



ENDURO
PIPELINE SERVICES, INC.

ENDURO
DdL™ Caliper Tool
User Manual

Using the ENDURO Tech-Less
12-Inch DdL™ Caliper Inspection Tool



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ENDURO DdL™ Caliper Procedures

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DISCLAIMER

* The following steps **MUST** be performed to help increase the odds for a successful survey. *

Failure to follow these steps could result in damage to the survey equipment and / or lead to an unsuccessful survey.

** From this point forward, Enduro Pipeline Services, Inc. will be referred to as ENDURO. **

*** Any company that has rented the DdL™ Caliper Tool will be referred to as CUSTOMER. ***

**** It is not necessary to upload the data from the Laptop Computer to Enduro Headquarters after each download****

Data can be stored on the Laptop Computer and uploaded as a batch after all runs are complete, or at any time in-between

WARNING

The Laptop Computer and Support Devices are **NOT** explosion proof.

Move to a safe area before using any of the provided equipment and devices.

WARNING

DO NOT Erase Data from the DdL™ Caliper Tool unless instructed by ENDURO directly.

1. **Survey Preparation:**

1.1. **Pipeline Cleanliness:**

1.1.1. The CUSTOMER must verify that the pipeline is clear of any dirt and debris, excessive amounts of water, and any other foreign objects that could cause damage or issues to / with the DdL™ Caliper Tool.

1.1.1.1. Contact ENDURO for further information and details regarding required cleanliness for the DdL™ Caliper Tool.

1.2. **Loading into / Unloading from Pipeline (Types of Traps):**

1.2.1. Verify with ENDURO what type of Traps will be utilized to Launch and Receive the DdL™ Caliper Tool.

1.2.1.1. These traps can be permanent, rented, or even temporary types of traps.

1.2.1.2. There must be an adequate number of inlets on each type of trap to allow proper Medium flow into and out of the pipeline.

1.3. **Medium to be used to propel the DdL™ Caliper Tool:**

1.3.1. **Running the Tool with AIR**

1.3.1.1. Single Stage Air Compressor(s) is / are recommended.

1.3.1.2. ENDURO will recommend the amount of CFM required to propel the DdL™ Caliper Tool at a sufficient rate per the pipeline specifications provided to ENDURO.

1.3.1.2.1. These requirements will change depending on pipe diameter and line section length.

1.3.1.2.2. CUSTOMER will need to inform ENDURO if the CFM requirements are unable to be met.

1.3.1.2.2.1. CUSTOMER will inform ENDURO what CFM is available so that calculation adjustments can be made to verify that the CFM total will be enough to propel the DdL™ Caliper Tool properly.

1.3.1.2.2.2. CUSTOMER will inform ENDURO what size CFM Air Compressor(s) are available and how many of each size.

1.3.1.2.3. CUSTOMER will have the Air Compressor(s) configured to maximize the volume of air being produced by the Air Compressor(s).

1.3.1.2.3.1. Some Air Compressors can be set to a Low or High output.

- 1.3.1.2.3.2. Unless otherwise specified by ENDURO, ENDURO recommends that the Air Compressor(s) be set to the Low output setting to maximize the air volume being produced by the Air Compressor(s).
- 1.3.1.3. ENDURO will recommend the amount of pressure (PSI) required to be placed on the pipeline in relation to the recommended amount of CFM required to propel the DdL™ Caliper Tool.
 - 1.3.1.3.1. These requirements will change depending on pipe diameter and line section length.
 - 1.3.1.3.2. Once ENDURO has been informed of the total amount of CFM that is available, adjustments may be made to the required pressure on the pipeline.
 - 1.3.1.3.3. This pressure MUST already be on the pipeline prior to the DdL™ Caliper Tool being launched.
 - 1.3.1.3.4. This pressure will be maintained at the receive location once the DdL™ Caliper Tool has been launched into the pipeline.
- 1.3.1.4. The discharge outlet(s) should be 3 inches or larger and each Air Compressor should have an individual entry point into the pipeline.
 - 1.3.1.4.1. Inform ENDURO of the size of hoses to be used to connect the Air Compressors to the pipeline.
 - 1.3.1.4.2. Do NOT attach the hoses to any Tees unless approved by ENDURO.
 - 1.3.1.4.3. Do NOT attach the hoses to a Manifold unless approved by ENDURO.
- 1.3.1.5. If Check Valves are to be used for Launching the DdL™ Caliper Tool, guide bars should be welded onto the inside bottom of the bowl of the Check Valve, so the tool does not drop into the bowl.
- 1.3.1.6. ENDURO recommends that no restrictions be present between the Air Compressors and pipeline.
 - 1.3.1.6.1. **NOTICE:** The Valves connecting the Air Compressors to the pipeline need to be fully opened once the DdL™ Caliper Tool has been launched.
 - 1.3.1.6.2. Verify that there are no Dryers connected between the Air Compressors and the pipeline.
 - 1.3.1.6.2.1. This will help rule out the possibility of an air volume restriction that may hinder the DdL™ Caliper Tool from running at a steady rate / speed.
- 1.3.1.7. CUSTOMER must have pressure gauges at the launch and receive locations prior to the DdL™ Caliper Tool being launched.

- 1.3.1.7.1.** ENDURO does not provide pressure gauges with the Standard Support Equipment that is sent with the DdL™ Caliper Tool.
- 1.3.1.7.2.** These gauges **MUST** remain on the pipeline through the duration of the survey.
- 1.3.1.7.3.** The gauges **MUST** be either:
 - 1.3.1.7.3.1.** Digital-type readout (preferred)
 - 1.3.1.7.3.2.** Analog-type readout not to exceed 100 psi.
 - 1.3.1.7.3.2.1.** ENDURO may recommend a larger Analog-type gauge only if the pressure on the pipeline may exceed 100 psi.
 - 1.3.1.7.3.2.2.** NEVER use an Analog-type gauge that is 300 psi or greater.
- 1.3.1.8.** CUSTOMER will have assigned personnel at the launch and receive locations to monitor any changes during the entire time the survey is in progress.
 - 1.3.1.8.1.** Any changes that are monitored during the survey **MUST** be documented by the CUSTOMER and relayed to ENDURO. Some examples are listed below:
 - 1.3.1.8.1.1.** Air Compressor(s) stopped working
 - 1.3.1.8.1.2.** Pressure being released at the receive location has stopped for a long period of time.
 - 1.3.1.8.1.3.** Large amount of debris and / or water was brought in by the DdL™ Caliper Tool at the Receive.
 - 1.3.1.8.1.4.** Pressure has equalized at both Launch and Receive locations for a long period of time.
- 1.3.1.9.** CUSTOMER will regulate / maintain the pressure on the pipeline at the receive location once the DdL™ Caliper Tool has been launched.
 - 1.3.1.9.1.** CUSTOMER will have assigned personnel to handle this task throughout the duration of the survey.
 - 1.3.1.9.1.1.** The pressures on the pipeline will be monitored constantly, making only small adjustments when needed, to regulate / maintain the required psi.
- 1.3.1.10.** Contact ENDURO for further information and details regarding this method of propelling the DdL™ Caliper Tool.

1.3.2. Running the Tool with WATER

- 1.3.2.1. ENDURO recommends that Fresh Water be used when running the DdL™ Caliper Tool in a water environment.
- 1.3.2.2. ENDURO recommends that the CUSTOMER have a minimum of 25% over the amount of water that is required for line fill to accommodate the possibility of Water bypassing around the DdL™ Caliper Tool during the survey.
 - 1.3.2.2.1. This will help ensure that the CUSTOMER will have enough Water to complete the survey without having long periods of potential stoppages due to insufficient Water amounts on-site.
 - 1.3.2.2.2. CUSTOMER must verify that the pipeline is clear of any issues that may cause the DdL™ Caliper Tool to not transition through the pipeline properly (*refer to section 1.1. for further details*).
 - 1.3.2.2.2.1. Any potential areas that may stop the DdL™ Caliper Tool may result in excessive amounts of Water usage, possibly causing the CUSTOMER to run out of Water before the survey is completed.
- 1.3.2.3. ENDURO will recommend the minimum flow rate pump required to propel the DdL™ Caliper Tool at a sufficient rate per the pipeline specifications provided to ENDURO.
 - 1.3.2.3.1. ENDURO will specify the minimum psi capability of the pump(s) that will be required.
 - 1.3.2.3.2. A Flow Meter MUST be installed between the pump and pipeline to help determine that the proper flow rate is maintained during the survey.
- 1.3.2.4. CUSTOMER will inform ENDURO in advance of how the tool will be ran if WATER will be used:
 - 1.3.2.4.1. **Water pushing Air**
 - 1.3.2.4.2. **Water pushing Water**
- 1.3.2.5. ENDURO recommends all connections to the pipeline be hard pipe for safety reasons.
- 1.3.2.6. If Check Valves are to be used for launching the DdL™ Caliper Tool, guide bars should be welded onto the inside bottom of the bowl of the Check Valve, so the tool does not drop into the bowl.
- 1.3.2.7. CUSTOMER must have pressure gauges at the Launch and Receive locations prior to the DdL™ Caliper Tool being launched.
 - 1.3.2.7.1. ENDURO does not provide pressure gauges with the Standard Support Equipment that is sent with the DdL™ Caliper Tool.
 - 1.3.2.7.2. These gauges MUST remain on the pipeline throughout the duration of the survey.

- 1.3.2.7.3. The gauges MUST be either:
 - 1.3.2.7.3.1. Digital-type readout (preferred)
 - 1.3.2.7.3.2. Analog-type readout.
 - 1.3.2.7.3.2.1. Select an Analog-type gauge that is adequate in psi readings per the ENDURO recommendations when running with Water.
- 1.3.2.8. When running with **Water pushing Air**, the CUSTOMER will NOT be required to maintain any pressure on the line in front of the DdL™ Caliper Tool.
 - 1.3.2.8.1. CUSTOMER will have assigned personnel at the launch and receive locations to monitor any changes during the entire time that the survey is in progress.
 - 1.3.2.8.2. Any changes that are monitored during the survey MUST be documented by the CUSTOMER and relayed to ENDURO. Some Examples are listed below:
 - 1.3.2.8.2.1. Pump stopped working
 - 1.3.2.8.2.2. Water ran out
 - 1.3.2.8.3. Contact ENDURO for further information and details regarding this method of propelling the DdL™ Caliper Tool.
- 1.3.2.9. When running with **Water pushing Water**, the CUSTOMER will maintain a minimum of 20 psi over what the static pressure is on the pipeline at the receive location before the DdL™ Caliper Tool has been launched.
 - 1.3.2.9.1. This may require that all outlets be closed on the receiver until the minimum of 20 psi over static pressure has been reached.
 - 1.3.2.9.1.1. Once the minimum pressure has been reached, regulating and maintaining this pressure will commence.
 - 1.3.2.9.2. CUSTOMER will have assigned personnel to handle this task during the entire time that the survey is in progress.
 - 1.3.2.9.2.1. The pressures on the pipeline will be monitored constantly, making only small adjustments when needed, to maintain the required psi.
 - 1.3.2.9.3. CUSTOMER will also have assigned personnel at the launch location to monitor any changes during the entire time that the survey is in progress.

1.3.2.9.4. Any changes that are monitored during the survey **MUST** be documented by the CUSTOMER and relayed to ENDURO. Some Examples are listed below:

1.3.2.9.4.1. Pump stopped working

1.3.2.9.4.2. Water ran out

1.3.2.9.5. Contact ENDURO for further information and details regarding this method of propelling the DdL™ Caliper Tool.

1.3.3. Running the Tool with **PRODUCT**

1.3.3.1. Verify with ENDURO the type of on-stream environment that will be used to propel the DdL™ Caliper Tool.

1.3.3.2. Verify with ENDURO the flow rate that will be available to propel the DdL™ Caliper Tool.

1.3.3.2.1. ENDURO may request a lower flow rate due to speed calculations per pipeline specifications provided.

1.3.3.3. Verify with ENDURO the Operating Pressure that will be present on the pipeline during the survey.

1.3.3.4. Verify with ENDURO if any injection points are present on the pipeline.

1.3.3.4.1. These injection points may affect the tool velocity.

1.3.3.4.2. ENDURO may request that these injection points be isolated during the survey to help control tool velocity.

1.3.3.5. Contact ENDURO for further information and details regarding this method of propelling the DdL™ Caliper Tool.

1.4. Main Line Valve (MLV) Locations

1.4.1. Verify that all MLV Locations are set up for the DdL™ Caliper Tool to transition through properly.

1.4.1.1. Verify MLV is fully opened

1.4.1.2. Verify that any Bypass lines present are closed.

1.4.1.3. If Check Valves are present

1.4.1.3.1. Verify that the Check Valve is going in the same direction that the tool is to be ran.

1.4.1.3.2. Verify that the Check Valve has been locked into a Fully Opened position.

2. **DdL™ Caliper Tool Pre-Run:**

2.1. **Unpacking Shipment:**

2.1.1. Standard Support Equipment will be shipped with the DdL™ Caliper Tool.

2.1.1.1. The CUSTOMER will be required to use this provided equipment so that no unnecessary damage occurs to the DdL™ Caliper Tool when loading and unloading from the pipeline.

2.1.2. CUSTOMER must visually inspect the DdL™ Caliper Tool, to look for any apparent damage caused by shipment.

2.1.2.1. Contact ENDURO for any questionable areas that the CUSTOMER is unsure of regarding the tool condition.

2.1.2.2. ENDURO may request pictures of any areas of concern.

2.1.3. CUSTOMER will be provided a packing list of all equipment shipped with the DdL™ Caliper Tool.

2.1.3.1. CUSTOMER will need to verify that all equipment is present and accounted for, prior to proceeding.

2.1.3.2. CUSTOMER must keep this packing list for when it comes time to ship equipment back to ENDURO.

2.1.3.2.1. This will help the CUSTOMER verify that all equipment to be returned is present and accounted for.

2.2. **Laptop Computer**

2.2.1. ENDURO provides a Laptop Computer as part of the Standard Support Equipment shipped with the DdL™ Caliper Tool.

2.2.1.1. The Laptop Computer will be inside a protective Pelican Case.

2.2.1.1.1. Keep the Laptop Computer in the Pelican Case when not in use.

2.2.1.2. Packing list for Laptop Computer Pelican Case:

2.2.1.2.1. Laptop Computer

2.2.1.2.2. Laptop Computer Charging Cable

2.2.1.2.3. Communication Cable A – to connect Laptop Computer to DdL™ Caliper Tool.

2.2.1.2.3.1. USB TYPE A to USB MICRO B

2.2.1.2.4. Communication Cable B – to connect Laptop Computer to AGM2 Box.

2.2.1.2.4.1. USB TYPE A to USB TYPE B

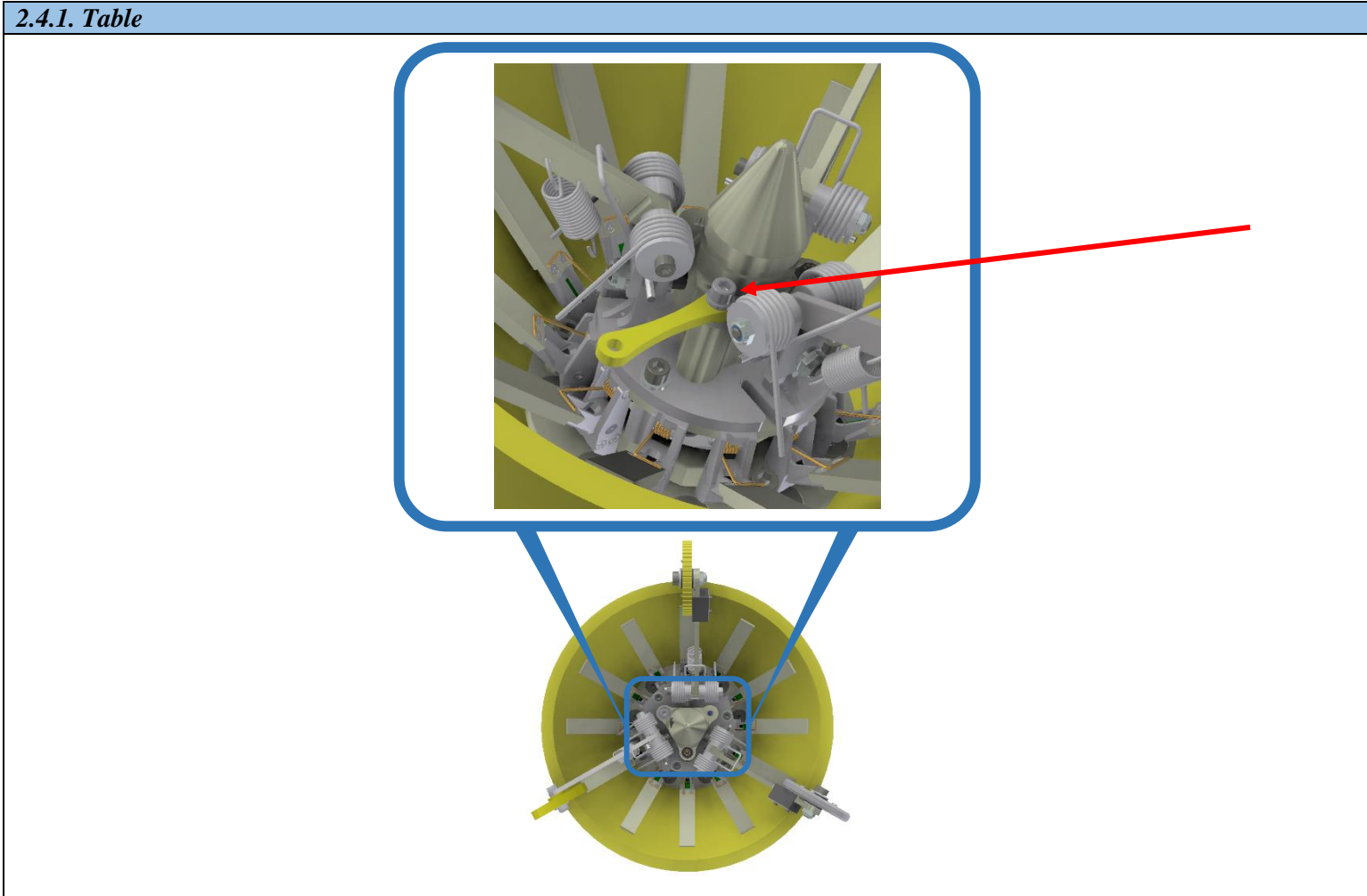
2.2.1.2.5. External Hard Drive (E.H.D.)

2.2.1.2.6. Ethernet Cable

- 2.2.2. Keep the Laptop Computer out of the elements as much as possible.
 - 2.2.2.1. Premature Failure to the Laptop Computer could occur if left out in the Extreme Heat, Extreme Cold, Rain and/or Snow.
- 2.2.3. The Laptop Computer will be shipped from ENDURO fully charged, but the battery life will deplete over time.
 - 2.2.3.1. CUSTOMER will verify that the Laptop Computer has been plugged into an AC outlet to allow the battery to reach a full charge prior to beginning the survey.
 - 2.2.3.2. Contact ENDURO for any IT issues regarding the Laptop Computer that was provided.
- 2.2.4. Locate the different computer ports that are on either side of the Laptop Computer.
 - 2.2.4.1. 3 – USB ports
 - 2.2.4.1.1. One USB port will be used to communicate with the DdL™ Caliper Tool.
 - 2.2.4.1.2. One USB port will be used to connect an External Hard Drive that ENDURO has provided.
 - 2.2.4.1.3. One USB port will be used to connect the AGM2 Box.
 - 2.2.4.2. 1 – Ethernet Port
 - 2.2.4.2.1. For ability to connect an Ethernet Cable from the Laptop Computer to an Internet provided source.
 - 2.2.4.3. 1 – Power Cable Port
 - 2.2.4.3.1. Connect Laptop Computer to AC power via Charging Cable.
- 2.3. **AGM2 Box**
 - 2.3.1. ENDURO provides an AGM2 Box as part of the Standard Support Equipment shipped with the DdL™ Caliper Tool.
 - 2.3.1.1. The AGM2 Box will be inside a protective Pelican Case.
 - 2.3.1.2. Located inside the AGM2 Box will be a communication port and a power button.
 - 2.3.1.2.1. Refer to “**Powering Up the AGM2 Box**” for further details.
 - 2.3.2. The main purpose of the AGM2 Box is to synchronize the DdL™ Caliper Tool with GPS Time.
 - 2.3.2.1. This time sync must be done after the DdL™ Caliper Tool has been powered ON.
 - 2.3.2.1.1. IF the DdL™ Caliper Tool has been powered down, an AGM2 sync MUST be done again when the tool is powered back on.

2.4. Powering Up the DdL™ Caliper Tool

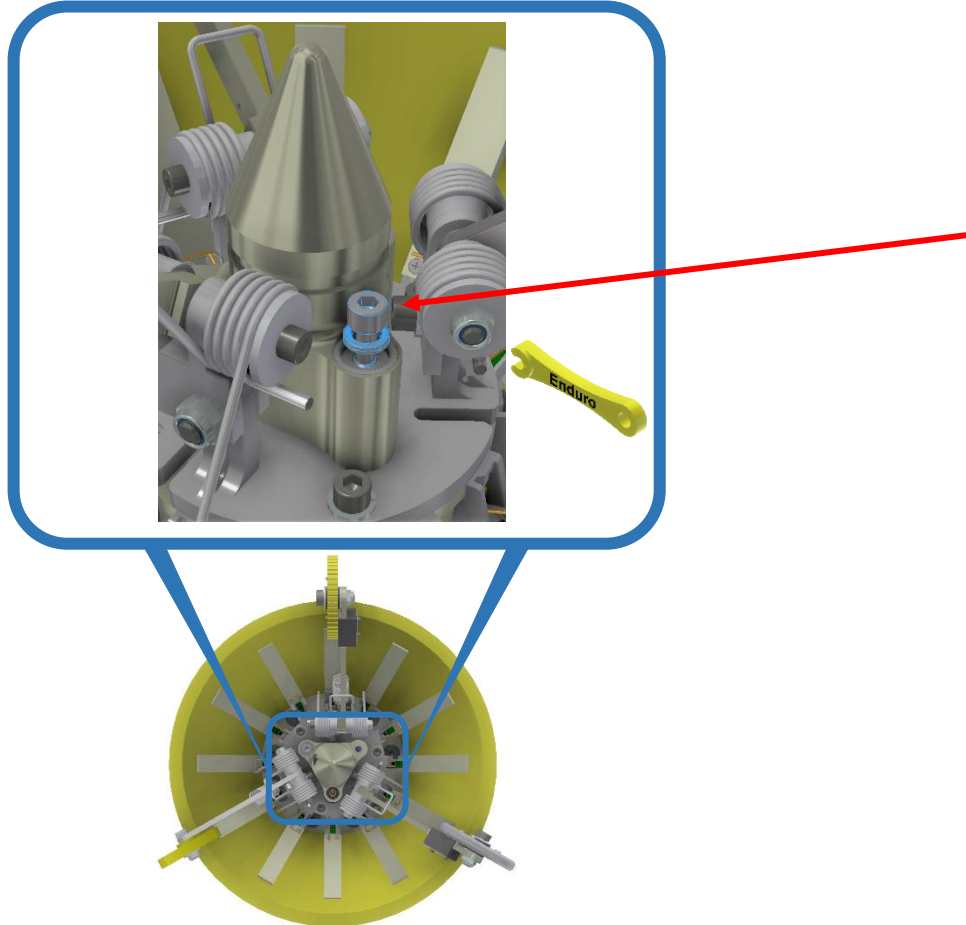
2.4.1. Locate the Power Bolt at the Rear of the DdL™ Caliper Tool (*refer to 2.4.1. Table*).



2.4.2. Remove the Urethane Spacer from the Power Bolt (*refer to 2.4.2. Table*).

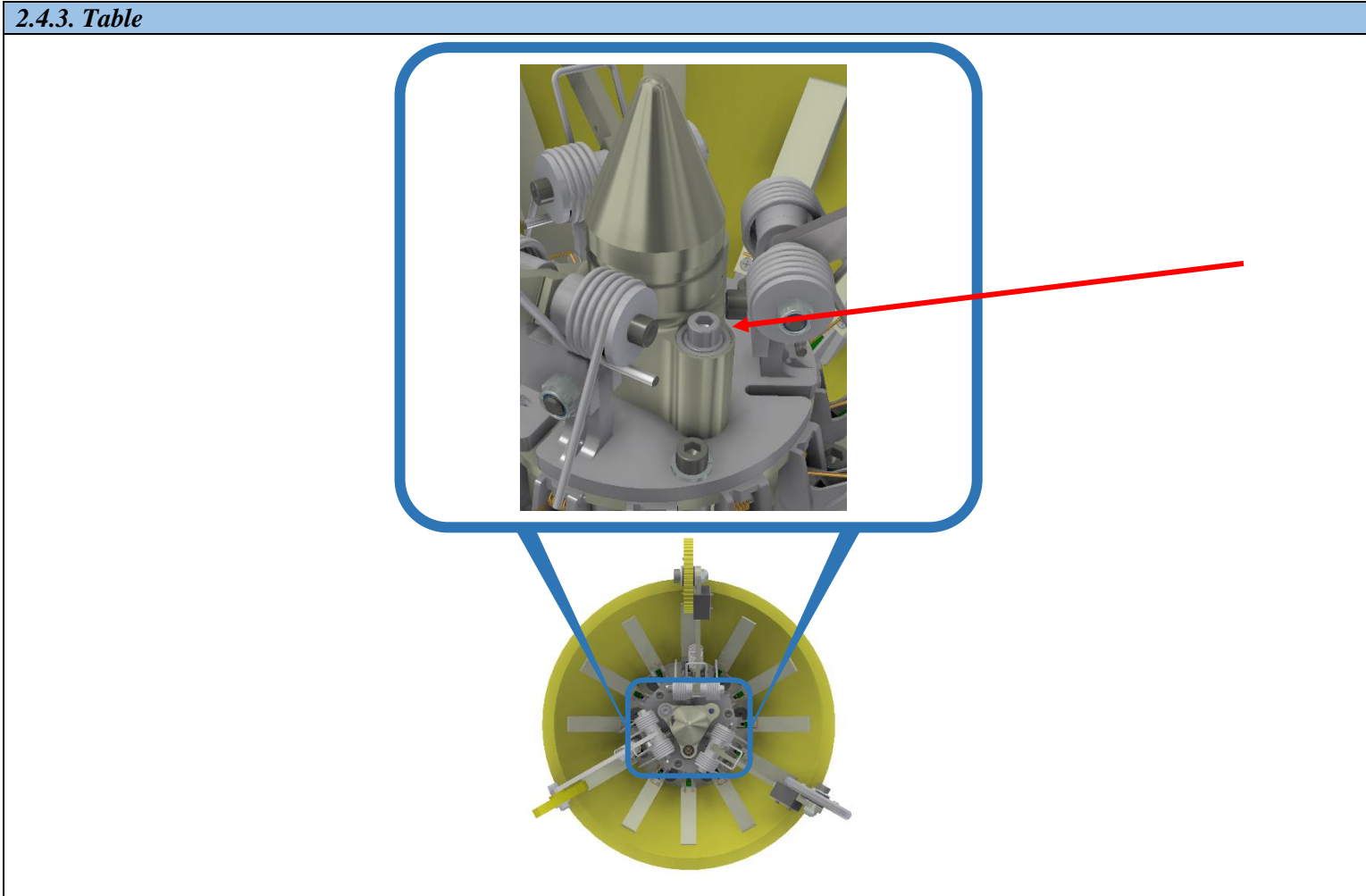
2.4.2.1. Please keep this Urethane Spacer with the Standard Support Equipment; it will be utilized periodically throughout this entire process.

2.4.2. Table

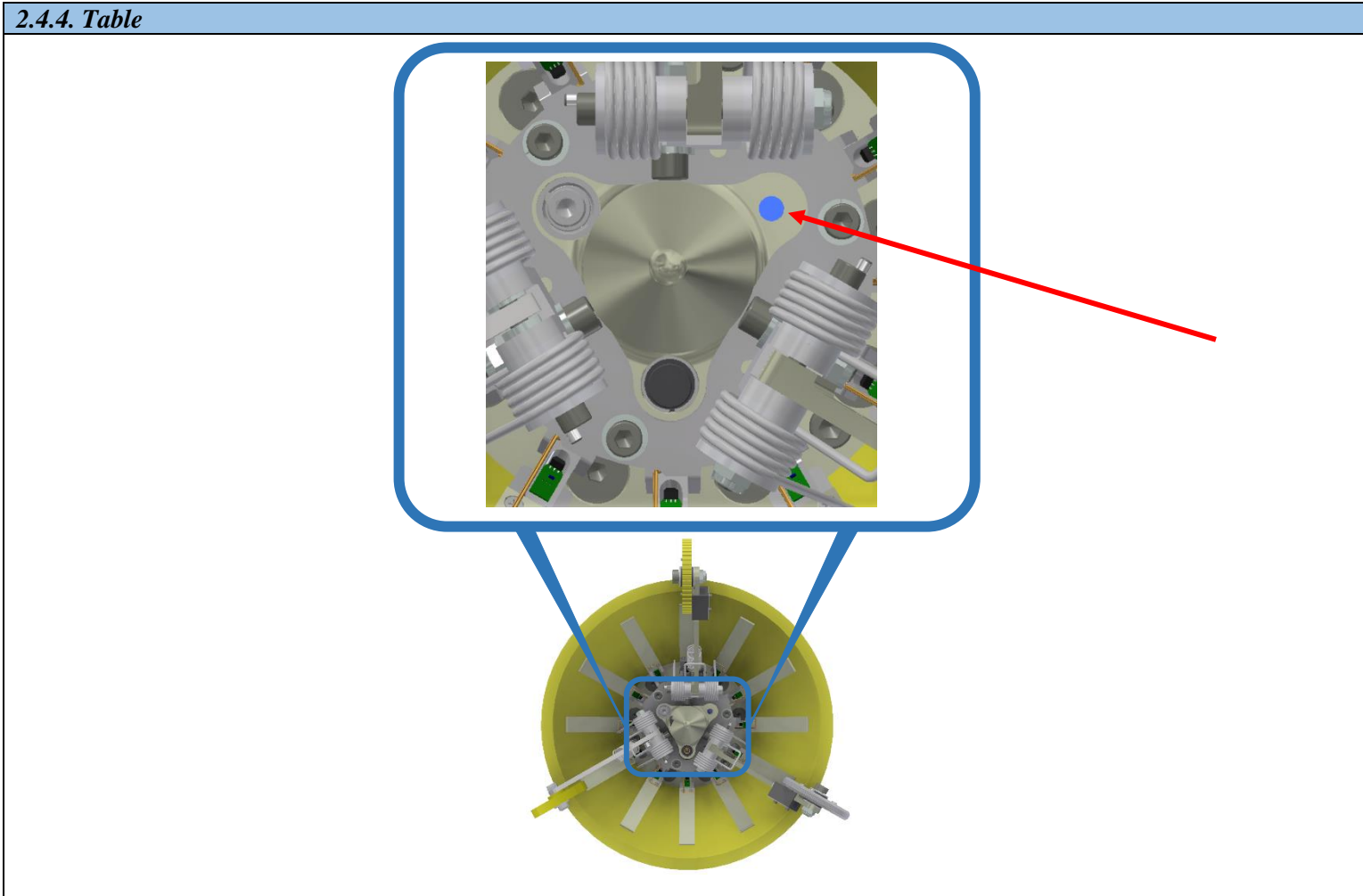


2.4.3. With a 3/16" Allen Wrench, rotate the Power Bolt clockwise until fully seated against the Odometer Housing (*refer to 2.4.3. Table*).

2.4.3.1. A 3/16" T-Handle Allen Wrench is provided, located within the supplied Computer Case.



2.4.4. Once the DdL™ Caliper Tool has power, a Blue Light will begin to illuminate on the Odometer Housing (*refer to 2.4.4. Table*).



2.4.5. When the DdL™ Caliper Tool is not in use, keep the tool powered down by verifying that the Urethane space is secure between the Power Bolt and Odometer Housing, and by also verifying that there is no Blue Light illuminated on the Odometer Housing.

2.5. Powering Up the AGM2 Box

2.5.1. Position the AGM2 Box so that it will be within cables length to connect to the Laptop Computer.

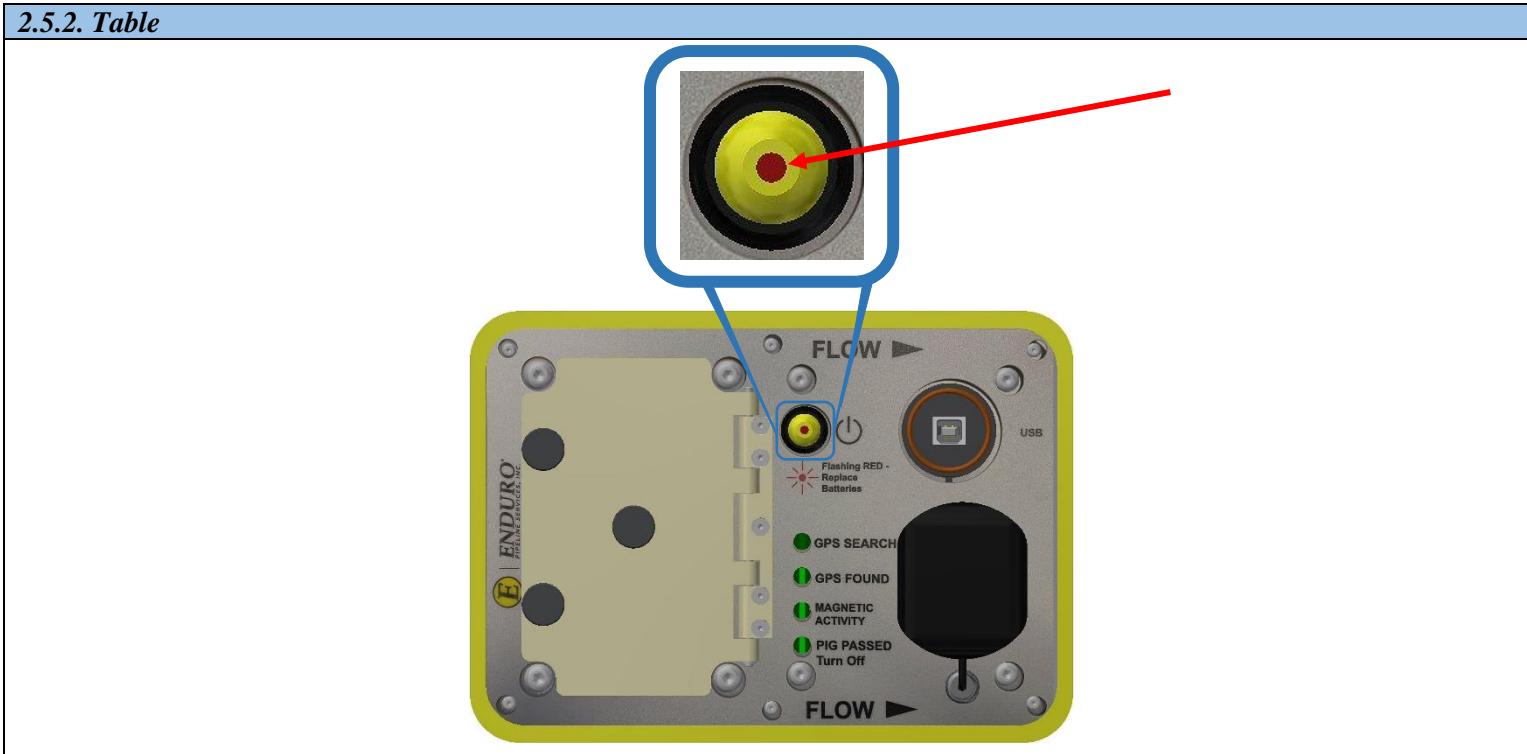
2.5.1.1. There must not be any obstacles blocking the AGM2 Box from establishing a Satellite connection.

2.5.1.1.1. For best Satellite connection, it is recommended to be outside, away from any large structures.

2.5.2. Locate the Power Button on the AGM2 Box once the lid is opened. (refer to 2.5.2. Table)

2.5.2.1. Press Power Button to turn on AGM2 Box.

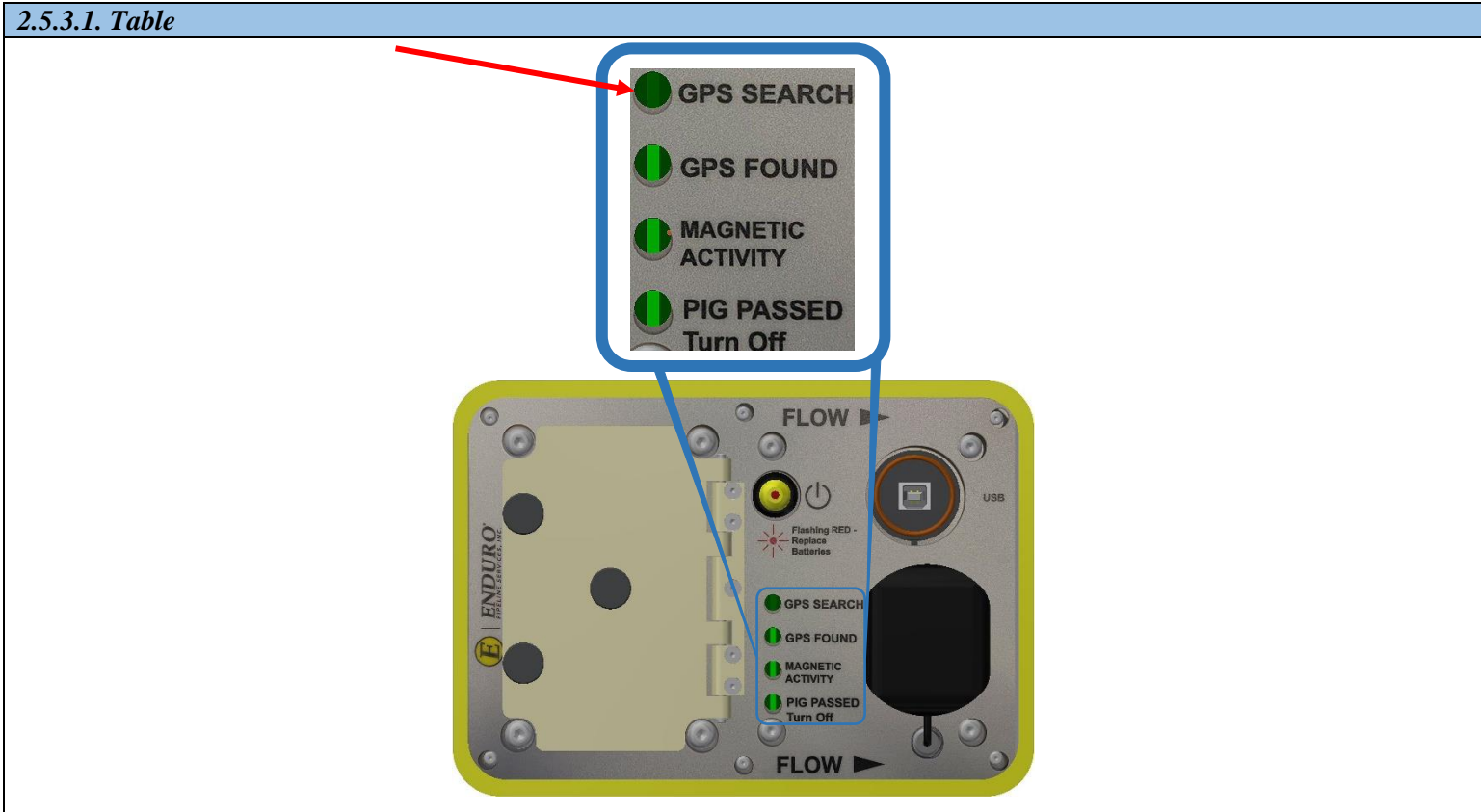
2.5.2.2. A light within the Power Button will illuminate, showing that the AGM2 Box has been turned on.



2.5.3. After the AGM2 Box has been turned on, it will begin searching for Satellites.

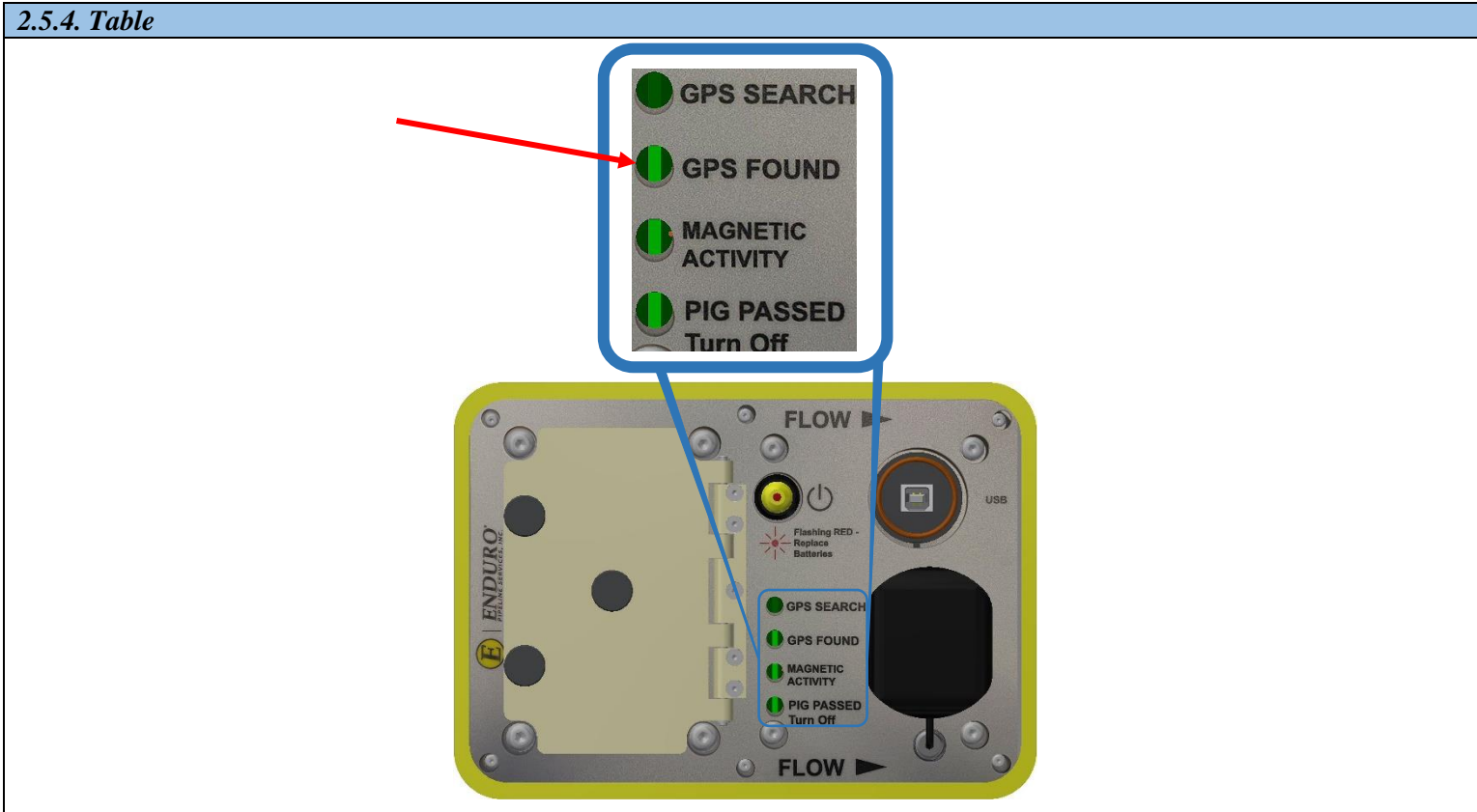
2.5.3.1. There will be a series of lights that will begin to blink on the AGM2 Box (*refer to 2.5.3.1. Table*).

2.5.3.2. GPS SEARCH light will remain ON during the Satellite search.



2.5.4. Once the AGM2 Box has established a Satellite connection, the following lights will be on solid (*refer to 2.5.4. Table*):

2.5.4.1. GPS FOUND

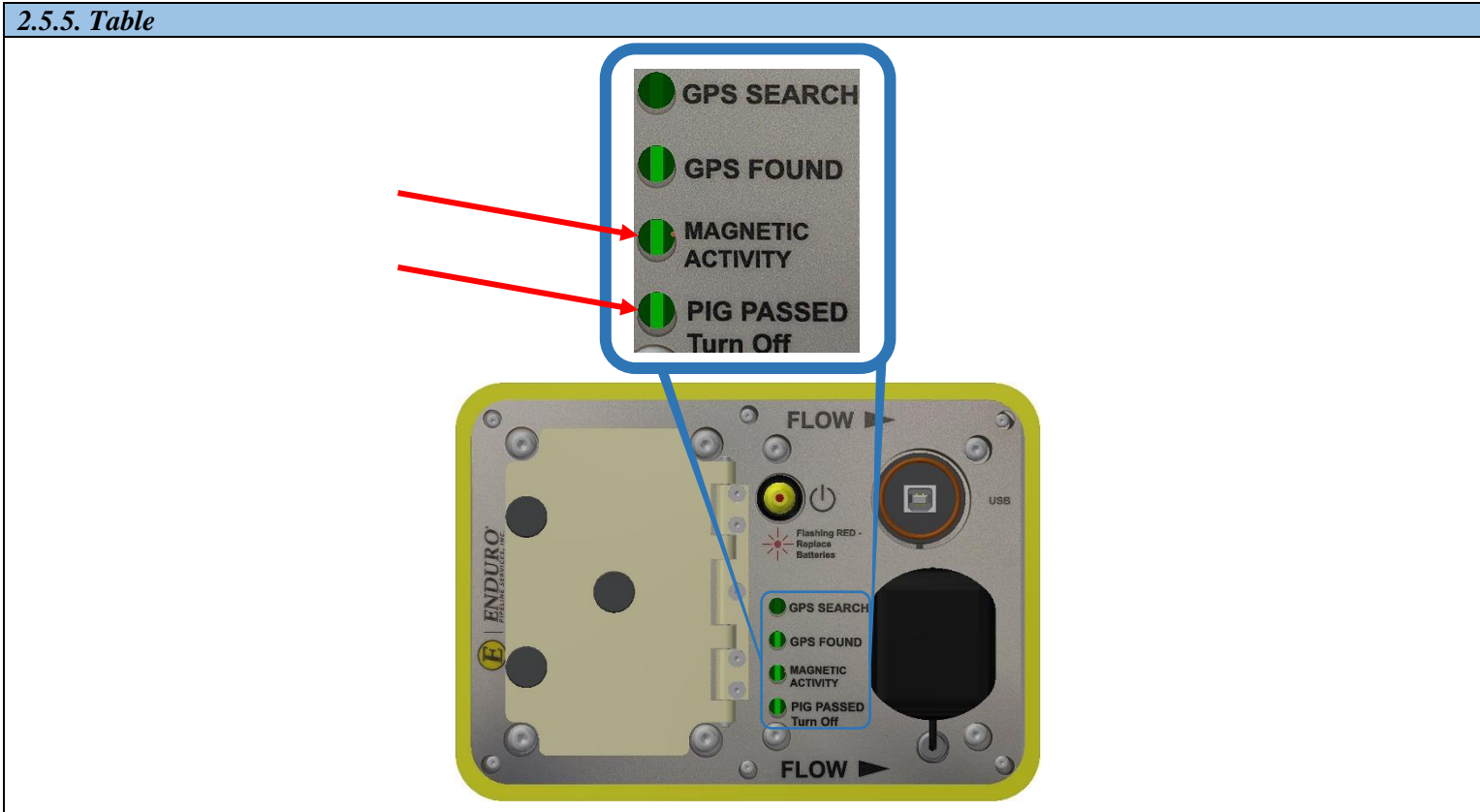


2.5.5. IF the AGM2 Box is bumped or moved any time during this process, the remaining lights will become active (*refer to 2.5.5. Table*).

2.5.5.1. MAGNETIC ACTIVITY

2.5.5.2. PIG PASSED

2.5.5.3. If this happens, no action will be required.



2.5.6. After the AGM2 Box has established a Satellite connection, proceed to the next step.

2.5.6.1. If the AGM2 Box is unable to establish a Satellite connection, power the box down and proceed back to **“Powering Up the AGM2 Box”** to begin the process over again.

