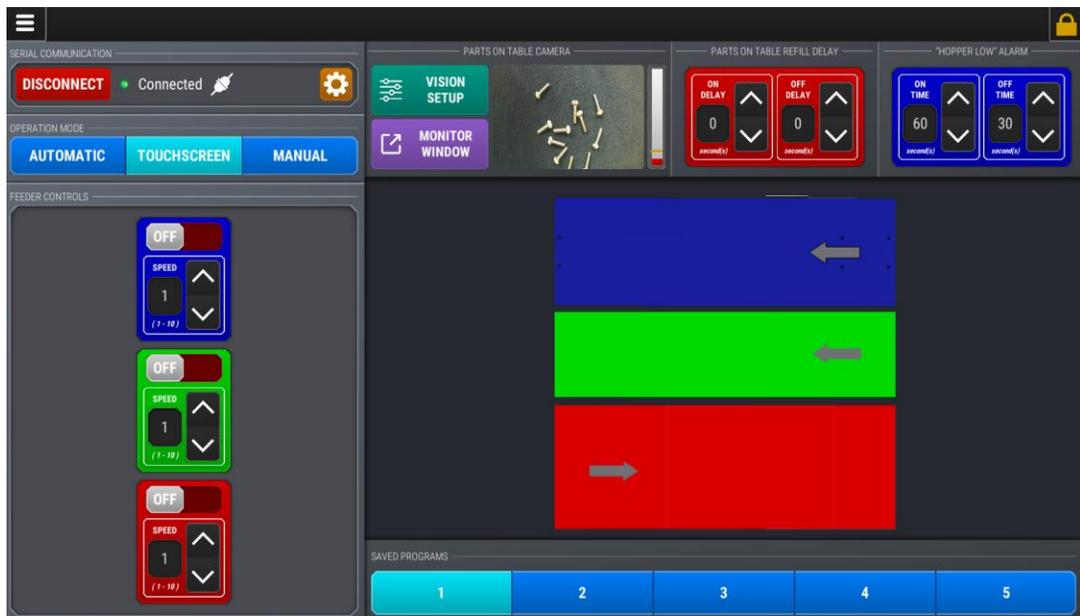


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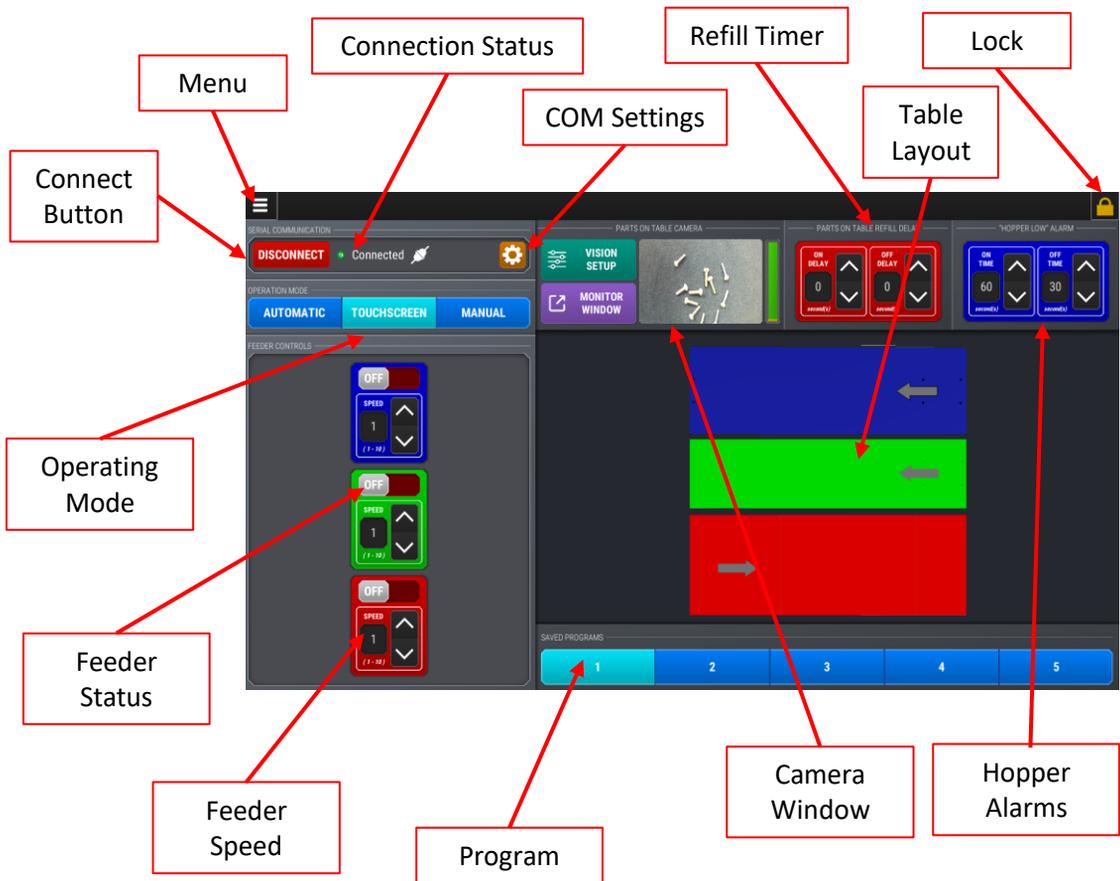
VIBRATORY MOTION SYSTEMS

