Big Mech diagnostic menu

RPX

TEC-EL-04232
Version 1.0.1

2021-04-09

Version History

Version	Department	Initials	Date	Comments
1.0.0	Electronic R&D	DT	2021-04-07	- First draft
1.0.1	Electronic R&D	DT	2021-04-09	- Added “Not Initialized” status. - Modified “Out-of-sync” status description.
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Contents

Big Mech diagnostic menu

Audience: spécifier l'audience

1. Topic

This document explains usage of the Big Mech diagnostic menu to test/validate functionality of the Big Mech reels. Currently, it is only accessible from the RamClearFactoryTest 3.3.0.

Found in **operator menu / diagnostic / Big Mech**, there is 2 preliminary screens before entering main diagnostic menu.

2. Detecting devices

When entering Big Mech menu, first thing done is a detection of the devices connected to the Spider board. All needed devices not connected yet are displayed on screen. If all devices are already connected before entering this menu, we will see (Image 1) for about 2 seconds before switching to next screen (Calibrating). If some devices are not connected, we will see something like (Image2). Connecting and disconnecting devices will be reflected live on screen. All devices must be connected to continue to (Calibrating). At any time, we can press Back to exit.

"Devices" refer to Phidget devices. There is a VINT Hub Phidget device. A Phidget Encoder and a Phidget Stepper device attached to each motor and connected to the Hub Phidget. For each reel, there is also a Break Sensor Phidget that is directly connected to the Encoder to detect position 0 of the reel.

Image 1

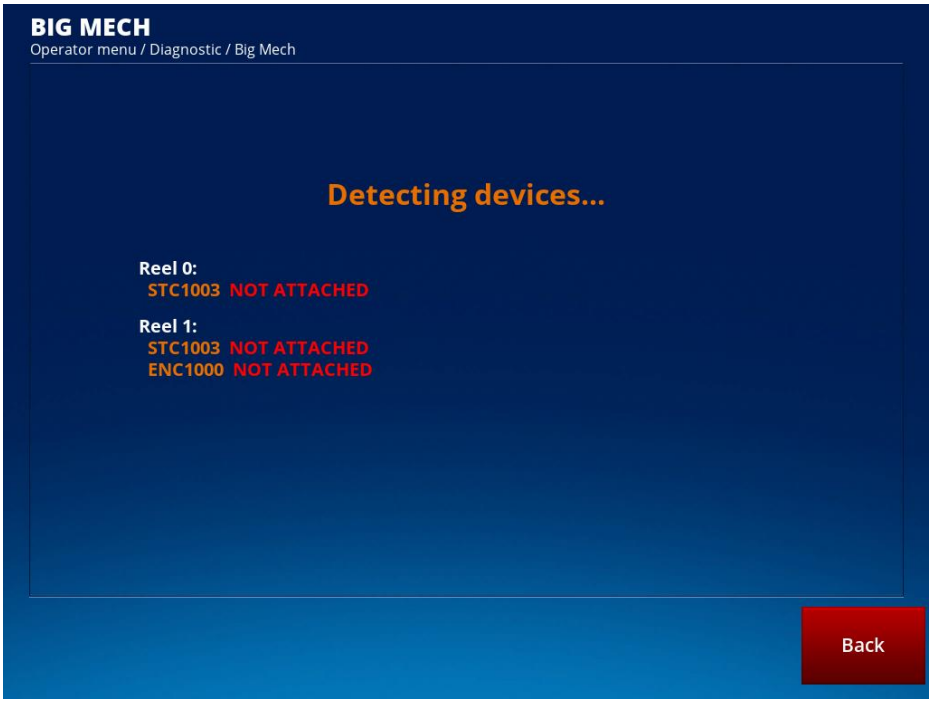

Image 2

3. Calibrating reels

The calibration process, lasting a few seconds and showing (image 3), is to do a little bit more than a complete revolution of each reel. Any error that could be detected would be displayed next in the main diagnostic screen.

