ASG-CT2500

ASG-SD2500 Series Screwdriver Controller

User's Guide

Version 1.1.0

December, 2010

ASG Precision Fastening ASG-CT2500 User's Guide

Version 1.1.0

Major Revision: December, 2010

Firmware Revisions

GUI: Firmware Version 1.0.6.3

Controller: Firmware Version C-6.11.0

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Safety Precautions

Be sure to read all instructions and precautions contained in this manual, failure to do so may result in personal injury and/or damage to tooling and components.

Do not operate or plug in the controller/system with wet hands or in wet environments. Failure to observe this may result in injury due to electric shock.

Ensure the controller is properly plugged in to a grounded electrical receptacle. Do not remove the ground pin or use any adapter plugs.

Always shut down the controller when changing cables or tools. Failure to do so could damage the tool or controller.

Keep work area clear of clutter and distractions that may cause the operator to lose control of the tool or the components.

Tool cable must be properly routed and festooned to avoid tangling and trip hazards.

Always use safety glasses when using electrical assembly tools.

Do not use any part of the system (tool, cable, or controller) for anything other than its specified application. Use of the system or its components for unintended applications could result in injury to the operator, failure of the system, and could void the warranty.

Never modify or disassemble any component of the system. Modification or disassembly of the system could result in injury and void the warranty.

Introduction

Thank you for investing in a ASG-CT2500 Controller from ASG Precision Fastening! This user's guide will assist you with setting up your controller.

Please start by finding the serial number label on the bottom of the controller.

Take note of the serial number and record it below with your date of purchase. This information will be necessary should any service be required in the future.

Serial Number:_____

Date of Purchase:_____

Installation

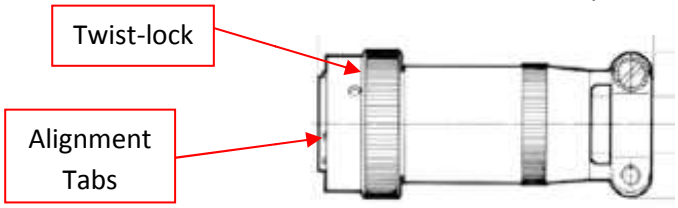
Installation of the ASG-CT2500 is very straightforward. Follow these steps to connect your system for the first time:

Controller Mounting:

The ASG-CT2500 comes standard with a mounting plate for attaching to the wall, workbench, or tool stand. Secure the controller using the (4) provided holes in the mounting plate. Ensure the controller power cord can reach a properly grounded receptacle without creating a trip hazard in the work area. The controller should also be mounted within view of the operator, and should be accessible and within reach for programming and modification.

Tool Installation:

Connect the tool cable to the connector on the bottom of the controller by identifying the alignment tabs in the large cable connector. Align these tabs and insert the cable to the controller, then rotate the twist-lock on the cable connector clockwise until it *clicks* into place.



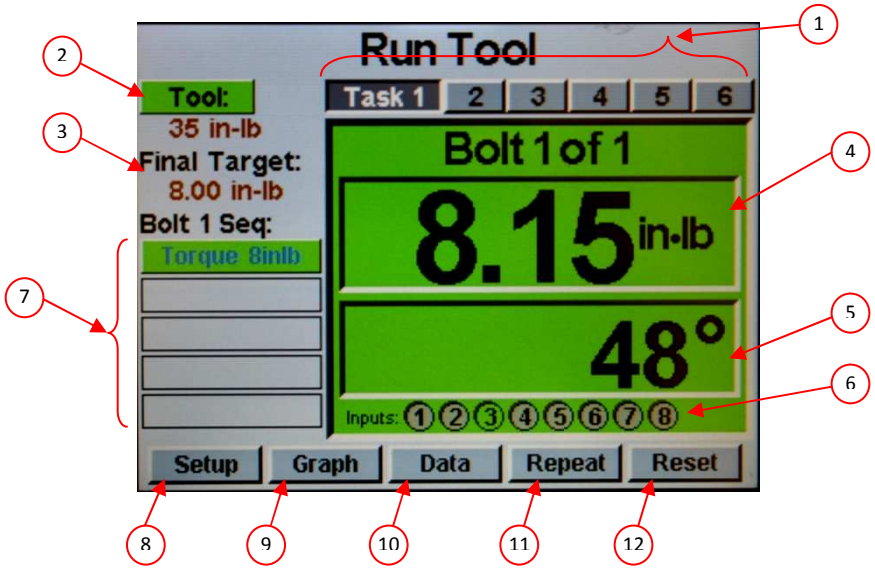
Note: To remove the cable from the controller, rotate the twist-lock on the cable connector counter-clockwise until it pops free, and then remove the cable from the controller.