Vibe Feeder Software Operating Instructions



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VIBRATORY MOTION SYSTEMS



Connection Status: Indicates PC connection to the PLC inside the cabinet

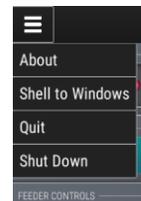
Menu: Pull down Menu

About: Software version

Shell to Windows: Minimizes program to get to Windows

Quit: Shuts down RoboShop Software. PC remains on

Shut Down: Shuts down program, and then PC



Connect Button: Use to connect PC to the PLC

Operating Mode:

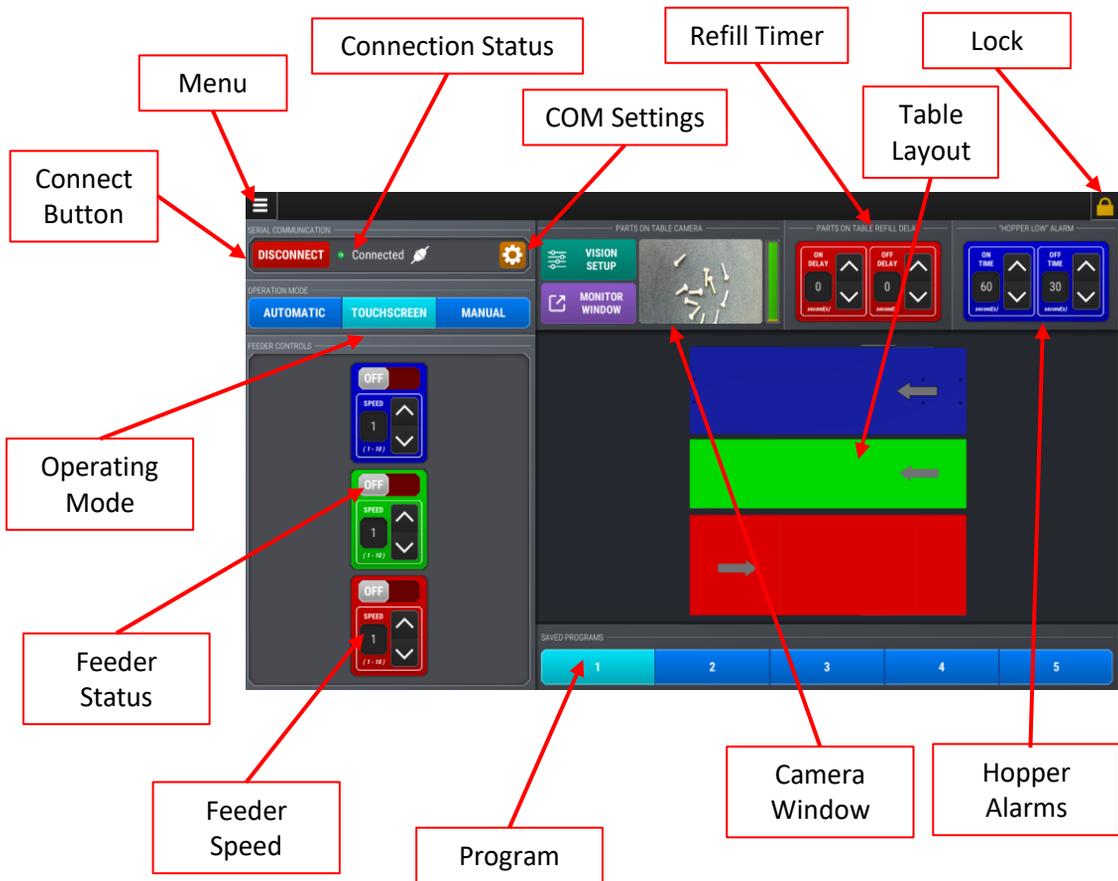
Automatic: Enabled with the RUN contact is made. For control by your PLC

Touchscreen: Controlled by the screen. Feeders can be turned on/off independently, speeds tested, etc.

Manual: Allows feeder control through individual inputs from your PLC.

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Feeder Status: Indicates if individual feeder is running

Feeder Speed: Changes part speed on an individual feeder. Scaled from 1-10.

