Motor Control Centers Accessory Selection Improvements

September 2023

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Overview

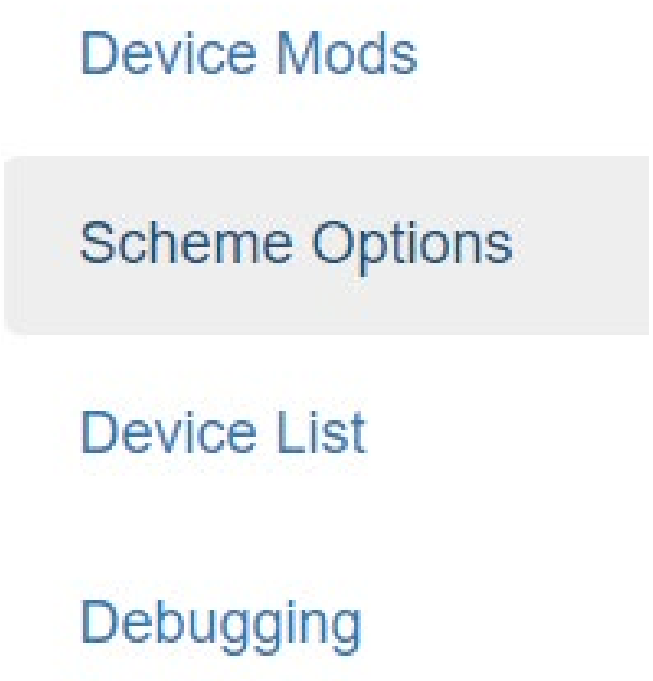
- Accessory selection is a core piece of functionality in the motor control center takeoff.
- As part of our “new ways of working”, IT is constantly engaging with our stakeholders to determine how we can best serve their needs and make Bid Manager the best product configuration tool in the industry.
- A frequent complaint among MCC users is the amount of time and effort it takes to create a takeoff and assign all the needed accessories to each individual device. There are too many situations in which a plant engineer or sales user must touch each individual unit in a large configuration.

The Solution

- The European CAPITOLE products use a different method of selecting accessories that allows users to create lists of accessories and quickly assign them to groups of devices or individual devices. Once this feature was demonstrated, the Fayetteville plant asked the Bid Manager development team to redesign the accessory selection process to more closely match the system used by our European takeoffs.
- In addition to the accessory changes, the plant has updated the MI and parts-picking rules to streamline the process of making selections that are only available to plant engineers.

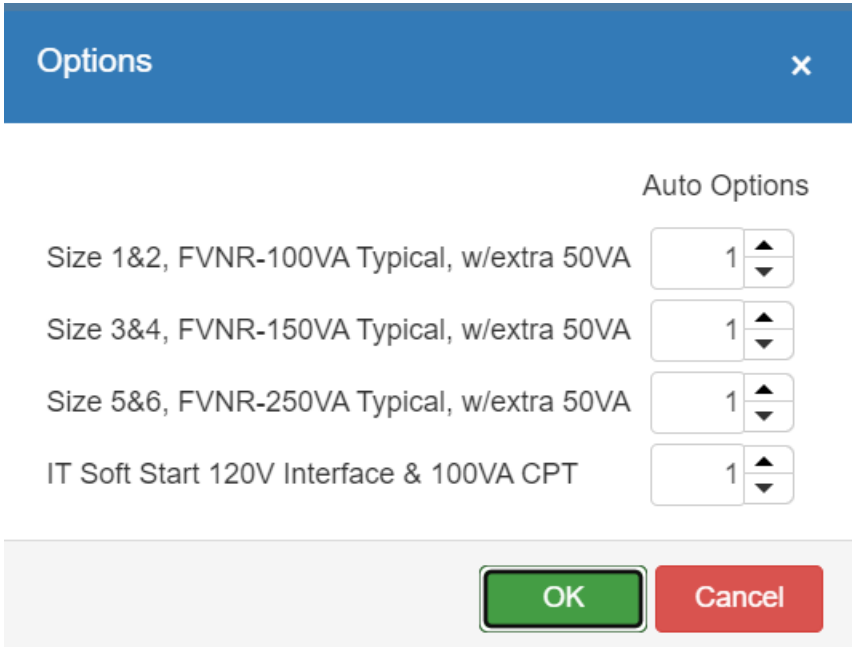
What is Changing?