Obtain the ASG-SD2500 tool and identify the slot on the screwdriver connector into which the screwdriver cable plugs. Find the red dot on the small end of the cable, and align it to the slot in the screwdriver connector. Insert the cable to the tool firmly until it *clicks* into place.

Note: To remove the cable from the tool, slide the grip of the cable connector away from the tool, then pull the cable out of the tool.

Connect the controller to the power source and power-up the controller.

Run Tool Screen



1. Quick Tap Task Keys: Allows the user to select one of 6 available tasks. Selecting these tabs will switch the tool to the selected task; settings for bolt counts, parameters, inputs, outputs, etc will switch with this action to the settings of that selected task.

2. Tool Information Button: Displays the Tool Information screen that shows tool characteristics.

3. Final Target: Displays the target value of the active Parameter, either torque or angle.

4. Torque Reading: Displays the torque seen by the tool during or at the end of the fastening cycle. This field will color code at the end of a fastening cycle to denote Pass (green), Fail – High (red), or Fail – Low (yellow) as defined by high and low limits of the selected Parameter.

5. Angle Reading: Displays the angle seen by the tool during or at the end of the fastening cycle. This field will color code at the end of a fastening cycle to denote Pass (green), Fail – High (red), or Fail – Low (yellow) as defined by high and low limits of the selected Parameter. The field remains un-highlighted when Angle Monitoring is disabled within the Parameter.

6. Inputs: Displays (1) radio button for each of the (8) available inputs. The appropriate radio button will illuminate green when the input is active.

7. Bolt Sequence Steps: Displays the bolt number, sequence step, and selected parameter. The parameter name will be highlighted red, yellow, or green at the end of its cycle to show its status.

8. Setup Button: Takes you to screens where you may set up Tasks, Parameters, Bolt Sequences, Inputs, Outputs, and System Settings.

9. Graph Button: Displays the most recent fastening cycle graphically as Torque vs. Time, Angle vs. Time, Torque vs. Angle, Speed vs. Time, and Power vs. Time.

10. Data Button: Displays a table that contains rundown characteristics for the last 100 fastening cycles. Additional data is available in the internal memory and can be downloaded to a USB flash drive from this screen as well.

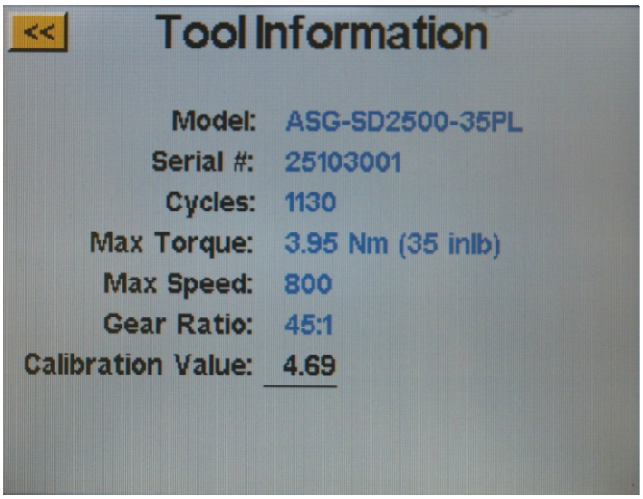
11. Repeat Button: Depressing this button keeps the controller on the current bolt in a bolt sequence. The sequence will not advance to the next bolt until the button is released.

12. Reset Button: Depressing this button resets the fastening sequence in the event of a failure, retry lockout, user request.

Tool Information Screen

This screen displays characteristics of the tool that is attached to the ASG-CT2500 controller such as:

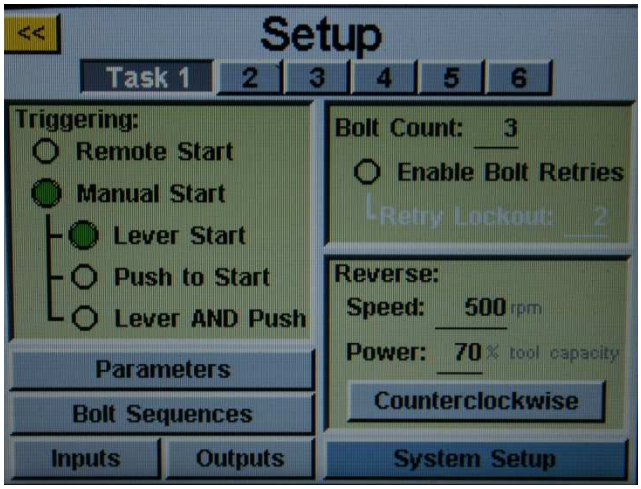
- Model Number
- Serial Number
- Number of Cycles on the Tool
- Max Torque
- Max Speed
- Gear Ratio
- Calibration Value



CAUTION: Tapping on the Calibration Value will take you to a screen where the value can be manually changed. This screen is for qualified calibration technicians only. Improperly changing the calibration value of the tool could lead to inaccurate torque readings and potential tool damage.