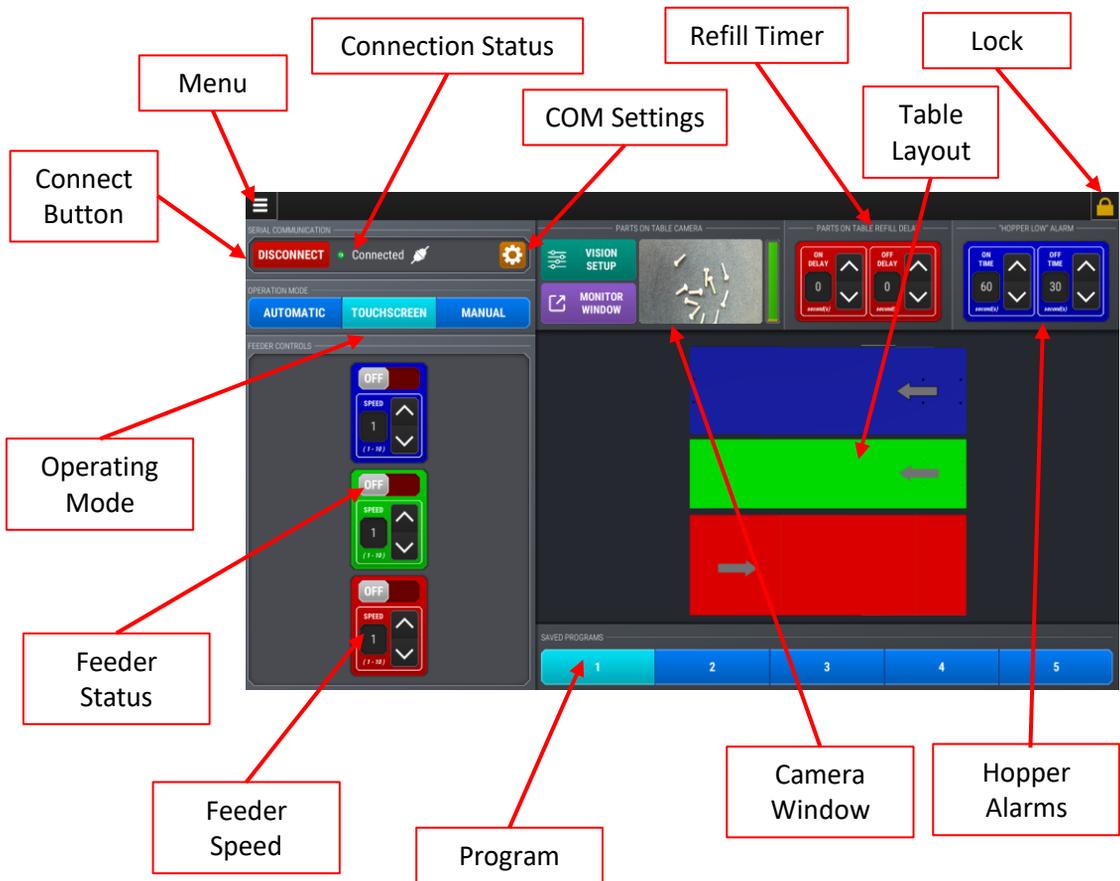
Program: Provides up to five different programs. Each program is a combination of feeder speeds. When running different parts on the same system it is sometimes beneficial to use a different speed for different parts. These speeds can be accessed through a set of BCD inputs. Program Changes are saved automatically.

Camera Window: Provides camera setup screens and monitor window for table level camera

Hopper Alarms: Timer Settings for Hopper Alarm Output. "On Time" is the length of time the hopper will run before triggering the output. "Off Time" is the length of the output signal. This can be used to indicate the hopper is low on parts.

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VIBRATORY MOTION SYSTEMS

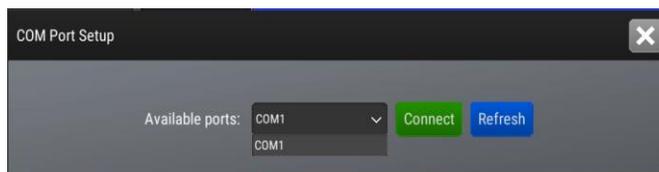


Lock: The individual feeder settings for frequency and pulse-width are protected behind the lock screen. These settings are typically set at the factory to optimize the system for your application

