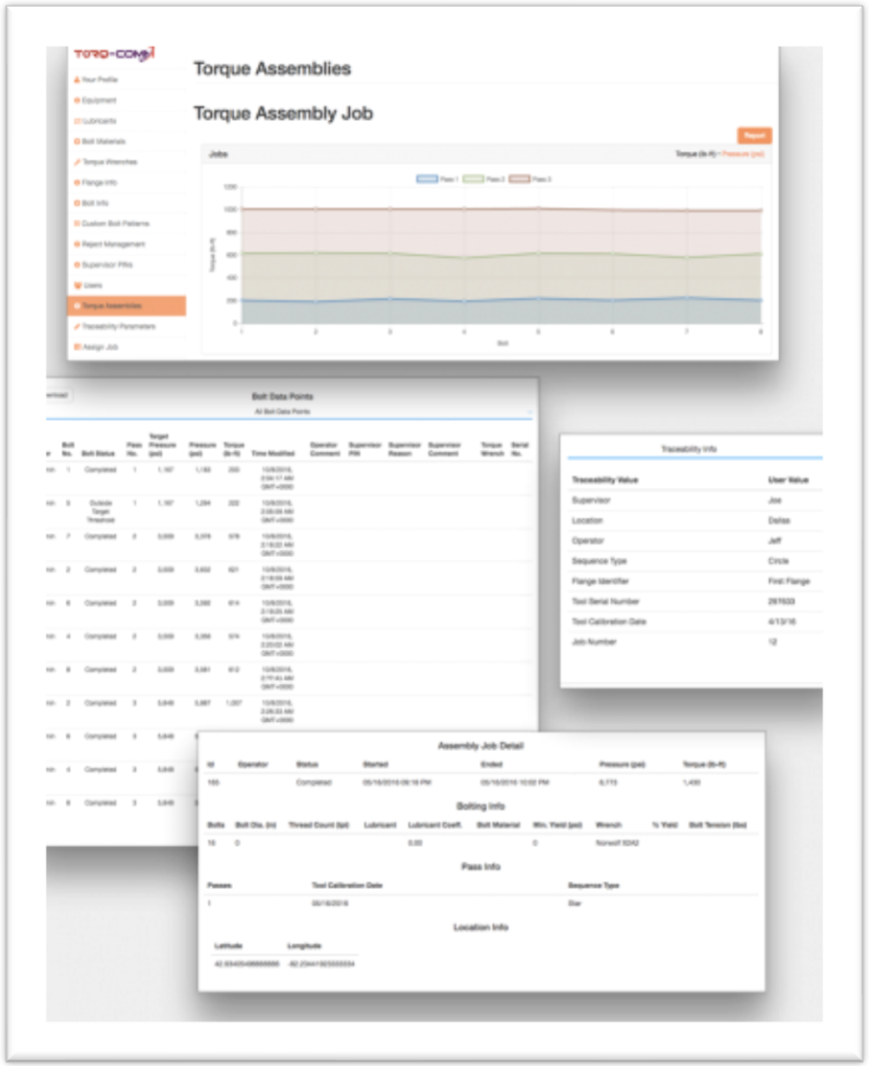
TORQ-COMM

COMMANDER CLOUD User Manual



Rev 1.0

July 2018

COMMANDER CLOUD *User Manual*

Contents

ABOUT THE COMMANDER CLOUD COMMANDER SOFTWARE

The Commander Cloud software is your company's storage facility for its hydraulic torqueing work. It is available anywhere in the world where internet or cellular access is found. It contains all of the related databases such as inventory of torque wrenches, flanges and bolts needed for any bolting job.

It allows a manager, who is half a world away for the job site, access to the up-to-date production information necessary to job completion, productivity and progress.

FEATURES:

- Global viewing of up to date information, analysis, and job creation for production control
- A library of bolting standards for Commander XT access
- Extensive reporting options include:
  - Out of Spec issues
  - Calibration, assembly data
  - Flange Assemblies Detail
  - Operator Performance
  - Job Status
- Data export options include PDF and CSV with a single click!

CAUTION!
Do Not Use Tool Without Reading This First!

Before using any Torq-Comm tool, *READ THIS MANUAL!* Your safety, and the safety of others, may depend on your proper use of this tool. This manual provides information about the proper use of this tool that is important for your protection and for the protection of your work. If you don't understand any part of this manual ***do not use the tool***. Instead, seek assistance from your distributor or from Torq-Comm customer support.

Torque can be critical! Incorrect torque can be dangerous! Although Torq-Comm, Inc.'s tools are designed to be safe when used properly, improper use of these tools may create unsafe conditions resulting in catastrophic failures and other accidents, causing severe **injury** or **death**, significant property damage, expensive shut down of industry equipment or infrastructure, and environmental damage.

Understand torqueing specifications, conditions, and variables. The software embedded in this Torq-Comm tool makes preliminary torque calculations required for different applications based upon published specifications such as ASME PCC-1 2013, API flange specifications, ANSI material specifications, and other specifications that are common in the industry. Nonetheless, there are a number of variables that affect final torque calculations that must be properly accounted for when using this tool. These variables include, *but are not limited to*:

- design specifications for the work to which the tool is applied
- other information input by the tool user
- dirt or debris in a tapped hole
- grease or oil on the threads
- damaged threads
- hole misalignment

Don't ignore calibration and warnings. Your tool communicates with the digital pressure gauge and other components using wireless communications technology that must be properly calibrated and maintained. The digital pressure gauge is calibrated when it is shipped, but it is up to the user to re-calibrate it as required by the appropriate internal calibration schedule. Also, do not ignore or circumvent built-in safety features such as the requirement for supervisor approval of out-of-specification readings.

DISCLAIMER AND LIMITATION OF LIABILITY

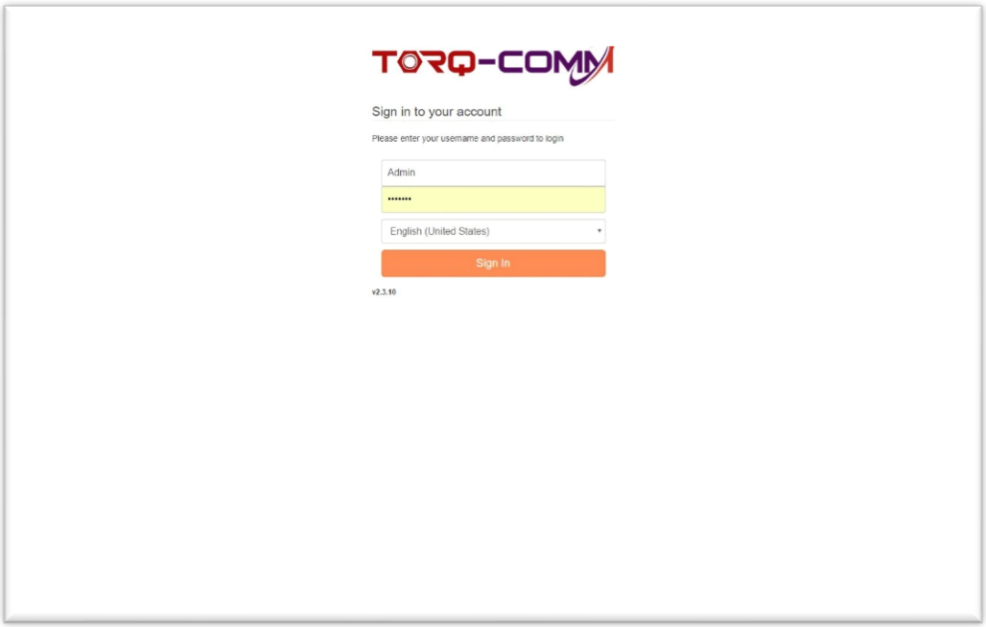
EXCEPT FOR THE LIMITED PRODUCT WARRANTY PROVIDED WITH THE TOOL, THIS TOOL IS DELIVERED BY TORQ-COMM, INC., WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY WARRANTY OF DESIGN, ANY IMPLIED WARRANTY OF MERCHANTABILITY, ANY IMPLIED WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE OR FOR A GENERAL PURPOSE, AND ANY WARRANTY ARISING BY LAW OR STATUTE, COURSE OF DEALING, OR USAGE OF TRADE.

IN NO EVENT, REGARDLESS OF CAUSE, SHALL TORQ-COMM, INC., BE LIABLE FOR ANY INDIRECT, SPECIAL, INCIDENTAL, PUNITIVE, OR CONSEQUENTIAL DAMAGES OF ANY KIND, WHETHER ARISING UNDER BREACH OF CONTRACT, TORT, STRICT LIABILITY, PRODUCTS LIABILITY, OR OTHERWISE.

COMMANDER CLOUD

GETTING STARTED

Your System Administrator can help you find the Commander Cloud web address and assign a unique Username and Password to each Engineer, Supervisor or Operator. Your Username and Password is your signature that ensures access to your torque assemblies and identifies you as a participant.



LOGGING IN

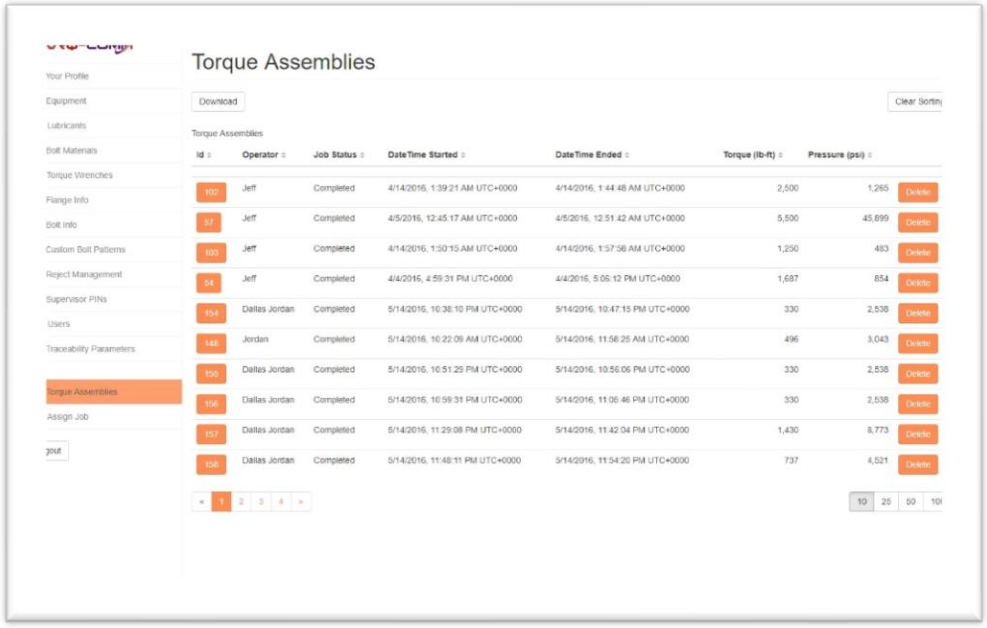
1. Tap the **USERNAME** box to type in your username.
2. Tap the **PASSWORD** box to type in your password.
3. Select the language by tapping on the drop-down menu. The language you choose will populate all columns and data in the Cloud screens.

   Current language options are English and Mandarin.
4. Tap **SIGN IN** to log into the Commander CLOUD.

DESKTOP VIEW

The desktop view provides an up-to-minute overview of the work in the field or on the floor by providing the status of each job. With just a quick glance, you can see the status of any job; past, present and future.

You will have an understand of each Operator's productivity by comparing when a job was started and when it was finished for each individual. You can also review the reports for each job to note any comments made by the Supervisor. Together they may indicate which Operators may need more training to bring them up to expected levels.



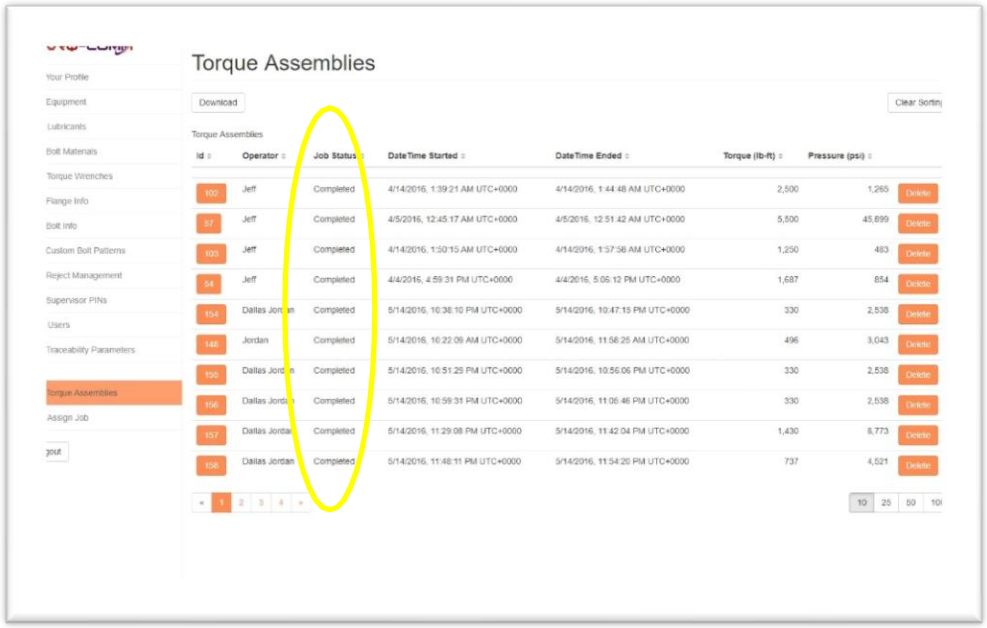
It also contains all of the databases of information necessary to create and maintain the torque assemblies and manage you field or factory assets. These databases are completely configurable by your System Administrator, Engineer or Supervisor to reflect your unique processes and procedures. The system is flexible enough to adapt to your work styles rather than the other way around.

TORQUE ASSEMBLY STATUS

Each Torque Assembly is tracked to determine the up to date status. The current status is displayed under **JOB STATUS.** When a single bolt is complete in the field, the information is immediately transmitted to the cloud and available for review.