- When loading the takeoff, users will notice a few changes to the design:
  - A new tab named “Scheme Options” has been added. This replaces the old “Accessories” button as the area in which accessories will be created.
  - The “Device List” tab has been in MCC for years, but our research indicates that most users are unaware of how to use this feature to speed up the configuration process. That will change going forward, as “Device List” and “Scheme Options” are closely linked.



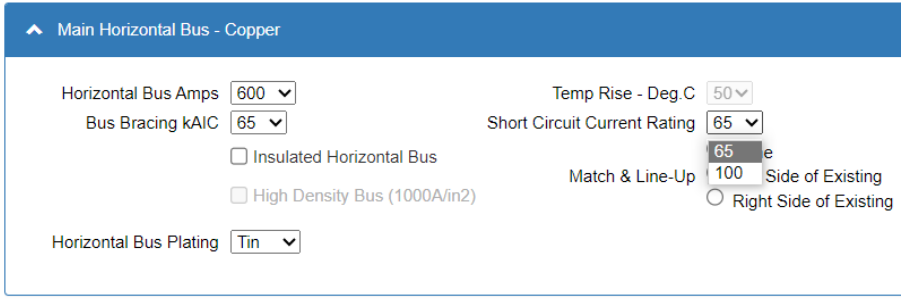
What is Changing?

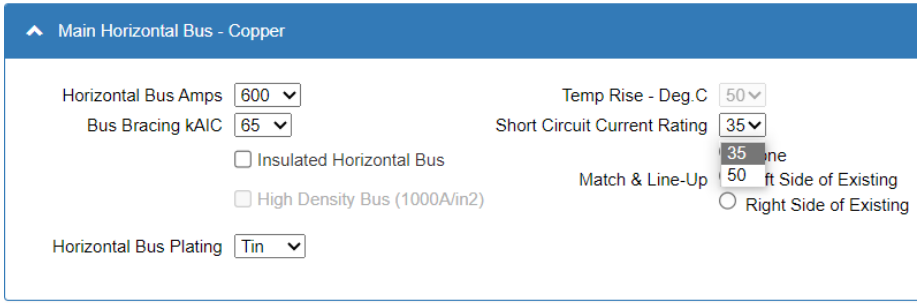
- The old “Accessories” button in the ribbon bar has been renamed “Auto Selections”, and offers only limited functionality.
- The dropdowns for category and subcategory have been removed so that no new accessories can be selected from this interface. Existing accessories from a saved takeoff can be edited.
  - Some accessories are selected automatically in the background as the user configures the takeoff. We didn’t want users to have to remember to add these manually, so the auto selections were maintained as part of this project. From this screen, quantities can be adjusted and auto selections can be removed by changing the quantity to 0.



What is Changing?

- In the Systems Tab, under Main Horizontal Bus, the Short Circuit Rating is live.
  - For Service Voltages under 600, the Short Circuit Rating selections are 65 KAIC or 100 KAIC.
    - The 65 KAIC is currently the default in Bidman.
    - With the 100 KAIC, an override will cause the feeder breakers in different units in the background. This will prevent selecting the wrong feeder breaker type when 100KAIC is requested by the customer.
  - For Service Voltage of 600, the Short Circuit Rating selections are 35KAIC or 50KAIC.
    - The 35 KAIC is currently the default in Bidman.
    - The 50 KAIC is another selection available for the 600V Service Voltage.