2.5.6.1.1. If the problem persists, Contact ENDURO Operations for further assistance.

2.6. Connecting Laptop Computer to the DdL™ Caliper Tool

2.6.1. Power the Laptop Computer ON and allow it to fully boot up.

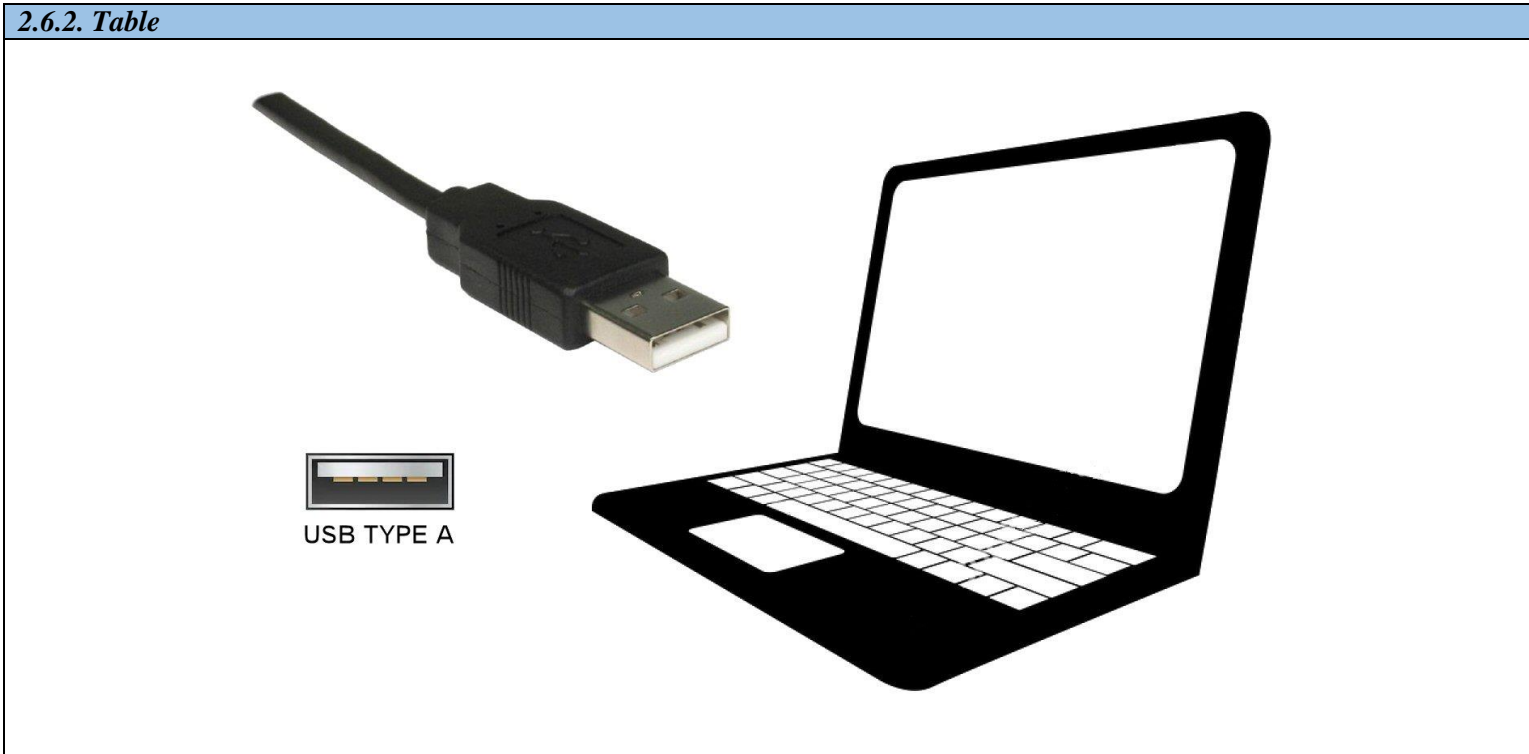
2.6.1.1. Press the “ctrl” key on the keyboard

2.6.1.2. A password must be typed in to unlock Laptop Computer

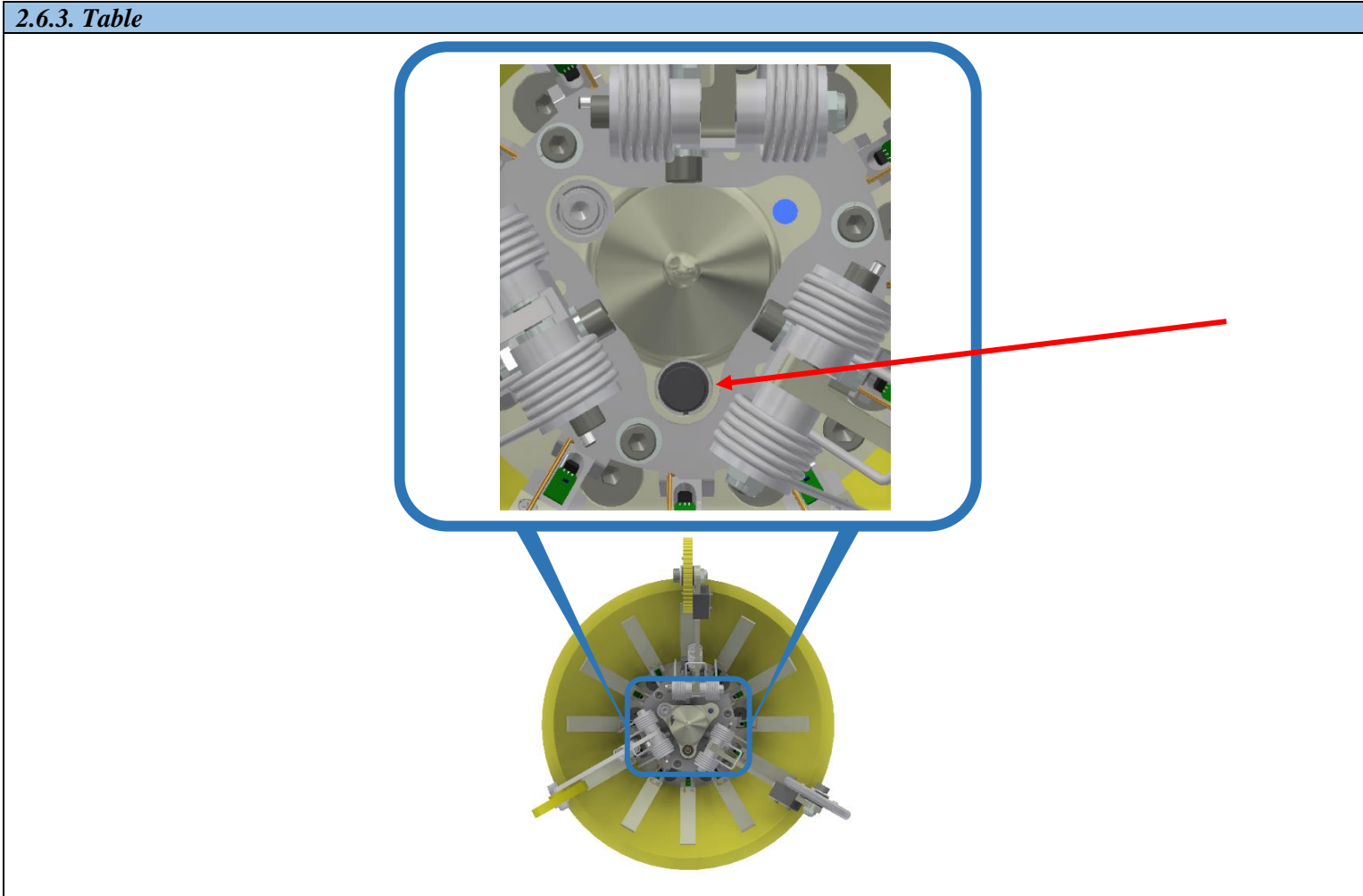
2.6.1.2.1. Password = 4461934

2.6.1.3. Contact ENDURO for any IT issues regarding the Laptop Computer that was provided.

2.6.2. Locate the Communication Cable A and plug the USB TYPE A end into the Laptop Computer USB Port labeled **TOOL**.
(refer to 2.6.2. Table)



2.6.3. Locate the Communication Port at the rear of the DdL™ Caliper Tool. (*refer to 2.6.3. Table*)



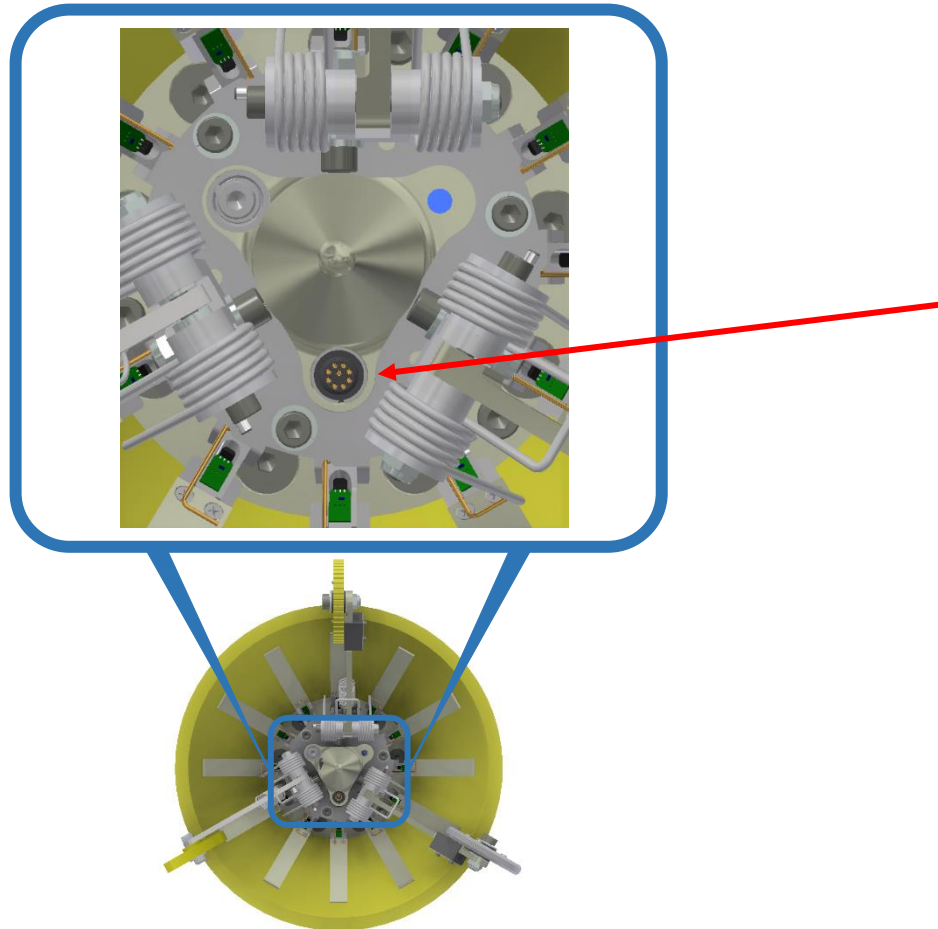
2.6.4. Remove the protective cover from the Communication Port located on the Odometer Housing (*refer to 2.6.4. Table*).

2.6.4.1. This protective cover is just a rubber dust cap and can be removed by pulling away from the Caliper Tool.

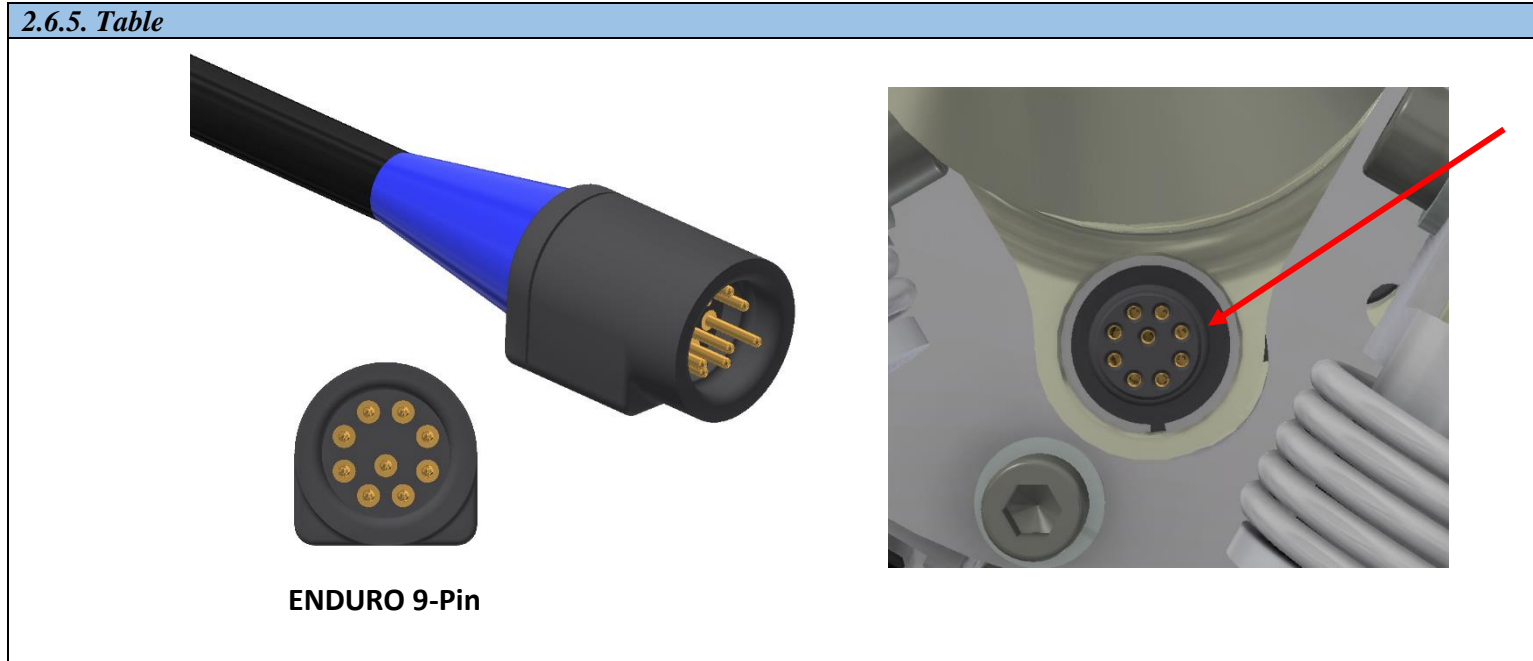
2.6.4.1.1. DO NOT LOSE THIS CAP!!!!!!

2.6.4.1.2. It will be utilized later in the process.

2.6.4. Table



- 2.6.5.** Locate the Communication Cable A and plug the ENDURO 9-Pin end into the Communication Port of the DdL™ Caliper Tool.
(refer to 2.6.5. Table).

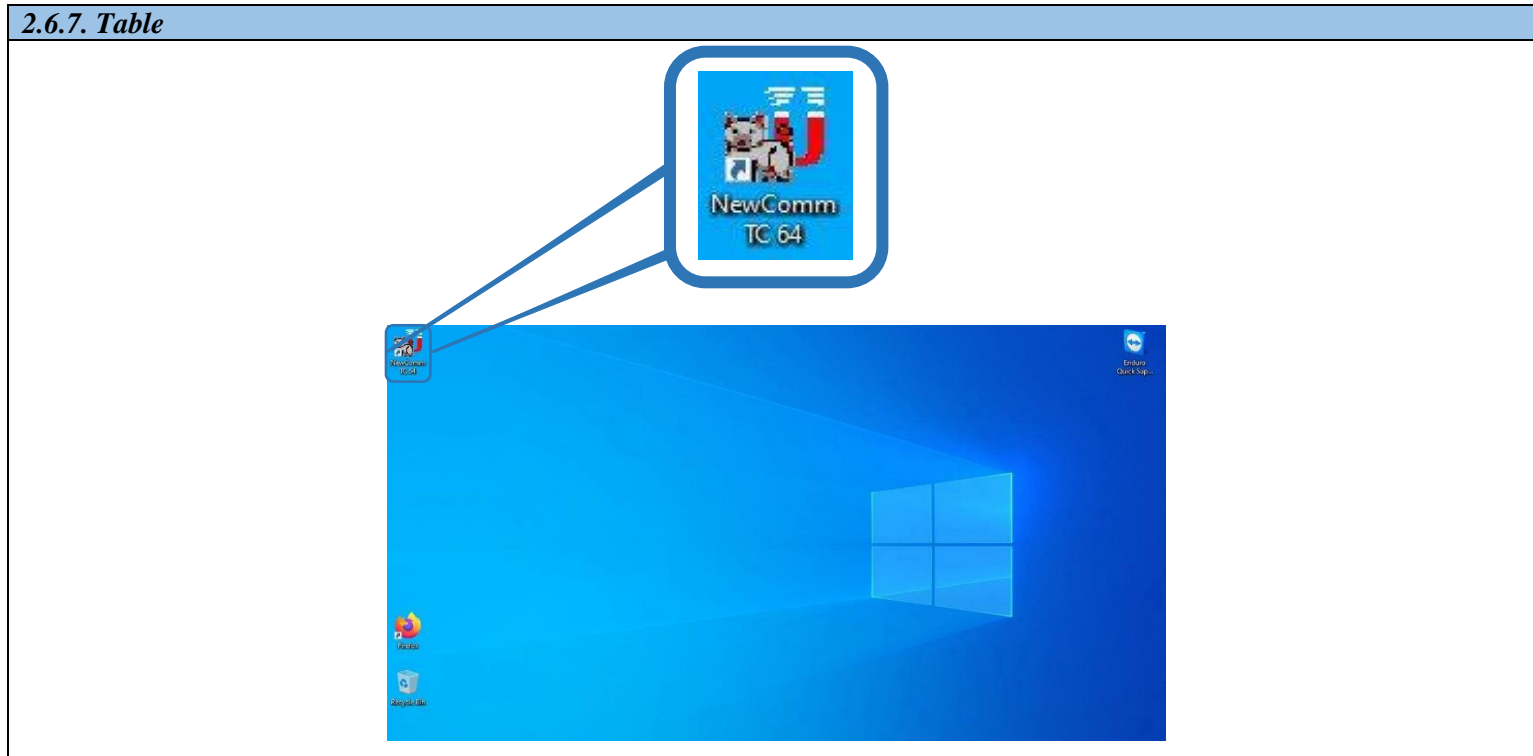


CAUTION

- 2.6.6.** This ENDURO 9-Pin Plug **MUST** be very carefully plugged into the Communication Port of the DdL™ Caliper Tool.
- 2.6.6.1.** This **MUST** be done with the ENDURO 9-Pin Plug perfectly aligned with the Communication Port.
 - 2.6.6.2.** **DO NOT ROTATE PLUG**
 - 2.6.6.3.** **DO NOT TRY TO ANGLE PLUG**

2.6.7. Locate the NewCommTC 64 Icon on the desktop of the Laptop Computer (*refer to 2.6.7. Table*)





2.6.7.1. Double click this Icon below to open the program.



2.6.8. Communication between the DdL™ Caliper Tool and the Laptop Computer should commence.

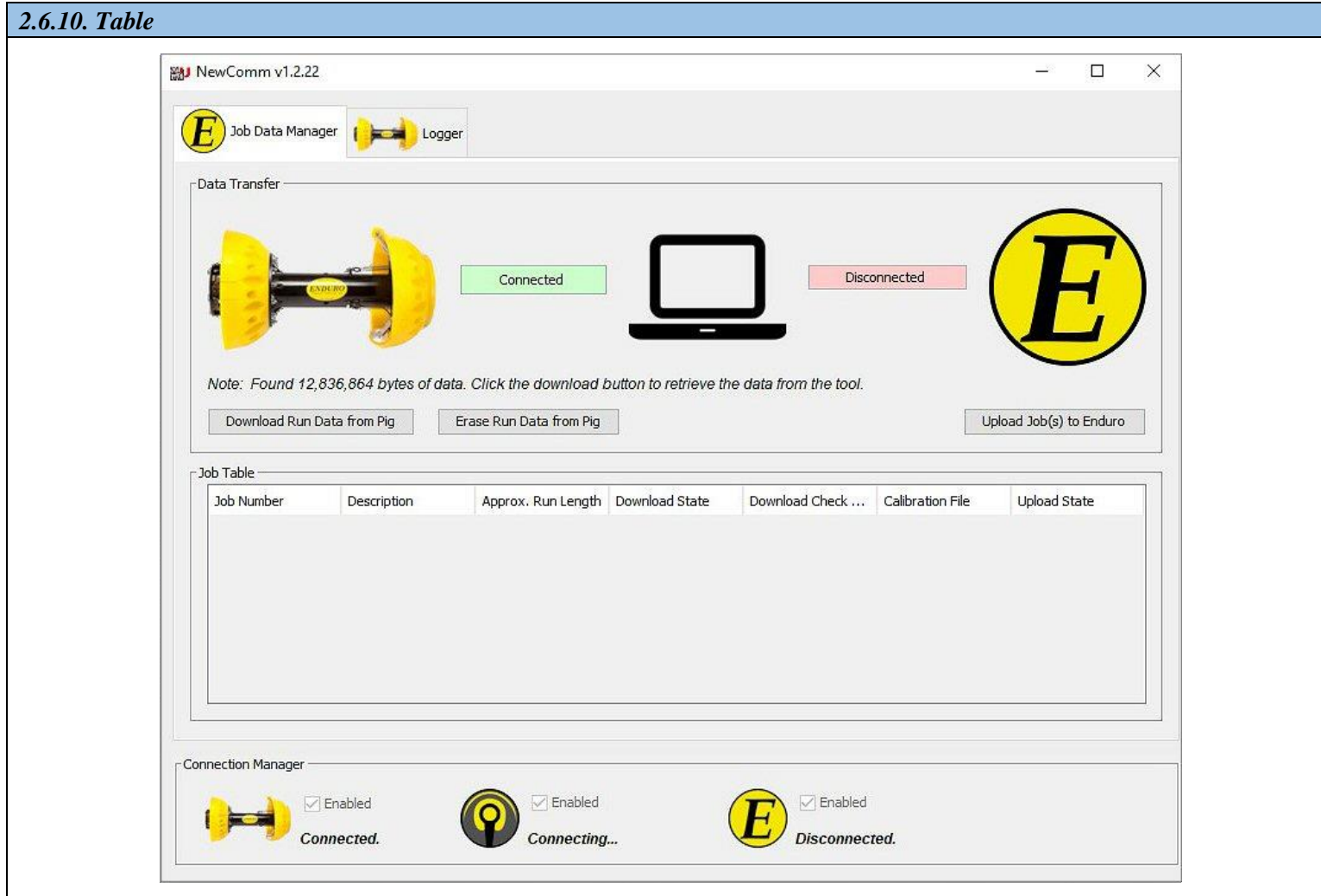
2.6.9. DdL™ Caliper Tool Icon - Laptop Computer Icon - AGM2 Box Icon - Enduro Logo Icon (*refer to 2.6.9. Table*)


2.6.9.1. These Icons represent the various points within the data communication chain.

2.6.9. Table	
DdL™ Caliper Tool Icon	
Laptop Computer Icon	
AGM2 Box Icon	
Enduro Logo Icon	

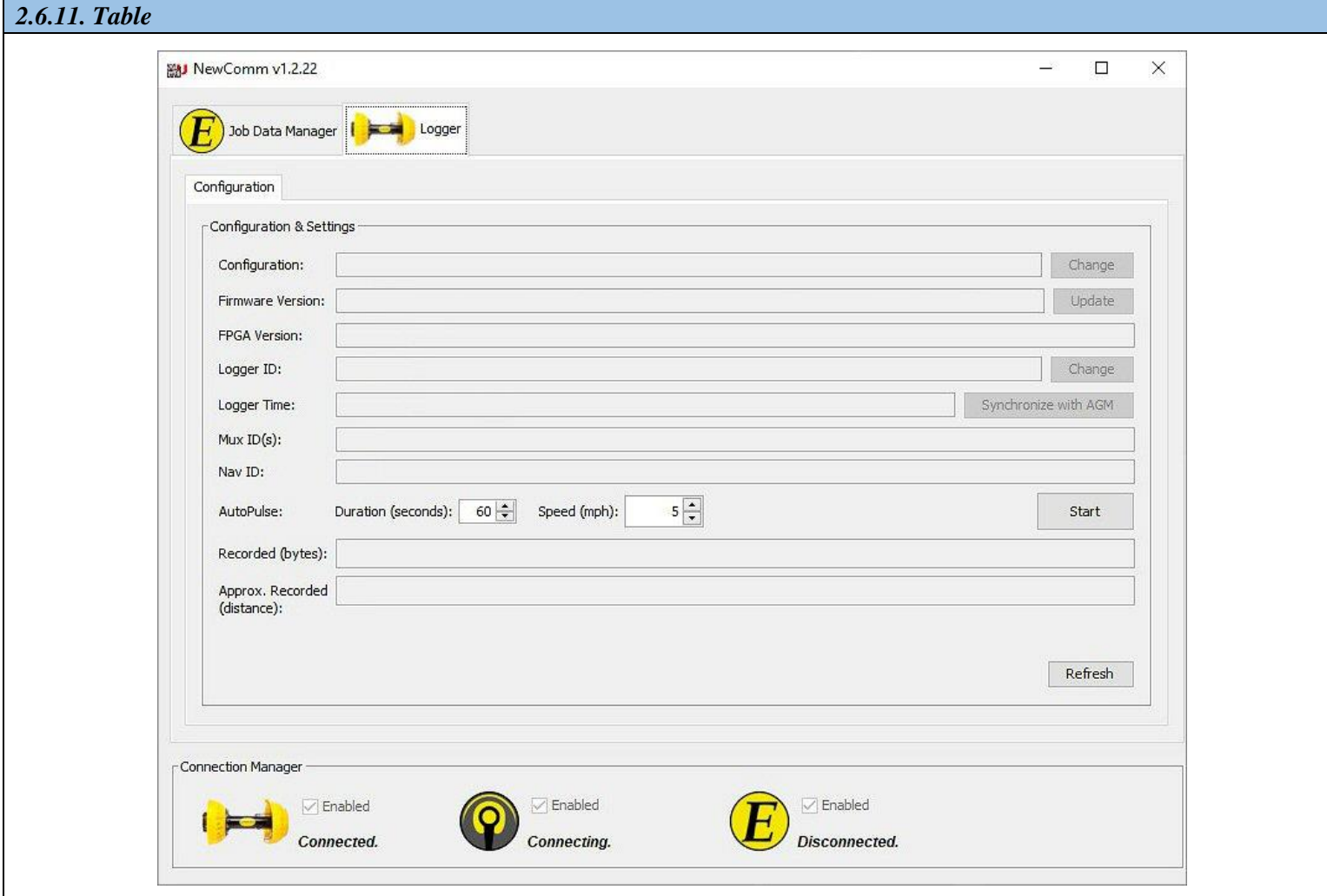
2.6.10. After double clicking the NewCommTC 64 Icon on the Desktop, this window below will open (refer to 2.6.10. Table)

2.6.10.1. The “ Job Data Manager ” window will open.



2.6.11. Click the tab “  **Logger** ” located at the top left of the screen and this window will open (*refer to 2.6.11. Table*)

2.6.11.1. Information communicated from the DdL™ Caliper Tool will automatically populate in the various cell boxes within the Configuration tab under “  **Logger** ”.



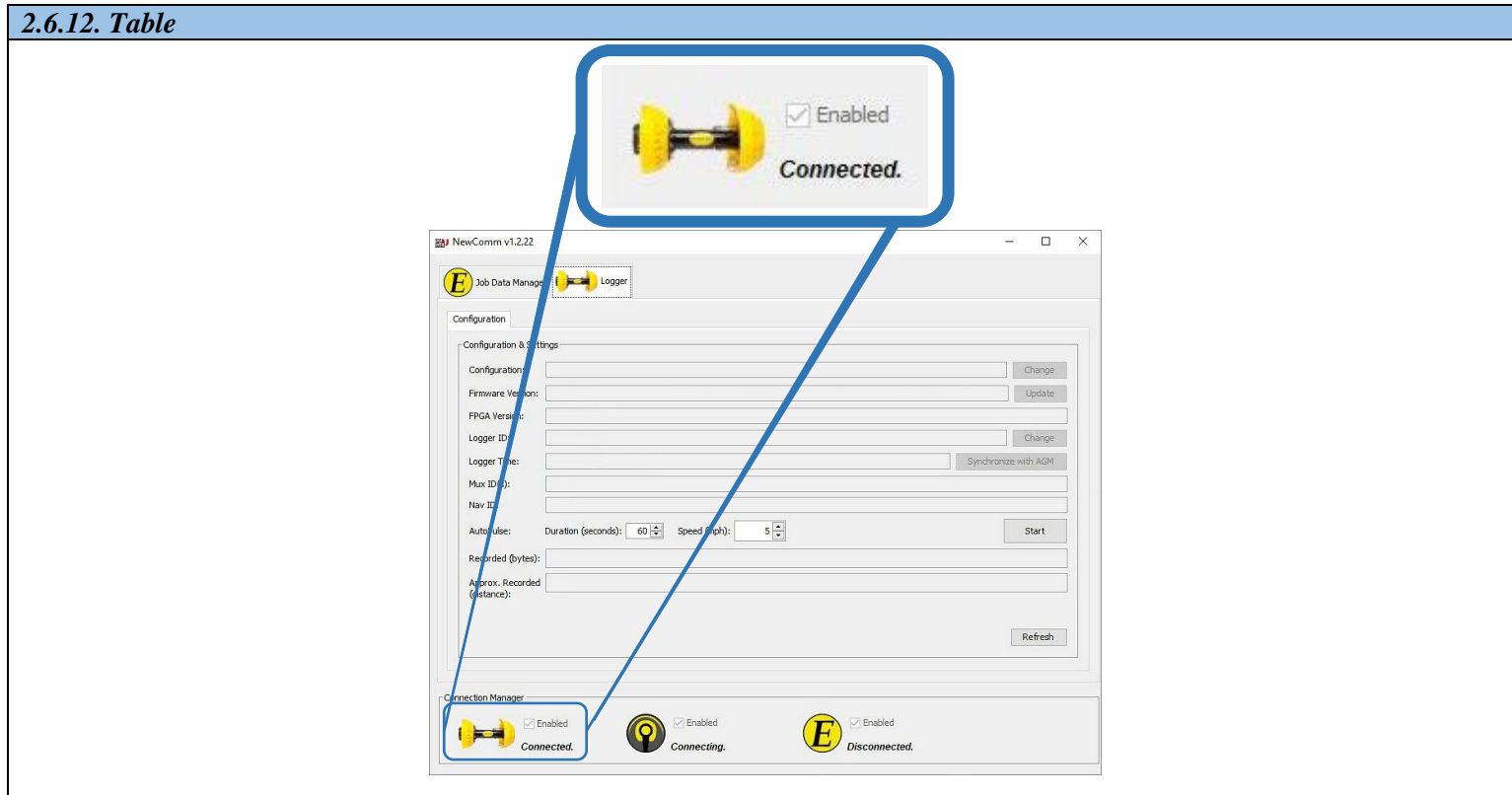
2.6.12. Verify that the Laptop Computer is communicating with the DdL™ Caliper Tool (refer to 2.6.12. Table).

2.6.12.1. When communication is established, the status will state “**Connected.**”

2.6.12.1.1. “**Connecting...**” = In the process / attempting to make connection.

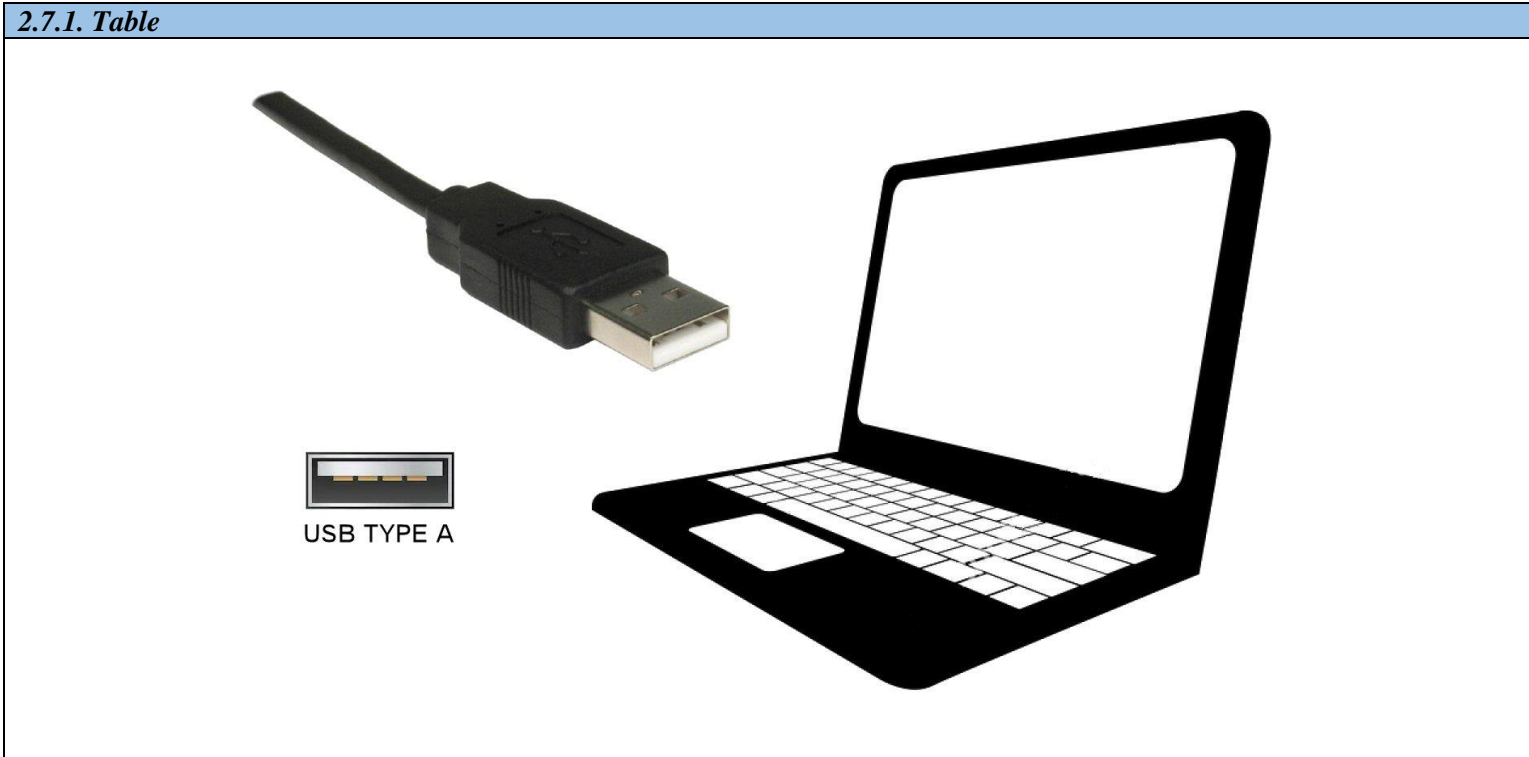
2.6.12.1.2. “**Disconnected.**” = No Connection established.

2.6.12. Table

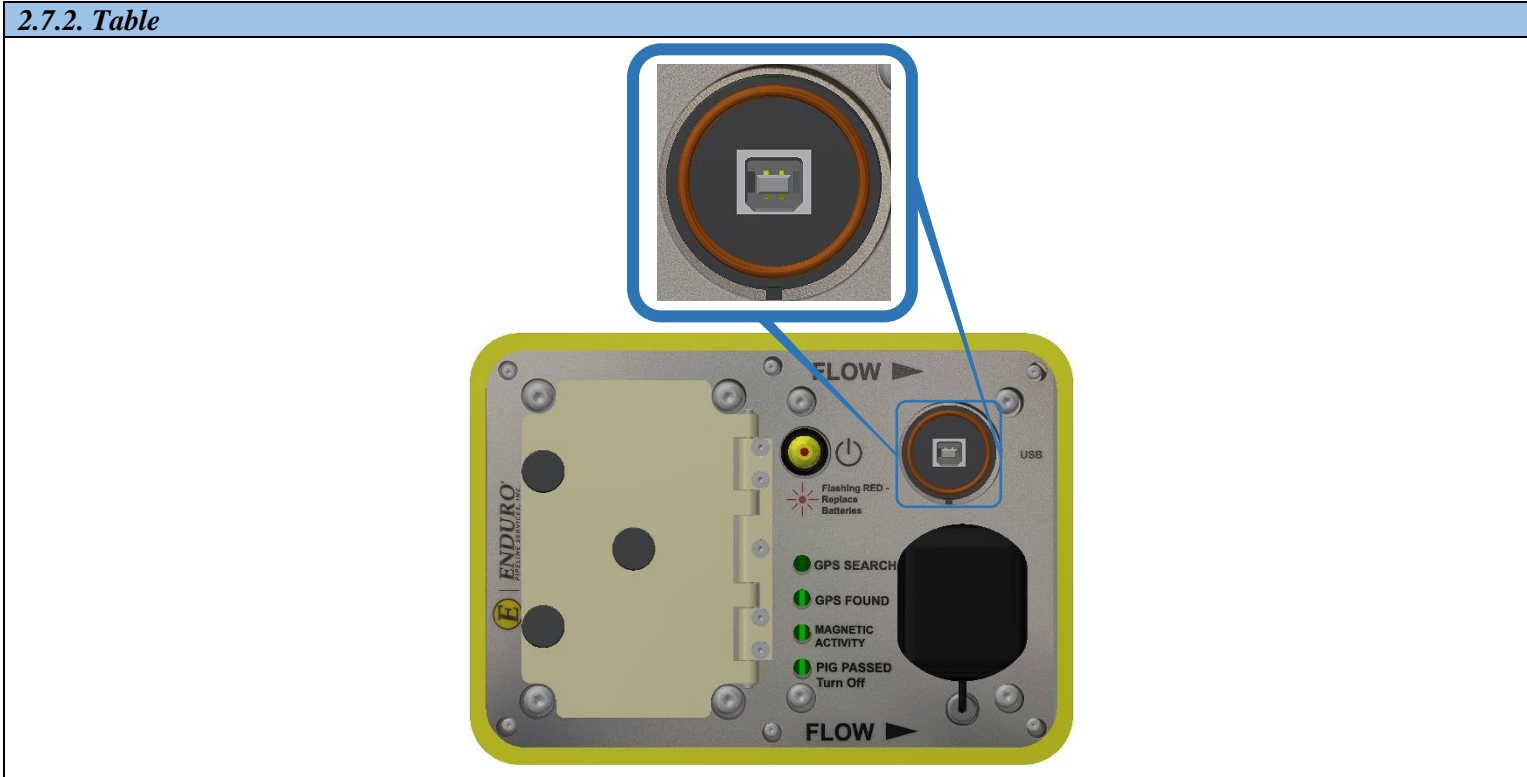


2.7. Connecting Laptop Computer to the AGM2 Box

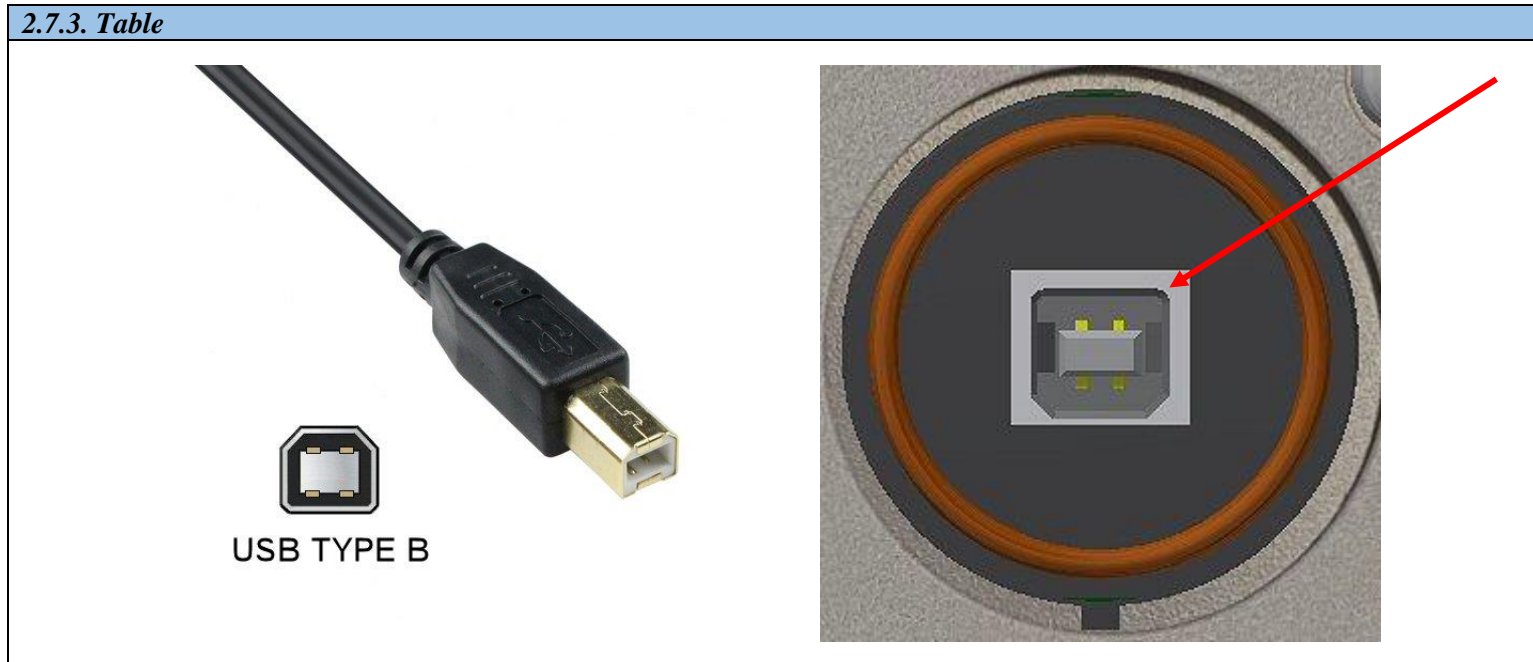
- 2.7.1.** Locate the Communication Cable B and plug the USB TYPE A end into the Laptop Computer USB Port labeled **AGM2**.
(refer to 2.7.1. Table)



2.7.2. Locate the Communication Port on the AGM2 Box. (refer to 2.7.2. Table).



2.7.3. Locate the Communication Cable B and plug the USB TYPE B end into the AGM2 Box. (*refer to 2.7.3. Table*)



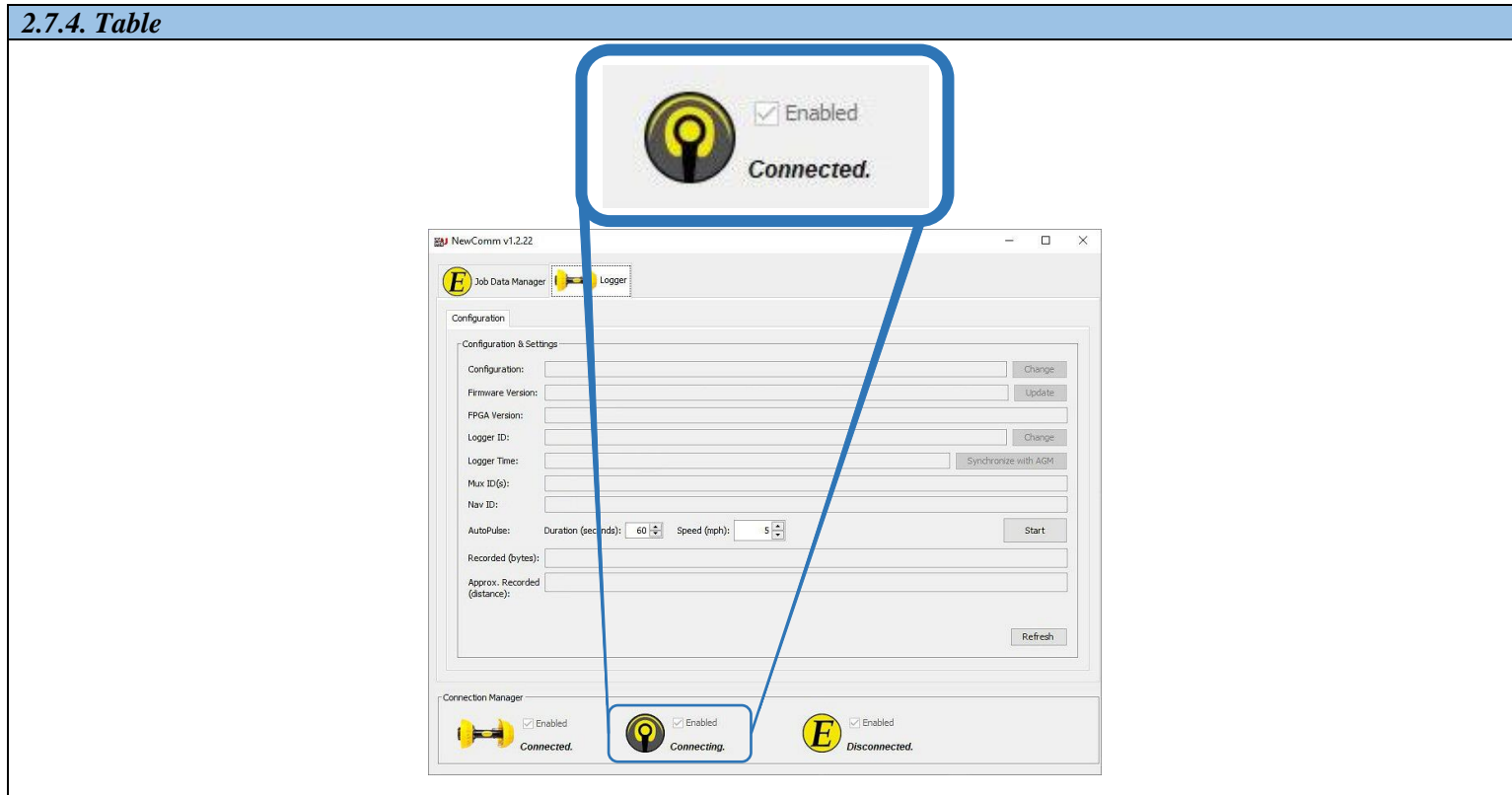
2.7.4. Verify that the Laptop Computer is communicating with the AGM2 Box (refer to 2.7.4. Table).

2.7.4.1. When communication is established, the status will state “**Connected.**”

2.7.4.1.1. “**Connecting...**” = In the process / attempting to make connection.

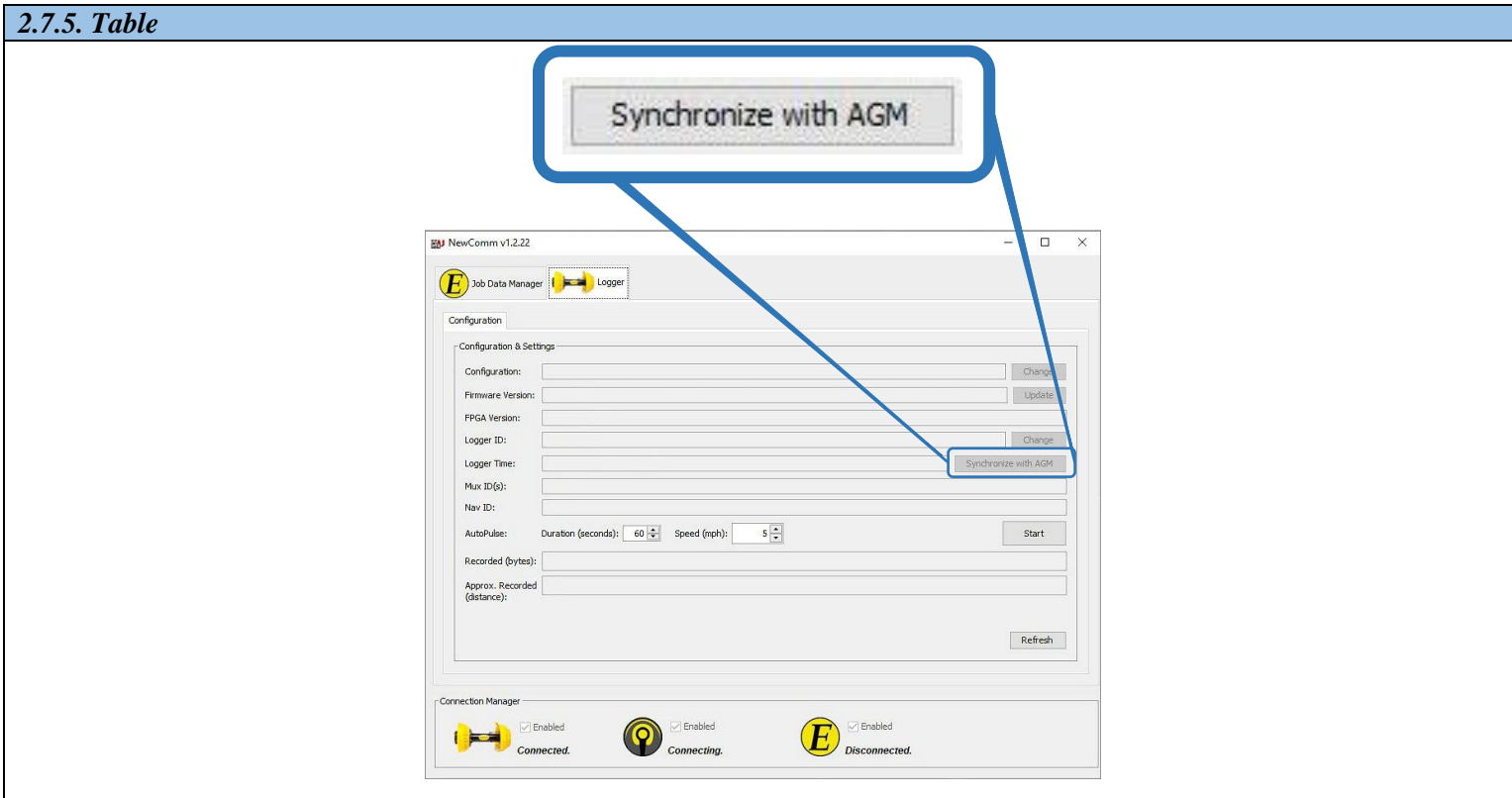
2.7.4.1.2. “**Disconnected.**” = No Connection established.