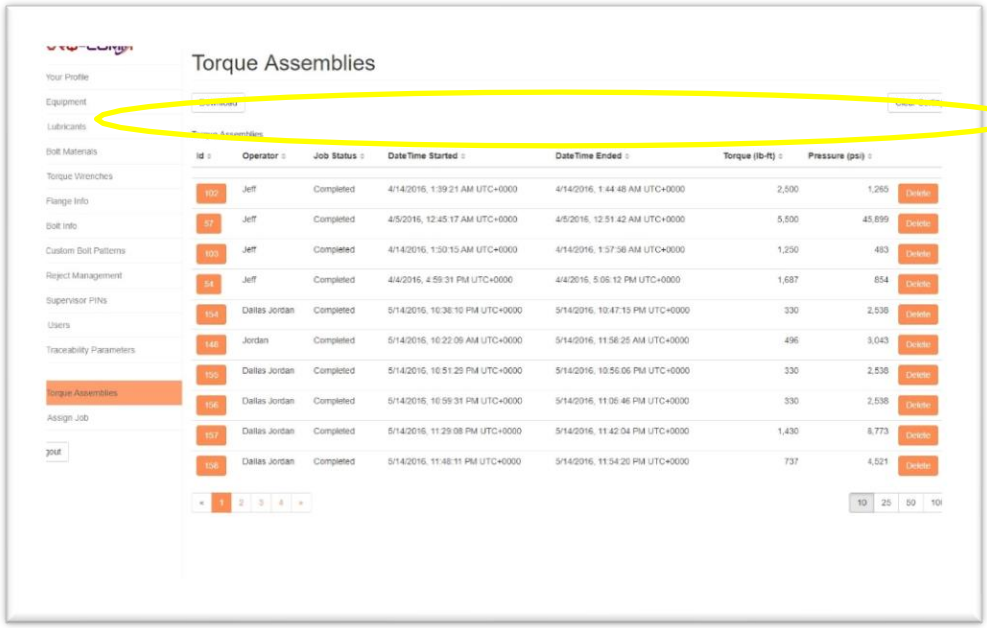
The various statuses are:

1. ASSIGNED – The torque assembly was created on the Cloud and has been scheduled and assigned to an operator but has not yet begun.
2. ASSEMBLY – The torque assembly was created on the handheld but has not yet begun.
3. SAVED TO BE RESUMED – The torque assembly has been started but has been stopped before it has been completed. There may be an issue at the site or the operator simply went to lunch. The data has been saved and will be started from where they left off.
4. COMPLETED – The torque assembly has been successfully completed and all data uploaded to the Cloud.



SORTING AND ORGANIZING

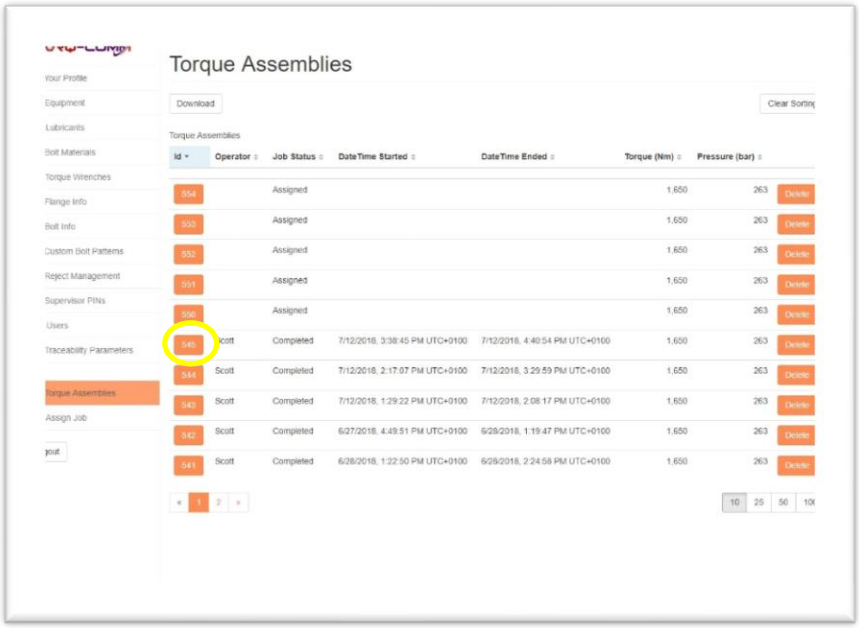
You can sort the information on any screen easily and quickly by tapping the appropriate column header. The Torque Assemblies with be arranged according to your preferences for easy viewing.



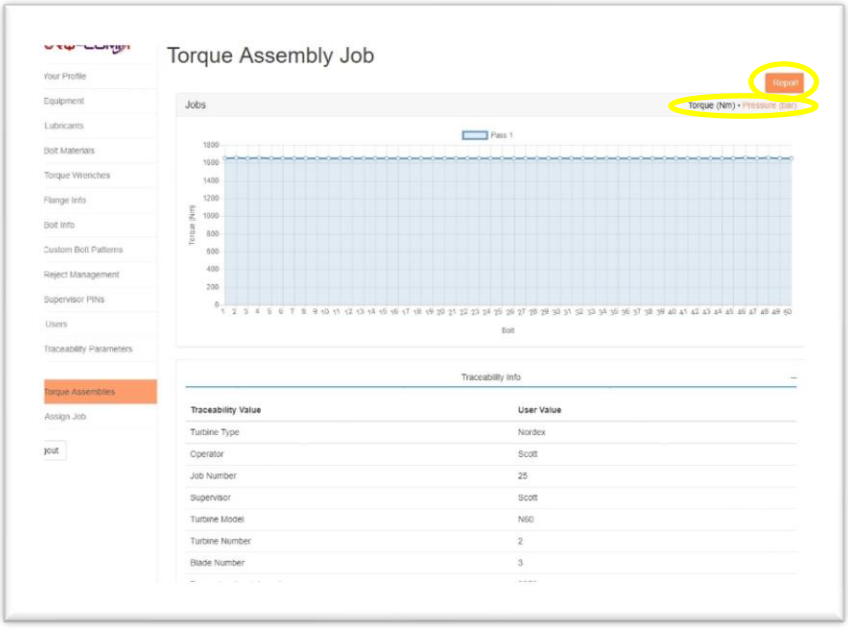
VIEWING A TORQUE ASSEMBLY

You can get the up to the minute data for any Torque Assembly. The complete set of Traceability Information and bolting data will be presented in easy to read charts and tables

1. Tap on the associated **ID Number** for the Torque Assembly you wish to view.



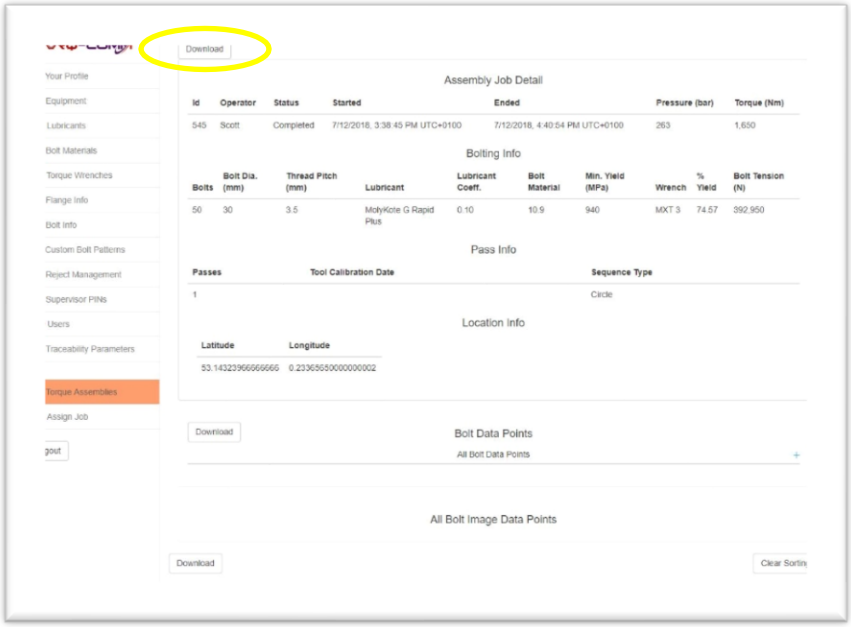
2. The chart of bolting data can be configured to show Torque vs Bolt or Pressure vs Bolt. Tap the key on the top right corner of the chart to change the display. How it is displayed on the screen is how it is displayed on your report.



The Traceability Information is presented for the job as it is configured in Traceability database. Each time the Operator enters the Torque Assembly job on the handheld, the information is collected and displayed.

To create a report of the Torque Assembly, simply tap **REPORT** on the screen to create a pdf file. This file contains all of the Assembly Job Detail, Traceability Information, Bolting Data, Charts and Images in one electronic file that can easily be sent or printed.

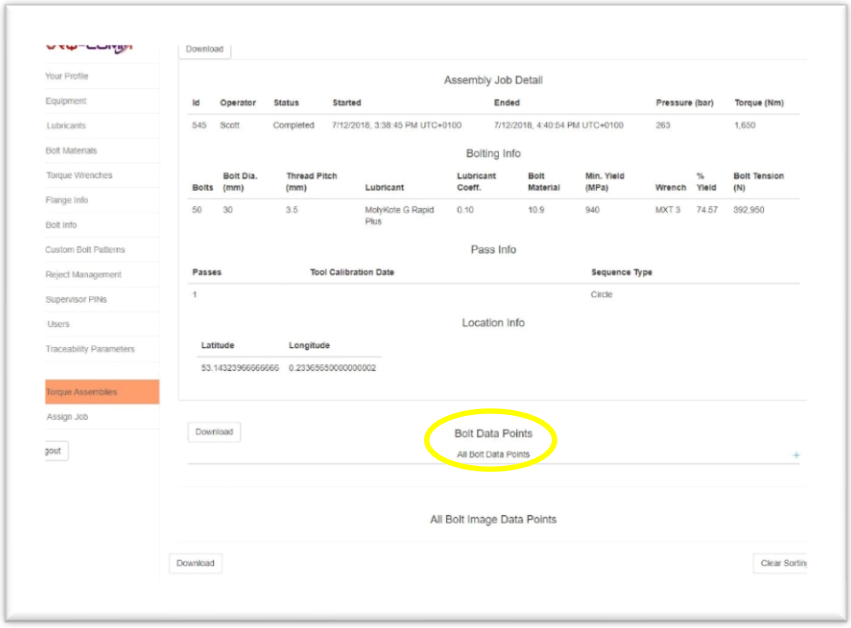
3. The Assembly Job Detail is presented as configured during the Assembly Job set up. In the Expert mode, a minimum of job details is required in order to expedite the job creation. Therefore, there are fields in the Assembly Job Detail that are left blank. Conversely, Flange mode and Guided mode for job creation captures the complete set of job details and all fields are populated.



The Latitude and Longitude for a particular Assembly Job may not be displayed if the work is being performed inside a building or at a site with no cellular connection. In these cases, no satellite can be acquired to provide coordinates.

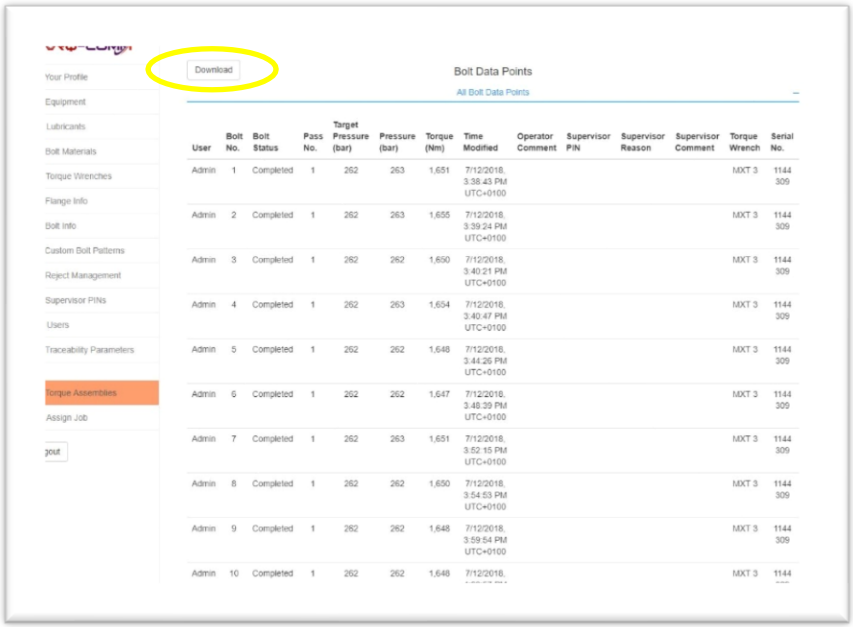
The Assembly Job Detail can easily be exported in a csv file by tapping **DOWNLOAD**. This file can be open and sorted in Excel program.

4. Tapping on **Bolt Data Points** will present all of the bolting information acquired.



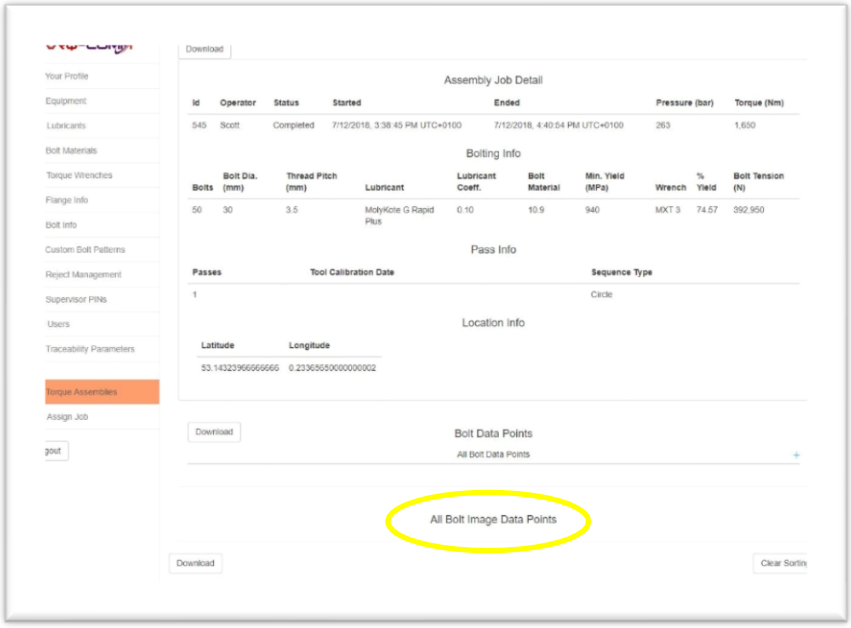
The Bolt Data Points lists the bolting information for each bolt in each pass.

Included in the data is the Target Pressure, the actual Pressure, the resulting Torque produced at that pressure using the particular Torque Wrench.

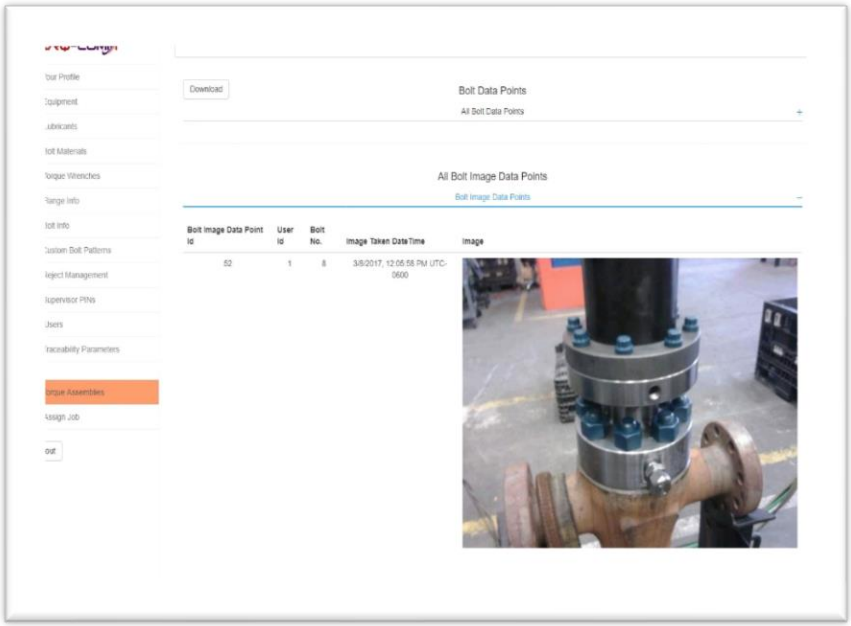


The Bolt Data Points can easily be exported in a csv file by tapping **DOWNLOAD**. This file can be open and sorted in Excel program.