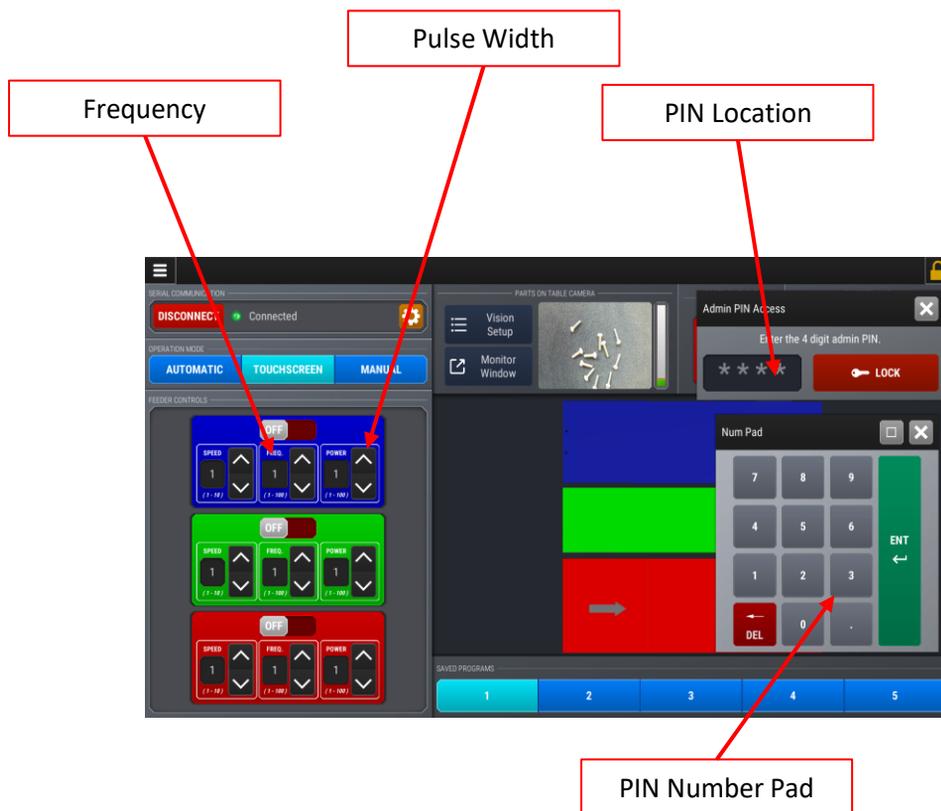
Table Layout: Graphic representation of the feeder system. Note the colors correspond with the colors of the feeder speed settings (feeder status) on the left side of the screen

Refill Timer: This timer sets the “on delay” and “off delay” for the hopper trigger. “On Delay” is the amount of time the table will be calling for replenishment before the hopper turns on. “Off Delay” is the length of time the hopper will run after the table level trigger is reached. These timers can be useful to dial in the table level for your specific part.

Com Settings: Opens menu to select Communication port for connecting to the PLC. Preset at factory.



Lock Screen Access



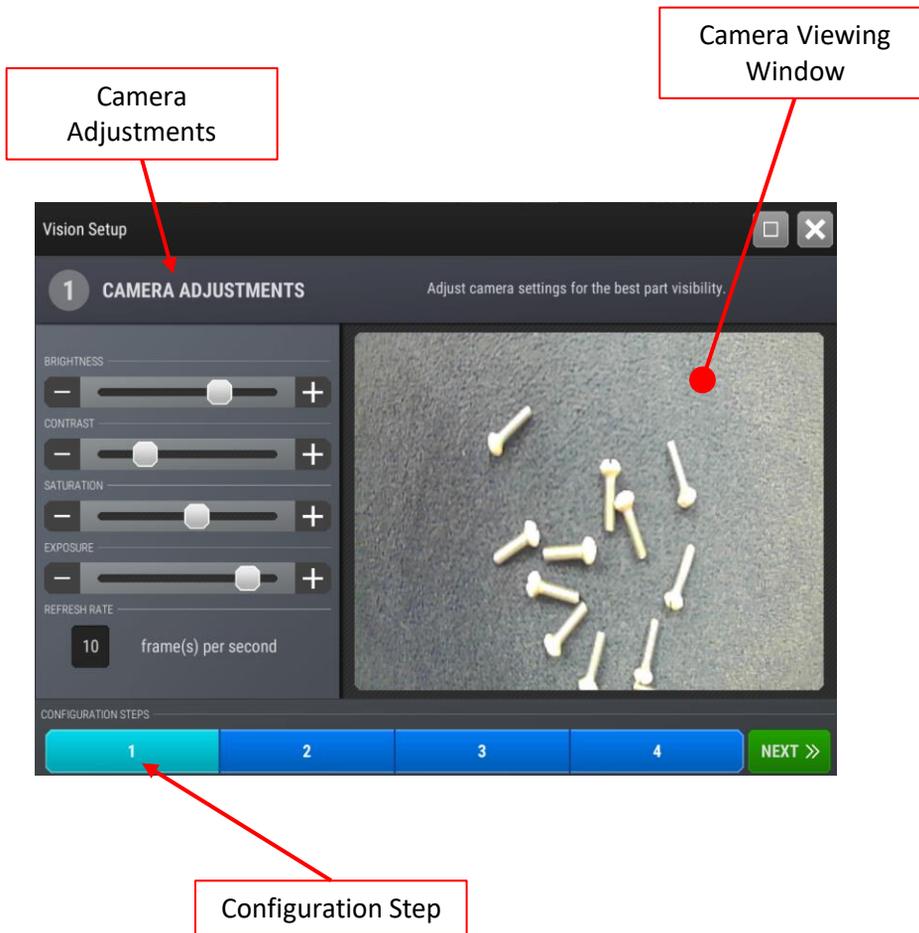
Lock: The individual feeder settings for frequency and pulse-width are protected behind the lock screen. These settings are typically set at the factory to optimize the system for your application

PIN Number Pad: Pops up for inputting the unlock code

Frequency: The individual running frequency for this specific feeder. Preset at RoboShop for optimized performance

Pulse Width: The pulse width of the power to the electromagnetic coil for each frequency pulse. Preset at RoboShop for optimized performance