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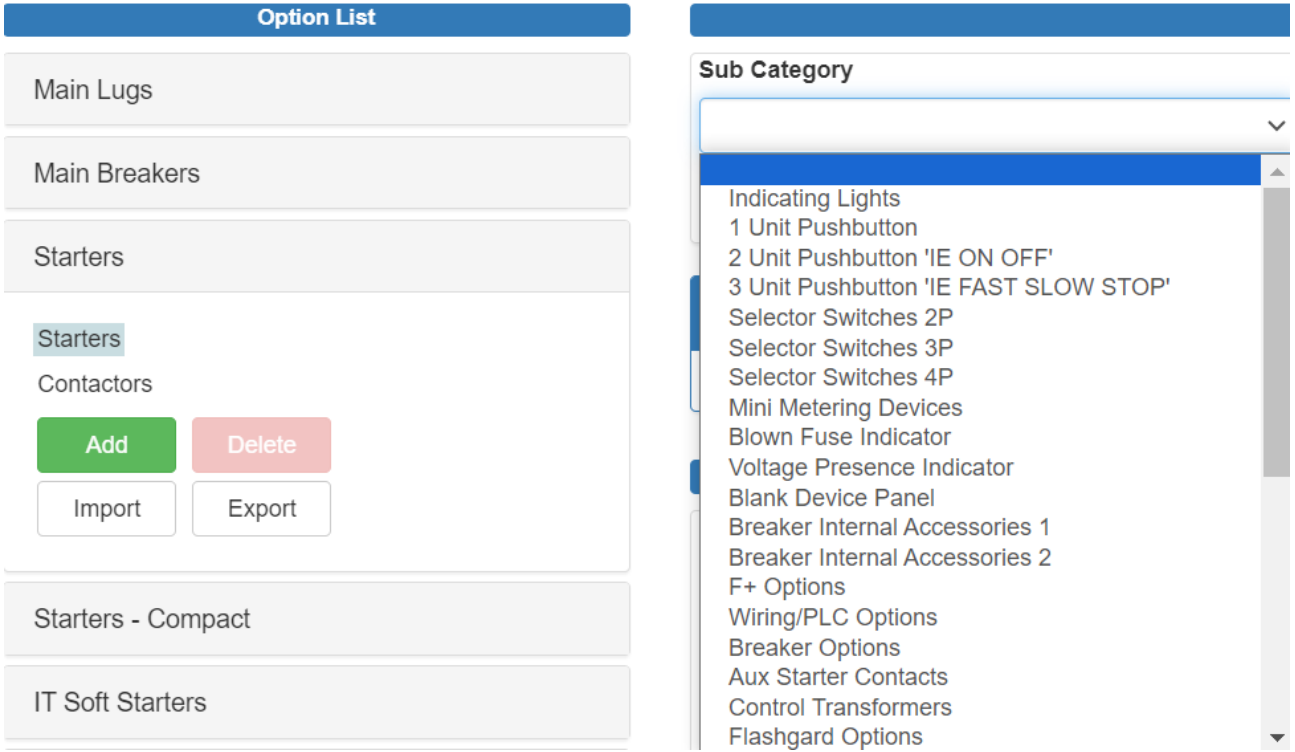
Scheme Options and Device List

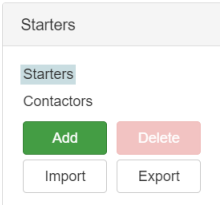
- The concept behind the scheme options/device list is simple: create lists of accessories and quickly assign them to all devices that require them without the need to open and edit each individual unit or copy and paste devices to duplicate a configuration. On the left side of the scheme options tab, we have a list of categories along with default option list names. These default lists cannot be deleted, but users can create their own lists with a different naming convention.
  - The plant assumes that most users will work according to a wiring diagram, and suggests that new lists are created with a wiring diagram name.
  - Lists can be imported and exported, so commonly used accessory configurations can be quickly loaded without the need to recreate them.
    - Note that only user-created lists can be imported. Overwriting default lists or having multiple lists with the same name is not supported.
  - When a category and accessory list are selected, a subcategory dropdown appears. This is similar to the category/subcategory breakdown most users are accustomed to seeing in the old MCC options picker.

Scheme Options and Device List



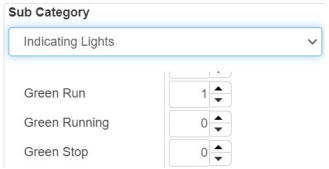
Scheme Options and Device List

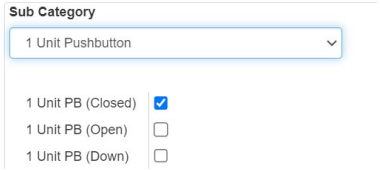
- Let's look at an existing lineup of ten starters, in which there is a customer requirement to add a green indicating light, a pushbutton, and a selector switch to each starter. How would we do that?
  - We could delete nine of the ten devices, add accessories to the remaining starter, and then increase the quantity. But what if we've already entered unique nameplate information for all ten starters? We would have to re-enter it.
  - In the old design, most users would work around this by opening and editing each individual unit.
  - In the new design, this can be easily handled by creating an accessory list, selecting the accessories, and associating them to the devices in the device list tab. No need to copy/paste, change quantities, or edit each device individually.
  - We could use the default "Starters" list for this, but let's suppose we've been given a customer wiring diagram for this configuration. We'll create a custom list called "WD-1". Click the "Add" button to create this list:

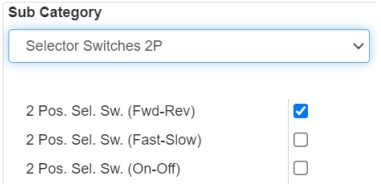


Scheme Options and Device List

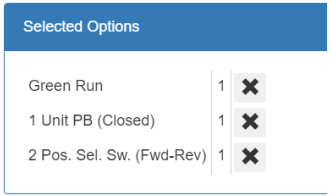
- With our list created, we select the appropriate subcategory for each of our three required accessories. For consistency, we've kept the subcategory names similar to what we had in the previous system.
  - For certain subcategories, sales users will have a more streamlined list of available selections.







- As we make the selections, they appear in the "Selected Options" section:
  - Selections can be removed by deselecting them, or by clicking the X in the selected options section:



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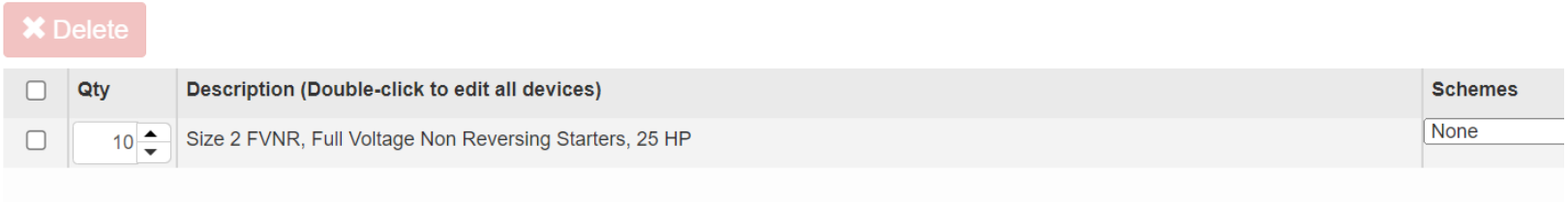
Assigning Lists

- Now that we have a list named WD-1, let's assign it to our ten starters. For speed and convenience, we have created three different ways to assign accessory lists:
  - In the device list tab
  - In the device properties form, on the "Standard Options" tab
  - In device mods
- The device list tab will often be the fastest way to work. This is a powerful tool for making bulk edits in larger lineups. This tab will analyze each device in the lineup and group all identical devices together with a quantity.



Assigning Lists

- By selecting “WD-1” from the “Schemes” dropdown, we have assigned a green indicating light, a pushbutton, and a selector switch to all ten devices at once. We can verify this by viewing the price sheet:

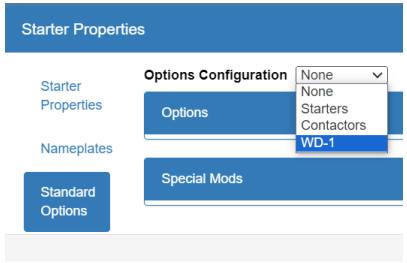
✖ Delete

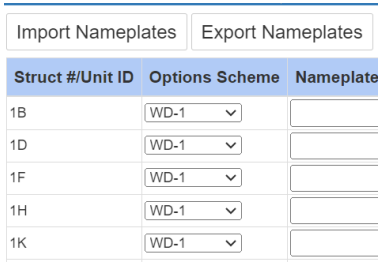
	Qty	Description (Double-click to edit all devices)	Schemes
☐	10	Size 2 FVNR, Full Voltage Non Reversing Starters, 25 HP	WD-1

1	FVNR Starter Size 2 [HMCP]	F206S2HMCP	$3,162.00
1	Size 1&2 FVNR-100VA Typical	CPT1S100V	$727.00
1	#16awg, MTW Control Wire	16AWG	$0.00
1	Wiremarkers at Each End	WMK	$0.00
1	Solid State Overload Relay (Standard C440)	SSOLSTD	$358.00
1	Terminal Block - Latching Pull-Apart, Std.	TCBSTD	$0.00
1	Green Run	E10250ORTPL10LED	$303.00
1	1 Unit PB (Closed)	E10250ORTPB10	$142.00
1	2 Pos. Sel. Sw. (Fwd-Rev)	E10250ORTSS20	$286.00

Assigning Lists

- Lists can also be assigned from within the device properties screen, or from the new dropdown in the device mods tab:

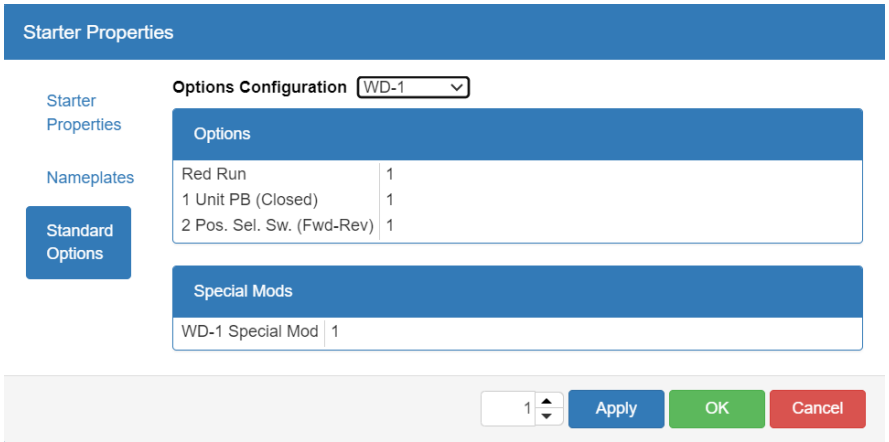




- Assigning lists in device mods is useful when a subset of the configured devices requires a minor change. Suppose three of our ten starters required a different color indicating light. This could be handled by creating a second list named “WD-2”, changing the indicating light, and assigning the new scheme in device mods.
- It does not matter whether you select accessories and then assign a list, or assign a list first and then choose the accessories. It will work the same either way.

Assigning Lists

- Accessories and special mods associated with a scheme can be viewed in the device properties form, on the “Standard Options” tab:
  - You will see the words “accessory” and “option” used interchangeably in some places throughout the takeoff. This is because much of the code base is shared with the European configurators and was set up to use the preferred Bid Manager terminology of “option” rather than the “accessory” wording commonly used by the MCC product line.



Assigning Lists in Device Mods

- After assigning a different scheme in device mods, we now have a configuration of seven starters with list WD-1 and three starters with list WD-2. The device list tab reflects the changes by breaking out the starters into two groups with the correct quantities:

Struct #/Unit ID	Options Scheme
1B	WD-2
1D	WD-2
1F	WD-2
1H	WD-1
1K	WD-1
1M	WD-1
2B	WD-1
2D	WD-1
2F	WD-1
2H	WD-1

Qty	Description (Double-click to edit all devices)	Schemes
7	Size 2 FVNR, Full Voltage Non Reversing Starters, 25 HP	WD-1
3	Size 2 FVNR, Full Voltage Non Reversing Starters, 25 HP	WD-2

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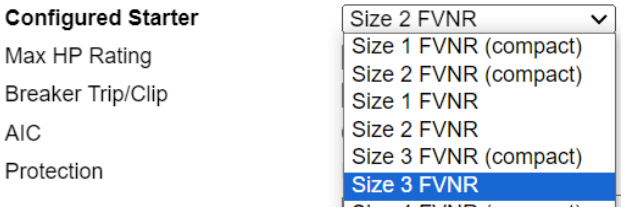
Faster Workflow Using the Device List Tab