5. Tapping on **Bolt Image Data Points** will present all of the pictures taken during the Torque Assembly.



Each high-resolution picture is associated with a particular bolt for a particular pass. The date and time stamp provide additional detail regarding the image. The images and information are included in the report.



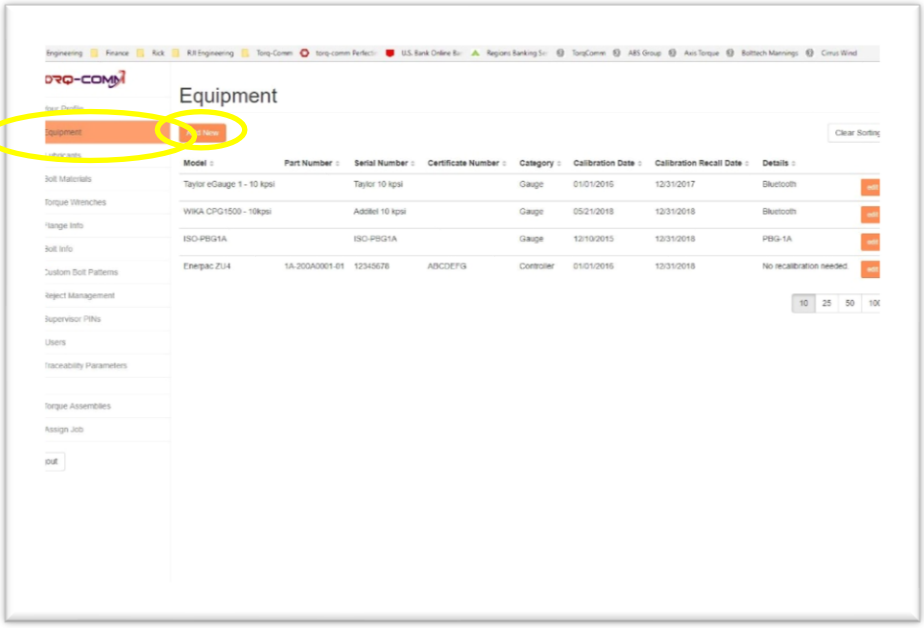
POPULATING the DATABASES

The databases contain all of the information necessary to complete your Torque Assemblies from equipment to materials to personnel. And they are completely customizable to your procedures and methods. Not the other way around!

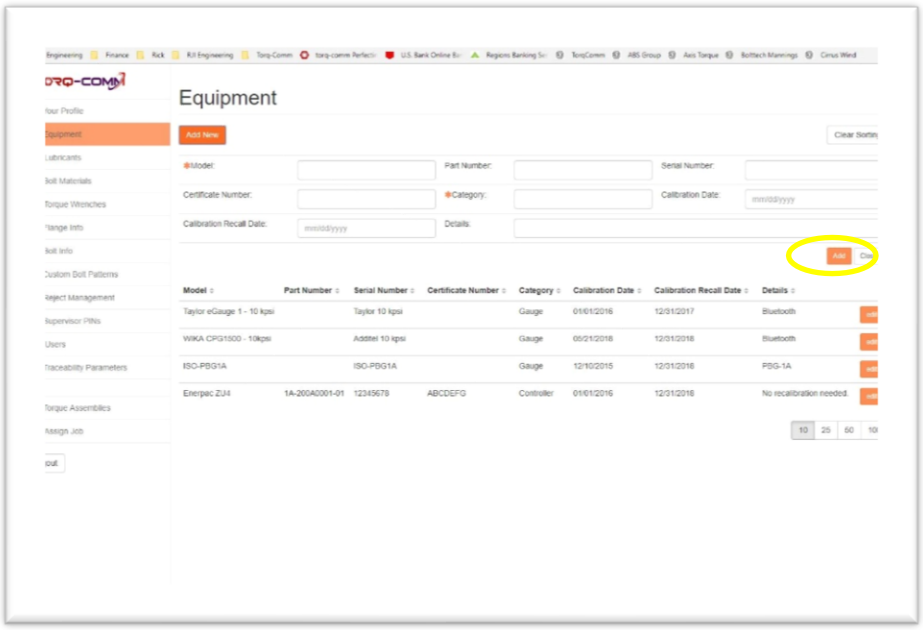
EQUIPMENT

The Equipment database contains information on all of your equipment other than Torque Wrenches. There is a separate database for those.

Equipment such as pressure gauges, calipers, leak detectors, etc. can be listed and their calibration cycles tracked. Virtually any piece of equipment can be listed.



1. To add an additional piece of equipment, tap **ADD NEW**.



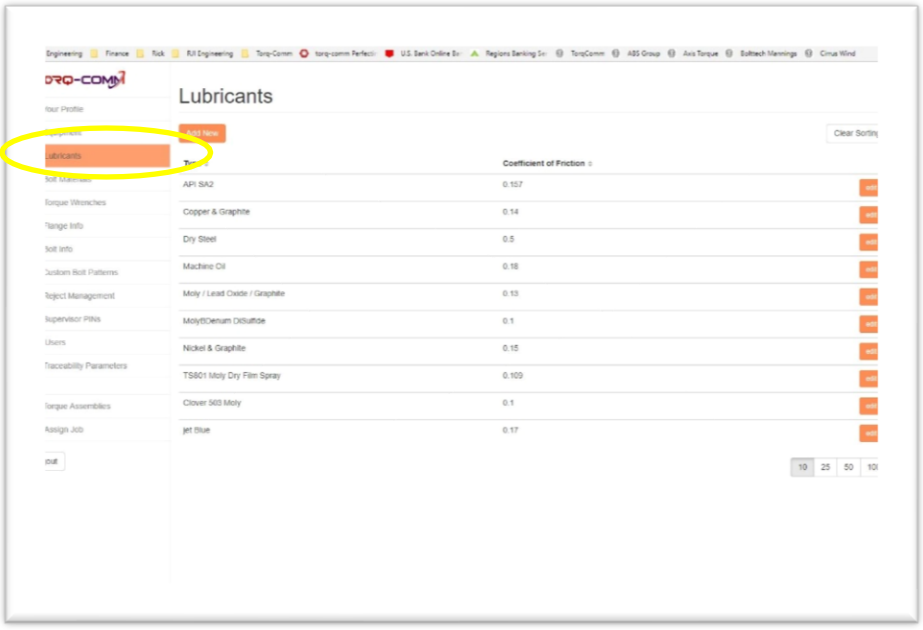
2. Fill in the boxes with the appropriate information. The boxes marked with a * are required to complete the entry. Other boxes are optional.

3. Tap **ADD** to complete the entry or **CLOSE** to cancel the entry.

4. You can update or change the information of any existing entry by tapping **EDIT** on the appropriate line.

LUBRICANTS

You can add any lubricant that your team commonly uses if you know the coefficient of friction as published by the manufacturer. Other material coefficients of friction, such as dry steel on dry steel, can be obtained in engineering handbooks and inputted for use.



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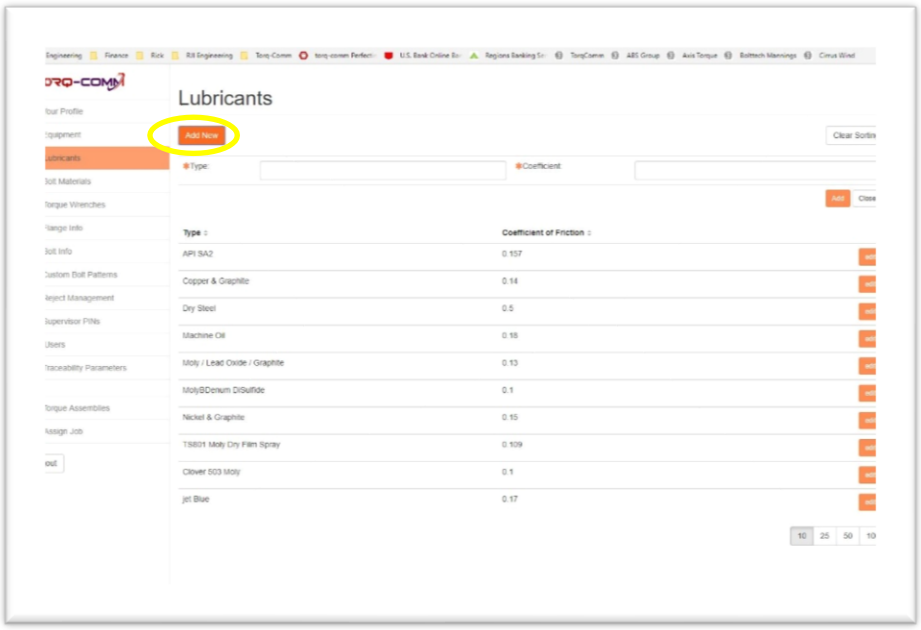


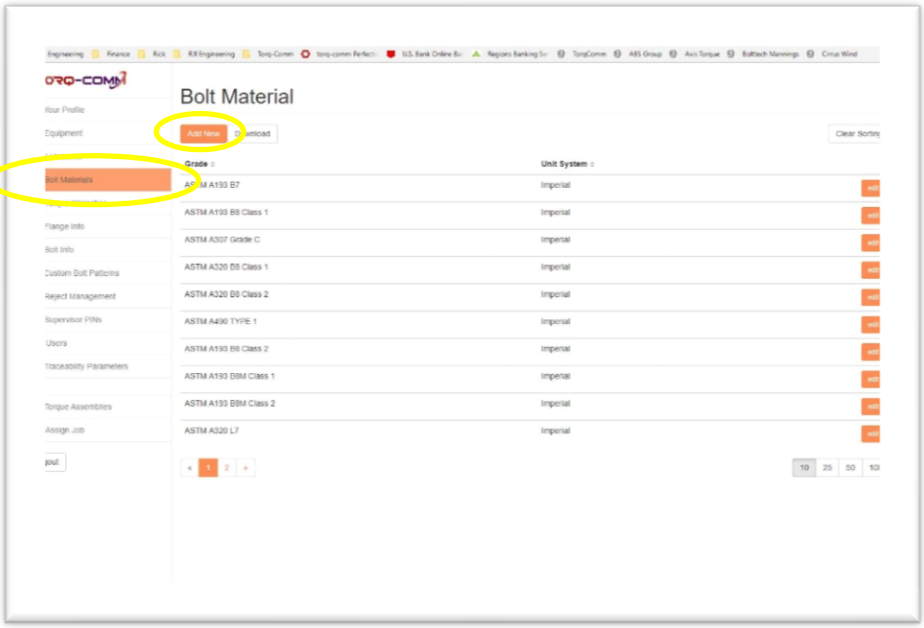
2. Fill in the boxes with the appropriate information. The boxes marked with a * are required to complete the entry. Other boxes are optional.

3. Tap **ADD** to complete the entry or **CLOSE** to cancel the entry.

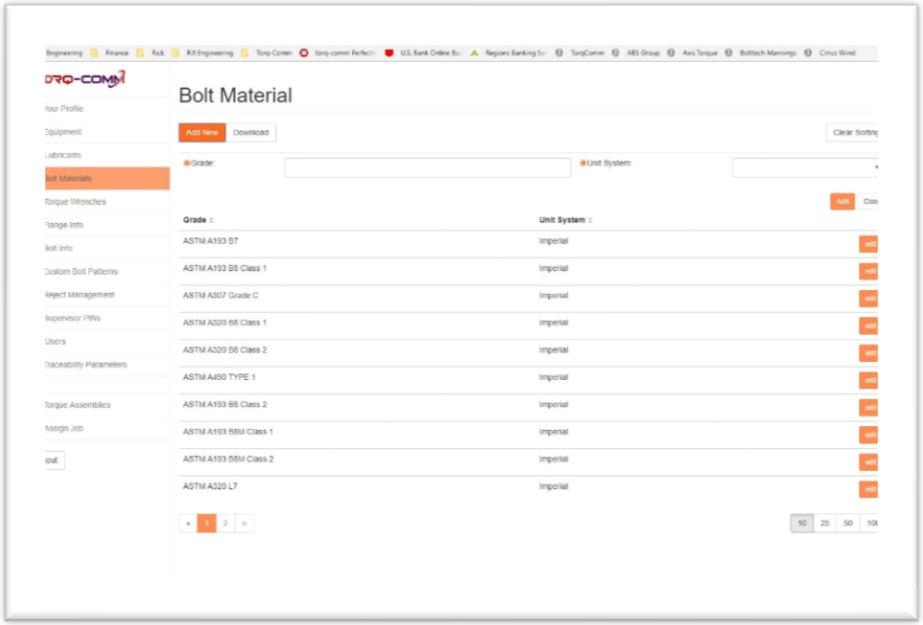
4. You can update or change the information of any existing entry by tapping **EDIT** on the appropriate line.

BOLT MATERIALS

Any material specification, whether it is ASME, DIN, JIS, ISO or others, can be added to the database whether it is Imperial or Metric units. Only the Minimum Yield Strength is needed.



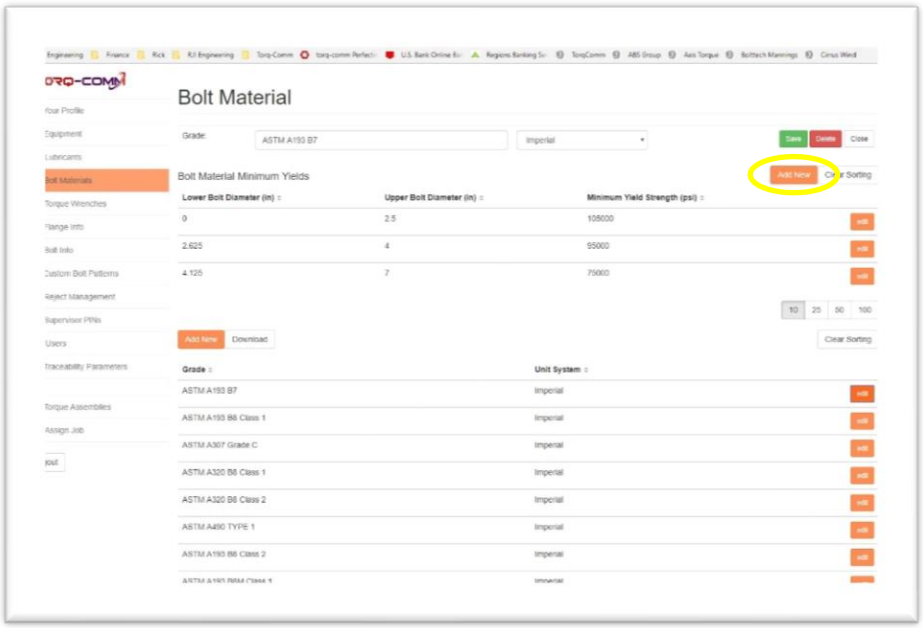
1. To add an additional piece of equipment, tap **ADD NEW**.