2.7.4. Table



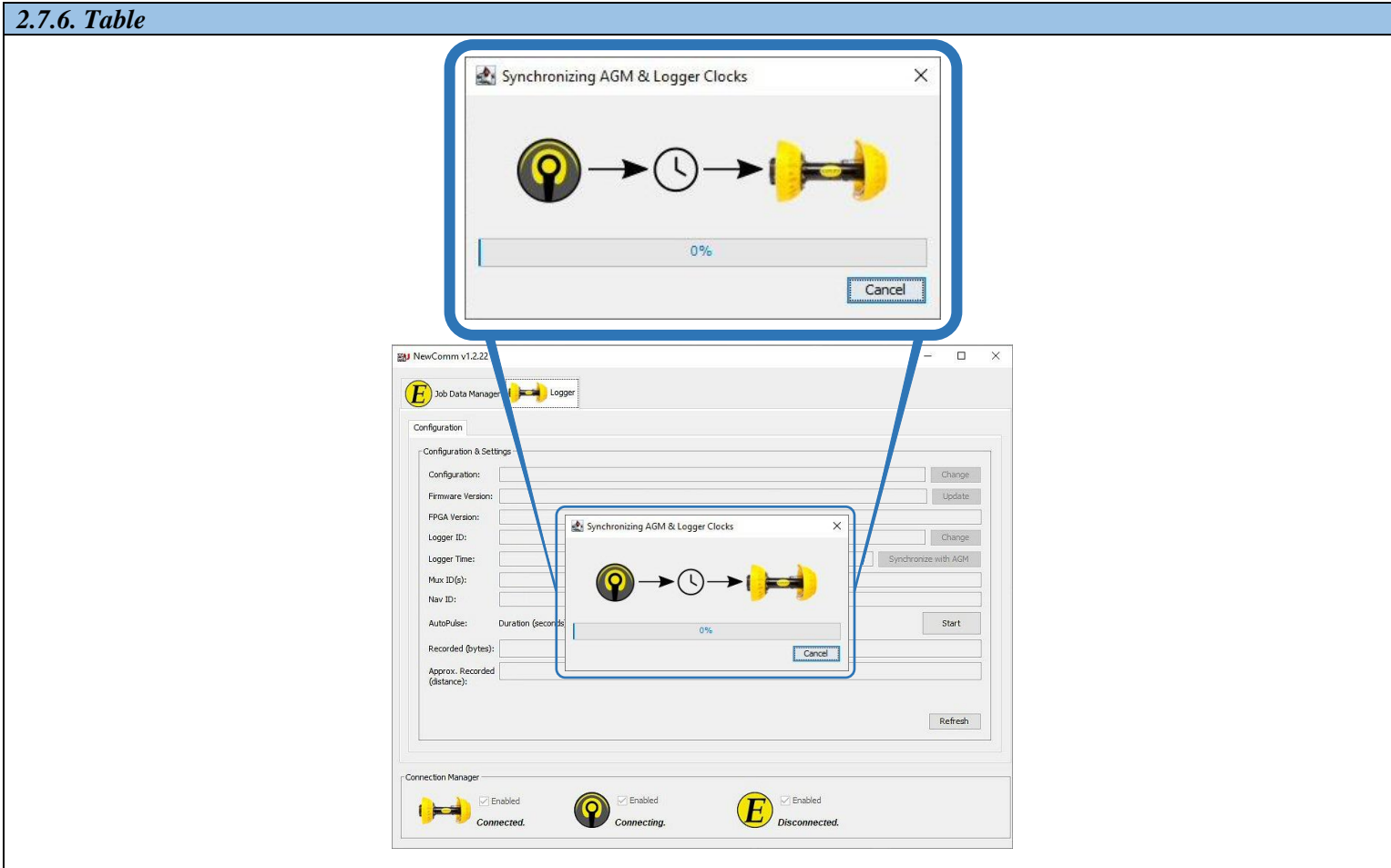
2.7.5. When communication is established, the “Synchronize with AGM” button will become enabled (*refer to 2.7.5. Table*).

2.7.5.1. Click the “Synchronize with AGM” button.



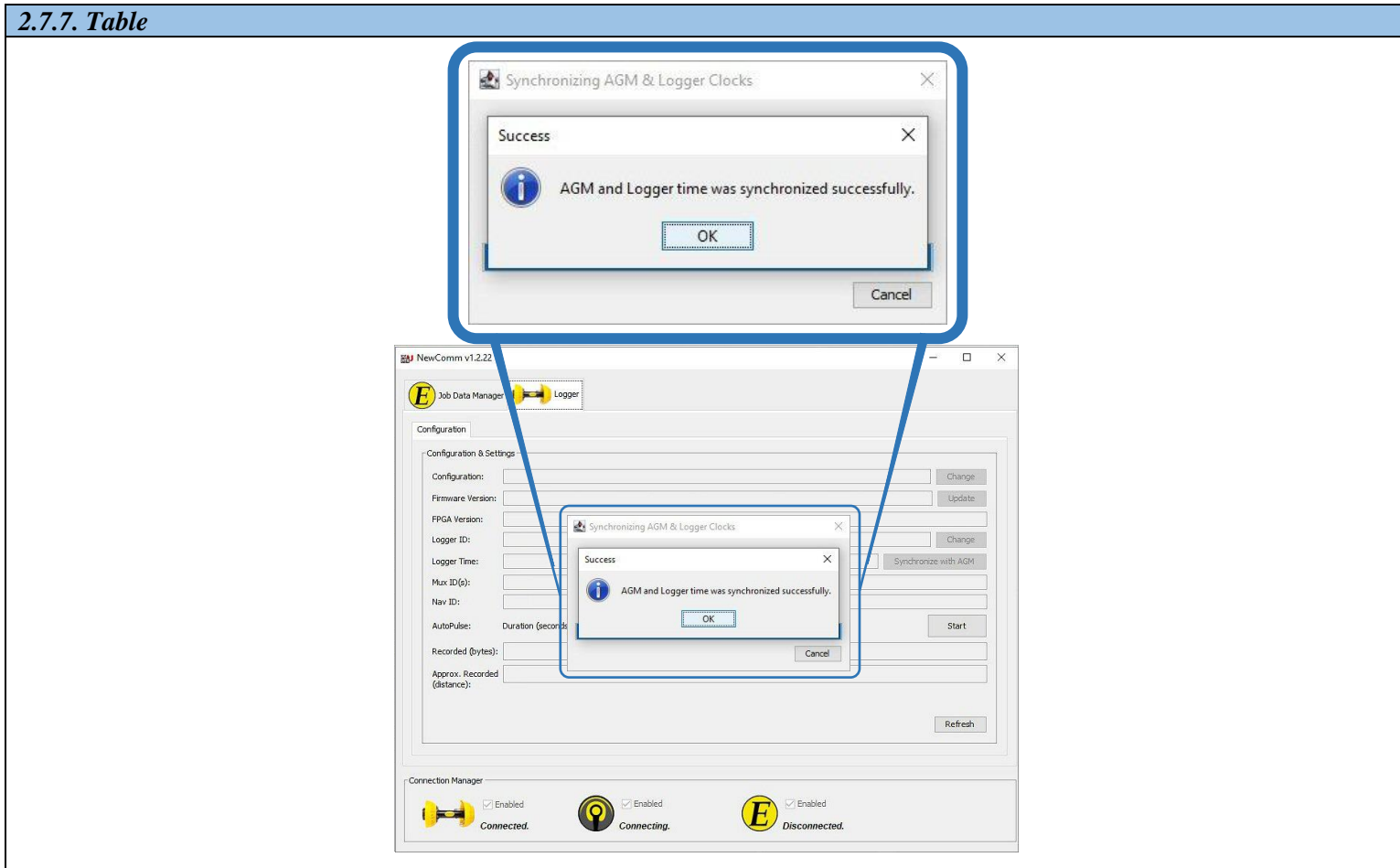
2.7.6. A pop-up window will open showing that the AGM2 Box is in progress of Synchronizing the AGM with the DdL™ Caliper Tool Logger (refer to 2.7.6. Table).

2.7.6.1. A progress bar will continue to update during this process, increasing the percentage that has been completed.



2.7.7. Once completed, a “Success” window will open, stating that the AGM and Logger time was synchronized successfully (refer to 2.7.7. Table).

2.7.7.1. Click “OK”



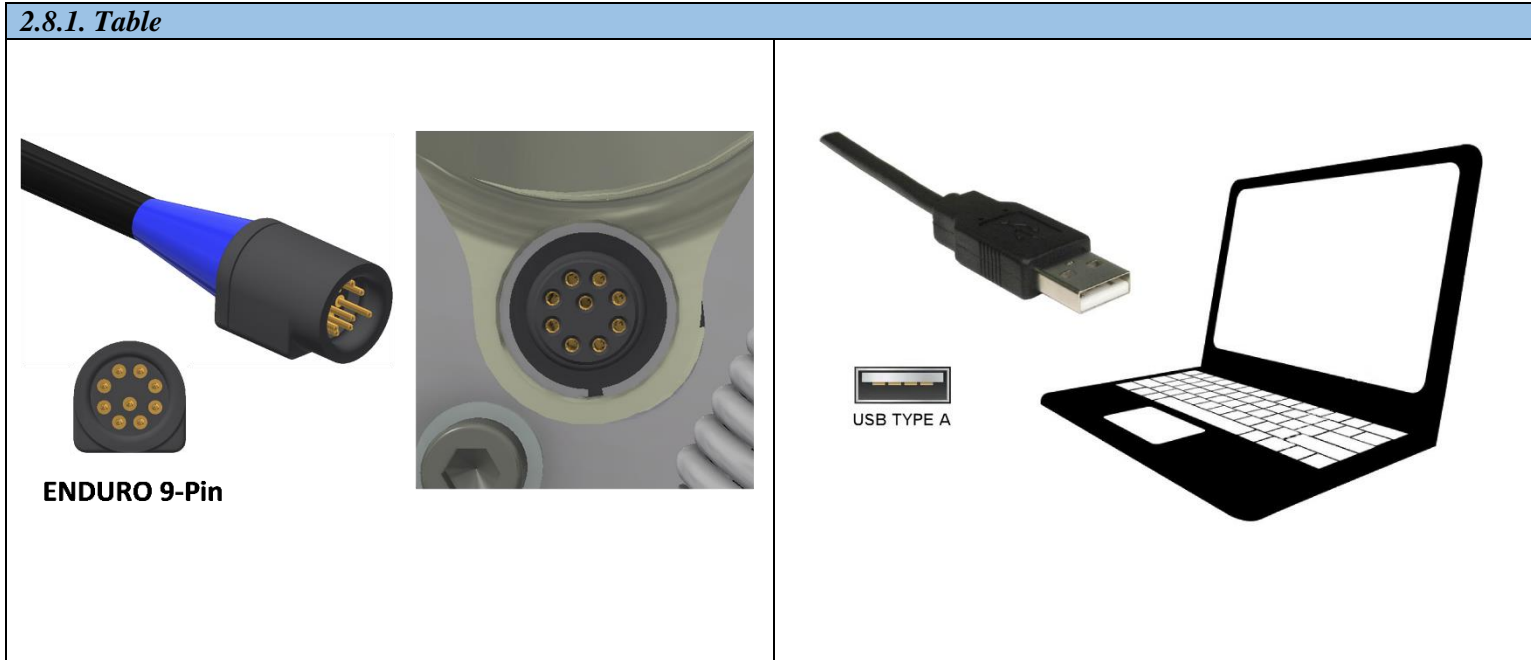
2.7.8. If something other than a Success window pops up, check all communication cable connections, and return to “**Powering Up the DdL™ Caliper Tool**” to begin the process over again.

2.7.8.1. If the problem persists, contact ENDURO Operations for further assistance.

2.7.9. Proceed to the next steps after all DdL™ Caliper Tool Checks have been completed.

2.8. Final DdL™ Caliper Tool Check

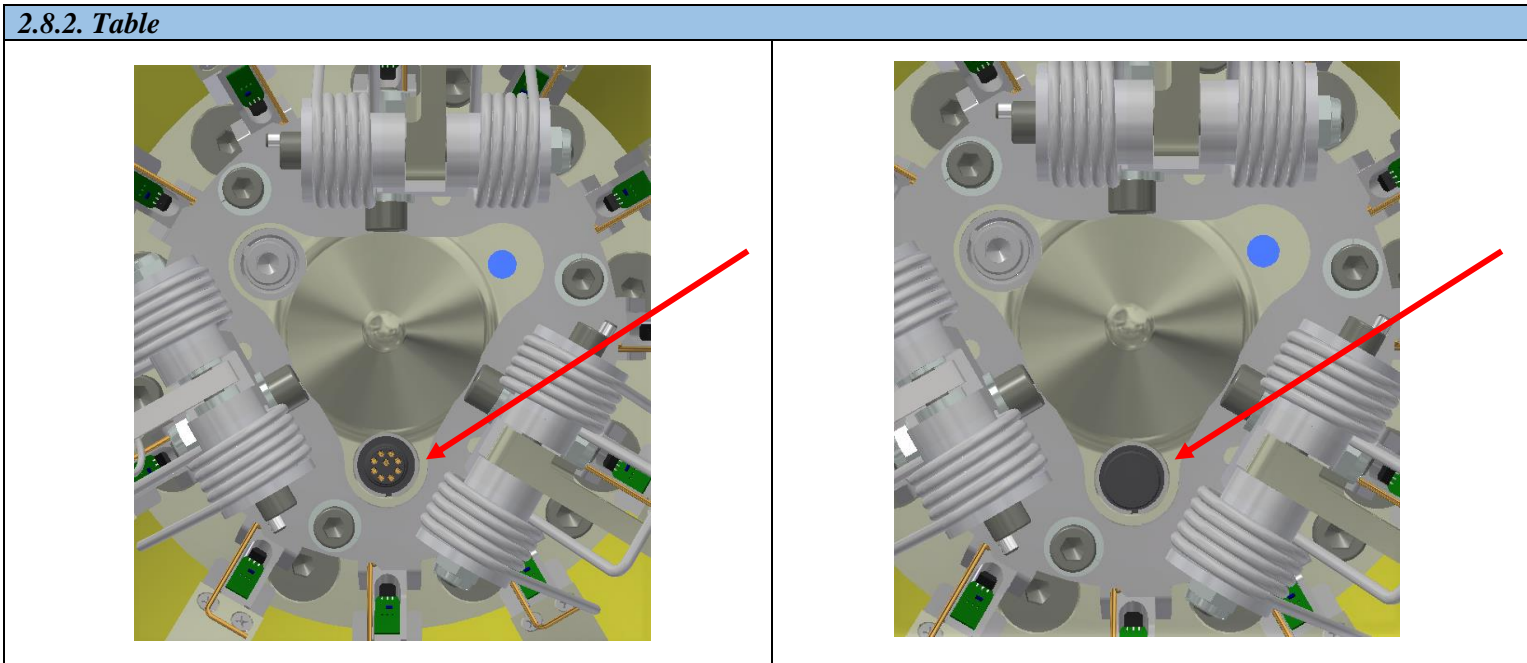
2.8.1. Unplug the Communication Cable A from the DdL™ Caliper Tool and from the Laptop Computer. (*refer to 2.8.1. Table*)



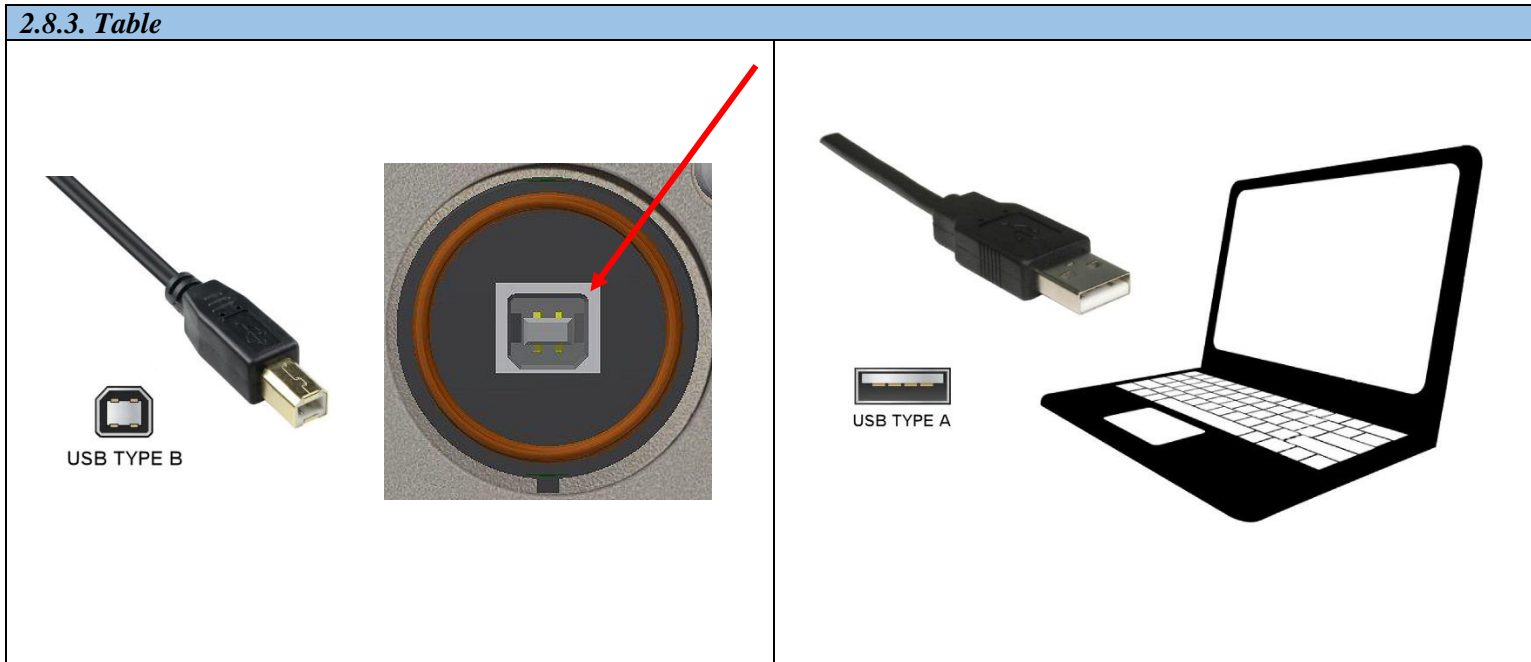
2.8.2. Replace the protective cover on the Communication Port at the rear of the DdL™ Caliper Tool by pushing the cap until seated fully.
(refer to 2.8.2. Table)

2.8.2.1. **NOTICE:** It is very important that the protective cover is replaced and seated fully.

2.8.2.1.1. This will help ensure that nothing will get into the Communication Port during the survey, causing damage to the DdL™ Caliper Tool.



2.8.3. Unplug the Communication Cable B from the AGM2 Box and from the Laptop Computer. (*refer to 2.8.3. Table*)

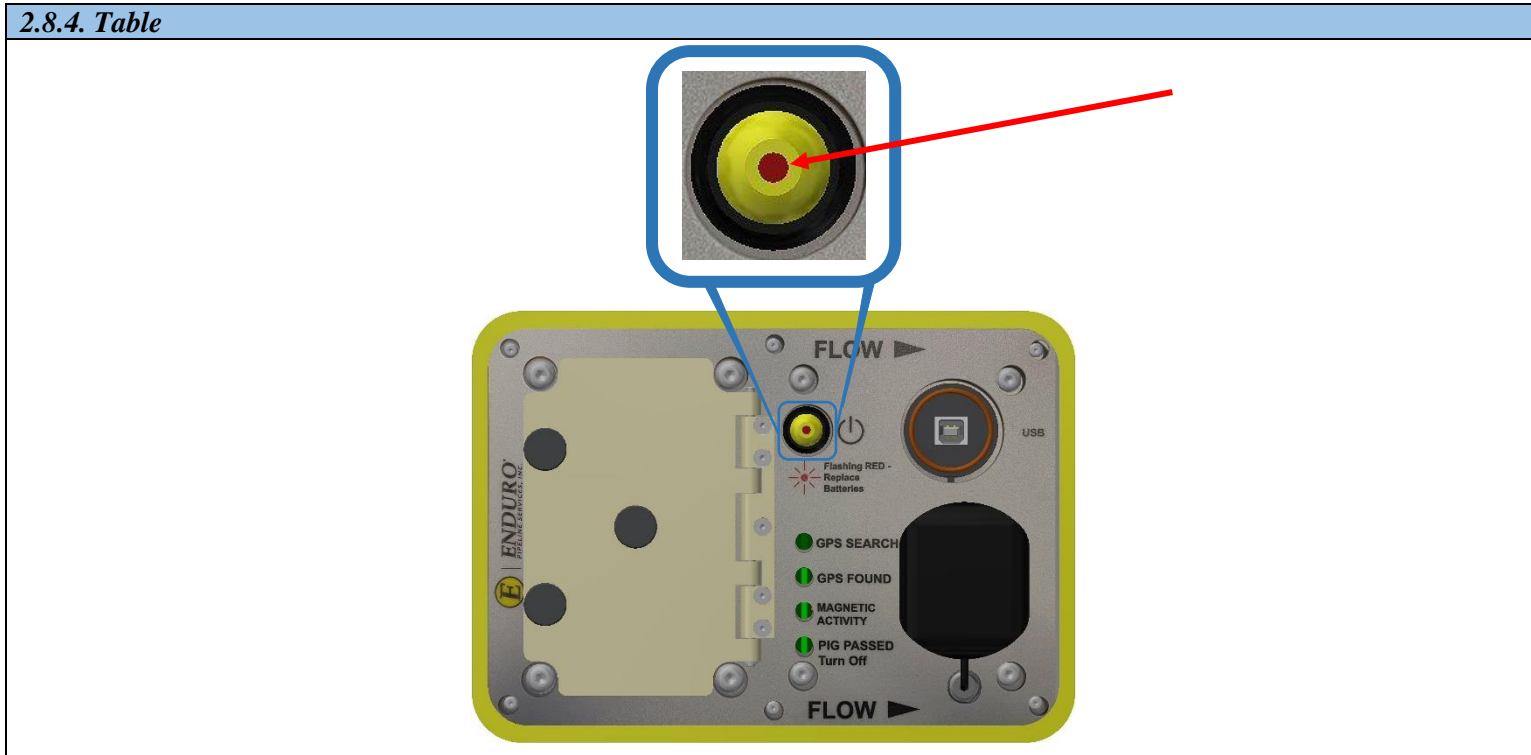


2.8.4. Power down the AGM2 Box to conserve battery life. (refer to 2.8.4. Table)

2.8.4.1. Press Power Button to turn off AGM2 Box.

2.8.4.2. Close and secure the lid on the AGM2 Box and keep the box with the Standard Support Equipment for future use.

2.8.4. Table



2.8.5. Shut down any opened programs that may still be opened on the Laptop Computer.

2.8.6. Power down the Laptop Computer to conserve battery life.

2.8.6.1. Return Laptop Computer, Communication Cables, and all other components to the Pelican Case until required again.

2.8.7. DdL™ Caliper Tool is now ready to be loaded into the pipeline.

2.9. Loading DdL™ Caliper Tool into Pipeline

2.9.1. NOTICE: This Section is a General Loading and Unloading of the DdL™ Caliper Tool from the pipeline.

2.9.2. Verify that there is no pressure on the section of pipeline where the DdL™ Caliper Tool will be loaded.

2.9.2.1. Trap Isolation procedures will need to be followed per the type of Trap configuration currently installed on the pipeline.

2.9.3. Remove the Calibration Ring, located on the rear cup of the DdL™ Caliper Tool.

2.9.3.1. Please keep this Calibration Ring with the Standard Support Equipment.

2.9.4. The DdL™ Caliper Tool is designed to travel ONLY in a forward direction.

2.9.4.1. NOTICE: Loading and Unloading from the Pipeline MUST be adhered to the above.

2.9.5. The DdL™ Caliper Tool can either be pushed or pulled into the pipeline.

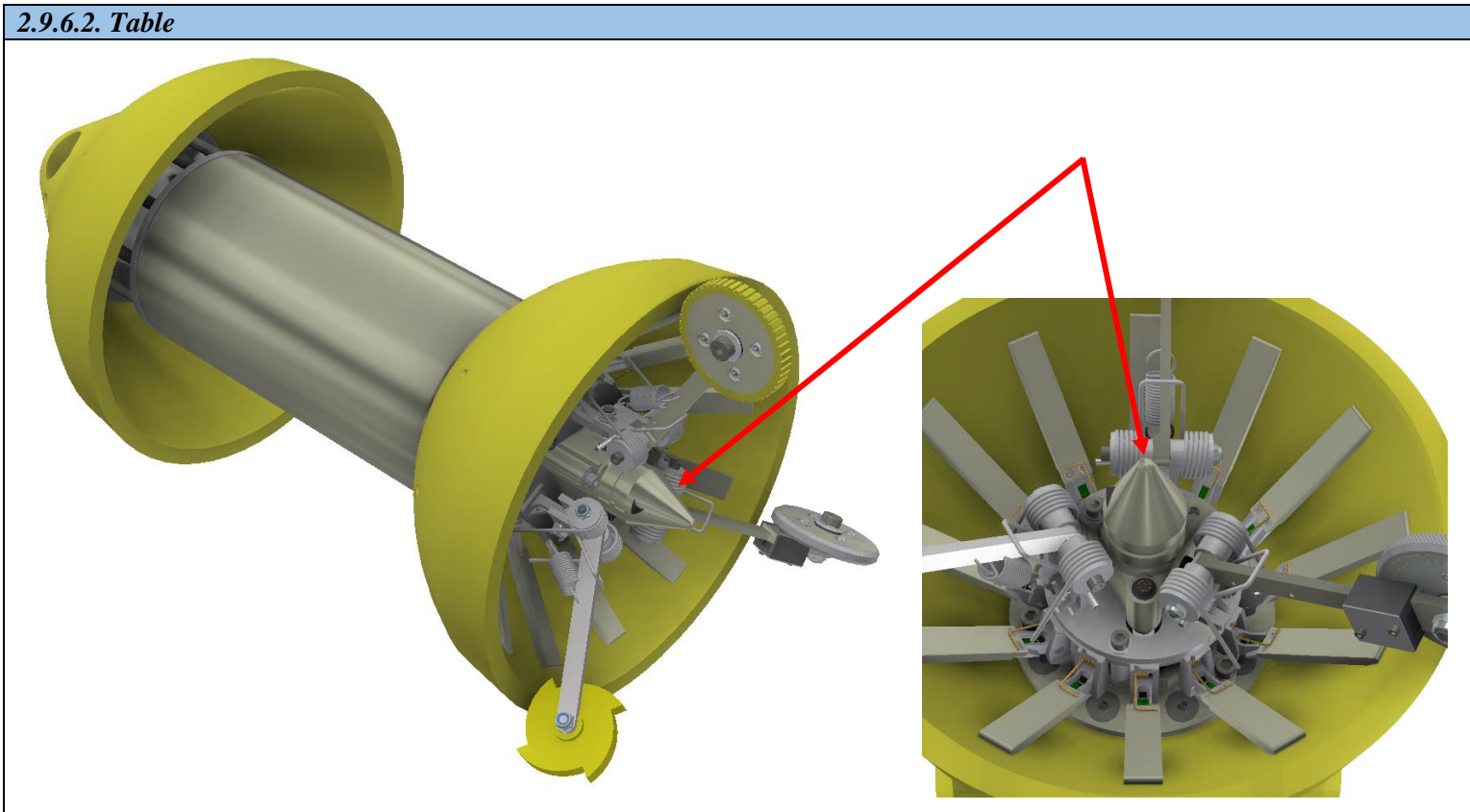
2.9.6. Pushing the DdL™ Caliper Tool into the Pipeline.

2.9.6.1. Pushing the DdL™ Caliper Tool is the preferred method.

2.9.6.1.1. Position the DdL™ Caliper Tool at the location that it allows it to be loaded into the pipeline.

2.9.6.2. Located on the rear of the DdL™ Caliper Tool is a Push Plate. (*refer to 2.9.6.2. Table*)

2.9.6.2.1. The 12-inch DdL™ Caliper Tool has a center cone that can be utilized to push the tool into the pipeline.

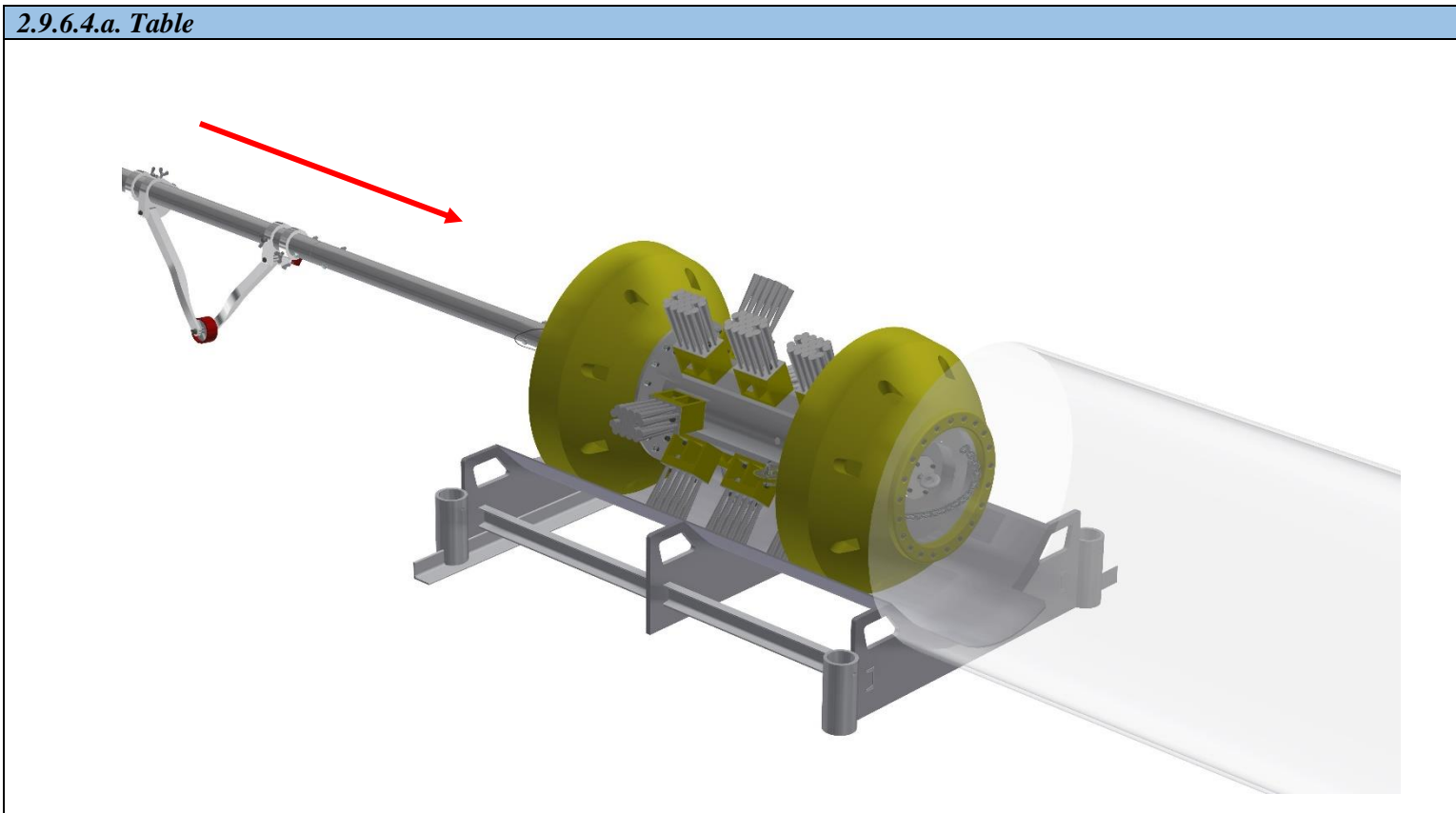


2.9.6.3. Push the DdL™ Caliper Tool into the pipeline using evenly distributed force on the Push Poles.

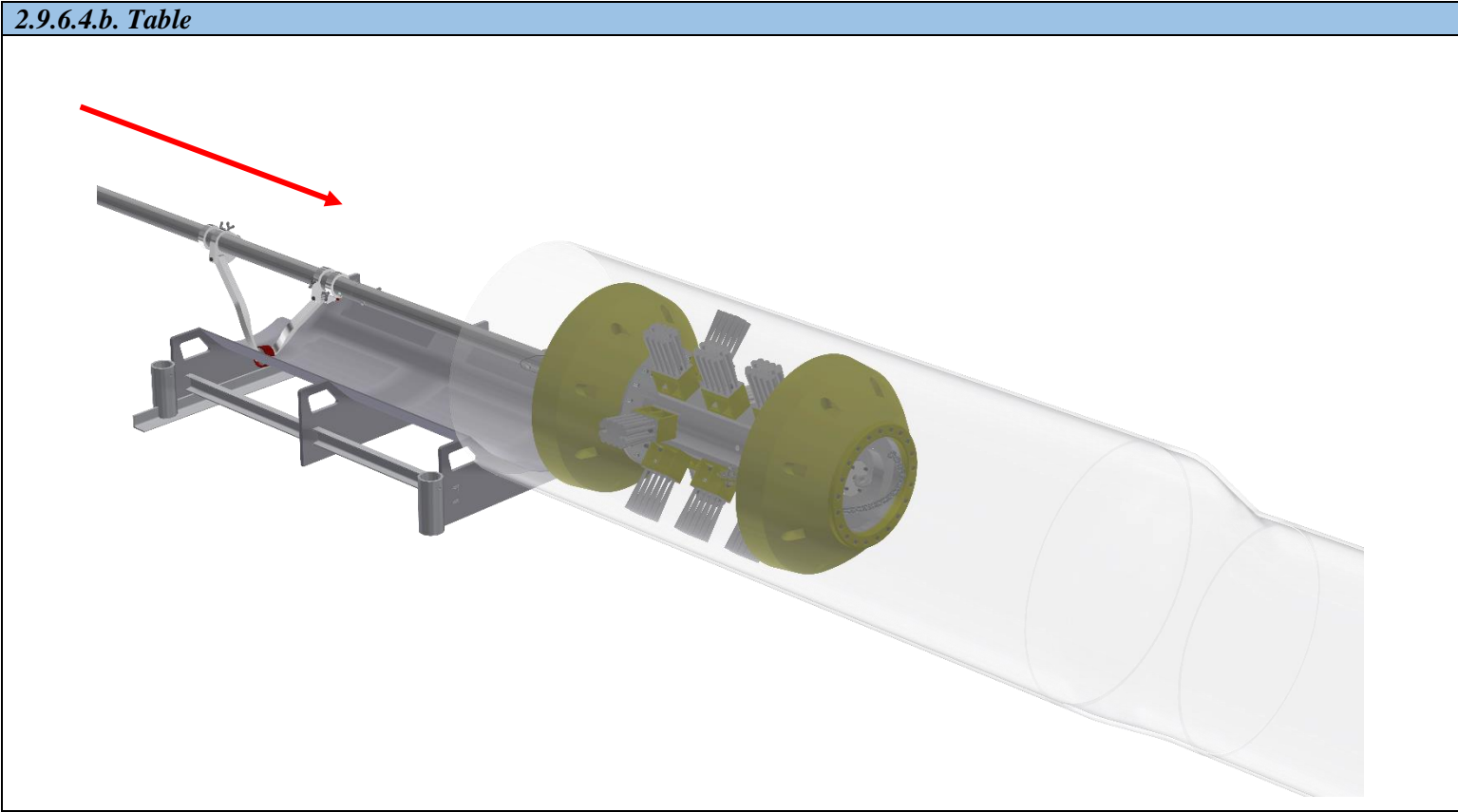
2.9.6.3.1. Damage to the DdL™ Caliper Tool may occur if the Push Poles are struck, banged on, or rammed with the equipment used to load the tool into the pipeline.

2.9.6.4. Below are example images that can be referenced to properly load the DdL™ Caliper Tool.

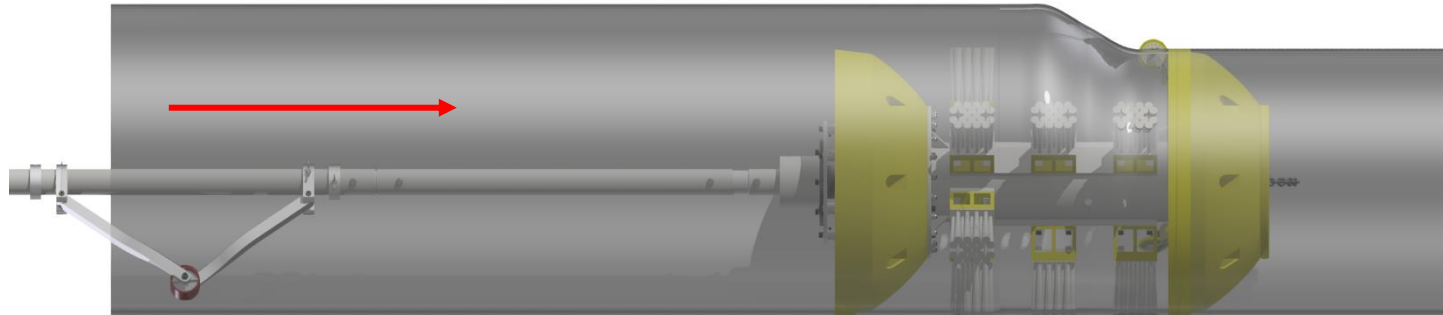
2.9.6.4.1. (refer to 2.9.6.4.a. Table, 2.9.6.4.b. Table, and 2.9.6.4.c. Table)



2.9.6.4.b. Table

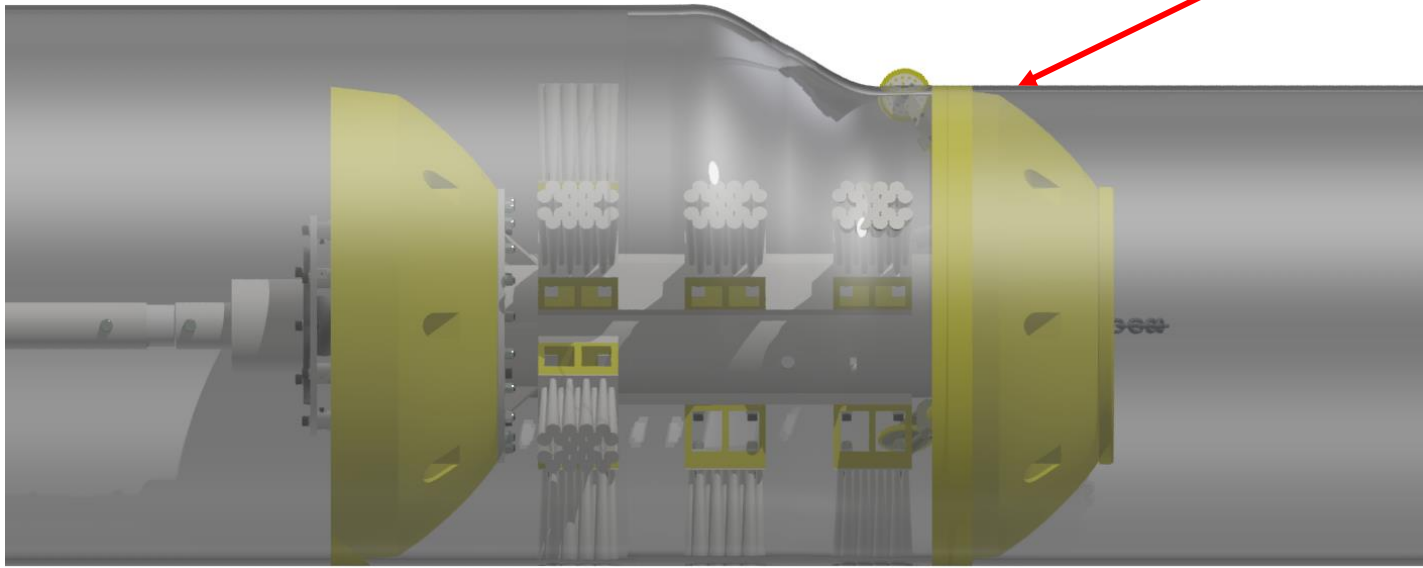


2.9.6.4.c. *Table*



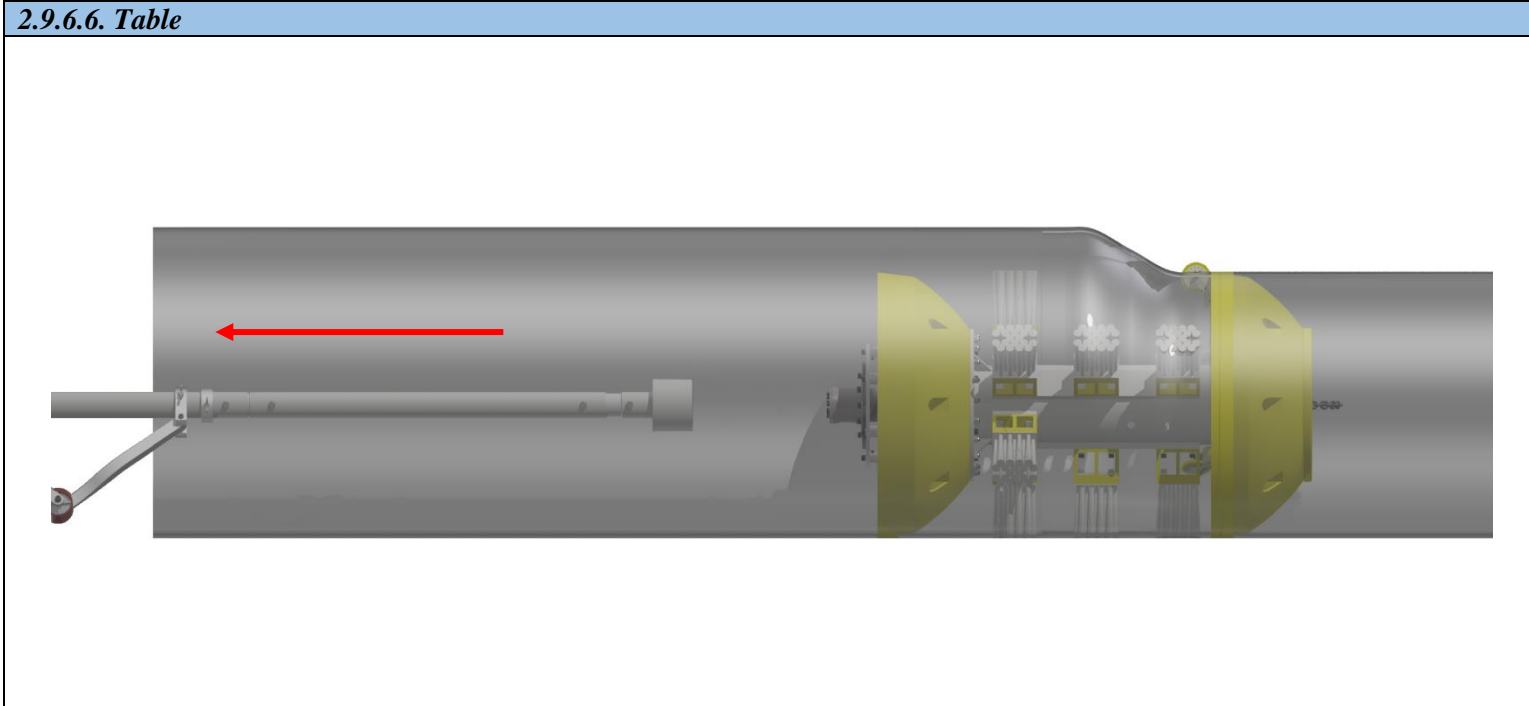
- 2.9.6.5.** Verify that the DdL™ Caliper Tool's front urethane cup is properly seated into the same diameter pipe that is being surveyed. (refer to 2.9.6.5. Table)

2.9.6.5. Table



2.9.6.6. Remove the Push Poles by using evenly distributed force straight back from where the DdL™ Caliper Tool was positioned. (*refer to 2.9.6.6. Table*)

2.9.6.6.1. Doing so, will help prevent any undue damage to the DdL™ Caliper Tool by the Push Poles.



2.9.6.7. Remove any remaining loading equipment from the area.

2.9.6.8. Secure the pipeline to allow pressure to be brought back up.

2.9.6.8.1. **NOTICE:** Pressure MUST be brought back up slowly so that the DdL™ Caliper Tool does not prematurely move.

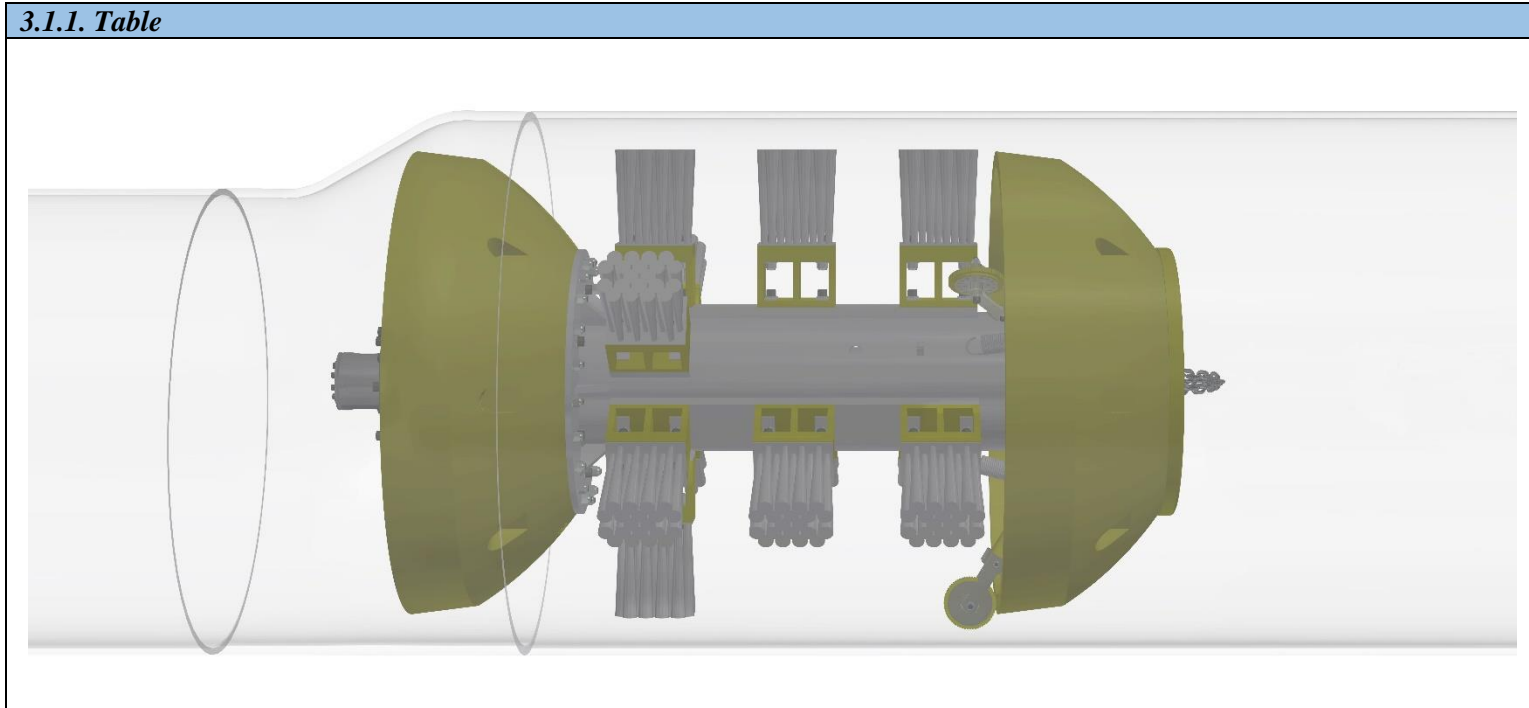
2.9.6.9. Once the trap is equalized, continue with procedures to properly launch the DdL™ Caliper Tool.