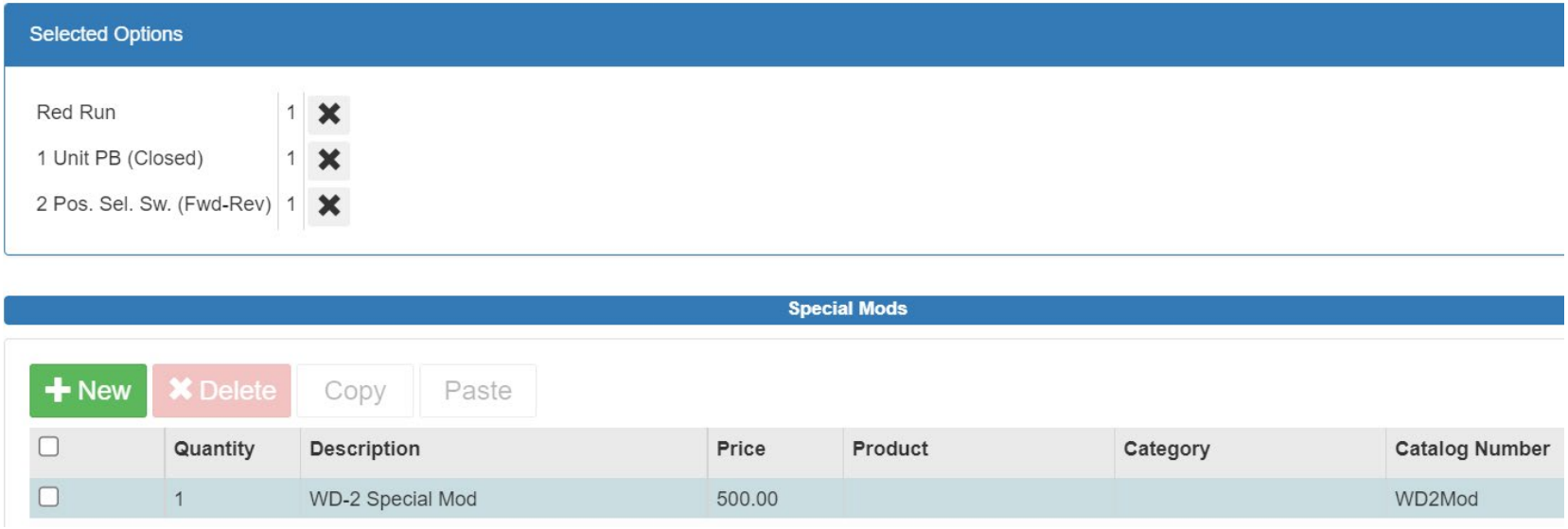
- Suppose the customer requirements change after we've already configured a lineup. Our seven starters with accessory list WD-1 need to be changed to size 3 starters. Instead of manually editing each device from within the layout tab, we can do a bulk edit in the device list tab. By double-clicking the device and changing from size 2 to size 3, the change is made across all seven starters at once:



	Qty	Description (Double-click to edit all devices)
☐	3	Size 2 FVNR, Full Voltage Non Reversing Starters, 25 HP
☐	7	Size 3 FVNR, Full Voltage Non Reversing Starters, 50 HP

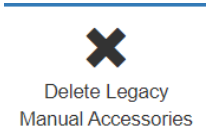
Scheme Option Special Mods

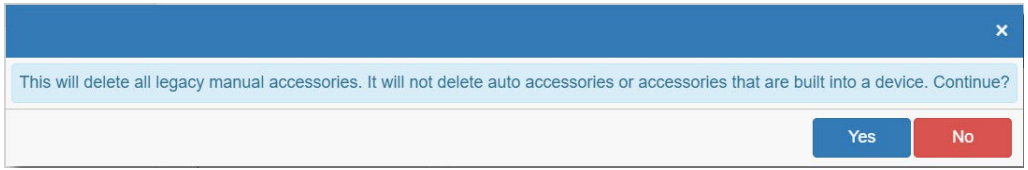
- Special mods can be created for an accessories list and automatically added to any device when that particular list assigned. In this example, a $500 special mod will be added to every device that has the WD-2 list assigned:



Working With Saved Configurations

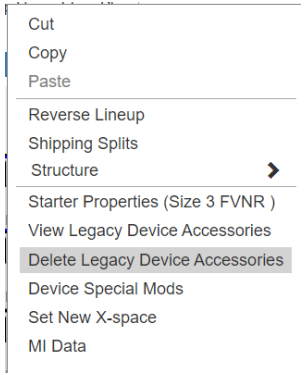
- Existing saved configurations created using the old method of selecting accessories will open and price correctly. No special action is needed to view or edit these configurations.
- If you are modifying an old takeoff, we recommend saving it as a new alternate and using the new process of configuring accessories.
  - In the ribbon bar, we have added a new button labeled “Delete Legacy Manual Accessories”. This button will remove all accessories that were manually added to an old takeoff at both the global and device level.
  - You do not need to delete the legacy accessories, but we recommend it for situations in which substantial changes need to be made to an older saved configuration.





Working With Saved Configurations

- You can view and remove legacy manual options on individual devices using the new selections in the device right-click menu:



- We have gone to great lengths to keep class names, attributes, and catalog numbers the same in both the old and new accessory logic. This will help ensure a smooth transition to the new scheme options design.

Quick Prints

- The quick prints will look the same as they always have.
  - Scheme special mods will be reflected in the list of materials and on the notes/special instructions page.
  - Accessories will be shown in the unit info page.