2. Fill in the boxes with the appropriate information. The boxes marked with a * are required to complete the entry. Other boxes are optional.

3. Tap **ADD** to complete the entry or **CLOSE** to cancel the entry.

4. You can update or change the information of any existing entry by tapping **EDIT** on the appropriate line.

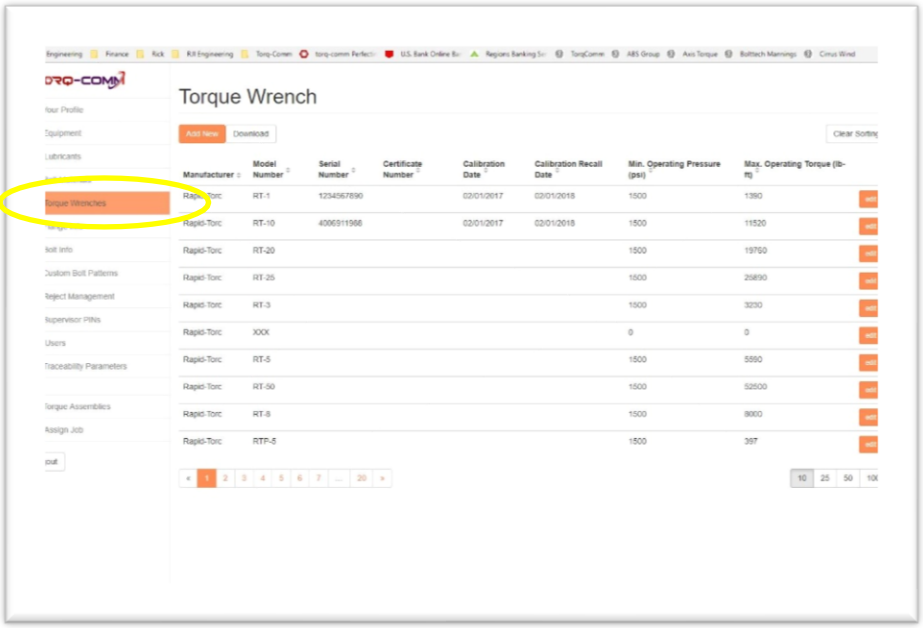


5. Some materials have a different Minimum Yield Strength depending on the bolt diameter. In these cases, tap **ADD NEW** to the entry field to add another set of data as shown above.

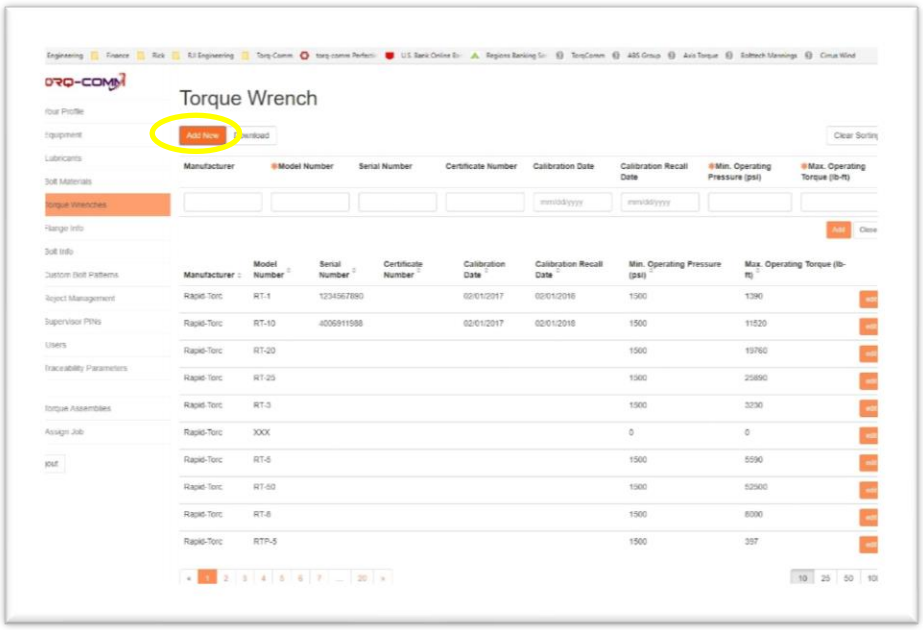
TORQUE WRENCHES

You can build your database to include every Torque Wrench in your tool crib and track them by serial number if you wish.

Each Torque Wrench's Pressure vs Torque profile information can be added to the database. You can use the Manufacturer's default profile or a wrench specific profile from its latest calibration testing.



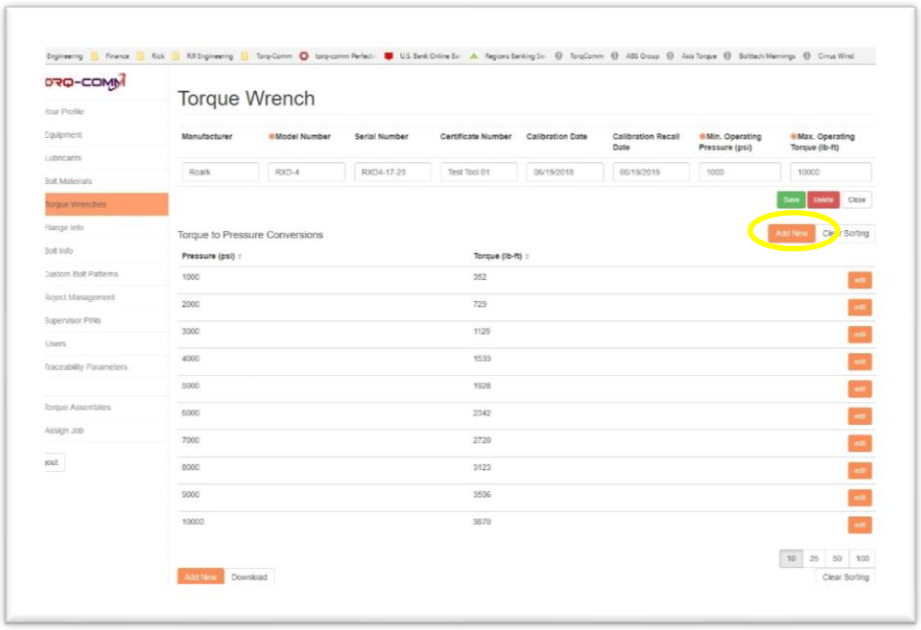
1. To add an additional piece of equipment, tap **ADD NEW**.



2. Fill in the boxes with the appropriate information. The boxes marked with a * are required to complete the entry. Other boxes are optional.

3. Tap **ADD** to complete the entry or **CLOSE** to cancel the entry.

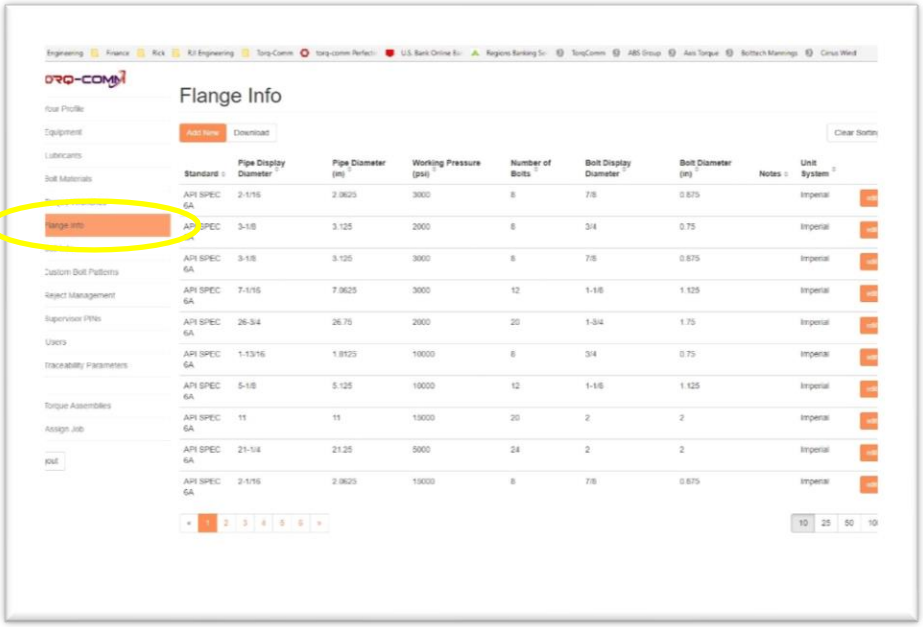
4. You can update or change the information of any existing entry by tapping **EDIT** on the appropriate line.



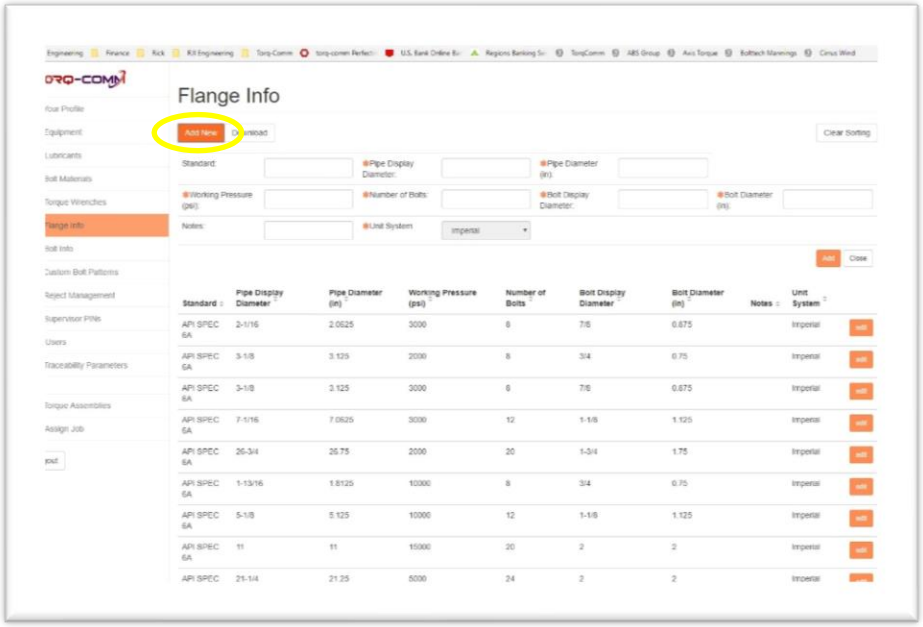
5. Continue to add profile information by adding Pressure vs Torque information for that particular wrench. Tap **ADD NEW** to provide another entry line to complete the table.

FLANGE INFO

The Flange Info database contains information on industry standard or custom circular flanges. It can be populated with Imperial or metric flanges.



1. To add an additional piece of equipment, tap **ADD NEW**.



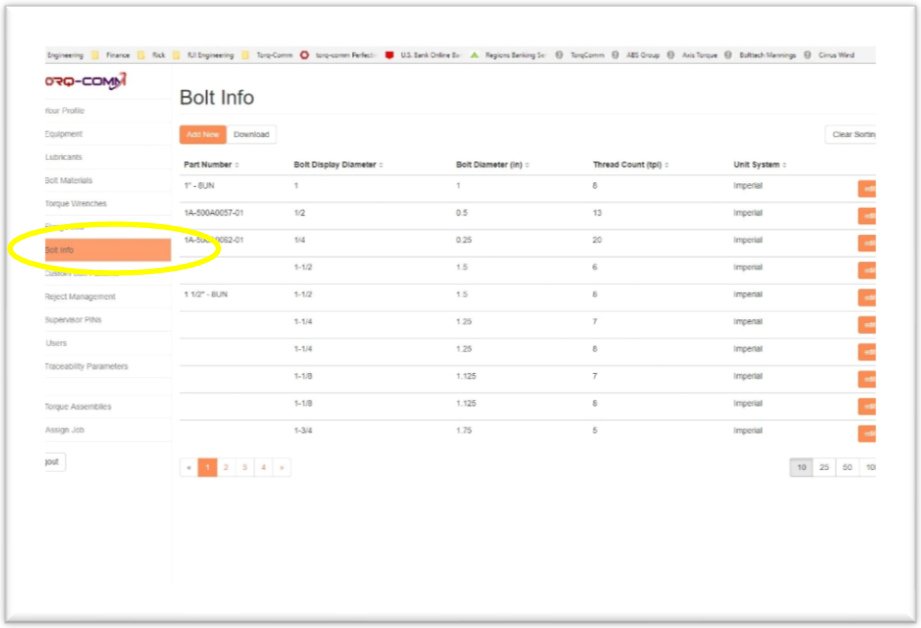
2. Fill in the boxes with the appropriate information. The boxes marked with a * are required to complete the entry. Other boxes are optional.

3. Tap **ADD** to complete the entry or **CLOSE** to cancel the entry.

4. You can update or change the information of any existing entry by tapping **EDIT** on the appropriate line.

BOLT INFO

The Bolt Info database contains information on industry standard or custom bolts or studs. It can be populated with Imperial or metric flanges.