Setup Screen

Entering the setup screen allows you to modify the settings of each task's parameters, bolt counts, bolt sequences, inputs, outputs, reverse settings, and triggering.



Tool Triggering:

On the 'Setup' screen, each task can be set up to trigger the tool in the way that best fits that task. The tool can be set up for remote start, lever start (if tool is equipped with a lever), push to start, lever or push to start (together), or lever and push to start. To select, just tap the radio button next to the desired option(s).

For remote start applications, the triggering will have to be configured in the 'Inputs' section of the Task Setup screen. See the Input programming section of this manual for more details.

Bolt Counts:

Setting up the bolt counts for each task can be done through the task setup screen. Under the 'Counts:' window, tap the underlined number next to 'Bolt Count:' to change the number of bolts to be secured on that task. The controller will display this information on the 'Run Tool' screen and update the individual bolt's parameter and target as well.

The controller will accept up to 999 bolts per task, but once the bolt count rises above 25, individual bolts cannot be programmed to different parameters in the 'Bolt Sequences' screen.

Bolt Retries:

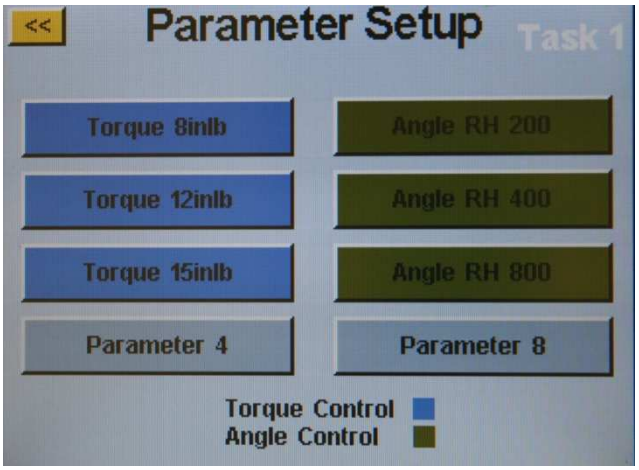
To enable this feature, tap the radio button on the task setup screen under the bolt count. Set the number of retries before lockout by tapping the number and inputting the desired value. A retry is counted when the tool is put into reverse and triggered. After the designated value of retries have been achieved, the tool will not run forward without tapping the 'reset' button on the 'Run Tool' screen.

Reverse Settings:

In each task, the reverse settings must be defined. More specifically, when the reverse button on the tool is pressed (and the colored LED lights on the tool are flashing), the user must tell the controller how fast to turn, what direction, and at what percent of the tool's maximum torque. For instance, if a 50 inlb tool is connected to the controller, and the Reverse Power is set to 50%, the tool will be able to use 25 inlb of torque to remove a fastener before the tool stalls. These reverse settings can be different for each task in the controller if the user wishes, or they can all be set identically for uniformity.

Parameter Setup:

From the task setup screen, select the Parameters button. Shown will be a button for each of the 8 available parameters for that task.



Some useful definitions for the Parameter Setup:

Target Torque/Angle: The value at which the tool should stop the fastener rundown

Torque HL/LL: The High Limit (HL) or Low Limit (LL) of acceptable torque for the fastener

Angle HL/LL: The High Limit (HL) or Low Limit (LL) of acceptable angle for the fastener. In Torque Control Profiles, this monitoring may be disabled by tapping the 'Angle Monitoring' radio button.

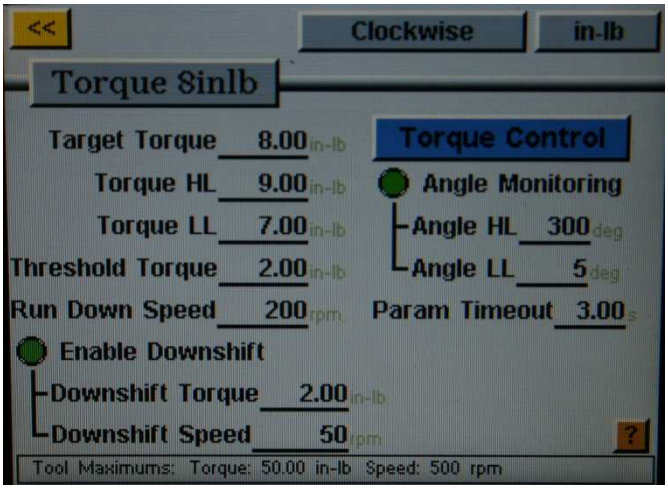
Threshold Torque: The torque reading at which the tool enters the fastening cycle. Once the tool reaches the threshold torque, it will count the angle of revolution until either the final torque or final angle (depending on Torque or Angle Profile).