2.9.6.10. Verify that the DdL™ Caliper Tool has launched.

3. **DdL™ Caliper Tool Post-Run:**

3.1. **Removing DdL™ Caliper Tool from Pipeline:**

3.1.1. Verify DdL™ Caliper Tool was received. (*refer to 3.1.1. Table*)



3.1.2. Verify that there is no pressure on the pipeline where the DdL™ Caliper Tool will be unloaded.

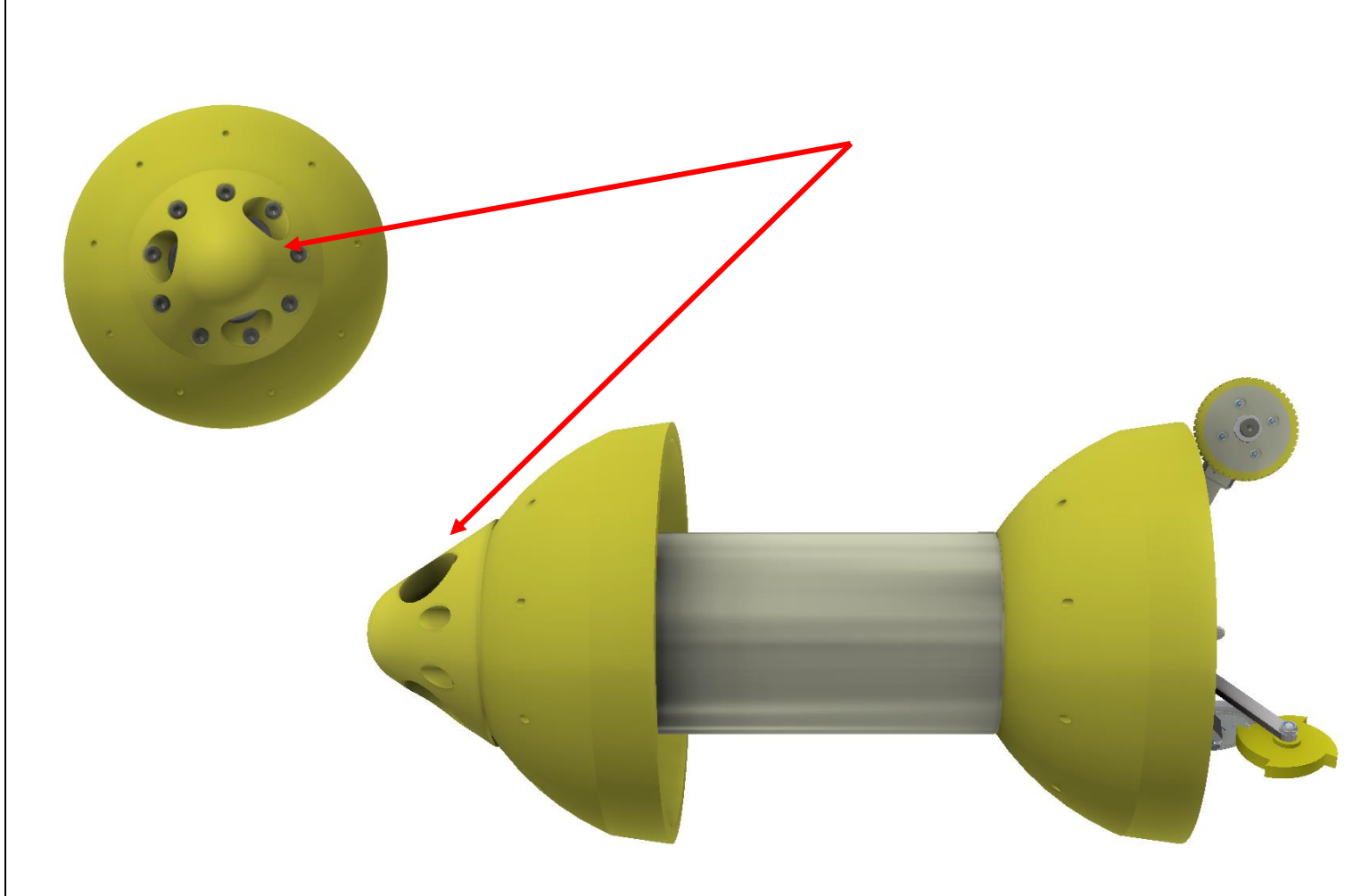
3.1.2.1. Trap Isolation procedures will need to be followed per the type of Trap configuration currently installed on the pipeline.

3.1.3. The DdL™ Caliper Tool will be pulled from the pipeline in a forward direction.

3.1.3.1. Once the Trap has been opened, locate the DdL™ Caliper Tool within the isolated area of the pipeline.

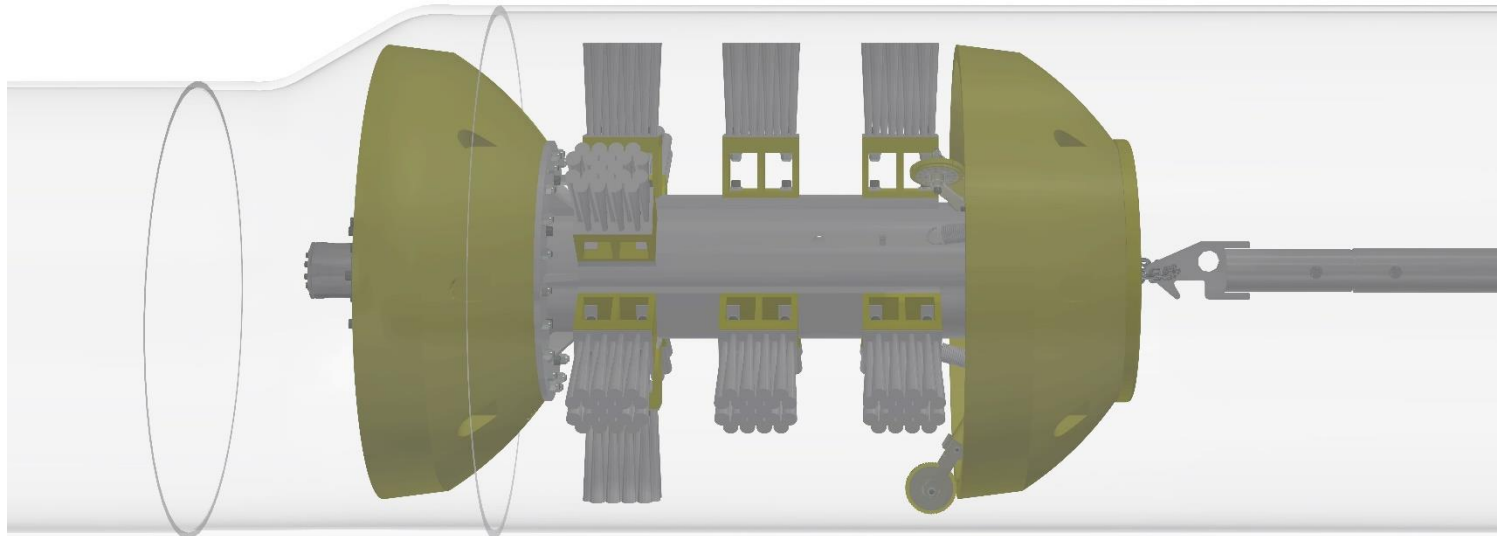
- 3.1.4.** Located on the front of the DdL™ Caliper Tool will be a Urethan Nose Cone Bumper that will allow the ability to grab the tool to remove it from the line. (*refer to 3.1.4. Table*)

3.1.4. Table

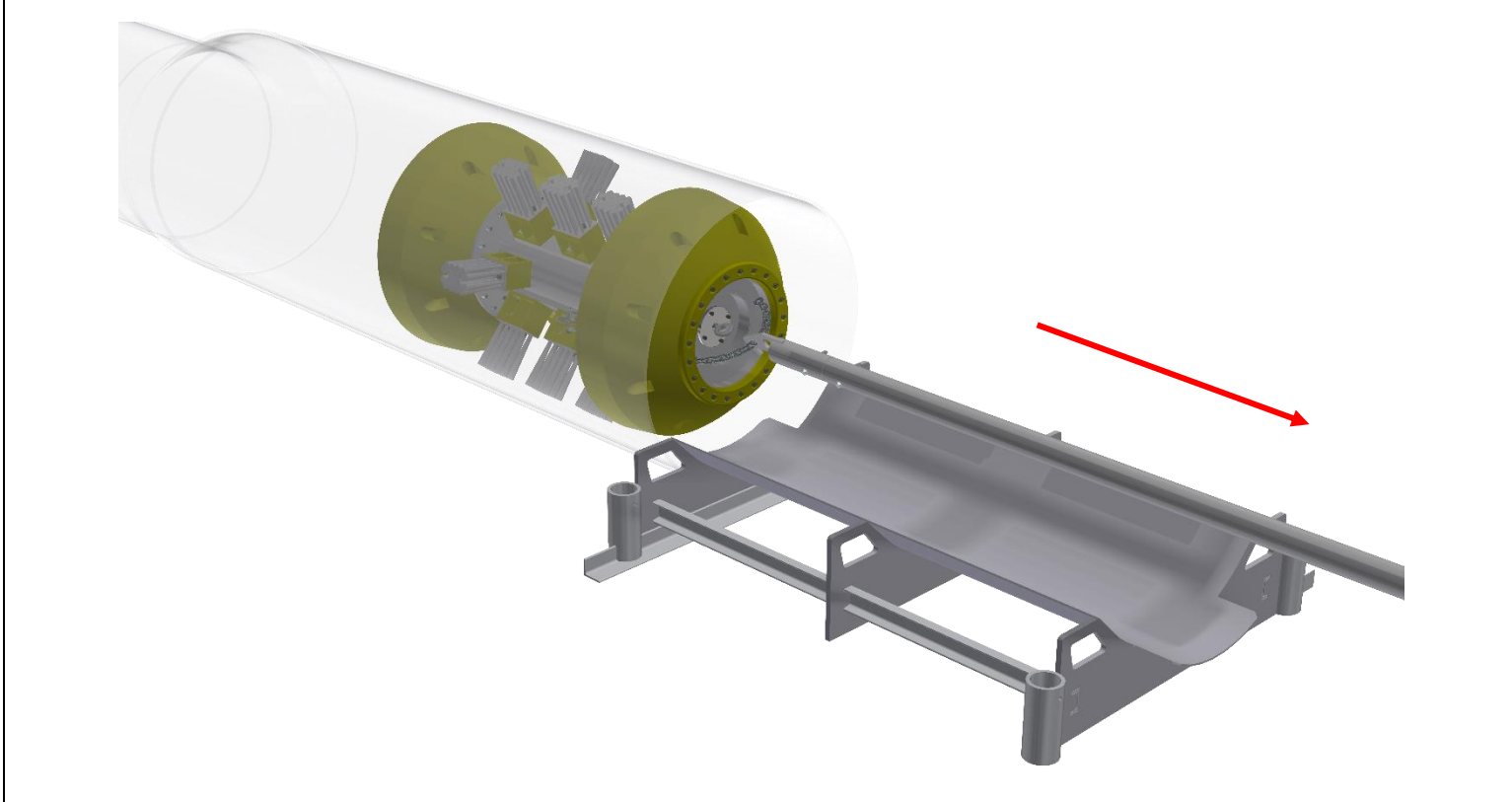


- 3.1.5.** Attach a hook to the front Urethan Nose Cone Bumper of the DdL™ Caliper Tool. (*refer to 3.1.5. Table*)
- 3.1.6.** Remove the DdL™ Caliper Tool from the pipeline using evenly distributed force when pulling on the Push Poles.
 - 3.1.6.1.** Damage to the DdL™ Caliper Tool may occur if the Push Poles are struck, banged on, or rammed with the equipment used to remove the tool from the pipeline.
 - 3.1.6.2.** Below are example images that can be referenced to properly remove the DdL™ Caliper Tool.
 - 3.1.6.2.1.** (*refer to 3.1.6.2.a. Table, 3.1.6.2.b. Table, and 3.1.6.2.c. Table*)

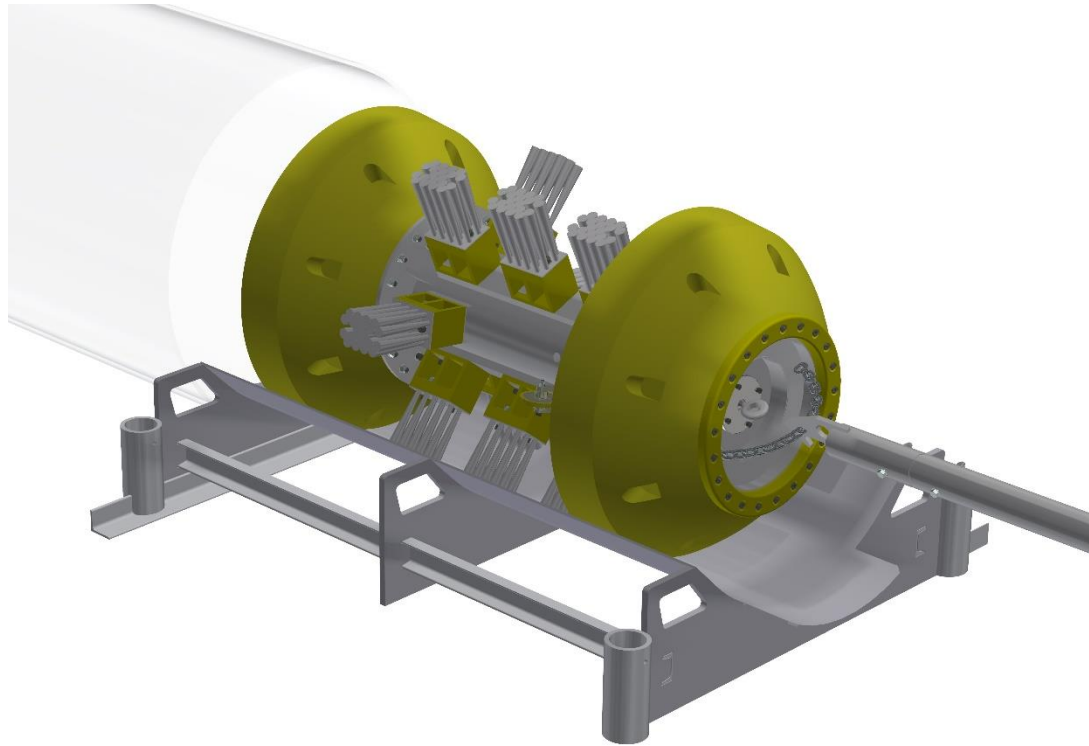
3.1.6.2.a. Table



3.1.6.2.b. *Table*



3.1.6.2.c. Table



- 3.1.7.** Remove any remaining unloading equipment from the area.
- 3.1.8.** Secure the pipeline to allow pressure to be brought back.
- 3.1.9.** Once the trap is equalized, CUSTOMER may continue with normal pipeline operating procedures.
- 3.1.10.** CUSTOMER must visually inspect the DdL™ Caliper Tool for any apparent damage sustained during the survey.
 - 3.1.10.1.** The CUSTOMER should contact ENDURO for any questionable areas that the CUSTOMER may be unsure of regarding the tool condition.
 - 3.1.10.2.** ENDURO may request pictures of any areas of concern.

3.2. Connecting Laptop Computer to the DdL™ Caliper Tool

3.2.1. Power the Laptop Computer on and allow it to fully boot up.

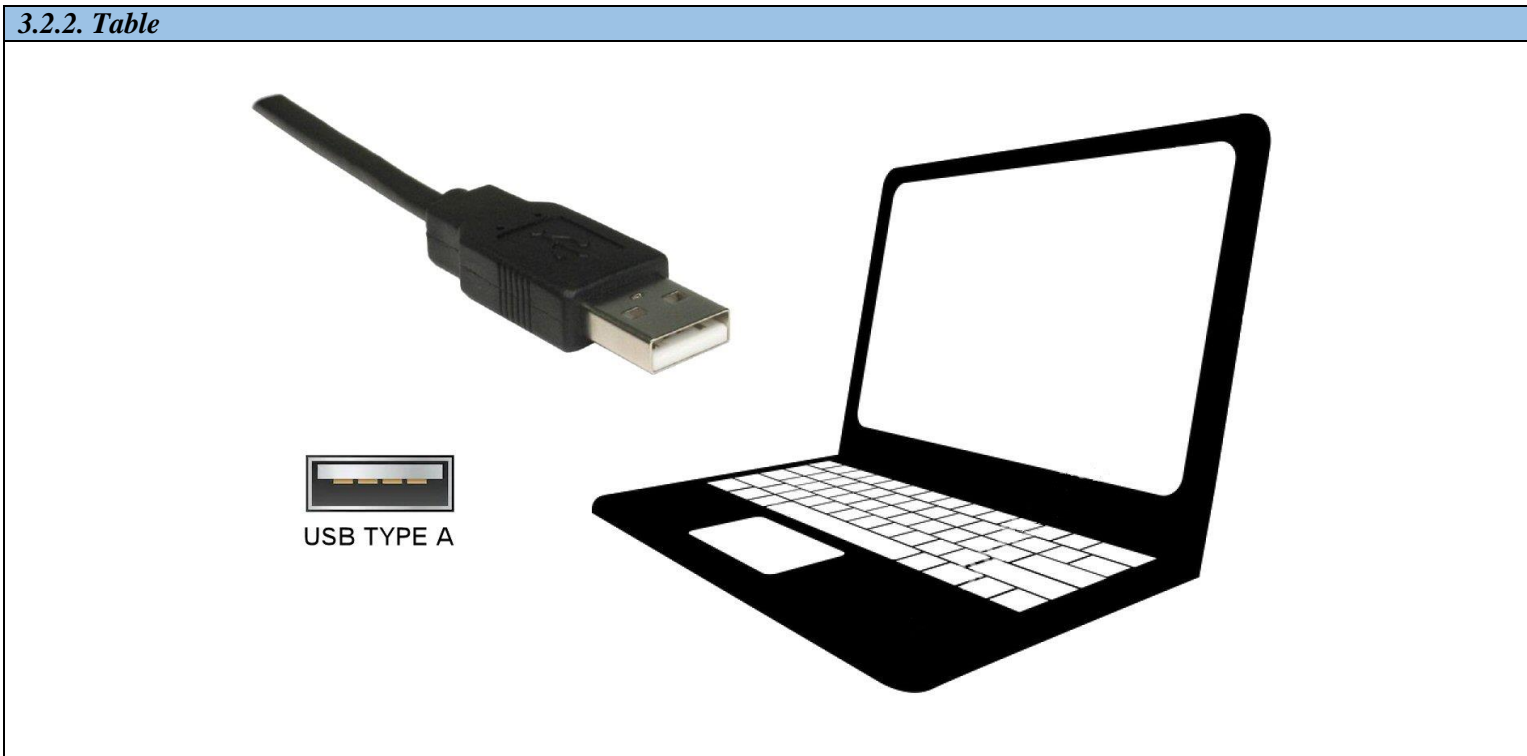
3.2.1.1. Press the “ctrl” key on the keyboard

3.2.1.2. A password must be typed in to unlock Laptop Computer

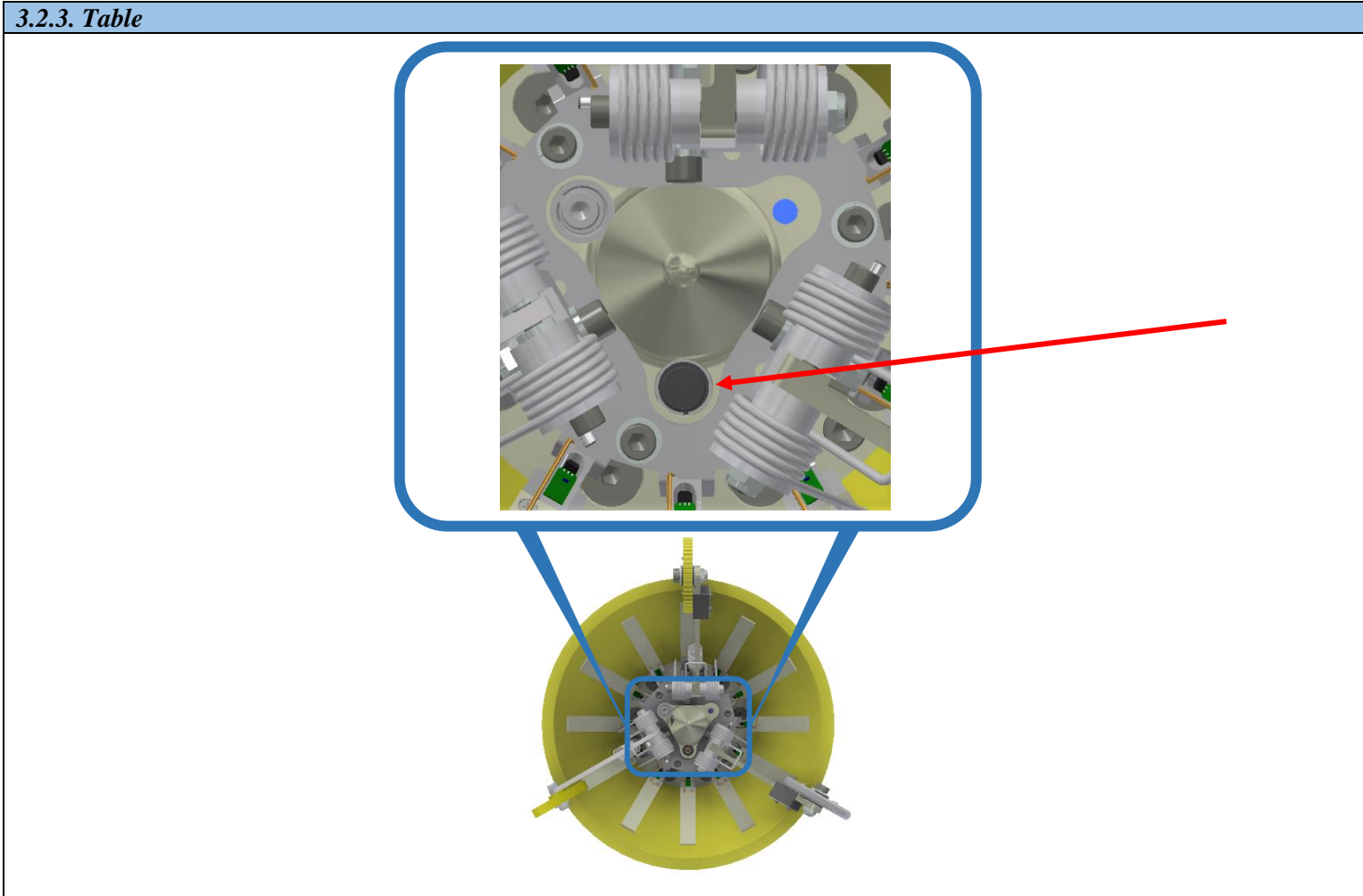
3.2.1.2.1. Password = 4461934

3.2.1.3. Contact ENDURO for any IT issues regarding the Laptop Computer that was provided.

3.2.2. Locate the Communication Cable A and plug the USB TYPE A end into the Laptop Computer USB Port labeled **TOOL**.
(refer to 3.2.2. Table)



3.2.3. Locate the Communication Port at the rear of the DdL™ Caliper Tool. (*refer to 3.2.3. Table*)



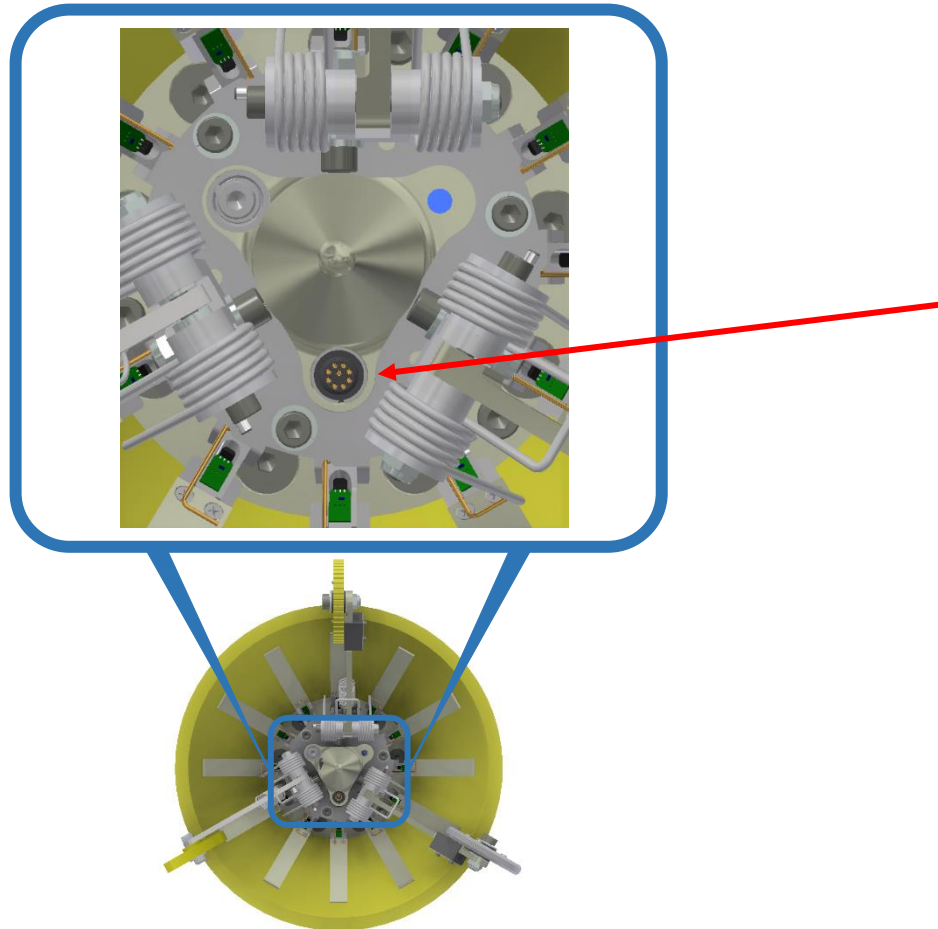
3.2.4. Remove the protective cover from the Communication Port located on the Odometer Housing (*refer to 3.2.4. Table*).

3.2.4.1. This protective cover is just a rubber dust cap and can be removed by pulling away from the Caliper Tool.

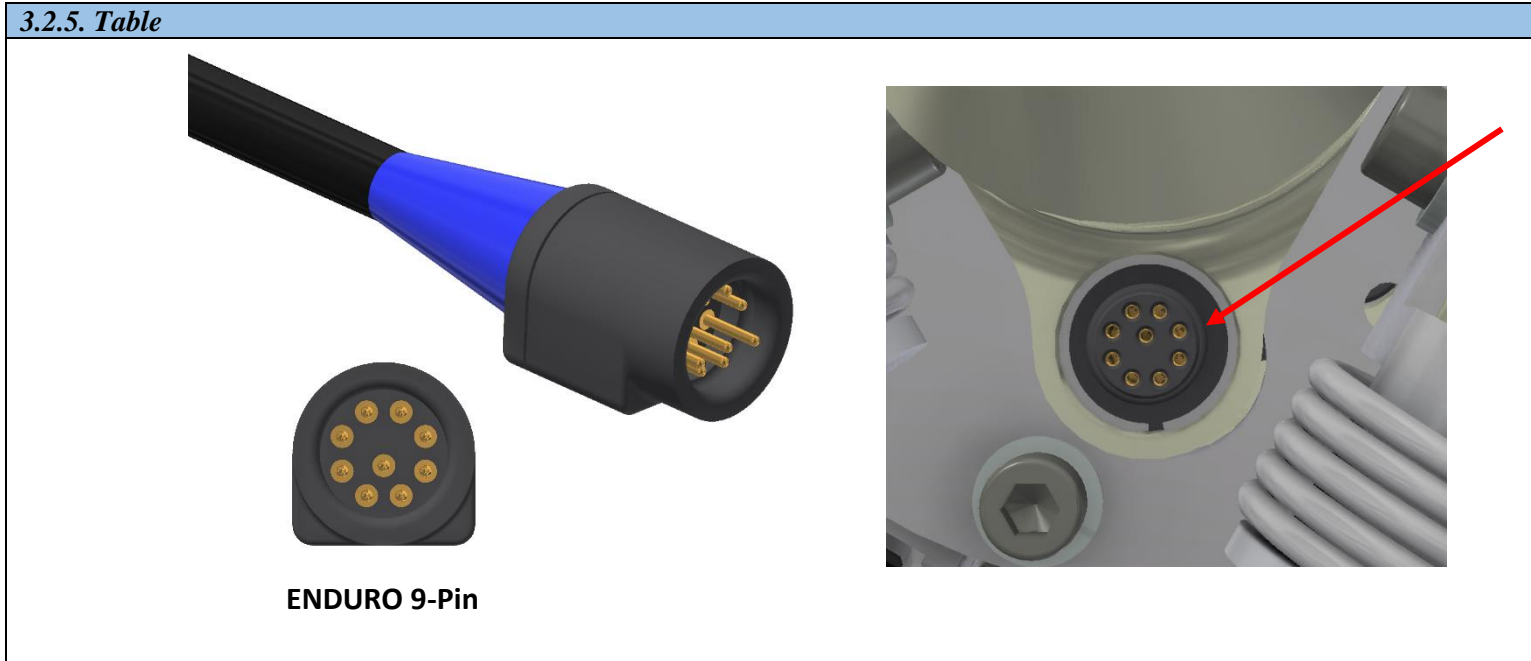
3.2.4.1.1. DO NOT LOSE THIS CAP!!!!!!

3.2.4.1.2. It will be utilized later in the process.

3.2.4. Table

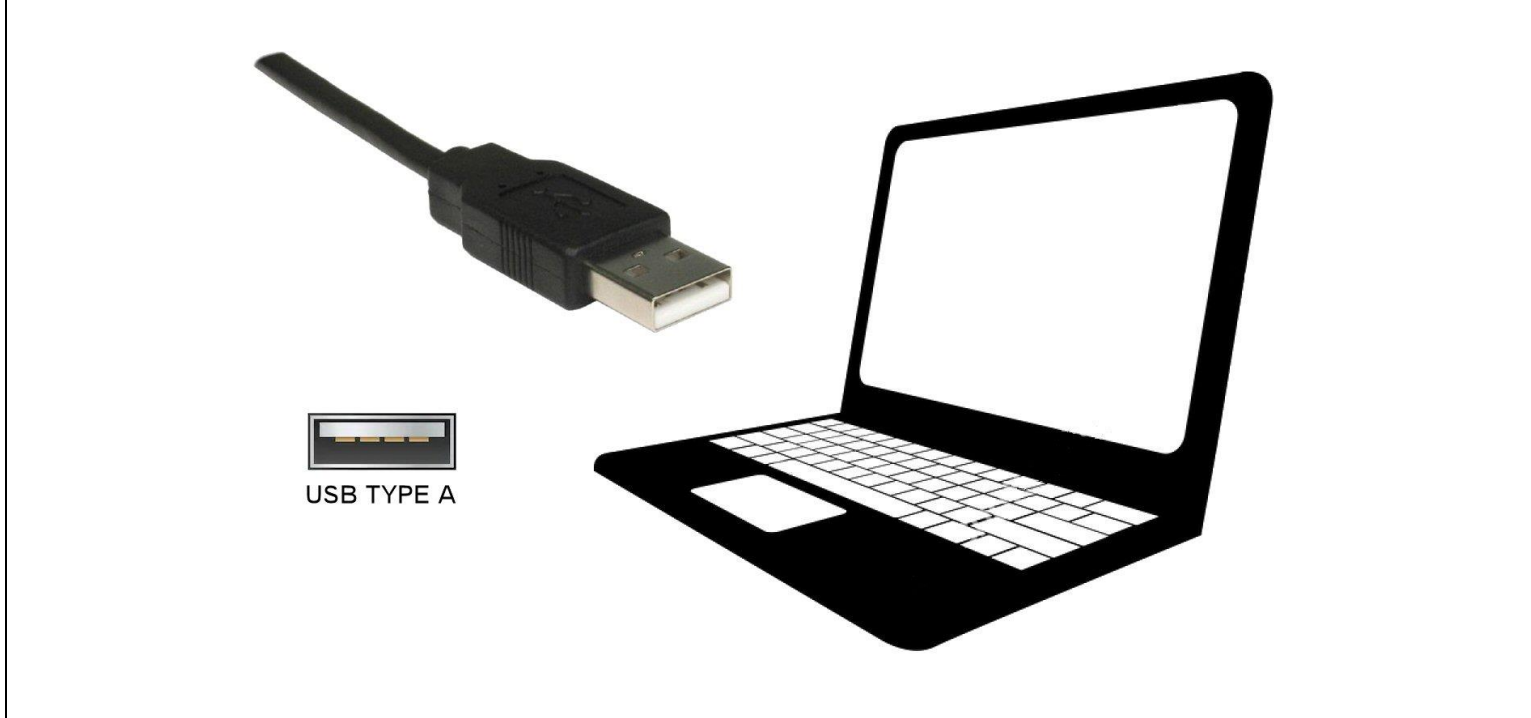


- 3.2.5.** Locate the Communication Cable A and plug the ENDURO 9-Pin end into the Communication Port of the DdL™ Caliper Tool.
(refer to 3.2.5. Table).



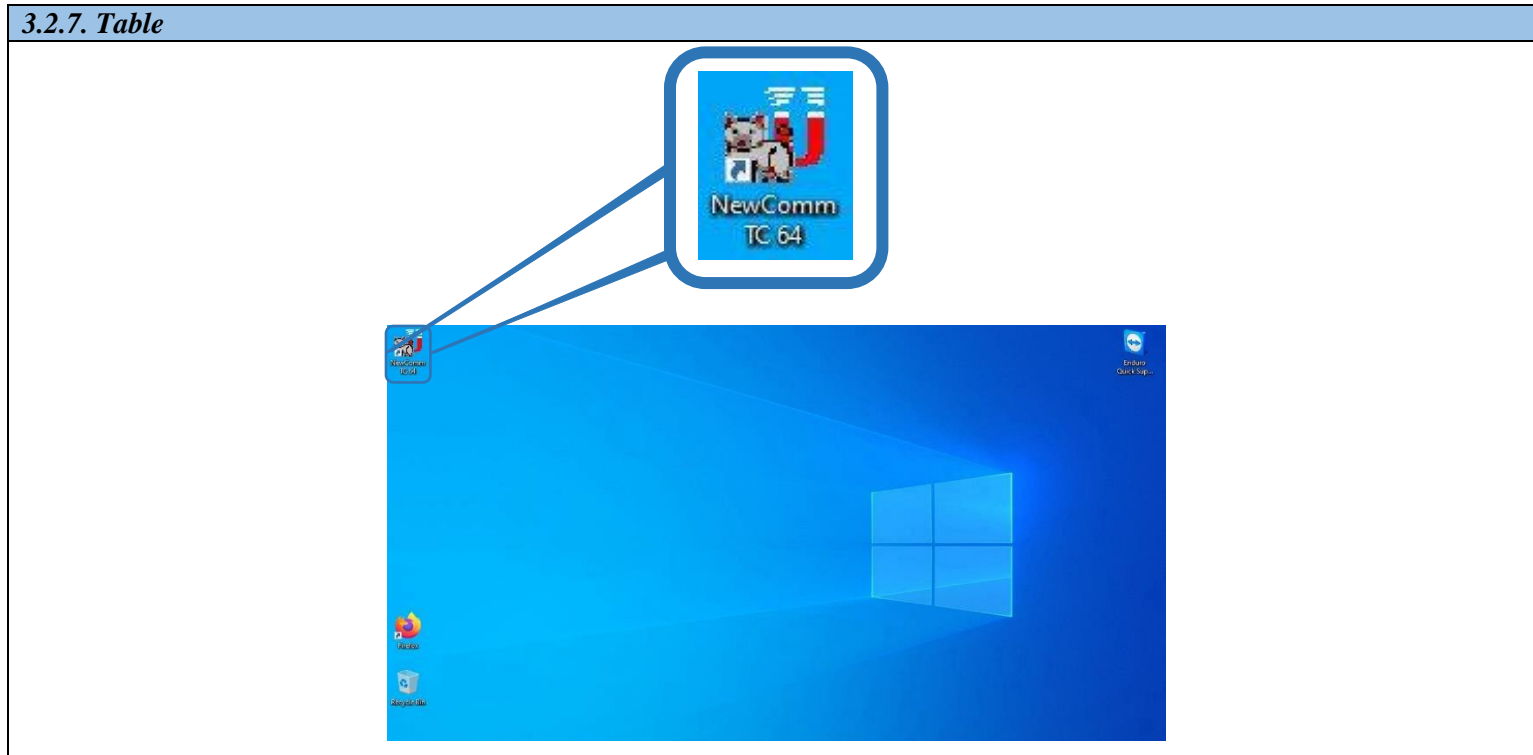
- 3.2.6.** Locate the External Hard Drive and plug the USB TYPE A end into the Laptop Computer USB Port labeled “E.H.D.”.
(refer to 3.2.6. Table)

3.2.6. Table



3.2.7. Locate the NewCommTC 64 Icon on the desktop (*refer to 3.2.7. Table*)

3.2.7.1. Double click this Icon below to open the program.

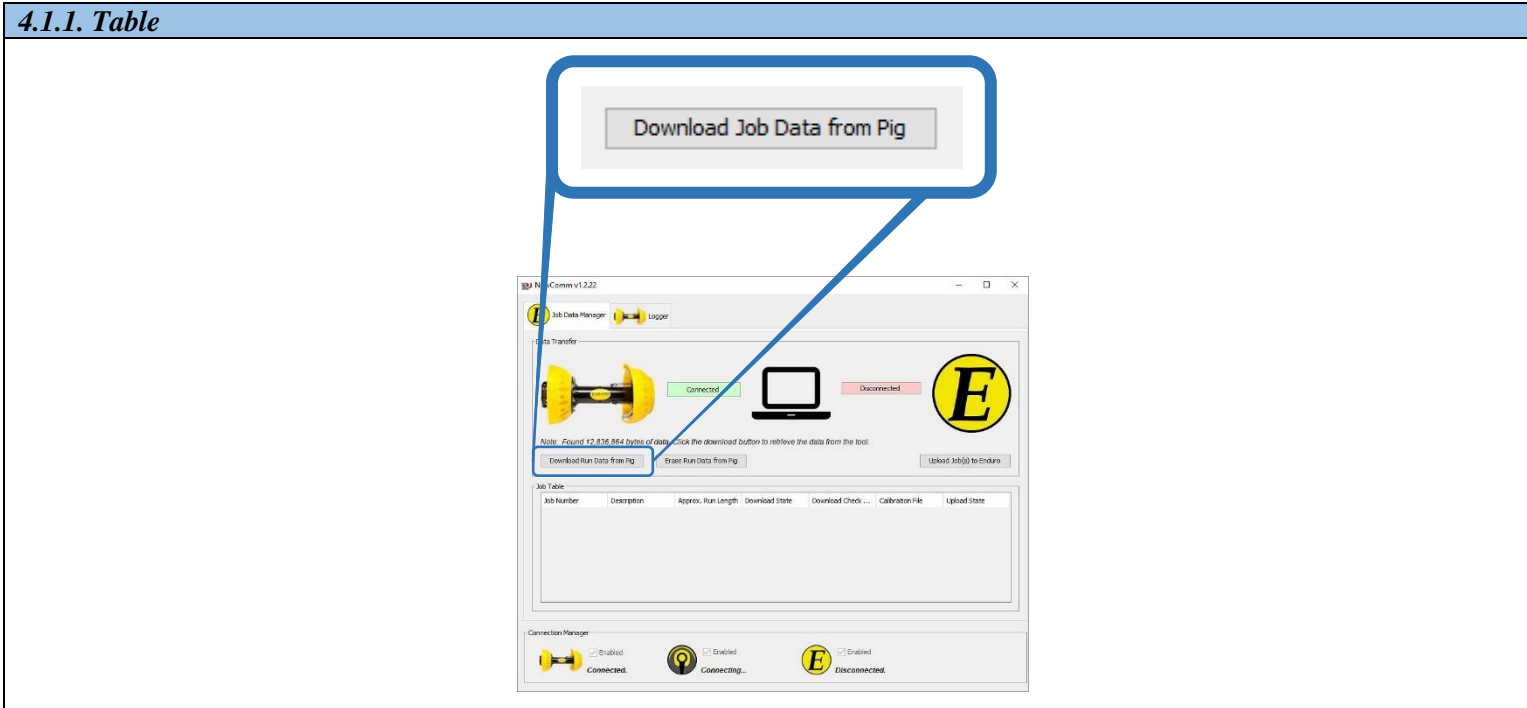


3.2.8. Communication between the DdL™ Caliper Tool and the Laptop Computer should commence.

4. **Download Dialog Window:**

4.1. Downloading the DdL™ Caliper Tool

4.1.1. Locate and click the “**Download Run Data from Pig**” button to start the download process. *(refer to 4.1.1. Table).*



4.1.2. ENDURO will assign a specific set of numbers and letters for each DdL™ Caliper Tool survey performed.

4.1.2.1. The ENDURO Job Number is assigned when the project is quoted to the CUSTOMER.

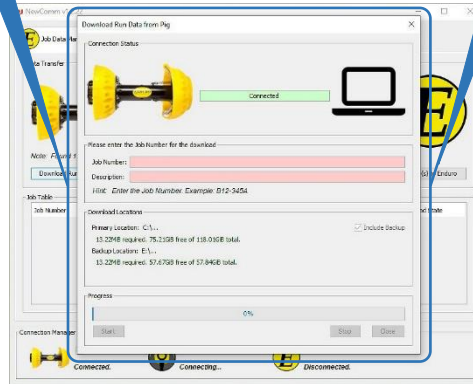
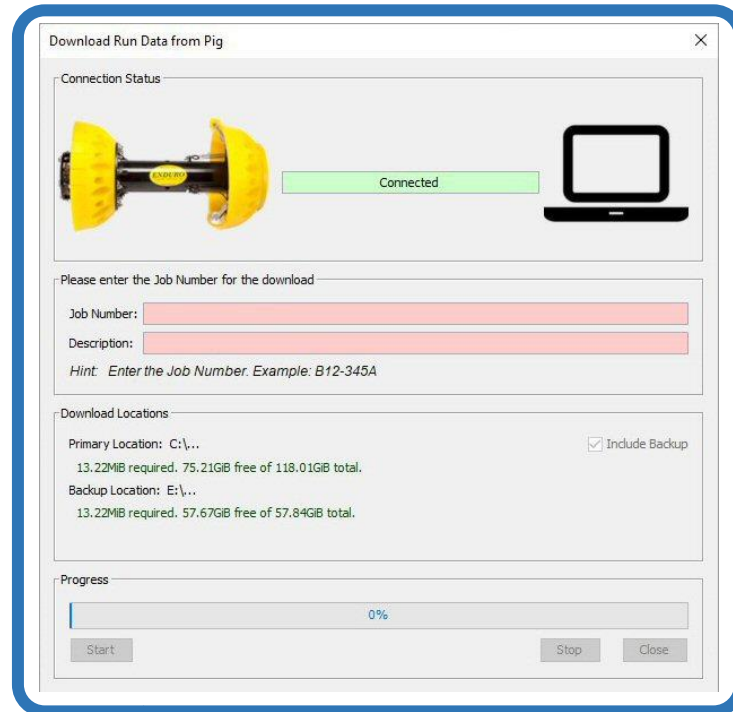
4.1.2.2. The ENDURO Job Number will be communicated to the CUSTOMER prior to the survey being performed.

4.1.2.3. Listed below are some examples that will be classified as an ENDURO Job Number.

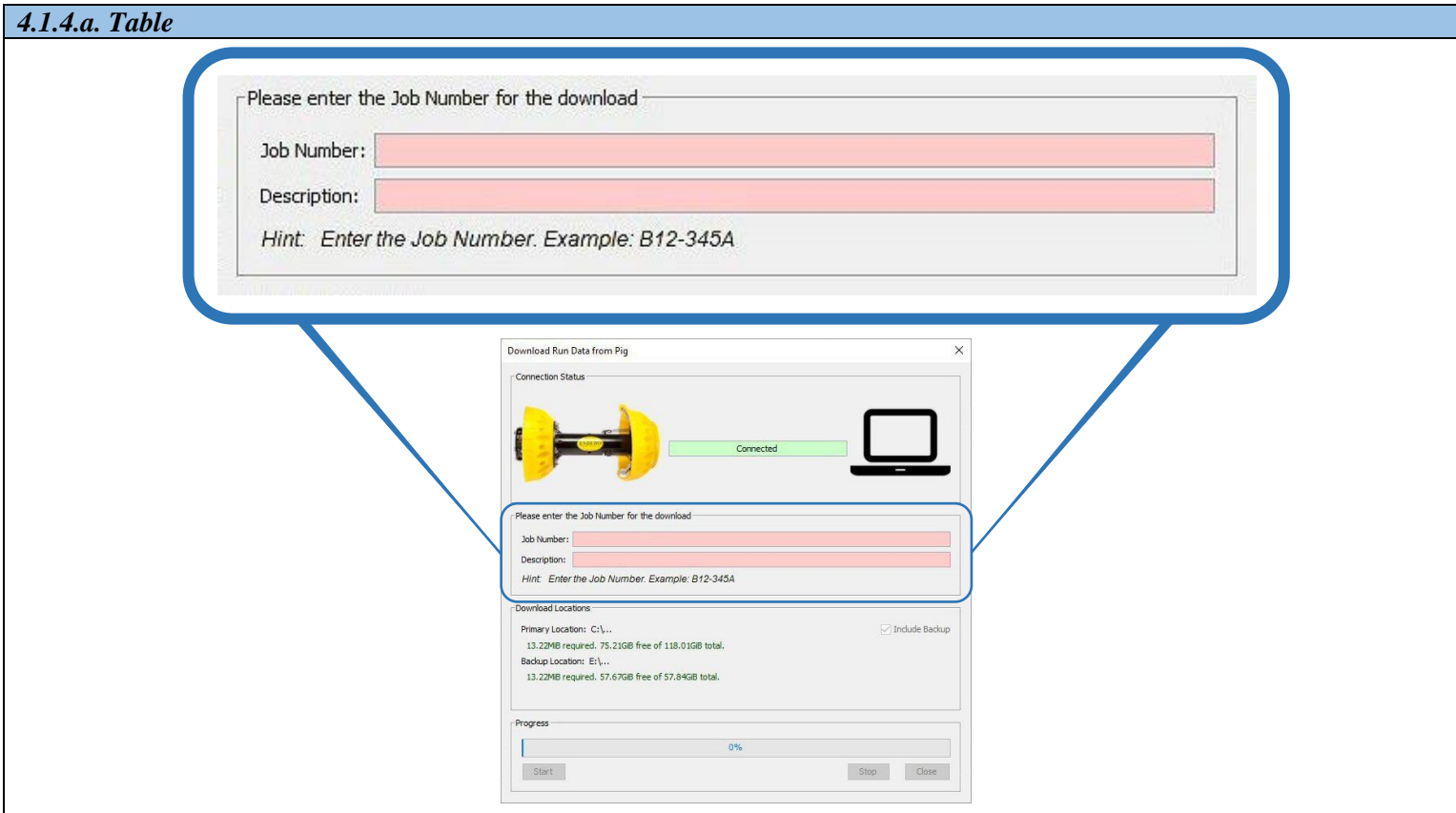
4.1.2.3.1. Ex: B20-000A, B19-000B, B20-000C, etc.

