed to Step 4. If not, proceed to Step 2.

EXAMPLE: In this case, the starting and mapping decks for the assay are shown in Figure 1. The Mapping Deck has the appropriate number and types of ALPs but will need to be renumbered to match the Starting Deck. In this case, proceed to Step 2.

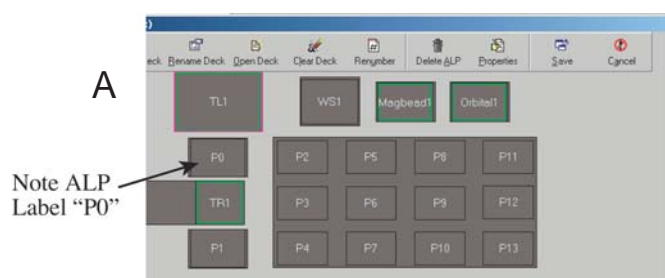


Figure 1A. Starting Deck: Note 14 Passive ALP positions (labeled P0-P13) plus a Tip Loader ALP, Trash ALP, MagBead ALP, and Orbital Shaker ALP are present on this deck.

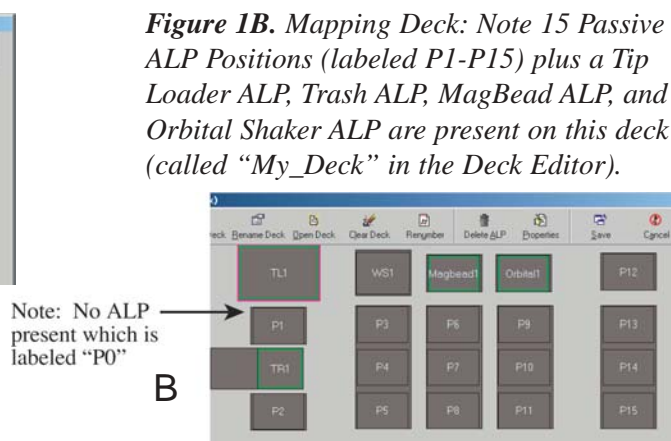


Figure 1B. Mapping Deck: Note 15 Passive ALP Positions (labeled P1-P15) plus a Tip Loader ALP, Trash ALP, MagBead ALP, and Orbital Shaker ALP are present on this deck (called "My_Deck" in the Deck Editor).

2. Modifying Mapping Deck ALP Names. If the difference between the Starting Deck and the Mapping Deck is only in ALP names, the Mapping Deck can be modified so the ALP names are identical between the two decks. If, during comparison of the Starting Deck and the Mapping Deck, the Mapping Deck does not contain the minimum number of ALPs required to run the method, nor the same type of active ALPs, please proceed to Step 3. To modify the ALP names on the Mapping Deck, follow the directions below and refer to the example.
 - a. Change and/or renumber ALPs on Mapping Deck to match the Starting Deck. To do so, double-click on the Deck Position containing the name that needs to be changed to match the Starting Deck. This will open the Position Properties window. Delete the current name and type the new name of that position exactly as it appears on the Starting Deck. Repeat this process for each position that needs to be renamed to match the Starting Deck.
 - b. Save the Mapping Deck with a new name. This will allow existing methods that have been developed on the Mapping Deck to continue to validate without changes.
 - c. Once the new deck that has the same ALPs as the Starting Deck has been created, proceed to Step 4.
3. When the Mapping Deck contains fewer positions and/or does not contain the same types of active ALPs as the Starting Deck.
 - a. Having dissimilar decks frequently requires some changes to the method itself to accommodate the different deck layouts.
 - b. Active ALPs that are present on the Starting Deck and perform a function in the method will be a necessary component of the deck onto which the method will be mapped. Method changes to accommodate the absence and function of active ALPs will be required when an active ALP position is lost.
 - c. When the number of ALPs present on the Mapping Deck is insufficient, labware and/or reagents will not transfer during mapping due to insufficient space on the new deck. When doing such a procedure, extensive method modification will probably be necessary to generate a method that will validate. It is possible that a method cannot be mapped onto a deck if the deck space is limited such that the reagents and labware necessary for the procedure cannot be accommodated. The addition of more ALP locations and the creation of a new deck may be necessary under such circumstances.
 - d. If you are performing extensive modification of a method and require assistance, please contact Beckman Coulter Technical Services (1-800-551-1150) for guidance.

EXAMPLE: The mapping deck from above had the appropriate number and types of ALPs as the deck used for the desired method. The ALPs on this deck were renumbered to reflect the ALP labels for the original deck and saved as a new name “My_Deck_2” (see Figure 2).

