ENDURO
PIPELINE SERVICES, INC.

ENDURO
DdL™ Caliper Tool
User Manual

Using the ENDURO Tech-Less
DdL™ Caliper Inspection Tool

P.O. Box 3489 · Tulsa, Oklahoma 74101-3489 · Office (918) 446-1934
Toll Free 1-800-752-1628 · Fax (918) 446-8125 · www.enduropls.com

Table of Contents

ENDURO DdL™ Caliper Procedures

Section	Topic	Page
A.	**DISCLAIMER**	**3**
1.	**Survey Preparation**	**4-9**
1.1.	*Pipeline Cleanliness*	*4*
1.2.	*Loading into / Unloading from Pipeline*	*4*
1.3.	*Medium to be used to propel DdL™ Caliper Tool*	*4*
1.3.1.	*AIR*	*4-6*
1.3.2.	*WATER*	*7-9*
1.3.3.	*PRODUCT*	*9*
1.4.	*Main Line Valve (MLV) Locations*	*9*
2.	**DdL™ Caliper Tool Pre-Run**	**10-50**
2.1.	*Unpacking Shipment*	*10*
2.2.	*Laptop Computer*	*10-11*
2.3.	*AGM2 Box*	*11*
2.4.	*Powering Up the DdL™ Caliper Tool*	*12-13*
2.5.	*Powering Up the AGM2 Box*	*14-17*
2.6.	*Connecting Laptop Computer to the DdL™ Caliper Tool*	*18-26*
2.7.	*Connecting Laptop Computer to the AGM2 Box*	*27-33*
2.8.	*Final DdL™ Caliper Tool Check*	*34-37*
2.9.	*Loading DdL™ Caliper Tool into Pipeline*	*38-50*

© Enduro Pipeline Services, Inc. All Rights Reserved.

3.	**DdL™ Caliper Tool Post-Run**	**51-64**
3.1.	*Removing DdL™ Caliper Tool from pipeline*	*51-58*
3.2.	*Connecting Laptop Computer to the DdL™ Caliper Tool*	*59-64*
4.	**Download Dialog Window**	**65-75**
4.1.	*Downloading the DdL™ Caliper Tool*	*65-71*
4.2.	*Powering Down the DdL™ Caliper Tool*	*72-75*
5.	**Upload Dialog Window**	**76-82**
5.1.	*Uploading the data to ENDURO Headquarters*	*76-82*
6.	**Erasing Data from DdL™ Caliper Tool**	**83-86**
6.1.	*Erase Challenge Dialog*	*66-86*
7.	**Shipping DdL™ Caliper Tool back to ENDURO**	**87**
7.1.	*Packing Shipment / Logistics*	*87*
8.	**NewCommTC 64 Dialog User Interface Reference**	**88-106**
8.1.	*Communication Dialog Windows*	*88-98*
8.2.	*Download Dialog Windows*	*99-114*
8.3.	*Upload Dialog Windows*	*115-123*
9.	**Troubleshooting**	**124**
9.1.	*Troubleshooting Laptop Computer*	*124*
9.2.	*Troubleshooting DdL™ Caliper Tool*	*124*

© Enduro Pipeline Services, Inc. All Rights Reserved.

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.

© Enduro Pipeline Services, Inc. All Rights Reserved.

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.

© Enduro Pipeline Services, Inc. All Rights Reserved.

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.

© Enduro Pipeline Services, Inc. All Rights Reserved.

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.

© Enduro Pipeline Services, Inc. All Rights Reserved.

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.

© Enduro Pipeline Services, Inc. All Rights Reserved.

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.

© Enduro Pipeline Services, Inc. All Rights Reserved.

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.

© Enduro Pipeline Services, Inc. All Rights Reserved.

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

© Enduro Pipeline Services, Inc. All Rights Reserved.

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.

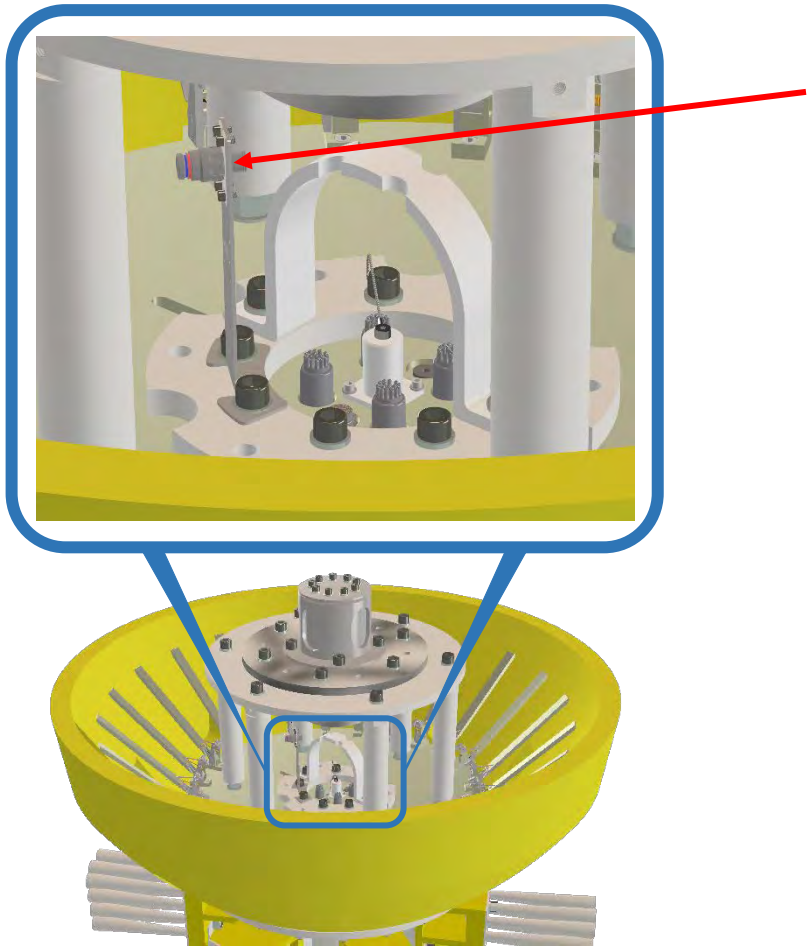
2.3.2.1.1. IF the DdL™ Caliper Tool has been powered down, an AGM2 sync MUST be done again when the tool is powered back on.

© Enduro Pipeline Services, Inc. All Rights Reserved.

2.4. Powering Up the DdL™ Caliper Tool

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

2.4.1. Table



© Enduro Pipeline Services, Inc. All Rights Reserved.

2.4.1.1. Remove the protective covers from the Male and Female ends of the Power Plug.

2.4.1.1.1. Please keep these protective covers with the Standard Support Equipment; they will be utilized periodically throughout this entire process.

2.4.1.1.2. Male Plug – Single Blue Line

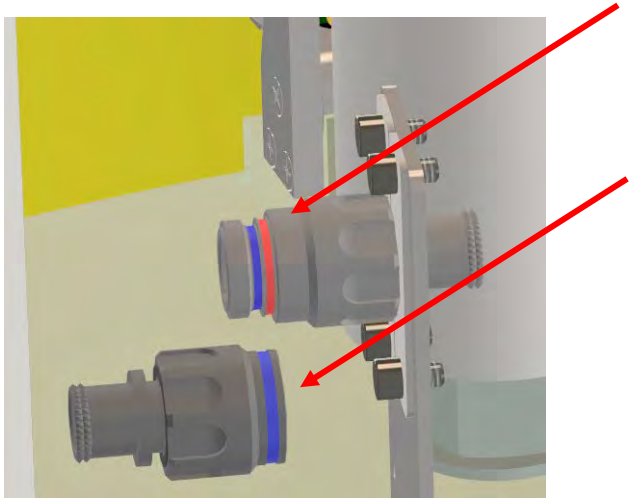
2.4.1.1.3. Female Plug – Single Blue Line & Single Red Line

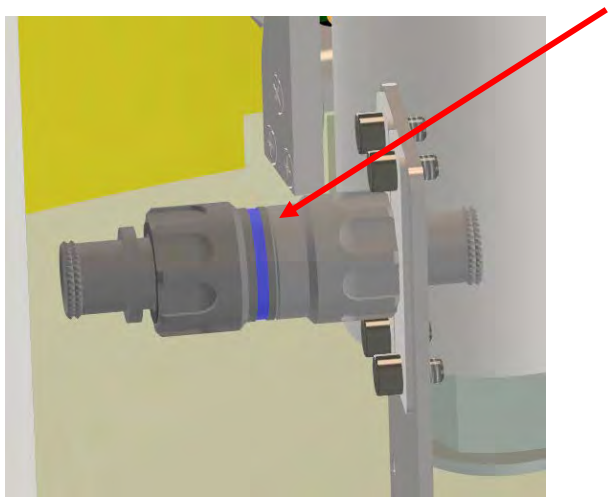
2.4.1.2. Insert the Male and Female ends together, aligning the alignment tabs with their corresponding slots.

2.4.1.3. Twist the Male Plug clockwise until it stops (*refer to 2.4.1.3. Table*).

2.4.1.3.1. A properly seated connection will cover the Single Red Line on the Female Plug.

2.4.1.3. Table





2.4.2. Once connected, the tool is powered up.

2.4.2.1. When the DdL™ Caliper Tool is not in use, keep the tool powered down by verifying that the Male and Female Plugs are disconnected, and the protective covers are installed on both Plugs.

© Enduro Pipeline Services, Inc. All Rights Reserved.

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.

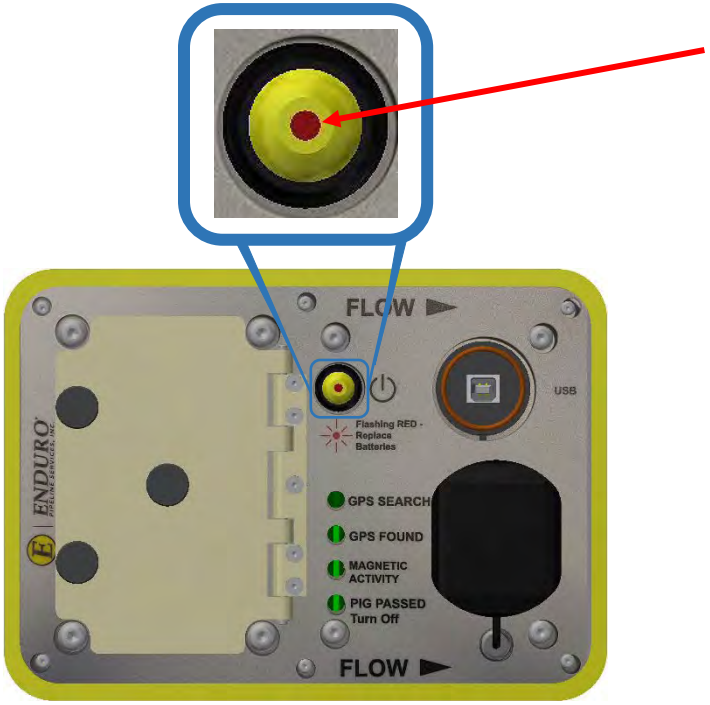
2.5.1.1.1. For best Satellite connection, it is recommended to be outside, away from any large structures.

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.

2.5.2. Table



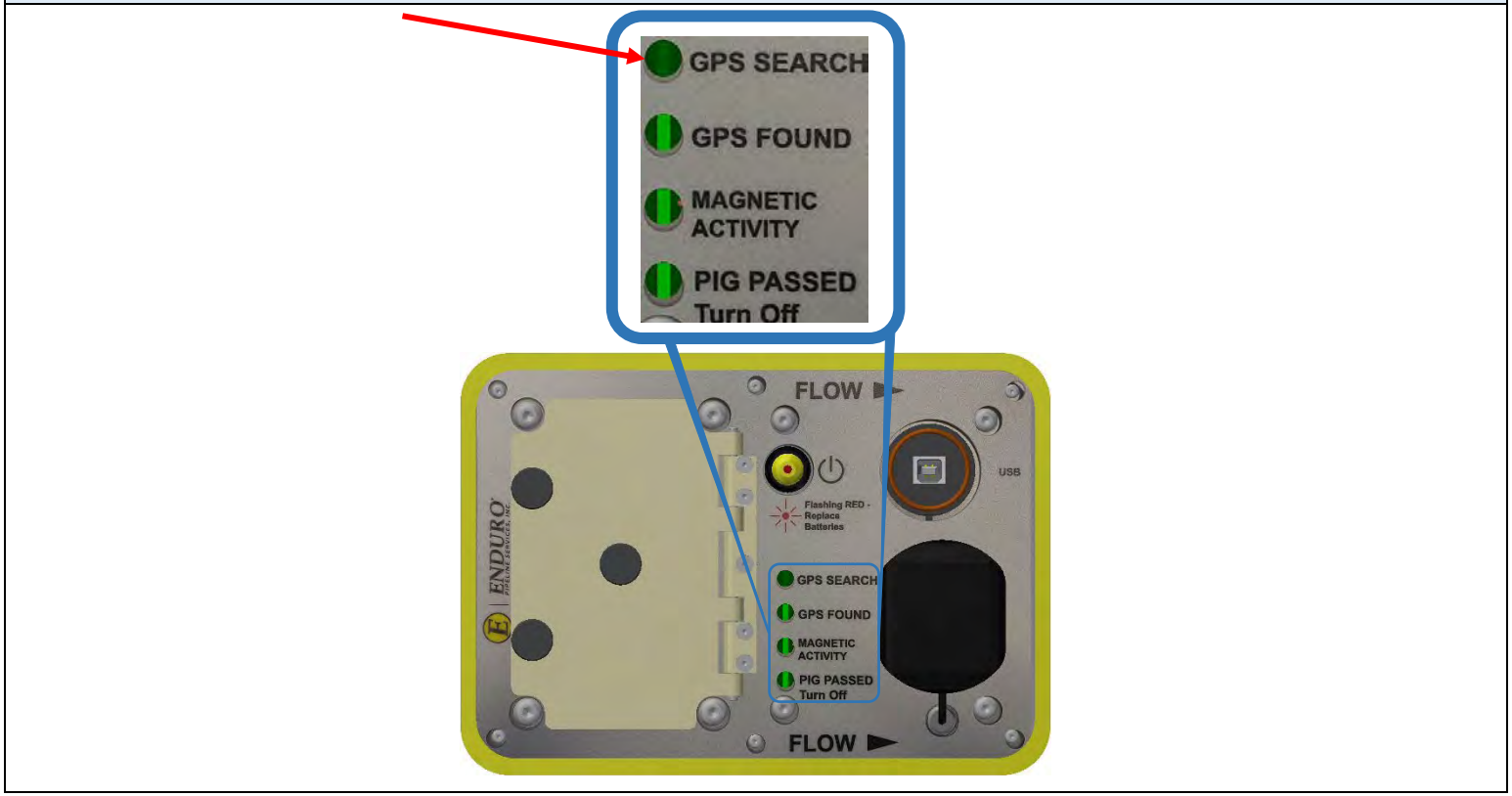
© Enduro Pipeline Services, Inc. All Rights Reserved.

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.

2.5.3.1. Table

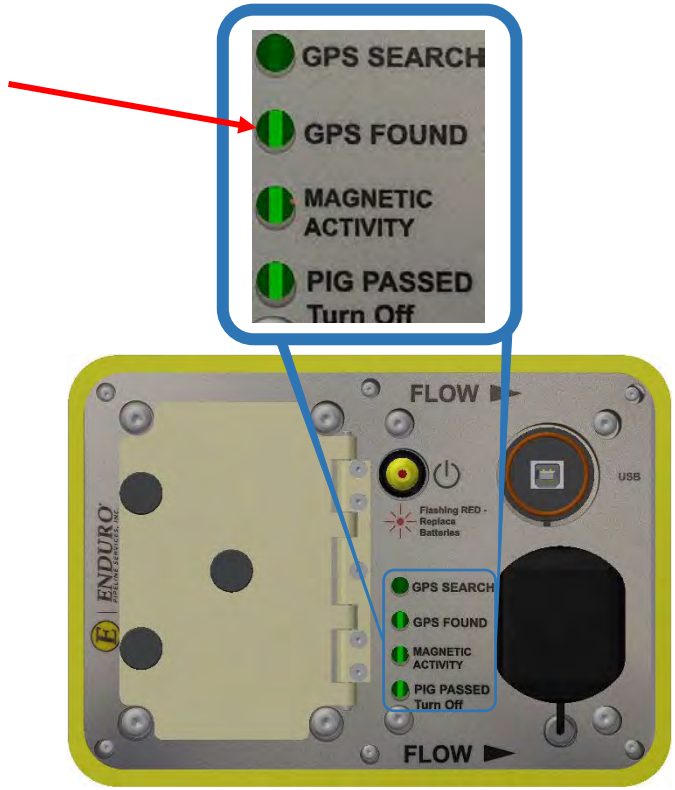


© Enduro Pipeline Services, Inc. All Rights Reserved.

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

2.5.4. Table



© Enduro Pipeline Services, Inc. All Rights Reserved.

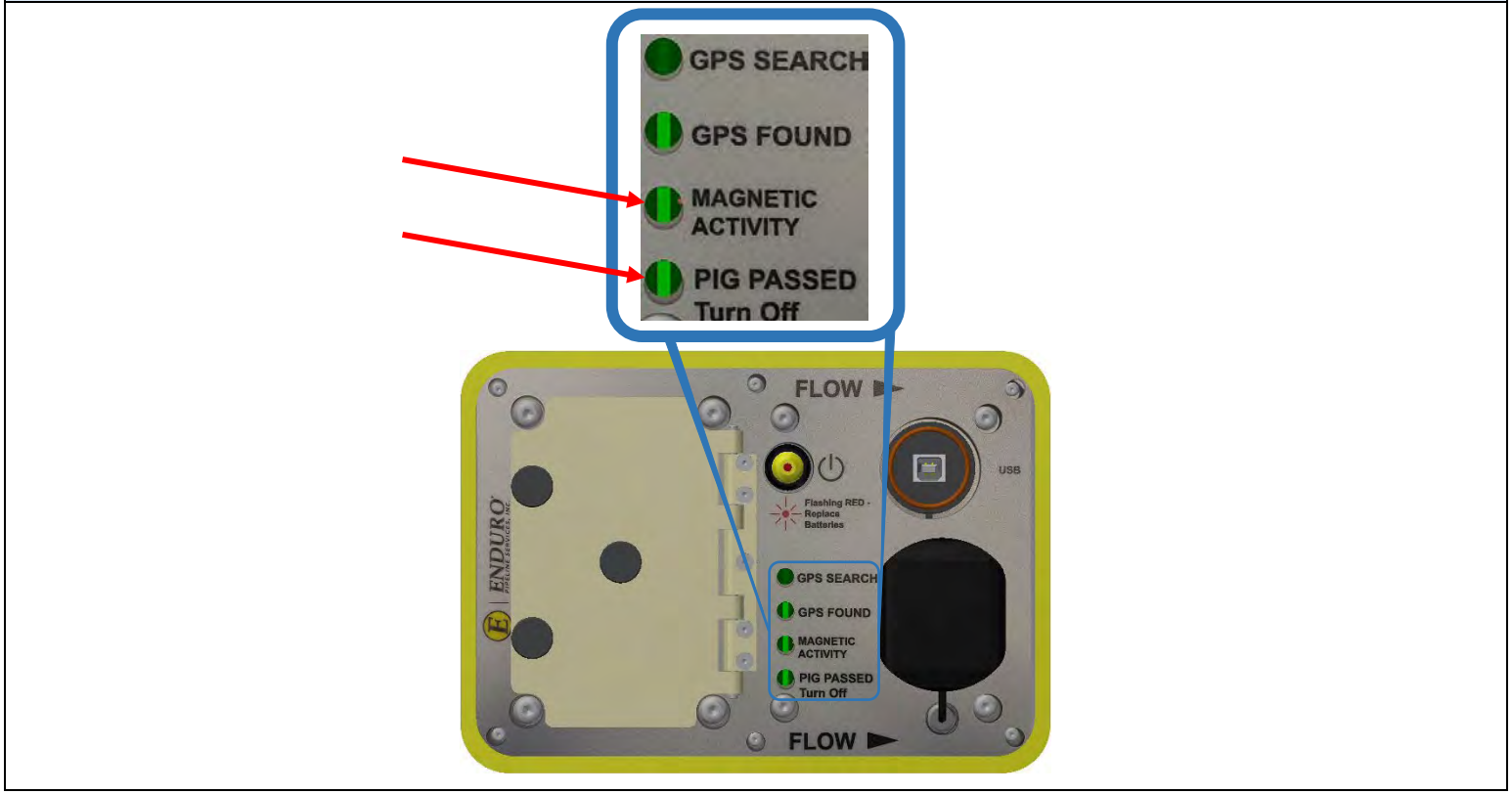
2.5.5. IF the AGM2 Box is bumped or moved any time during this process, the remaining lights will become active (*refer to 2.5.5. Table*).

2.5.5.1. MAGNETIC ACTIVITY

2.5.5.2. PIG PASSED

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

2.5.5. Table



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.

© Enduro Pipeline Services, Inc. All Rights Reserved.

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.

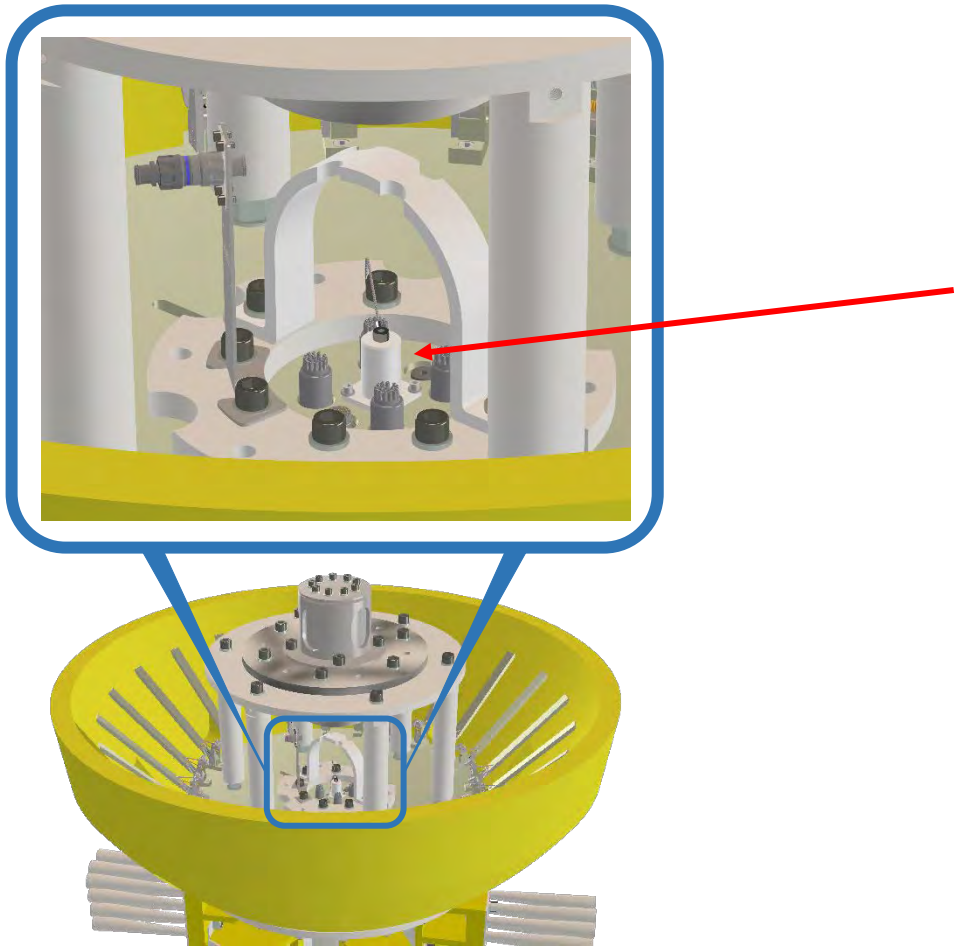
2.6.2. Locate the Communication Cable A and plug the USB TYPE A end into the Laptop Computer USB Port labeled **TOOL**. (*refer to 2.6.2. Table)*

2.6.2. Table

© Enduro Pipeline Services, Inc. All Rights Reserved.

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

2.6.3. Table



© Enduro Pipeline Services, Inc. All Rights Reserved.

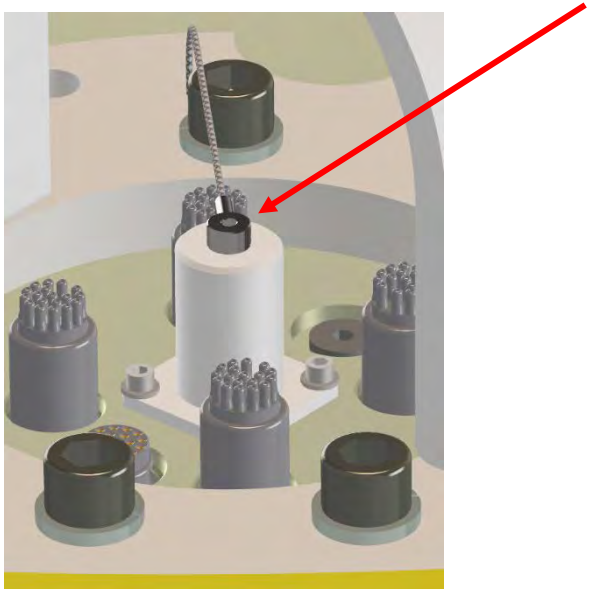
2.6.3.1. Remove the protective cover by unscrewing the cap counterclockwise. (*refer to 2.6.3.1. Table)*

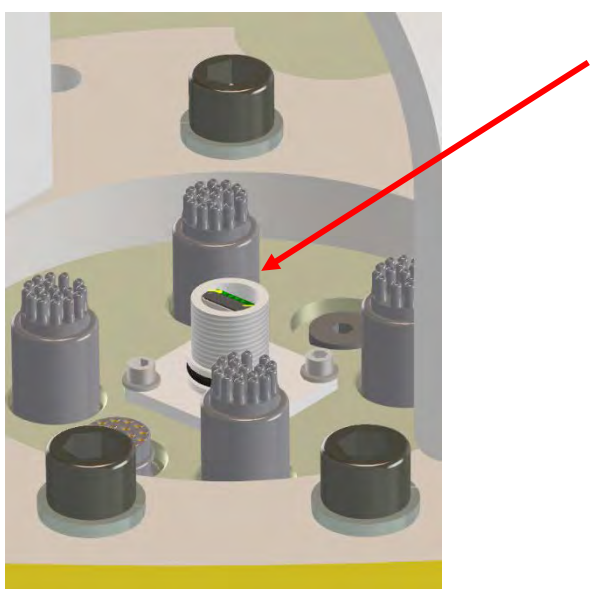
2.6.3.1.1. Please be mindful of the other connectors located around the Communication Port

2.6.3.1.1.1. DO NOT disconnect any of the other connectors that are located around the Communication Port.

2.6.3.1.1.2. These other connections may become disconnected or even damaged if moved in a manner not intended.

2.6.3.1. Table



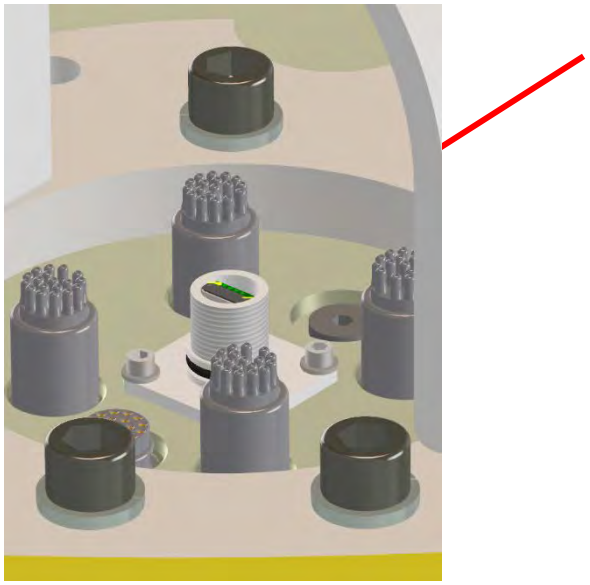


© Enduro Pipeline Services, Inc. All Rights Reserved.

2.6.3.2. Locate the Communication Cable A and plug the USB MICRO B end into the Communication Port of the DdL™ Caliper Tool. (*refer to 2.6.3.2. Table*)

2.6.3.2. Table

USB MICRO B

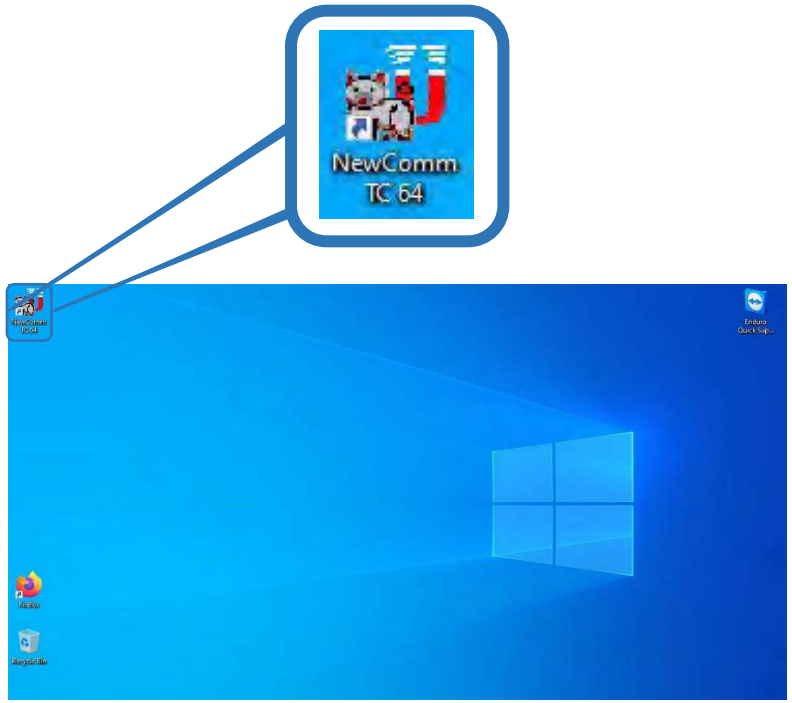


© Enduro Pipeline Services, Inc. All Rights Reserved.

2.6.4. Locate the NewCommTC 64 Icon on the desktop of the Laptop Computer (*refer to 2.6.4. Table*)

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

2.6.4. Table



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

© Enduro Pipeline Services, Inc. All Rights Reserved.

2.6.6. DdL™ Caliper Tool Icon - Laptop Computer Icon - AGM2 Box Icon - Enduro Logo Icon (*refer to 2.6.6. Table*)

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

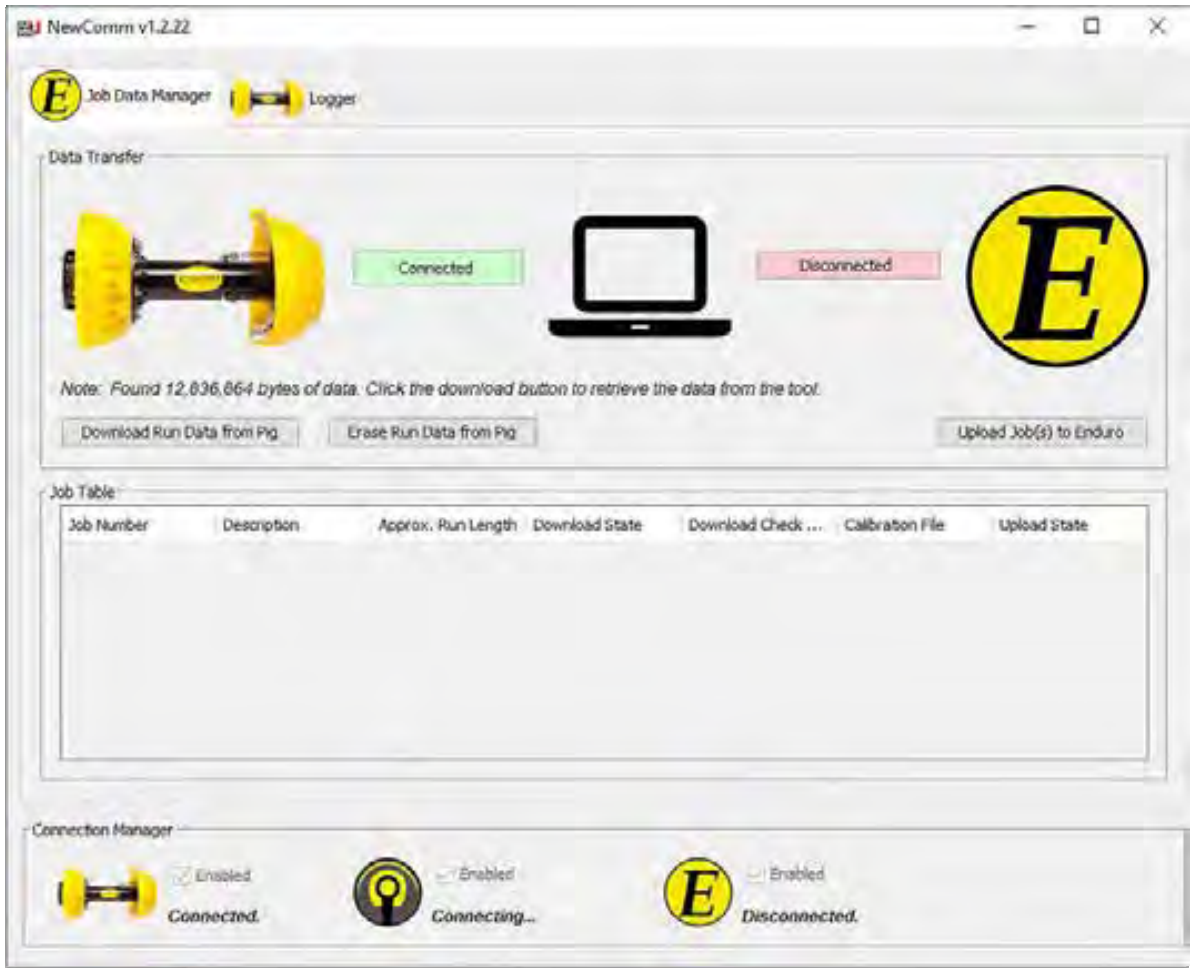
2.6.6. Table	
DdL™ Caliper Tool Icon	
Laptop Computer Icon	
AGM2 Box Icon	
Enduro Logo Icon	

© Enduro Pipeline Services, Inc. All Rights Reserved.