4.1.3. A Download Dialog window will open (refer to 4.1.3. Table).

4.1.3. Table



- 4.1.4. Enter the ENDURO Job Number and a brief Description (*refer to 4.1.4.a. Table & 4.1.4.b. Table*).
- 4.1.4.1. Manual insertion of the Job Number and Description must be typed into this Text Field by the CUSTOMER.
- 4.1.4.2. Dynamic guidance, or hints, for entering a correctly formed Job Number and Description (Line ID) are provided immediately below the Text Field.
 - 4.1.4.2.1. The background of the Text Field is **RED** when the entered text does NOT match ENDURO’s Job Number and Description scheme.



4.1.4.2.2. The background of the Text Field is **GREEN** when the entered text does match ENDURO's Job Number scheme.

4.1.4.2.2.1. CUSTOMER can insert their Line ID within this Text field for Description.

4.1.4.2.2.2. The Description Text field **MUST** contain a minimum of 8 characters.

4.1.4.b. Table

Please enter the Job Number for the download:

Job Number: B00-000A

Description: Insert Line ID Here (minimum 8 characters)

Download Run Data from Pig

Connection Status

Connected

Please enter the Job Number for the download:

Job Number: B00-000A

Description: Insert Line ID Here (minimum 8 characters)

Download Locations

Primary Location: C:\pd\data\2000\B000\A\B00-000A.mff Include Backup
13.21MB required, 75.20GB free of 118.01GB total.

Backup Location: E:\pd\data\2000\B000\A\B00-000A.mff
13.21MB required, 57.66GB free of 57.84GB total.

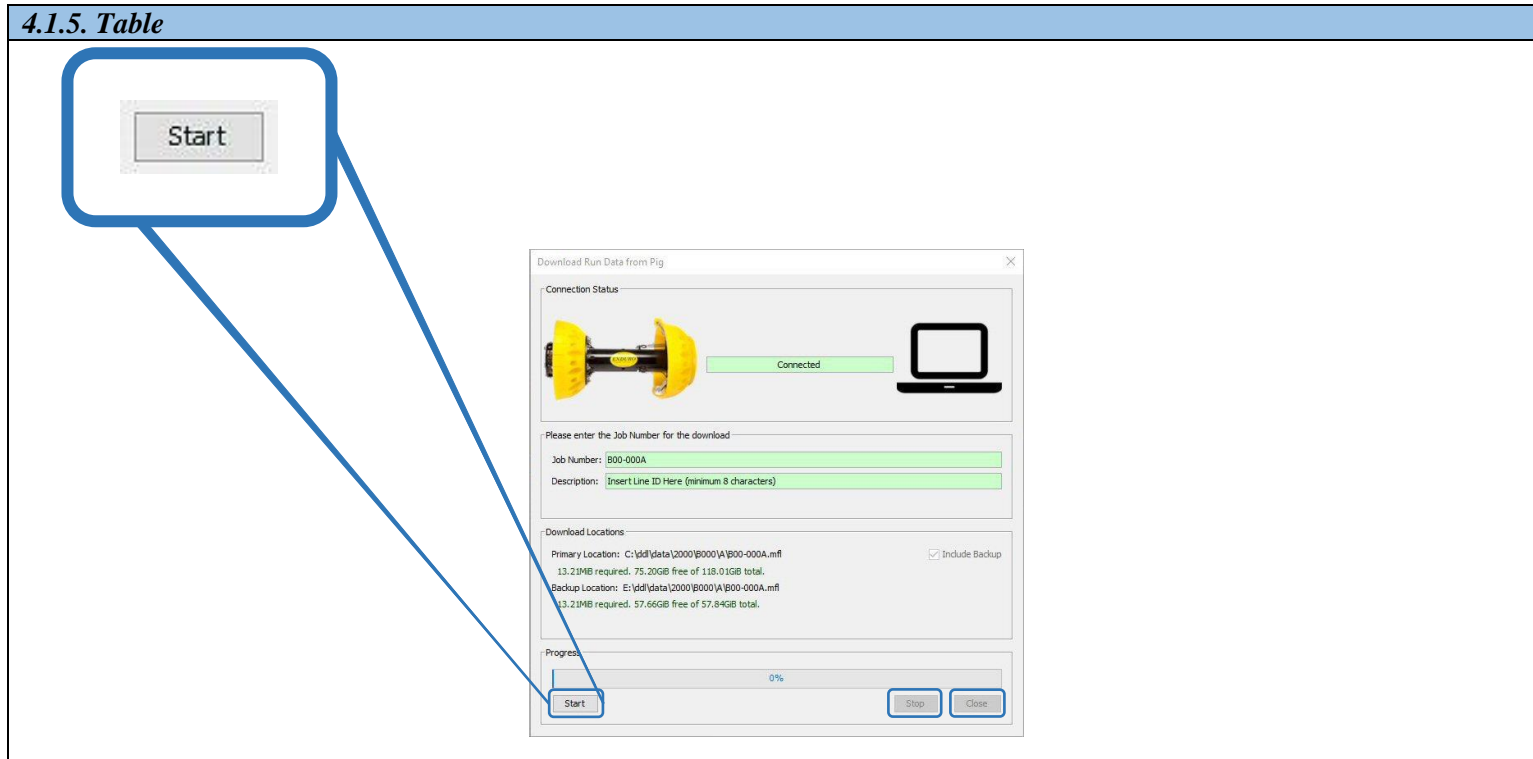
Progress

0%

Start Stop Close

4.1.5. Click the Start button. (*refer to 4.1.5. Table*).

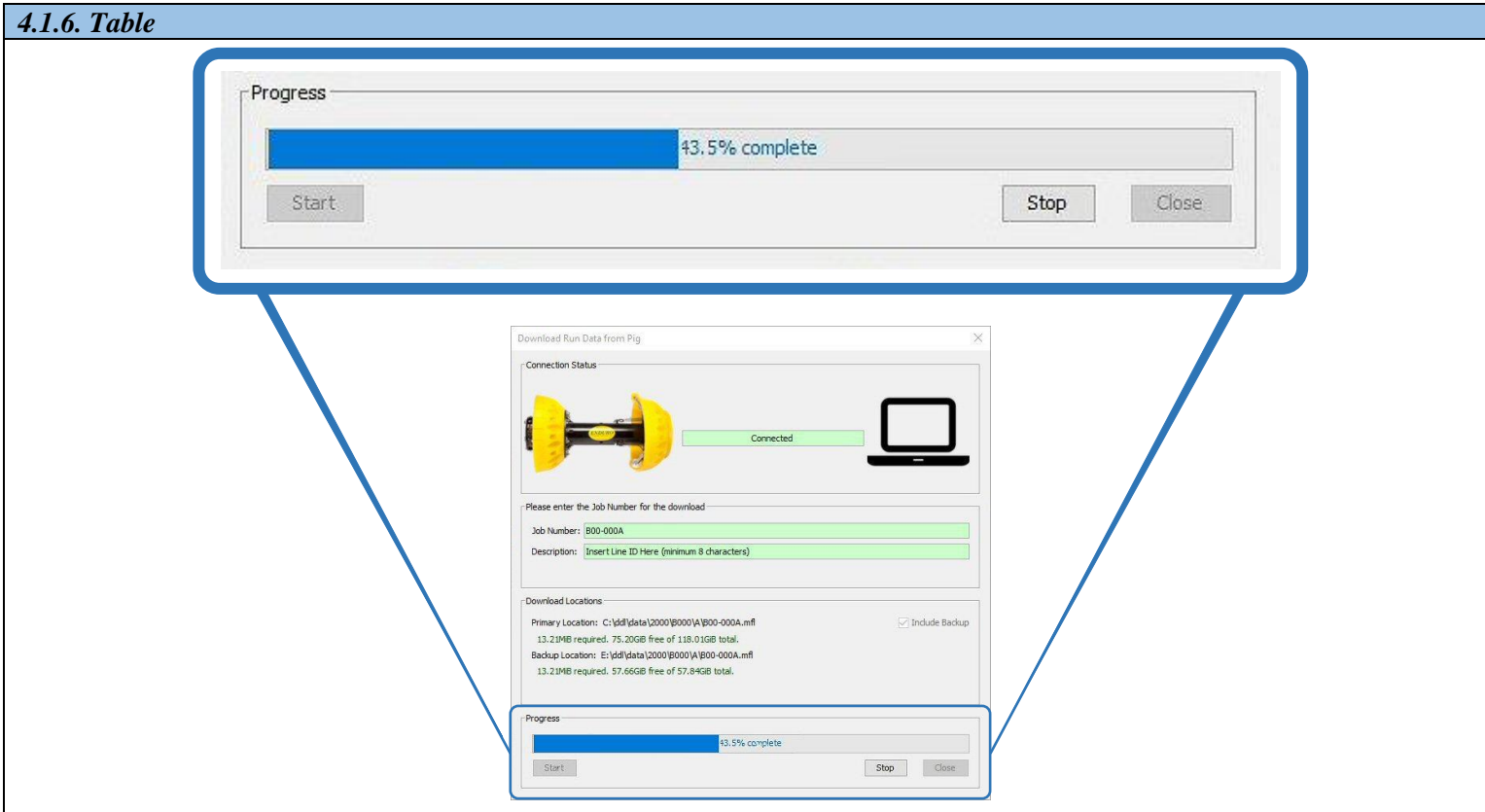
4.1.5.1. The Download process and subsequent checks can take anywhere from several minutes to approximately an hour, depending on the file size / line lengths.



4.1.6. Progress Bar (refer to 4.1.6. Table).

4.1.6.1. This will give the user feedback regarding the download progress from the DdL™ Caliper Tool to the Laptop Computer / External Hard Drive and how much remains.

4.1.6.1.1. 100% = Download Complete



4.1.7. Verify that the Download has completed. (refer to 4.1.7. Table).

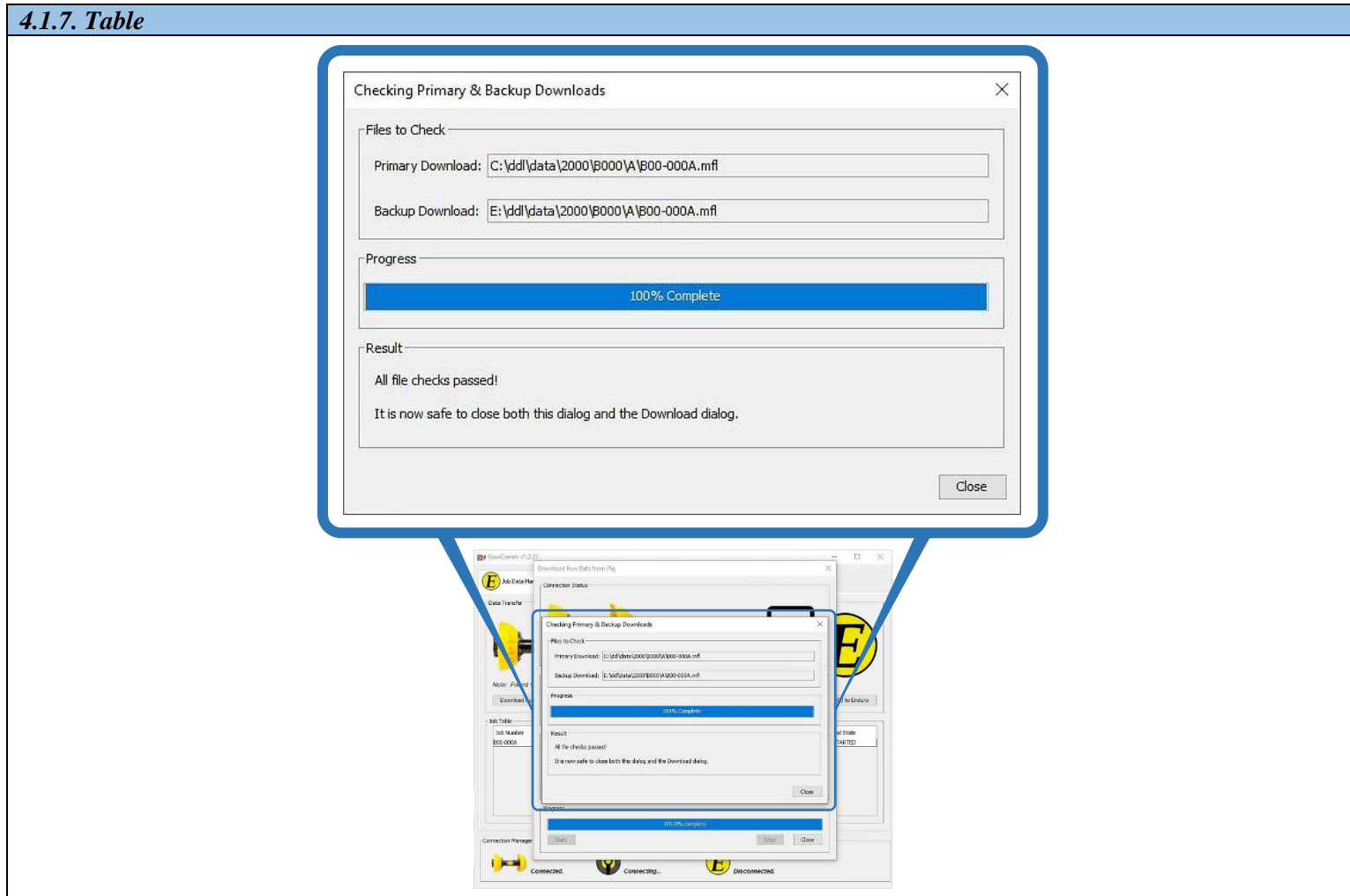
4.1.7.1. Upon completion of the download, the Result box will display any issues encountered during the download process.

4.1.7.1.1. Re-Download the DdL™ Caliper Tool if there are either incomplete or failed Download messages.

4.1.7.1.1.1. Contact ENDURO Operations for further assistance.

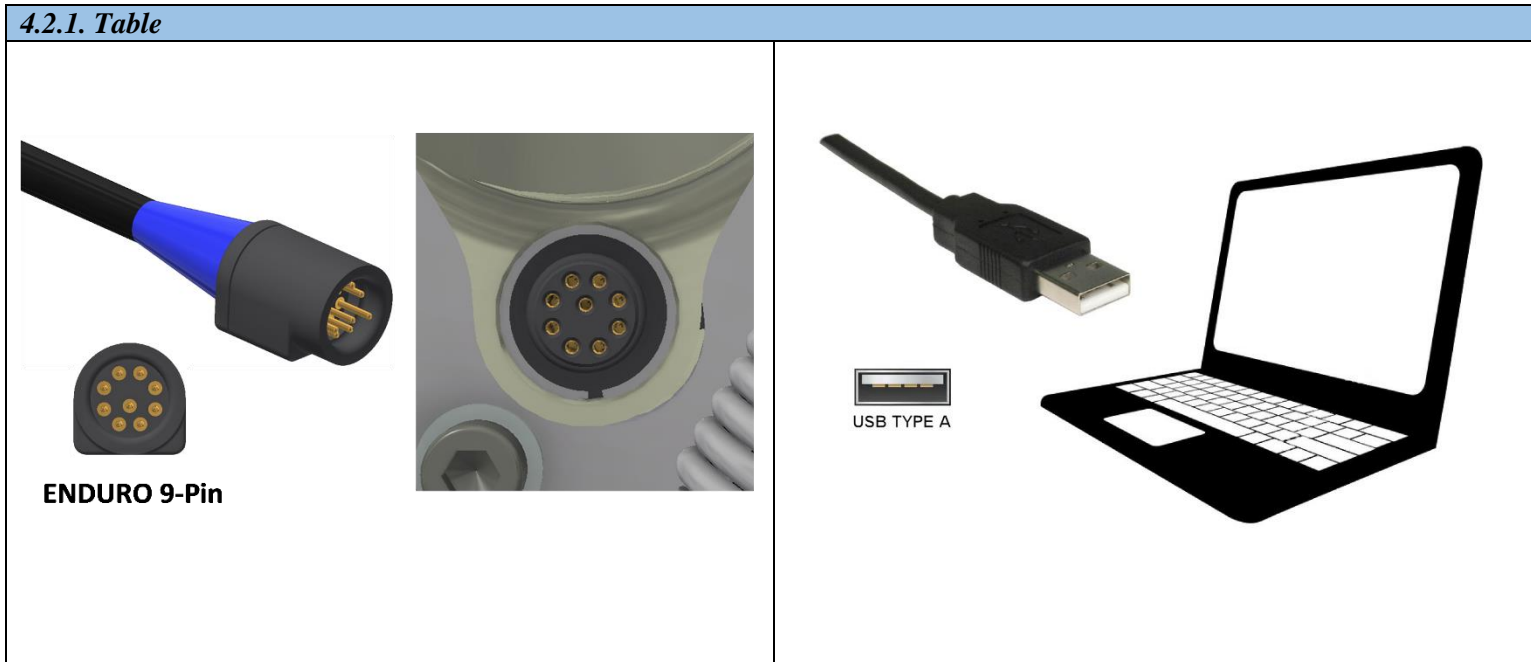
4.1.7.1.2. If a successful download has been obtained, click “Close” to close window.

4.1.7. Table



4.2. Powering Down the DdL™ Caliper Tool

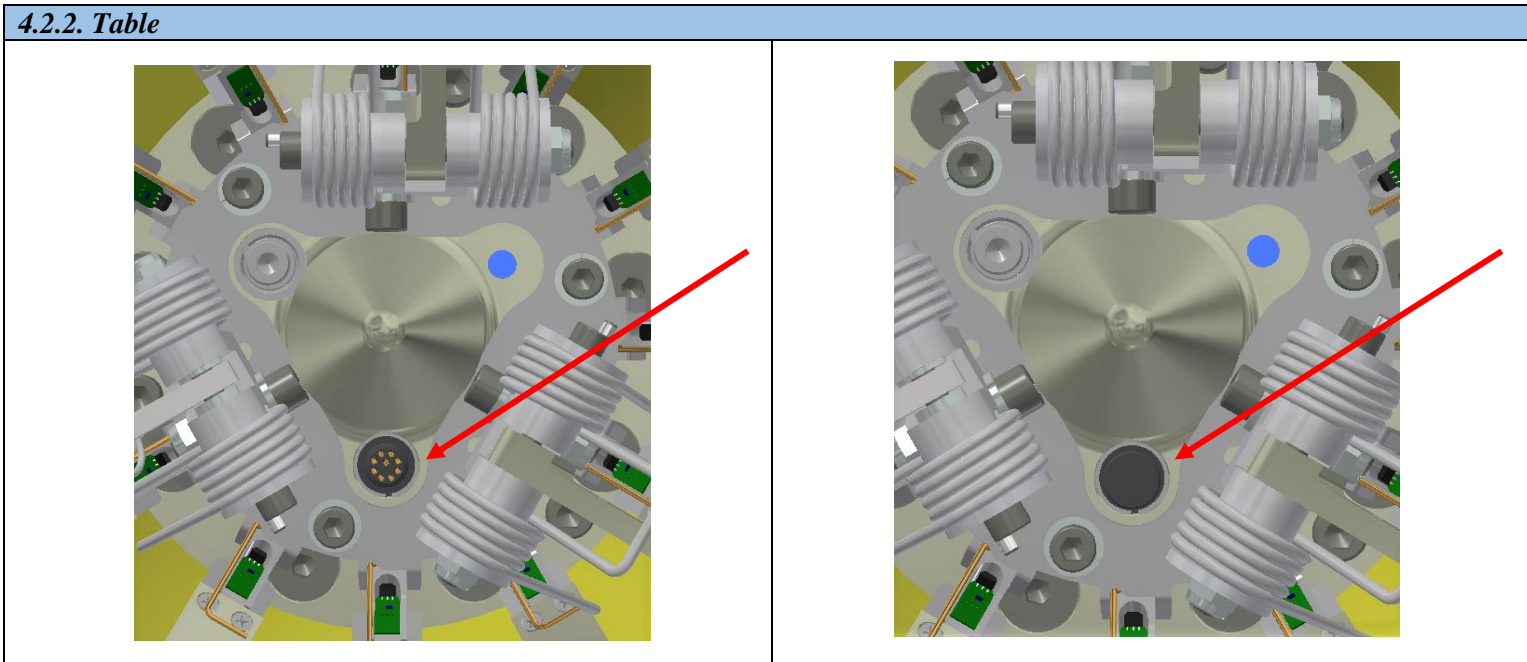
4.2.1. Unplug the Communication Cable A from the DdL™ Caliper Tool and from the Laptop Computer. (*refer to 4.2.1. Table*)



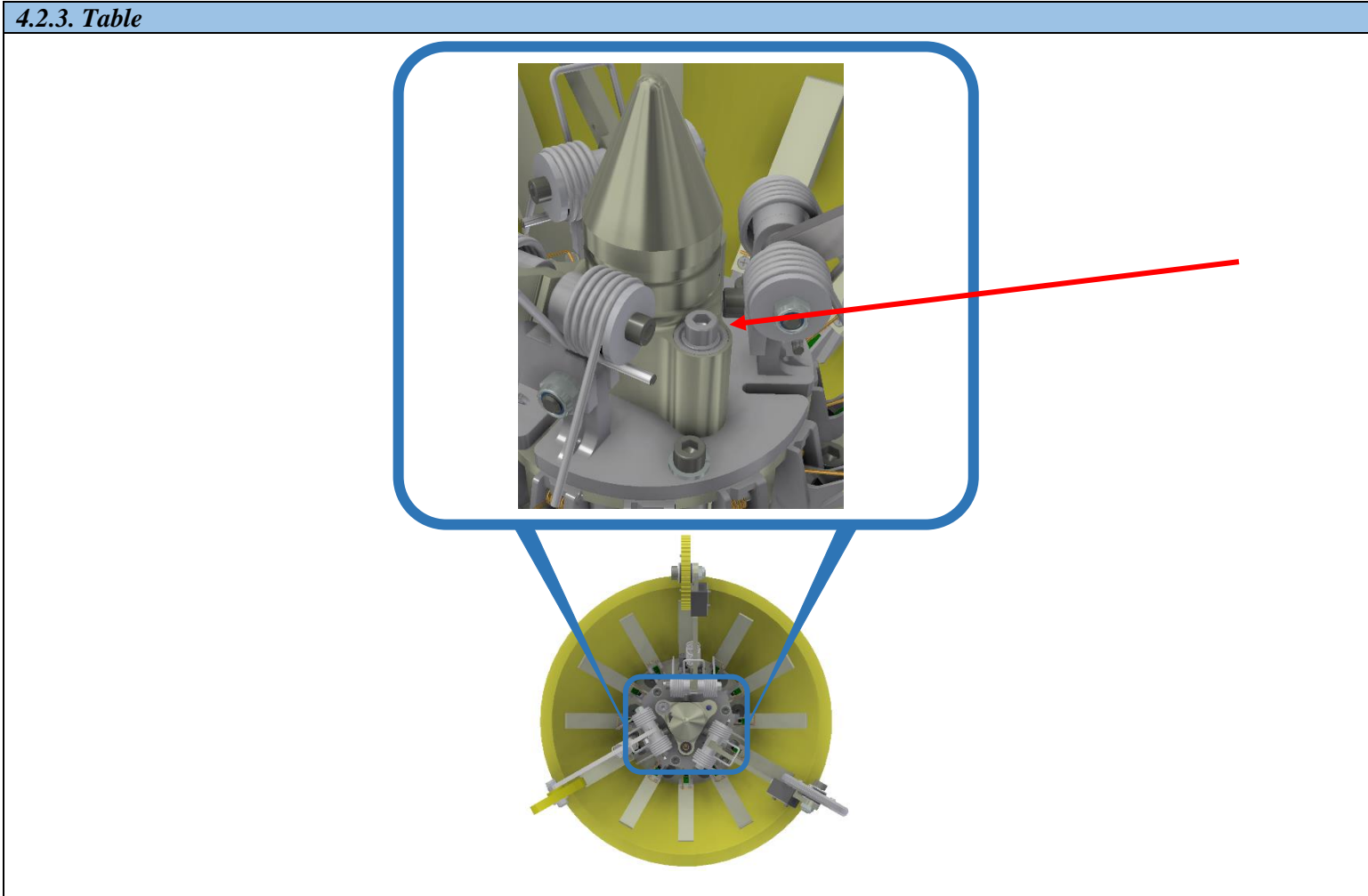
4.2.2. Replace the protective cover on the Communication Port at the rear of the DdL™ Caliper Tool by pushing the cap until seated fully.
(refer to 4.2.2. Table).

4.2.2.1. **NOTICE:** It is very important that the protective cover is replaced and seated fully.

4.2.2.1.1. This will help ensure that nothing will get into the Communication Port during the survey, causing damage to the DdL™ Caliper Tool.

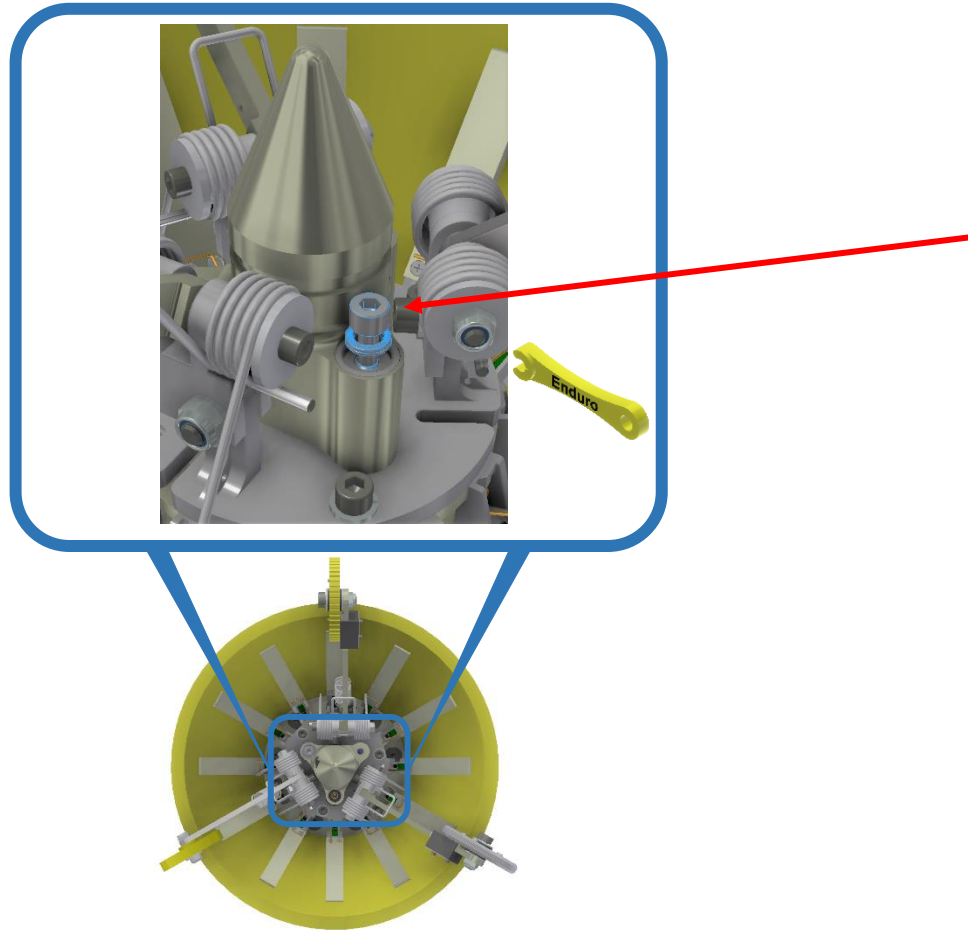


4.2.3. Locate the Power Bolt at the Rear of the DdL™ Caliper Tool (*refer to 4.2.3. Table*).

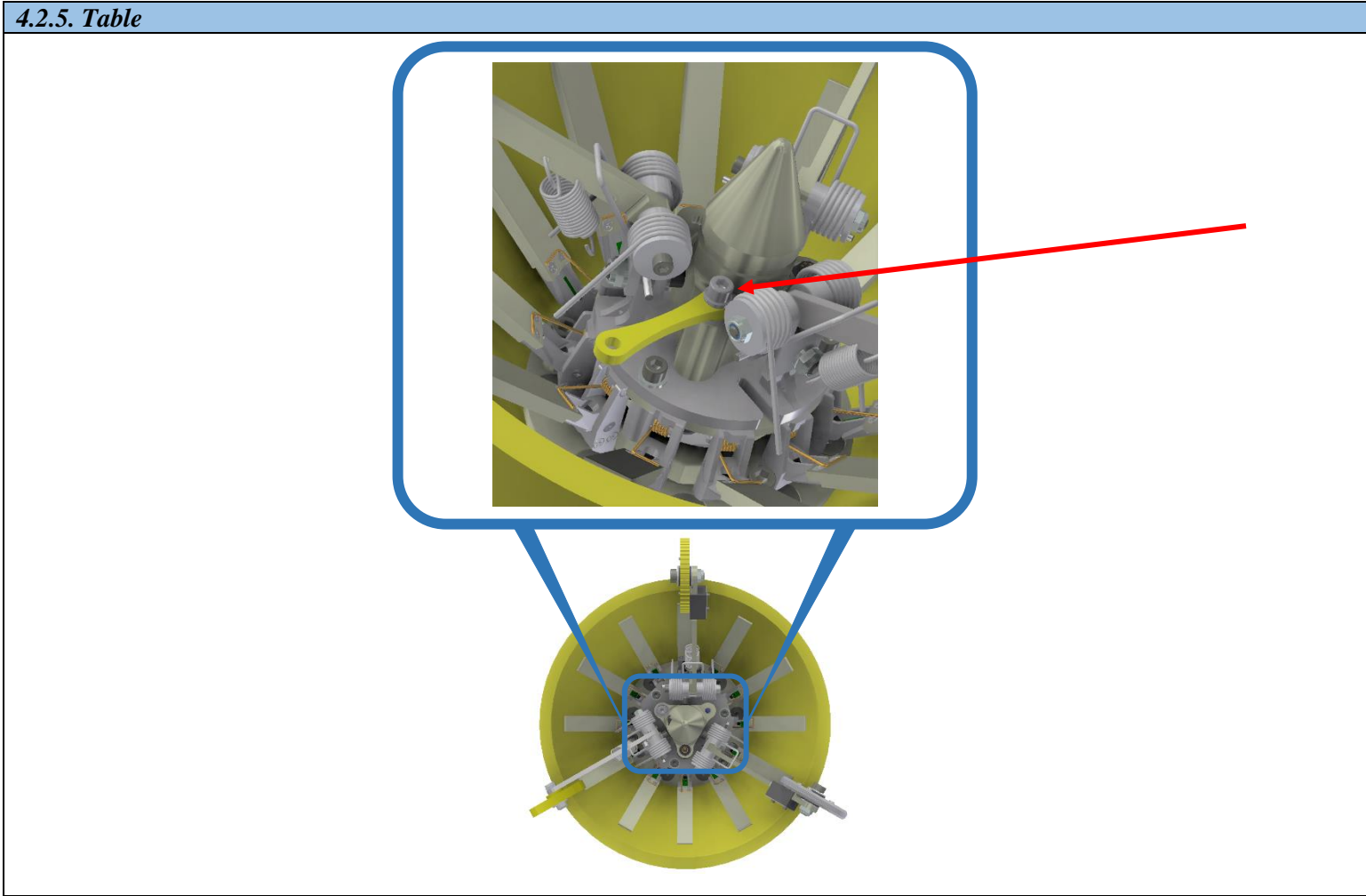


- 4.2.4. With a 3/16" Allen Wrench, rotate the Power Bolt counterclockwise until removed far enough to reinsert the Urethane spacer (refer to 4.2.4. Table).

4.2.4. Table



4.2.5. Fully seat the Power Bolt with the Urethane Spacer against the Odometer Housing (*refer to 4.2.5. Table*).



4.2.6. Once disconnected, the tool is powered down.

4.2.7. When the DdL™ Caliper Tool is not in use, keep the tool powered down by verifying that the Urethane spacer is secure between the Power Bolt and Odometer Housing, and by also verifying that there is no Blue Light illuminated on the Odometer Housing.

5. **Upload Dialog Window:**

5.1. **Uploading the Data to ENDURO Headquarters will be required:**

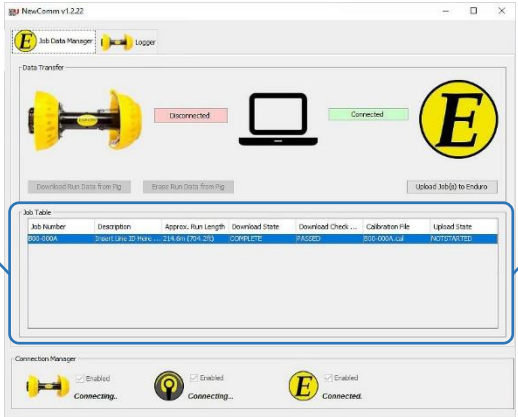
- 5.1.1. CUSTOMER will need to upload the data to ENDURO Headquarters at their earliest convenience, preferably by the end of the day for any run.
- 5.1.2. CUSTOMER must connect the Laptop Computer to the internet, either by Wi-Fi or Ethernet Cable.
- 5.1.3. Select the Job to send to ENDURO Headquarters for further inspection.
 - 5.1.3.1. Click the “Upload Job Data to Enduro” button to start the transfer (further instructions listed below)
- 5.1.4. It is not necessary to upload a Job after each download.
 - 5.1.4.1. Jobs can be stored on the Laptop Computer and uploaded as a batch after all runs are complete, or at any time in-between.

5.1.5. Left click on row to select the Downloaded Job to be sent to ENDURO Headquarters for further inspection (*refer to 5.1.5. Table*).

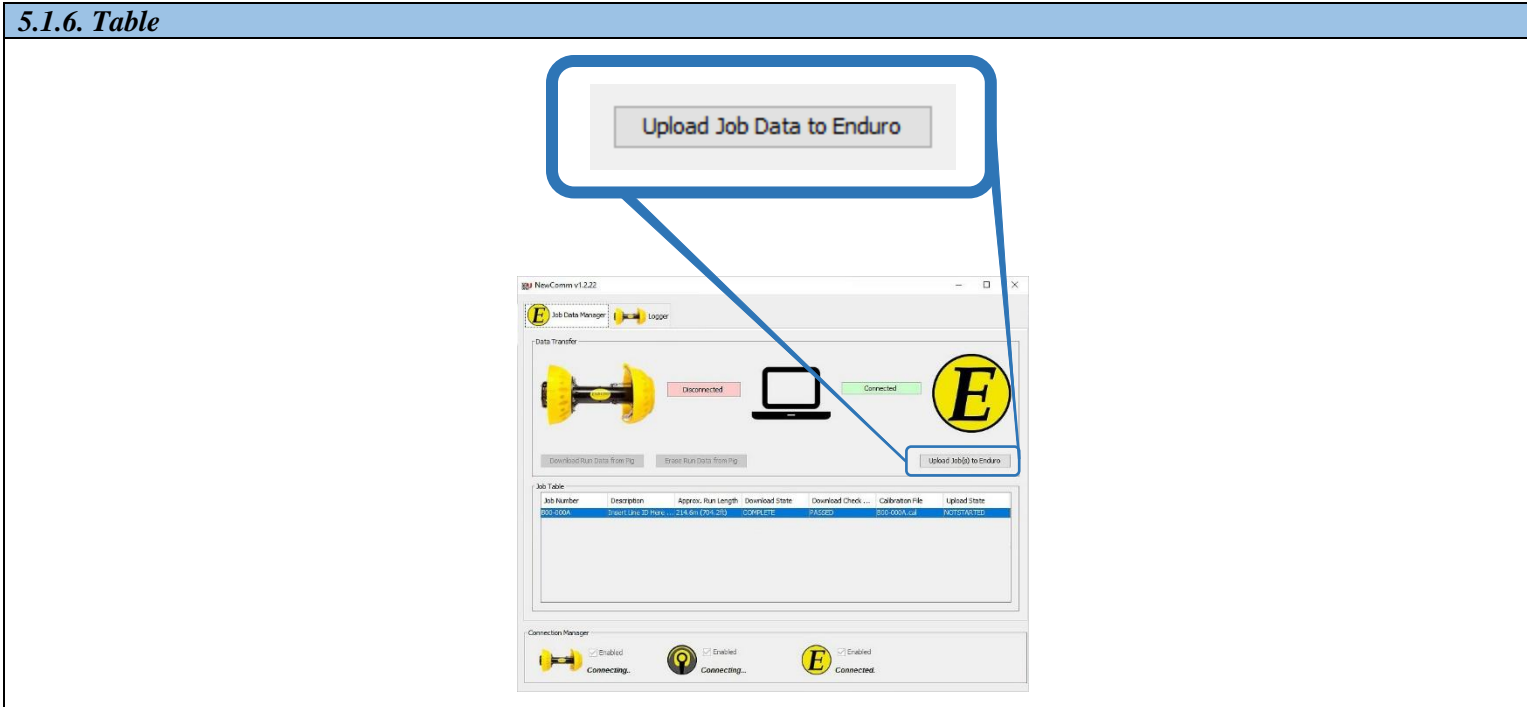
5.1.5.1. If multiple jobs have been downloaded, multiple selections can be made for the Upload process.

5.1.5. Table

Job Number	Description	Approx. Run Length	Download State	Download Check ...	Calibration File	Upload State
B00-000A	Insert Line ID Here ...	214.6m (704.2ft)	COMPLETE	PASSED	B00-000A.cal	NOTSTARTED

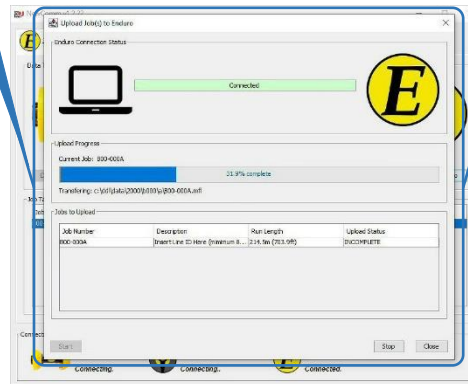
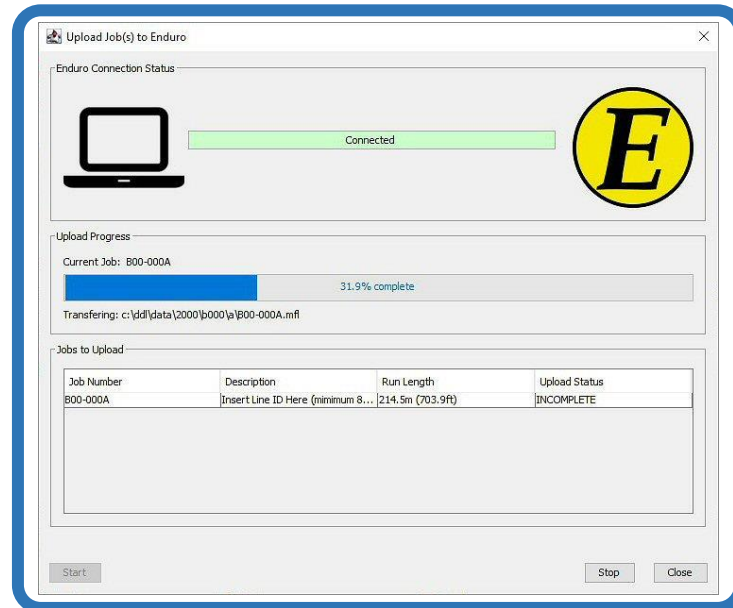


5.1.6. Locate and click the “Upload Job Data to Enduro” button to start the upload process. (refer to 5.1.6 Table).



5.1.7. An Upload Dialog window will open (refer to 5.1.7. Table).

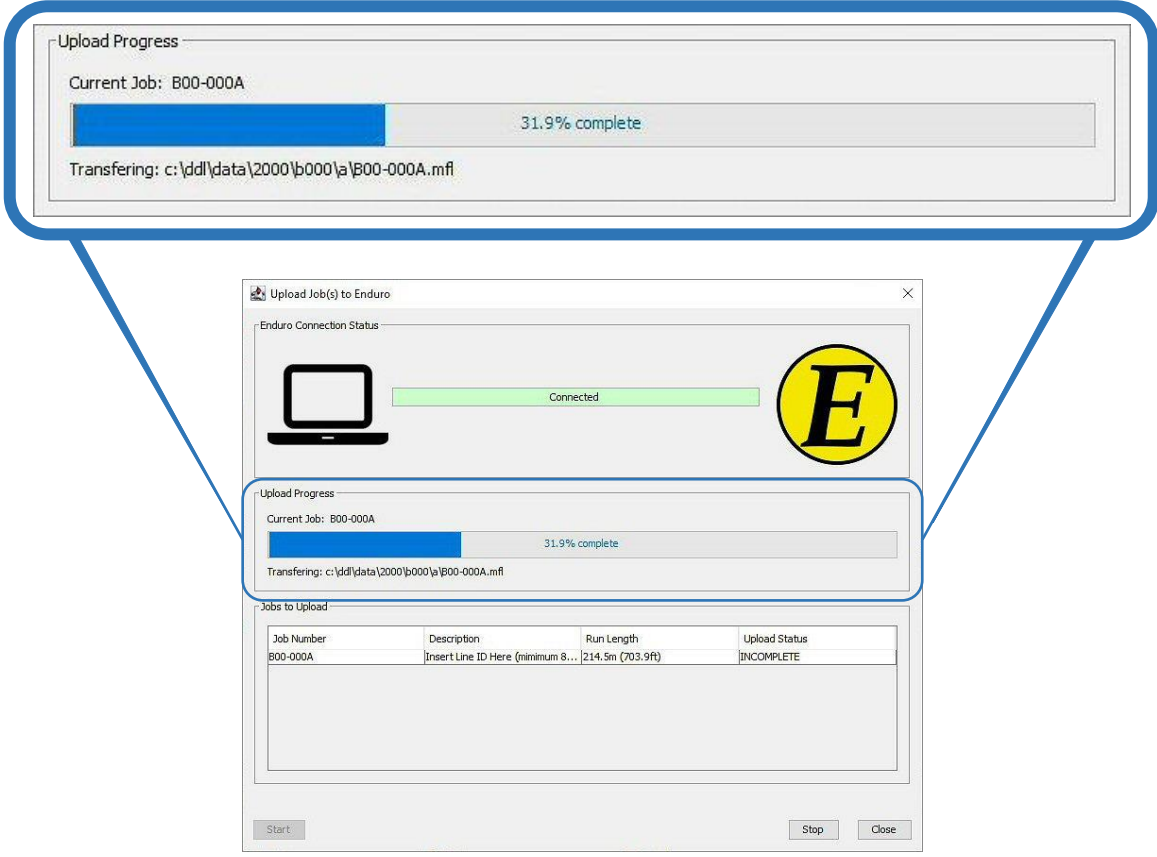
5.1.7. Table



5.1.8. Upload Progress Bar (refer to 5.1.8. Table).

5.1.8.1. This will give the user feedback regarding the upload progress from the Laptop Computer to ENDURO Headquarters and how much progress remains.

5.1.8. Table



The screenshot displays the software interface for uploading data. A callout box highlights the 'Upload Progress' section, which shows:

- Current Job: B00-000A
- Progress bar: 31.9% complete
- Transferring: c:\ddl\data\2000\b000\A\B00-000A.mfl

The main window, titled 'Upload Job(s) to Enduro', includes:

- 'Enduro Connection Status' section with a laptop icon, a green 'Connected' bar, and the ENDURO logo.
- A smaller 'Upload Progress' section identical to the callout box.
- 'Jobs to Upload' table:

Job Number	Description	Run Length	Upload Status
B00-000A	[Insert Line ID Here (minimum 8...]	214.5m (703.9ft)	INCOMPLETE

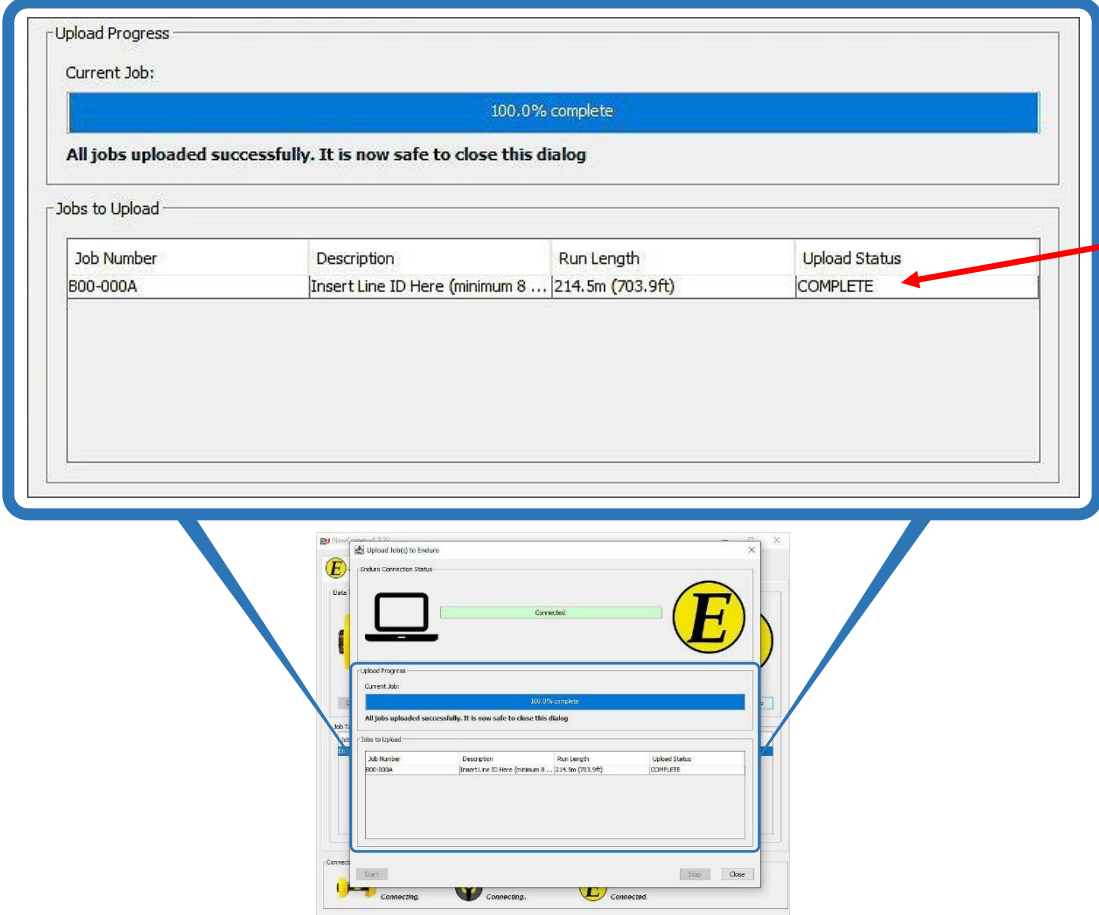
Buttons for 'Start', 'Stop', and 'Close' are located at the bottom of the window.

5.1.9. Jobs Upload Complete (refer to 5.1.9. Table).

5.1.9.1. Once the upload to ENDURO Headquarters has successfully completed, the Progress Bar will show “100.0% complete” and the upload status will change to “COMPLETE”.