Run Down Speed: The speed (rpm) that the tool will run in forward (RH rotation) from the time the tool is triggered until either the final target is met, or the downshift point is met (if enabled).

Downshift Torque: The torque at which the tool will shift from the run down speed to the downshift speed.

Downshift Speed: An optional second speed that the tool may slow down to at a defined torque threshold. This can be disabled by tapping the 'Enable Downshift' radio button.

Param Timeout: The time (in seconds) between when the tool is triggered and when it will shut off on its own if the threshold torque is not reached to enter a fastening cycle.



To set up a parameter:

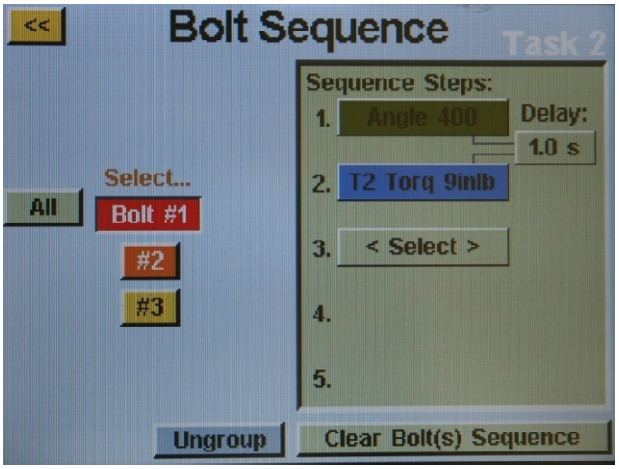
1) Select one of the Parameter buttons and select either Torque Control Profile or Angle Control Profile by tapping the button on the right side of the screen to toggle between the choices.

   Note: Torque Control Profiles Parameters will appear in BLUE on the parameter list and Angle Control Profile Parameters will appear in GREEN.
2) Select the direction of rotation for the parameter by toggling between 'clockwise' and 'counterclockwise' at the top of the screen.

3) Select the torque units by selecting the button at the top right hand corner of the screen, then selecting the units required.
4) Name the parameter by selecting the button below the yellow << button and using the on-screen keypad to enter the desired name.
5) Fill out the rundown characteristics by tapping on the underlined areas and using the on-screen keypad to enter the information.
6) Tap the yellow << button to return to the parameter list and select 'Yes' to save the changes.

Bolt Sequences

The 'Bolt Sequences' button allows the user to select which parameter(s) will run for a given bolt inside each task. To assign a parameter to a bolt, select the bolt number (or multiple bolts if they will all have the same parameter(s)) then tap the button to the right to access the parameter list. Tap the parameter name you wish to choose to select that parameter for that bolt.



Each bolt can have up to 5 parameters assigned to run in sequence as well. A time delay between parameters may be programmed in this screen should the application require it. When the bolt count is 25 or less, each bolt can be selected separately to assign it any of the 8 available parameters on that task.

When using multiple parameters on a single bolt, only one trigger pull is required for the bolt, but must be held until the entire sequence is completed. Releasing the trigger in the middle of the sequence will result in a 'sequence aborted' error.

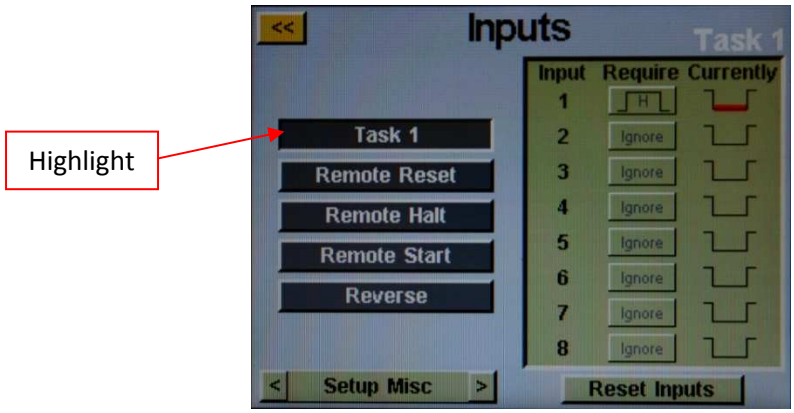
Should one step of a sequence fail during a rundown, the bolt will fail at that point and not proceed to the next step of the sequence.