Table Level Camera Setup



Camera Adjustments:

Allows adjustment of the camera settings for specific parts and/or lighting conditions

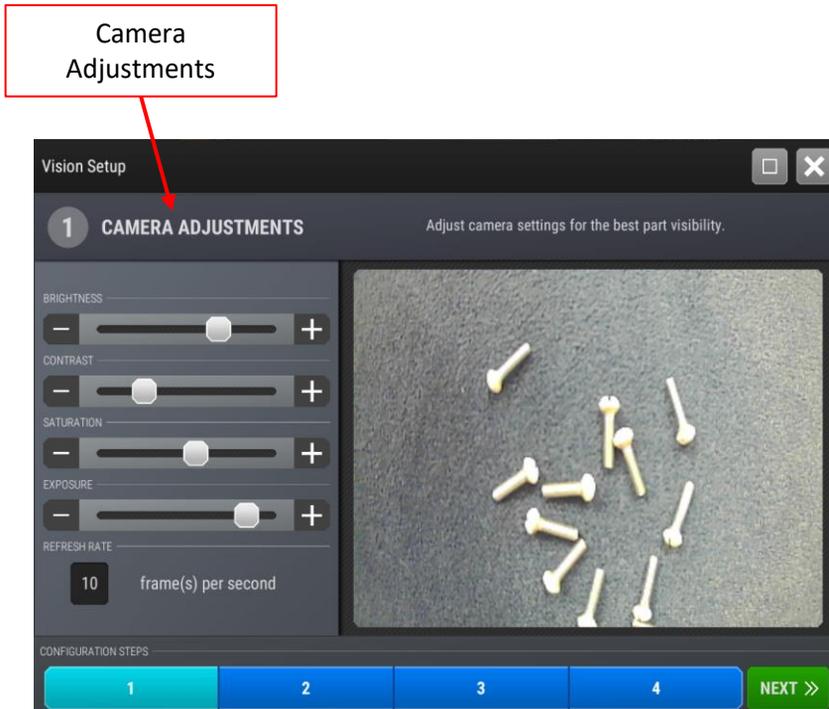
Configuration Steps:

Step-by-Step procedures for setting up camera to replenish the feeder table from the hopper

Camera Viewing Window:

Real time image from the camera

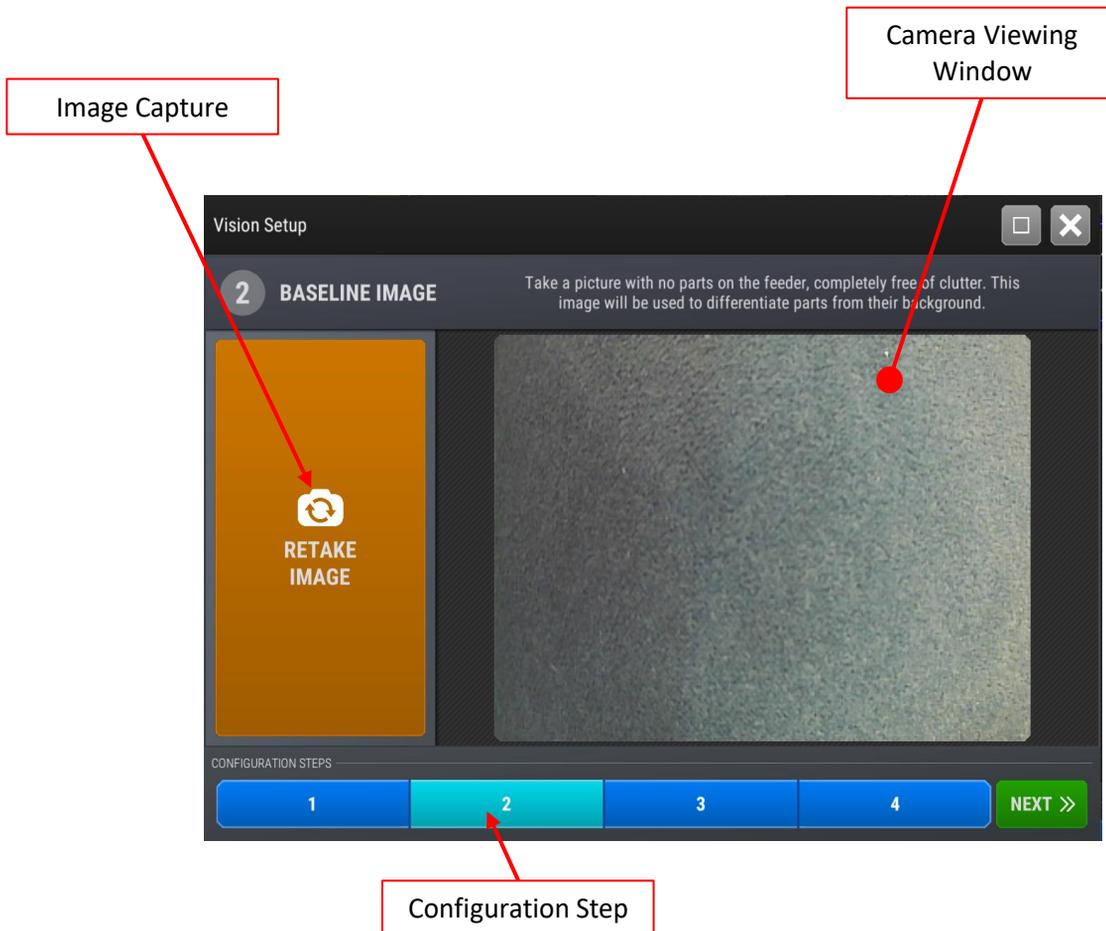
Table Level Camera Setup



Step 1: Camera Adjustments

Using the slider bars, adjust the camera for the best image

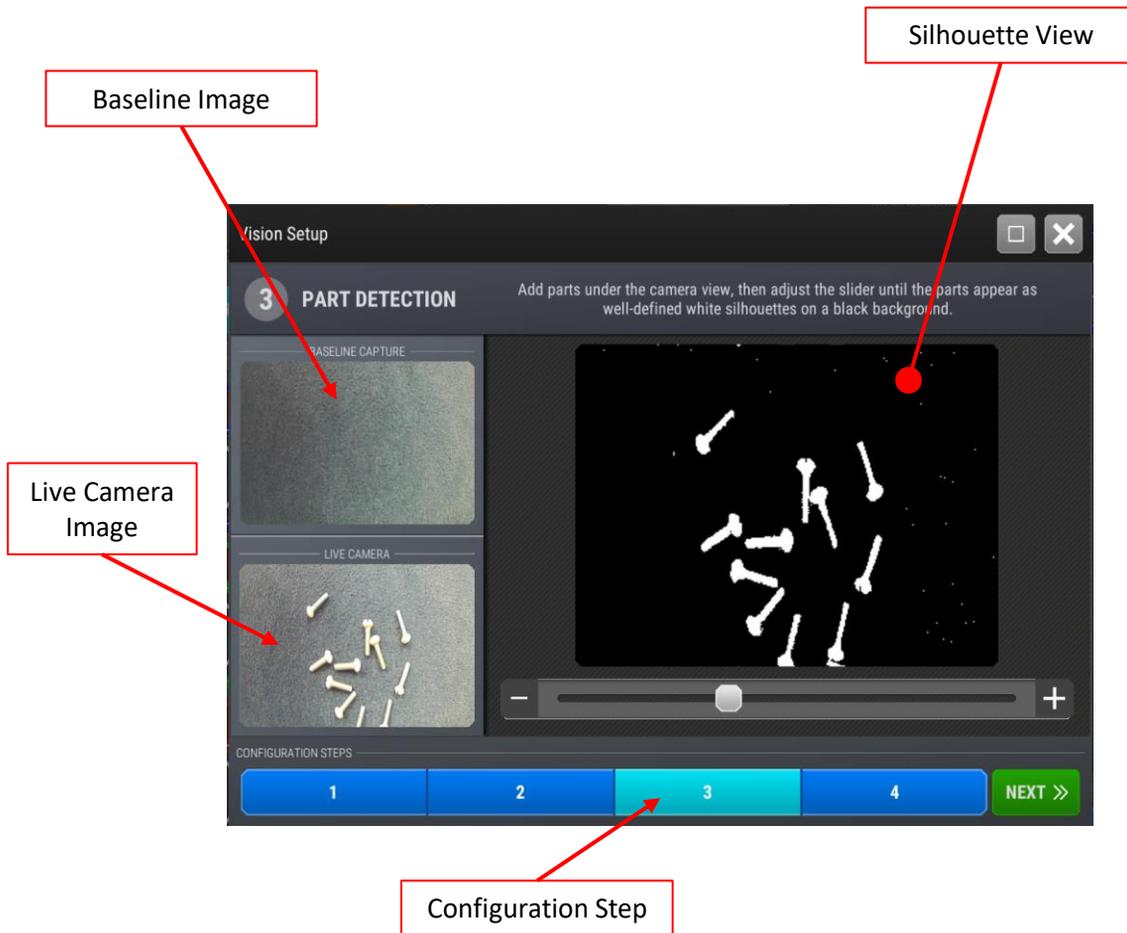
Table Level Camera Setup



Step 2: Shoot the baseline image

Take a picture with no parts on the feeder, completely free of clutter. This image will be used to differentiate parts from the background