5.1.9.1.1. 100% = Upload Complete

5.1.9. Table



Upload Progress

Current Job:

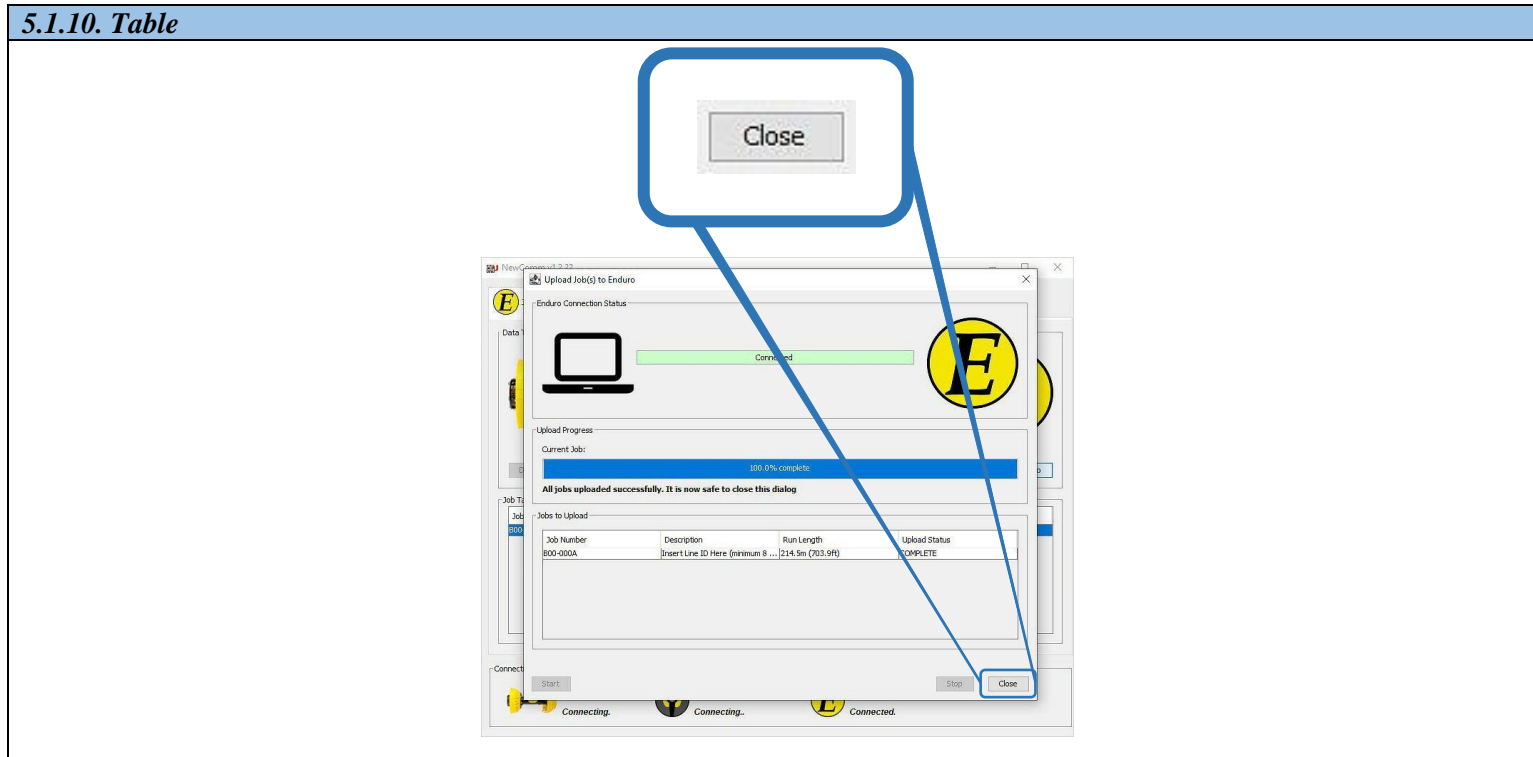
100.0% complete

All jobs uploaded successfully. It is now safe to close this dialog

Jobs to Upload

Job Number	Description	Run Length	Upload Status
B00-000A	[Insert Line ID Here (minimum 8 ...]	214.5m (703.9ft)	COMPLETE

5.1.10. Once a successful upload has been completed, click the “Close” button on the Upload Dialog window (*refer to 5.1.10. Table*).



5.1.11. Proceed to the next steps after all upload processes have been completed.

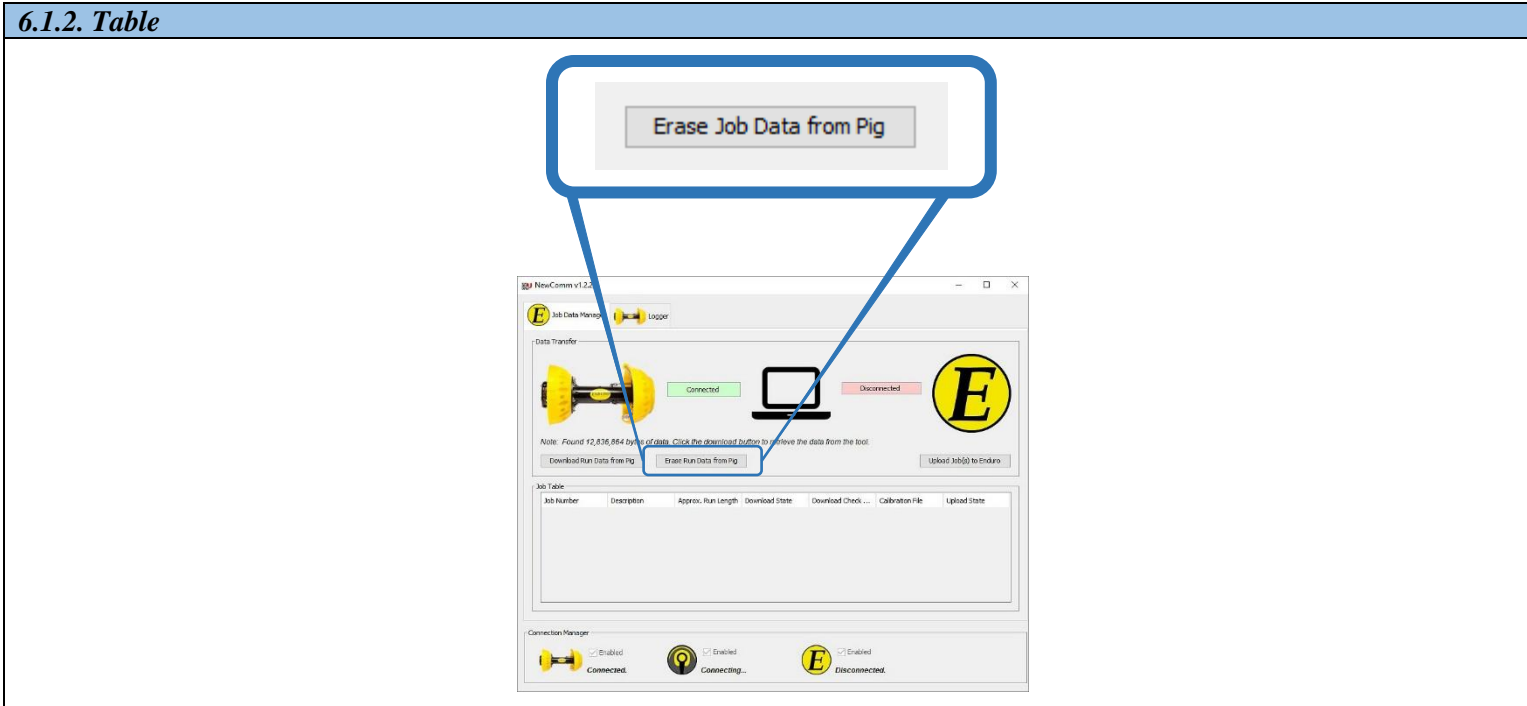
- 5.1.11.1.** Shut down any opened programs that may still be opened on the Laptop Computer.
- 5.1.11.2.** Power down the Laptop Computer to conserve the battery life.
- 5.1.11.3.** Unplug the External Hard Drive from the Laptop Computer.
- 5.1.11.4.** Return Laptop Computer and all its components to the Pelican Case until required again.

6. **Erase Data from DdL™ Caliper Tool:**

6.1. Erase Challenge Dialog

6.1.1. **WARNING:** DO NOT perform this task unless instructed by ENDURO directly.

6.1.2. Click the “Erase Job Data from Pig” button. (refer to 6.1.2. Table).



6.1.3. A confirmation dialog window will pop up. (refer to 6.1.3. Table).

6.1.3.1. This will require the user to manually type the word “erase” before the NewCommTC 64 program will proceed.

6.1.3.1.1. The “erase” button will only be enabled when the correct word has been typed into the dialog window.

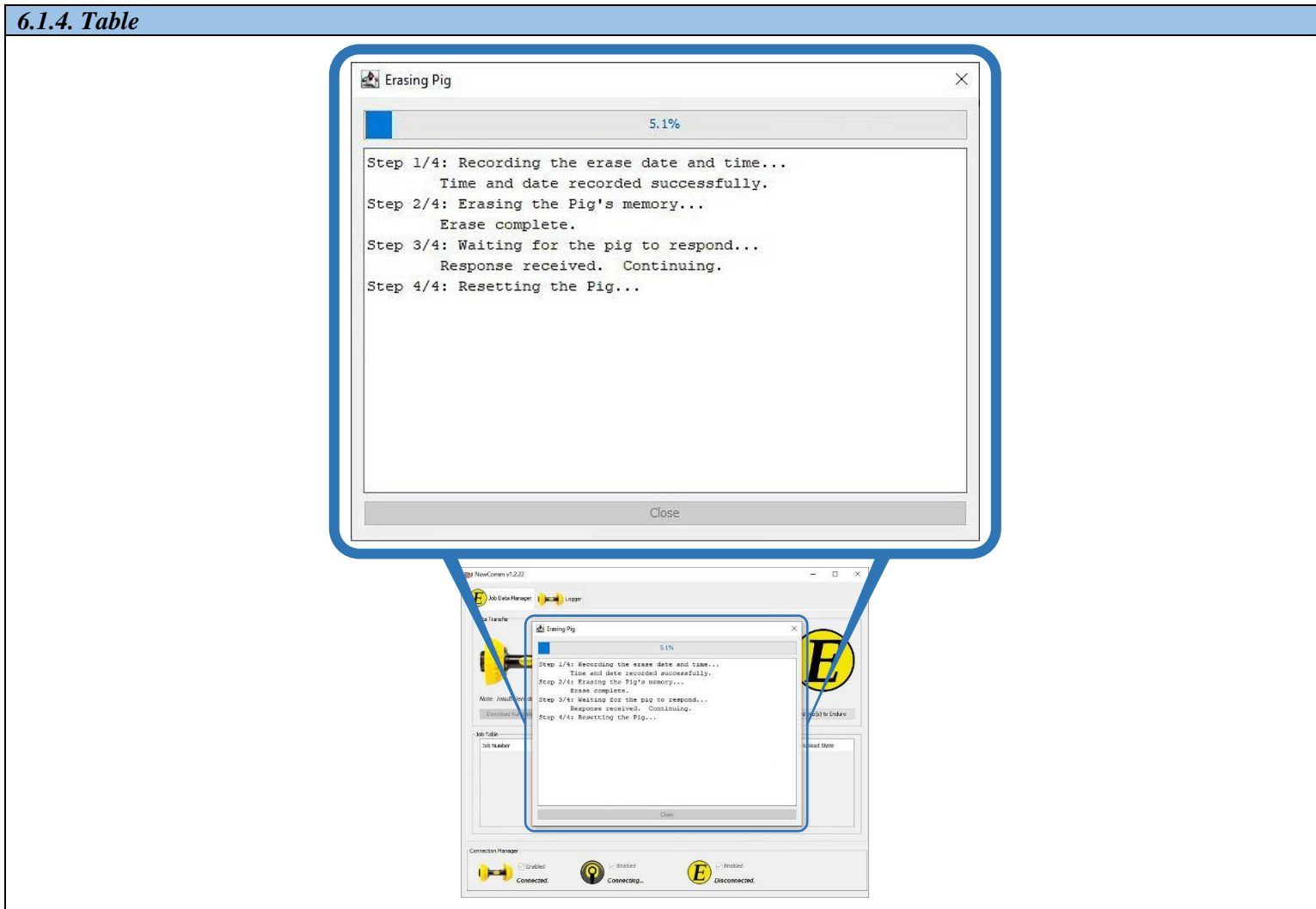


6.1.4. An Erasing Pig window will open. (refer to 6.1.4. Table).

6.1.4.1. The window indicates progress during the erase process.

6.1.4.1.1. This screen will give feedback to the user during and after the erase process.

6.1.4. Table



6.1.5. Erase Successful (refer to 6.1.5. Table).

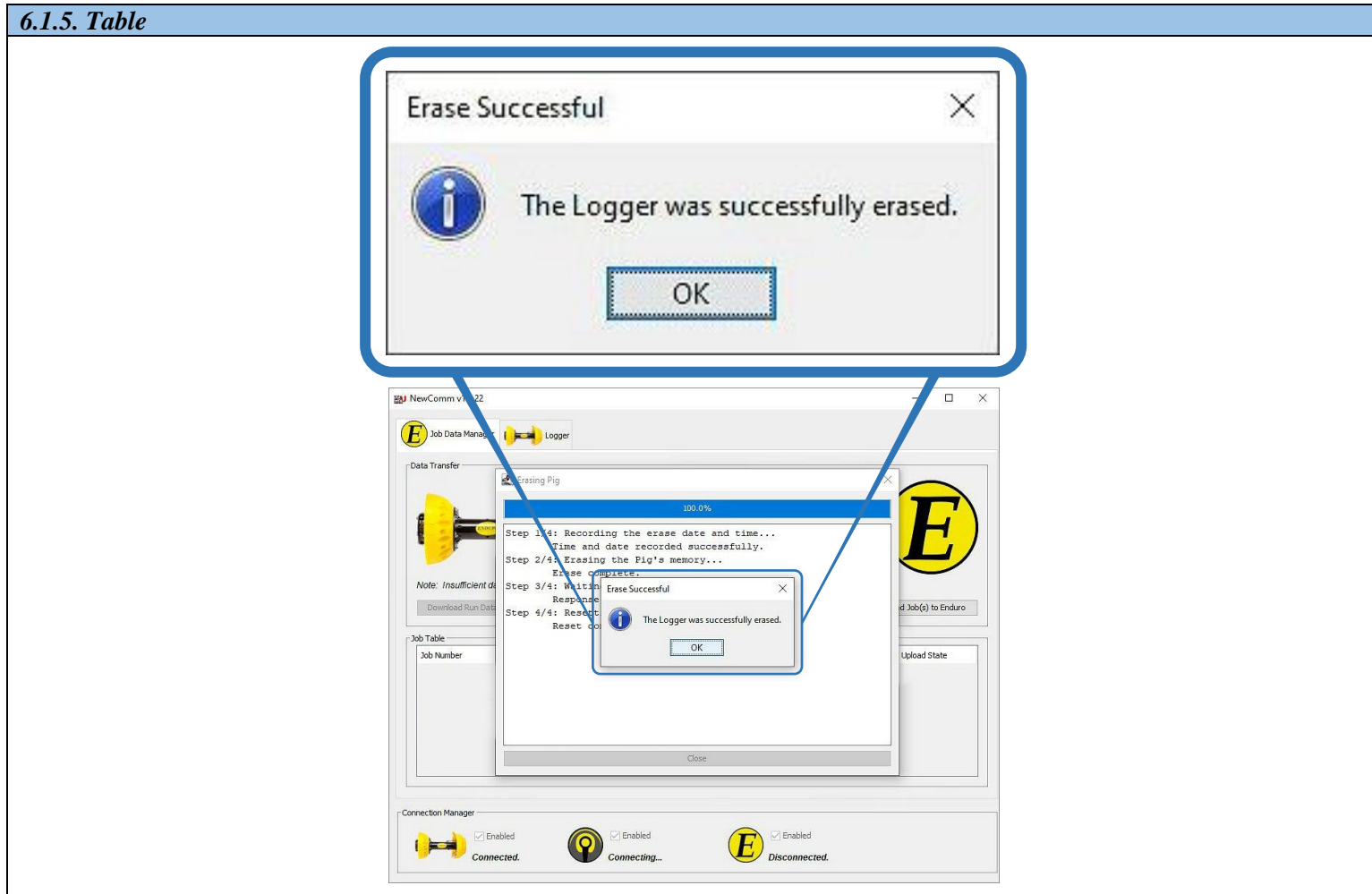
6.1.5.1. This window will open once the Erase process has completed.

6.1.5.2. Click “OK” and the Erase windows will close.

6.1.5.3. A hard reboot may be required of the DdL™ Caliper Tool once the Erase process has completed.

6.1.5.3.1. Powering the DdL™ Caliper Tool down and back up will accomplish the hard reboot.

6.1.5. Table



7. **Shipping DdL™ Caliper Tool back to ENDURO:**

7.1. **Packing Shipment / Logistics:**





- 7.1.1. CUSTOMER must thoroughly clean the DdL™ Caliper Tool and all Support Equipment before packing the equipment back into the shipping container.
 - 7.1.1.1. Power washing equipment may be used ONLY if the end of the water outlet is kept at a minimum of 2 feet of distance between the DdL™ Caliper Tool and its sensitive equipment (Sensor / Wiring).
 - 7.1.1.1.1. Other areas of the DdL™ Caliper Tool (Urethane Cups, Steel Body, Brushes, etc.) are not as susceptible to damage from the power washing equipment and a minimum distance will not be required.
 - 7.1.1.1.2. A mild soap and / or degreaser can also be used to aid in cleaning the DdL™ Caliper Tool.
 - 7.1.1.2. ENDURO recommends after thorough cleaning of the DdL™ Caliper Tool, wrapping the tool up in a thick plastic.
 - 7.1.1.2.1. This will help reduce the potential of any contaminants leaking during transportation back to ENDURO.
 - 7.1.1.2.2. IF the DdL™ Caliper Tool was ran in a product, ENDURO recommends adding absorbent pads, or something equivalent, with the tool along with the thick plastic to help soak up any residual product that may still be present after cleaning.
- 7.1.2. Referencing the original packing list, CUSTOMER must verify that all equipment originally shipped with the DdL™ Caliper Tool is present and accounted for.
 - 7.1.2.1. Included with this will be the Laptop Computer and all its Support Equipment.
- 7.1.3. Pack all equipment back into the shipping container and secure with supplied securing hardware.
- 7.1.4. Contact ENDURO to begin the process of returning the equipment.
 - 7.1.4.1. ENDURO will handle the Logistics of getting the equipment picked up and shipped back to ENDURO.
- 7.1.5. Once equipment has been returned, ENDURO will inspect and inventory all equipment.
 - 7.1.5.1. ENDURO may charge / bill the CUSTOMER for any missing and / or damaged equipment after completing the inspection and inventory.

8. NewCommTC 64 Dialog User Interface Reference:

8.1. Communication Dialog Windows

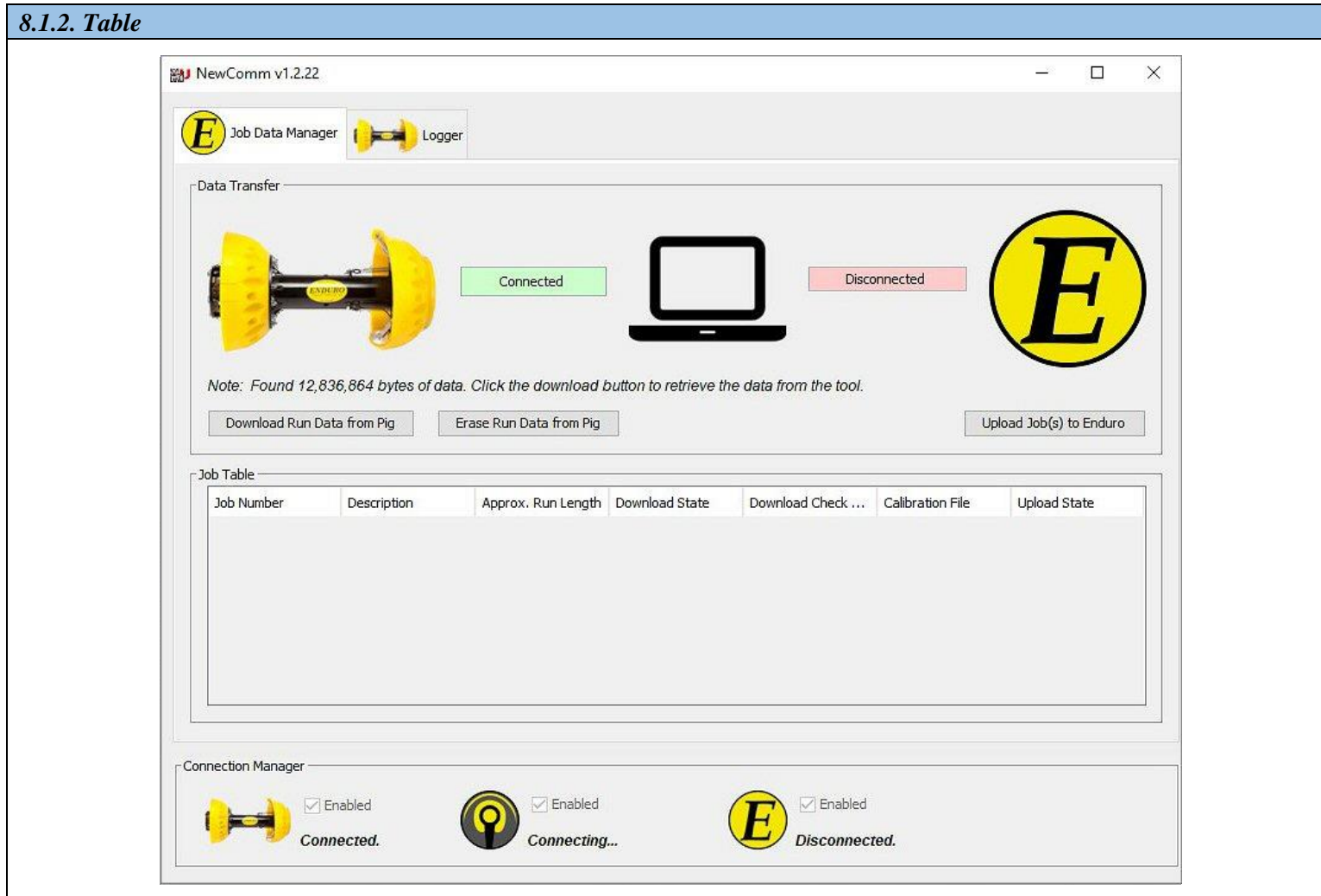
8.1.1. DdL™ Caliper Tool Icon - Laptop Computer Icon - AGM2 Box Icon - Enduro Logo Icon (*refer to 8.1.1. Table*)

8.1.1.1. These Icons represent the various points within the data communication chain.

8.1.1. Table	
DdL™ Caliper Tool Icon	
Laptop Computer Icon	
AGM2 Box Icon	
ENDURO Headquarters Icon	

8.1.2. After double clicking the NewCommTC 64 Icon on the Desktop, the window below will open (refer to 8.1.2. Table)

8.1.2.1. The “  Job Data Manager ” window will open.



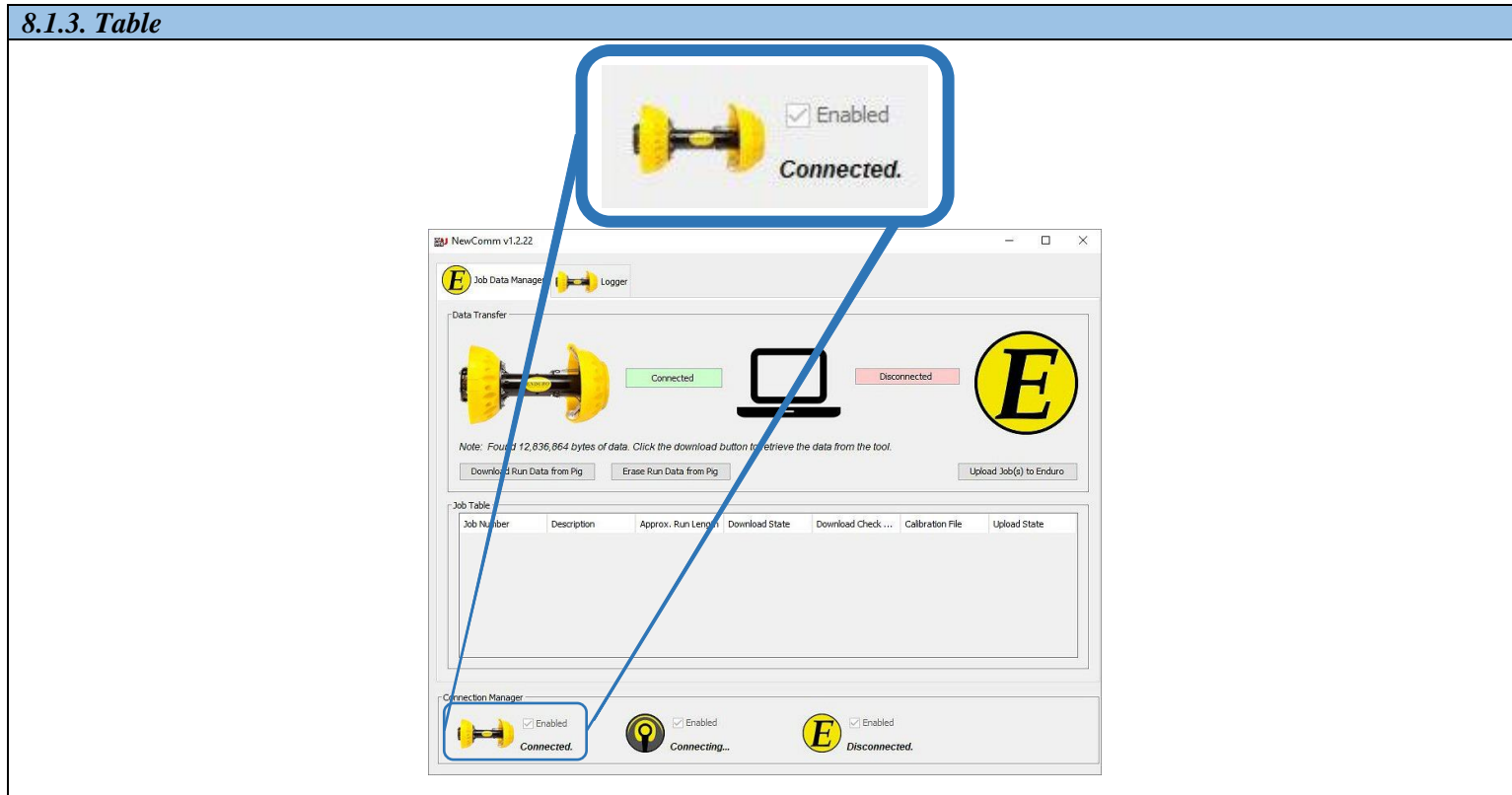
8.1.3. Verify that the Laptop Computer is Communicating with the DdL™ Caliper Tool (refer to 8.1.3. Table).

8.1.3.1. If everything is working and communicating properly, the status will state “**Connected.**”

8.1.3.1.1. “**Connecting...**” = In the process / attempting to make connection.

8.1.3.1.2. “**Disconnected.**” = No Connection established

8.1.3. Table



8.1.4. DdL™ Caliper Tool – to – Laptop Computer Indicator (refer to 8.1.4. Table).

8.1.4.1. The Indicator has two presentation states and will have corresponding appearances as shown below.

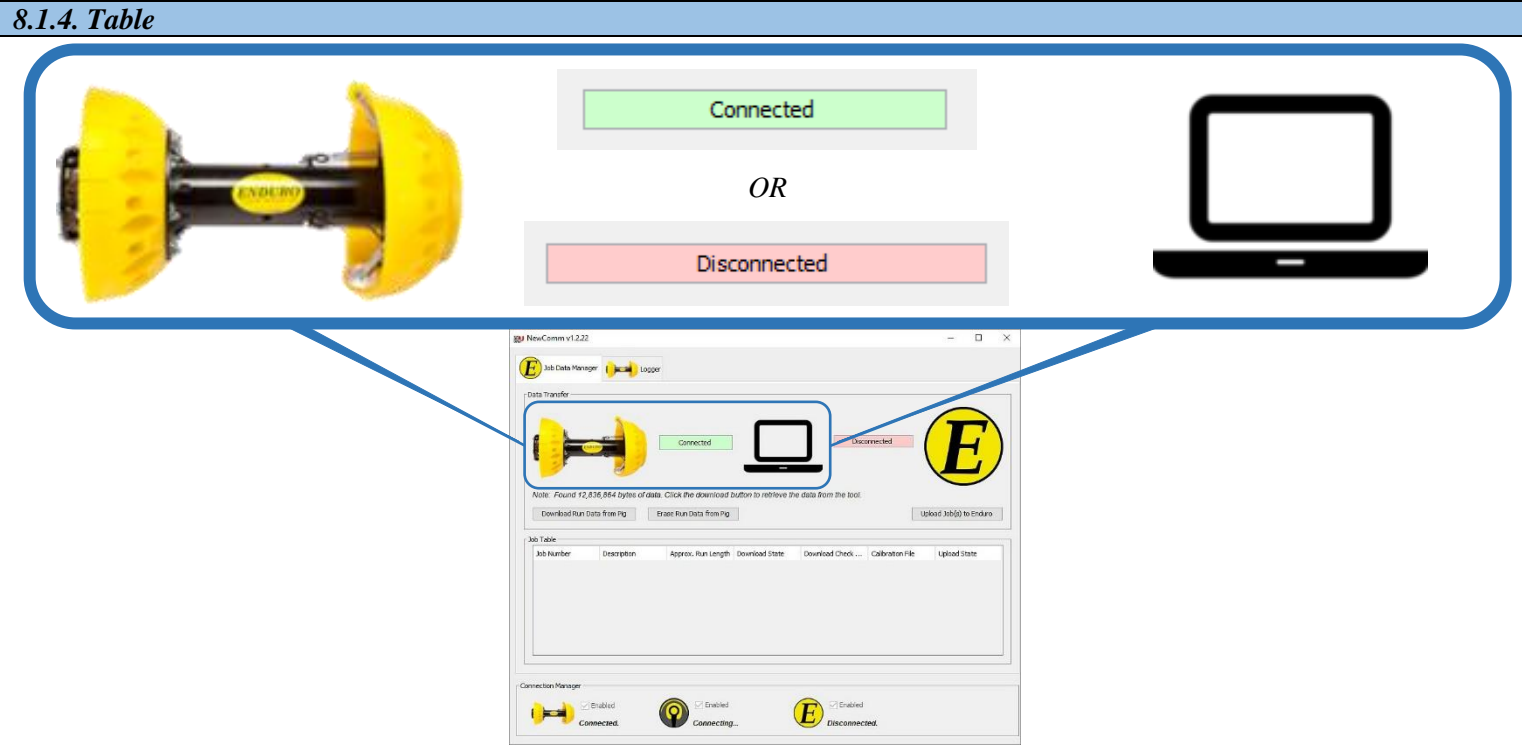
8.1.4.1.1. The connection status is actively monitored and will dynamically respond to changes.

8.1.4.1.1.1. The NewCommTC 64 program will detect when the DdL™ Caliper Tool is plugged-in and unplugged from the Laptop Computer.

8.1.4.1.1.2. GREEN = Connection between DdL™ Caliper Tool and Laptop Computer is successful.

8.1.4.1.1.3. RED = Connection between DdL™ Caliper Tool and Laptop Computer is unsuccessful.

8.1.4. Table



8.1.5. Laptop Computer - to - Enduro Logo Indicator (refer to 8.1.5. Table).

8.1.5.1. The Indicator has two presentation states and will have corresponding appearances as shown below.

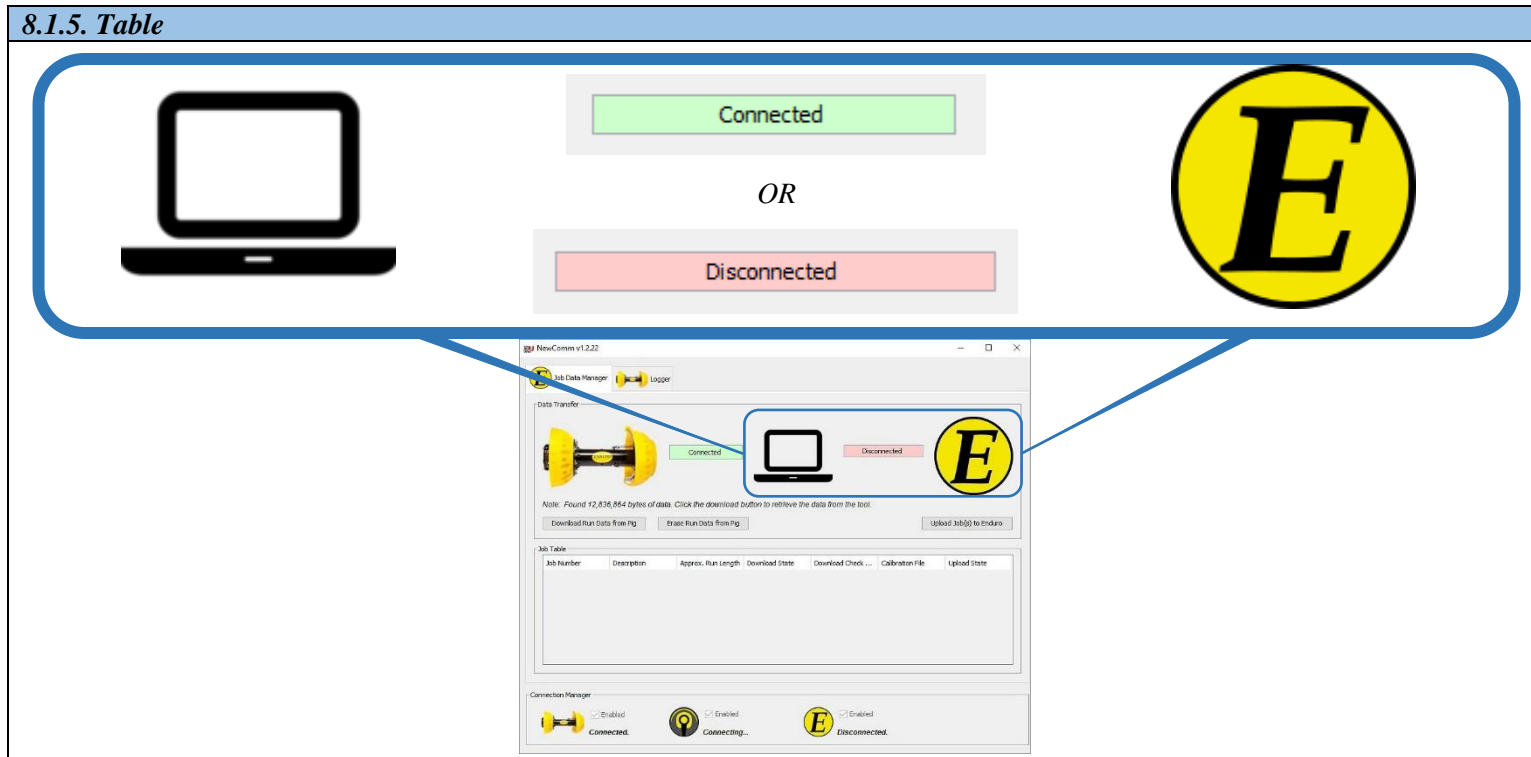
8.1.5.1.1. The connection status is actively monitored and will dynamically respond to changes to Internet Connection.

8.1.5.1.1.1. In the Disconnected state, the software attempts to establish a connection at a nominal rate of once a second.

8.1.5.1.1.2. In the Connected state, the software checks the connection status at a nominal rate of once every 10 seconds.

8.1.5.1.1.3. GREEN = Connection between Laptop Computer and ENDURO Headquarters is successful.

8.1.5.1.1.4. RED = Connection between Laptop Computer and ENDURO Headquarters is unsuccessful.



8.1.6. A small, DdL™ Caliper Tool related text field will populate. (refer to 8.1.6. Table).

8.1.6.1. This field will display notes or tips to the user.

8.1.6. Table

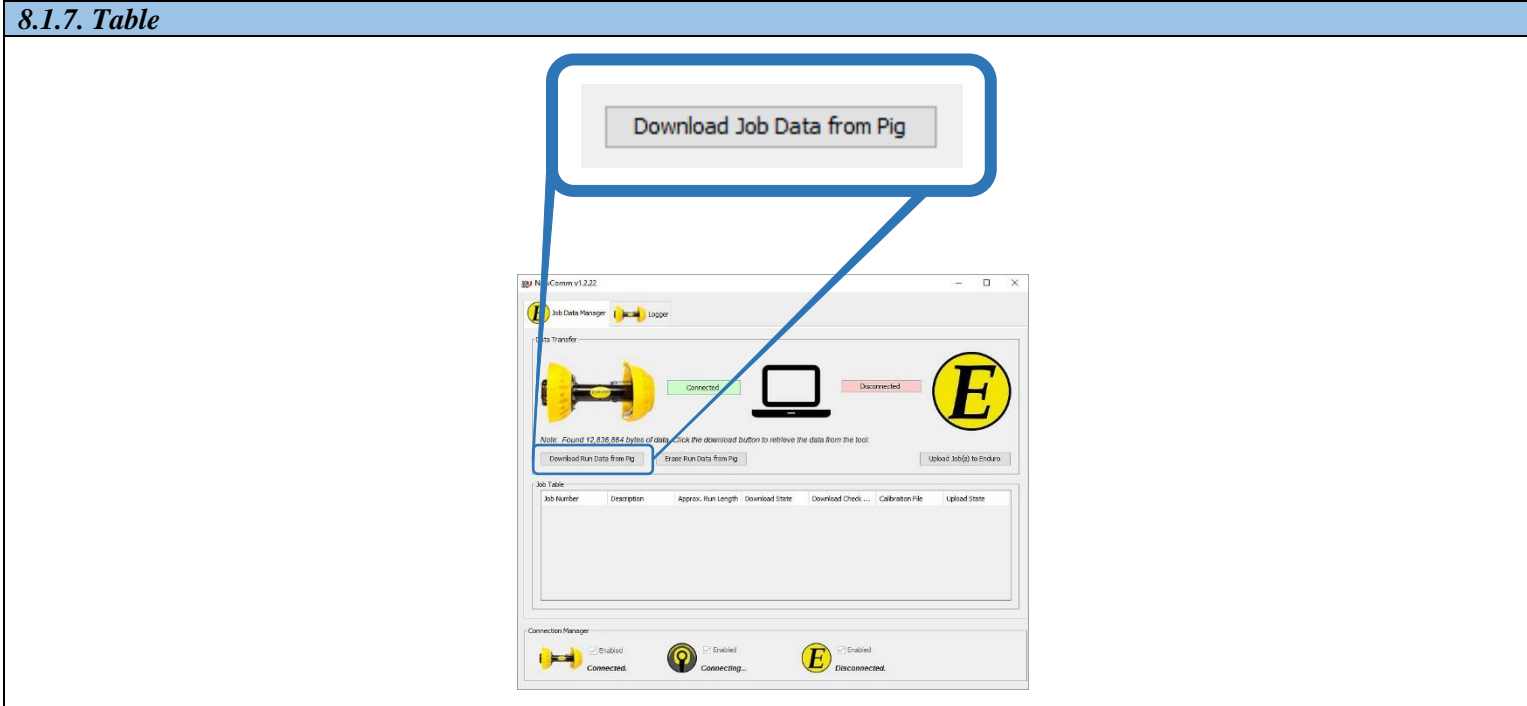
Note: Found 12,836,864 bytes of data. Click the download button to retrieve the data from the tool.

The screenshot shows the 'NewComm v1.2.22' application window. At the top, there are icons for 'Job Data Manager' and 'Logger'. The main area is titled 'Data Transfer' and features a yellow caliper tool icon on the left, a green 'Connected' button in the center, and a red 'Disconnected' button on the right. Below these is a callout box containing the text: 'Note: Found 12,836,864 bytes of data. Click the download button to retrieve the data from the tool.' Underneath the callout are three buttons: 'Download Run Data from Tool', 'Erase Run Data from Tool', and 'Upload Job(s) to Enduro'. Below the buttons is a 'Job Table' with the following columns: Job Number, Description, Approx. Run Length, Download State, Download Check, Calibration File, and Upload State. At the bottom of the window is a 'Connection Manager' section with three status indicators: a yellow caliper icon with 'Enabled Connected', a yellow circle with a black dot and 'Enabled Connecting...', and a yellow circle with a black 'E' and 'Enabled Disconnected'.

8.1.7. Download Job Data from Pig button (refer to 8.1.7. Table).

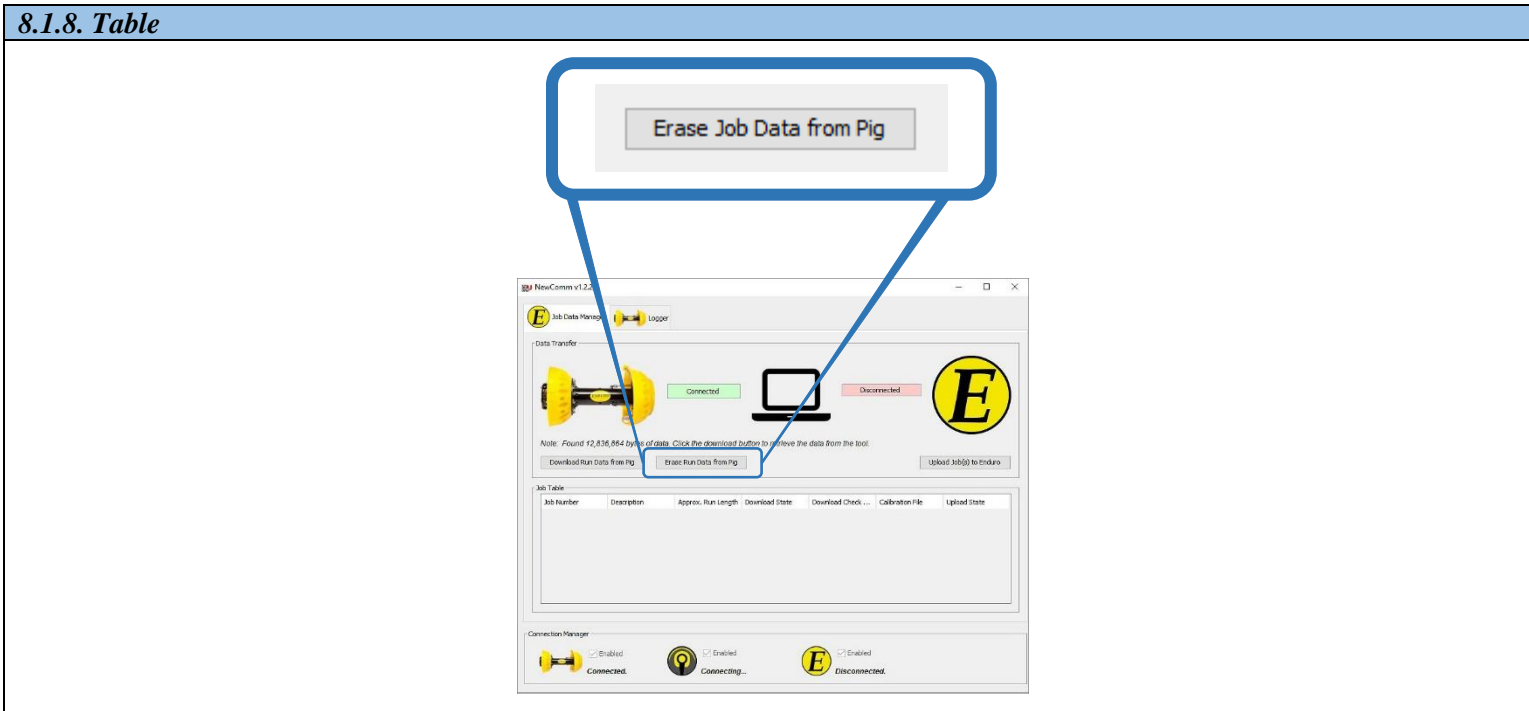
8.1.7.1. This will open the Download Dialog.

8.1.7.2. This button is only active if a DdL™ Caliper Tool is connected.



- 8.1.8. Erase Job Data from Pig button (refer to 8.1.8. Table).
- 8.1.8.1. This will open the Erase Challenge Dialog.
- 8.1.8.2. This button is only active if a DdL™ Caliper Tool is connected.
- 8.1.8.3. **WARNING:** DO NOT perform this task unless instructed by ENDURO directly.

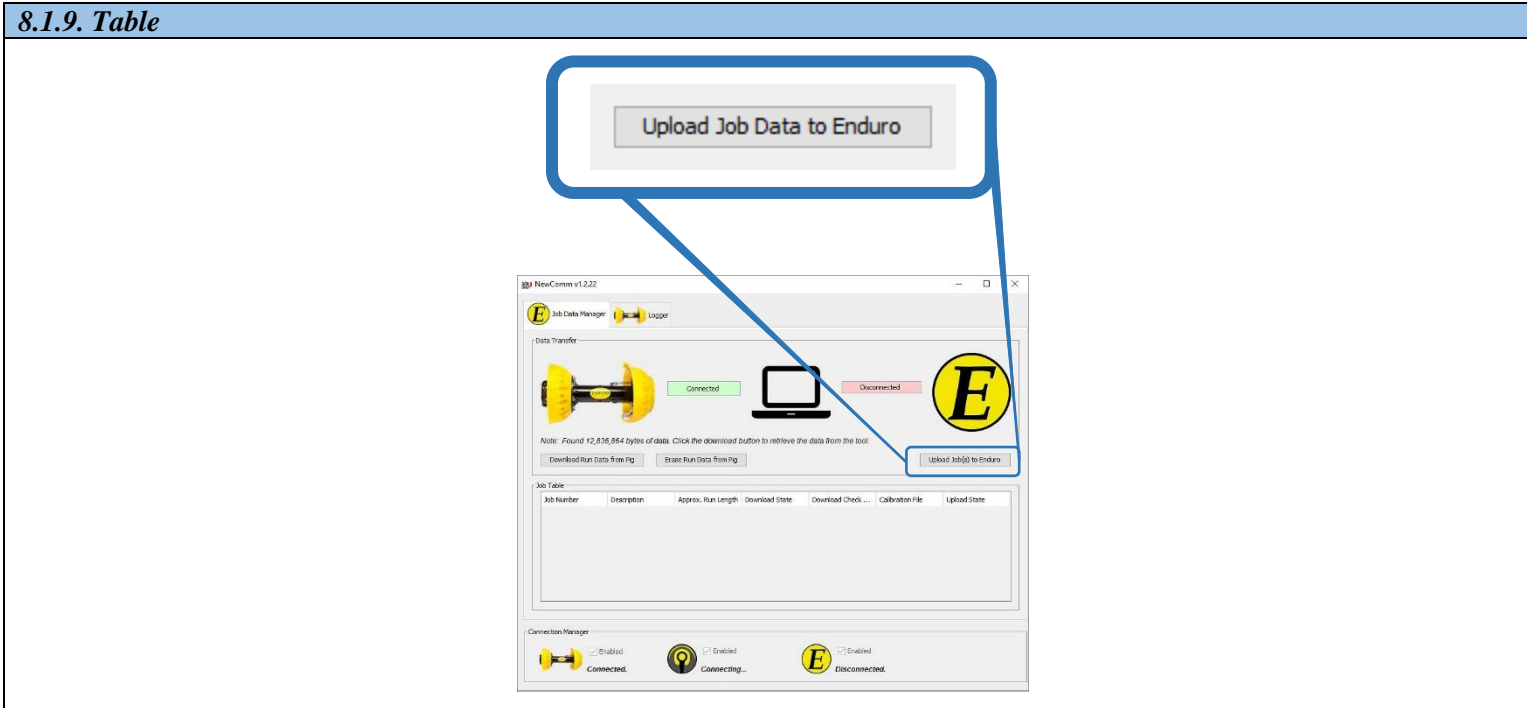
8.1.8. Table



8.1.9. Upload Job Data to Enduro button (*refer to 8.1.9. Table*).

8.1.9.1. This will open the Upload Dialog.

8.1.9.2. This button is only active if an Internet connection to ENDURO Headquarters has been established.

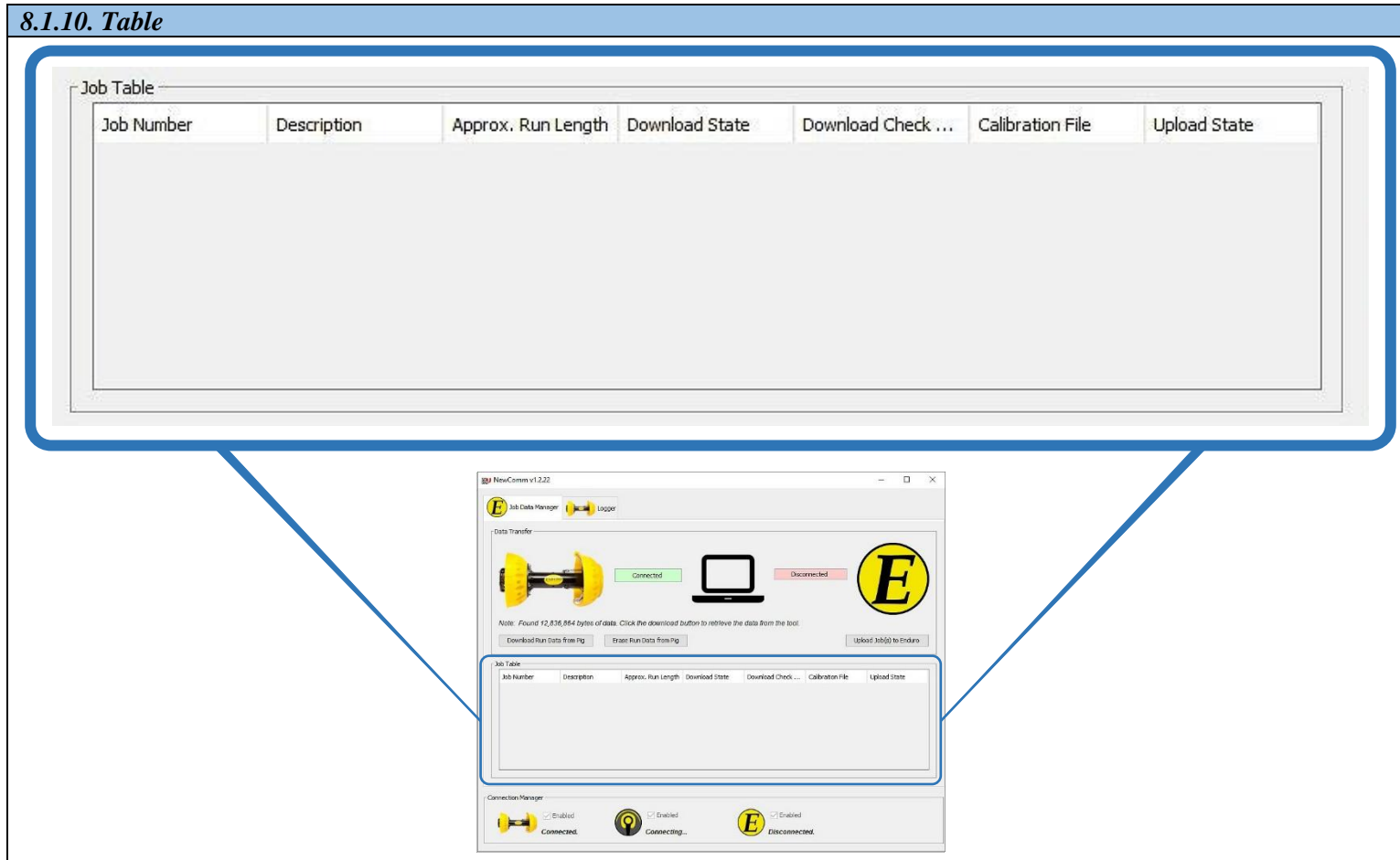


8.1.10. Job Table data listing (refer to 8.1.10. Table).

8.1.10.1. This table will list the job data and associated information on a per-job basis.

8.1.10.1.1. The table will scroll vertically to handle more than one screen's worth of jobs

8.1.10.2. Jobs will be added to this table as they have been downloaded from the DdL™ Caliper Tool to the Laptop Computer.