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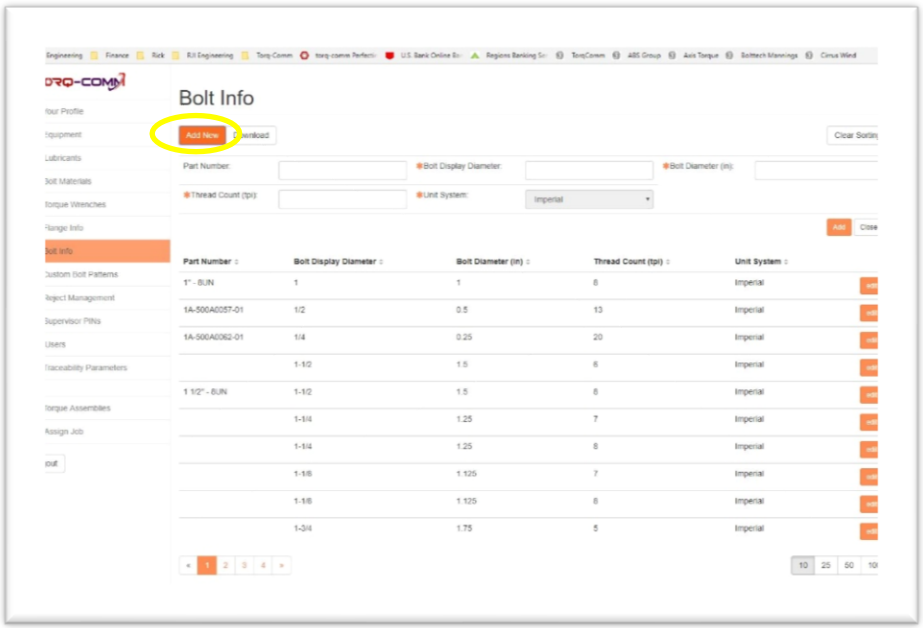


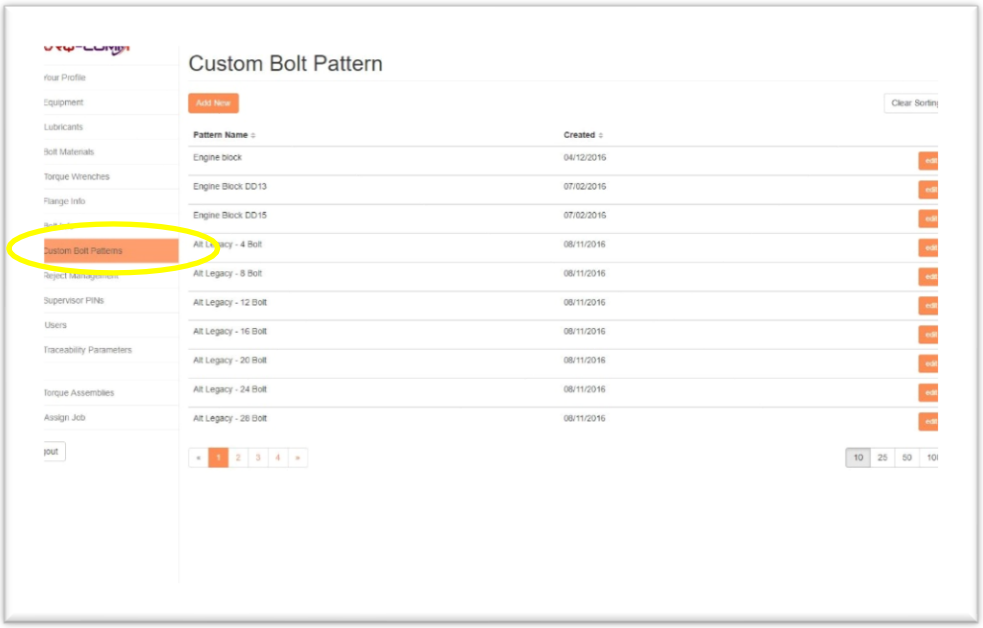
2. Fill in the boxes with the appropriate information. The boxes marked with a * are required to complete the entry. Other boxes are optional.

3. Tap **ADD** to complete the entry or **CLOSE** to cancel the entry.

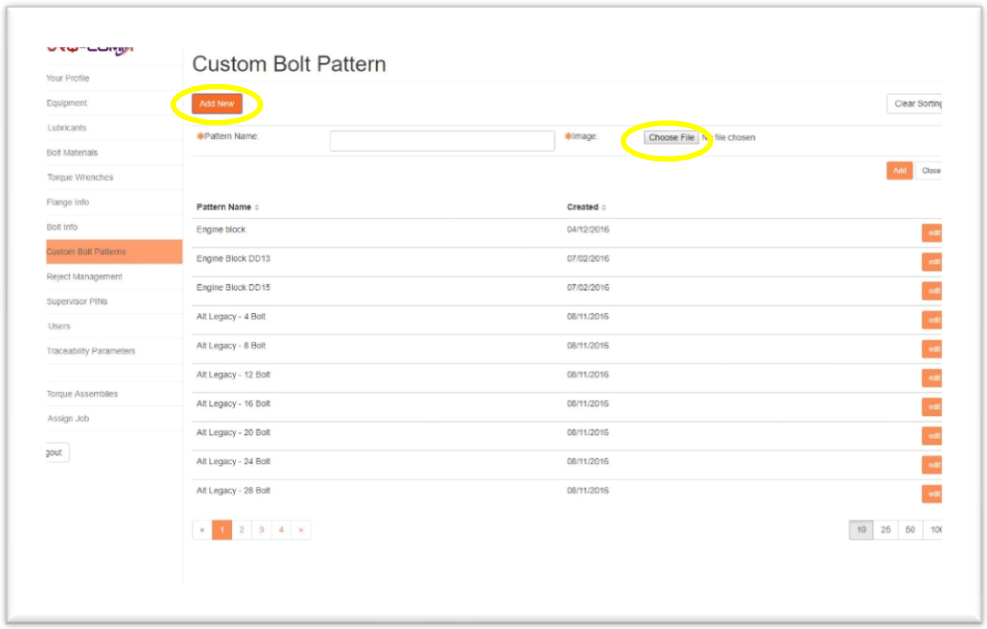
4. You can update or change the information of any existing entry by tapping **EDIT** on the appropriate line.

CUSTOM BOLT PATTERNS

The COMMANDER XT1000 and XT2000 are not limited to circular flanges. Any bolting pattern you can image can be accommodated if you can simply supply an image file. The jpeg can be from a picture or a CAD file.

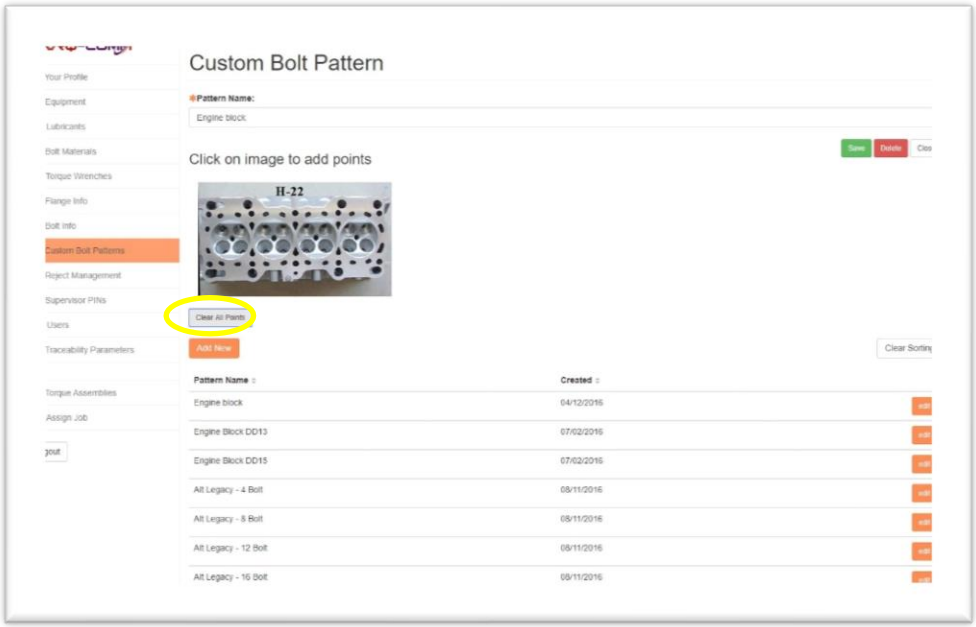


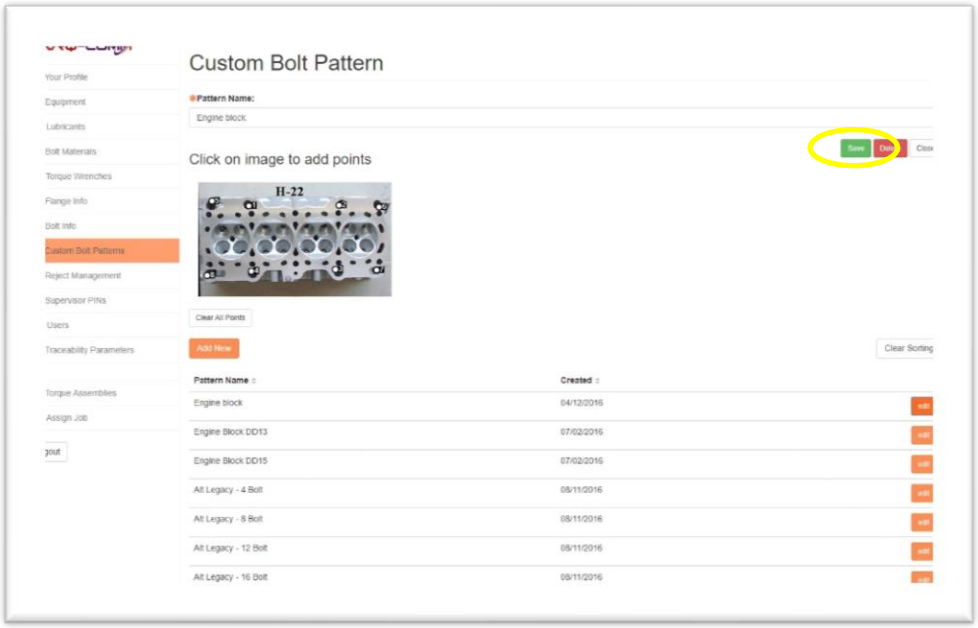
1. To add an additional piece of equipment, tap **ADD NEW**.



2. Tap **CHOOSE FILE** to search your computer for the correct jpeg file.

3. Assign the bolting sequence as designed by simply tapping on the right location on the image. A bolt sequence number will appear on the image. Continue to identify and assign the bolting sequence until completed.
4. At any time, you can tap **CLEAR ALL POINTS** to remove the bolt sequence numbers from the image and start again.





5. Fill in the boxes with the appropriate information. The boxes marked with a * are required to complete the entry. Other boxes are optional.

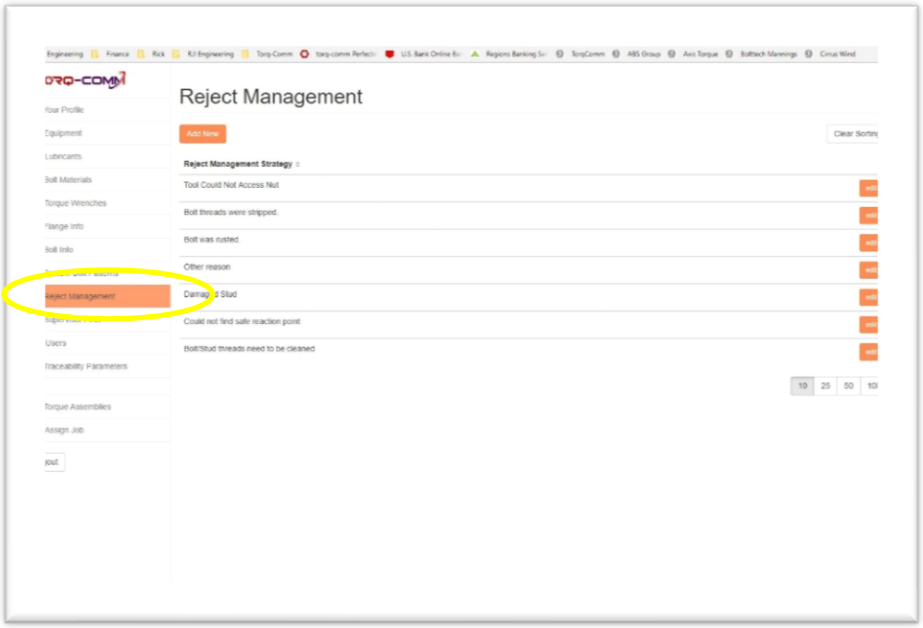
6. Tap **SAVE** to complete the entry or **CLOSE** to cancel the entry.

7. You can update or change the information of any existing entry by tapping **EDIT** on the appropriate line.

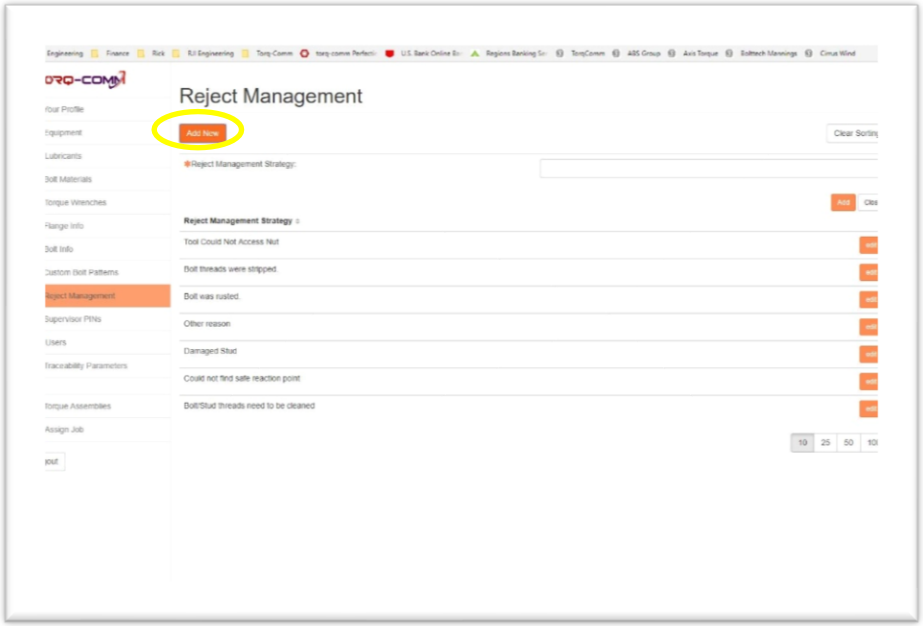
8. The picture of the Custom Bolting Sequence will be displayed on the handheld. The COMMANDER will guide the operator through the bolting sequence.

REJECT MANAGEMENT

The Reject Management database contains standard statements regarding skipped bolts or quality issues associated with a Torque Assembly. The Operator may choose one of these statements in a drop down menu or type in their own on the Commander.



1. To add an additional piece of equipment, tap **ADD NEW**.



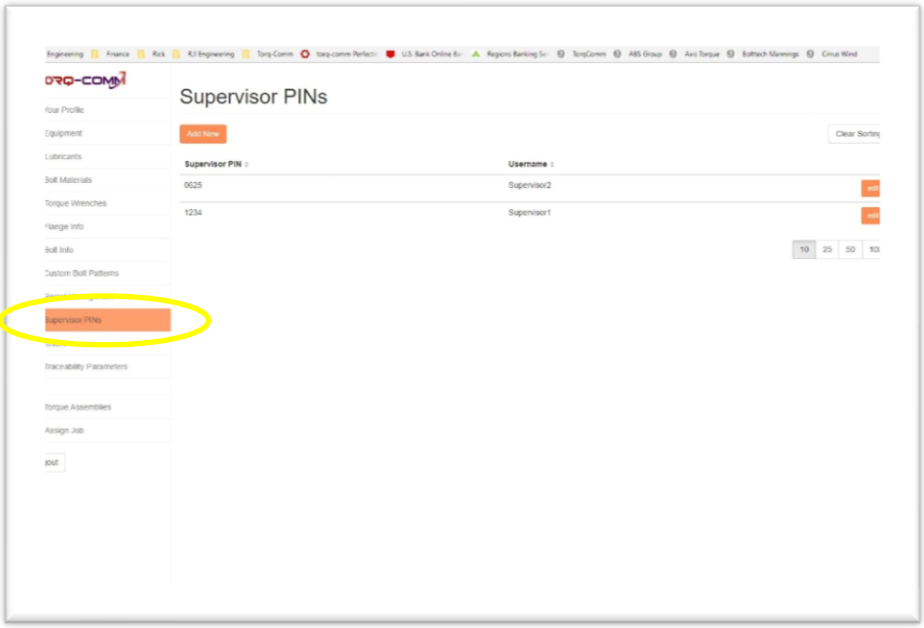
2. Fill in the boxes with the appropriate information. The boxes marked with a * are required to complete the entry. Other boxes are optional.