Note: ALPs have been renumbered to include a position labeled “P0”

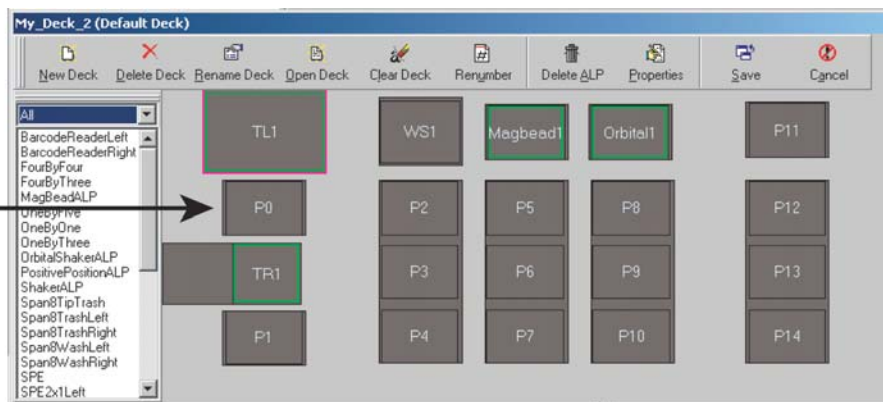


Figure 2. The ALPS on this deck were renumbered to reflect the ALP labels for the original deck and the deck was saved with a new name (“My_Deck_2”).

4. Map the method onto the new deck.
 - a. Open the Biomek® FX method that will be mapped onto this new deck.
 - b. From the drop-down box for the decks, choose the newly created deck.
 - c. Labware should now map onto the deck onto the ALP of the same name. For example, if a tip box is present on ALP P1, it will now be present on ALP P1 of the new deck. You may want to reposition labware to improve efficiency and minimize “fly-over” of reagents over samples, etc.
 - d. Go to the finish line at the bottom of the method to ensure the method validates. Make the appropriate changes to the method in the event that it does not validate.

EXAMPLE: The starting Instrument setup for the original method is shown in Figure 3A. Note the location, type, and number of all labware and reagents.

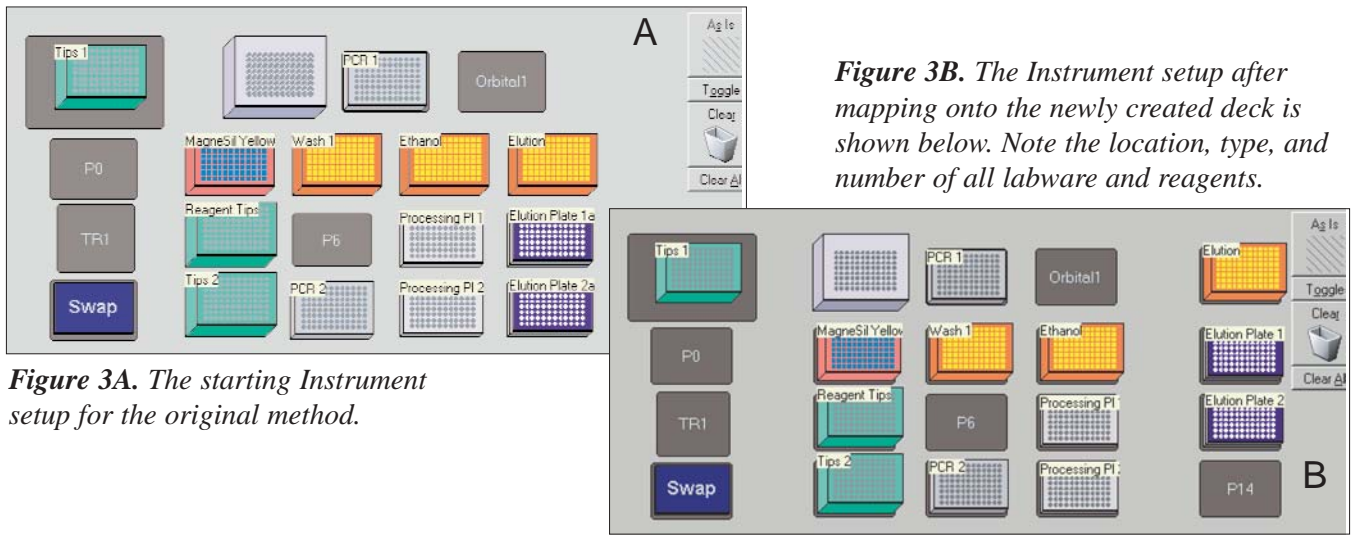


Figure 3A. The starting Instrument setup for the original method.

Figure 3B. The Instrument setup after mapping onto the newly created deck is shown below. Note the location, type, and number of all labware and reagents.

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