8.1.11. Connection Manager (refer to 8.1.11. Table).

8.1.11.1. This will show the connection status between three components.

8.1.11.1.1. DdL™ Caliper Tool

8.1.11.1.2. AGM2 Box

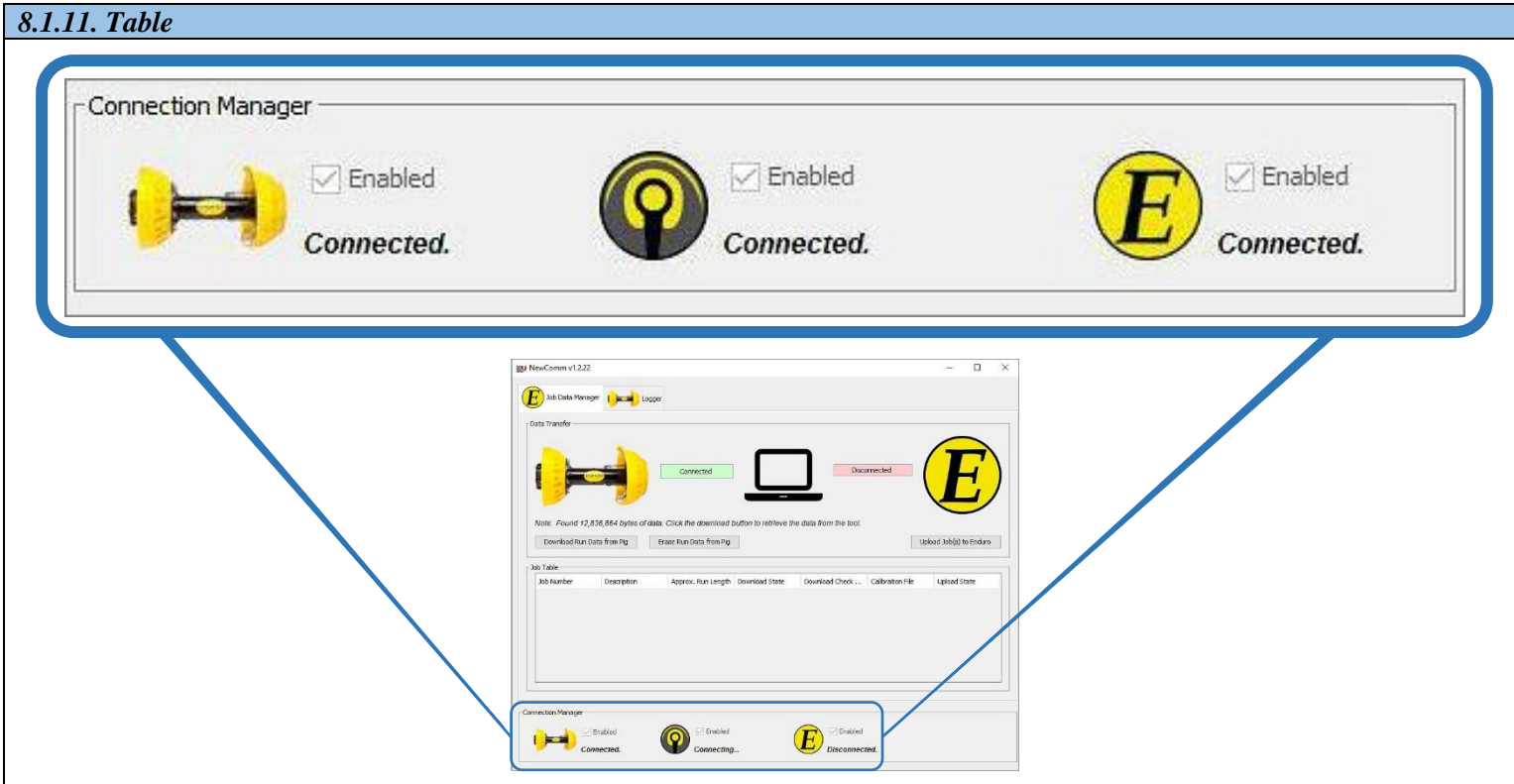
8.1.11.1.3. ENDURO Headquarters

8.1.11.2. There will be three types of communication verbiage

8.1.11.2.1. “*Connected.*” = Connection established.

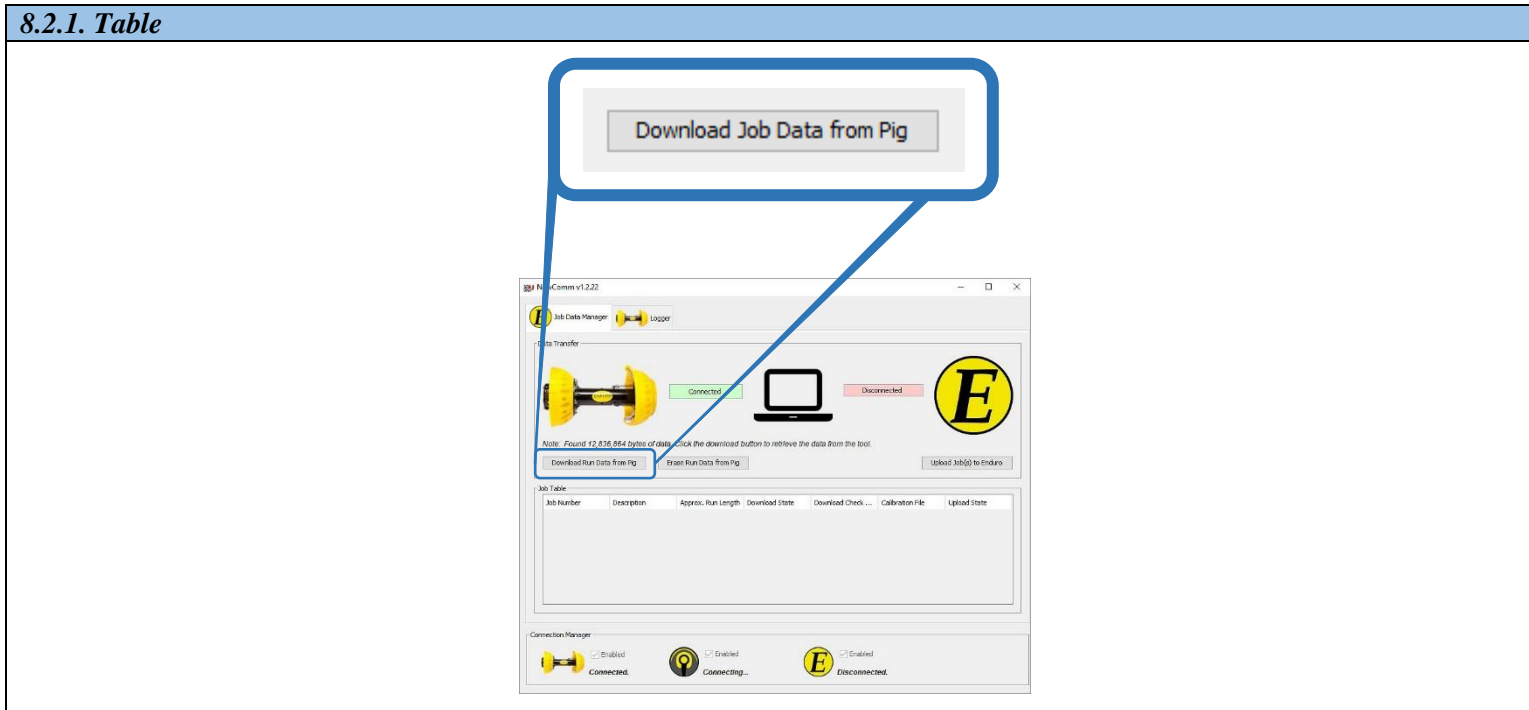
8.1.11.2.2. “*Connecting...*” = In the process / attempting to make connection.

8.1.11.2.3. “*Disconnected.*” = No Connection established



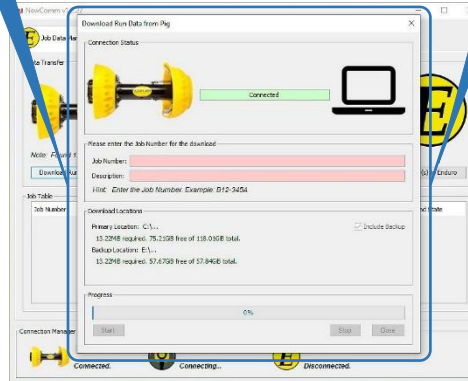
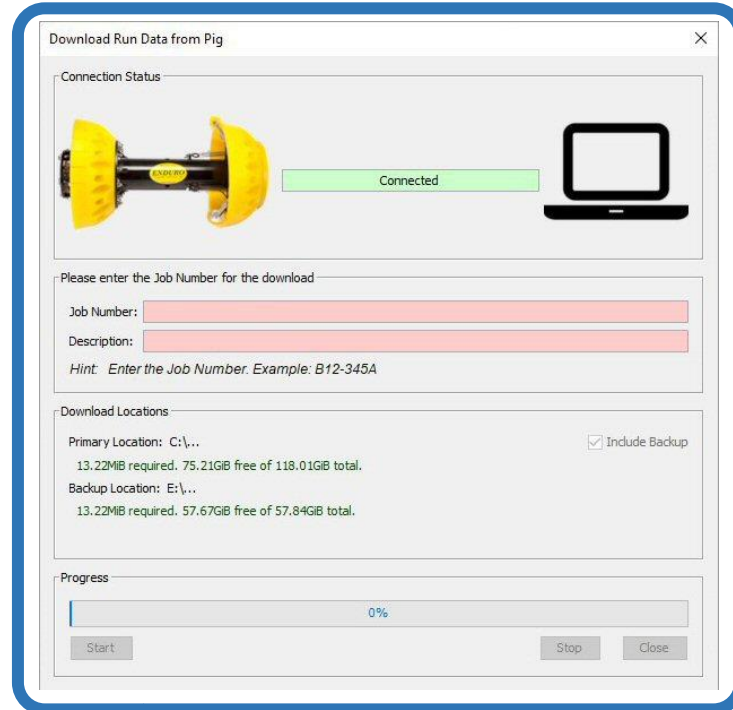
8.2. Download Dialog Windows

8.2.1. Click the “Download Job Data from Pig” button (refer to 8.2.1. Table).



8.2.2. A Download Dialog window will open (refer to 8.2.2. Table).

8.2.2. Table

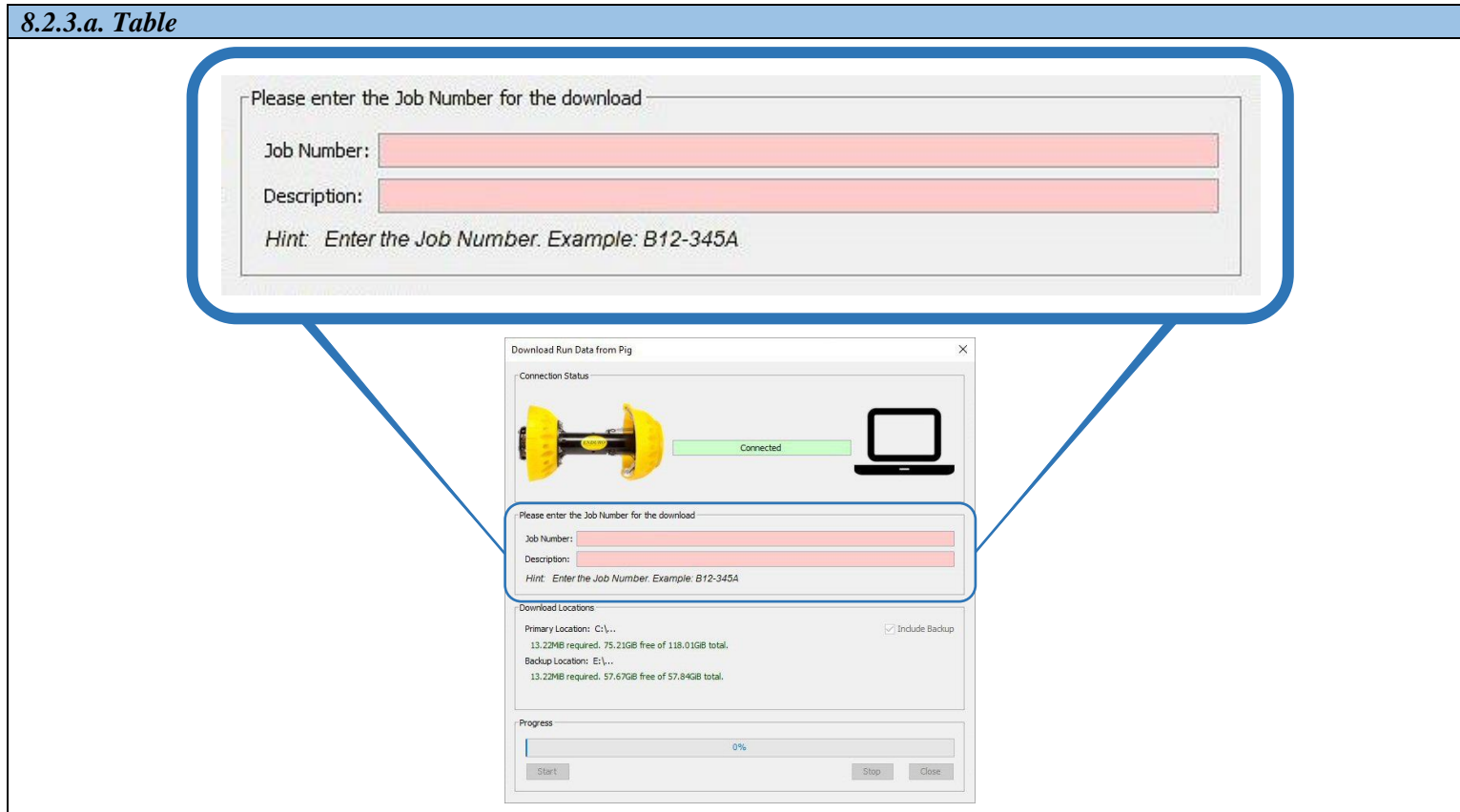


8.2.3. Text Field to enter Job Number and Description (*refer to 8.2.3.a. Table & 8.2.3.b. Table*).

8.2.3.1. Manual insertion of the Job Number and Description must be typed into this Text Field by the CUSTOMER.

8.2.3.2. Dynamic guidance, or hints, for entering a correctly formed Job Number and Description are provided immediately below the Text Field.

8.2.3.2.1. The background of the Text Field is **RED** when the entered text does NOT match ENDURO's Job Number and Description scheme.

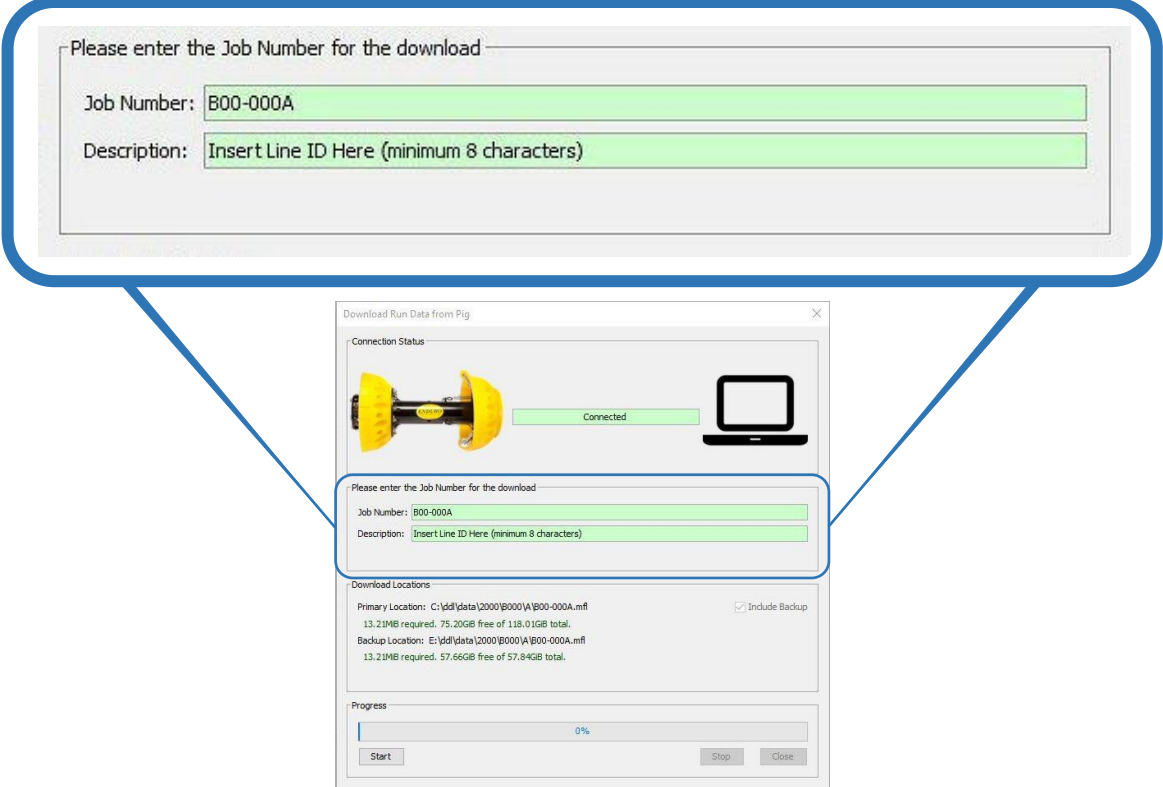


8.2.3.2.2. The background of the Text Field is **GREEN** when the entered text does match ENDURO's Job Number scheme.

8.2.3.2.2.1. CUSTOMER can insert their Line ID within this Text Field for Description.

8.2.3.2.2.2. The *Description* Text field **MUST** contain a minimum of 8 characters.

8.2.3.b. Table



The screenshot shows a software window titled "Download Run Data from Pig". It contains the following elements:

- A prompt: "Please enter the Job Number for the download"
- A "Job Number:" text field containing "B00-000A".
- A "Description:" text field containing "Insert Line ID Here (minimum 8 characters)".
- A "Connection Status" section showing a pig icon connected to a laptop icon, with a green bar labeled "Connected".
- A "Download Locations" section with a checked "Include Backup" option. It lists:
 - Primary Location: C:\pdl\data\2000\B000\A\B00-000A.mff (13.21MB required, 75.20GB free of 118.01GB total)
 - Backup Location: E:\pdl\data\2000\B000\A\B00-000A.mff (13.21MB required, 57.66GB free of 57.84GB total)
- A "Progress" section with a progress bar at 0% and "Start", "Stop", and "Close" buttons.

8.2.4. Download Locations (refer to 8.2.4. Table).

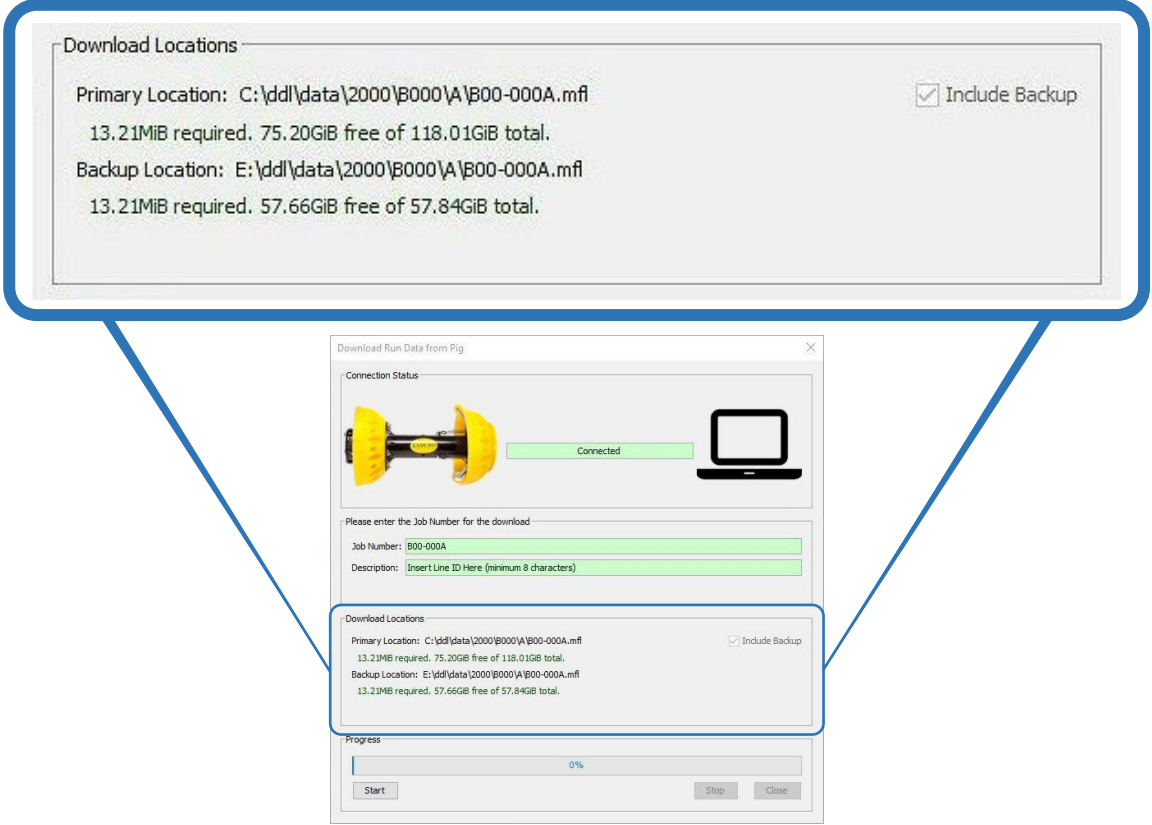
8.2.4.1. This field informs the user as to where their Job Data will be stored.

8.2.4.1.1. The Job Data will be stored in two locations.

8.2.4.1.1.1. Laptop Computer = (Primary Location)

8.2.4.1.1.2. External Hard Drive = (Backup Location)

8.2.4. Table



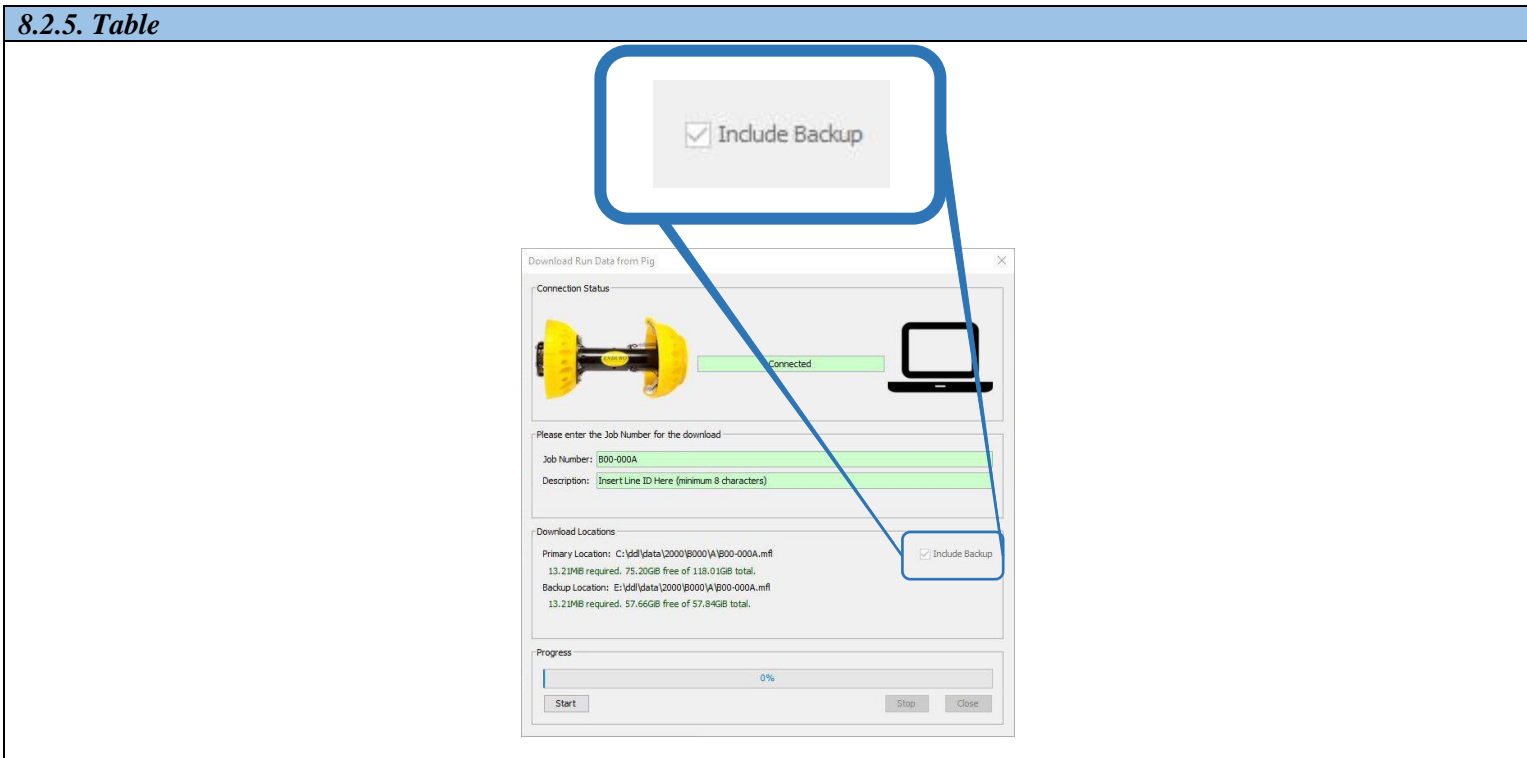
The screenshot displays a software interface for downloading run data from a pig. It features a 'Download Locations' dialog box and a 'Download Run Data from Pig' window. The 'Download Locations' dialog shows the primary location as C:\ddl\data\2000\B000\A\B00-000A.mfl (13.21MiB required, 75.20GiB free of 118.01GiB total) and the backup location as E:\ddl\data\2000\B000\A\B00-000A.mfl (13.21MiB required, 57.66GiB free of 57.84GiB total). An 'Include Backup' checkbox is checked. The 'Download Run Data from Pig' window shows a 'Connected' status with a pig icon and a laptop icon, a 'Job Number' field containing 'B00-000A', and a 'Description' field. A progress bar at the bottom shows 0% completion, with 'Start', 'Stop', and 'Close' buttons.

8.2.5. Include Backup (*refer to 8.2.5. Table*).

8.2.5.1. Feedback letting the user know that a backup will be created.

8.2.5.1.1. The box is check-marked if an External Hard Drive is detected and said drive has sufficient, available storage space to accommodate the download.

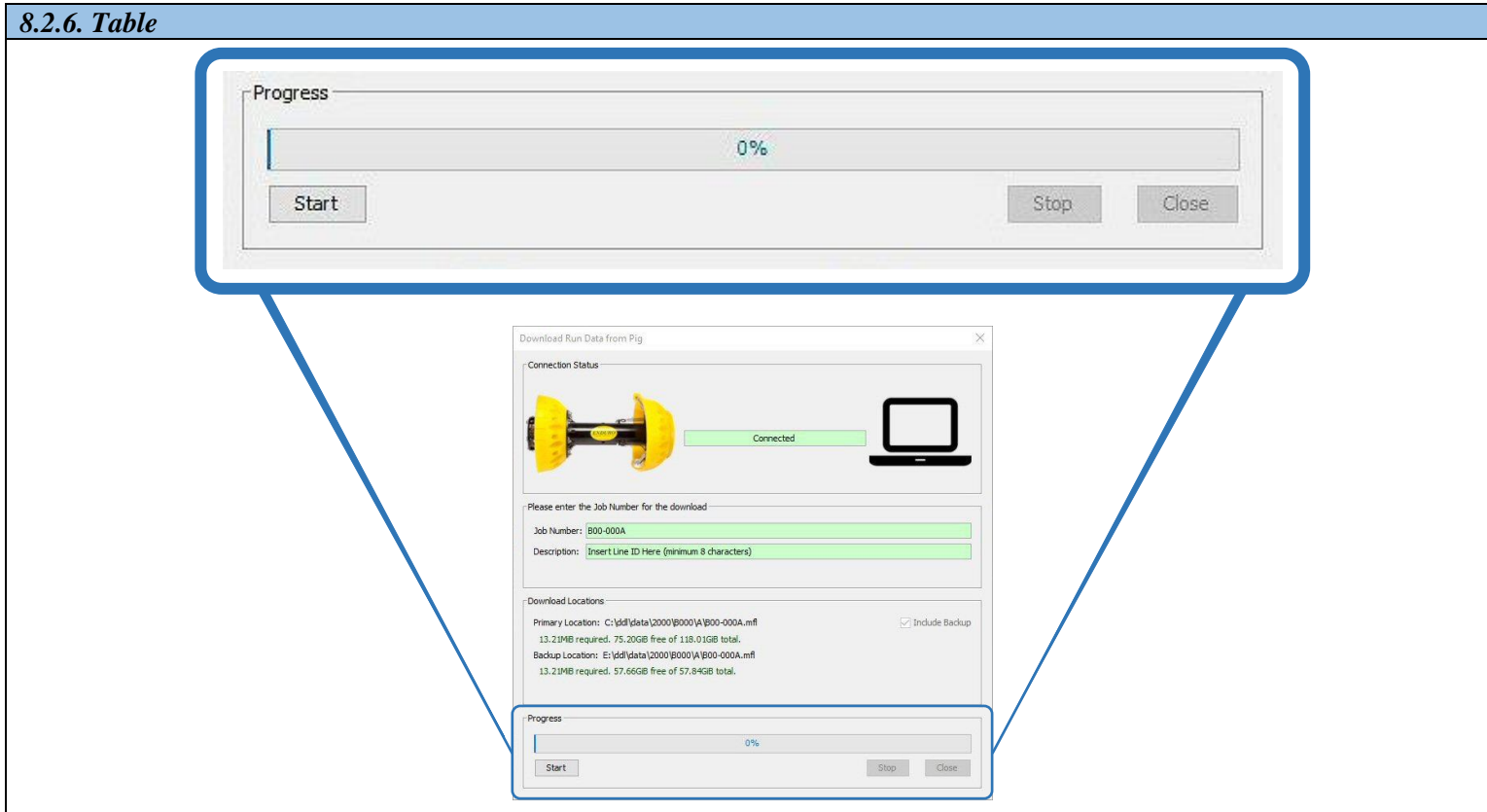
8.2.5.2. If the External Hard Drive is not plugged into the Laptop Computer, the program is defaulted to not allow the data to be downloaded.



8.2.6. Progress Bar (refer to 8.2.6. Table).

8.2.6.1. This will give the user feedback regarding the download progress from the DdL™ Caliper Tool to the Laptop Computer / External Hard Drive and how much progress remains.

8.2.6.1.1. 100% = Download Complete



8.2.7. Start / Stop / Close buttons (refer to 8.2.7. Table).

8.2.7.1. Start Button

8.2.7.1.1. This will start the download process from the DdL™ Caliper Tool to Laptop Computer & External Hard Drive.

8.2.7.1.1.1. Only enabled when a valid Job Number has been entered.

8.2.7.2. Stop Button

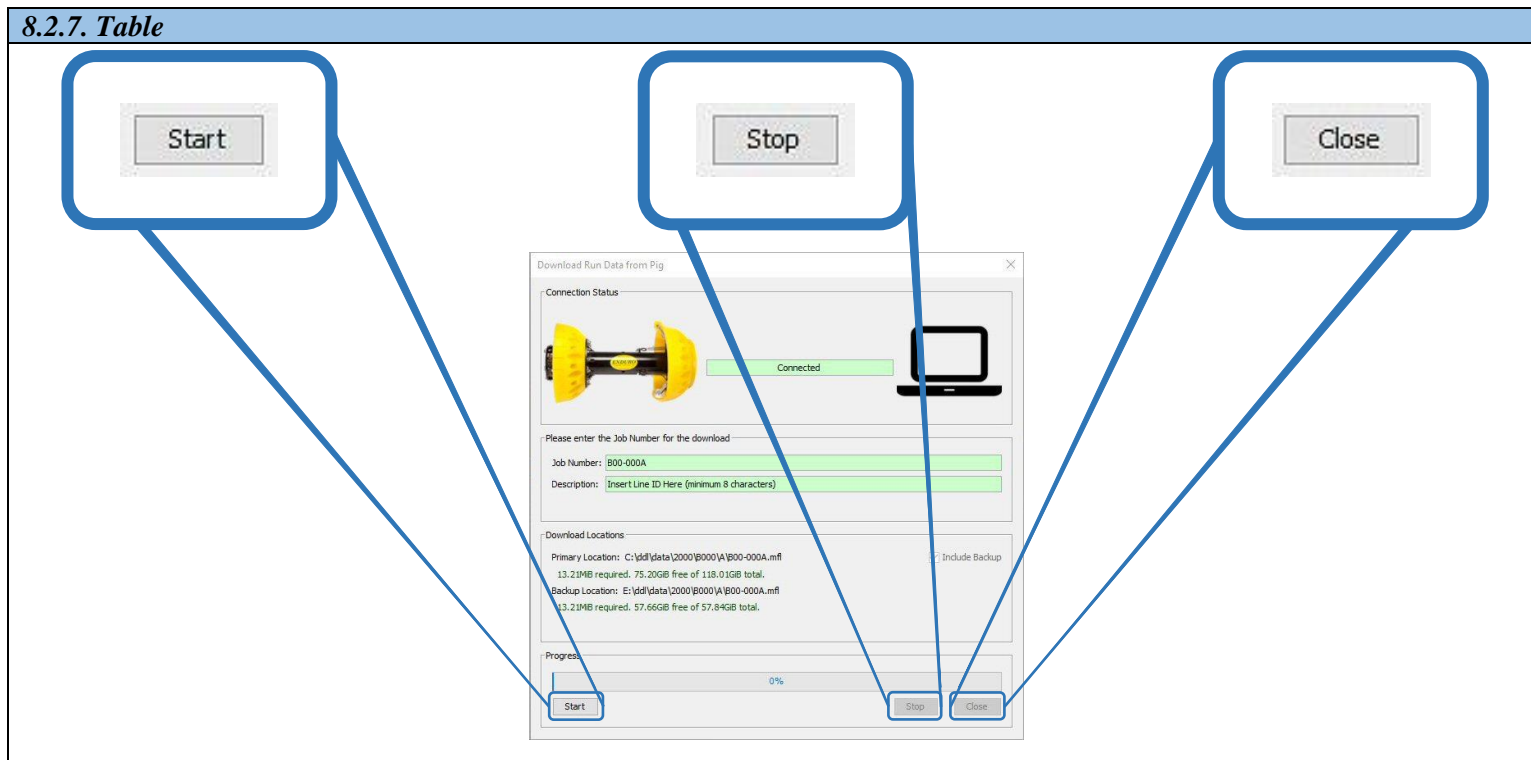
8.2.7.2.1. This will stop the download process.

8.2.7.2.1.1. Only enabled when a download is in progress.

8.2.7.3. Close Button

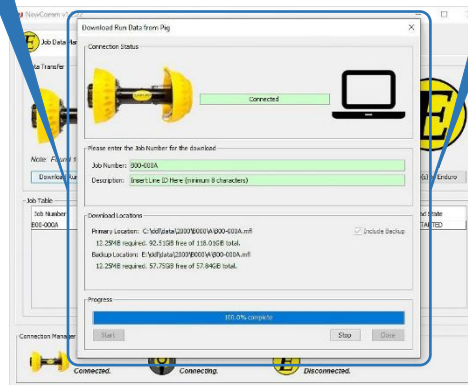
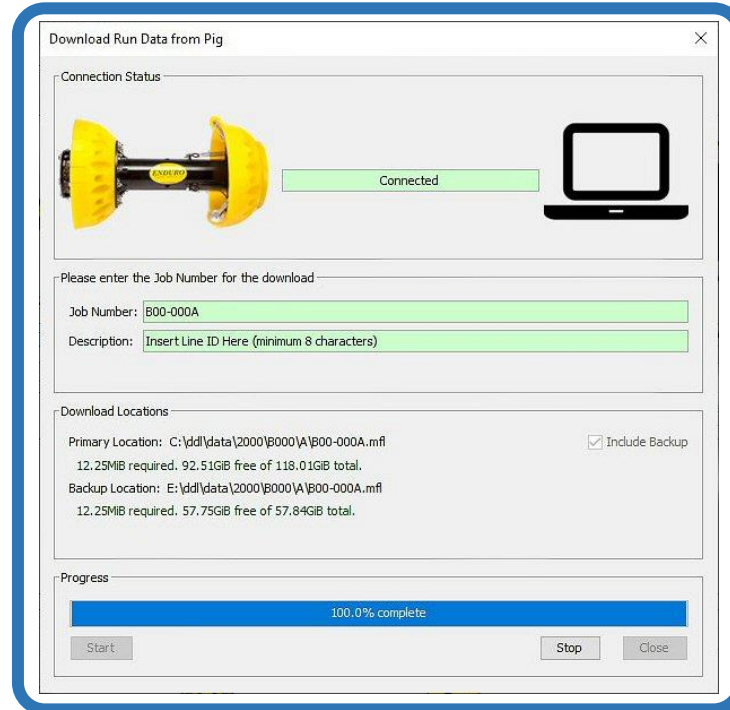
8.2.7.3.1. This will close the download dialog window

8.2.7.3.1.1. Only enabled when a download has completed successfully.



8.2.8. When the progress of the download reaches completion, the Progress bar will show “100.0% complete”. (refer to 8.2.8. Table)

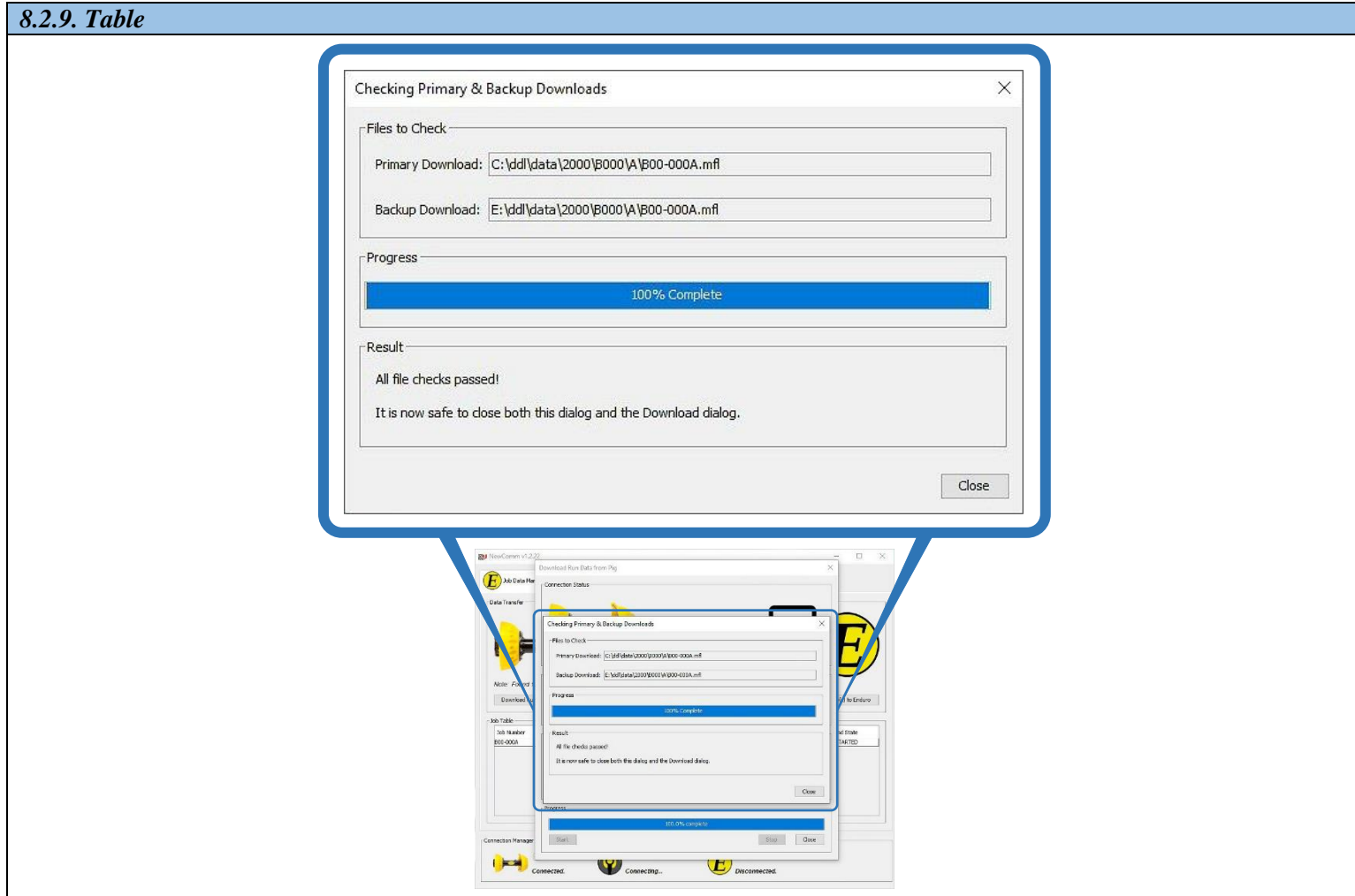
8.2.8. Table



8.2.9. Once the Download process has completed, a “Checking Primary & Backup Downloads” window will pop up (*refer to 8.2.9. Table*).