Input Programming

There are (8) inputs, as well as a 24V DC and ground available through the input connector on the bottom of the controller. On the 'Run Tool' screen, there is a row of lights at the bottom showing each of the 8 inputs. When an input is active, the light will illuminate green to aid in trouble-shooting and setup. See the chart at the end of this section for pin location and other technical information. The instructions below detail how to set up various commands through the inputs.

- **TASK SELECT**: From the 'Run Tool' Screen:
  - Tap the 'Setup' Button
  - Tap the task number tab that you wish to program
  - Tap the 'Inputs' Button
  - If you see a button on the left that says 'Bolt #1' then tap the 'Setup Bolt(s)' Button, otherwise skip this step.

  Assuming you are programming Task 1, tap the button on the left that says 'Task 1'. You should now see a column of buttons appear in the chart next to each input number. You may now select which input you want to use to select the task by tapping the 'Ignore' button to the right of that input. This will toggle between 'H','L', and 'Ignore' with each tap. The picture to the right of this button shows what the controller is currently seeing on that input. Press the yellow << button at the top and save changes if desired.

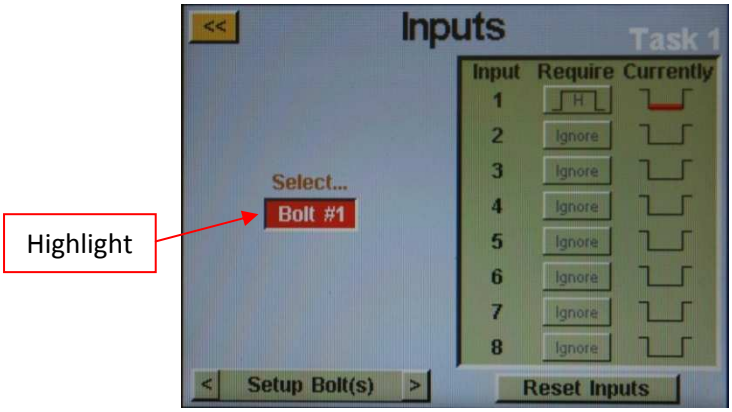


Note: after programming, the controller will switch to the task when that input is keyed, and will stay there until commanded to switch tasks either via the input or the touch screen controls. The input does not need to stay on for the task to remain enabled. If you desire the input to be active in order for the task to run, we recommend you go to the next section and setup each bolt in that task to require the same input used for the task selection.

- **ENABLE BOLTS**: From the 'Run Tool' Screen:
  - Tap the 'Setup' Button
  - Tap the task number tab that you wish to program
  - Tap the 'Inputs' Button

- If you see a button on the left that says ‘Task 1’ then tap the ‘Setup Misc’ Button, otherwise skip this step.

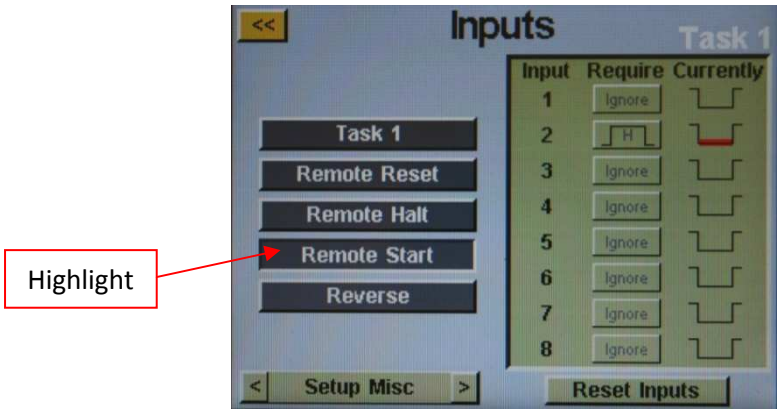
Assuming that there is only 1 bolt in your sequence, tap the button on the left that says ‘Bolt 1’. You should now see a column of buttons appear in the chart next to each input number. You may now select which input you want to use to enable the bolt by tapping the ‘Ignore’ button to the right of that input. This will toggle between ‘H’,’L’, and ‘Ignore’ with each tap. The picture to the right of this button shows what the controller is currently seeing on that input. Press the yellow << button at the top and save changes if desired.



Note: If you have multiple bolts in your sequence, it is recommended that you set that up in the ‘Setup’ and ‘Bolt Sequences’ screens prior to completing this step. You will then want to make sure you set up each bolt you wish to be enabled with the input. For your convenience, with multiple bolts a ‘All’ button will appear on the ‘Input’ screen to allow you to select all bolts and set them up simultaneously.