3. Tap **ADD** to complete the entry or **CLOSE** to cancel the entry.

4. You can update or change the information of any existing entry by tapping **EDIT** on the appropriate line.

SUPERVISOR PINs

The Supervisor PIN is their signature in the field. It indicates that an deviation is being made during a Torque Assembly, such as skipping a bolt or TorqTag, and who specifically is making the decision. It is noted in the report.



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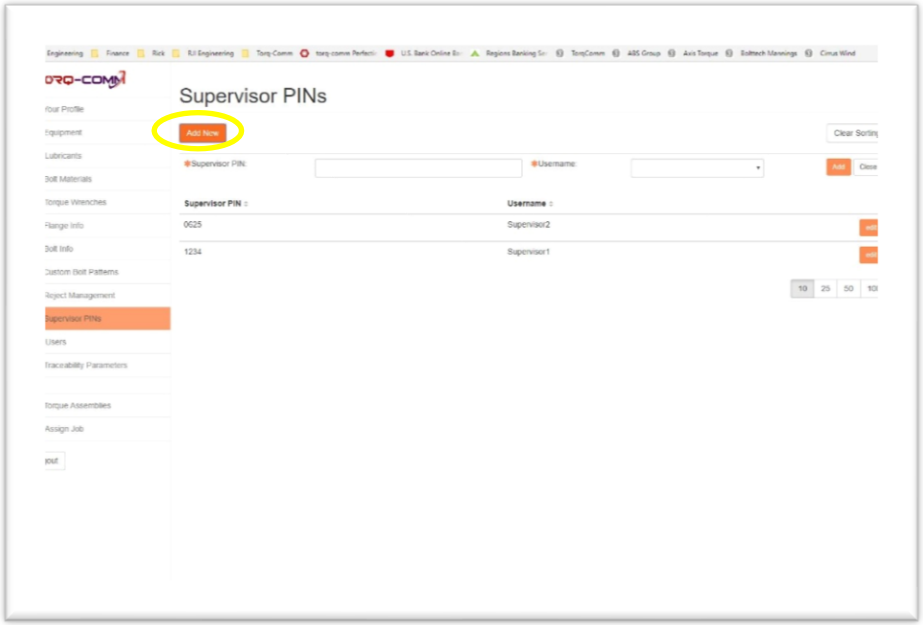


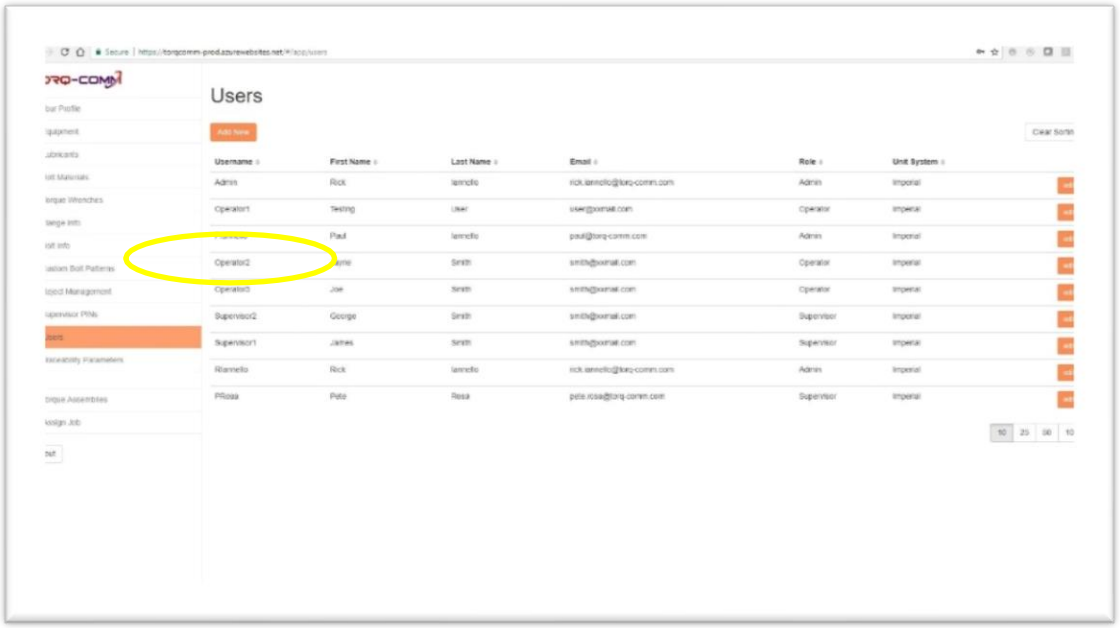
2. Fill in the boxes with the appropriate information. The boxes marked with a * are required to complete the entry. Other boxes are optional.

3. Tap **ADD** to complete the entry or **CLOSE** to cancel the entry.

4. You can update or change the information of any existing entry by tapping **EDIT** on the appropriate line.

USERS

The User database contains the list of individuals who are allowed to log into the Commander Cloud or onto the Commander handheld. It also lists each one's role and therefore their permissions.



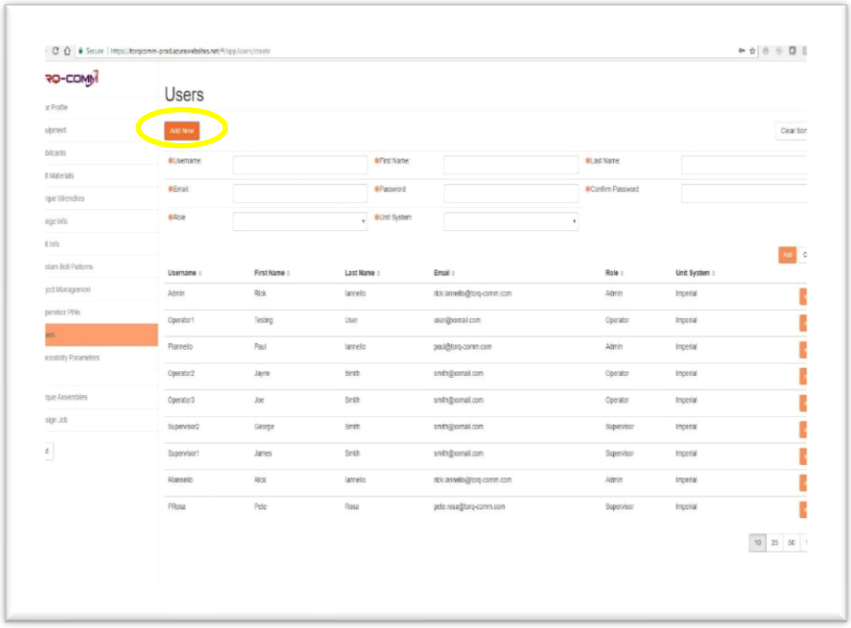
Roles of the Users listed in the database:

Admin - This is the system administrator for the Cloud and each Commander handheld. Only one user should be given this authority. The Admin can do everything on the system except manipulate the data. No one can alter the data once it has been collected by the Commander.

Supervisor - The Supervisor can do everything the Admin can except adding additional Users or assigning Supervisor PINs on the Cloud or change the WEB API Address on the handheld. They can add or modify anything in the Cloud data bases and create assembly jobs on the Cloud or handheld, pair and manage devices on the Commander and accept out of tolerance toque data with their unique PIN.

Operator - On the Cloud, the Operator can only view Torque Assemblies and print out reports. They will not even see the databases listed on the side of the Cloud. On the Commander, they can Retrieve Jobs and Go to Assemblies in order to complete the assembly jobs. They can Manage Devices in case they have to change pumps and gauges for a particular job. This way they can communicate with the gauge. However, they cannot Pair Devices. Also, they cannot create a new job on the Commander. Their privileges are limited to just those necessary to complete an assembly job on their own. If an out of tolerance situation occurs, a Supervisor will have to be called for their approval and PIN.

1. To add an additional piece of equipment, tap **ADD NEW**.



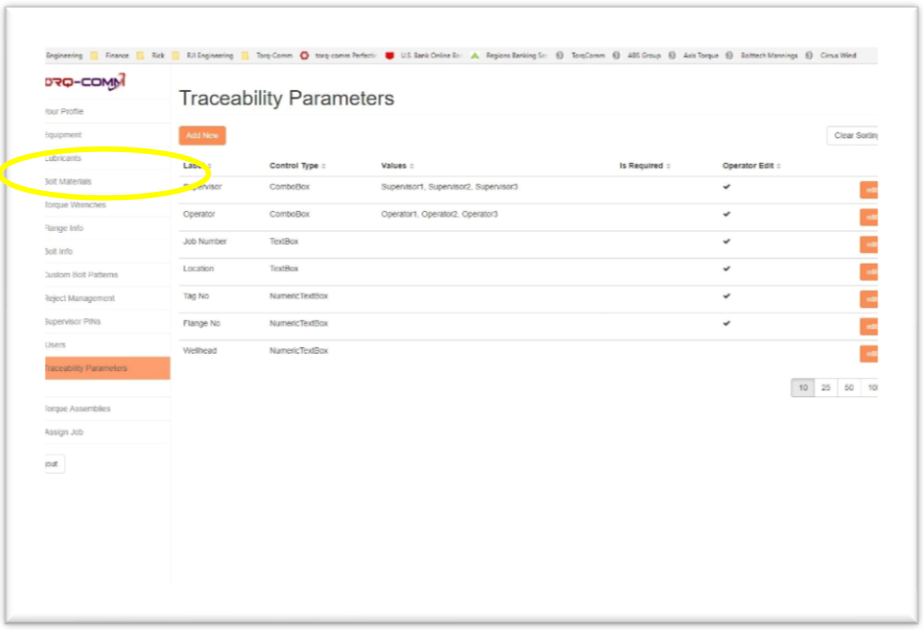
2. Fill in the boxes with the appropriate information. The boxes marked with a * are required to complete the entry. Other boxes are optional.

3. Tap **ADD** to complete the entry or **CLOSE** to cancel the entry.

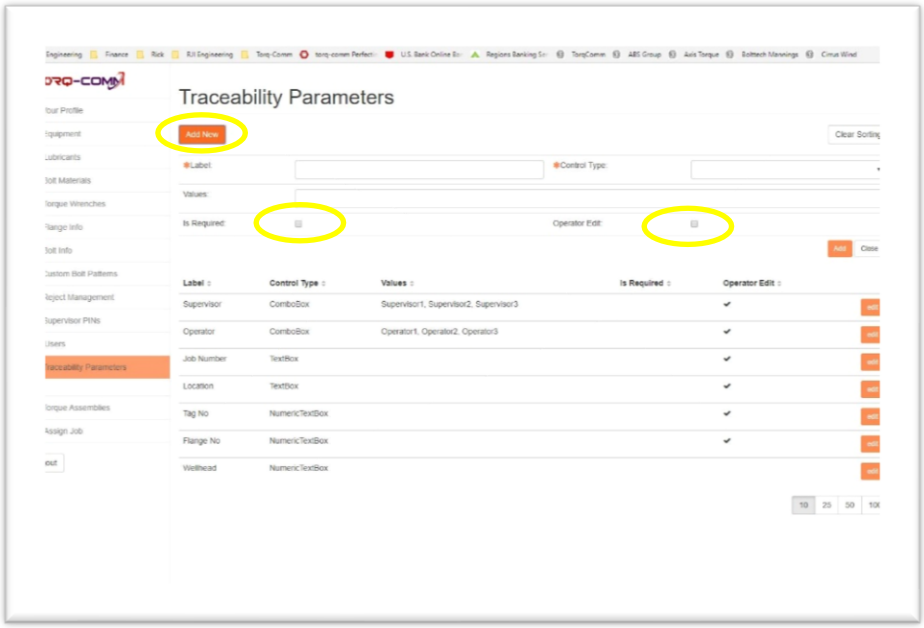
4. You can update or change the information of any existing entry by tapping **EDIT** on the appropriate line.

TRACEABILITY PARAMETERS

Traceability Parameters are the unique details of a Torque Assembly that should be collected to allow an assembly to be repeated. The User can collect as many parameters that they wish.



1. To add an additional piece of equipment, tap **ADD NEW**.



2. Fill in the boxes with the appropriate information. The boxes marked with a * are required to complete the entry. Other boxes are optional.

The Control Type describes the method of data entry on the Commander handheld.

ComboBox – Allows the Operator to select from a list of options listed in Value. This entry option reduces the amount of typing need in the field. ComboBox values are separated by a comma (,).

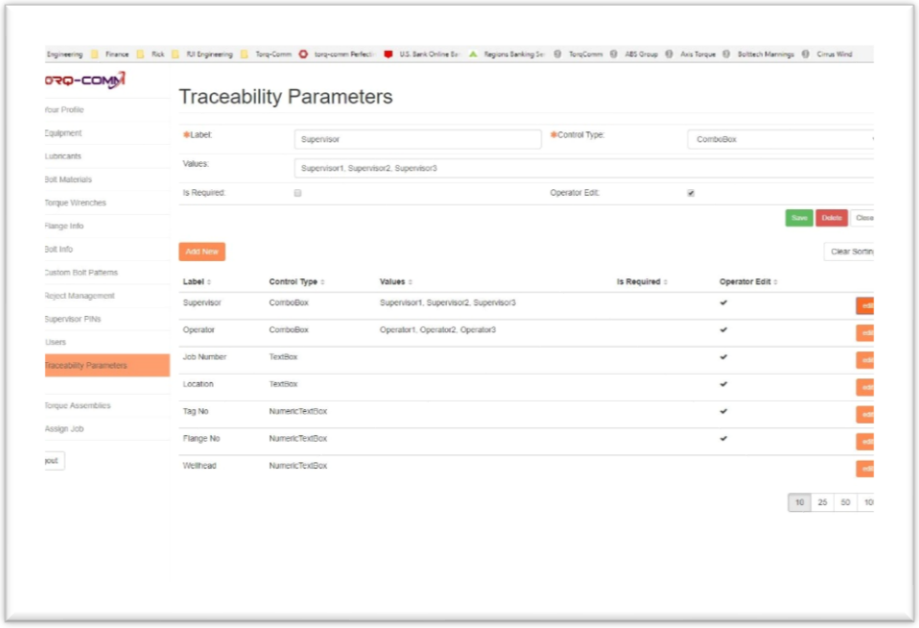
DatePicker – Allows the Operator to select a date from a calendar.

NumericTextBox – Allows the Operator to type only numeric values. A barcode can be scanned to input the data thus eliminating any typing in the field reducing time and the potential for error.

TextBox - Allows the Operator to type alpha-numeric values. A barcode can be scanned to input the data thus eliminating any typing in the field reducing time and the potential for error. There are additional options for the Traceability Information.

Is Required – By checking this box, the Operator must input a value on the Traceability field before proceeding with the Torque Assembly. The system will not allow them to proceed without an input.

Operator Edit – By checking this box, the Operator can input data other than listed in a drop down menu by typing in the box.