8.2.9.1. Click “Close” to close window.

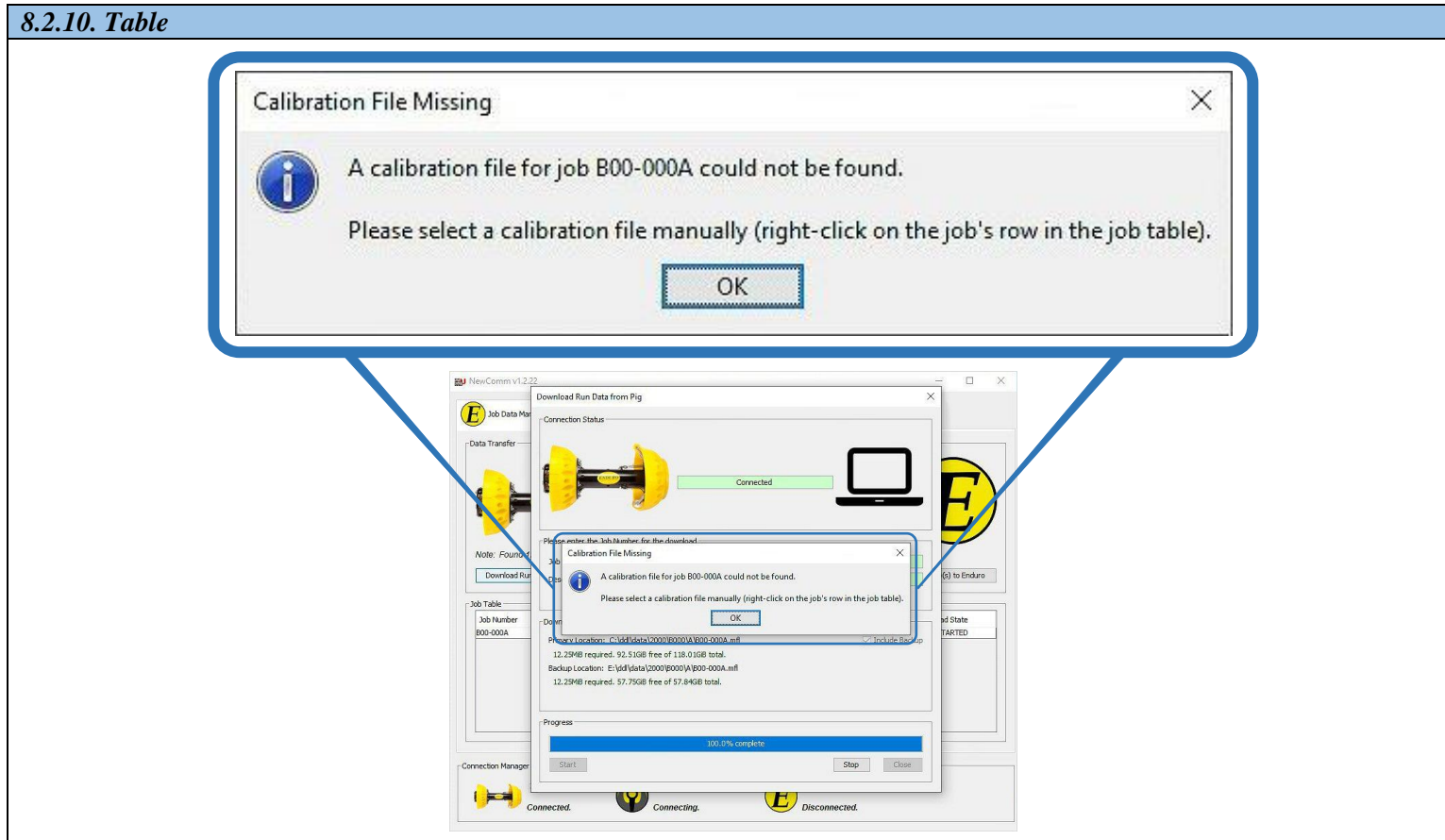
8.2.9. Table



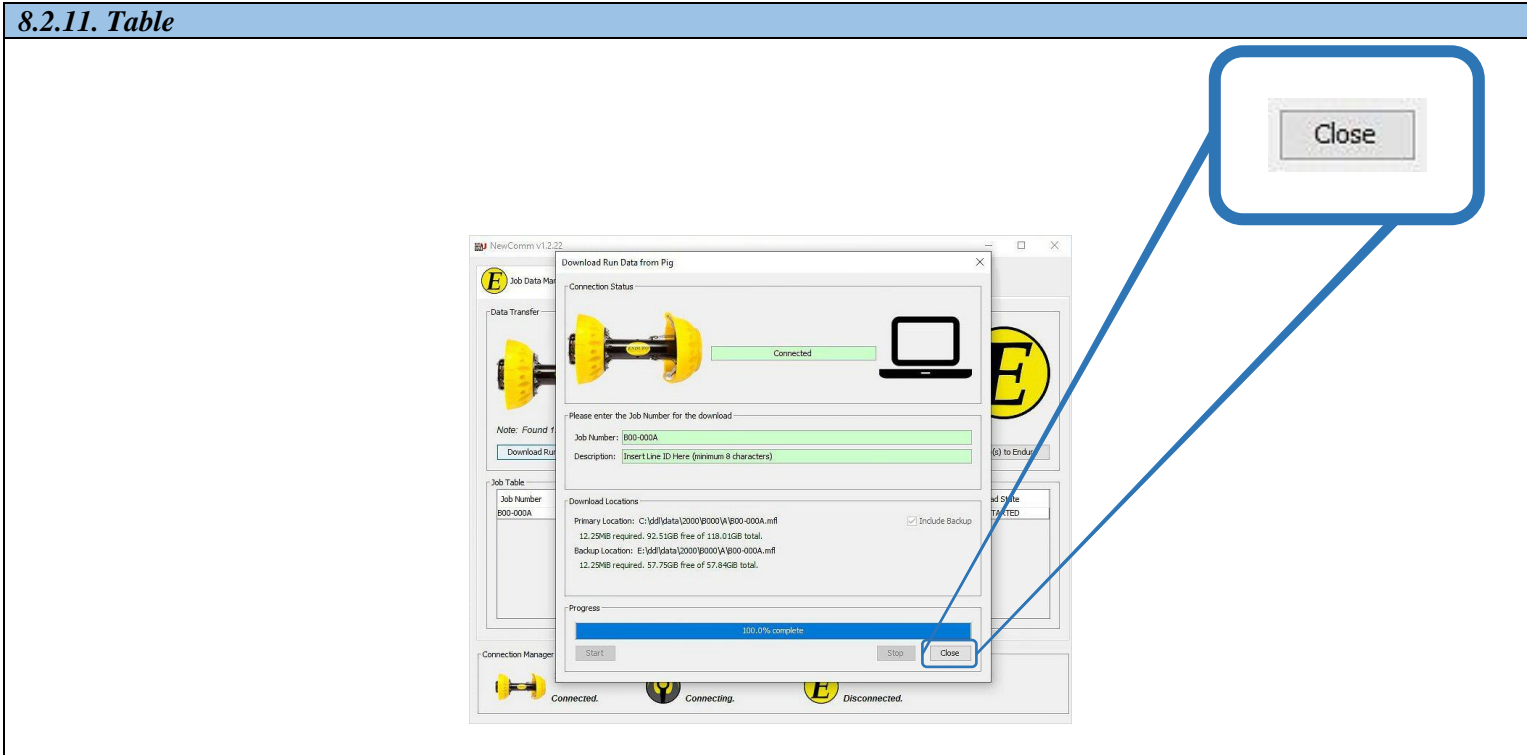
8.2.10. IF a calibration file is missing from the Laptop Computer, a “Select an Option” window will open. (refer to 8.2.10. Table)

8.2.10.1. Click “OK” to proceed.

8.2.10. Table



8.2.11. Click “Close” to get back to the main window (*refer to 8.2.11. Table*)

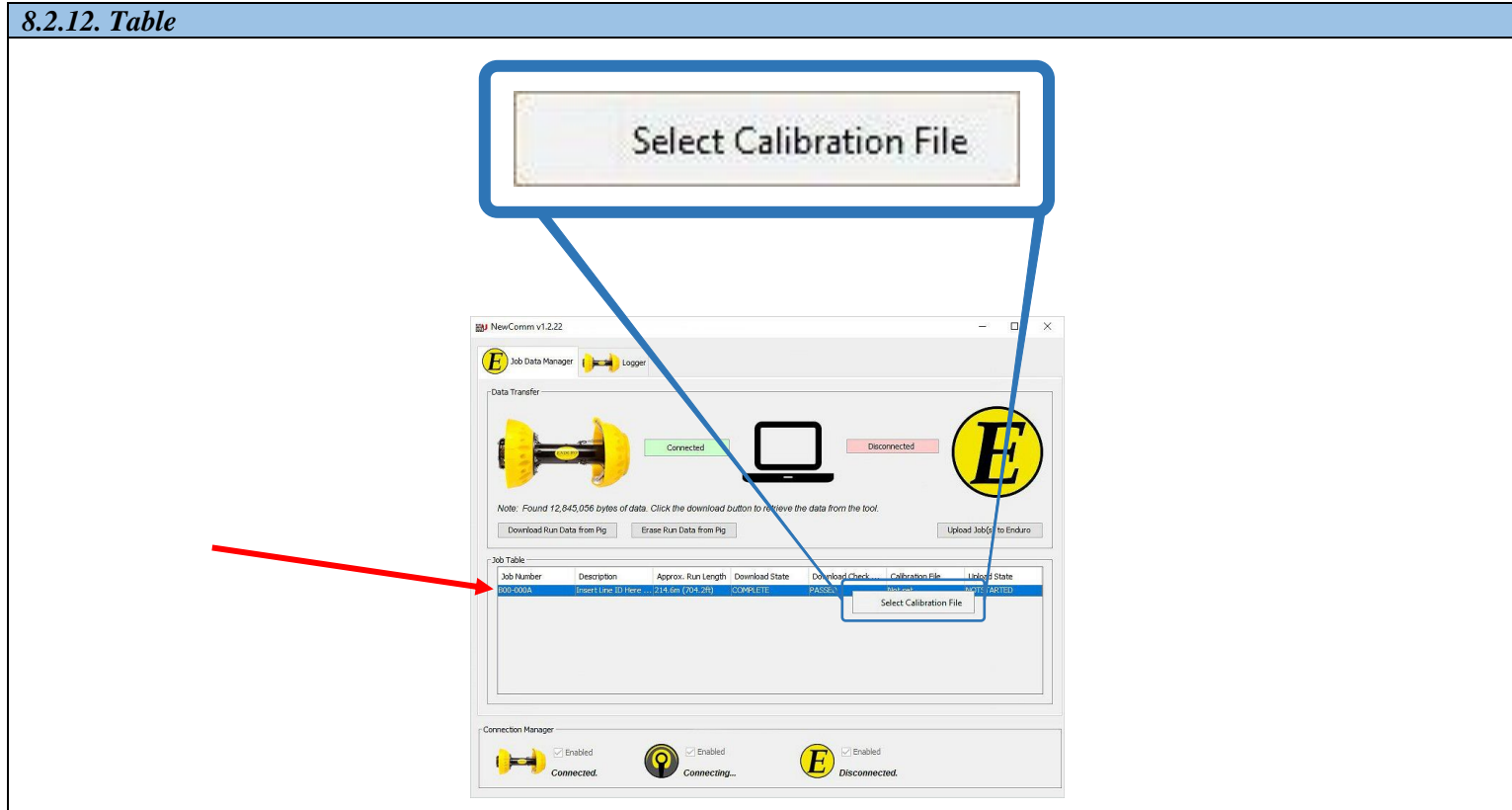


8.2.12. Left click on the row to select the Downloaded Job. (refer to 8.2.12. Table)

8.2.12.1. This will highlight the entire row of the Downloaded Job.

8.2.12.2. Right Click highlighted row to get the “Select Calibration File” window to open.

8.2.12. Table



The screenshot shows the 'NewComm v1.2.22' application window. At the top, there is a 'Job Data Manager' section with a 'Logger' icon. Below this is a 'Data Transfer' section showing a 'Connected' status with a yellow pig icon and a 'Disconnected' status with a laptop icon. A note indicates that 12,843,056 bytes of data were found and a 'Download Run Data from Pig' button is available. Below the data transfer section is a 'Job Table' with the following data:

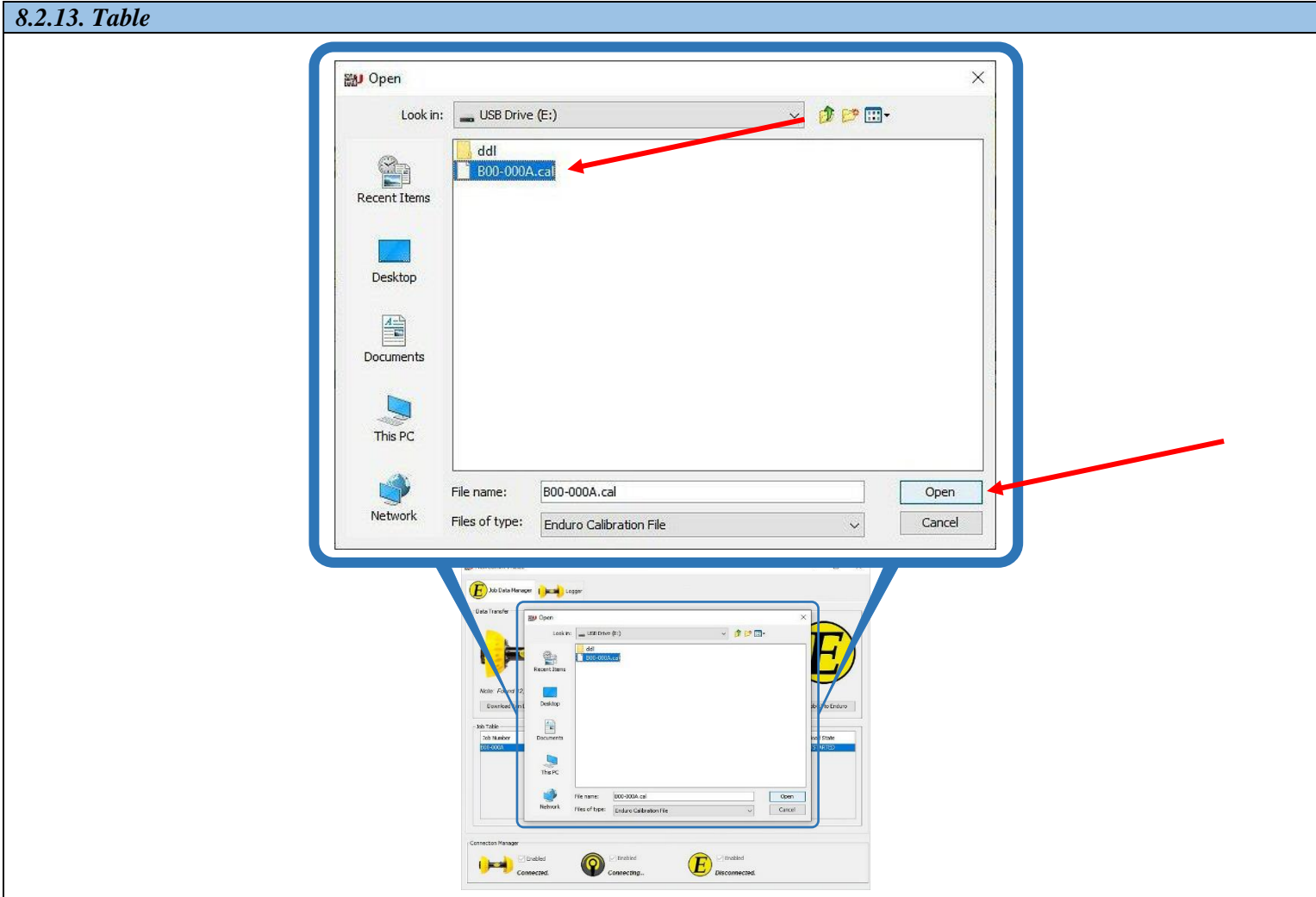
Job Number	Description	Approx. Run Length	Download State	Download Check	Calibration File	Upload State
000-000A	Insert line ID Here ...	214.6m (704.2ft)	COMPLETE	PASSED		NOT STARTED

A red arrow points to the first row of the 'Job Table'. A blue callout box labeled 'Select Calibration File' is positioned over the 'Calibration File' column of the first row. Below the table is a 'Connection Manager' section with three connection status indicators: 'Connected', 'Connecting...', and 'Disconnected', each with an 'Enabled' checkbox.

8.2.13. A file search window will open. (refer to 8.2.13. Table)

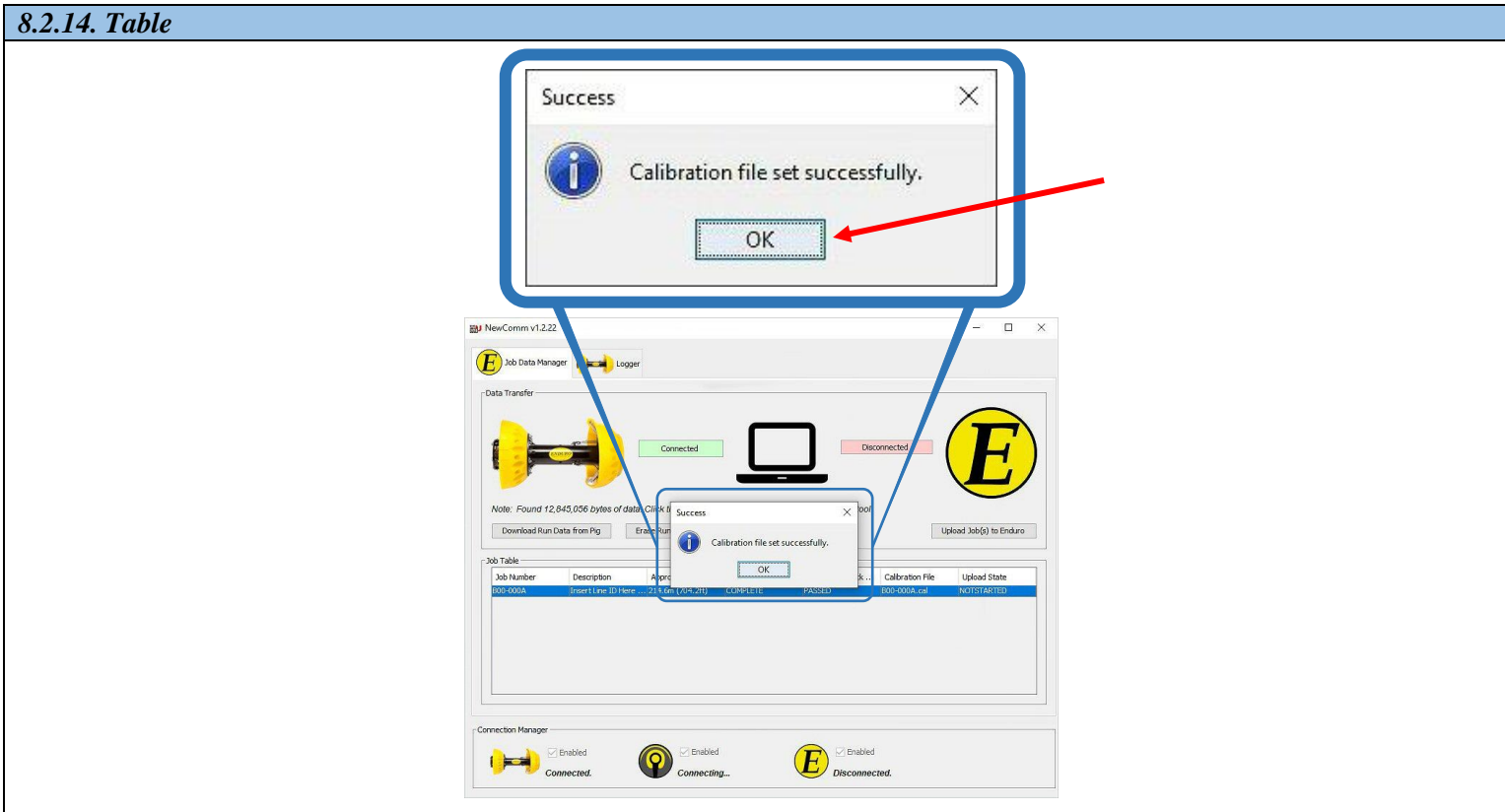
8.2.13.1. Navigate through the correct pathway to locate the appropriate calibration file.

8.2.13.1.1. Once the calibration file has been located, click on it to highlight it, and click “Open”



8.2.14. Once a Calibration file has been selected, a “Success” window will open (*refer to 8.2.14. Table*)

8.2.14.1. Click “OK” to complete the process.

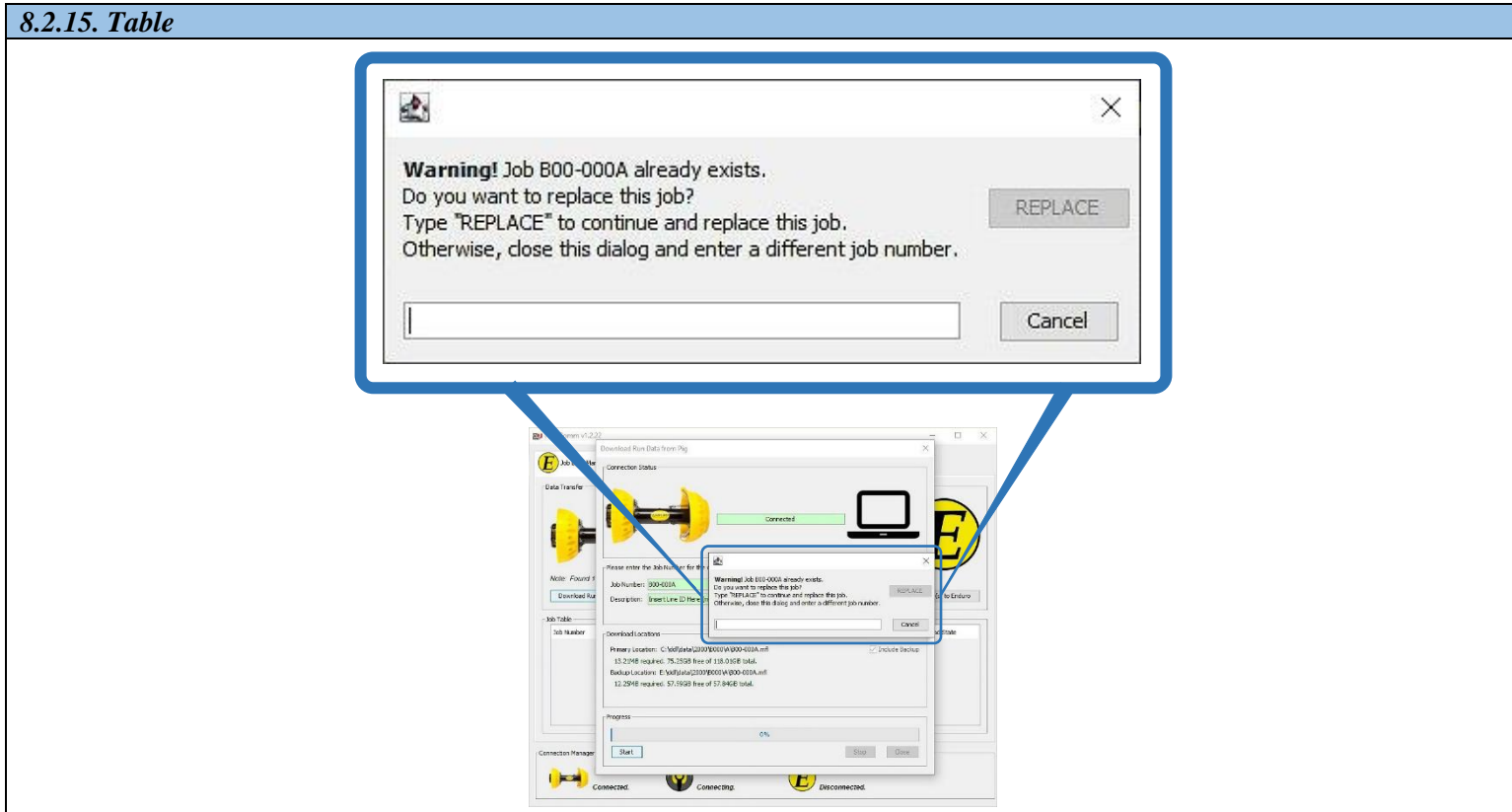


8.2.15. If the Job Number entered already exists at ENDURO Headquarters, the Warning window below will pop up. (refer to 8.2.15. Table)

8.2.15.1. **WARNING:** DO NOT perform this task unless instructed by ENDURO directly.

8.2.15.2. Contact ENDURO Operations for further assistance.

8.2.15. Table



8.3. Upload Dialog Windows

8.3.1. Laptop Computer - to - Enduro Logo Indicator (refer to 8.3.1. Table).

8.3.1.1. The Indicator has two presentation states and will have corresponding appearances as shown below.

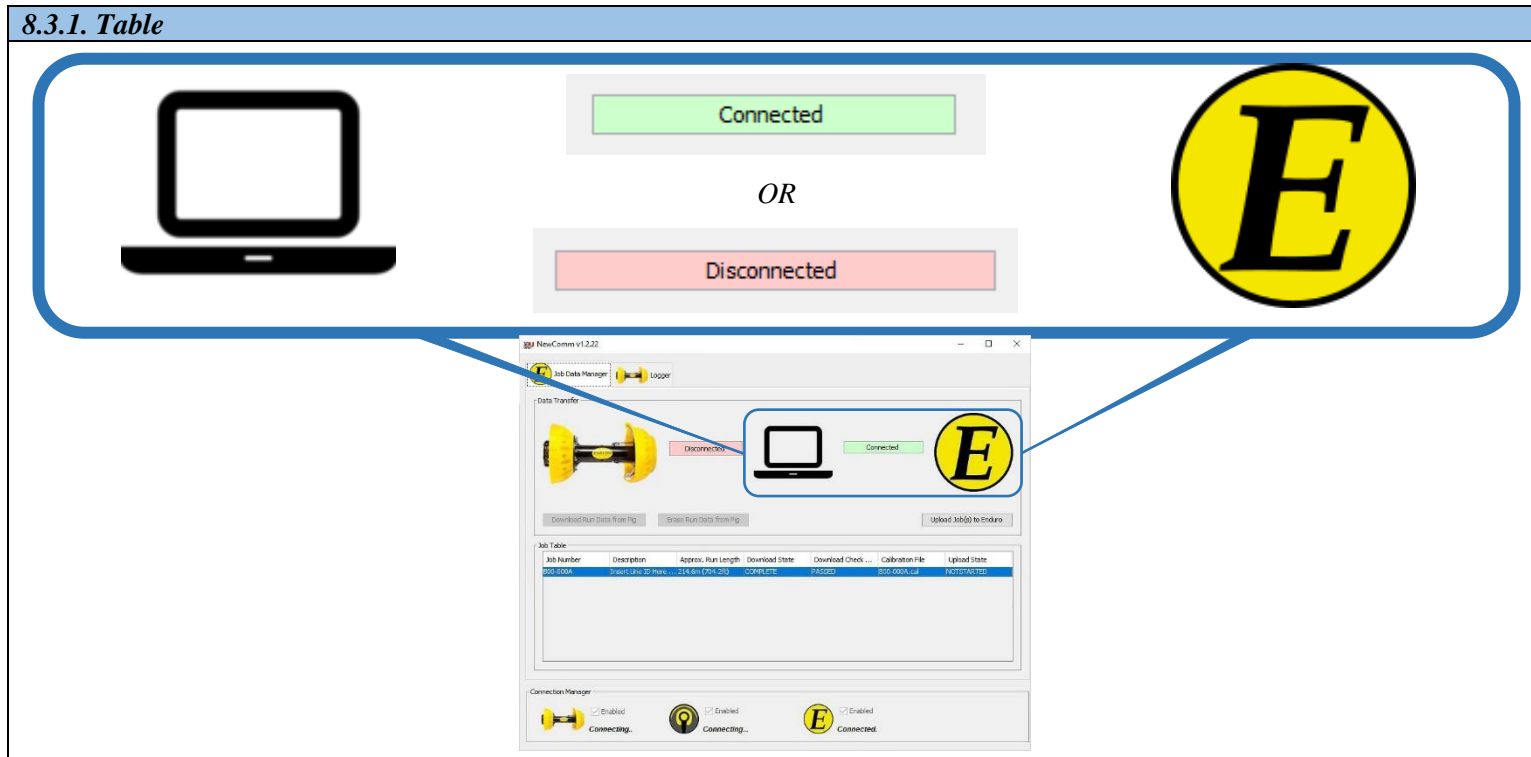
8.3.1.1.1. The connection status is actively monitored and will dynamically respond to changes to Internet Connection.

8.3.1.1.1.1. In the Disconnected state, the software attempts to establish a connection at a nominal rate of once a second.

8.3.1.1.1.2. In the Connected state, the software checks the connection status at a nominal rate of once every 10 seconds.

8.3.1.1.1.3. GREEN = Connection between Laptop Computer and ENDURO Headquarters is successful.

8.3.1.1.1.4. RED = Connection between Laptop Computer and ENDURO Headquarters is unsuccessful.

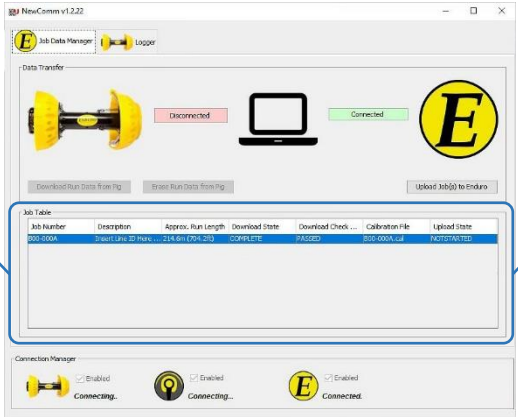


8.3.2. Left click on row to select the Downloaded Job (*refer to 8.3.2. Table*).

8.3.2.1. If multiple jobs have been downloaded, multiple selections can be made for the Upload process.

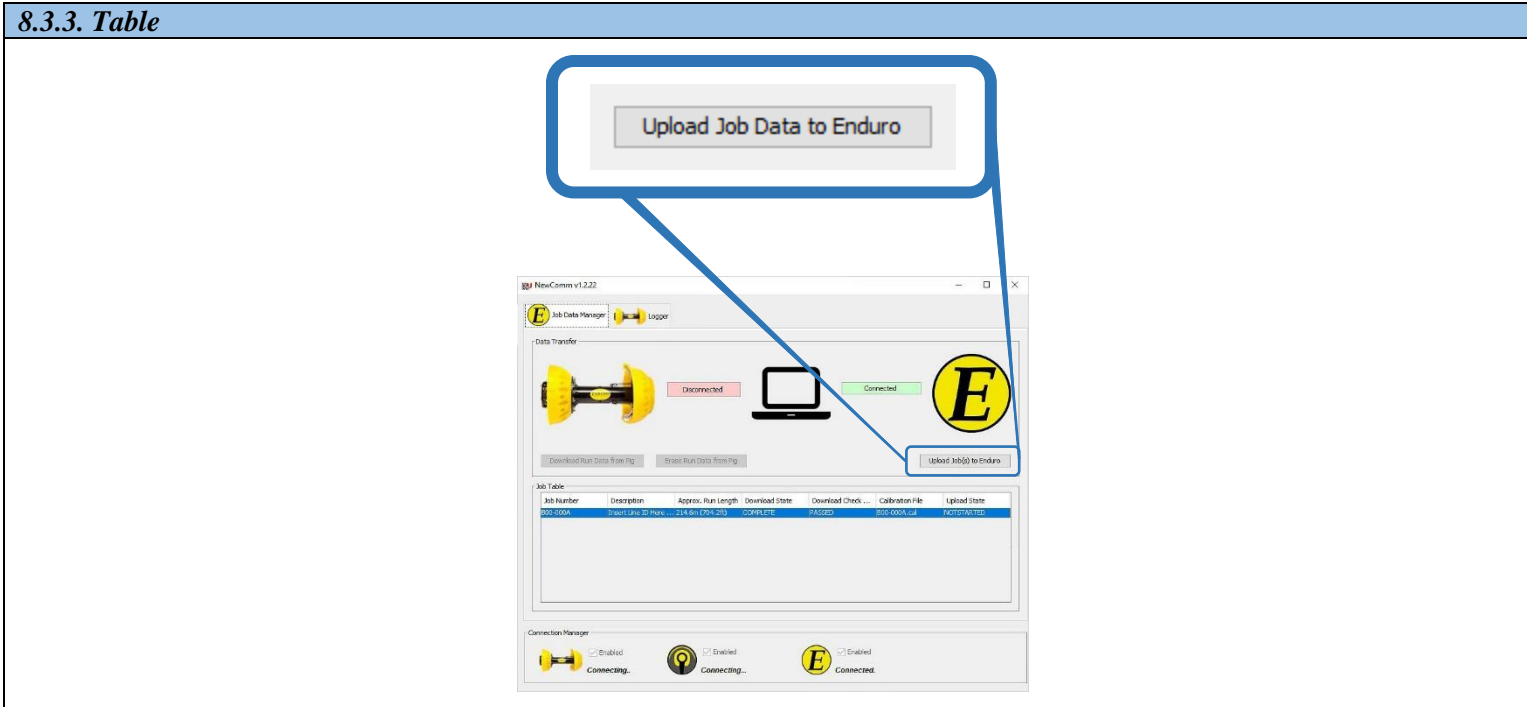
8.3.2. Table

Job Number	Description	Approx. Run Length	Download State	Download Check ...	Calibration File	Upload State
B00-000A	Insert Line ID Here ...	214.6m (704.2ft)	COMPLETE	PASSED	B00-000A.cal	NOTSTARTED



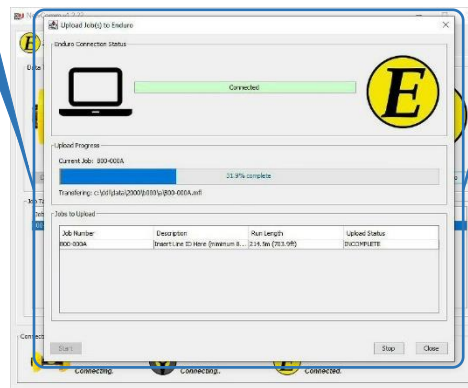
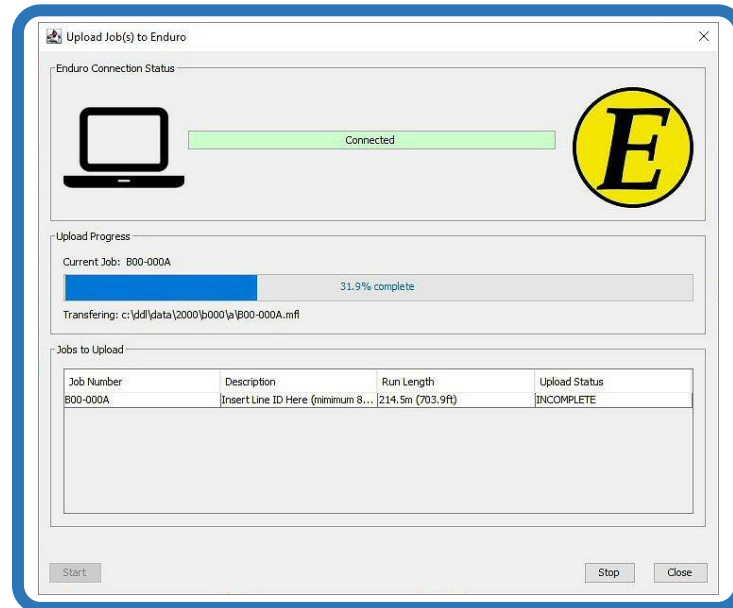
The screenshot shows a software window titled "NewComm v1.2.22". It features a "Job Data Manager" section with a "Logger" icon. Below this is a "Data Transfer" section with a "Disconnected" status (red) and a "Connected" status (green). A yellow hard hat icon is shown next to the "Disconnected" status, and a laptop icon is next to the "Connected" status. A large yellow "E" logo is also present. At the bottom, there is a "Connection Manager" section with three status indicators: "Connecting..." (red), "Connecting..." (yellow), and "Connected" (green).

8.3.3. Locate and click the “Upload Job Data to Enduro” button to start the upload process. (refer to 8.3.3 Table).



8.3.4. An Upload Dialog window will open (refer to 8.3.4. Table).

8.3.4. Table

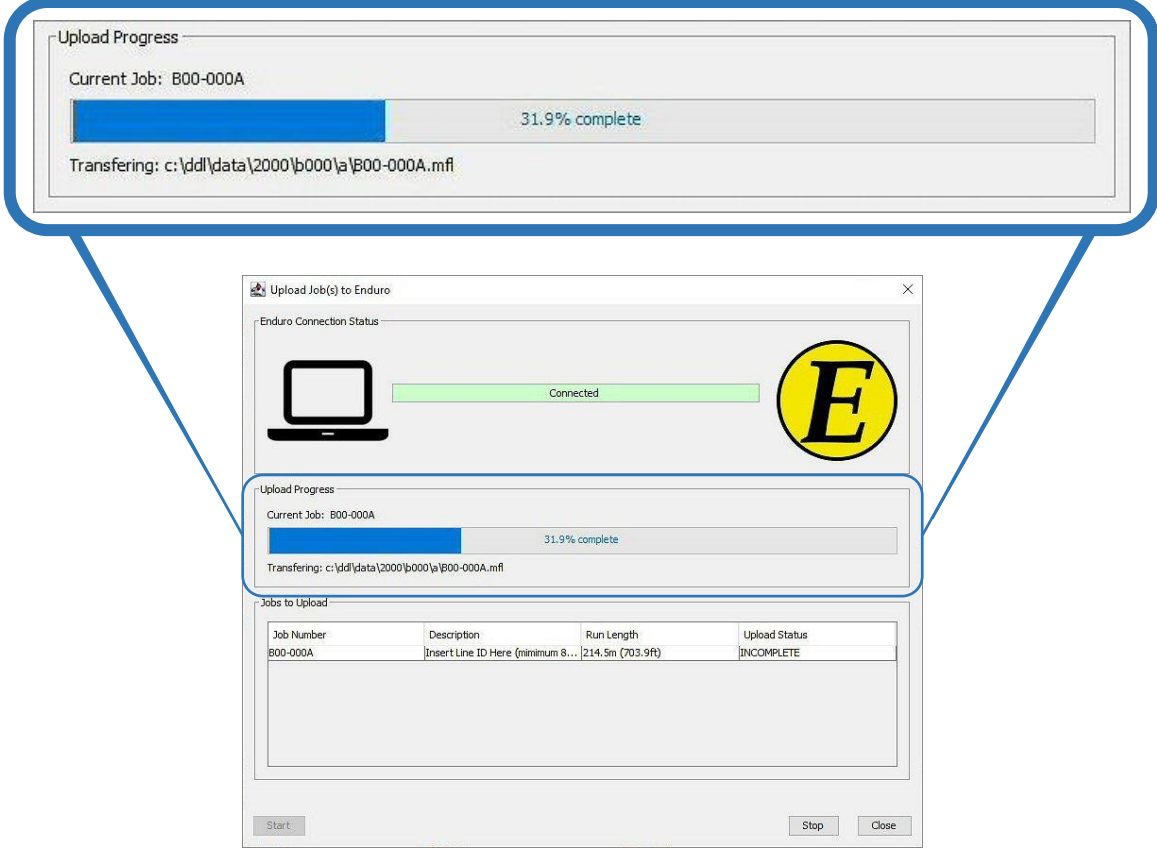


8.3.5. Upload Progress Bar (refer to 8.3.5. Table).

8.3.5.1. This will give the user feedback regarding the upload progress from the Laptop Computer to ENDURO Headquarters and how much progress remains.

8.3.5.1.1. 100% = Upload Complete

8.3.5. Table



The screenshot displays a software interface for uploading data. It features a main window titled "Upload Job(s) to Enduro" and a smaller inset window titled "Upload Progress".

The "Upload Progress" inset window shows:

- Current Job: B00-000A
- A progress bar at 31.9% complete.
- Transferring: c:\ddl\data\2000\b000\A\b00-000A.mfl

The main "Upload Job(s) to Enduro" window shows:

- Enduro Connection Status: Connected (indicated by a green bar and a laptop icon).
- A yellow circular logo with a black 'E'.
- A smaller "Upload Progress" inset window showing the same progress as above.
- A "Jobs to Upload" table with the following data:

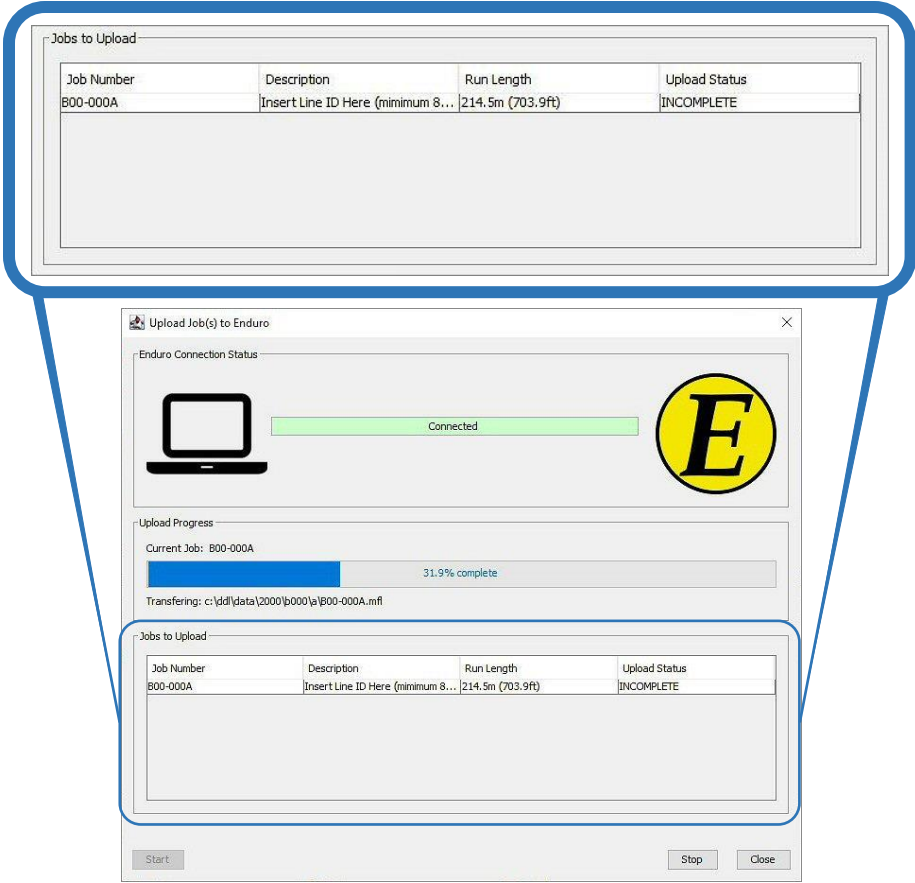
Job Number	Description	Run Length	Upload Status
B00-000A	[Insert Line ID Here (minimum 8...]	214.5m (703.9ft)	INCOMPLETE

At the bottom of the main window are buttons for "Start", "Stop", and "Close".

8.3.6. Jobs to Upload (refer to 8.3.6. Table).

8.3.6.1. This will list the Jobs to upload and their respective upload status.

8.3.6. Table



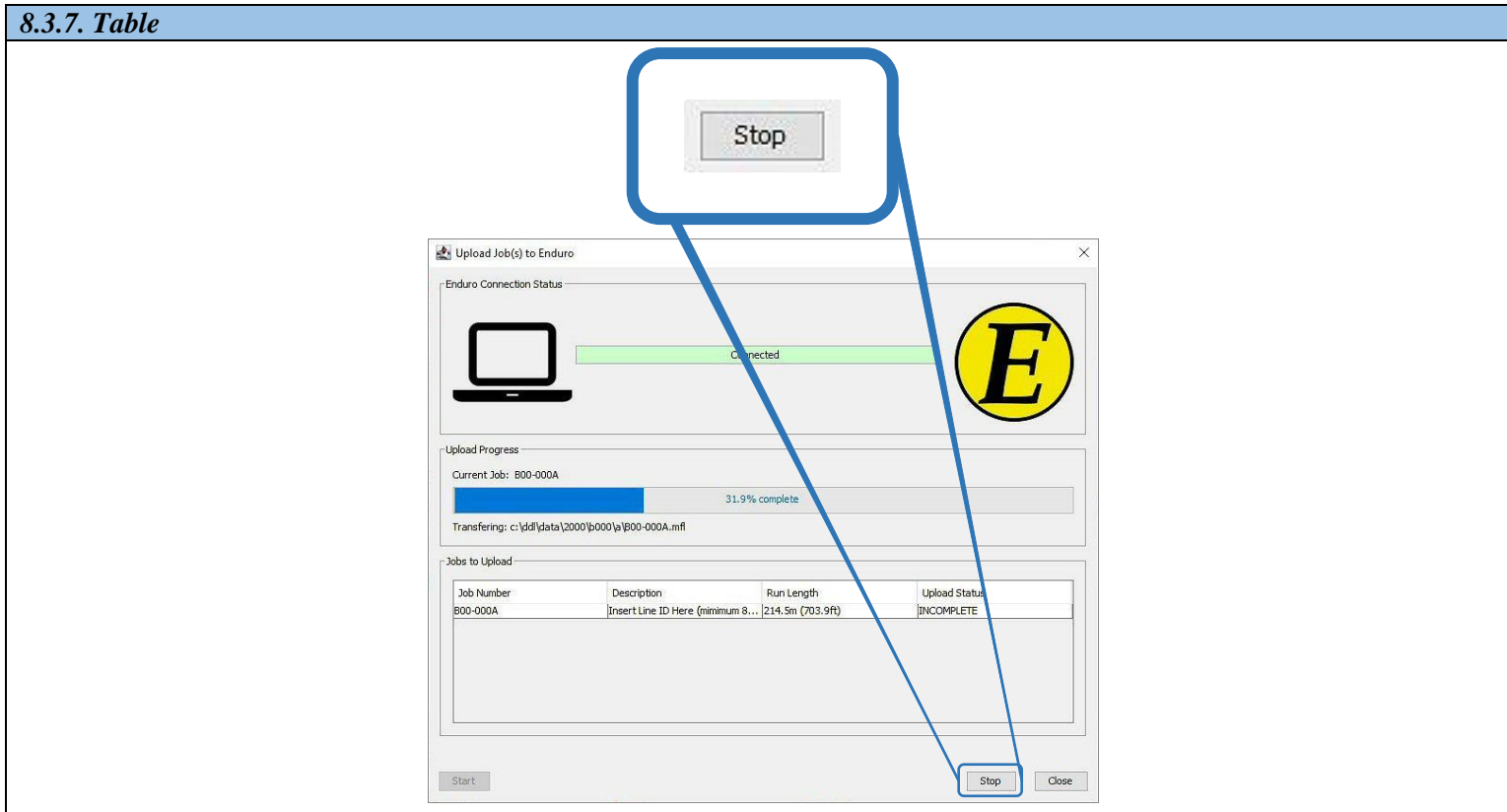
The screenshot displays two windows from the software. The top window, titled 'Jobs to Upload', contains a table with the following data:

Job Number	Description	Run Length	Upload Status
B00-000A	Insert Line ID Here (minimum 8...	214.5m (703.9ft)	INCOMPLETE

The bottom window, titled 'Upload Job(s) to Enduro', shows the 'Enduro Connection Status' as 'Connected' with a green progress bar. Below this, the 'Upload Progress' section shows 'Current Job: B00-000A' with a progress bar at '31.9% complete' and the file path 'Transferring: c:\ddl\data\2000\p000\p\B00-000A.mfl'. At the bottom of this window, there are 'Start', 'Stop', and 'Close' buttons. A smaller version of the 'Jobs to Upload' table is also visible at the bottom of the dialog box.

8.3.7. Stop Upload button (*refer to 8.3.7. Table*).

8.3.7.1. This will stop the upload process if necessary.




8.3.8. Jobs Upload Complete (refer to 8.3.8. Table).

8.3.8.1. Once the Upload to ENDURO Headquarters process has successfully completed, the Progress Bar will show “100.0% complete” and the upload status will change to “COMPLETE”.

8.3.8. Table

Upload Progress

Current Job:



100.0% complete

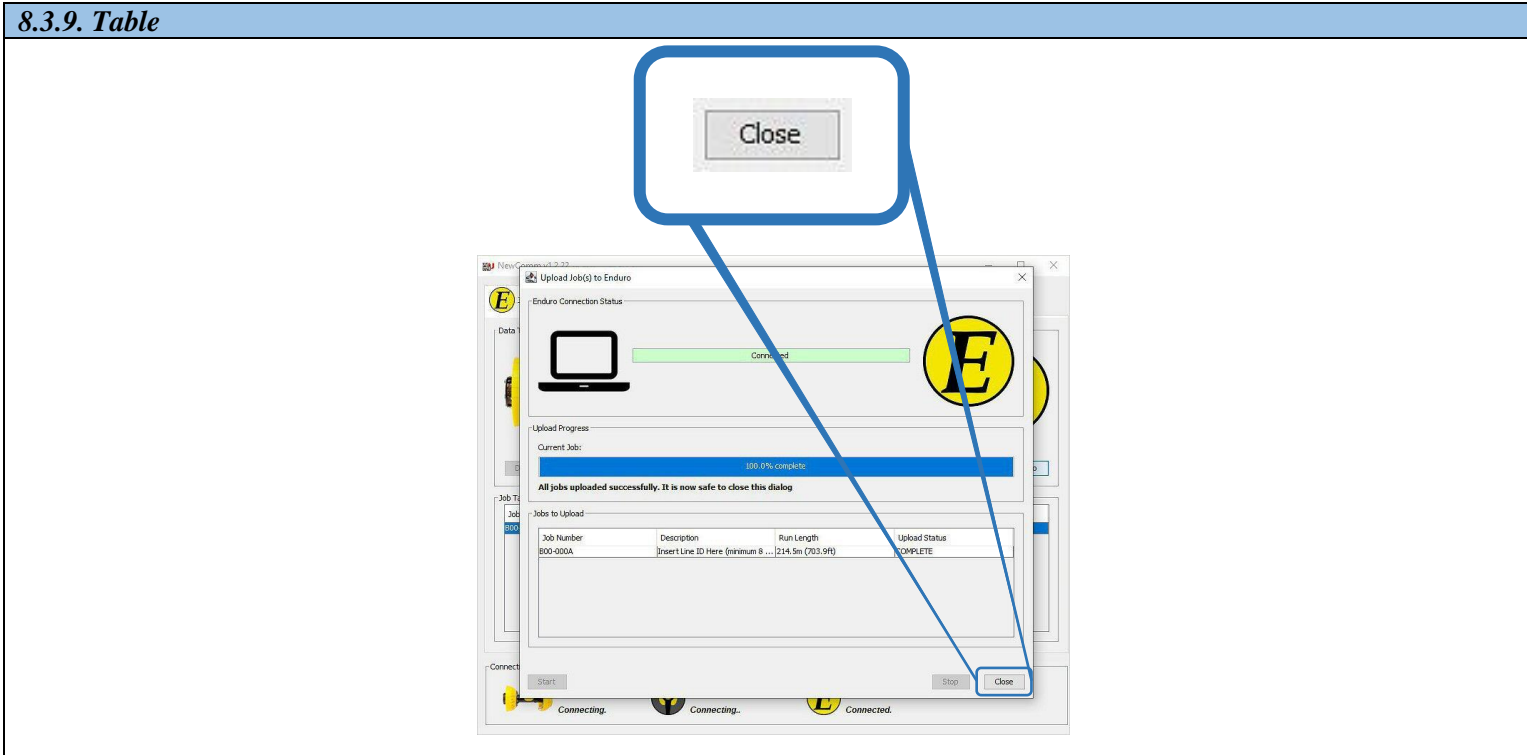
All jobs uploaded successfully. It is now safe to close this dialog

Jobs to Upload

Job Number	Description	Run Length	Upload Status
B00-000A	Insert Line ID Here (minimum 8 ...	214.5m (703.9ft)	COMPLETE



8.3.9. Once a successful upload has been completed, click the Close button on the Upload Dialog window (*refer to 8.3.9. Table*).



9. **Troubleshooting:**

9.1. **Laptop Computer:**

9.1.1. If an issue develops with the Laptop Computer, contact ENDURO IT Department for further assistance.

9.2. **DdL™ Caliper Tool:**

9.2.1. If an issue develops with the DdL™ Caliper Tool, contact ENDURO Operations Department for further assistance.