2.6.7. After double clicking the NewCommTC 64 Icon on the Desktop, this window below will open (*refer to 2.6.7. Table*)

2.6.7.1. The " **Job Data Manager** " window will open.

2.6.7. Table

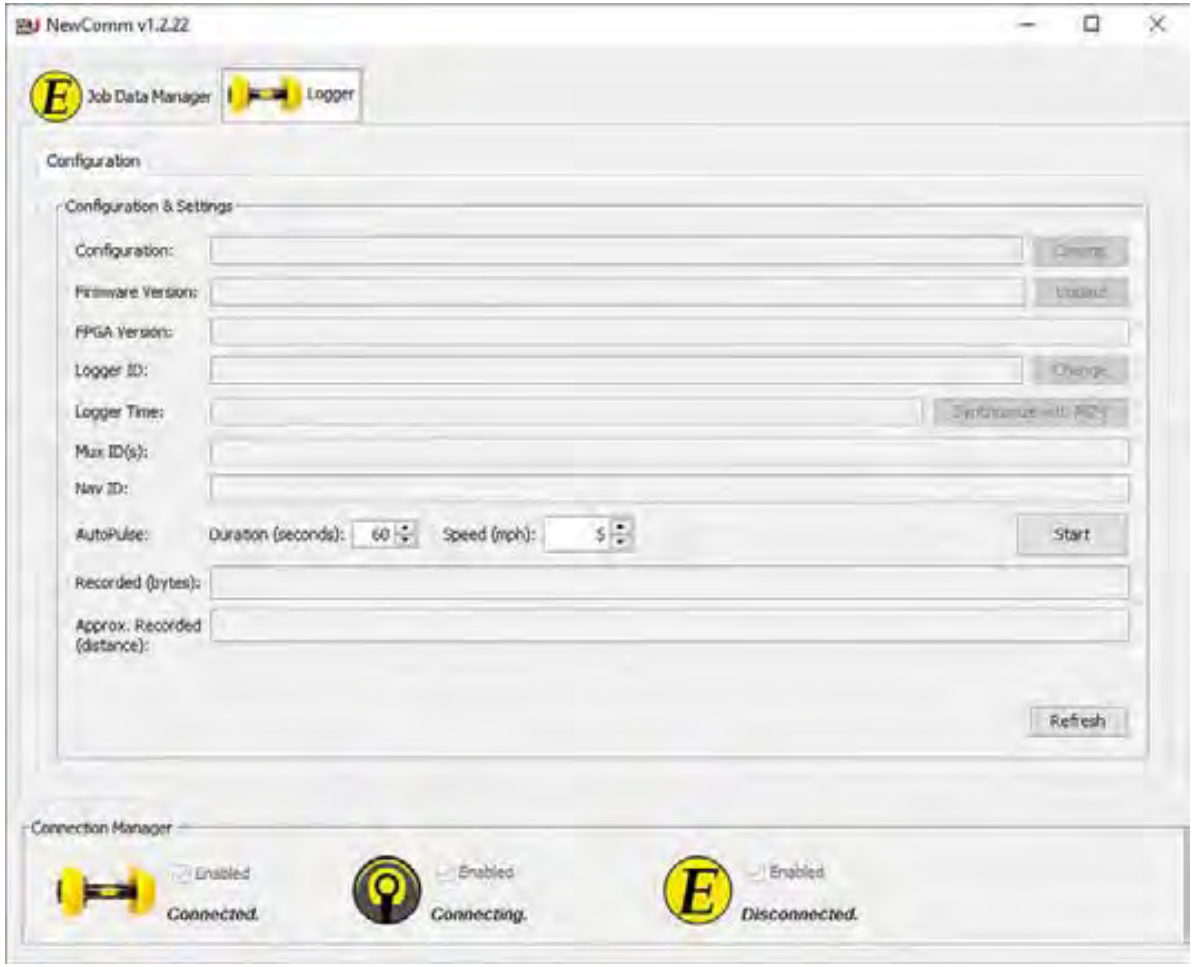


© Enduro Pipeline Services, Inc. All Rights Reserved.

2.6.8. Click the tab " **Logger** " located at the top left of the screen and this window will open (*refer to 2.6.8. Table*)

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

2.6.8. Table



© Enduro Pipeline Services, Inc. All Rights Reserved.

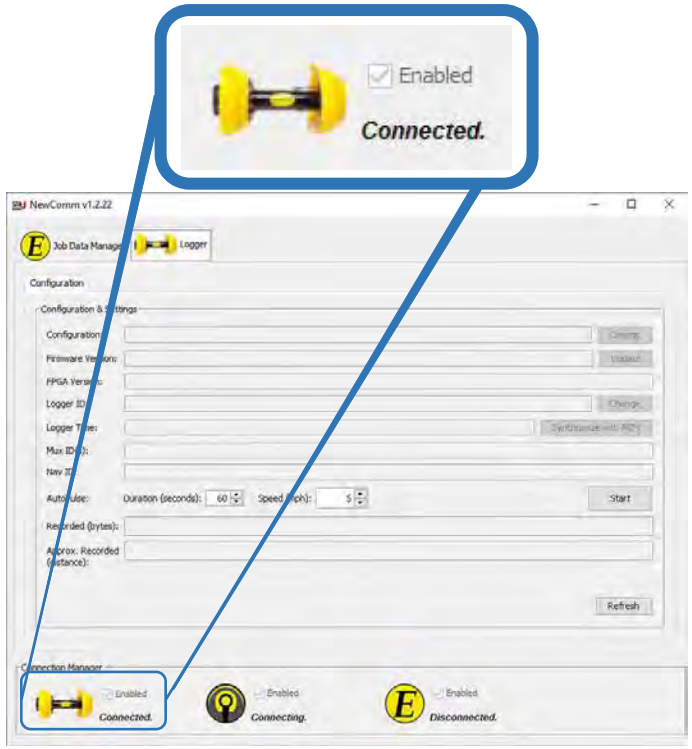
2.6.9. Verify that the Laptop Computer is communicating with the DdL™ Caliper Tool (*refer to 2.6.9. Table*).

2.6.9.1. When communication is established, the status will state "***Connected.***"

2.6.9.1.1. "***Connecting…***" = In the process / attempting to make connection.

2.6.9.1.2. "***Disconnected.***" = No Connection established.

2.6.9. Table



© Enduro Pipeline Services, Inc. All Rights Reserved.

2.7. Connecting Laptop Computer to the AGM2 Box

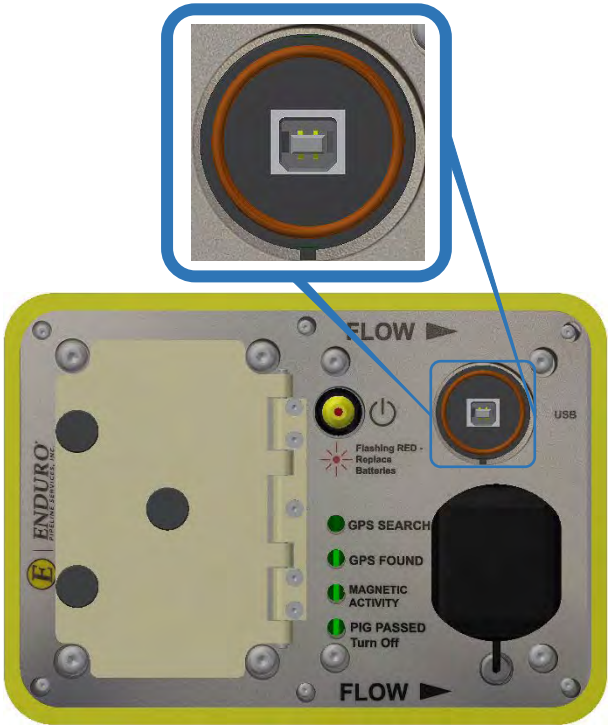
2.7.1. Locate the Communication Cable B and plug the USB TYPE A end into the Laptop Computer USB Port labeled **AGM2**. (*refer to 2.7.1. Table)*

2.7.1. Table

© Enduro Pipeline Services, Inc. All Rights Reserved.

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

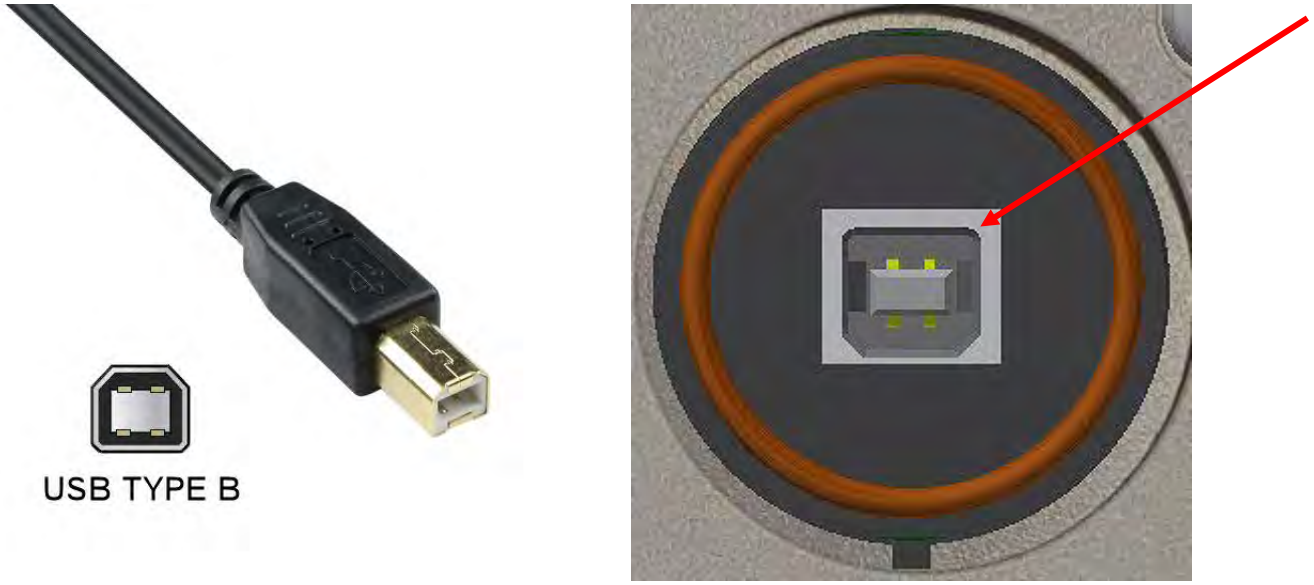
2.7.2. Table



© Enduro Pipeline Services, Inc. All Rights Reserved.

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*)

2.7.3. Table



© Enduro Pipeline Services, Inc. All Rights Reserved.

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.

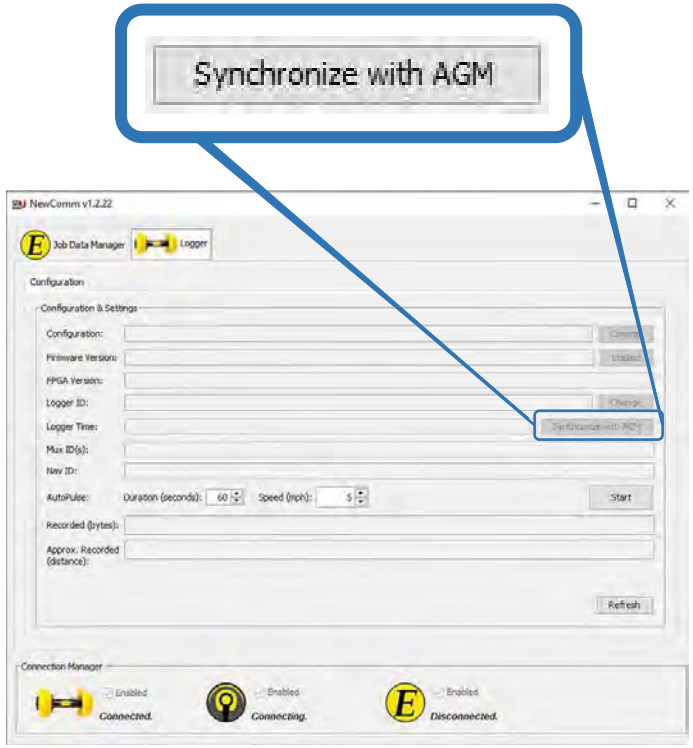
2.7.4. Table

© Enduro Pipeline Services, Inc. All Rights Reserved.

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.

2.7.5. Table

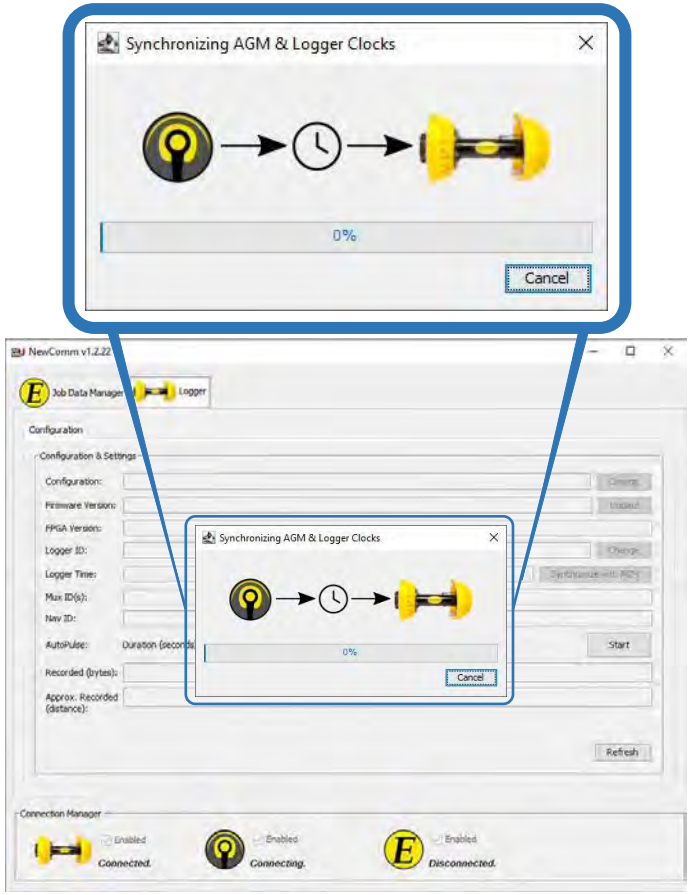


© Enduro Pipeline Services, Inc. All Rights Reserved.

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.

2.7.6. Table

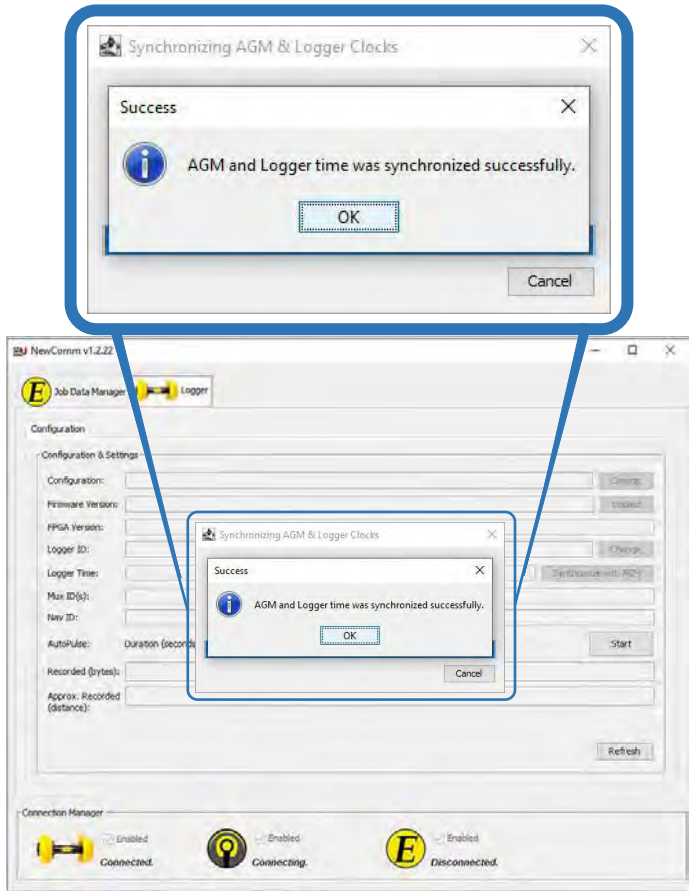


© Enduro Pipeline Services, Inc. All Rights Reserved.

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”

2.7.7. Table



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.

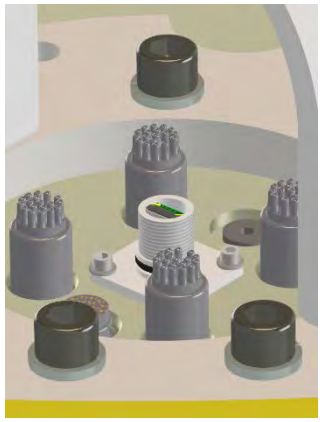
2.7.9. Proceed to the next steps after all DdL™ Caliper Tool Checks have been completed

© Enduro Pipeline Services, Inc. All Rights Reserved.

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*)

2.8.1. Table



© Enduro Pipeline Services, Inc. All Rights Reserved.

2.8.2. Replace the protective cover on the Communication Port at the rear of the DdL™ Caliper Tool by screwing the cap clockwise 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.

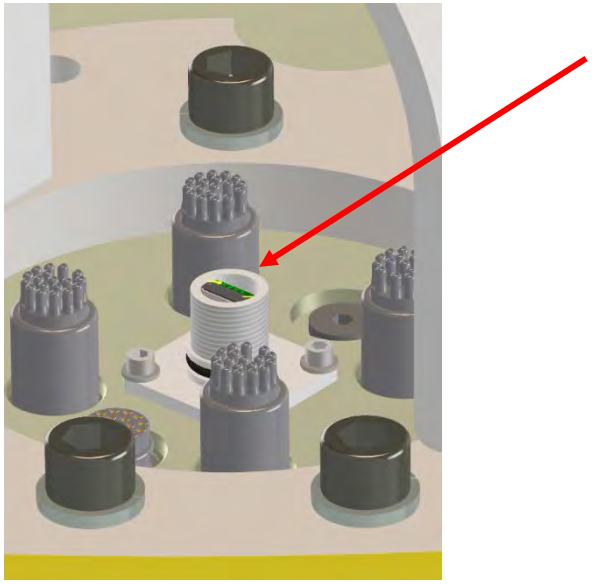
2.8.2.1.1. This will help ensure that nothing will get into the Communication Port during the survey, causing damage to the DdL™ Caliper Tool.

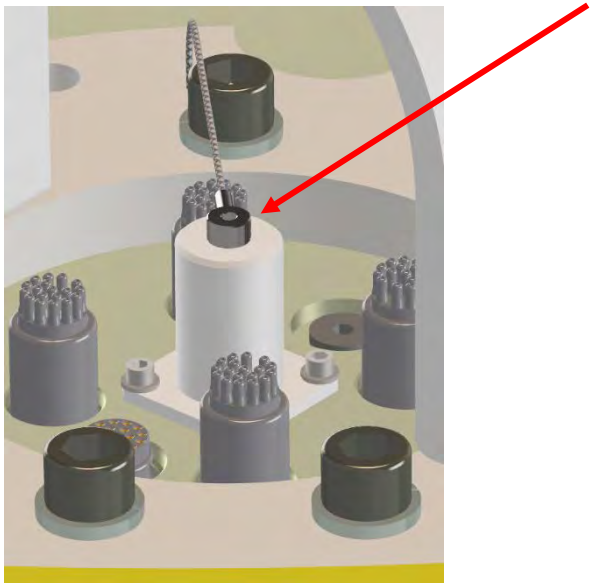
2.8.2.1.2. Please be mindful of the other connectors located around the Communication Port.

2.8.2.1.2.1. DO NOT disconnect any of the other connectors that are located around the Communication Port.

2.8.2.1.2.2. These other connections may become disconnected or even damaged if moved in a manner not intended

2.8.2. Table

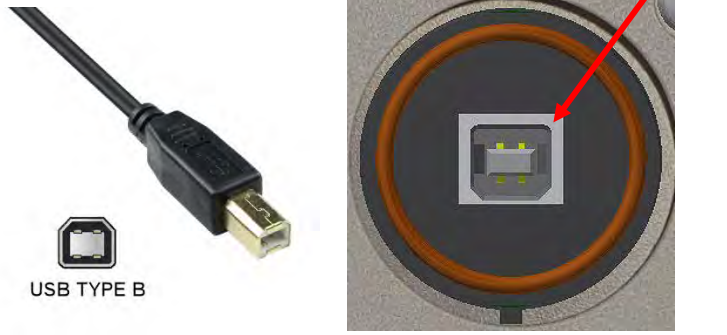




© Enduro Pipeline Services, Inc. All Rights Reserved.

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

2.8.3. Table



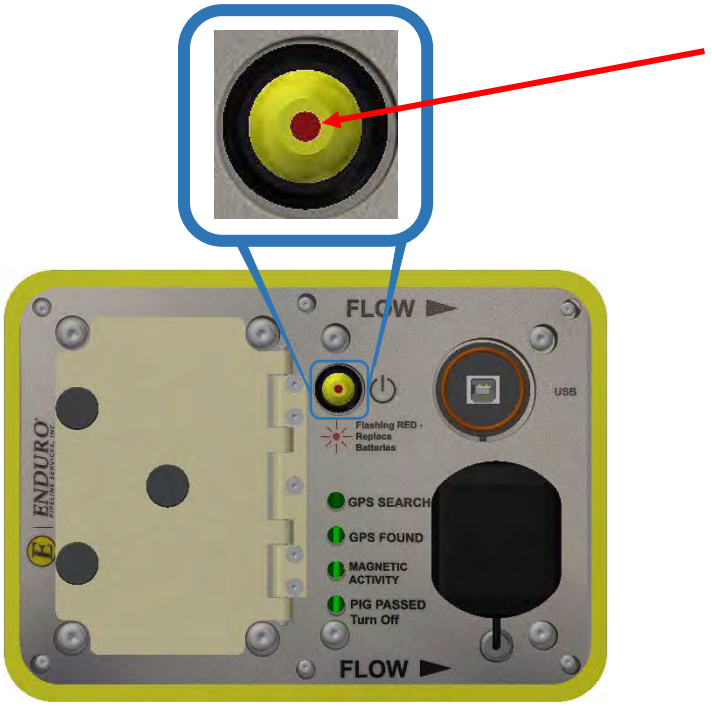
© Enduro Pipeline Services, Inc. All Rights Reserved.

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.

© Enduro Pipeline Services, Inc. All Rights Reserved.

2.9. Loading DdL™ Caliper Tool into Pipeline

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

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

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

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

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

2.9.4. **Pushing the DdL™ Caliper Tool into the Pipeline**.

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

2.9.4.2. Assemble the provided Push Poles that were shipped with the DdL™ Caliper Tool as part of the Support Equipment. (*refer to 2.9.3.2. Table*)

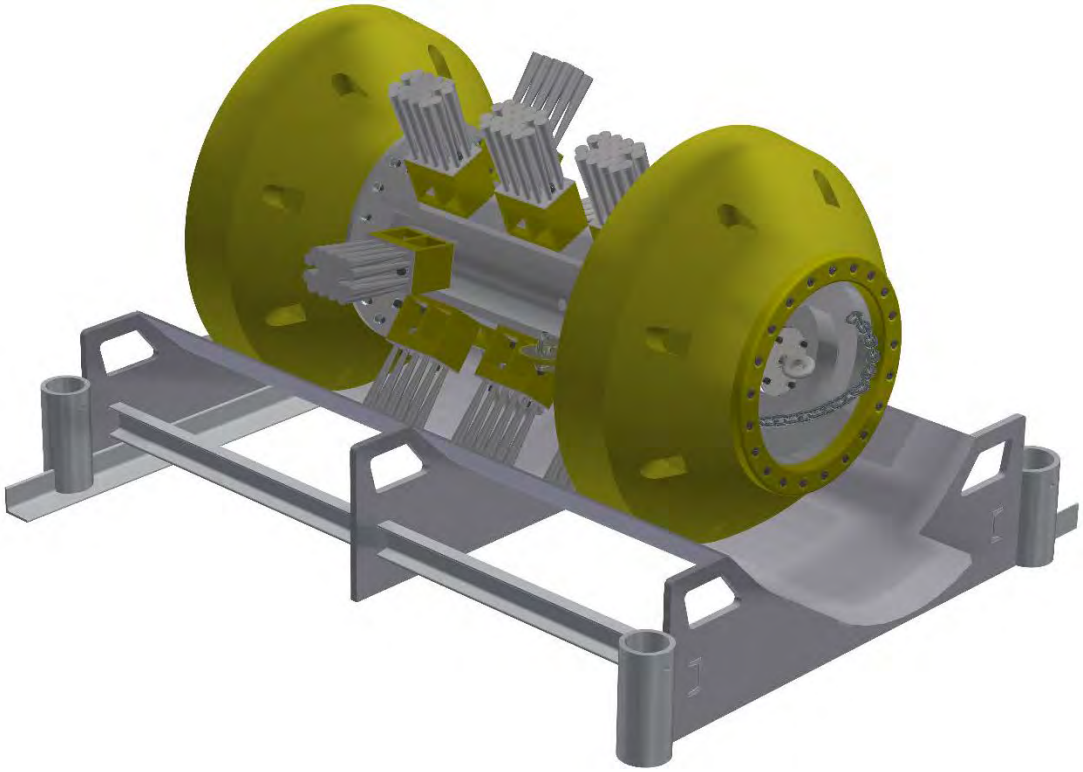
2.9.3.2. Table

© Enduro Pipeline Services, Inc. All Rights Reserved.

2.9.4.3. The DdL™ Caliper Tool will be transported on a utility tray that will assist with loading / unloading of the DdL™ Caliper Tool. (*refer to 2.9.3.3. Table*)

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

2.9.3.3. Table

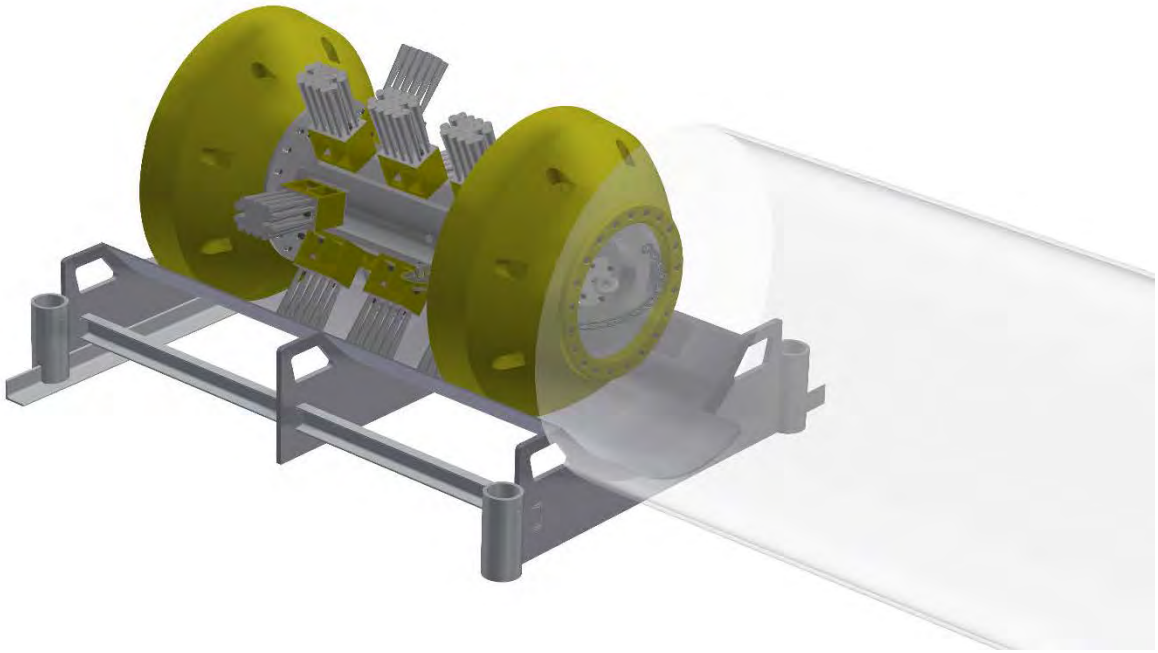


© Enduro Pipeline Services, Inc. All Rights Reserved.

2.9.4.4. Position and support utility tray in front of the opening of the pipeline in such a way that the tray is going in the same direction as the pipeline. (*refer to 2.9.3.4. Table*)

2.9.4.4.1. Remove the supplied Support Equipment used to secure the DdL™ Caliper Tool to the utility tray.

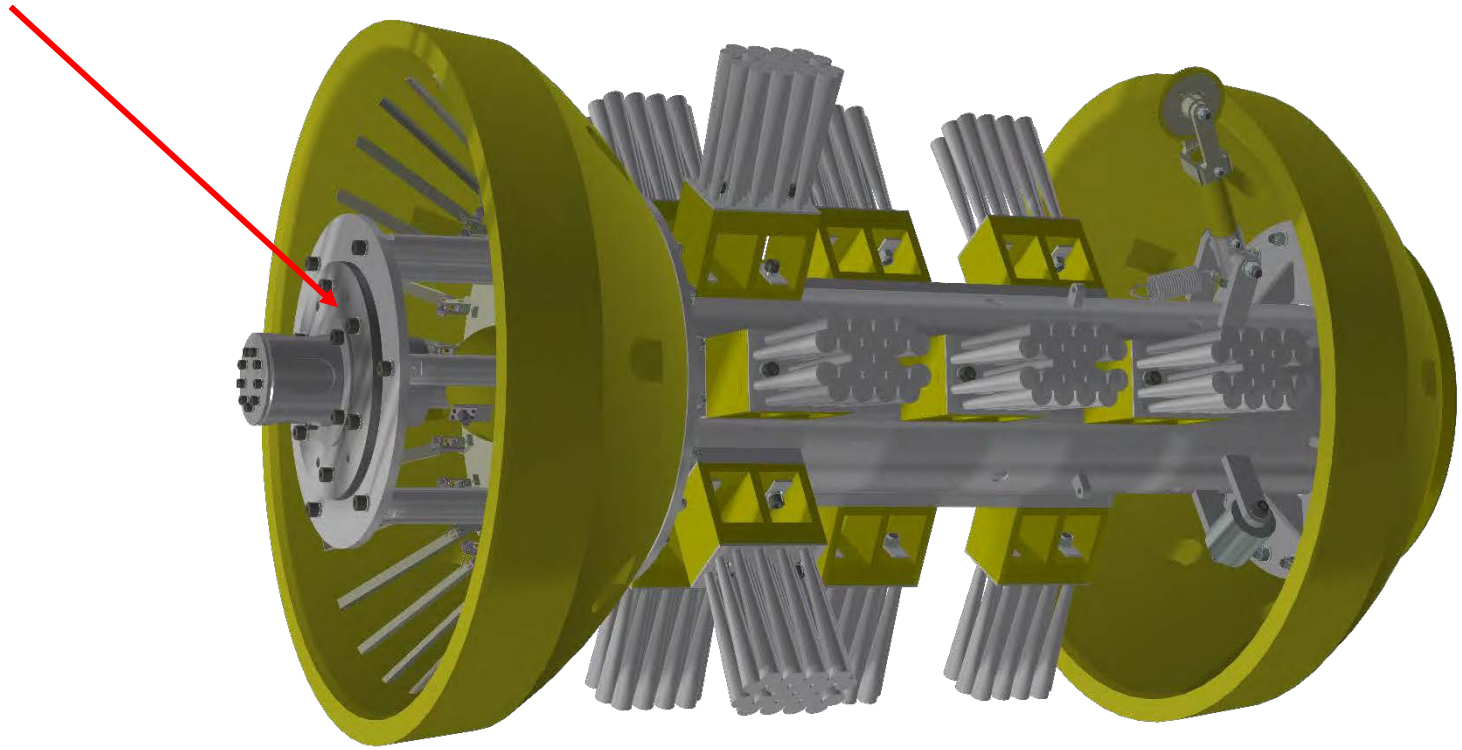
2.9.3.4. Table



© Enduro Pipeline Services, Inc. All Rights Reserved.