- **REMOTE START**: From the ‘Run Tool’ Screen:
  - Tap the ‘Setup’ Button
  - Tap the task number tab that you wish to program
  - Select the ‘Remote Start’ radio button in the ‘Triggering’ section.
  - Tap the ‘Inputs’ Button
  - If you see a button on the left that says ‘Bolt #1’ then tap the ‘Setup Bolt(s)’ Button, otherwise skip this step.

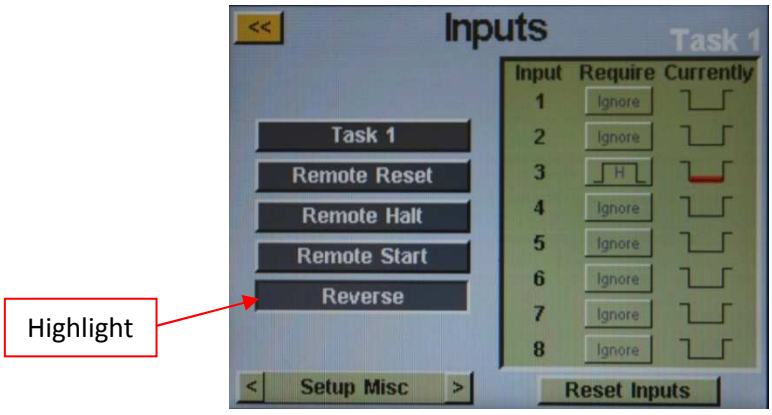
Select the ‘Remote Start’ button on the left side of the screen. You should now see a column of buttons appear in the chart next to each input number. You may now select which input you want to use to start the tool by tapping the ‘Ignore’ button to the right of that input. This will toggle between ‘H’,’L’, and ‘Ignore’ with each tap. The picture to the right of this button shows what the controller is currently seeing on that input. Press the yellow << button at the top and save changes if desired.



- **REVERSE ROTATION SELECT:** From the 'Run Tool' Screen:
  - Tap the 'Setup' Button
  - Tap the task number tab that you wish to program
  - Tap the 'Inputs' Button
  - If you see a button on the left that says 'Bolt #1' then tap the 'Setup Bolt(s)' Button, otherwise skip this step.

  Select the 'Reverse' button on the left side of the screen. You should now see a column of buttons appear in the chart next to each input number. You may now select which input you want to use to define left hand rotation in the tool by tapping the 'Ignore' button to the right of that input. This will toggle between 'H','L', and 'Ignore' with each tap. The picture to the right of this button shows what the controller is currently seeing on that input. Press the yellow << button at the top and save changes if desired.

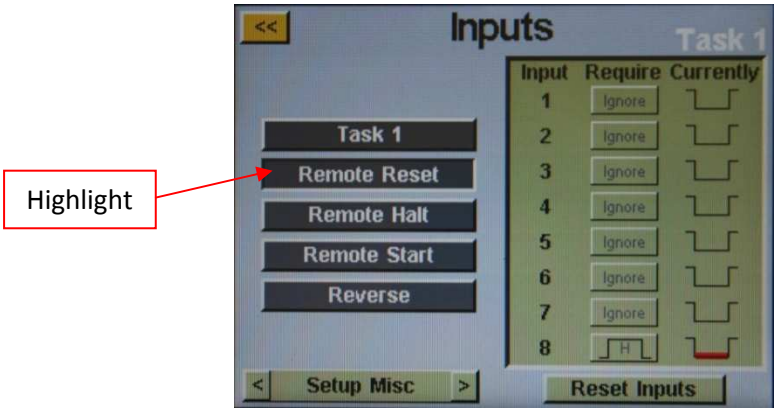
  Note: Ensure the reverse settings on the Task's 'Setup' screen are set to the desired settings (rotation, speed, power).



- **REMOTE RESET:** From the 'Run Tool' Screen:
  - Tap the 'Setup' Button
  - Tap the task number tab that you wish to program
  - Tap the 'Inputs' Button

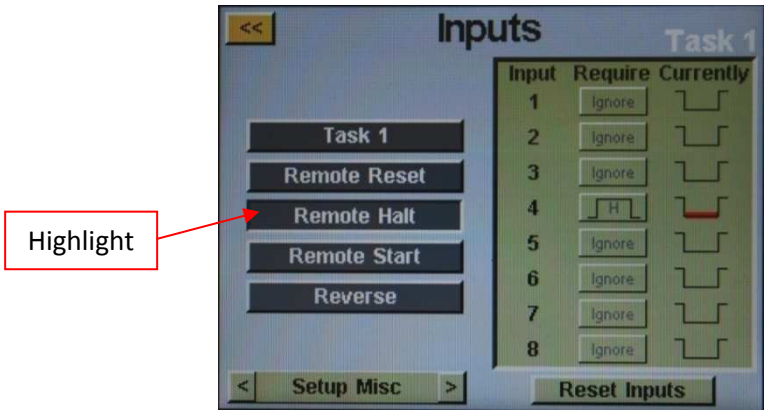
- If you see a button on the left that says ‘Bolt #1’ then tap the ‘Setup Bolt(s)’ Button, otherwise skip this step.