3. Tap **ADD** to complete the entry or **CLOSE** to cancel the entry.

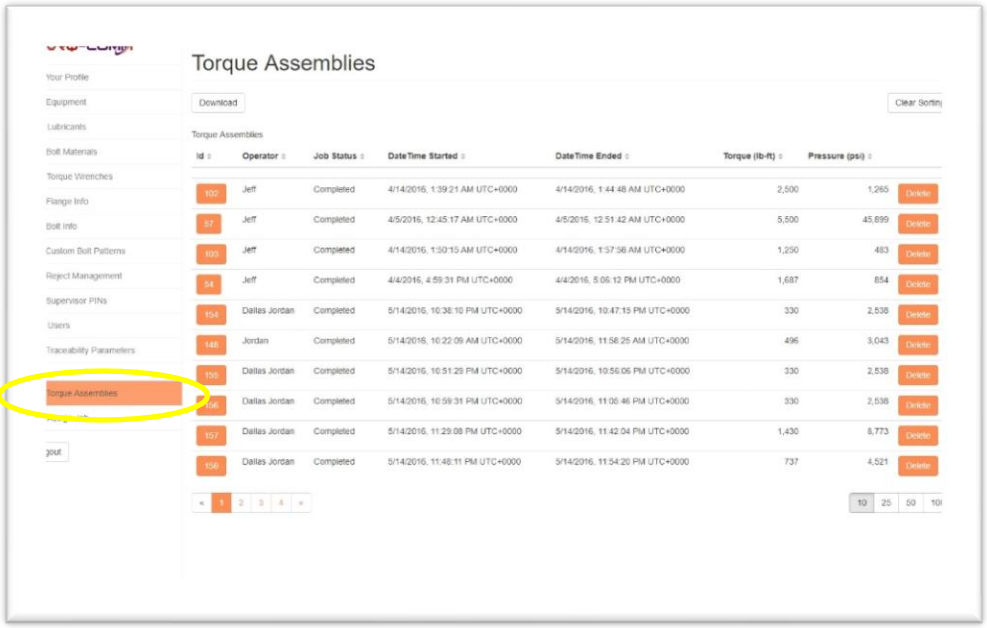
4. You can update or change the information of any existing entry by tapping **EDIT** on the appropriate line.

5. There are four key Traceability Parameters that must be included and in the following format to ensure proper operation.

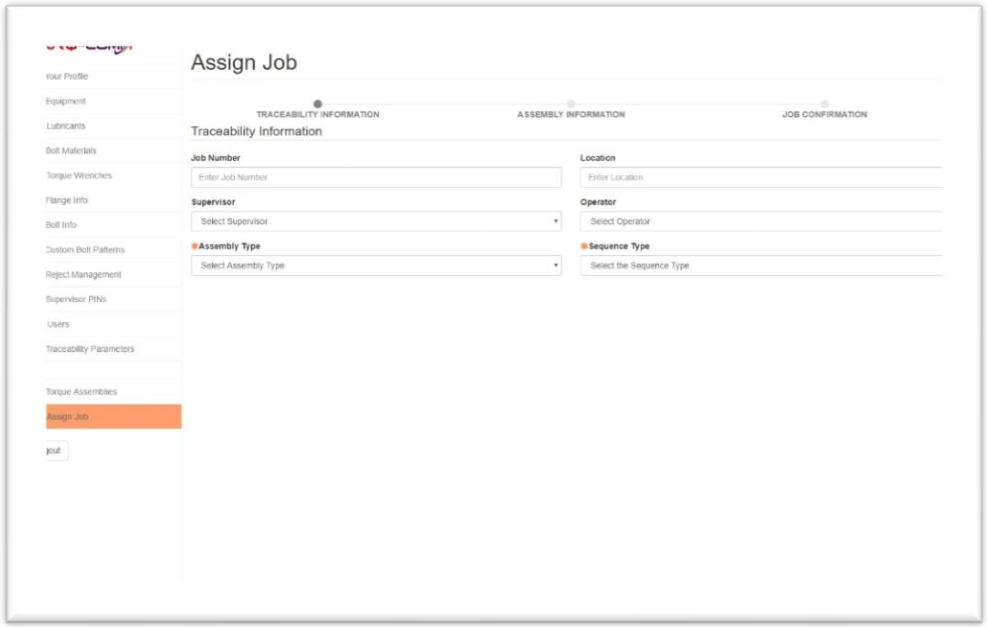
Supervisor	**Combo**
Operator	**Combo**
Location	**Text**
Job Number	**Text**

CREATING JOBS ON THE CLOUD

You can create torqueing jobs on the COMMANDER CLOUD just as you can on the COMMANDER XT1000/XT2000. Step by step, each of the three methods is exactly the same using the same database of equipment and materials.



1. From the Home screen, tap **ASSIGN JOB**

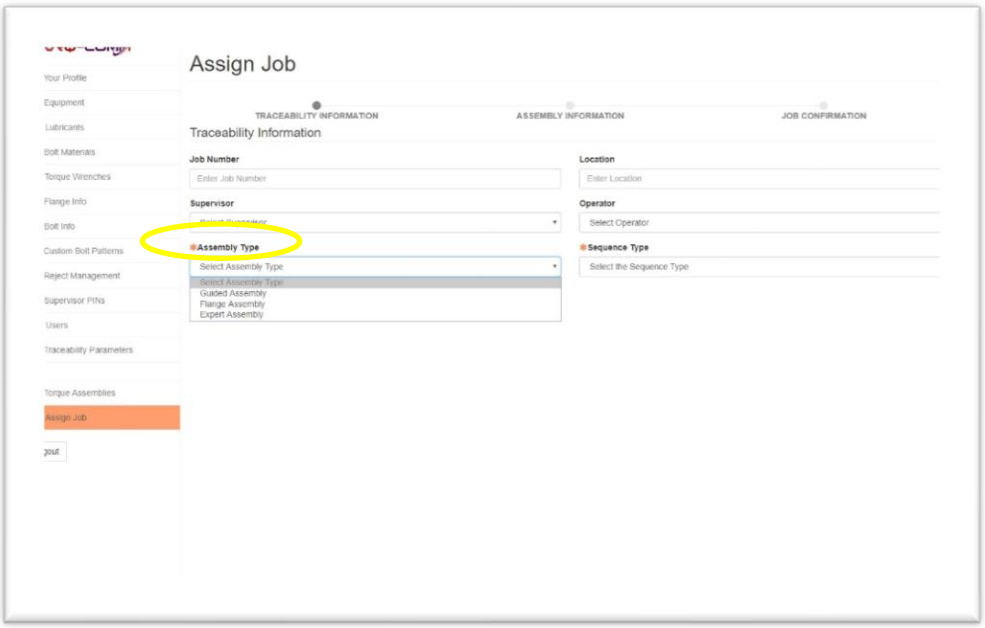


2. Enter the Torque Assembly Job information. The boxes marked with a * are required to complete the entry. Other boxes are optional.

3. The Supervisor and Operator drop downs are populated by the User database.

TORQUE ASSEMBLY MODES

There are three Assembly Modes to create a Torque Assembly. All three will take the User to the same conclusion by requiring different input based on the application. They are all based on PCC-1 2013 guidelines.



Expert Mode - is for the service provider who is given a complete specification for a torque assembly job from their customer.

They are told the number of bolts and the final torque to be applied. The service provider's only input is what wrench they use based on their inventory. The Commander then determines the required pressure to reach the necessary torque for each pass.

It is the fastest way to enter a job. Just three questions (# of bolts, # of passes and final pressure) and one input (wrench) will give you the required final pressure.

Flange Mode - is used when the pipe has a working fluid (liquid or gas) under pressure.

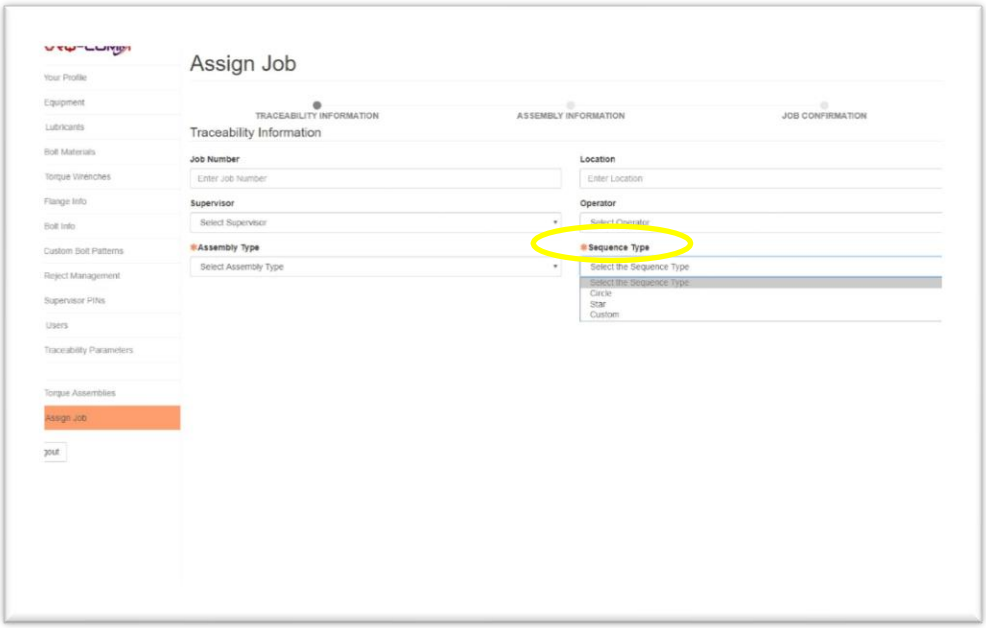
The first question is the pipe size / diameter. Based on the selection, the Commander defaults to the options for that pipe size based on the specifications entered in the database.

Once the pipe size selected, the pressure selection defaults to the pressures possible for that size pipe. Based on the pressure that is selected, the number and size of the bolts are default selections.

The next selections are based on the company's standard practices. The thread pitch of the bolts, bolt material and lubrication are what the typically use. Their databases are customized to their current practices. The Commander checks to make sure their standard practices are correct and within the range of the wrench and within an acceptable range of the yield strength.

Guided Mode - is similar to the Flange mode however it does not involve a working pressure. It can be applied to everything from a wind tower that is bolted together, a bridge or the engine block of a large earth moving tractor. Most of your custom Bolting patterns will be used with this mode.

SEQUENCE TYPES



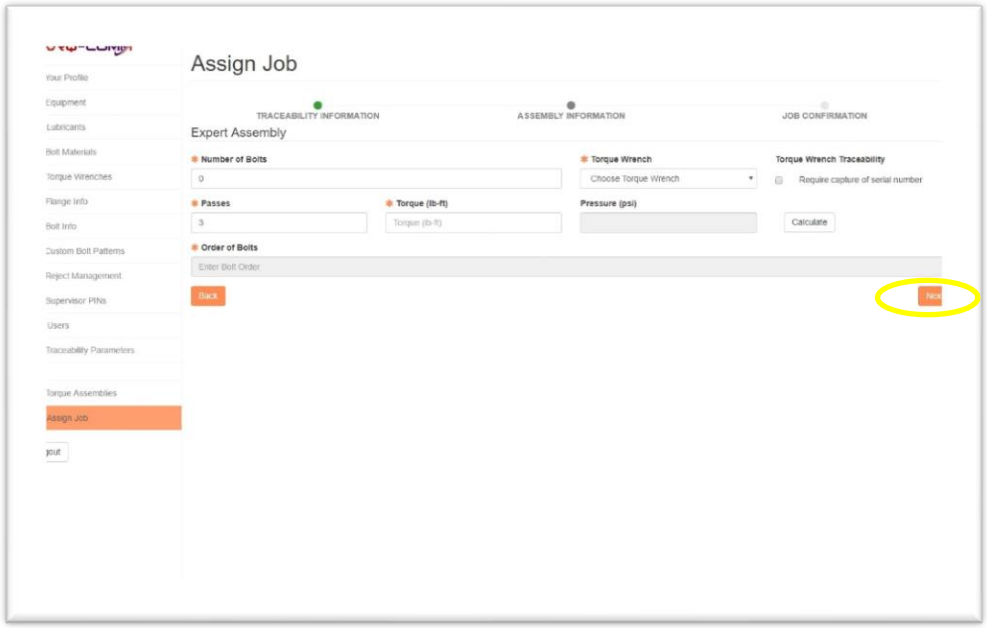
Multiple bolting sequences are available.

Circle – As the name implies, the bolting pattern is for circular flange and proceeds in a clockwise direction.

Star – Is based on the Legacy bolting pattern described in PCC-1 2013. The Star sequence is defined as “cross-pattern bolt-tightening sequence and multi-round tightening are necessary to count the elastic interaction that occurs when tightening bolts”.

Custom – These are the patterns that are defined in the Custom Bolt Patterns database.

EXPERT ASSEMBLY MODE



1. Enter the Torque Assembly Job information. The boxes marked with a * are required to complete the entry. Other boxes are optional.

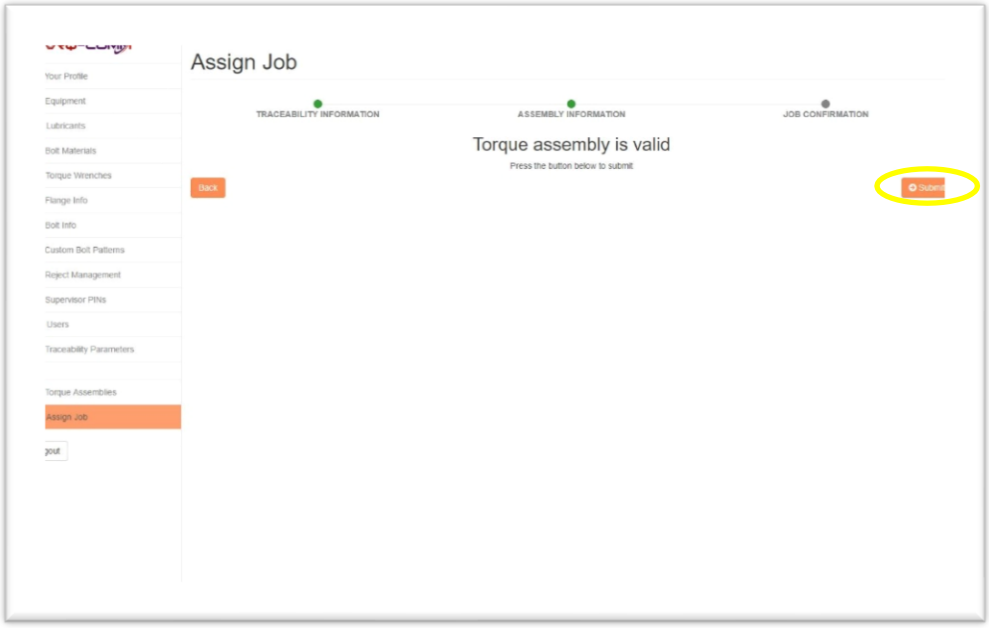
2. The Supervisor and Operator drop downs are populated by the User database.

3. Enter the number of bolts, passes, torque wrench, sequence type and the required final torque. The drop-down menus can be accessed by tapping on each block.