2.9.4.5. Located on the rear of the DdL™ Caliper Tool is a Push Plate. (*refer to 2.9.3.5. Table*)

2.9.3.5. Table



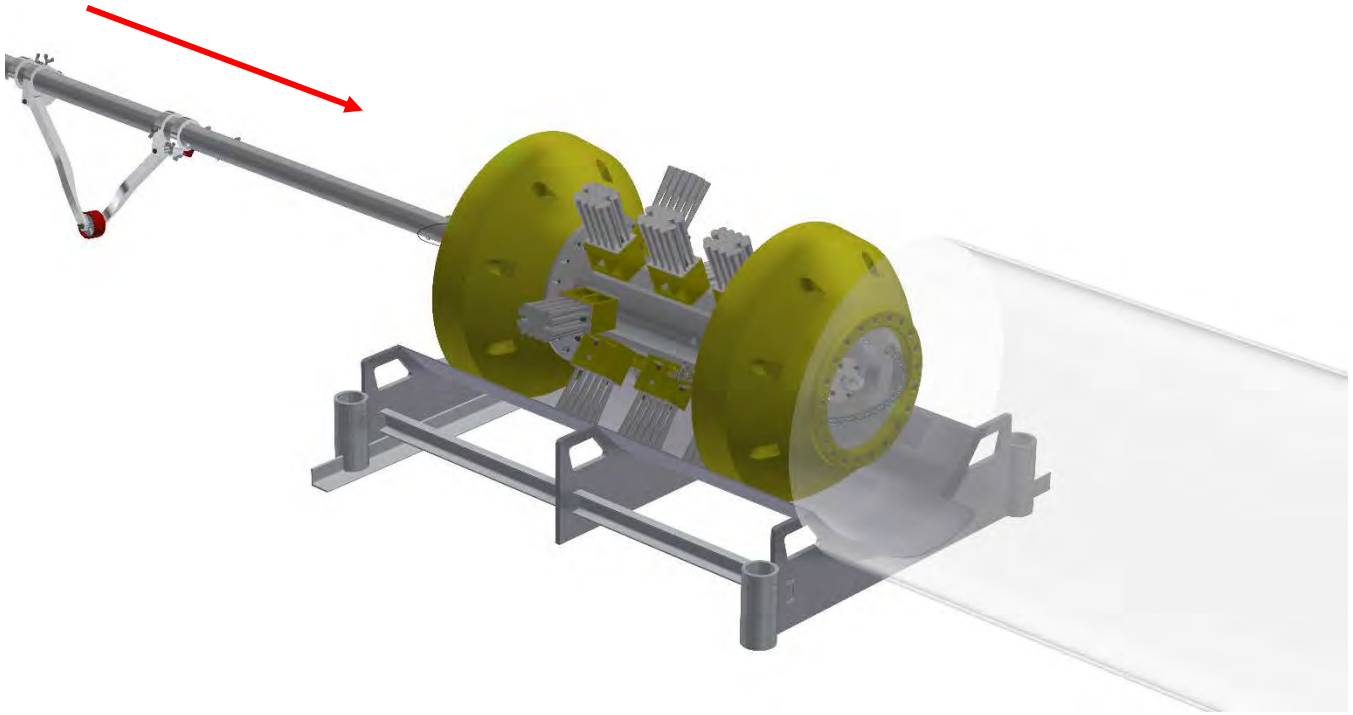
© Enduro Pipeline Services, Inc. All Rights Reserved.

2.9.4.6. Take the assembled Push Poles utilizing the supplied adapter and position onto the Push Plate. (*refer to 2.9.3.6.a. Table, 2.9.3.6.b. Table, and 2.9.3.6.c. Table*)

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

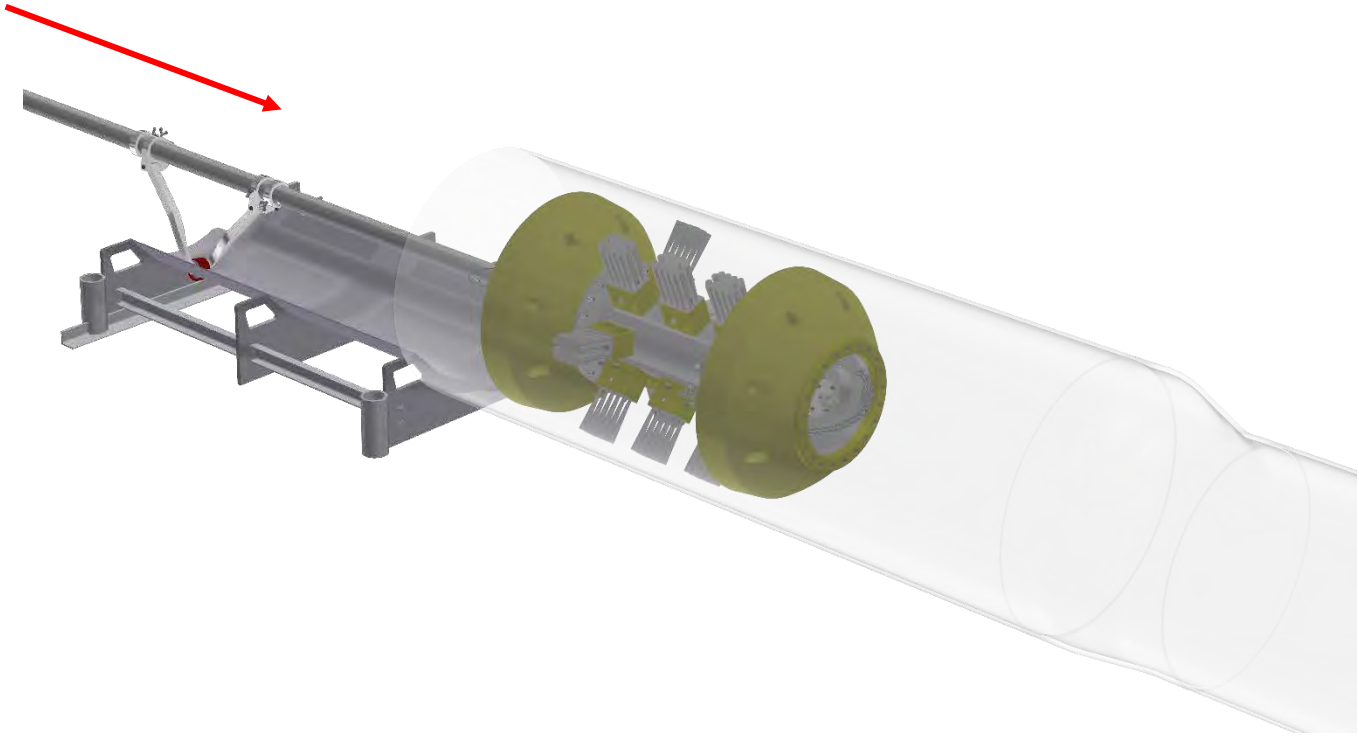
2.9.4.6.1.1. Damage to the DdL™ Caliper Tool may occur if the Push Poles are struck, banged on, or rammed with the equipment used to load the tool into the pipeline.

2.9.3.6.a. Table

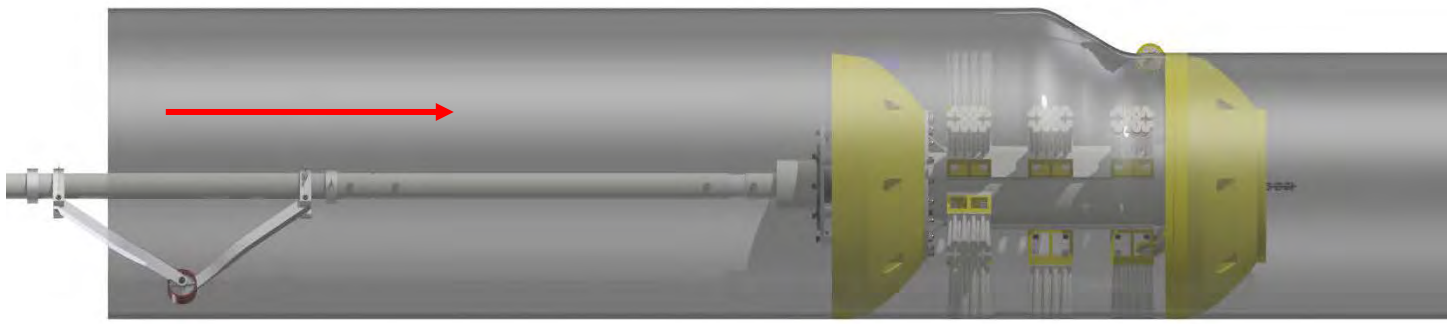


© Enduro Pipeline Services, Inc. All Rights Reserved.

2.9.3.6.b. Table



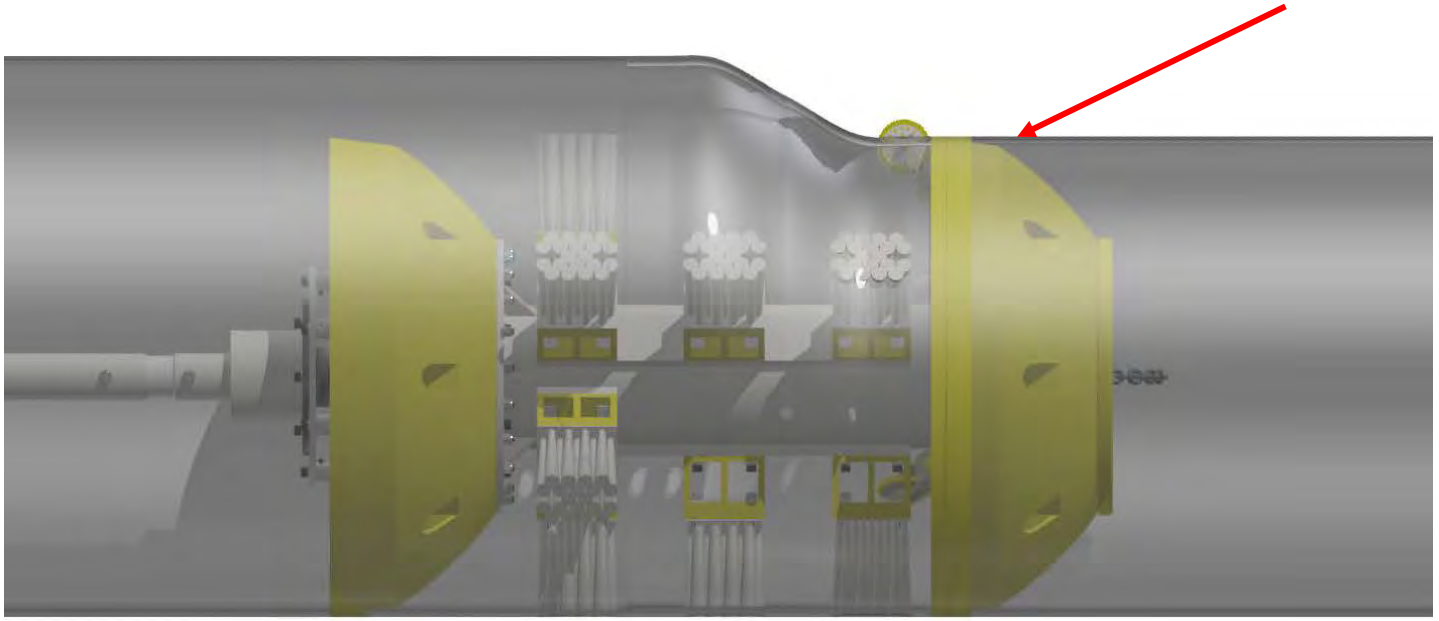
© Enduro Pipeline Services, Inc. All Rights Reserved.

2.9.3.6.c. Table


© Enduro Pipeline Services, Inc. All Rights Reserved.

2.9.4.7. Verify that the DdL™ Caliper Tool's front urethane cup is properly seated into the same diameter pipe that is being surveyed. (*refer to 2.9.3.7. Table*)

2.9.3.7. Table

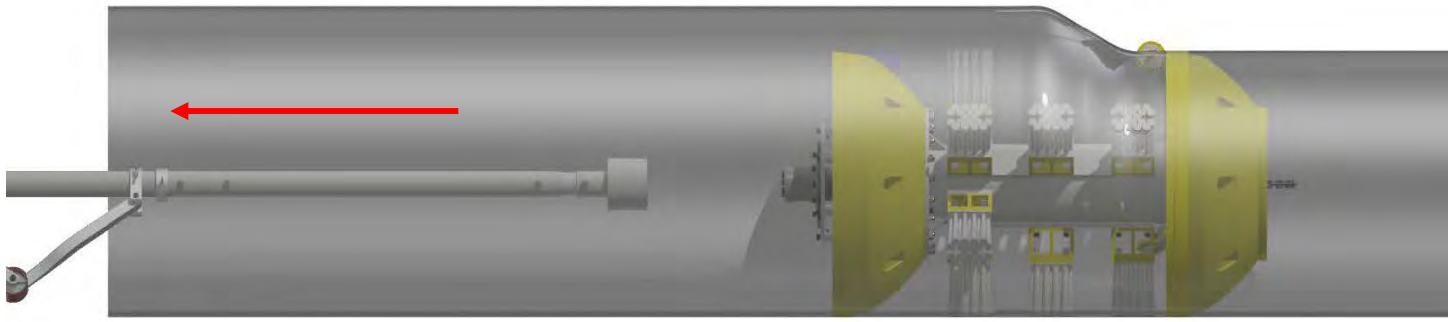


© Enduro Pipeline Services, Inc. All Rights Reserved.

2.9.4.8. Remove the Push Poles by using evenly distributed force straight back from where the DdL™ Caliper Tool was positioned. (*refer to 2.9.3.8. Table*)

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

2.9.3.8. Table



2.9.4.9. Remove any remaining loading equipment from the area.

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

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

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

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

© Enduro Pipeline Services, Inc. All Rights Reserved.

2.9.5. Pulling the DdL™ Caliper Tool into the Pipeline.

2.9.5.1. Utilizing this method will require additional Trap specifics that must be met, for this process to work properly.

2.9.5.2. Locate the pull port on the Trap that will be used to pull the DdL™ Caliper Tool into the line.

2.9.5.3. Insert fish tape or something equivalent that will reach back to the Trap Door opening.

2.9.5.4. Take the cable from the support equipment and run one end of the cable through the front chain or eyelet of the DdL™ Caliper Tool.

2.9.5.4.1. Continue running this cable until both ends meet each other, creating a Basket type configuration with the cable.

2.9.5.5. Attach both ends of the cable to the fish tape and begin pulling cable into the Trap.

2.9.5.6. Once the cable ends have come out of the pull port on the Trap, the fish tape can be removed.

2.9.5.7. Install the provided cable clamps on both ends of the cable to create an eyelet on each end of the cable.

2.9.5.7.1. Multiple clamps may be used to decrease the possibility of the cable coming undone.

© Enduro Pipeline Services, Inc. All Rights Reserved.

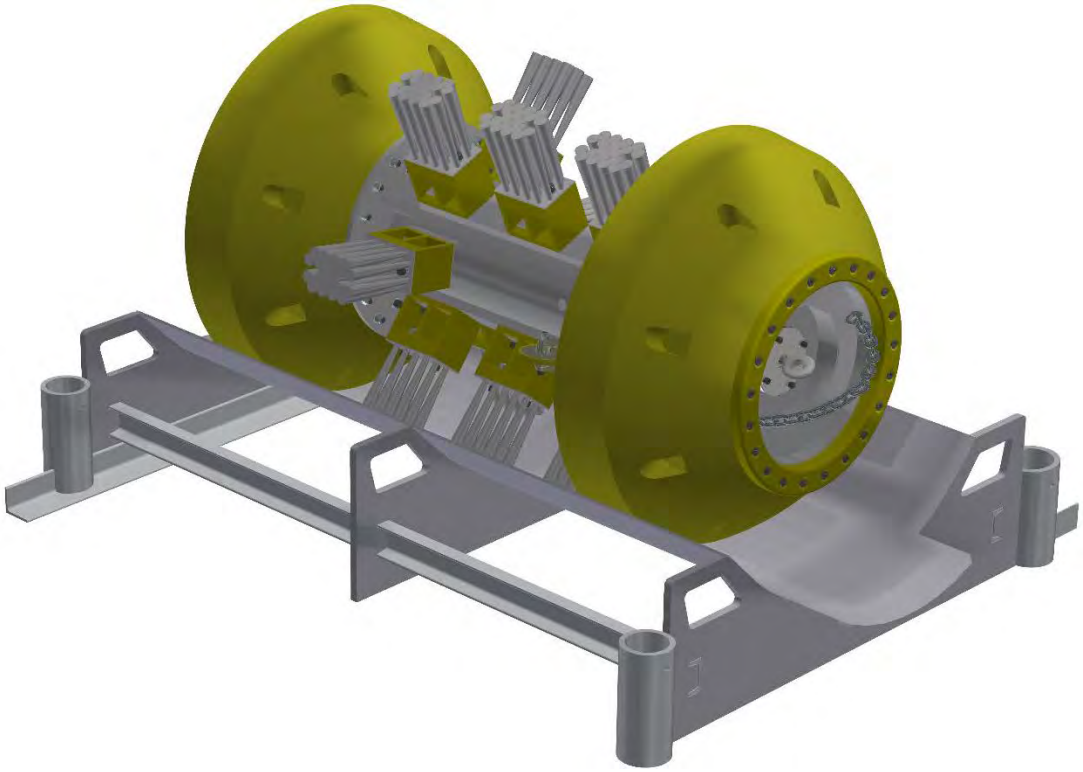
2.9.5.8. The DdL™ Caliper Tool will be transported on a utility tray that will assist with loading / unloading of the tool. (*refer to 2.9.4.8. Table*)

2.9.5.8.1. Position the DdL™ Caliper Tool at the location that it can be loaded into the pipeline.

2.9.5.8.2. Simultaneously having someone pull both ends of the cable at the pull port location will help keep any excessive slack to a minimum.

2.9.5.8.3. Position and support utility tray in front of the opening of the pipeline in such a way that the tray is going in the same direction as the pipeline

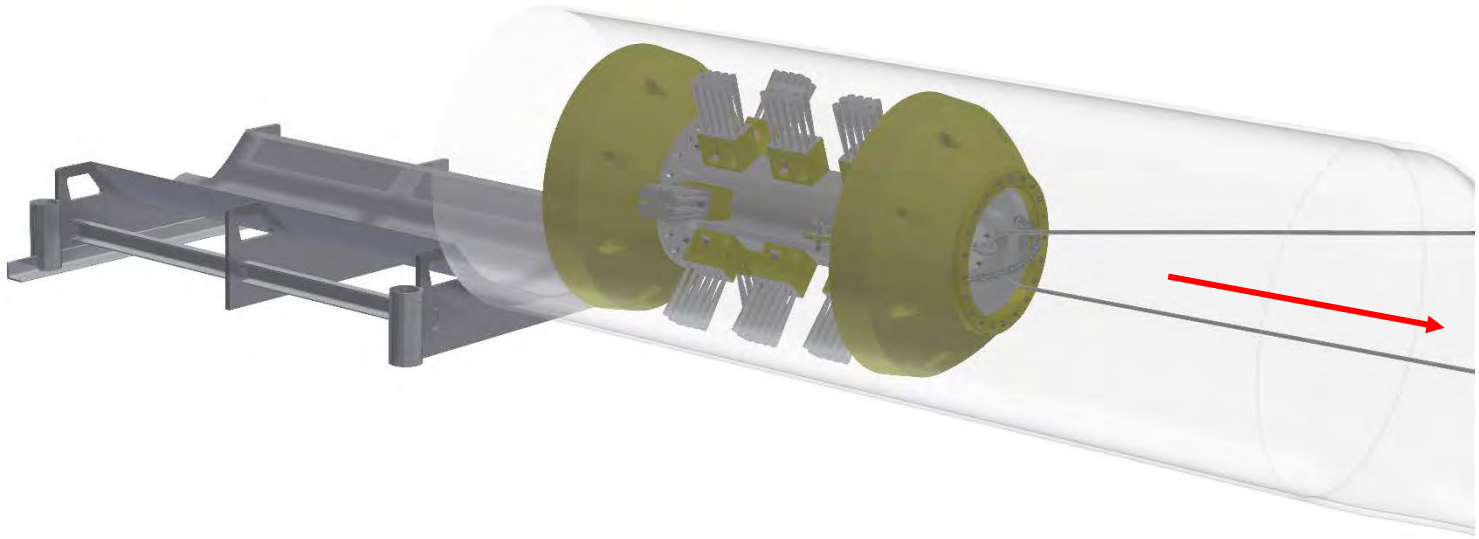
2.9.4.8. Table



© Enduro Pipeline Services, Inc. All Rights Reserved.

2.9.5.9. Begin pulling both ends of the cable at the pull port location with evenly distributed force to begin loading the DdL™ Caliper Tool. (*refer to 2.9.4.9. Table*)

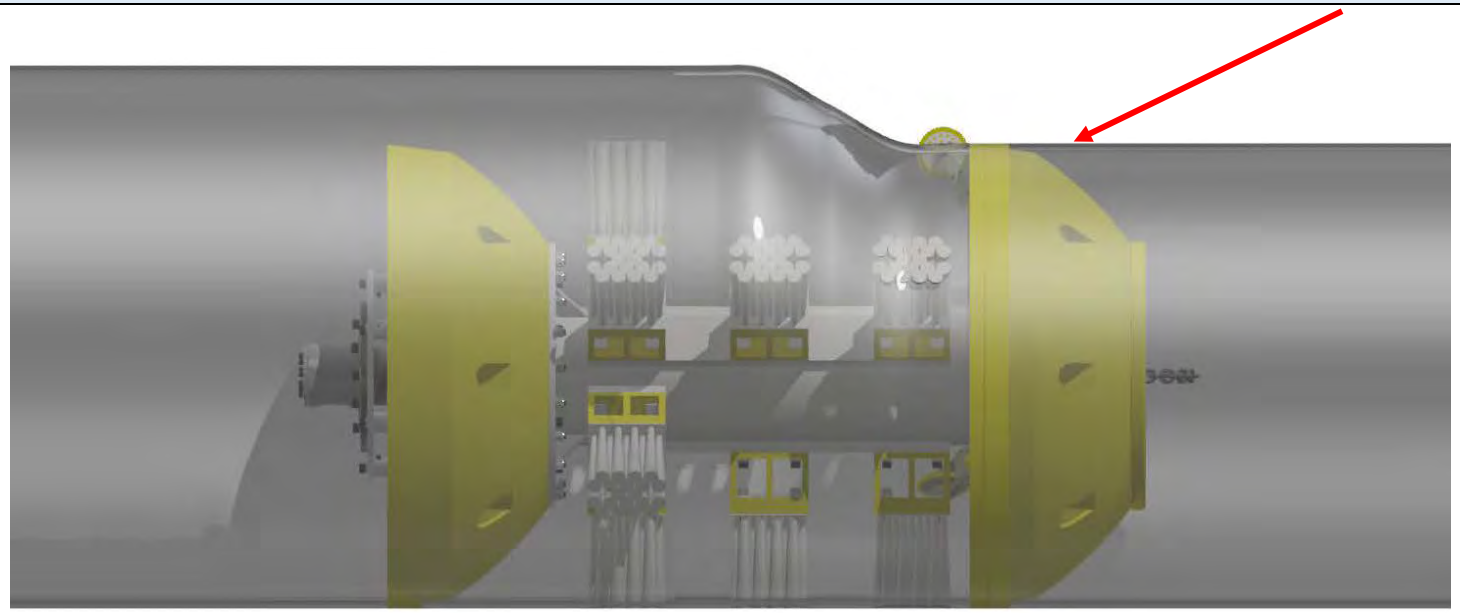
2.9.4.9. Table



© Enduro Pipeline Services, Inc. All Rights Reserved.

2.9.5.10. Verify that the DdL™ Caliper Tool's front urethane cup is properly seated into the same diameter pipe that is being surveyed. (*refer to 2.9.4.10. Table*)

2.9.4.10. Table



2.9.5.11. Remove cable clamps from one end of the cable.

2.9.5.12. Begin pulling the eyelet end of the cable out of the pull port location until the cable has been completely removed from the Trap.

2.9.5.13. Remove any remaining loading equipment from the area.

2.9.5.14. Secure the pipeline to allow pressure to be brought back.

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

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

2.9.5.16. Verify DdL™ Caliper Tool launched.

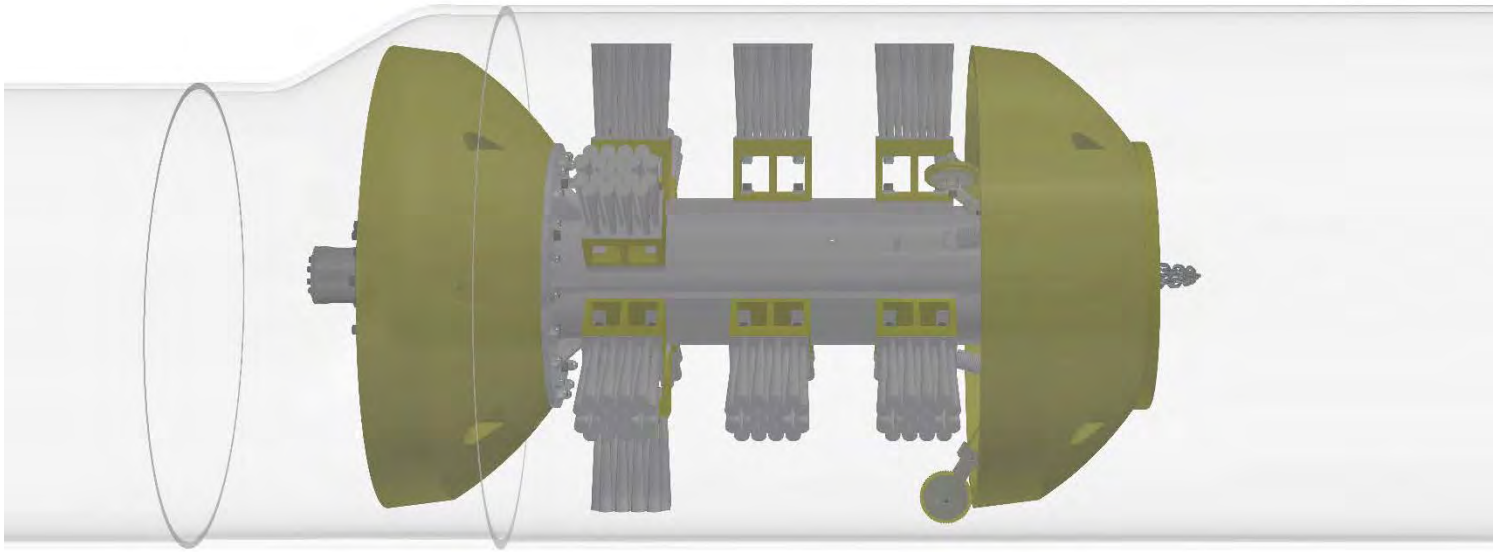
© Enduro Pipeline Services, Inc. All Rights Reserved.

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*)

3.1.1. Table



© Enduro Pipeline Services, Inc. All Rights Reserved.

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

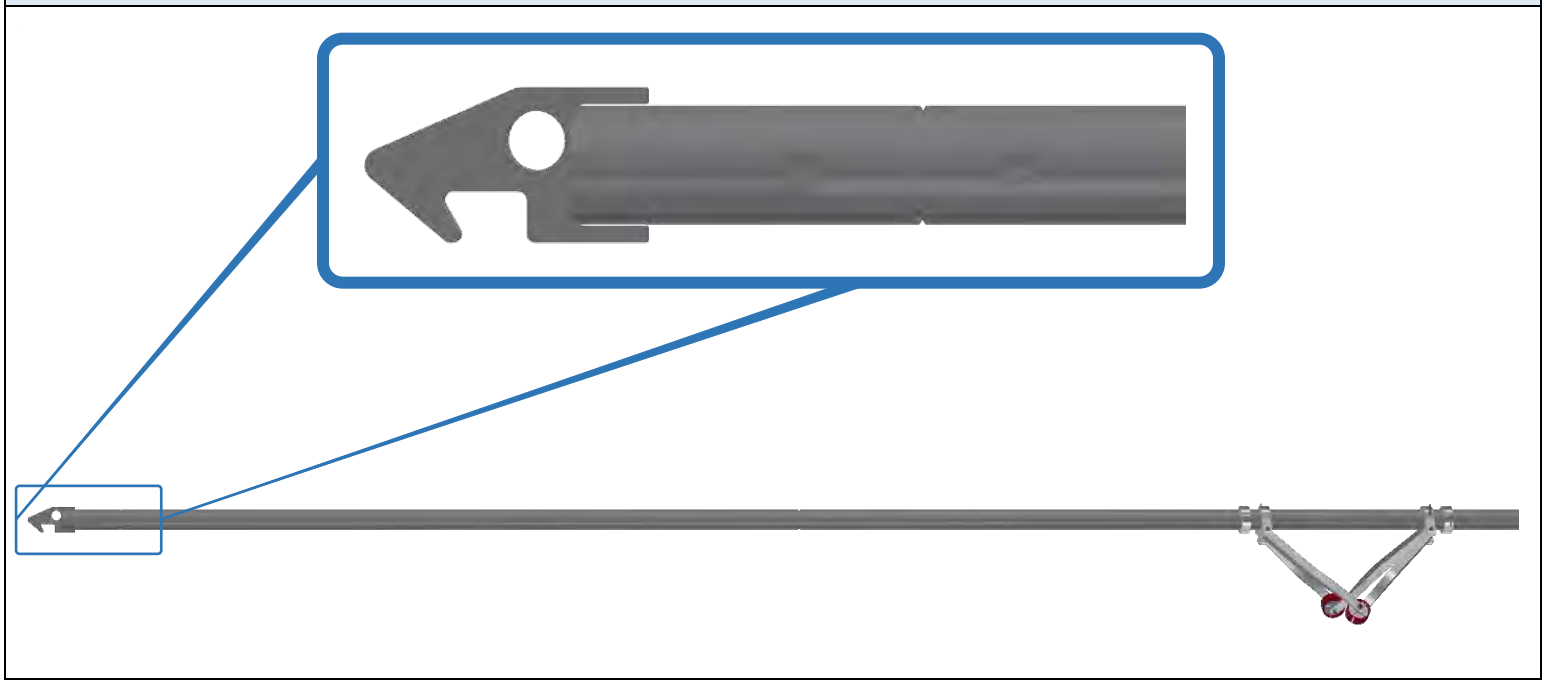
3.1.2.1. Trap Isolation procedures will need to be followed per the type of Trap configuration currently installed on the pipeline.

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. Assemble the provided Push Poles that were shipped with the DdL™ Caliper Tool as part of the Support Equipment. (*refer to 3.1.4. Table*)

3.1.4. Table

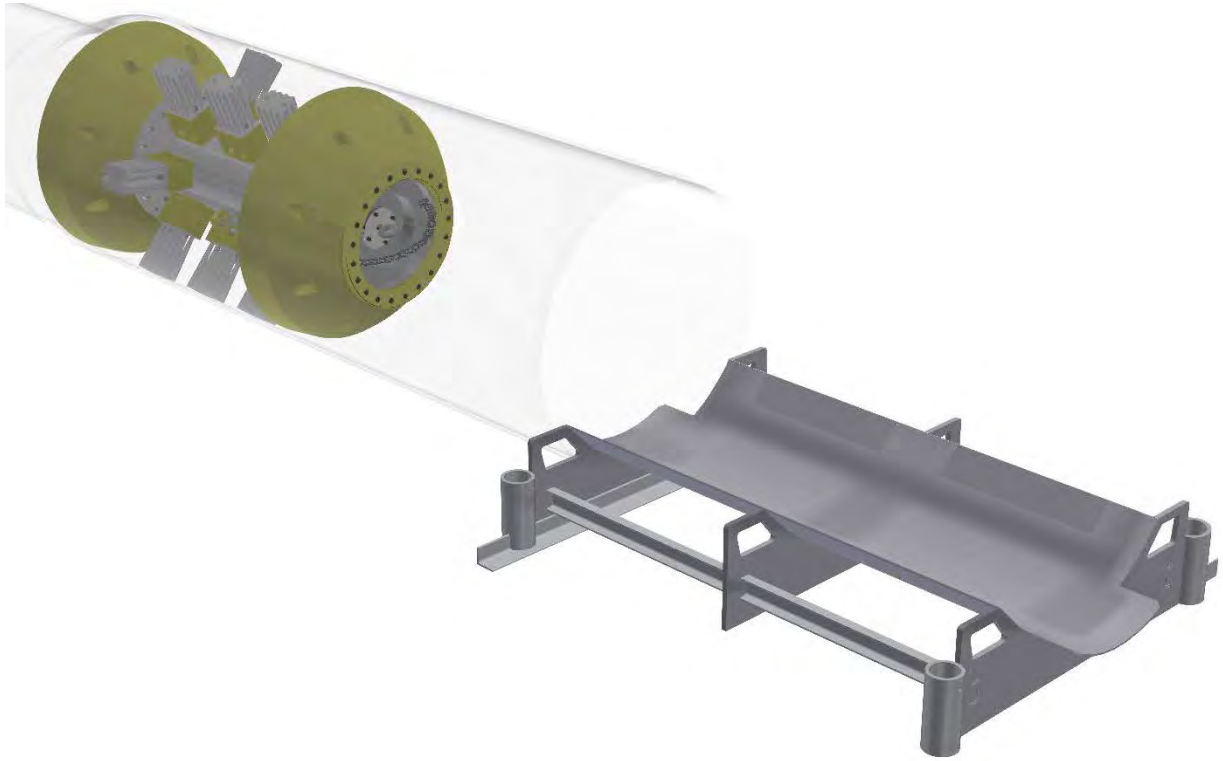


© Enduro Pipeline Services, Inc. All Rights Reserved.