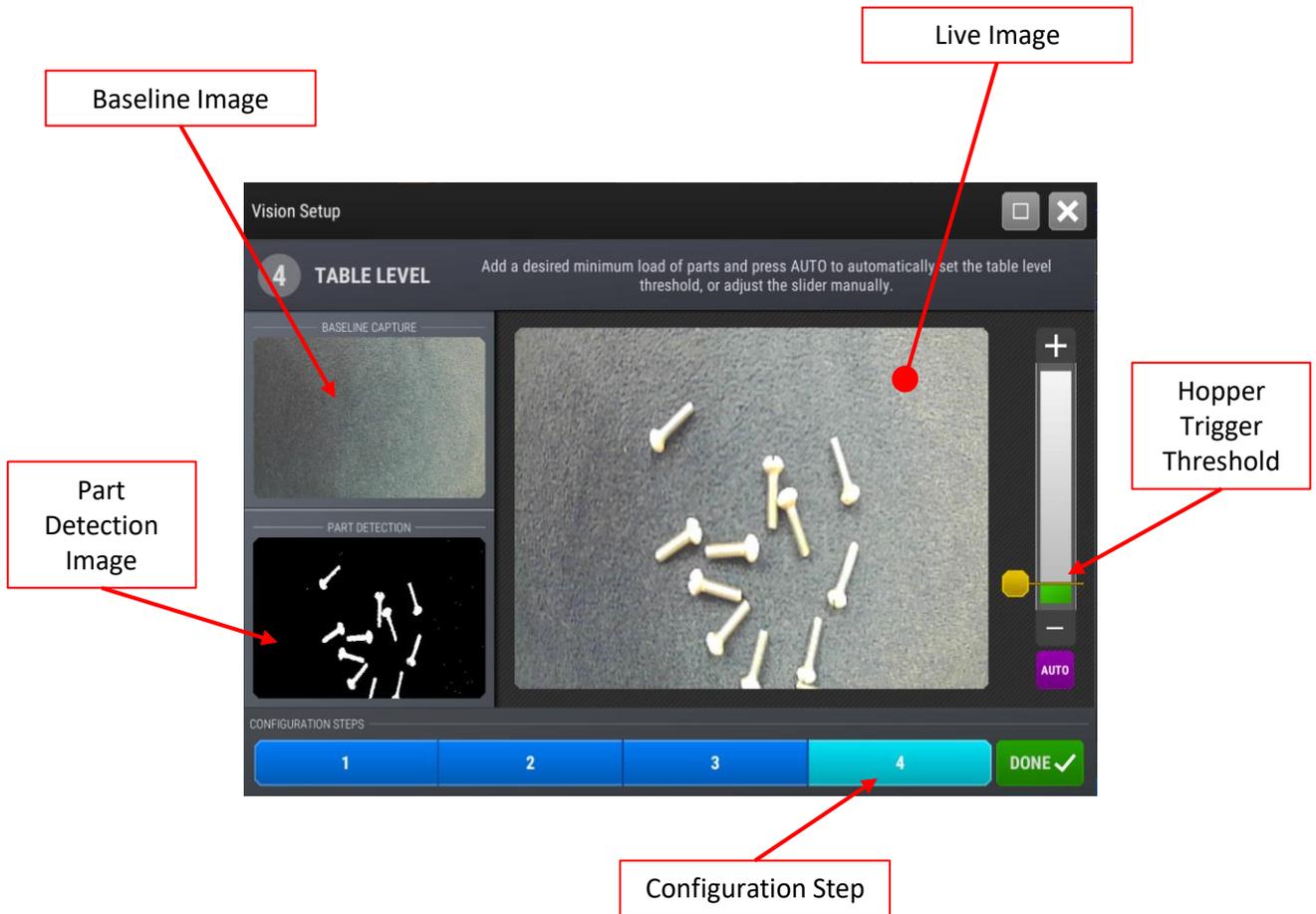
Table Level Camera Setup



Step 3: Part Detection

Add parts under the camera view, and then adjust the slider until the parts appear well defined silhouettes on a black background. To get the best contrast, you may need to go back to the camera settings screen (step 1) and adjust the exposure, contrast, etc. If you do change the camera settings, you should reshoot the baseline image.