4. Tap **CALCULATE** to determine the required final pressure.

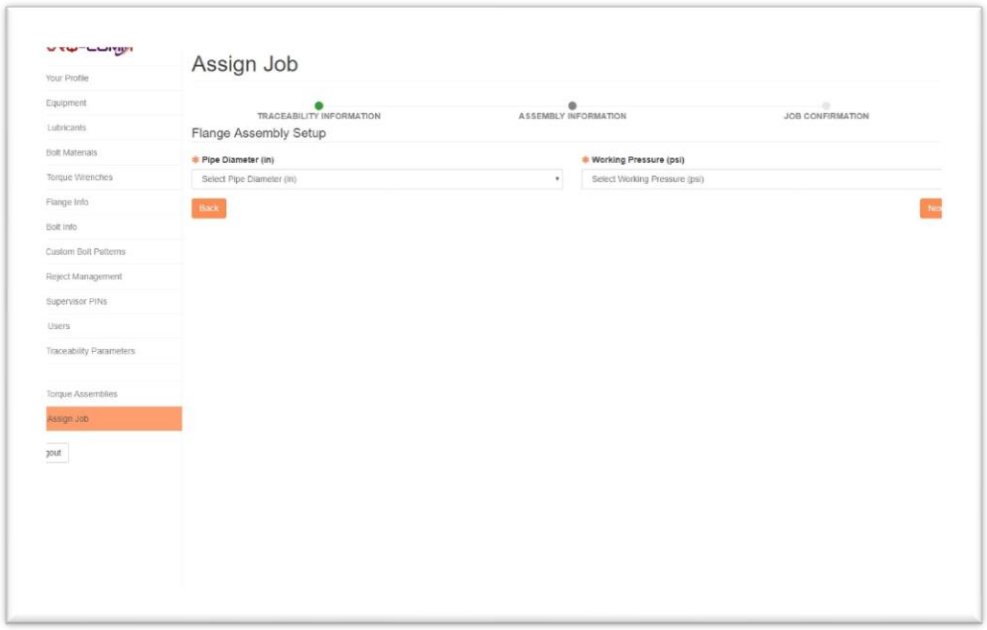
5. Tap **NEXT**

The COMMANDER XT1000 will review the information for accuracy and present the bolting sequence based on the number of bolts and the sequence type. It will present Valid Sequence if correct.



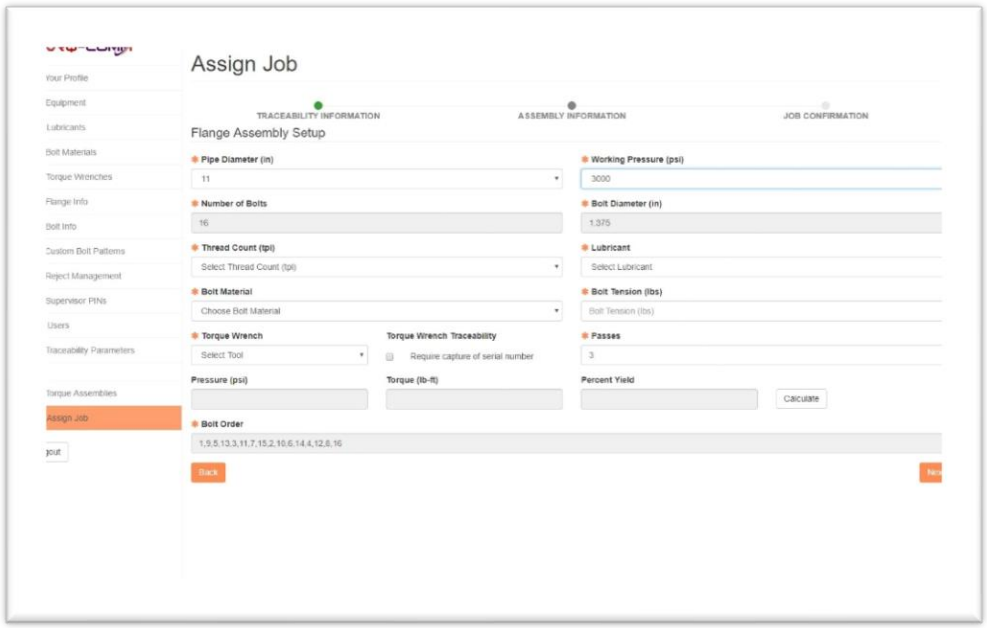
6. Tap **NEXT** to complete the assignment. The Torque Assembly is now listed on the Cloud desktop and ready to be downloaded to the handhled.

FLANGE ASSEMBLY MODE



1. Tap the Pipe Diameter block to access the pull-down menu. Select the appropriate size.

2. Tap the Working Pressure block to access the appropriate pressure for that Pipe Diameter.



3. Tap **NEXT** to continue.

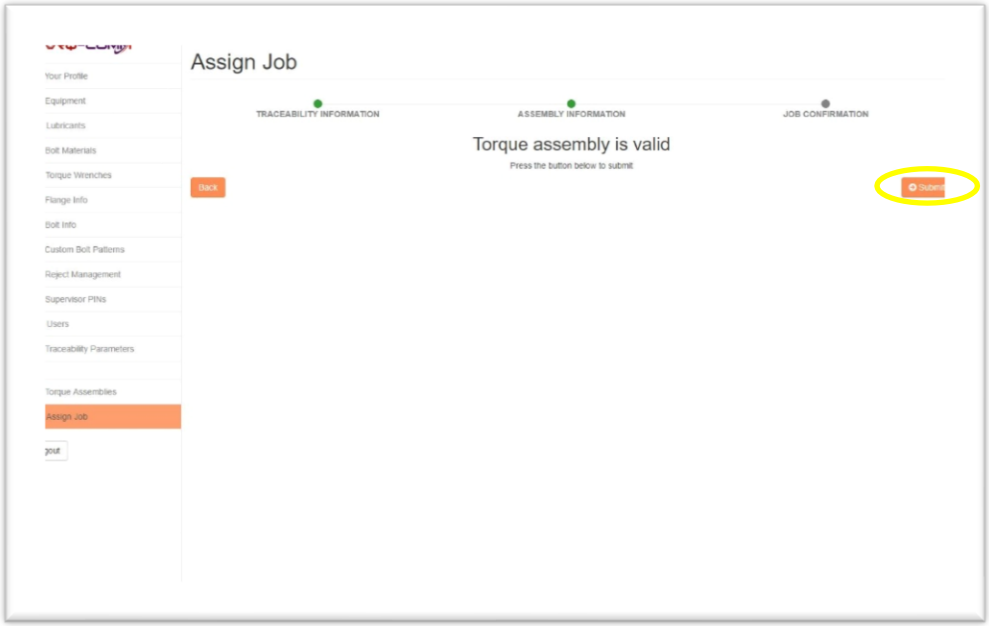
4. Enter the number of bolts, bolt diameter, thread pitch, lubricant. The drop-down menus can be accessed by tapping on each block.

5. Enter the bolt material, bolt tension, torque wrench, sequence type and number of passes. The drop-down menus can be accessed by tapping on each block

6. Tap **CALCULATE** to determine the required final pressure.

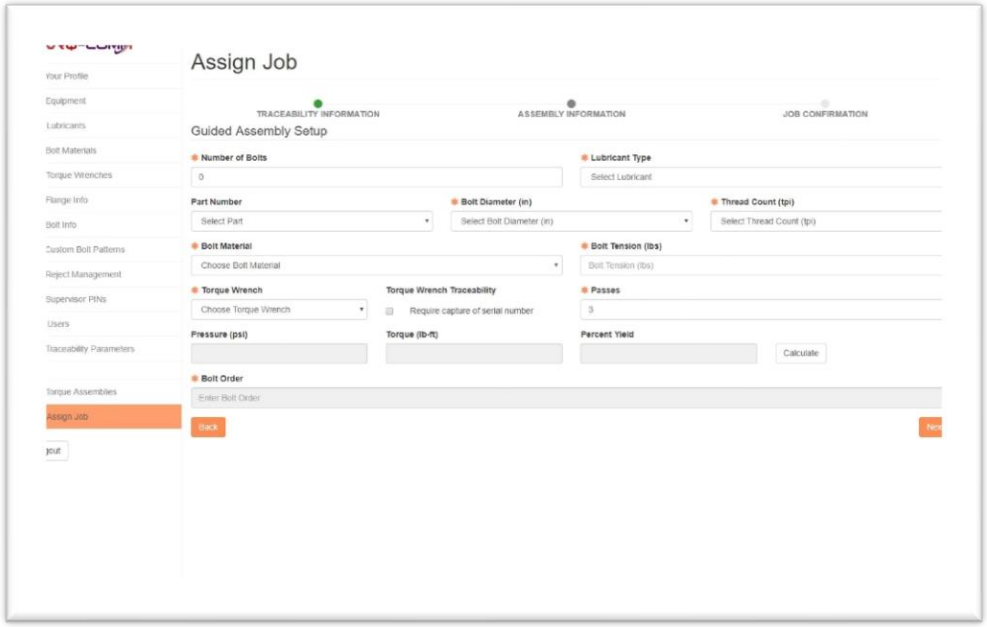
7. Tap **NEXT**

The COMMANDER XT1000 will review the information for accuracy and present the bolting sequence based on the number of bolts and the sequence type. It will present Valid Sequence if correct.



7. Tap **NEXT** to complete the assignment. The Torque Assembly is now listed on the Cloud desktop and ready to be downloaded to the Commander.

GUIDED ASSEMBLY MODE



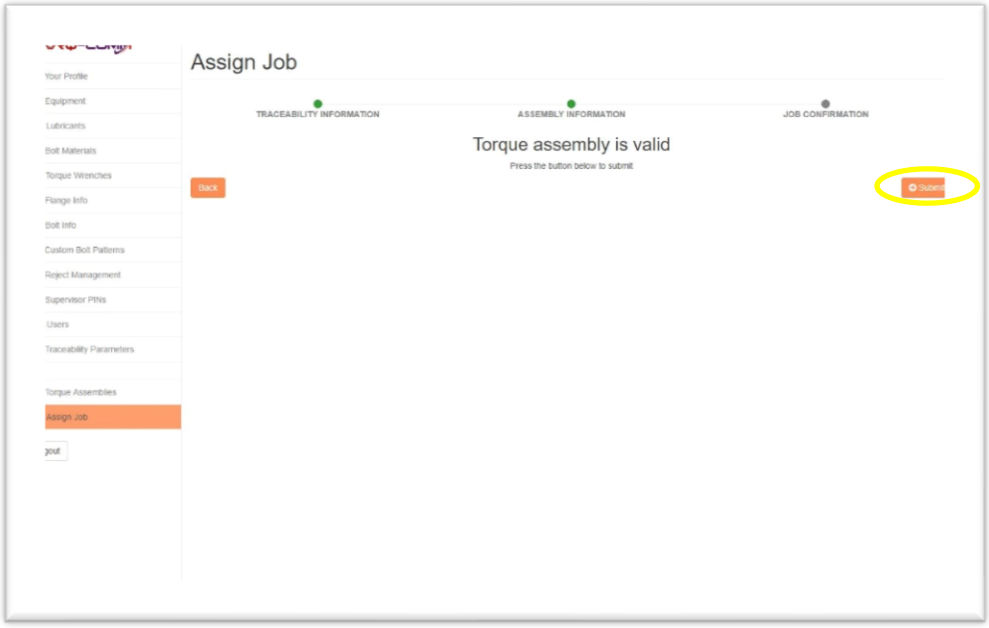
1. Enter the number of bolts, bolt diameter, thread pitch, lubricant. The drop-down menus can be accessed by tapping on each block.

2. Enter the bolt material, bolt tension, torque wrench, sequence type and number of passes. The drop-down menus can be accessed by tapping on each block.

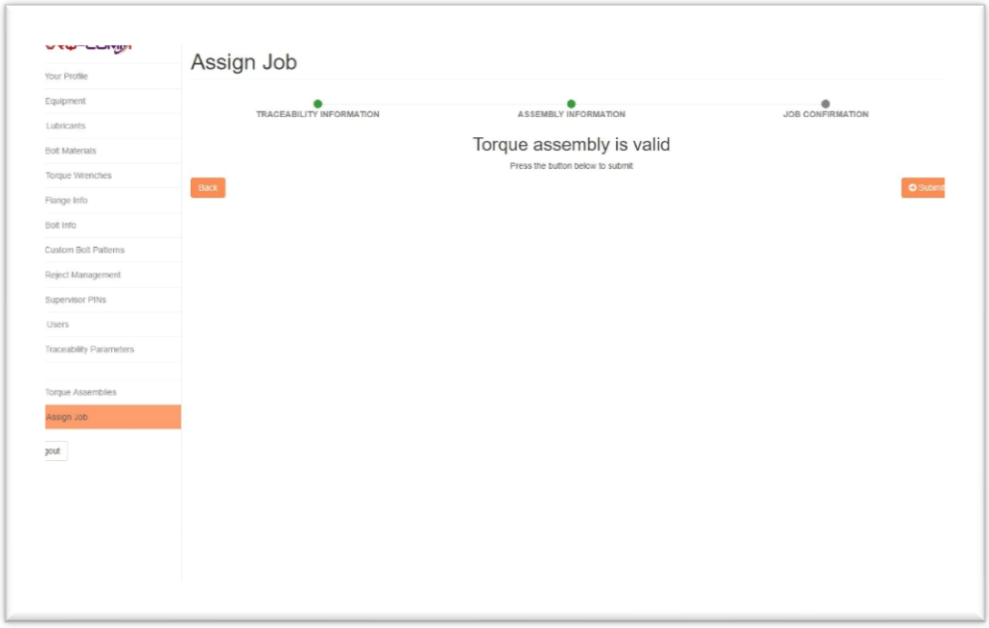
3. Tap **CALCULATE** to determine the required final pressure.

4. Tap **NEXT**

   The COMMANDER XT1000 will review the information for accuracy and present the bolting sequence based on the number of bolts and the sequence type. It will present Valid Sequence if correct.



8. Tap **NEXT** to complete the assignment. The Torque Assembly is now listed on the Cloud desktop and ready to be downloaded to the Commander.


Your Profile
Equipment
Lubricants
Bolt Materials
Torque Wrenches
Flange Info
Bolt Info
Custom Bolt Patterns
Reject Management
Supervisor PINs
Users
Traceability Parameters
Torque Assemblies
Assign Job
Assign Job
TRACEABILITY INFORMATION
ASSEMBLY INFORMATION
JOB CONFIRMATION
Torque assembly is valid
Press the button below to submit
Back

ERROR MESSAGES

1. If the Percent Yield is above 60%, the system will warn you but allow you to proceed.

   Tap **OK** to proceed.

2. After tapping OK to the Alert, the Authorization screen appears. A Supervisor must enter a pre-assigned four-digit PIN in order to accept the out of specification After typing in the PIN, tap AUTHORIZE PIN.

   Tap **CANCEL** to return to the input screens.

3. If the resulting pressure is below the minimum recommended by the wrench manufacturer, the system will present a warning message. However, tapping **OK** will allow you to proceed should you choose.

4. If the resulting torque is above the recommended torque by the wrench manufacturer, the system will present a warning message. It will not allow you to proceed.

Tapping **OK** will take you to the previous screen to adjust the values or tools