3.1.4.1. The DdL™ Caliper Tool will be transported on a utility tray that will assist with loading / unloading of the DdL™ Caliper Tool. (*refer to 3.1.4.1. Table*)

3.1.4.1.1. Position and support utility tray in front of the opening of the pipeline in such a way that the tray is going in the same direction away from the pipeline.

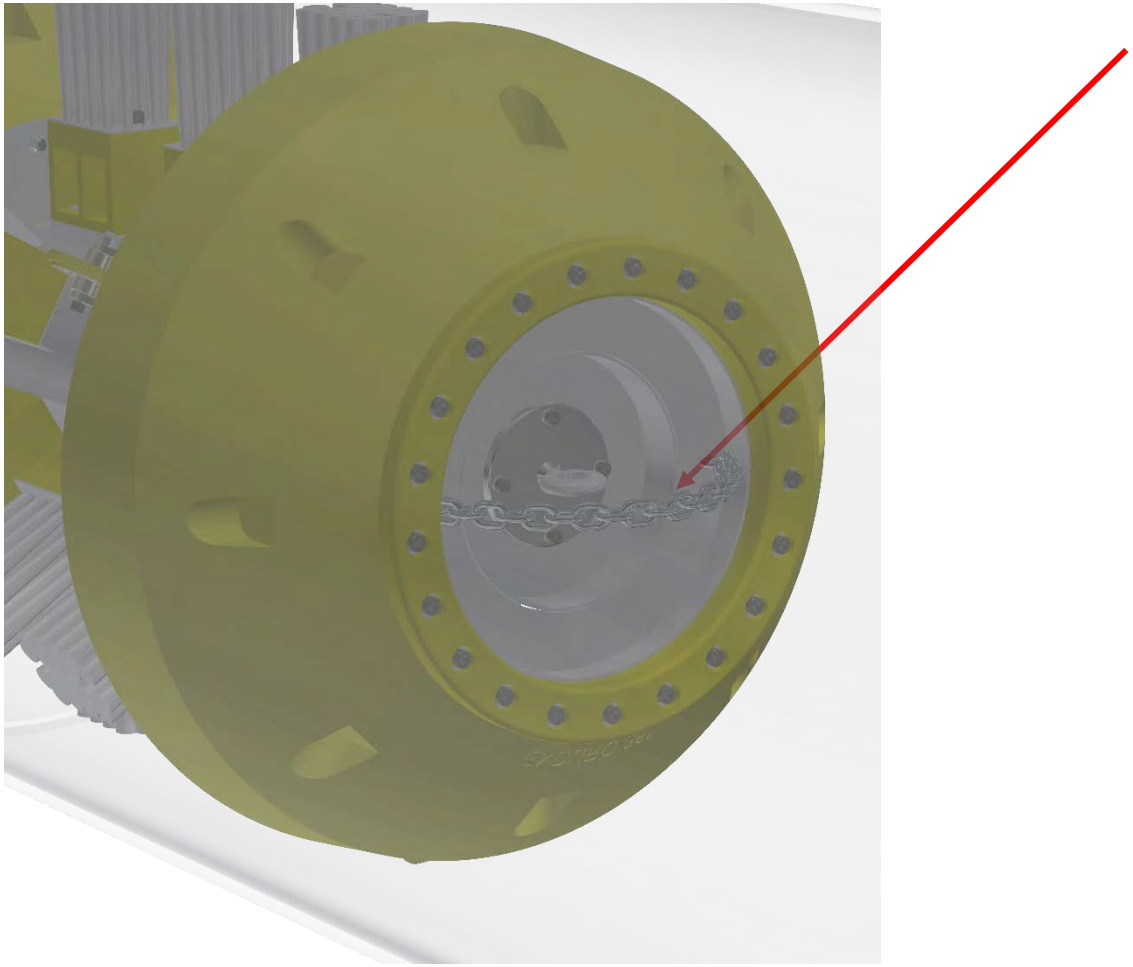
3.1.4.1. Table



© Enduro Pipeline Services, Inc. All Rights Reserved.

3.1.4.2. Located on the front of the DdL™ Caliper Tool will be a chain or eyelet to grab the tool to remove it from the line. (*refer to 3.1.4.2. Table*)

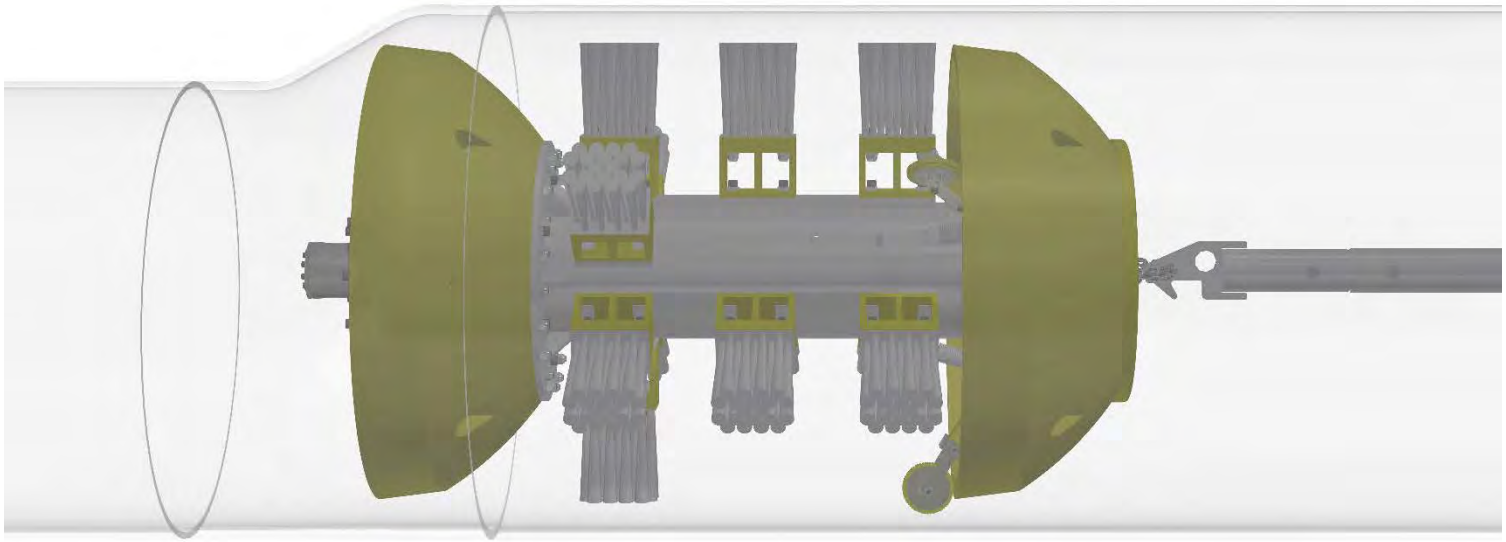
3.1.4.2. Table



© Enduro Pipeline Services, Inc. All Rights Reserved.

3.1.4.3. Attach the Push Poles to the front of the DdL™ Caliper Tool using the hook end that was supplied with the Support Equipment. (*refer to 3.1.4.3. Table*)

3.1.4.3. Table

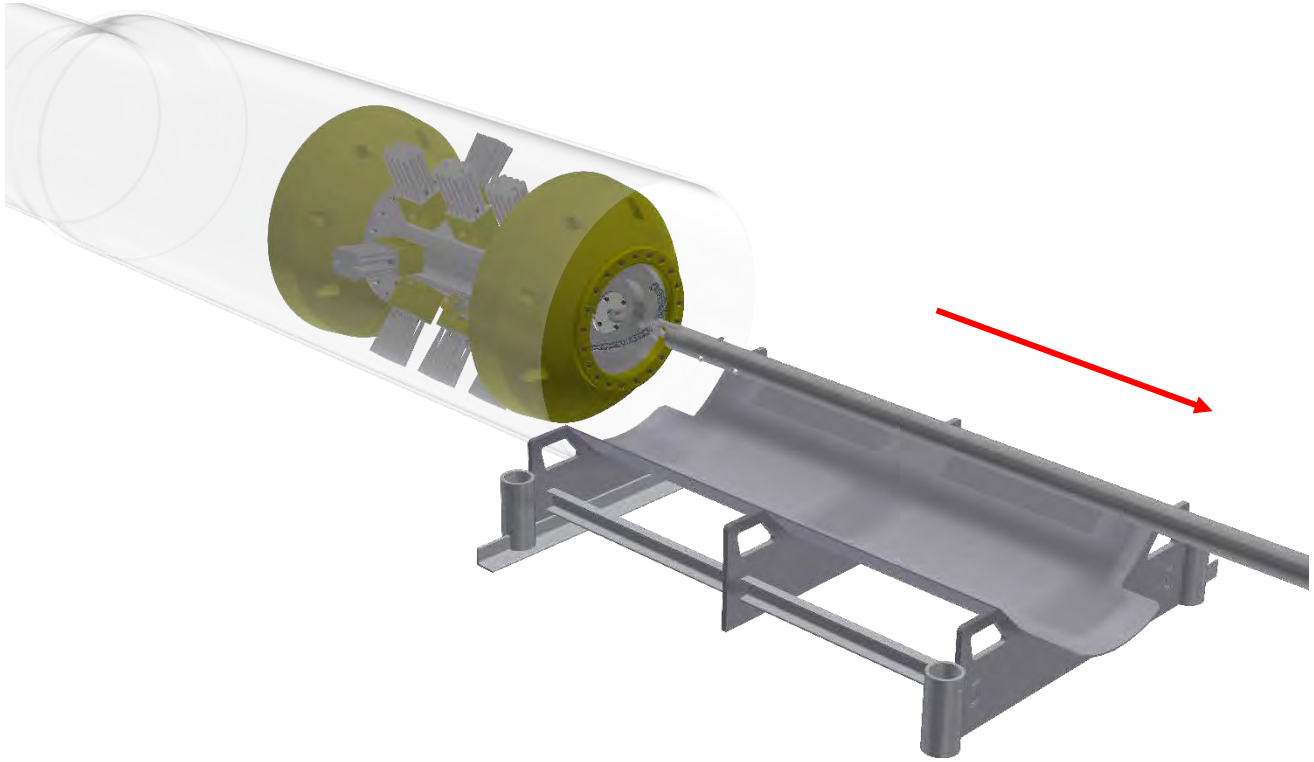


© Enduro Pipeline Services, Inc. All Rights Reserved.

3.1.5. Remove the DdL™ Caliper Tool from the pipeline using evenly distributed force when pulling on the Push Poles. (*refer to 3.1.5. Table*)

3.1.5.1. 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.

3.1.5. Table

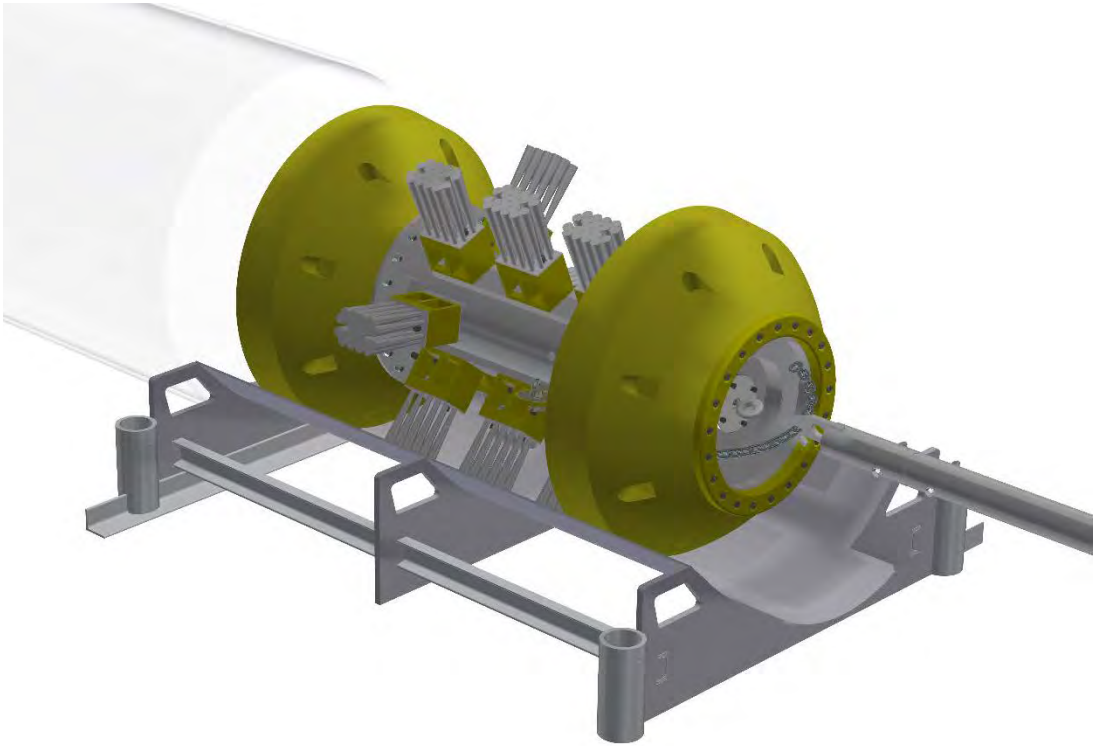


© Enduro Pipeline Services, Inc. All Rights Reserved.

3.1.5.2. Once the DdL™ Caliper Tool is on the utility tray, unhook the Push Poles from the DdL™ Caliper Tool. (*refer to 3.1.5.1. Table*)

3.1.5.3. Secure the DdL™ Caliper Tool to the utility tray using the supplied Support Equipment.

3.1.5.1. Table



© Enduro Pipeline Services, Inc. All Rights Reserved.

3.1.6. Remove any remaining unloading equipment from the area.

3.1.7. Secure the pipeline to allow pressure to be brought back.

3.1.8. Once the trap is equalized, CUSTOMER may continue with normal pipeline operating procedures.

3.1.9. CUSTOMER must visually inspect the DdL™ Caliper Tool for any apparent damage sustained during the survey.

3.1.9.1. The CUSTOMER should contact ENDURO for any questionable areas that the CUSTOMER may be unsure of regarding the tool condition.

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

© Enduro Pipeline Services, Inc. All Rights Reserved.

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.

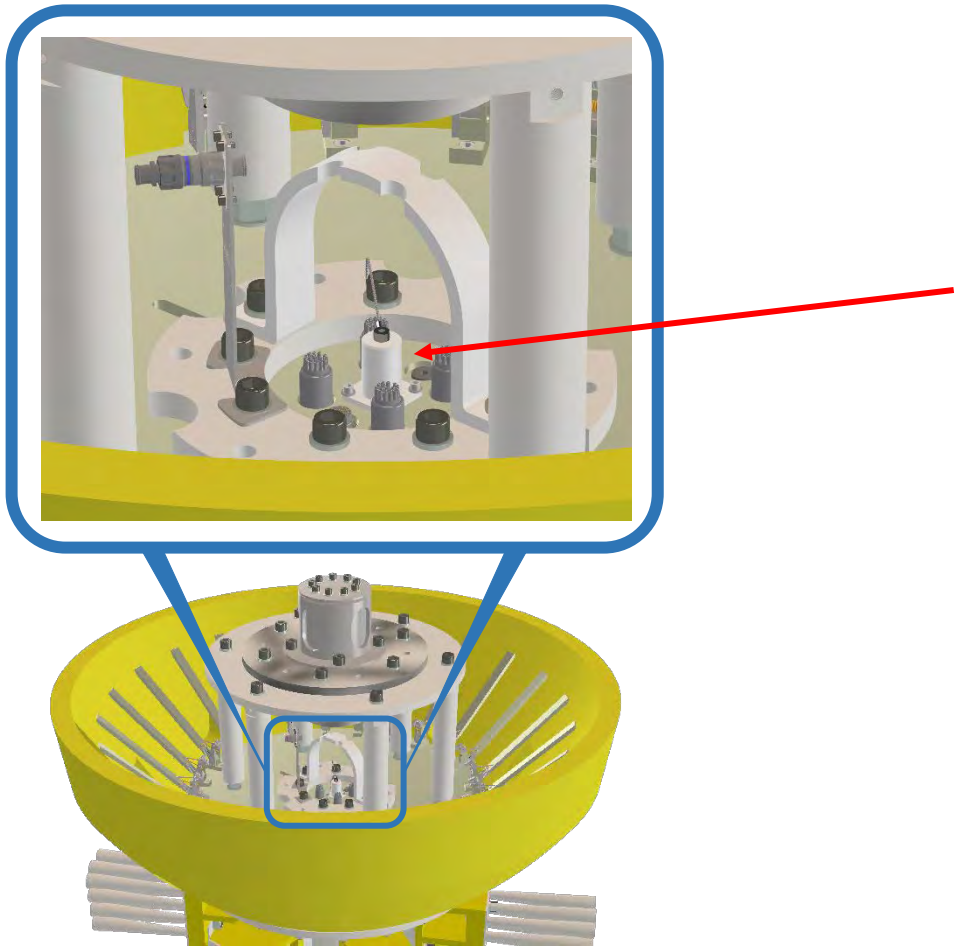
3.2.2. Locate the Communication Cable A and plug the USB TYPE A end into the Laptop Computer USB Port labeled **TOOL**. (*refer to 3.2.2. Table*)

3.2.2. Table

© Enduro Pipeline Services, Inc. All Rights Reserved.

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

3.2.3. Table



© Enduro Pipeline Services, Inc. All Rights Reserved.

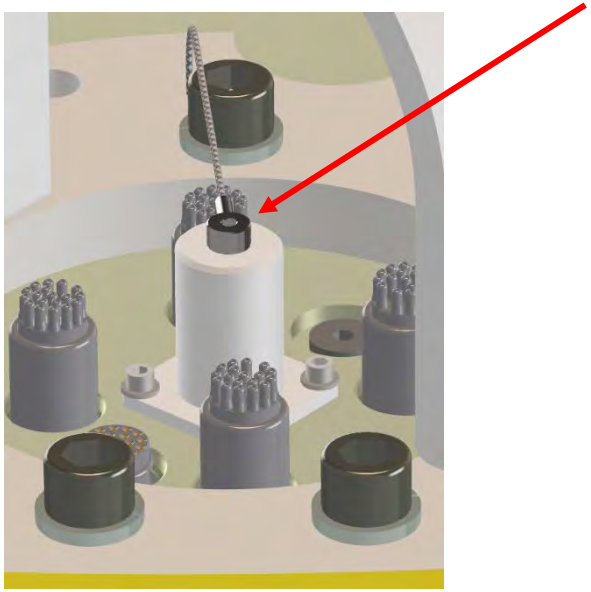
3.2.3.1. Remove the protective cover by unscrewing the cap counterclockwise. (*refer to 3.2.3.1. Table)*

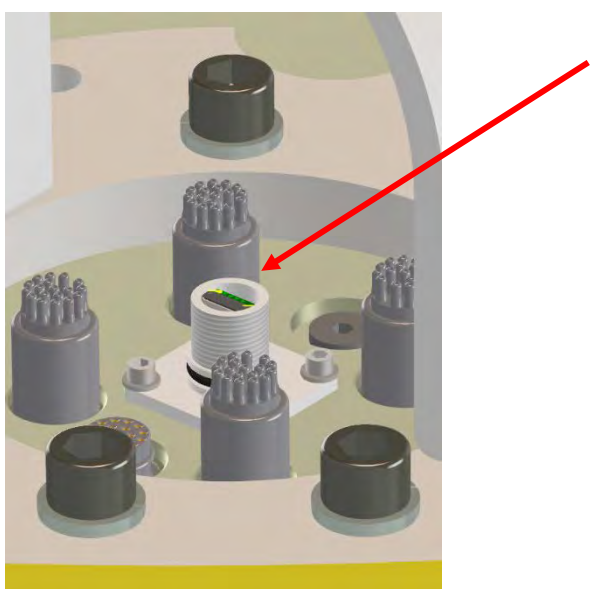
3.2.3.1.1. Please be mindful of the other connectors located around the Communication Port

3.2.3.1.1.1. DO NOT disconnect any of the other connectors that are located around the Communication Port.

3.2.3.1.1.2. These other connections may become disconnected or even damaged if moved in a manner not intended.

3.2.3.1. Table



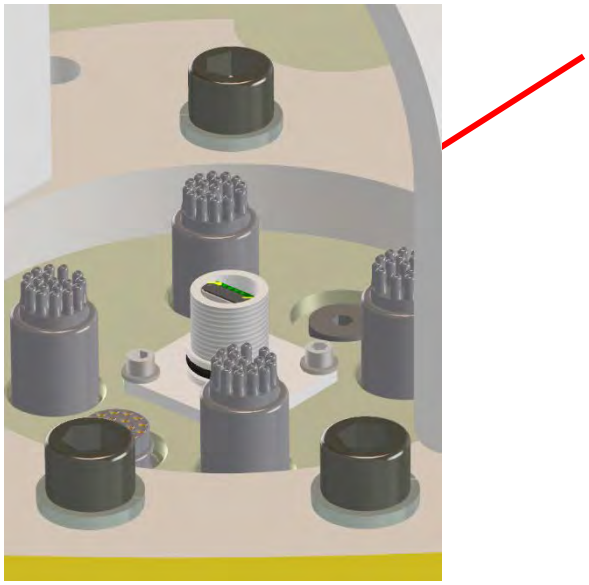


© Enduro Pipeline Services, Inc. All Rights Reserved.

3.2.3.2. Locate the Communication Cable A and plug the USB MICRO B end into the Communication Port of the DdL™ Caliper Tool. (*refer to 3.2.3.2. Table*)

3.2.3.2. Table

USB MICRO B



© Enduro Pipeline Services, Inc. All Rights Reserved.

3.2.4. Locate the External Hard Drive and plug the USB TYPE A end into the Laptop Computer USB Port labeled "**E.H.D.**". (*refer to 3.2.5. Table*)

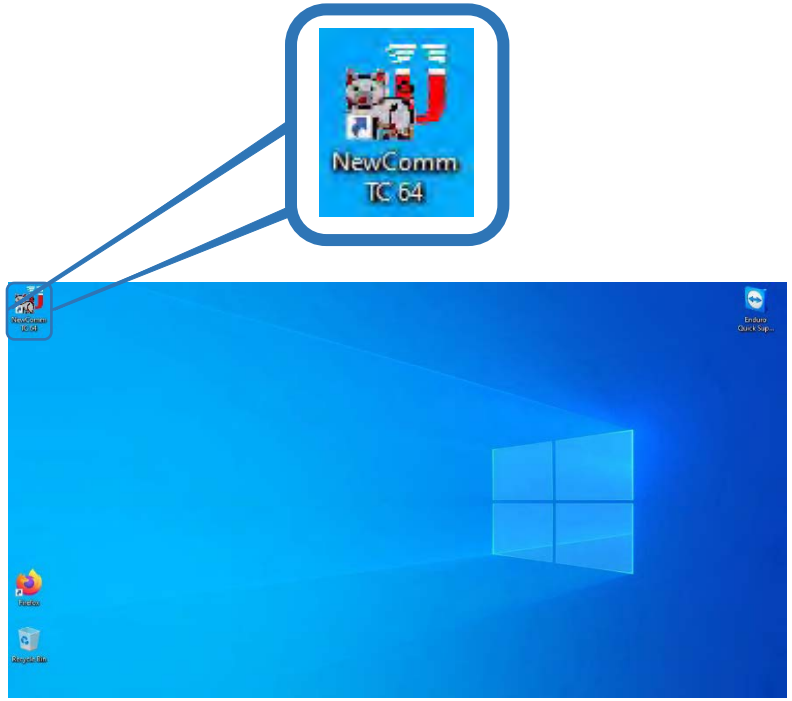
3.2.5. Table

© Enduro Pipeline Services, Inc. All Rights Reserved.

3.2.5. Locate the NewCommTC 64 Icon on the desktop (*refer to 3.2.5. Table*)

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

3.2.5. Table



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

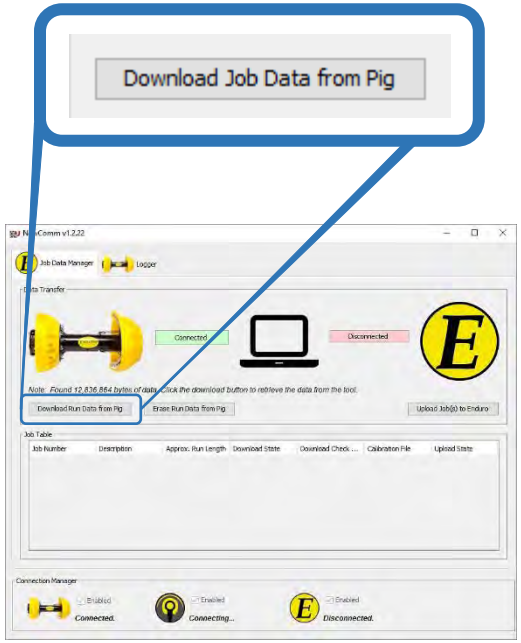
© Enduro Pipeline Services, Inc. All Rights Reserved.

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*).

4.1.1. 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.

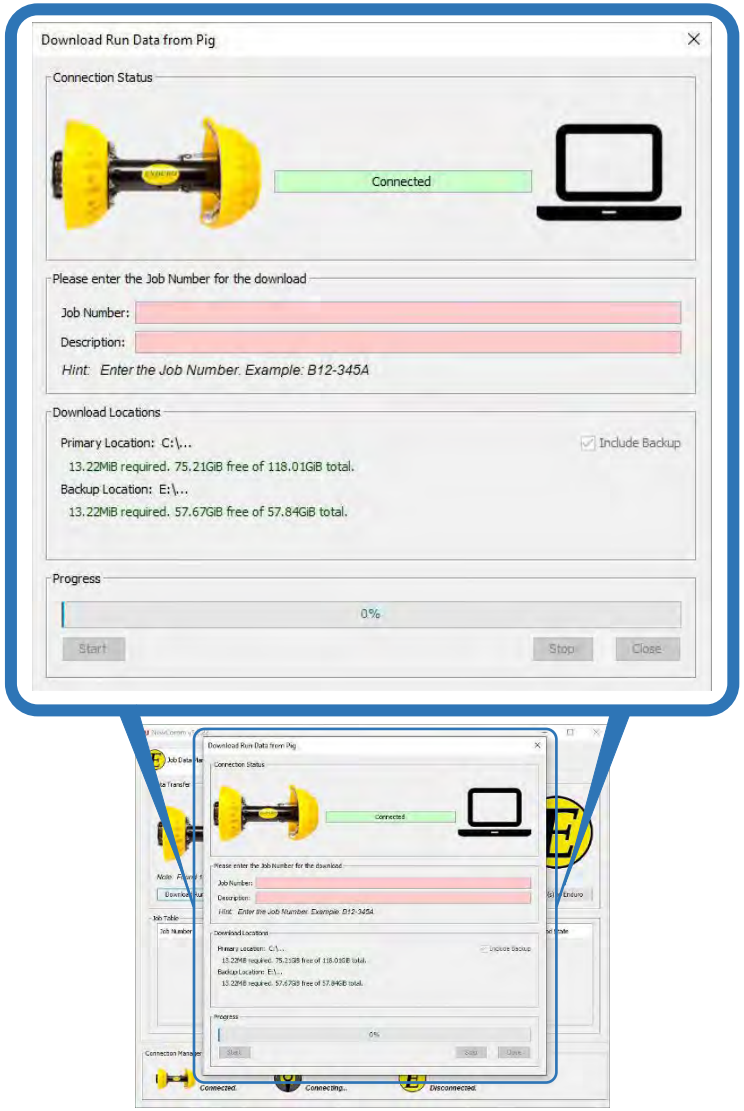
4.1.2.3. Listed below are some examples that will be classified as an ENDURO Job Number.

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

© Enduro Pipeline Services, Inc. All Rights Reserved.

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

4.1.3. Table



© Enduro Pipeline Services, Inc. All Rights Reserved.

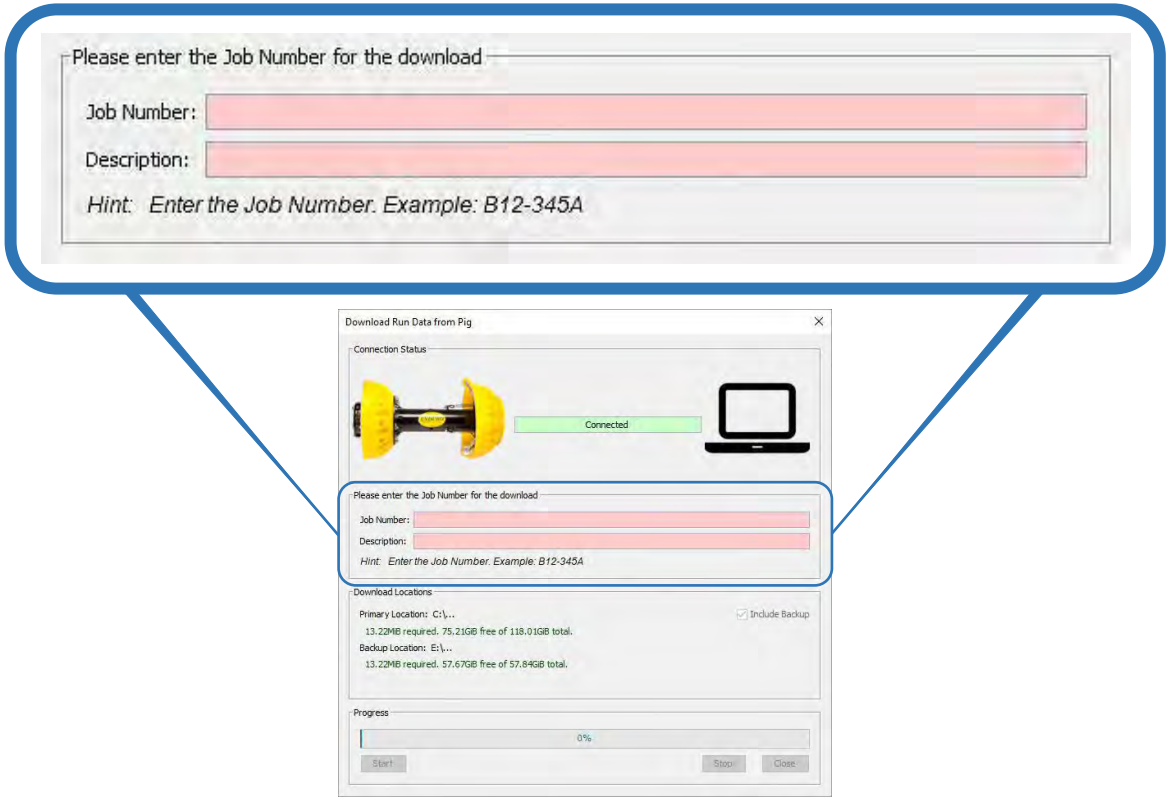
4.1.4. Enter the ENDURO Job Number and a brief Description (*refer to 4.1.4.a. Table & 4.1.4.b. Table*).

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.a. Table



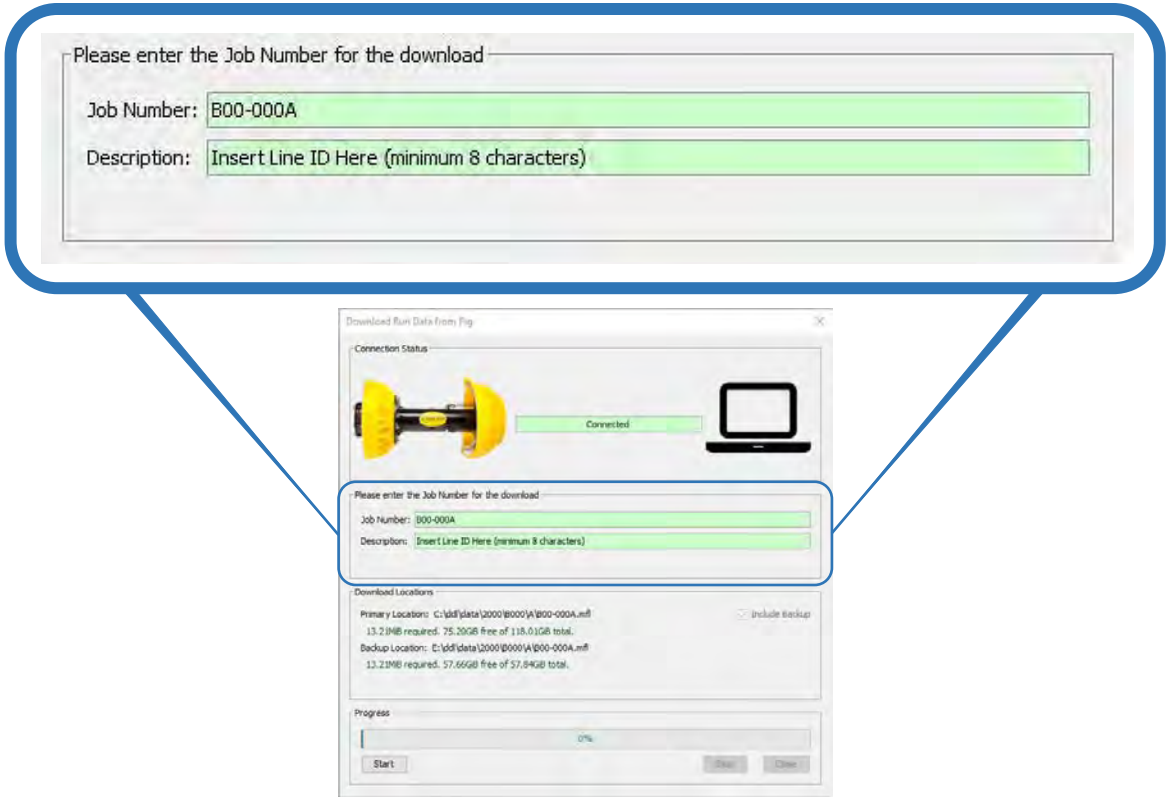
© Enduro Pipeline Services, Inc. All Rights Reserved.