Select the ‘Remote Reset’ button on the left side of the screen. You should now see a column of buttons appear in the chart next to each input number. You may now select which input you want to use to reset the tool by tapping the ‘Ignore’ button to the right of that input. This will toggle between ‘H’,’L’, and ‘Ignore’ with each tap. The picture to the right of this button shows what the controller is currently seeing on that input. Press the yellow << button at the top and save changes if desired.



- **REMOTE HALT**: From the ‘Run Tool’ Screen:
  - Tap the ‘Setup’ Button
  - Tap the task number tab that you wish to program
  - Tap the ‘Inputs’ Button
  - If you see a button on the left that says ‘Bolt #1’ then tap the ‘Setup Bolt(s)’ Button, otherwise skip this step.

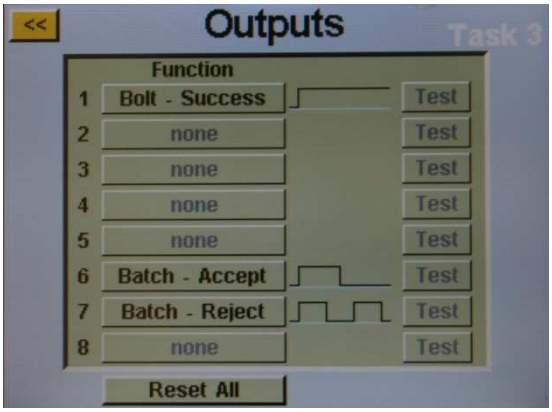
Select the ‘Remote Halt’ button on the left side of the screen. You should now see a column of buttons appear in the chart next to each input number. You may now select which input you want to use to halt the tool by tapping the ‘Ignore’ button to the right of that input. This will toggle between ‘H’,’L’, and ‘Ignore’ with each tap. The picture to the right of this button shows what the controller is currently seeing on that input. Press the yellow << button at the top and save changes if desired.

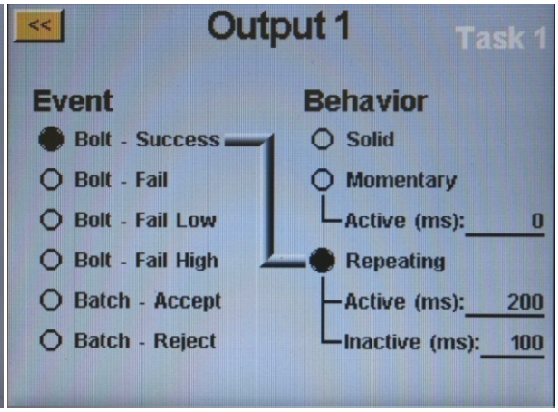


Output Programming

There are (8) outputs, 24V DC, and ground available through the output connector on the bottom of the controller. See the chart at the end of this section for pin location and other technical information. All the outputs can be set up with the following instructions from the 'Run Tool' Screen:

- Tap the 'Setup' Button
- Tap the task number tab that you wish to program
- Tap the 'Outputs' Button





Select an available output button by tapping the 'none' button. Under the 'Event' heading, select the appropriate radio button. Select the type of output you would like under the 'Behavior' heading, and if necessary input the time intervals for the non-solid outputs. To adjust these values, tap on the number, enter the value you wish on the on-screen keypad, then tap the enter button. Any un-saved changes will appear in red until they are saved by exiting the screen with the yellow << button.

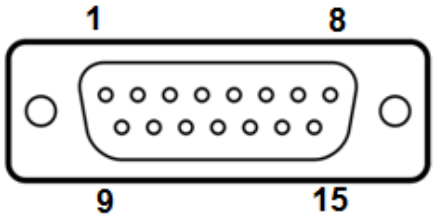
Note: Back on the 'Outputs' screen, you will have the opportunity to test the output signal to your PLC by tapping the 'Test' button next to each output.