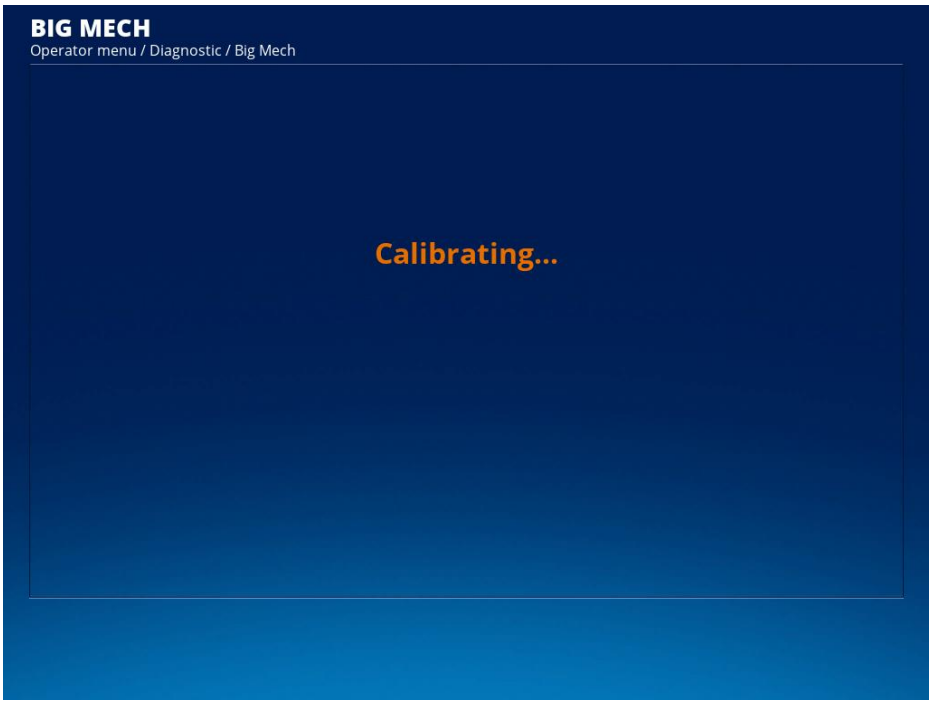

Image 3

4. Big Mech diagnostic

This is the main screen of the diagnostic page.

Image 4

4.1. Buttons

4.1.1. Individual reels buttons

The 3 middle columns of buttons are used to manipulate each reel individually.

- **SymbolButton**: This button is used to select to which symbol we want the **GotoSymbolButton** stops. Each time, we press **SymbolButton**, the next symbol of the reel is display. If a “*” appear on the button, it means that this is the first symbol of the reel. Please note that the symbols are the same and in the same order than their reel.

- **GotoSymbolButton**: Pressing it will start spinning the reel and stop on the selected **SymbolButton**. If the reel was already on the right symbol. The reel will spin for a complete revolution to stop to the same symbol.

- **GoHomeButton**: Pressing it will spin the reel to the first symbol of the reel. The “*” on the button means that the reel is on its first symbol. In this case, pressing **GoHomeButton** will do a complete revolution of the reel.

4.1.2. AutoplayButton/StopButton

Pressing **AutoplayButton** will start a simulation of playing games with all 3 reels. A symbol will be randomly selected for each reel. A complete revolution will be done then the spin will continue until reaching the selected symbol. 3 seconds after all reels are stopped, a new cycle will start.

While on Autoplay, the name of the button changes for **StopPlayButton**. If we press it, autoplay will stop at the end of current cycle.

Image 5

4.1.3. EngageButton/DisengageButton

At any time, the motor of each reel is engaged (Holding current), meaning that it is a little bit hard to move a reel manually. If needed to manipulate reels, pressing **DisengageButton** will deactivate the motor of the reels. Il will be easier to spin them manually. We can press **EngageButton** to return Holding current to the reels.

If the reels are disengaged and we press a button that will spin one or all reels, every motor will be engaged again and stay engaged after the action.

4.1.4. InitializeButton

This button does the same as entering the Big Mech diagnostic. It will detect devices then calibrate the reels. This is what we must do to clear errors after trying to correct them.

Pressing some buttons may deactivate some others to avoid doing an action on a reel that is already spinning. I.E. Pressing **AutoplayButton** will deactivate all but **StopPlayButton** and **BackButton** (Image 5). Pressing **GoHomeButton** or **GotoSymbolButton** will deactivate buttons of this reel.

4.2. On-screen information

4.2.1. Position

Each position is displayed in step or in symbol. The number of steps to do a complete revolution depends on the motor/gearbox and its xml configuration file. As an example, some motors/Gearbox need 680 steps to do a complete revolution. Some need 5100 steps. All but Physical positions are running position. They started from 0 after detection/calibration and they can only be reset by initializing again.

Encoder pos: Current position of the encoder in steps.
Index pos: Position in step of the last time reel passed-by the break sensor.
Stepper pos: Current position of the stepper motor in steps. There can be a slight difference between stepper and encoder position. If the difference is too much, an "Out-of-sync" error will be displayed.
Value in (): This is the position of the stepper motor in number of symbols.
Physical pos: This is the position of the reel in steps. It is reset each time the reel pass-by break sensor.

If errors occur with Phidget devices, an error will be displayed instead of the position. The main error that can occur is "NOT ATTACHED" meaning that the device has not been detected. For any other error, refer to Phidget documentation.

4.2.2. Versions

Encoder version / **Stepper version** / **VINT Hub version**: They are the current driver version of each Phidget devices. Displayed in white means that the version is ok. If the version is older than what we need, it will be displayed in red.

4.2.3. Status

This is the current reel status.

- OK: The reel is functional.
- Sensor err: After spinning more than a complete revolution, no break sensor detected to reset physical position.
- Out-of-sync: If the difference between the encoder and the stepper is too large.
- Not initialized: One or both devices on a reel are disconnected. When all devices will be connected, the status will change for Out-of-sync and we will need to press **InitializeButton** to clear this status.

Contact Us

If you have any question, comment, or feedback, please use the contact details provided below.

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