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

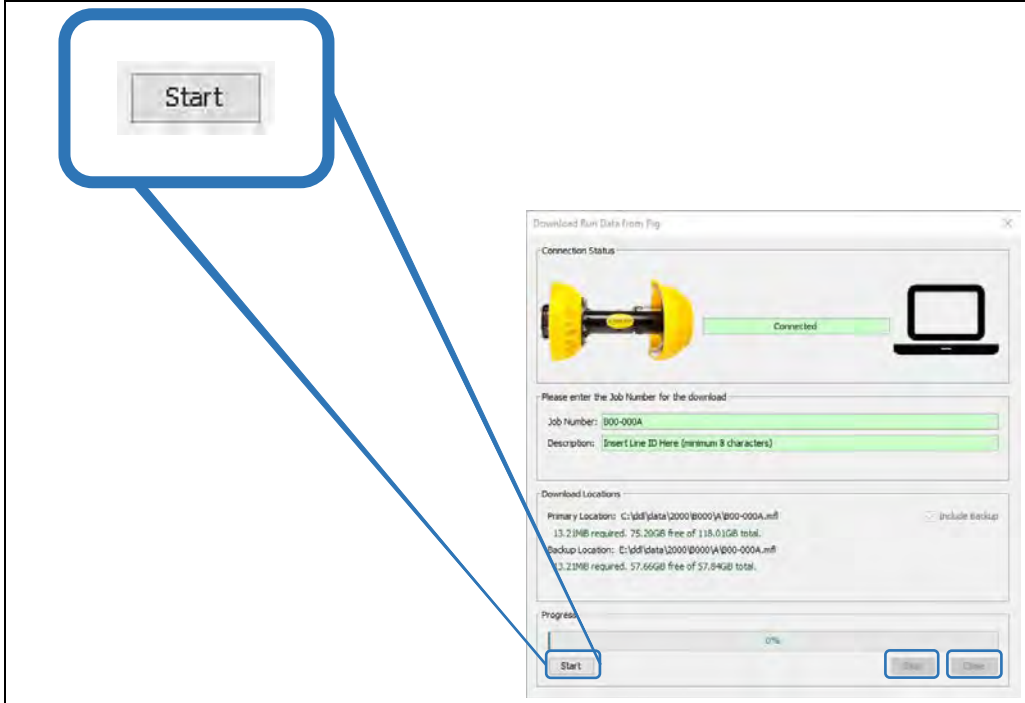


© Enduro Pipeline Services, Inc. All Rights Reserved.

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.

4.1.5. Table



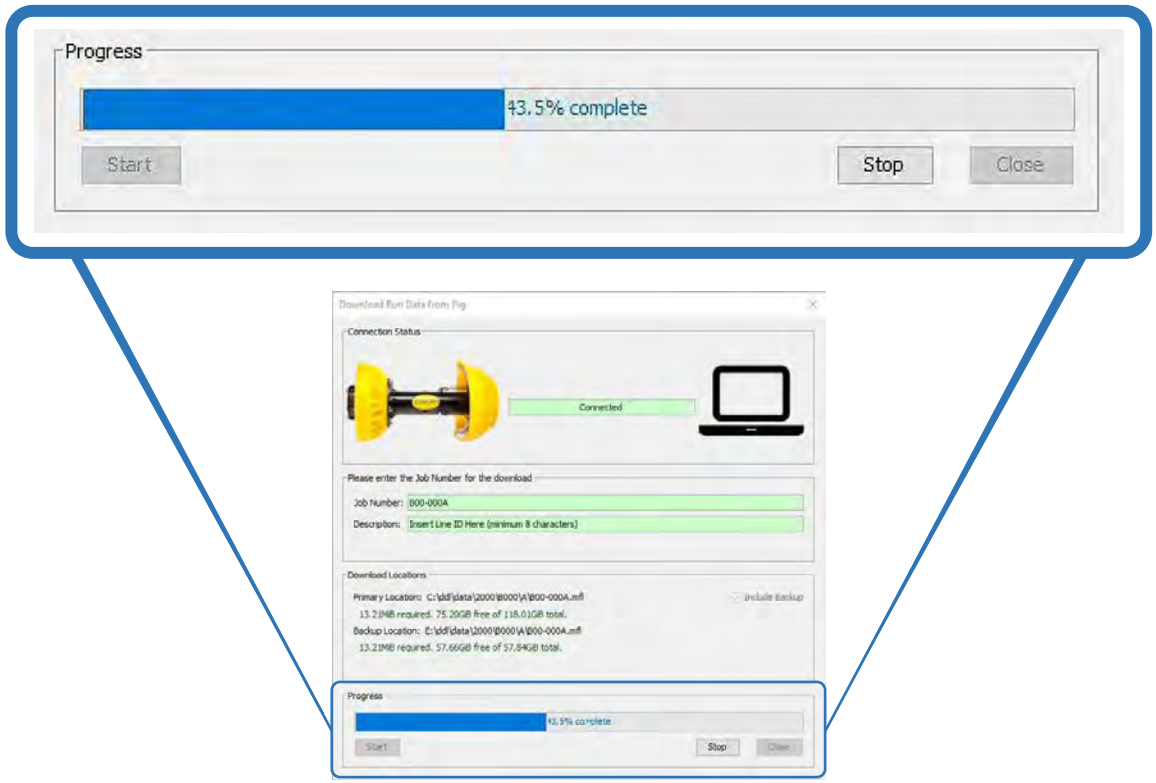
© Enduro Pipeline Services, Inc. All Rights Reserved.

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

4.1.6. Table



© Enduro Pipeline Services, Inc. All Rights Reserved.

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

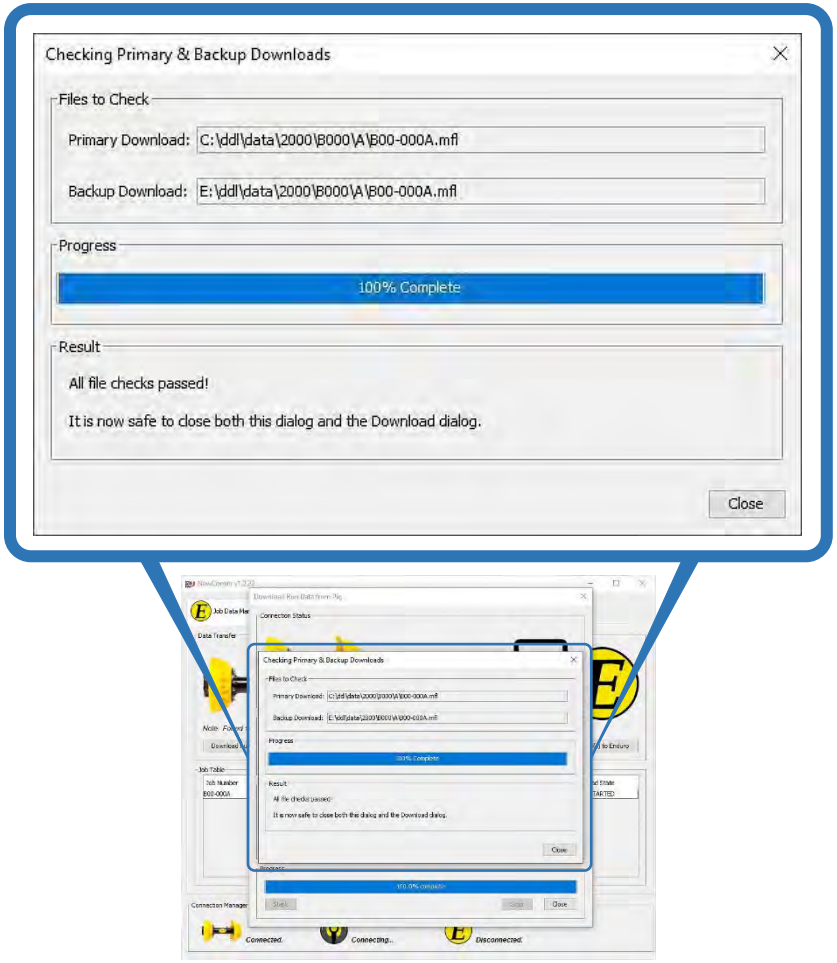
4.1.7.1. Upon completion of the download, the Result box will display any issues encountered during the download process.

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

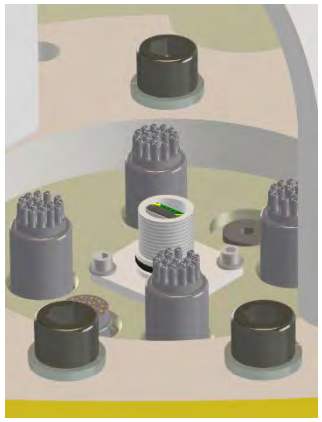


© Enduro Pipeline Services, Inc. All Rights Reserved.

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*)

4.2.1. Table



© Enduro Pipeline Services, Inc. All Rights Reserved.

4.2.2. Replace the protective cover on the Communication Port at the rear of the DdL™ Caliper Tool by screwing the cap clockwise 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.

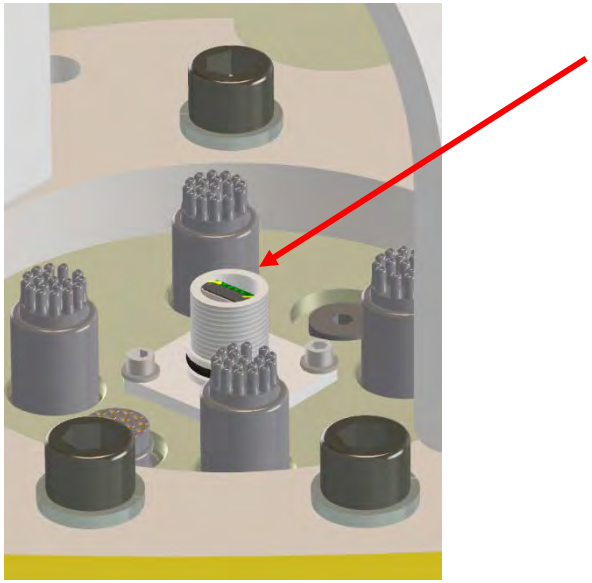
4.2.2.1.1. This will help ensure that nothing will get into the Communication Port during the survey, causing damage to the DdL™ Caliper Tool.

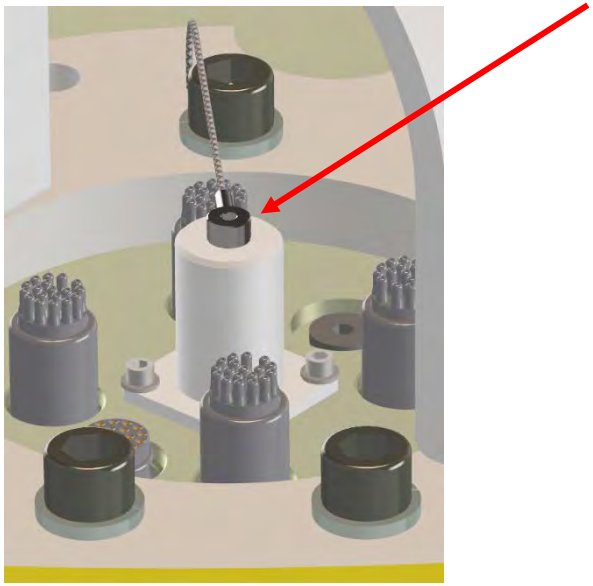
4.2.2.1.2. Please be mindful of the other connectors located around the Communication Port

4.2.2.1.2.1. DO NOT disconnect any of the other connectors that are located around the Communication Port.

4.2.2.1.2.2. These other connections may become disconnected or even damaged if moved in a manner not intended.

4.2.2. Table

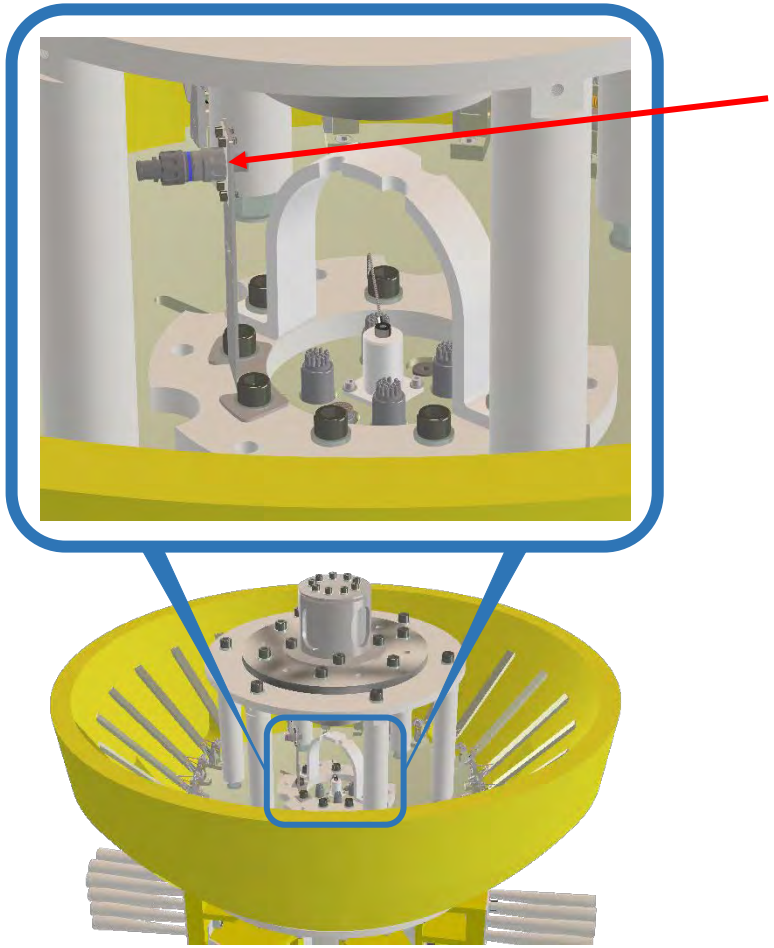




© Enduro Pipeline Services, Inc. All Rights Reserved.

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

4.2.3. Table



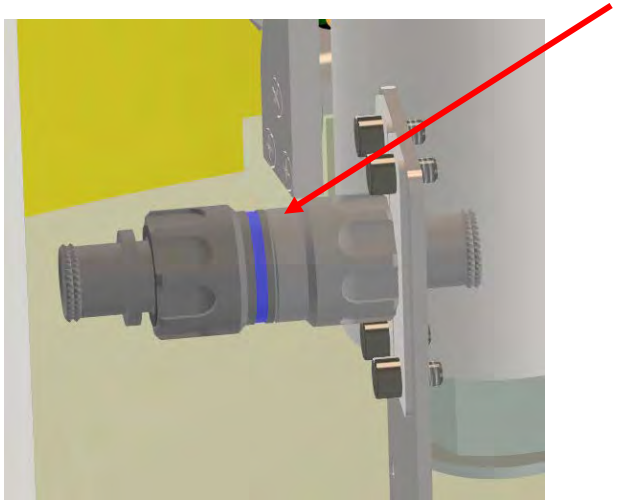
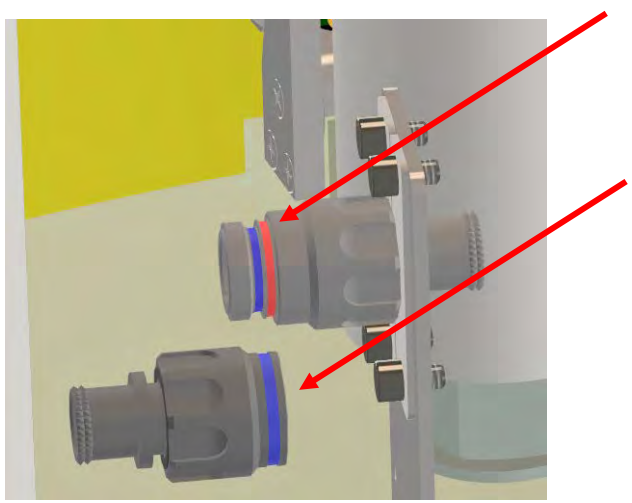
© Enduro Pipeline Services, Inc. All Rights Reserved.

4.2.3.1. Twist the Male Plug counterclockwise until the Male Plug can separate from the Female Plug (*refer to 4.2.3.1. Table*)

4.2.3.1.1. Male Plug – Single Blue Line

4.2.3.1.2. Female Plug – Single Blue Line & Single Red Line

4.2.3.1. Table

4.2.3.2. Locate the protective covers that should have been kept with the Standard Support Equipment.

4.2.3.2.1. Reinstall the protective covers on both the Male and Female ends of the Power Plug.

4.2.4. Once disconnected, the tool is powered down.

4.2.4.1. When the DdL™ Caliper Tool is not in use, keep the tool powered down by verifying that the Male and Female Plugs are disconnected, and the protective covers are installed on both Plugs

© Enduro Pipeline Services, Inc. All Rights Reserved.

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.

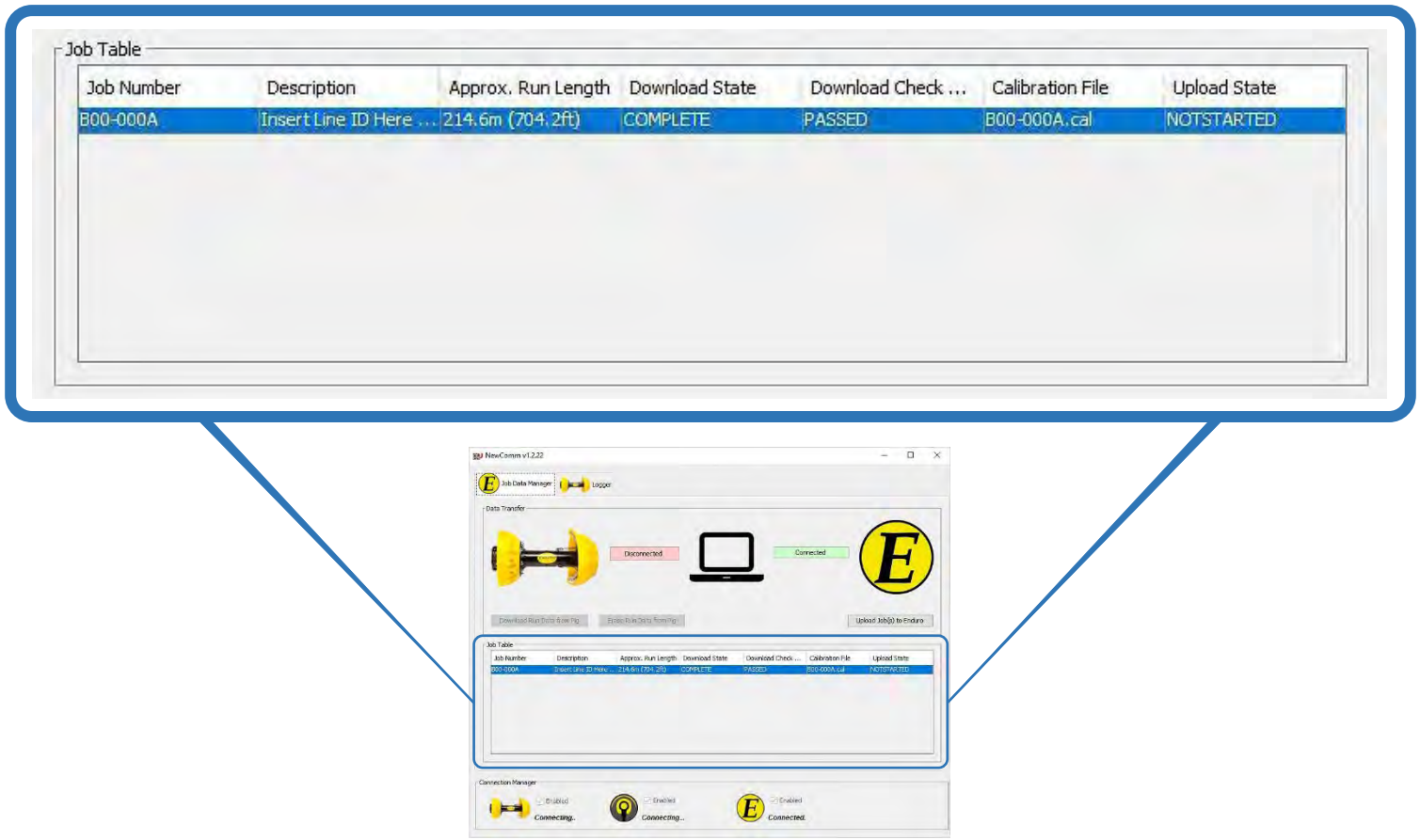
5.1.4.1. Jobs can be stored on the Laptop Computer and uploaded as a batch after all runs are complete, or at any time in-between.

© Enduro Pipeline Services, Inc. All Rights Reserved.

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.

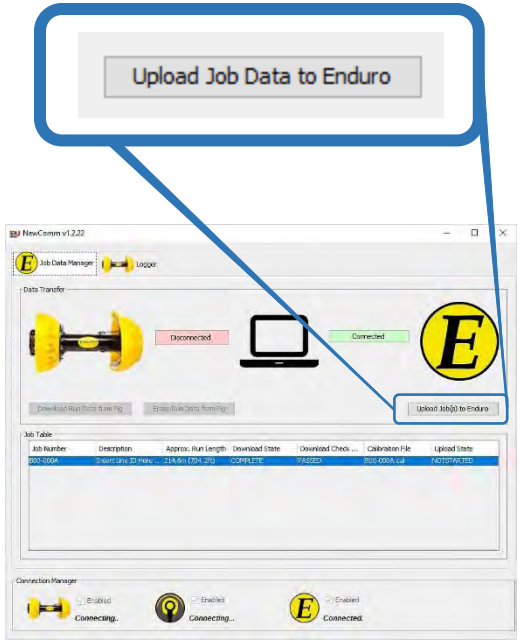
5.1.5. Table



© Enduro Pipeline Services, Inc. All Rights Reserved.

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

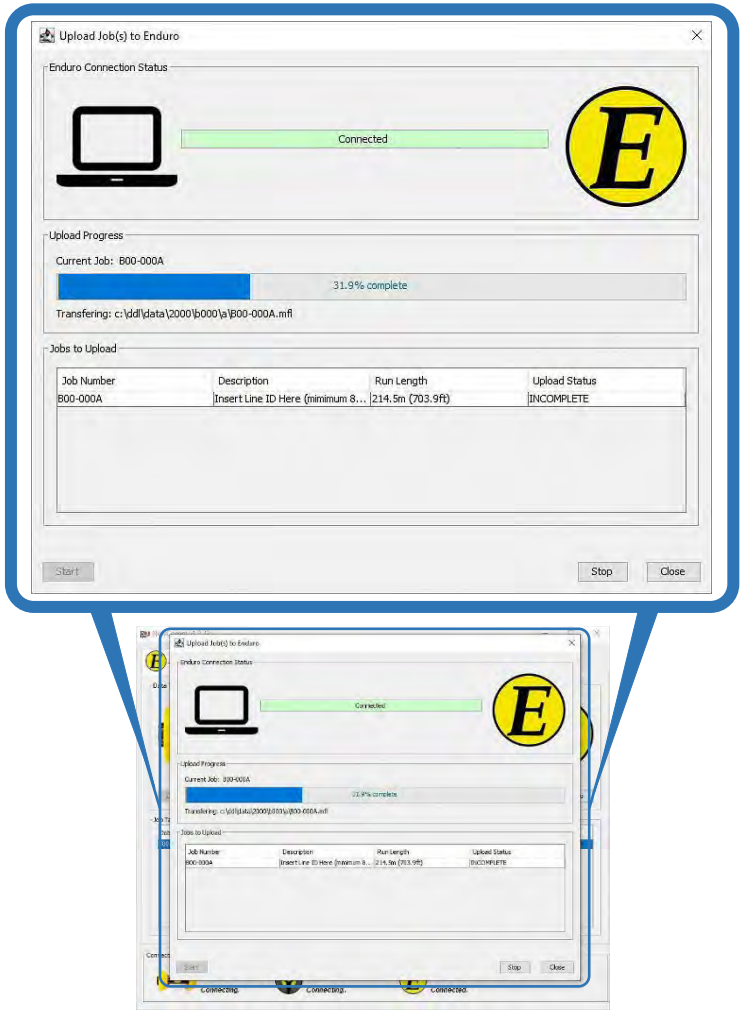
5.1.6. Table



© Enduro Pipeline Services, Inc. All Rights Reserved.

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

5.1.7. Table

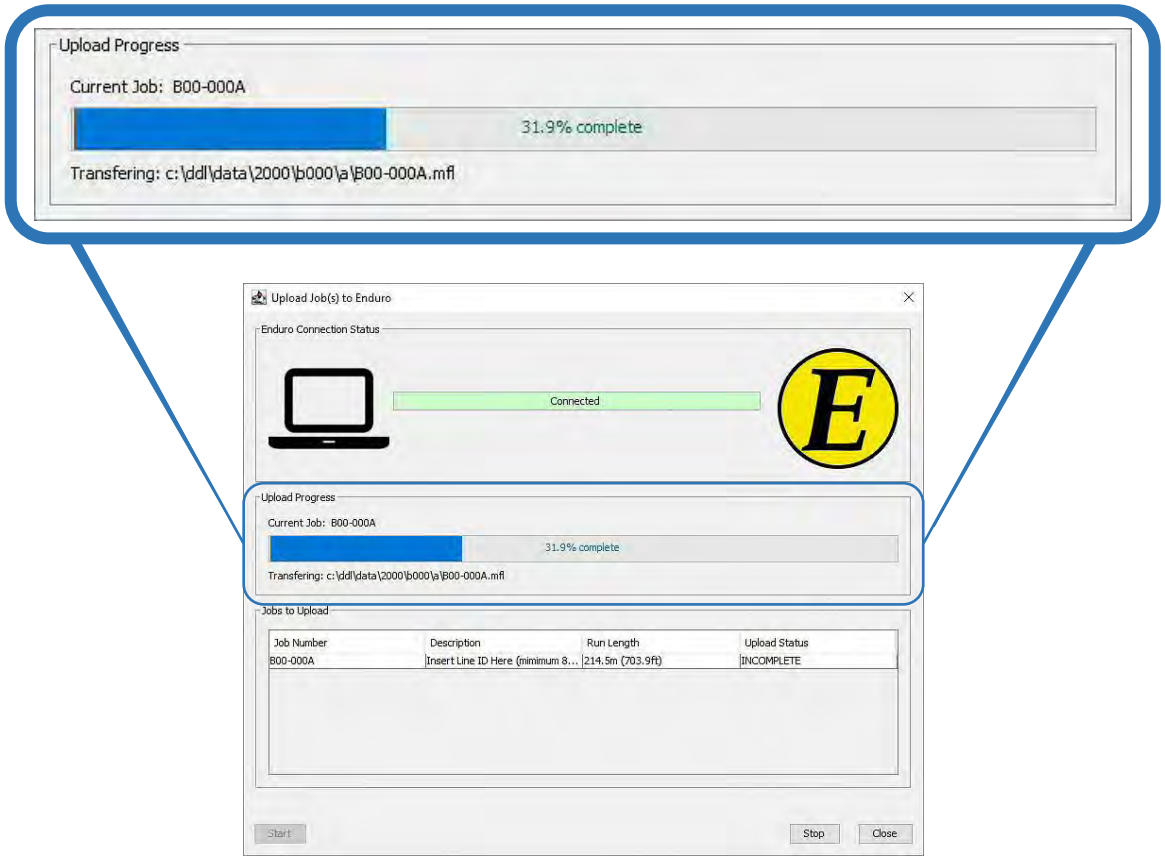


© Enduro Pipeline Services, Inc. All Rights Reserved.

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



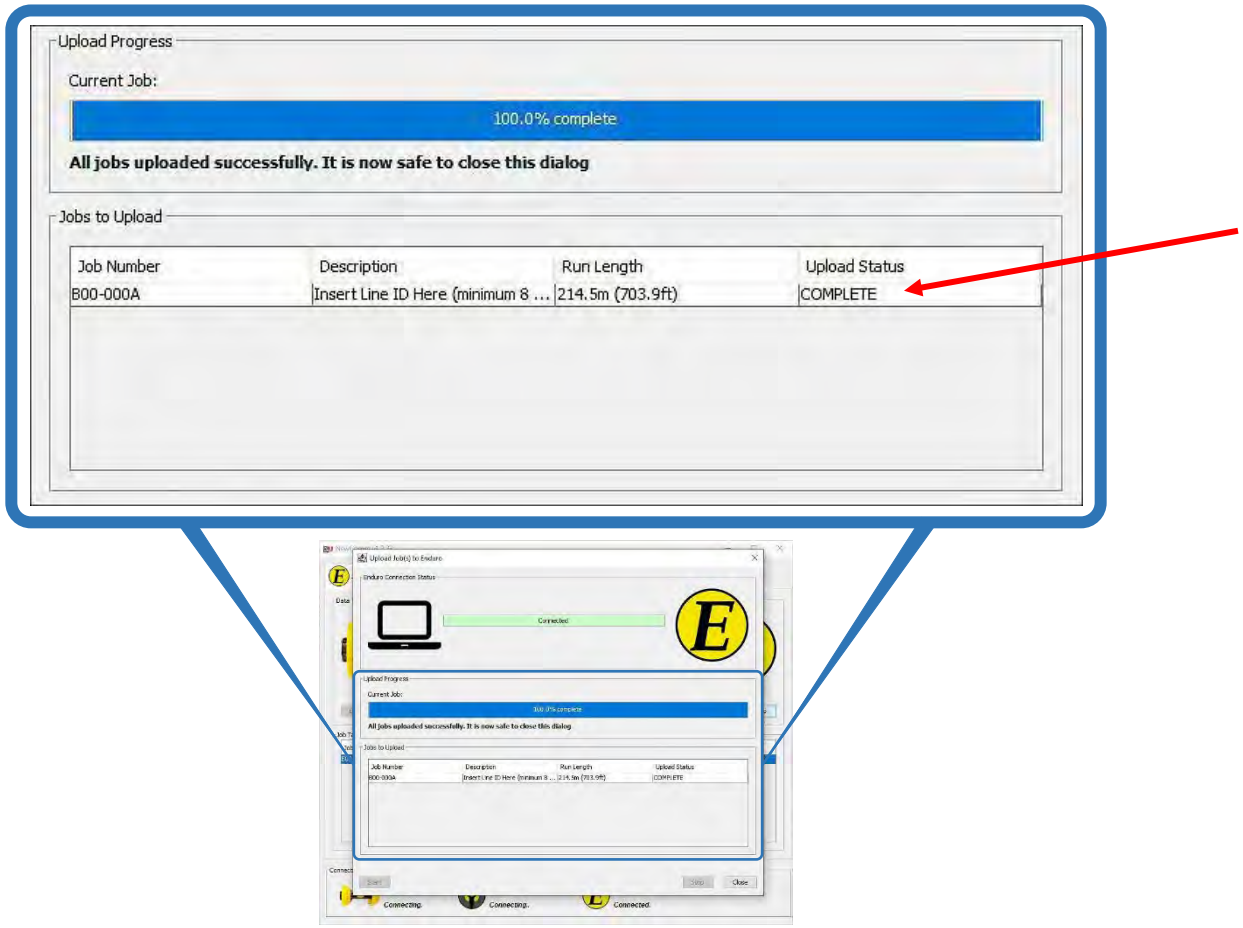
© Enduro Pipeline Services, Inc. All Rights Reserved.