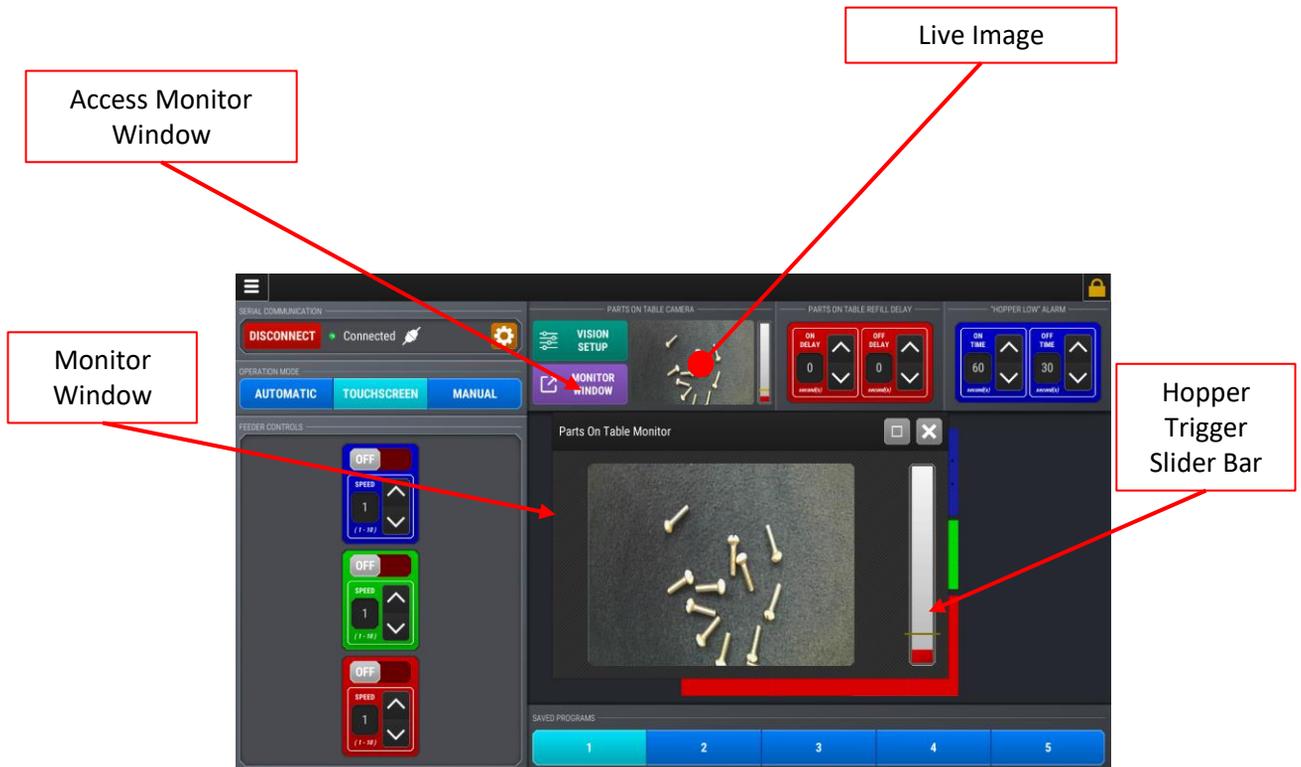
Table Level Camera Setup



Step 4: Set Table Level

Add the desired number of parts and press AUTO to automatically set the table level threshold or adjust the slider manually. Green bar = part level fulfilled. Red bar = part level low, hopper will run. This can also be adjusted from the home screen with the monitor window

Table Level Camera Setup



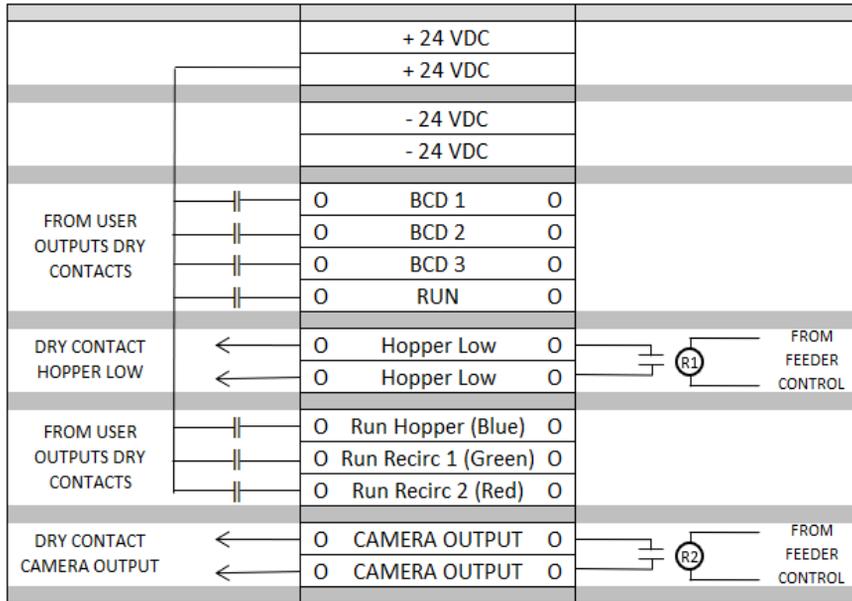
Monitor Window

Threshold adjustments can also be made on the home screen by accessing the monitor window. Use the slider bar to increase or decrease the number of parts on the table.

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VIBRATORY MOTION SYSTEMS

WIRING INSTRUCTIONS



BCD1, BCD2, BCD3 are used to change programs. This is usually only used for different parts. You won't need these.

RUN is how you turn the table on/off. It puts the PC in "automatic" mode, and enables the camera to control the hopper.

Hopper Low is an output we send if the hopper run exceeds a preset timer. The timer is on the PC screen.

Run Hopper, Run Recirc 1, Run Recirc 2 are used to turn on an individual feeder with your PLC, if desired. You can also run individual feeders from the screen, in "touchscreen" mode.

Camera Output is another output we send when the camera is calling for parts. Some customers have asked for this so we made it standard.

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VIBRATORY MOTION SYSTEMS

BCD INPUTS TO ACCESS SPECIFIC SAVED PROGRAMS

Program	BCD1	BCD2	BCD3
1	0	0	0
2	1	0	0
3	0	1	0
4	1	1	0
5	0	0	1