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

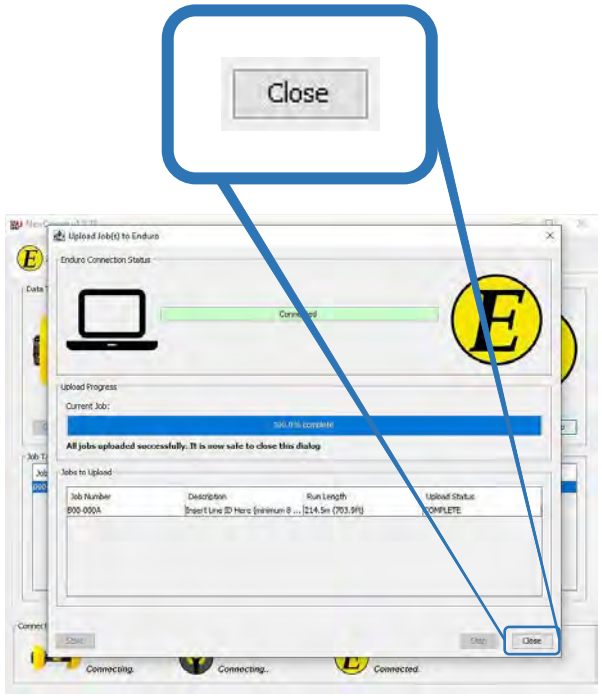
5.1.9. Table



© Enduro Pipeline Services, Inc. All Rights Reserved.

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).*

5.1.10. 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.

© Enduro Pipeline Services, Inc. All Rights Reserved.

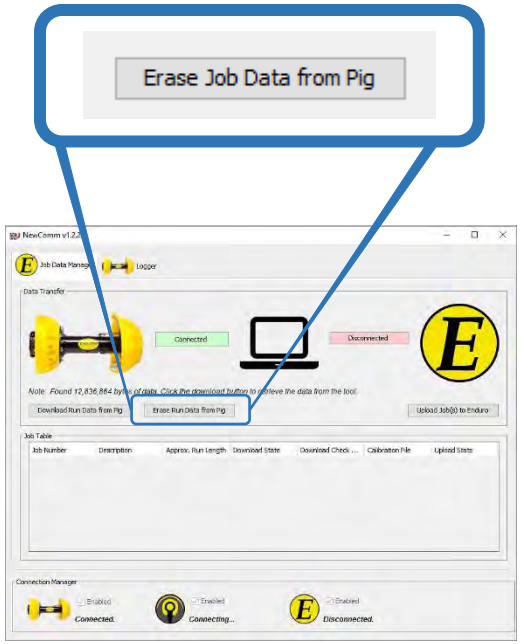
6. *Erase Data from DdL™ Caliper Tool:*

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*).

6.1.2. Table



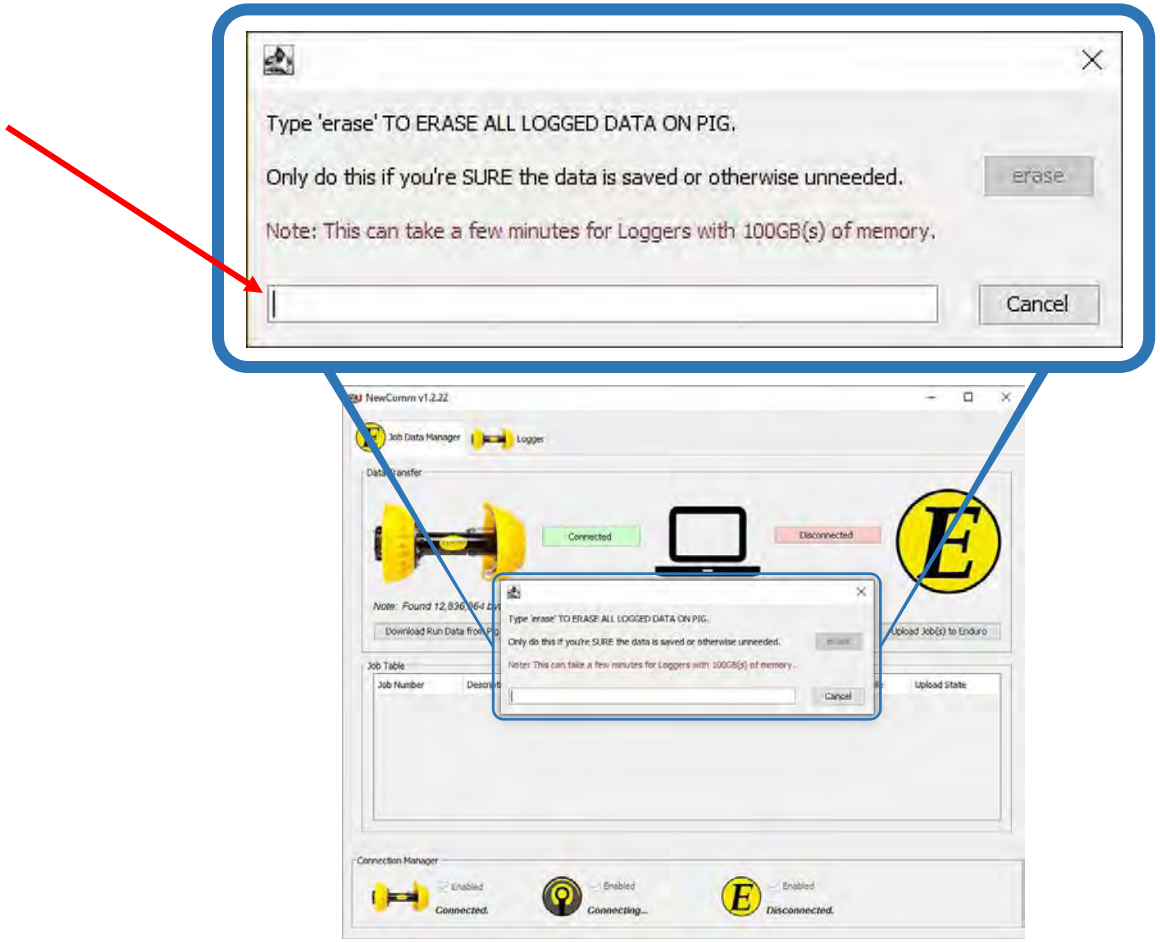
© Enduro Pipeline Services, Inc. All Rights Reserved.

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.

6.1.3. Table



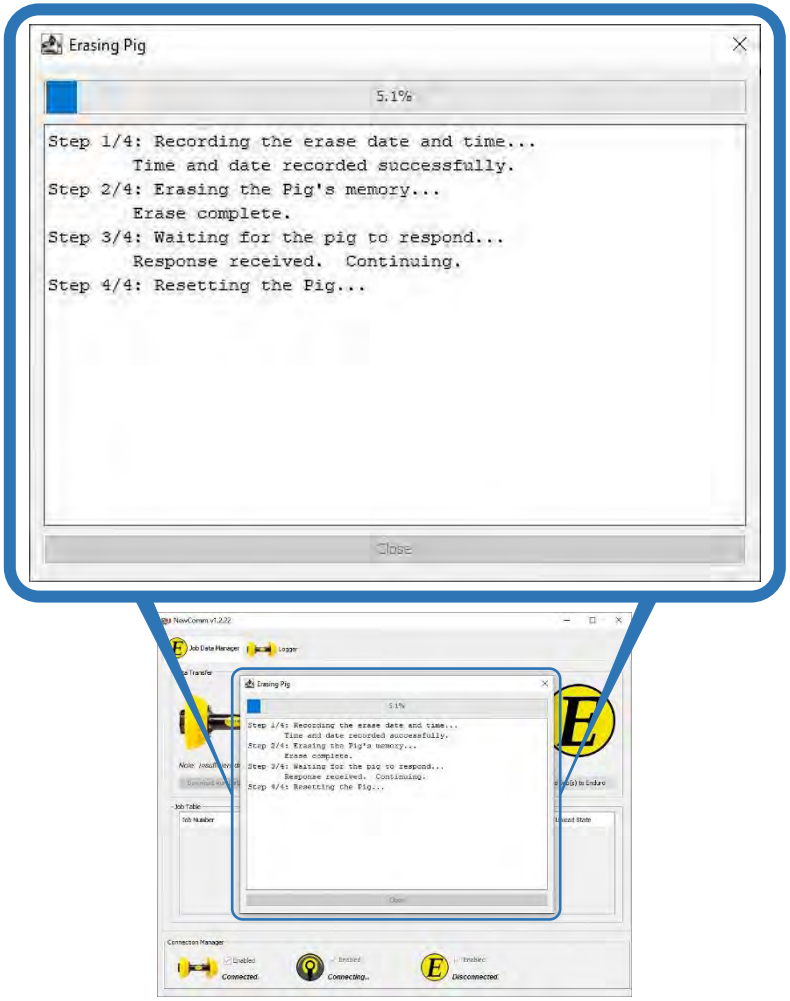
© Enduro Pipeline Services, Inc. All Rights Reserved.

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



© Enduro Pipeline Services, Inc. All Rights Reserved.

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

© Enduro Pipeline Services, Inc. All Rights Reserved.

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.

© Enduro Pipeline Services, Inc. All Rights Reserved.

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

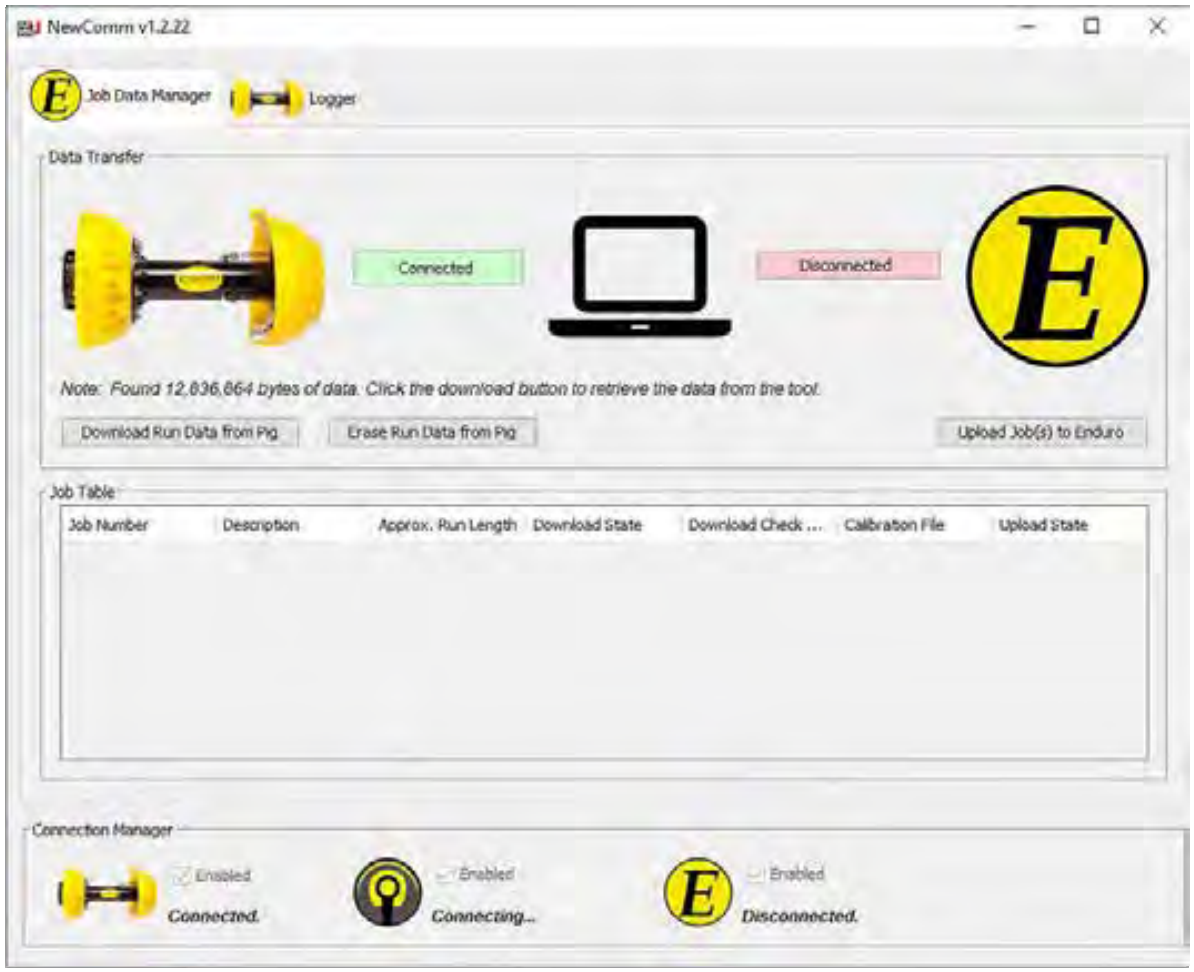
DdL™ Caliper Tool Icon	
Laptop Computer Icon	
AGM2 Box Icon	
ENDURO Headquarters Icon	

© Enduro Pipeline Services, Inc. All Rights Reserved.

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.

8.1.2. Table



© Enduro Pipeline Services, Inc. All Rights Reserved.

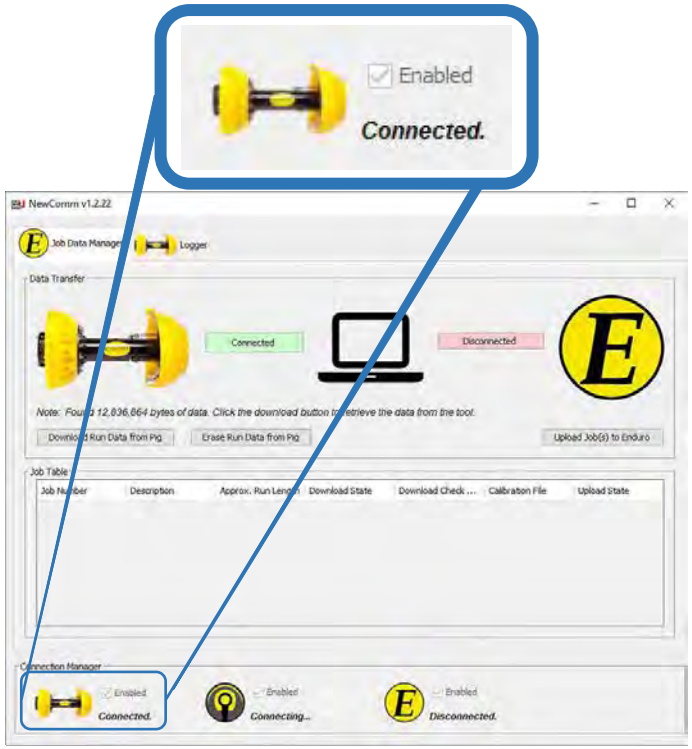
8.1.3. Verify that the Laptop Computer is Communicating with the DdL™ Caliper Tool (*refer to 8.1.3. Table*).

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



© Enduro Pipeline Services, Inc. All Rights Reserved.

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.

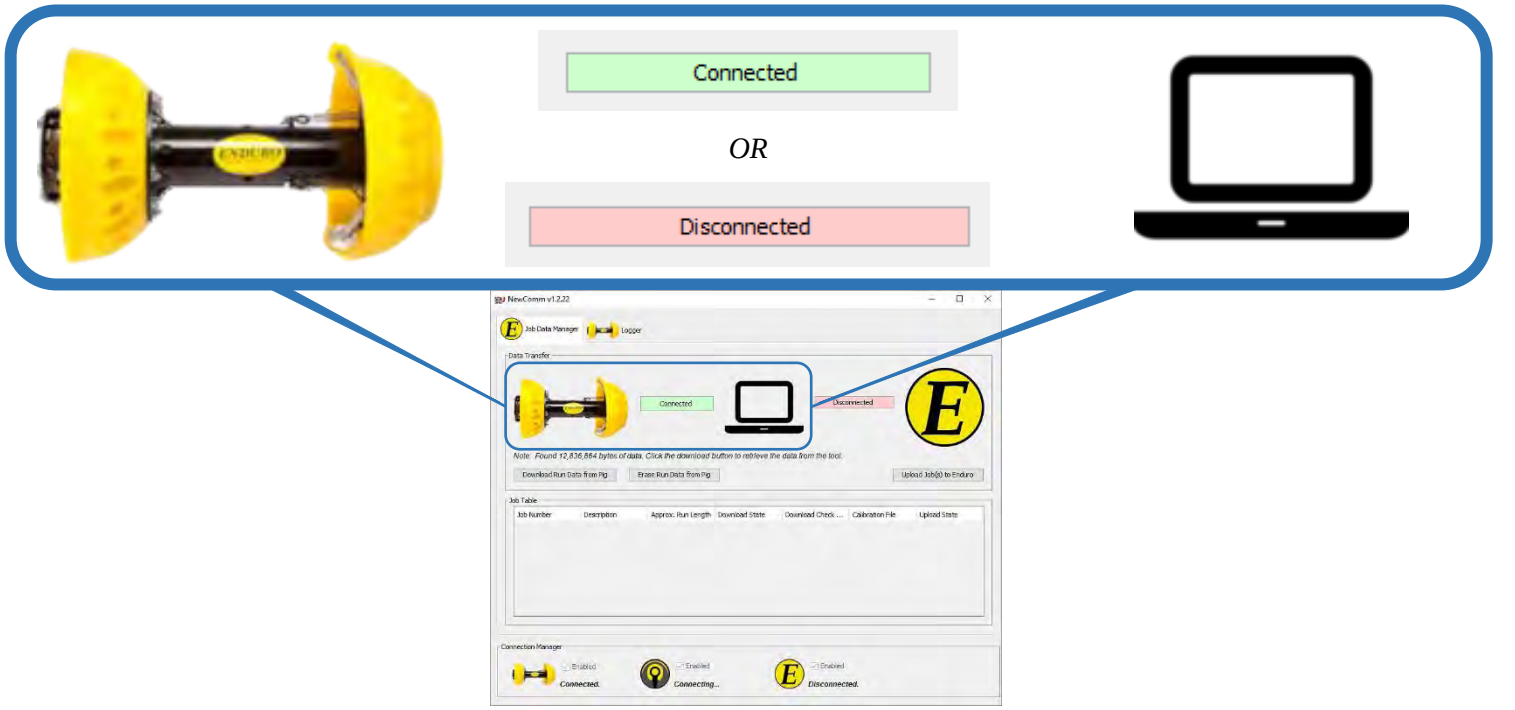
8.1.4.1.1. The connection status is actively monitored and will dynamically respond to changes.

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



© Enduro Pipeline Services, Inc. All Rights Reserved.

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.

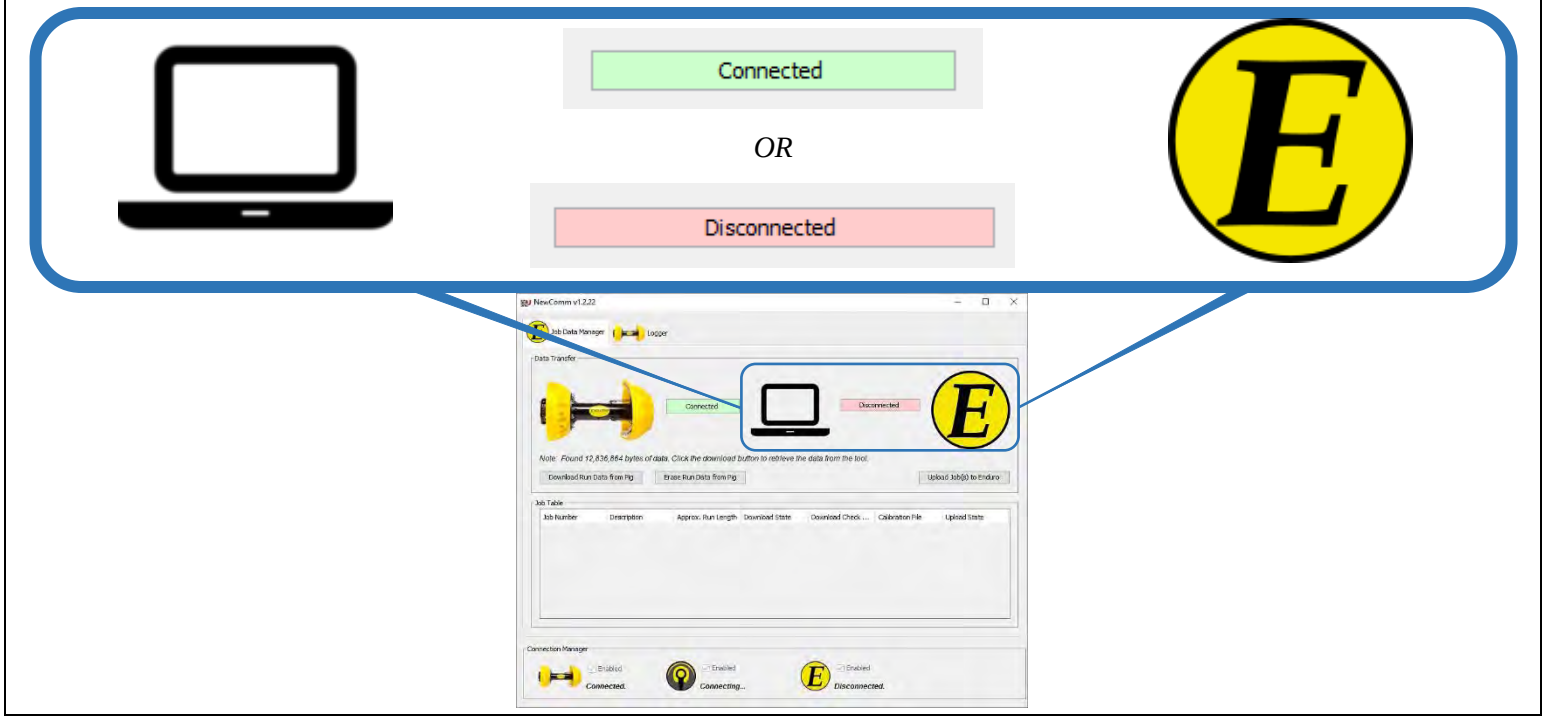
8.1.5.1.1.1. In the Disconnected state, the software attempts to establish a connection at a nominal rate of once a second.

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.

8.1.5. Table

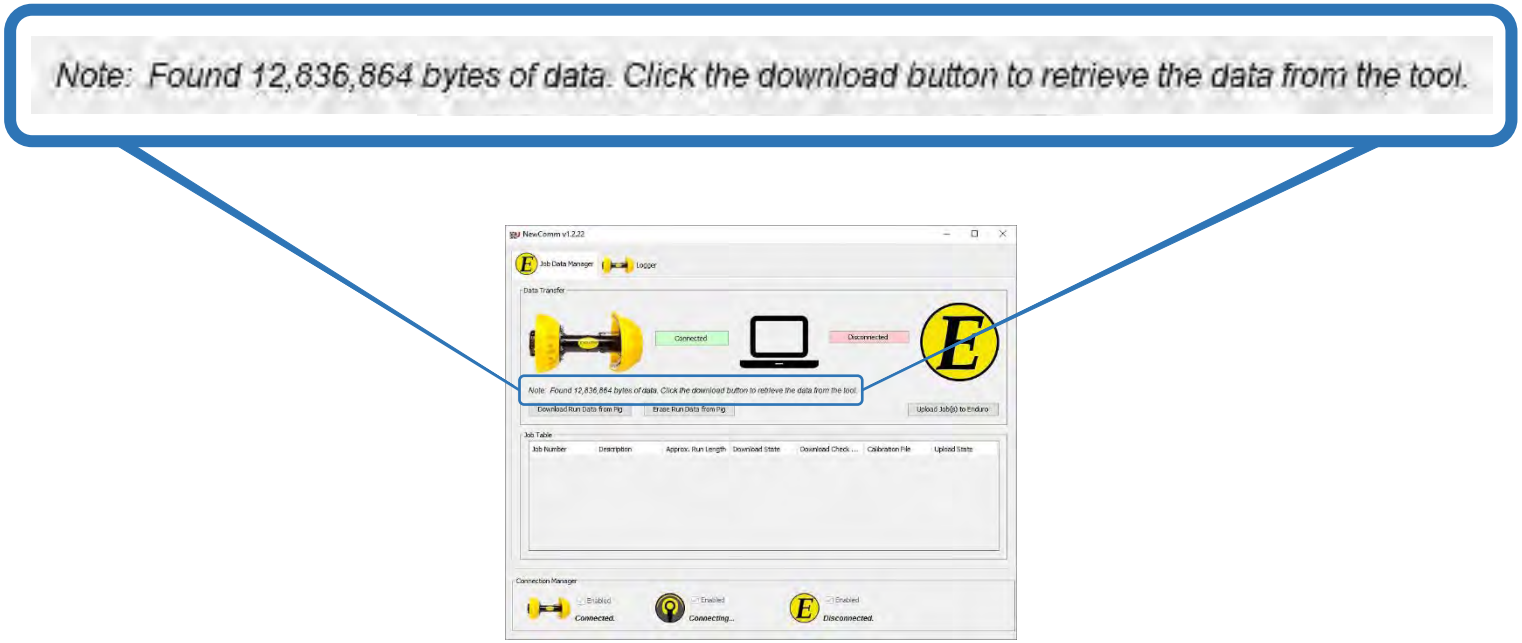


© Enduro Pipeline Services, Inc. All Rights Reserved.

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



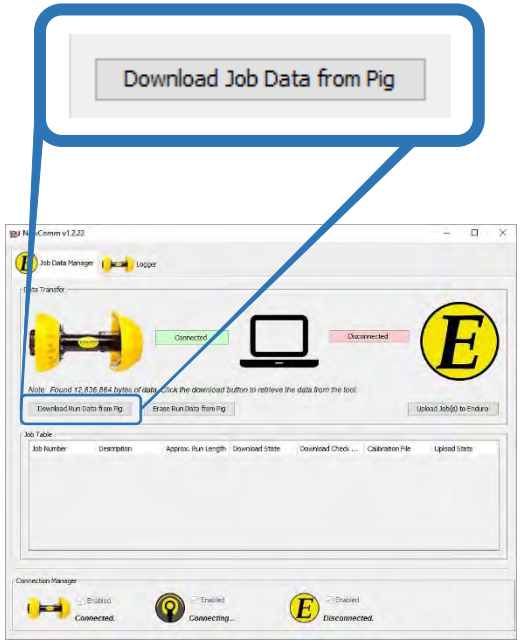
© Enduro Pipeline Services, Inc. All Rights Reserved.

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.

8.1.7. Table



© Enduro Pipeline Services, Inc. All Rights Reserved.

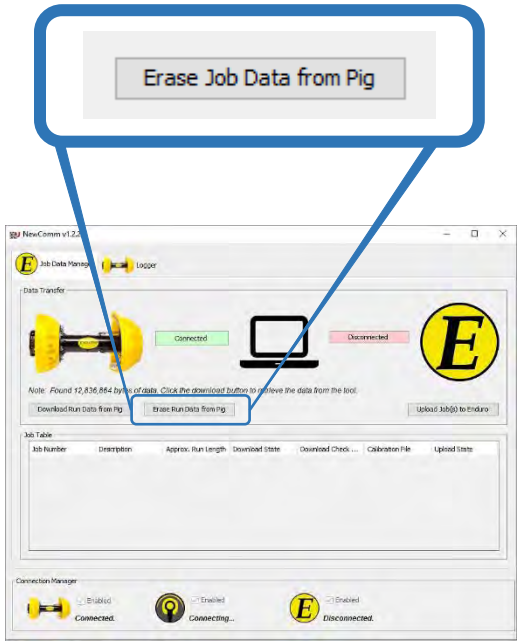
8.1.8. Erase Job Data from Pig button (*refer to 8.1.8. Table*).

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



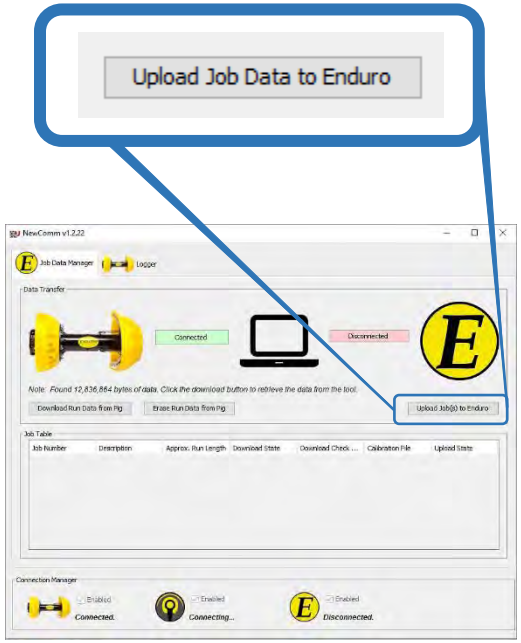
© Enduro Pipeline Services, Inc. All Rights Reserved.

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.

8.1.9. Table



© Enduro Pipeline Services, Inc. All Rights Reserved.

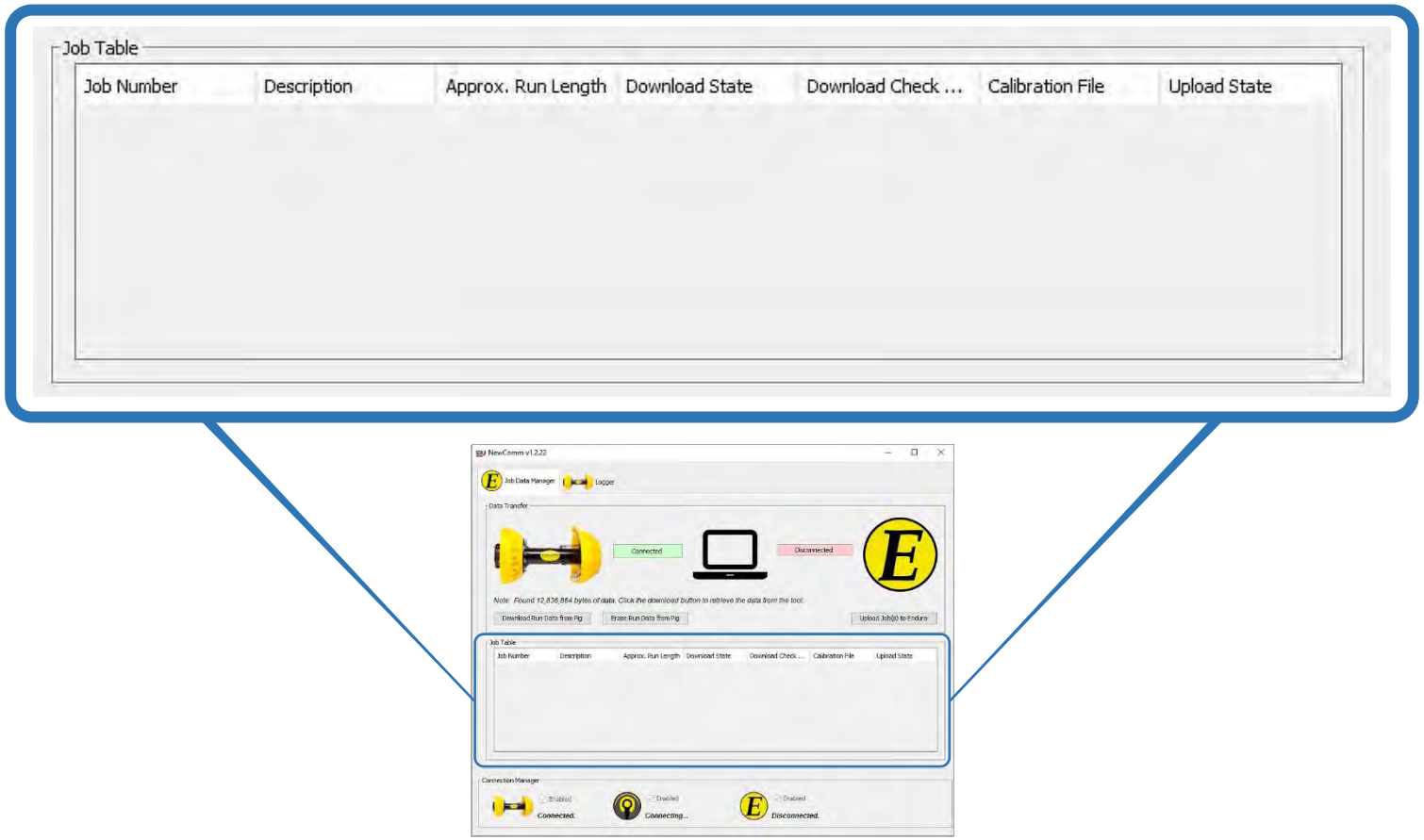
8.1.10. Job Table data listing (*refer to 8.1.10. Table*).

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.

8.1.10. Table



© Enduro Pipeline Services, Inc. All Rights Reserved.

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

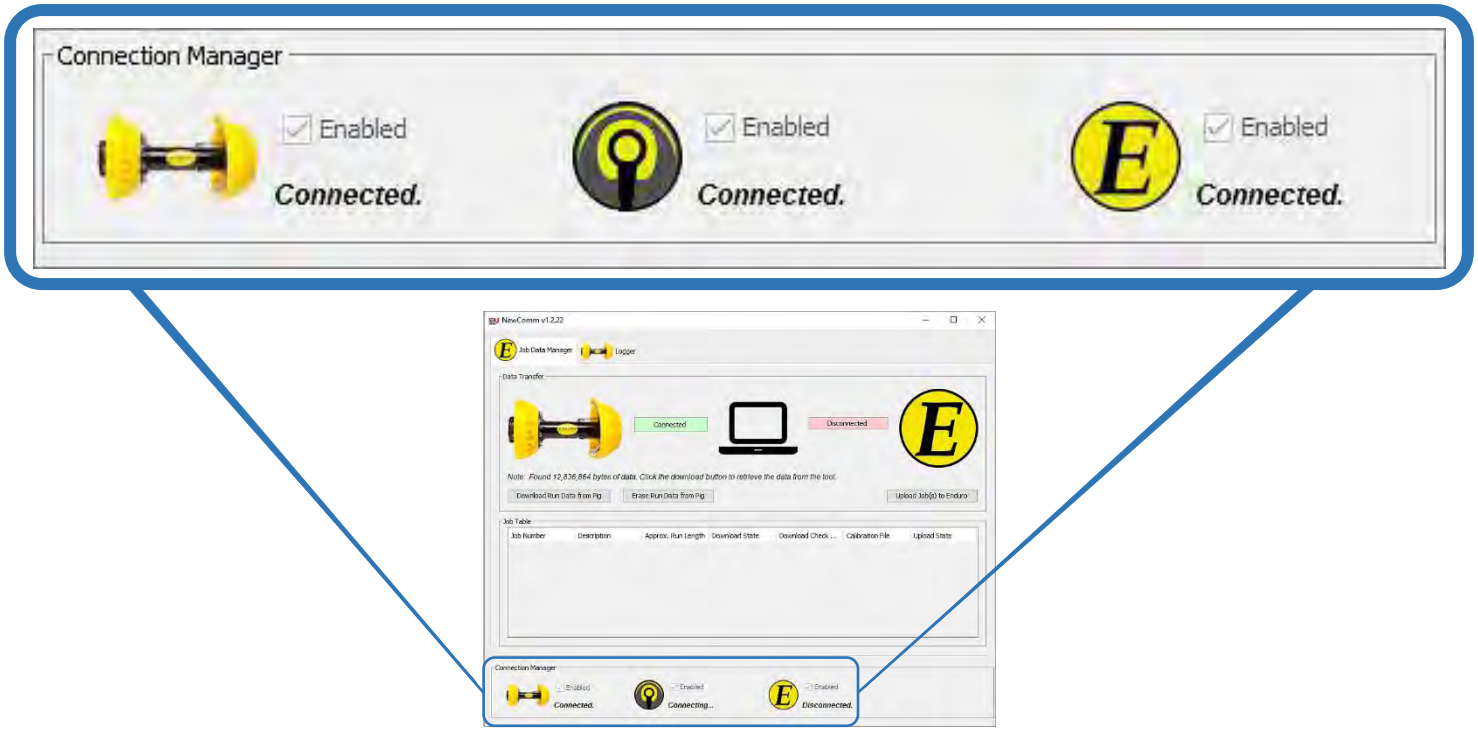
8.1.11.2. There will be three types of communication verbiage

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

8.1.11. Table

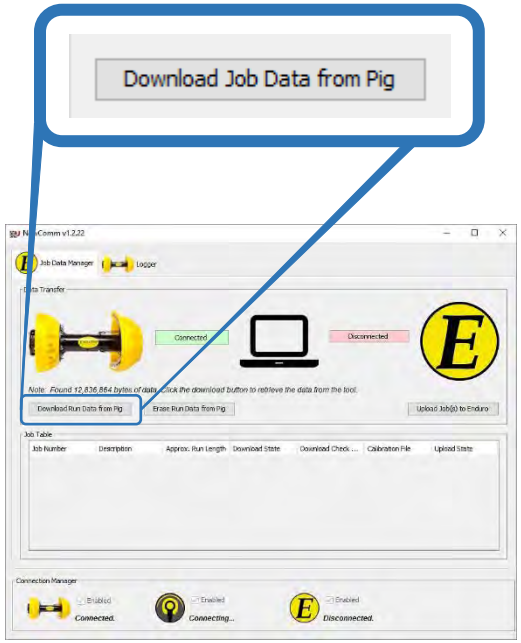


© Enduro Pipeline Services, Inc. All Rights Reserved.

8.2. Download Dialog Windows

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

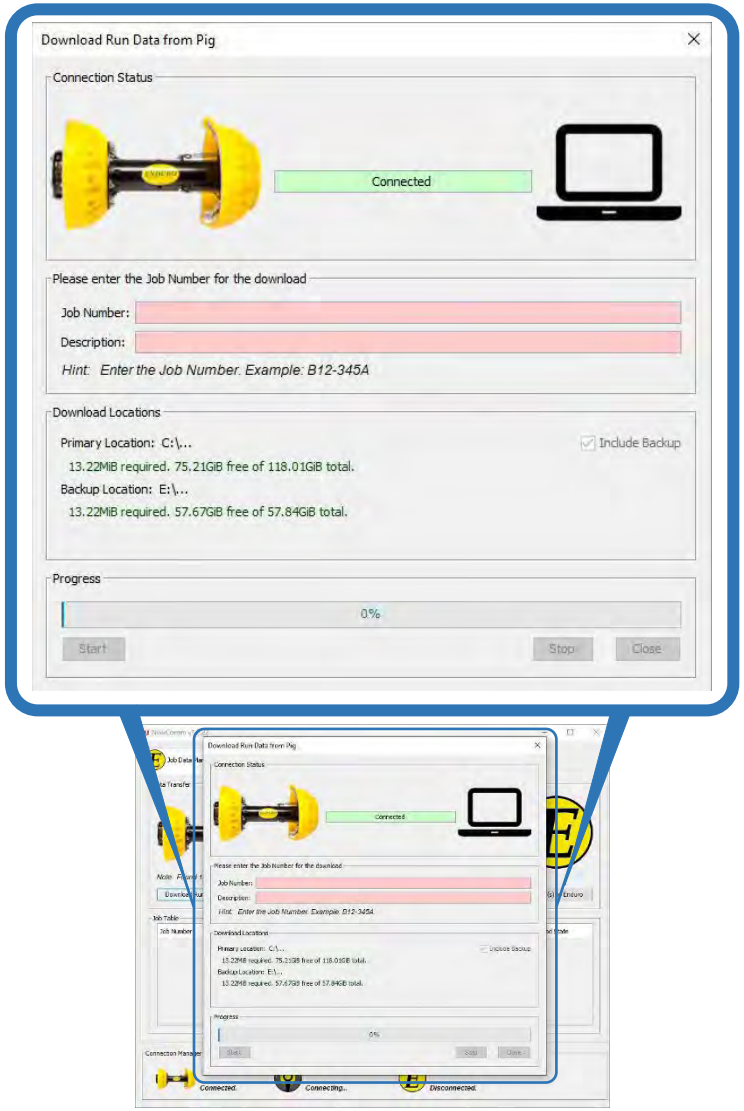
8.2.1. Table



© Enduro Pipeline Services, Inc. All Rights Reserved.

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

8.2.2. Table



© Enduro Pipeline Services, Inc. All Rights Reserved.

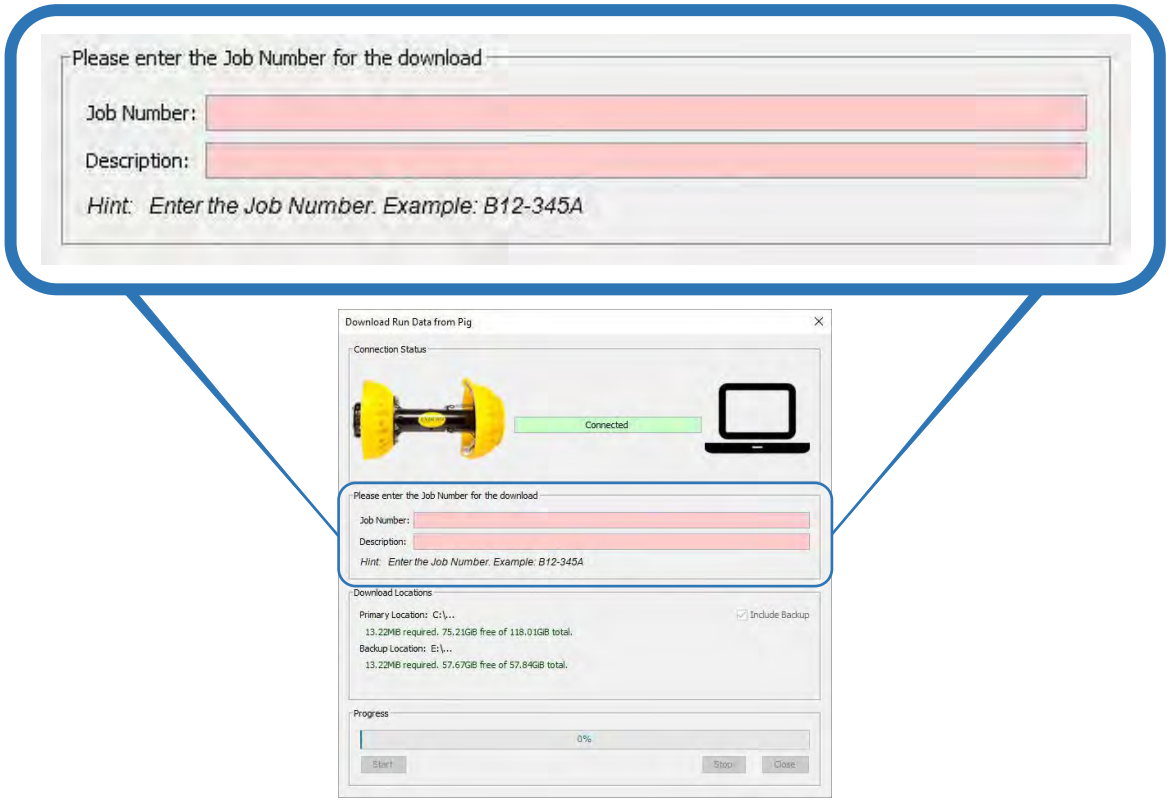
8.2.3. Text Field to enter Job Number and Description (*refer to 8.2.3.a. Table & 8.2.3.b. Table*).

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.a. Table



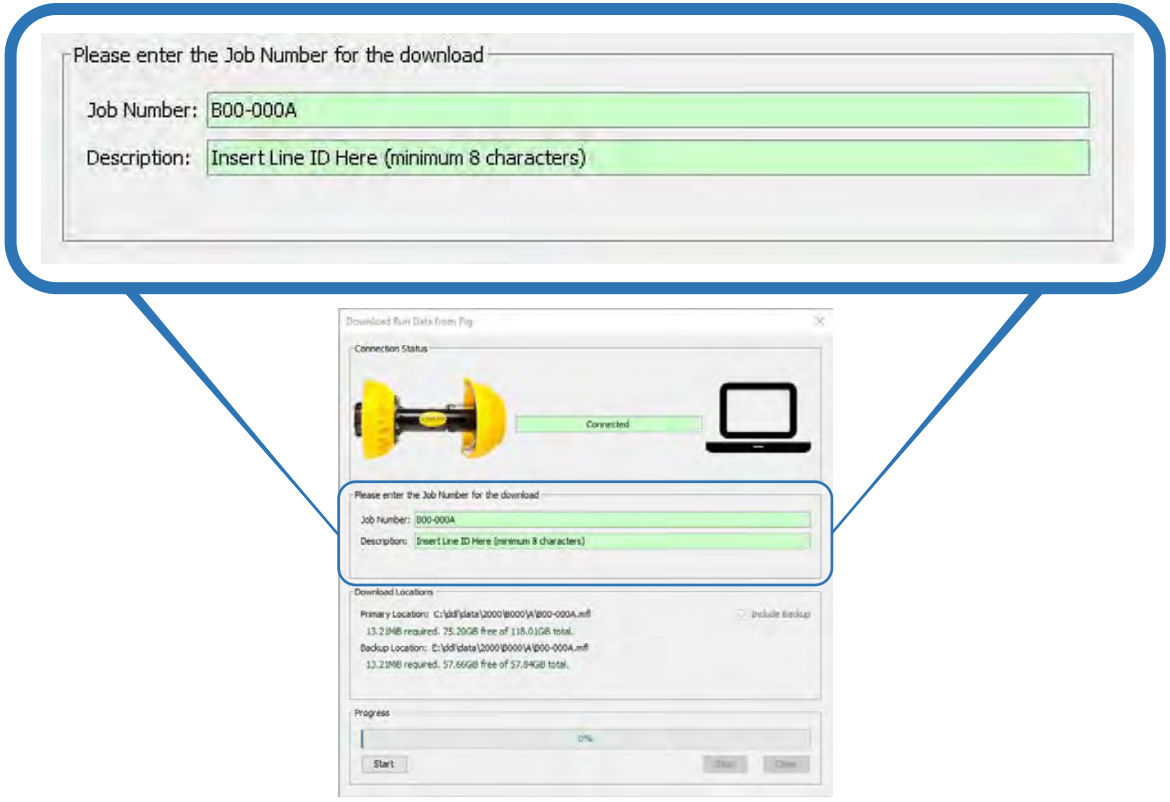
© Enduro Pipeline Services, Inc. All Rights Reserved.

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



© Enduro Pipeline Services, Inc. All Rights Reserved.

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

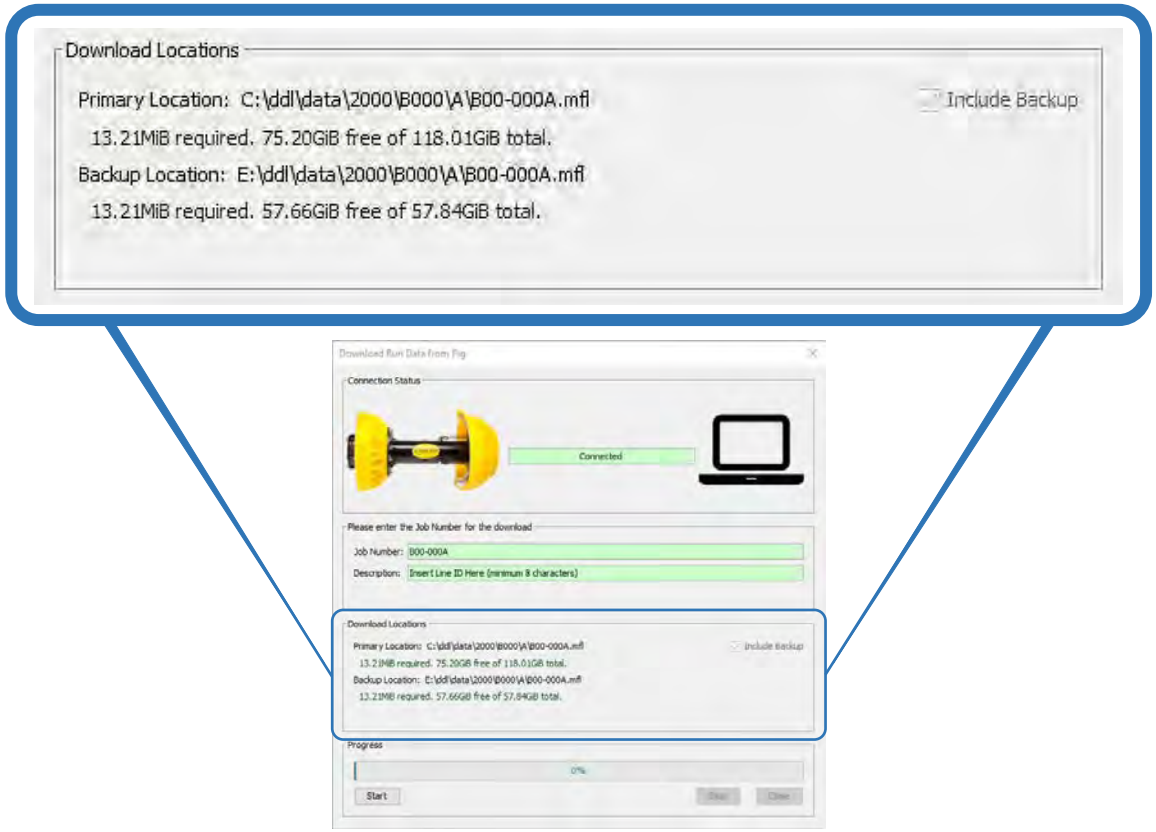
8.2.4.1. This field informs the user as to where their Job Data will be stored.

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



© Enduro Pipeline Services, Inc. All Rights Reserved.

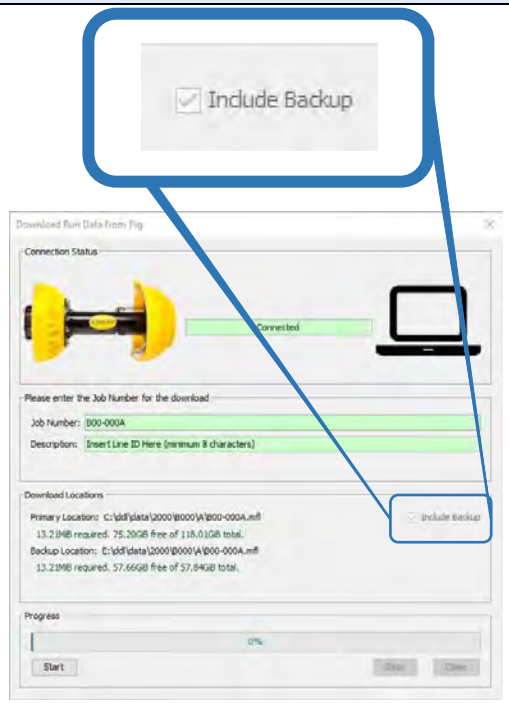
8.2.5. Include Backup (*refer to 8.2.5. Table*).

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.

8.2.5. Table



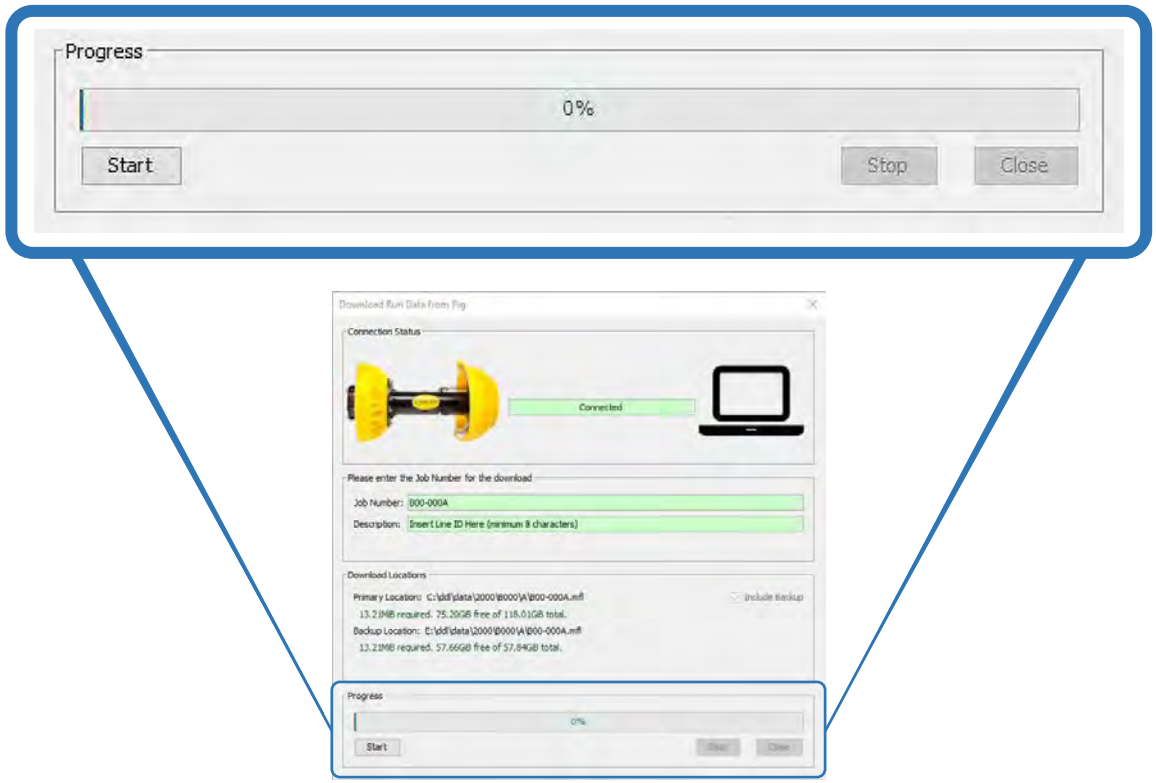
© Enduro Pipeline Services, Inc. All Rights Reserved.

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

8.2.6. Table



© Enduro Pipeline Services, Inc. All Rights Reserved.

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.

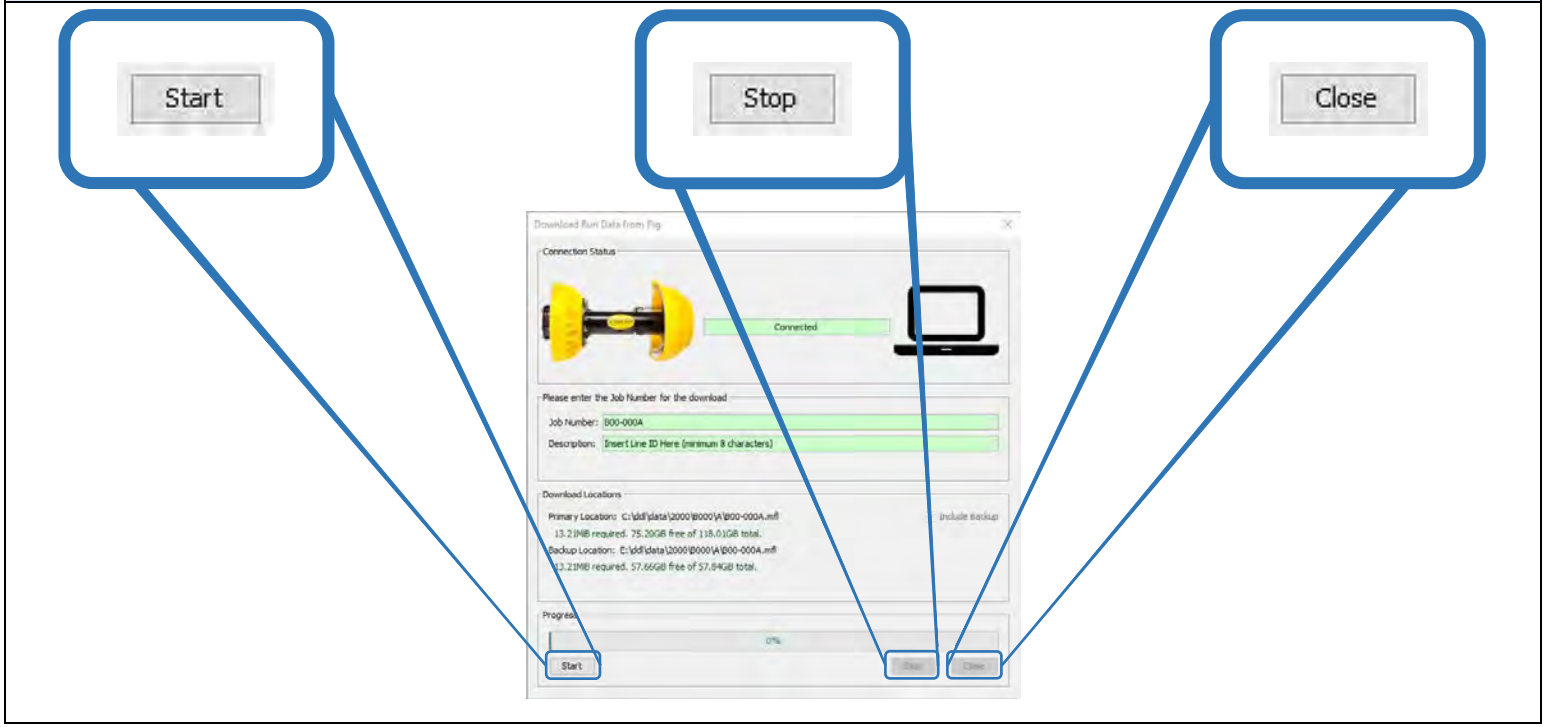
8.2.7.2.1.1. Only enabled when a download is in progress.

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.

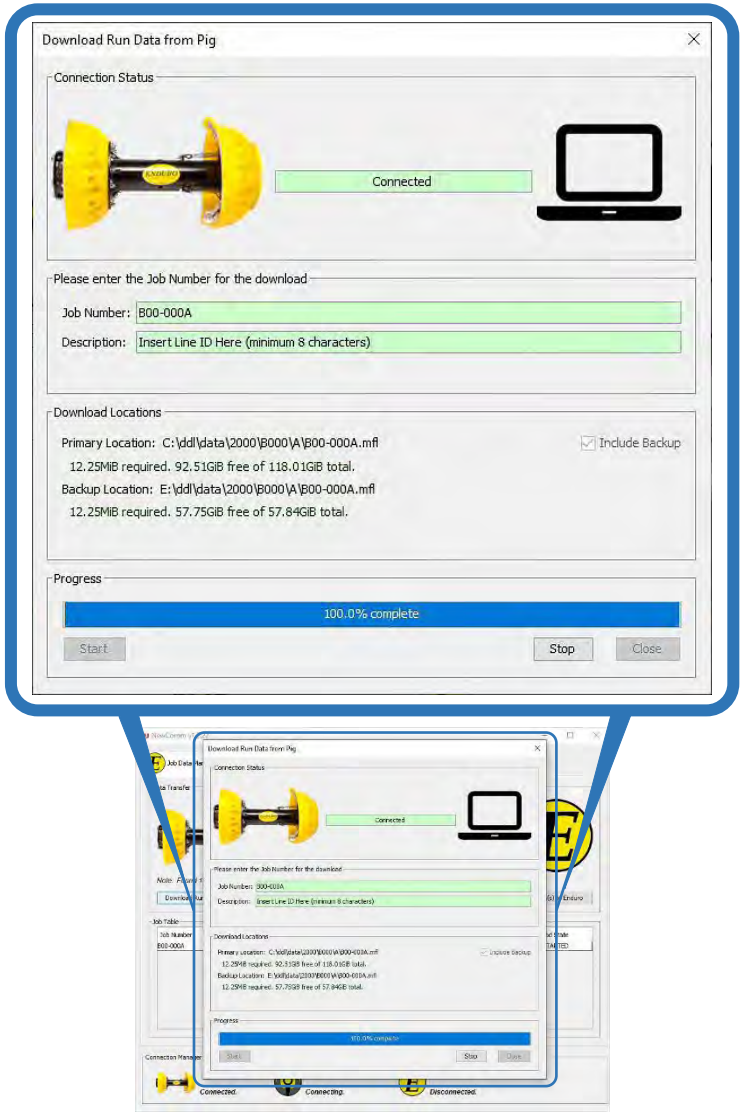
8.2.7. Table



© Enduro Pipeline Services, Inc. All Rights Reserved.

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

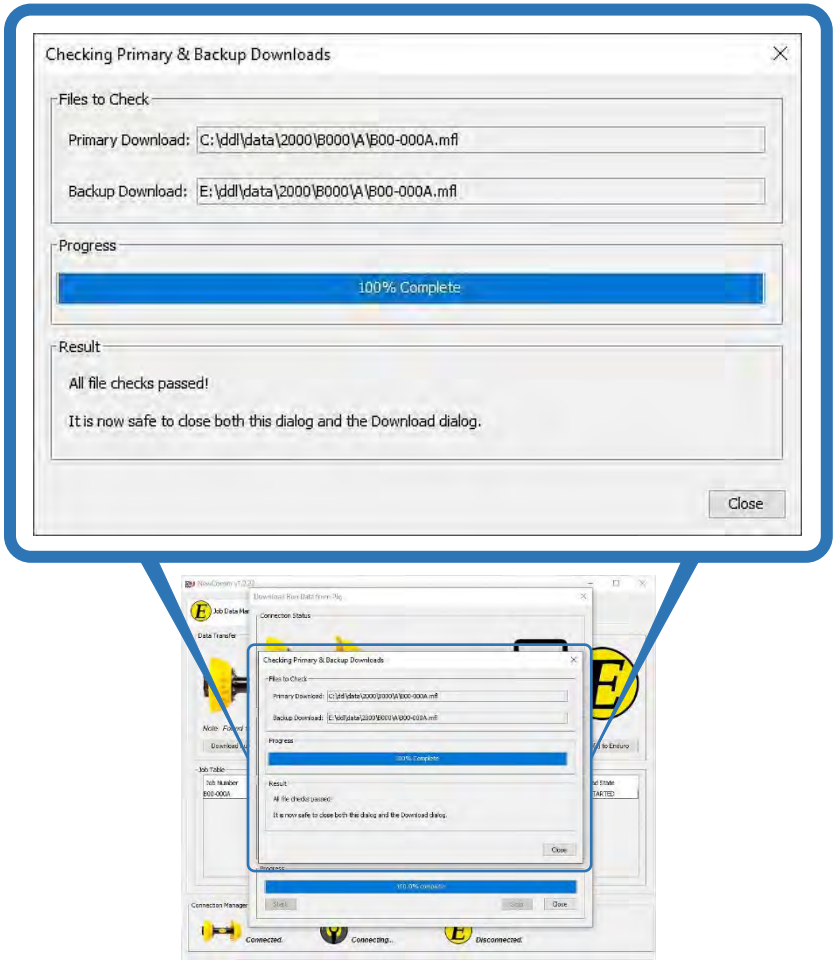


© Enduro Pipeline Services, Inc. All Rights Reserved.

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

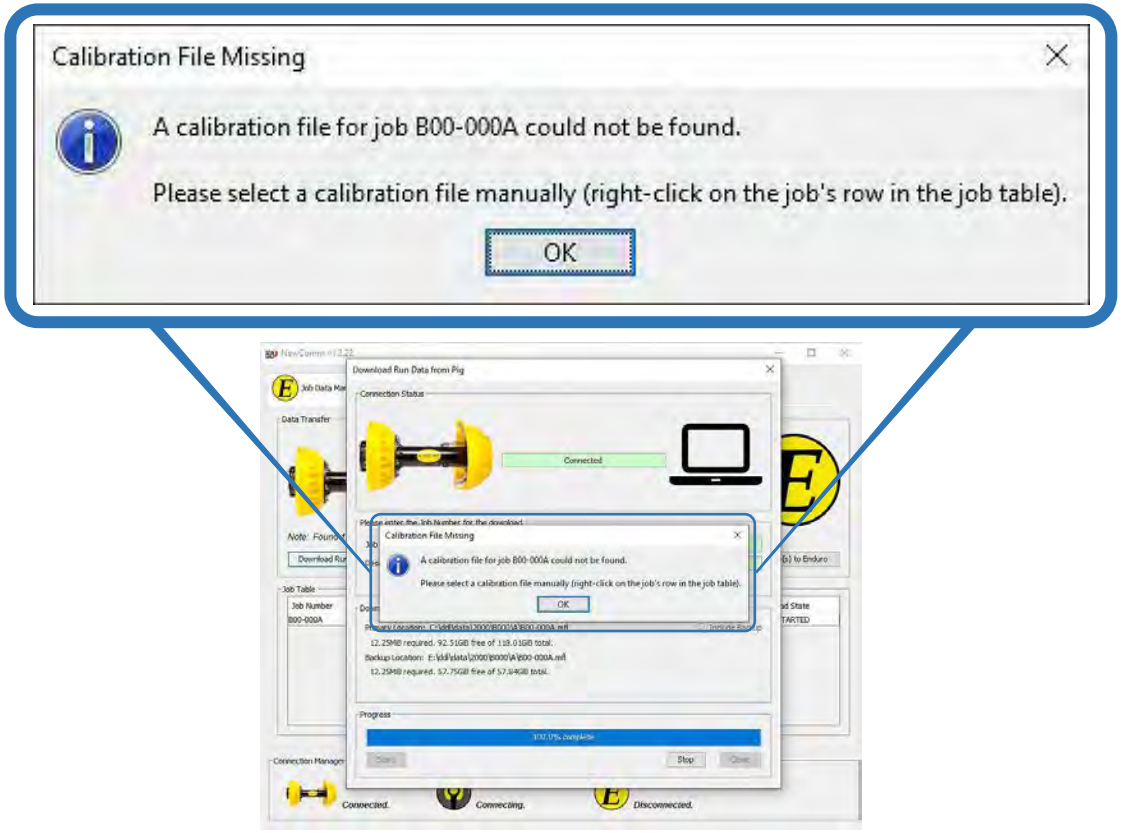


© Enduro Pipeline Services, Inc. All Rights Reserved.

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.

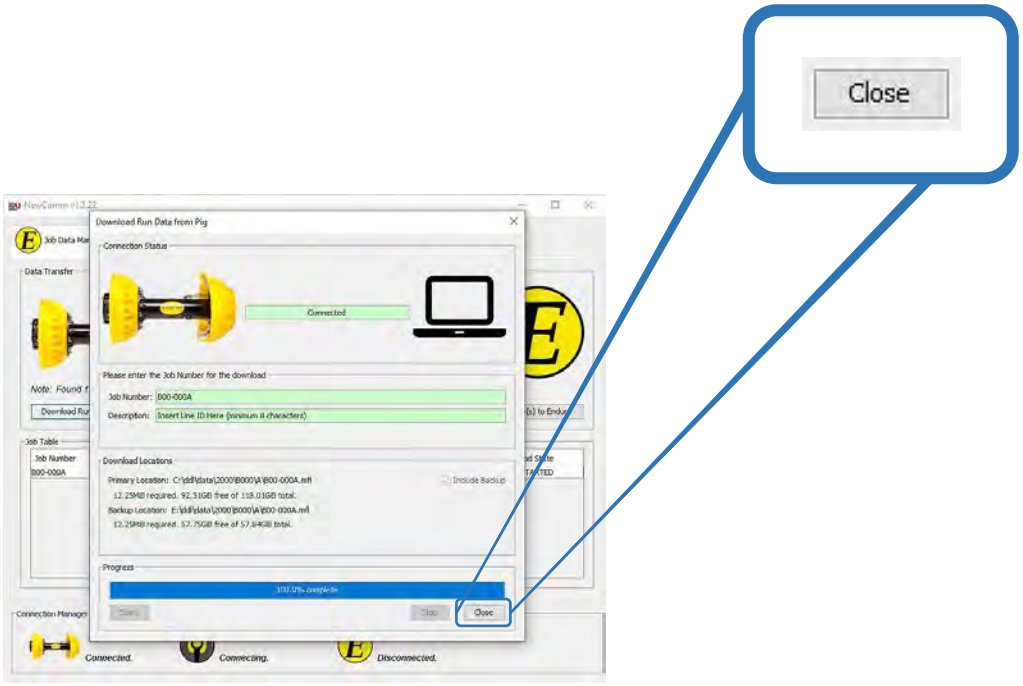
8.2.10. Table



© Enduro Pipeline Services, Inc. All Rights Reserved.

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

8.2.11. Table



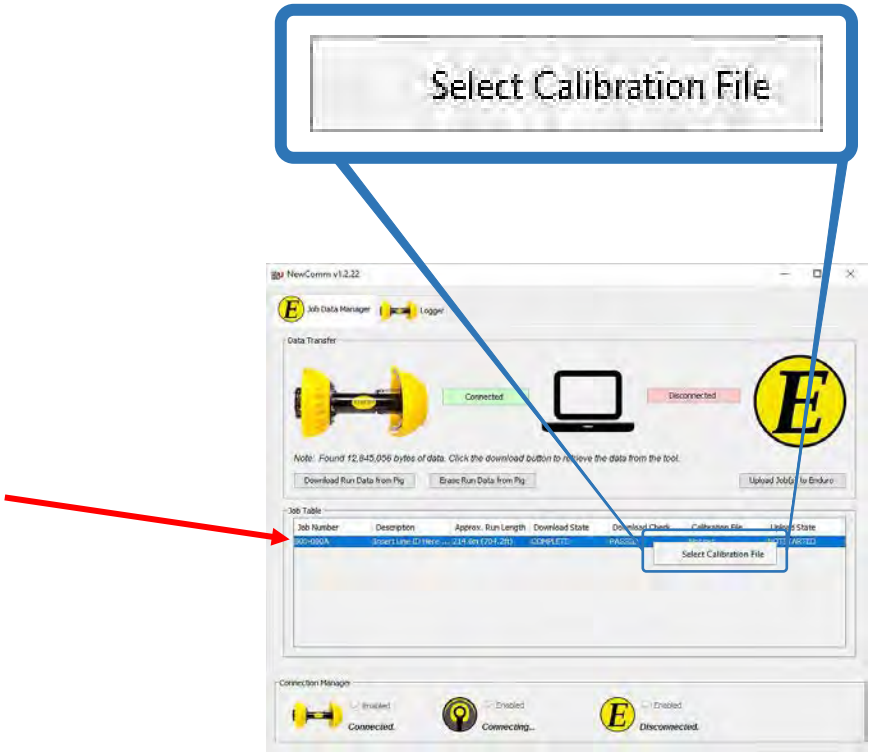
© Enduro Pipeline Services, Inc. All Rights Reserved.

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



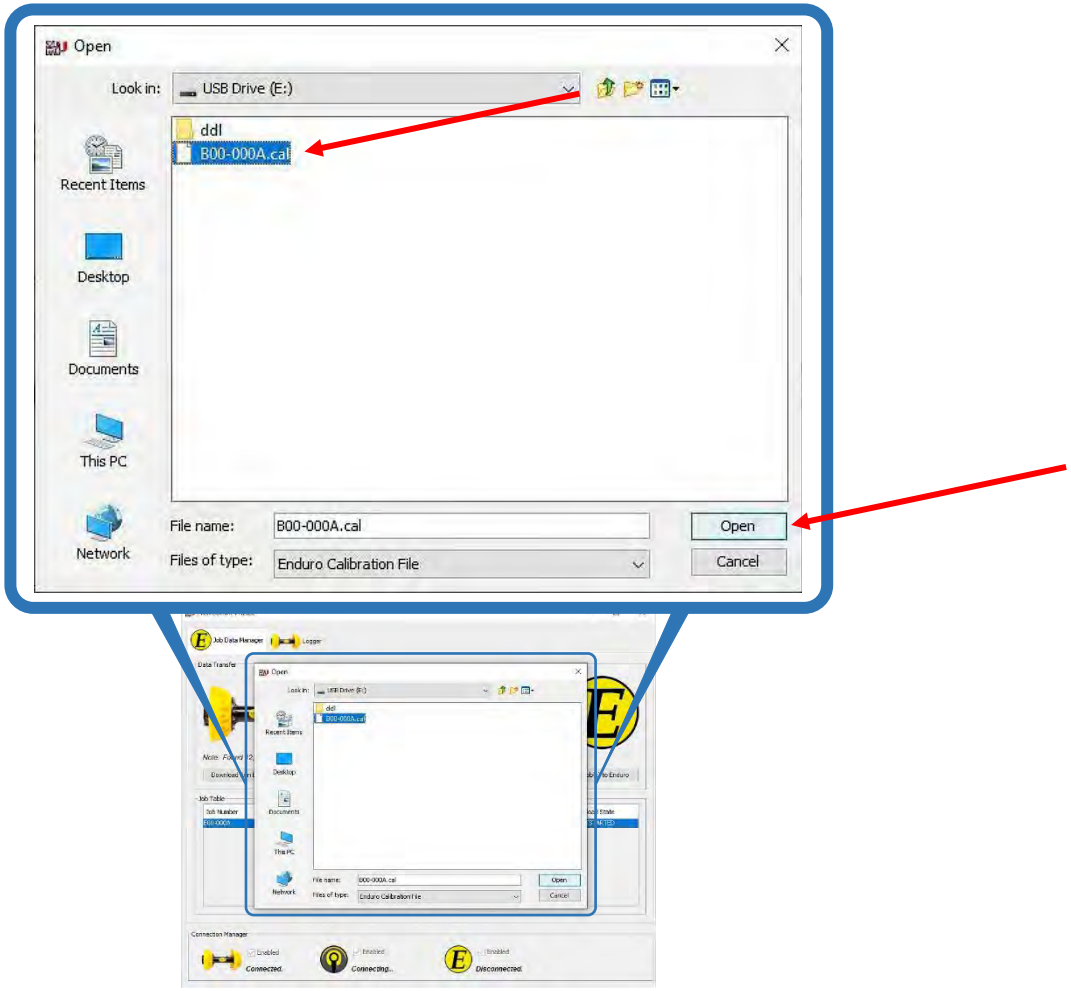
© Enduro Pipeline Services, Inc. All Rights Reserved.

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”

8.2.13. Table



© Enduro Pipeline Services, Inc. All Rights Reserved.

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.

8.2.14. Table

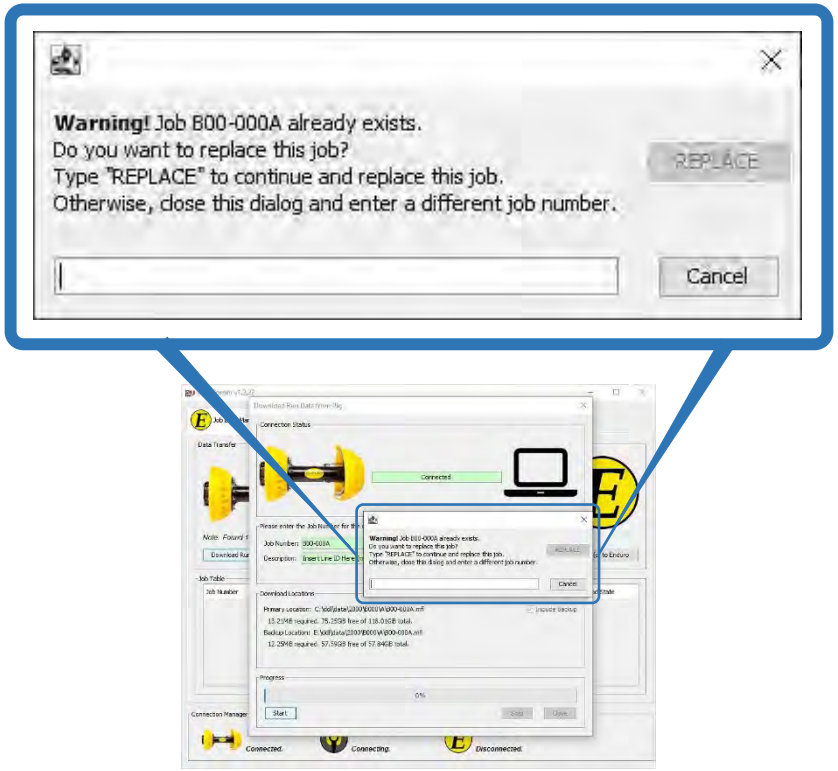
© Enduro Pipeline Services, Inc. All Rights Reserved.

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



© Enduro Pipeline Services, Inc. All Rights Reserved.

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.

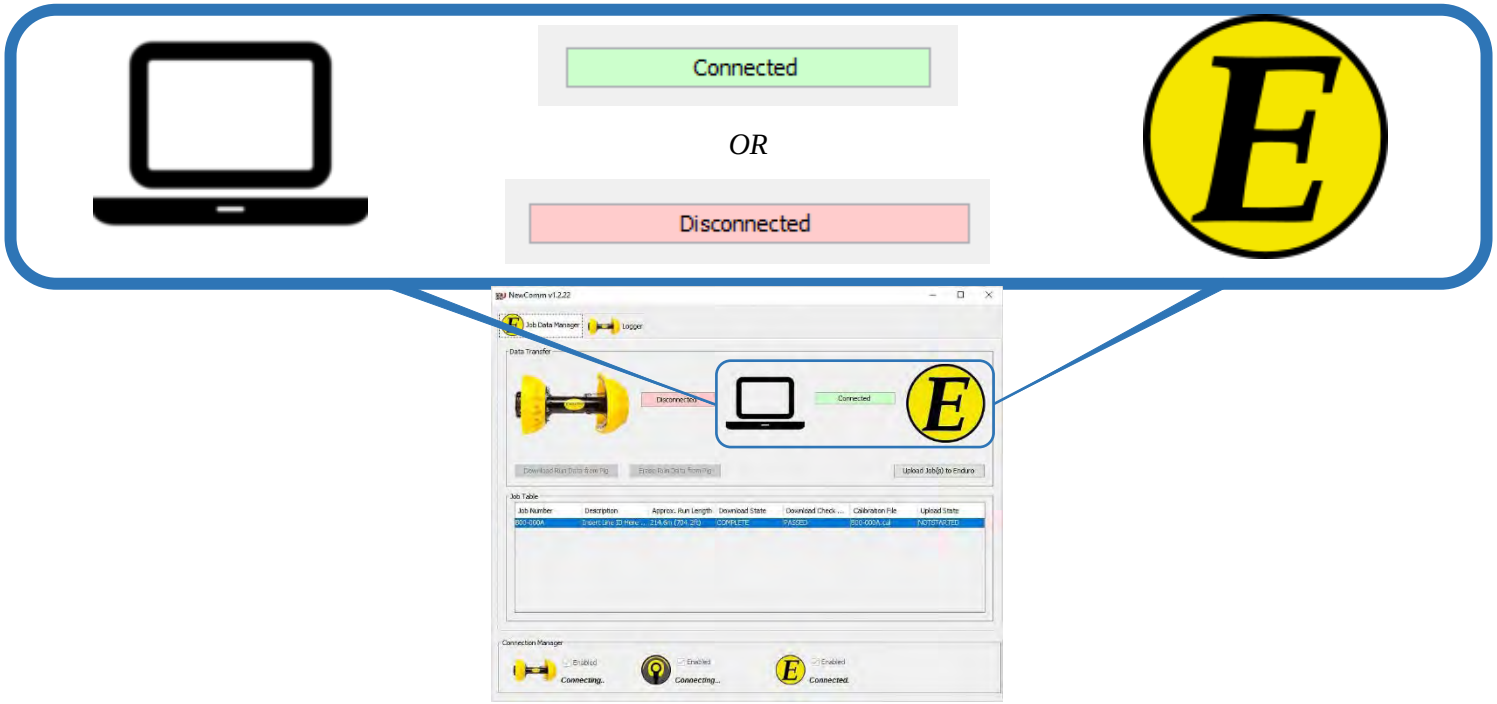
8.3.1.1.1.1. In the Disconnected state, the software attempts to establish a connection at a nominal rate of once a second.

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.

8.3.1. Table

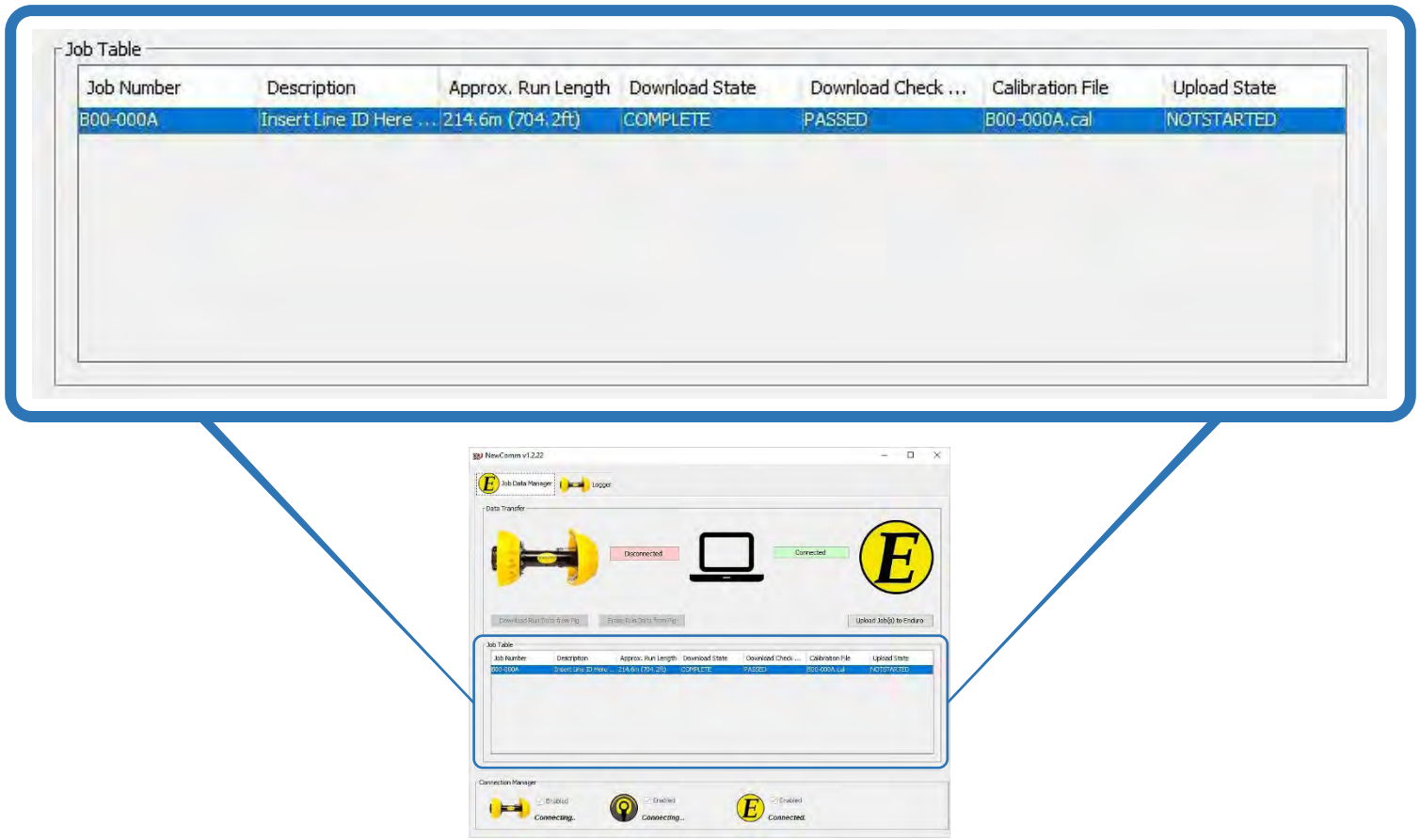


© Enduro Pipeline Services, Inc. All Rights Reserved.

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.

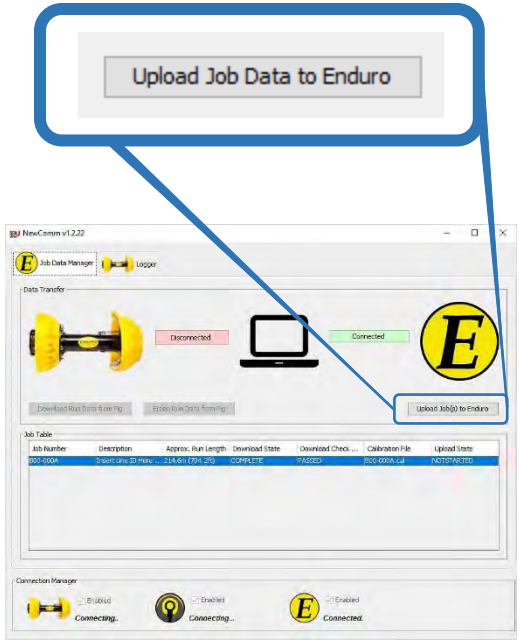
8.3.2. Table



© Enduro Pipeline Services, Inc. All Rights Reserved.

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

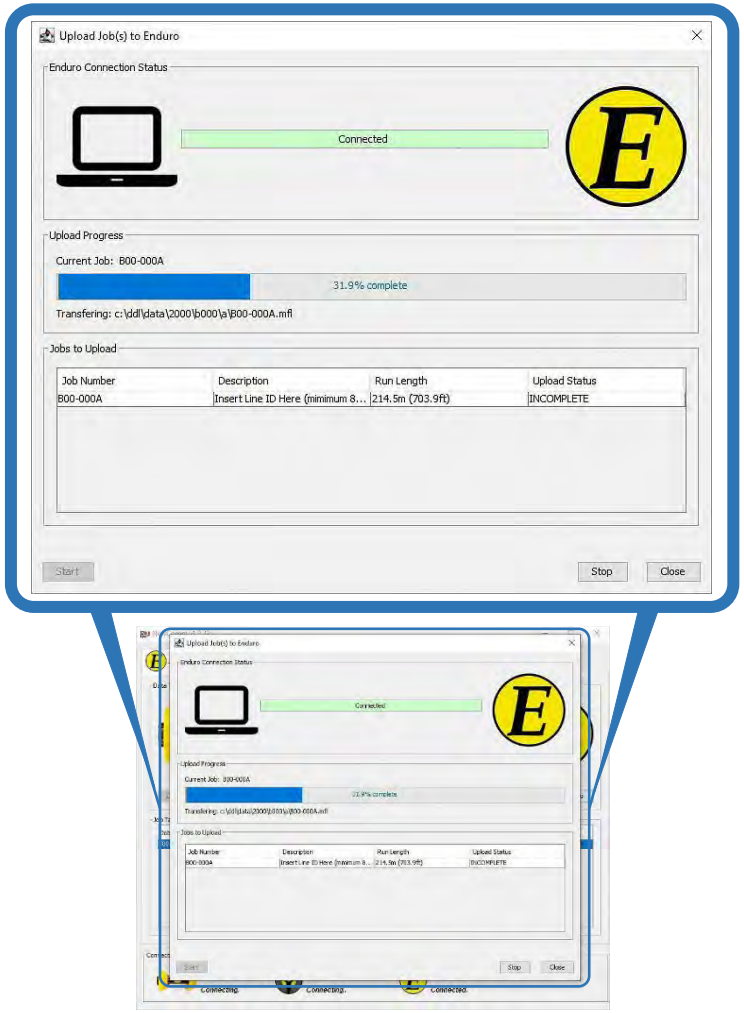
8.3.3. Table



© Enduro Pipeline Services, Inc. All Rights Reserved.

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

8.3.4. Table



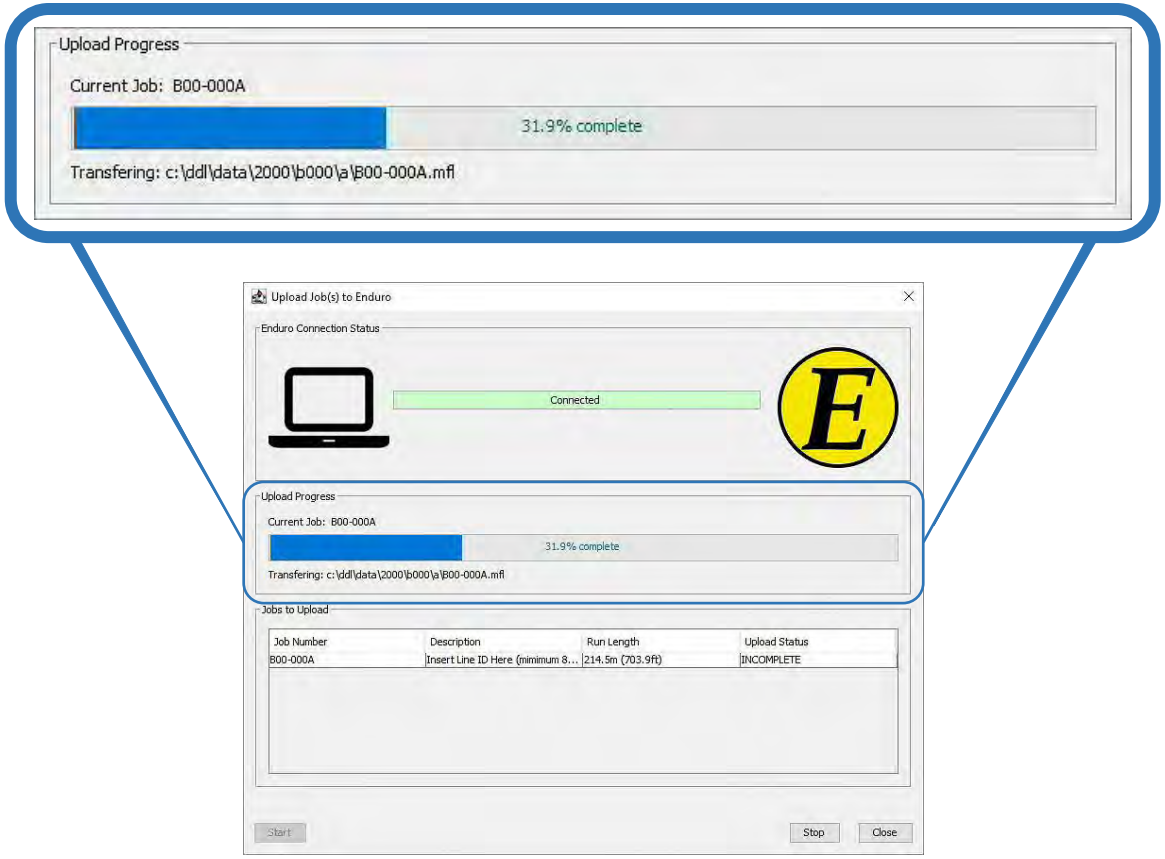
© Enduro Pipeline Services, Inc. All Rights Reserved.

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

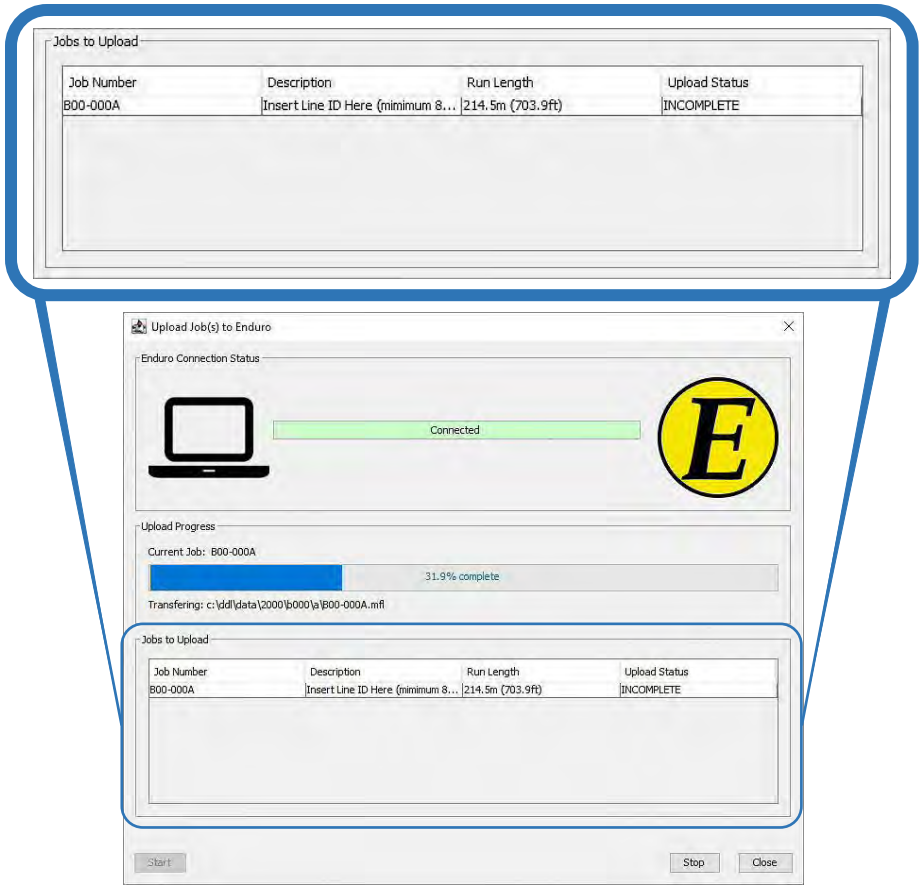


© Enduro Pipeline Services, Inc. All Rights Reserved.

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

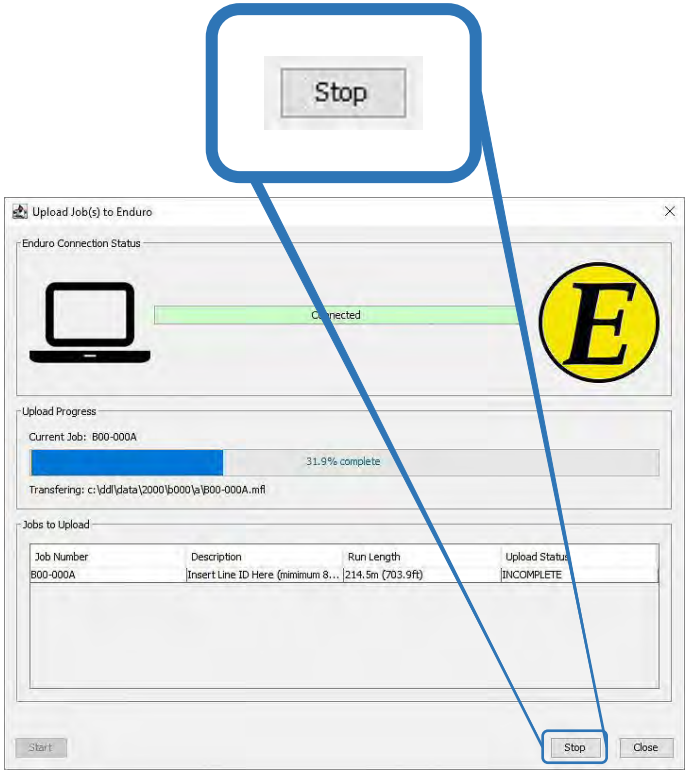


© Enduro Pipeline Services, Inc. All Rights Reserved.

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

8.3.7.1. This will stop the upload process if necessary.

8.3.7. Table

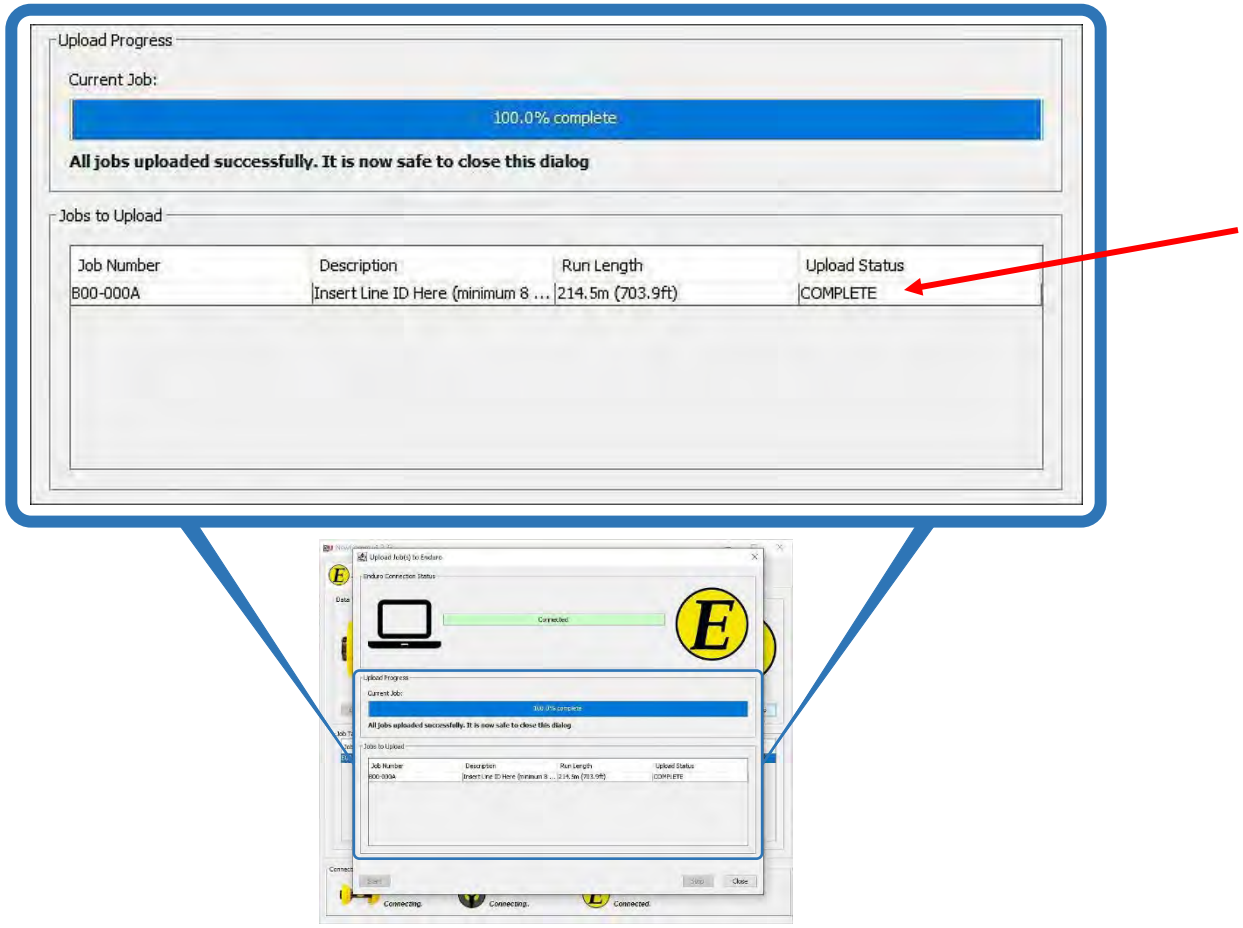


© Enduro Pipeline Services, Inc. All Rights Reserved.

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”.

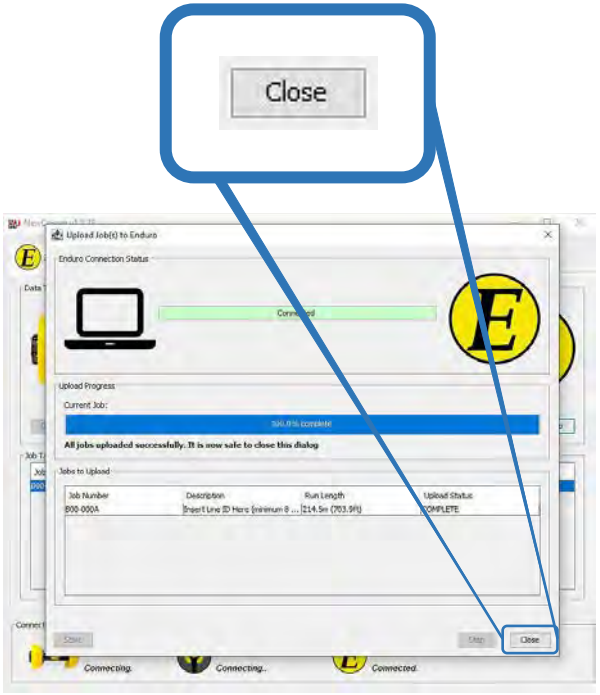
8.3.8. Table



© Enduro Pipeline Services, Inc. All Rights Reserved.

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).*

8.3.9. Table



© Enduro Pipeline Services, Inc. All Rights Reserved.

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.

© Enduro Pipeline Services, Inc. All Rights Reserved.