AVAILABLE OUTPUT CRITERIA:

- **BOLT - SUCCESS**: (All torque and angle requirements fall within the predefined acceptable ranges of the programmed parameter)
- **BOLT – FAIL LOW**: (Any torque or angle requirement fell below the predefined acceptable ranges of the programmed parameter)
- **BOLT – FAIL HIGH**: (Any torque or angle requirement fell above the predefined acceptable ranges of the programmed parameter)
- **BATCH ACCEPT**: (All bolts or cycles required in the task are complete and within the acceptable ranges)
- **BATCH REJECT**: (Some portion of the task did not complete within acceptable parameters or the task was aborted)

Input/Output Port Pin Guide

Input Connector (DB15 Male)



Pin #	Function
1	**GROUND**
2	INPUT 1
3	COMMON - INPUTS 3 & 4
4	INPUT 4
5	INPUT 5
6	INPUT 7*
7	INPUT 8*
8	**24V**
9	COMMON - INPUTS 1 & 2
10	INPUT 2
11	INPUT 3
12	COMMON - INPUTS 5 & 6
13	INPUT 6
14	INPUT 7*
15	INPUT 8*

*Inputs 7&8 can have COMMON on either pin

Input Voltage: 5 - 24 V AC/DC

24 Volt supply 1 Amp max.

Output contact ratings

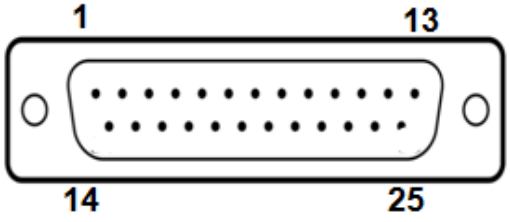
Switching Voltage AC/DC: 100 Volts

Switching Current AC/DC: 0.25 Amps

Carry Current: 0.5 Amps

Contact Rating: 3 Watts

Output Connector (DB25 Male)



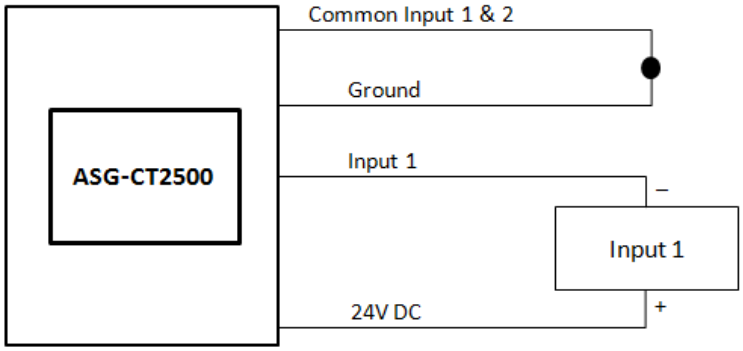
Pin #	Function
1	**GROUND**
2	**GROUND**
3	NORMALLY CLOSED - OUTPUT 1
4	NORMALLY CLOSED - OUTPUT 2
5	COMMON - OUTPUTS 3 & 4
6	NORMALLY OPEN - OUTPUT 3
7	NORMALLY OPEN - OUTPUT 4
8	NORMALLY CLOSED - OUTPUT 5
9	NORMALLY CLOSED - OUTPUT 6
10	COMMON - OUTPUTS 7 & 8
11	NORMALLY OPEN - OUTPUT 7
12	NORMALLY OPEN - OUTPUT 8
13	**24V**
14	**GROUND**
15	COMMON - OUTPUTS 1 & 2
16	NORMALLY OPEN - OUTPUT 1
17	NORMALLY OPEN - OUTPUT 2
18	NORMALLY CLOSED - OUTPUT 3
19	NORMALLY CLOSED - OUTPUT 4
20	COMMON - OUTPUTS 5 & 6
21	NORMALLY OPEN - OUTPUT 5
22	NORMALLY OPEN - OUTPUT 6
23	NORMALLY CLOSED - OUTPUT 7
24	NORMALLY CLOSED - OUTPUT 8
25	**24V**

Wiring Information

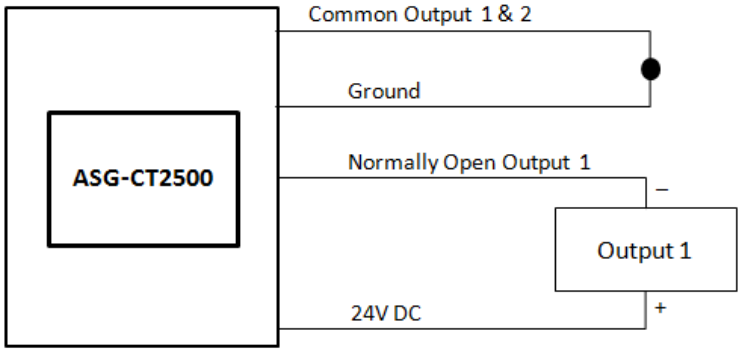
Examples are shown below as to how to wire both an Input and an Output

CAUTION: Be sure to understand an follow any recommended safety precautions of the input or output devices connected to the ASG-CT2500 controller. Some devices may recommend safeties such as fuses or resistors to be installed with those devices to prevent any damage from surge or overload.

Input Wiring Example



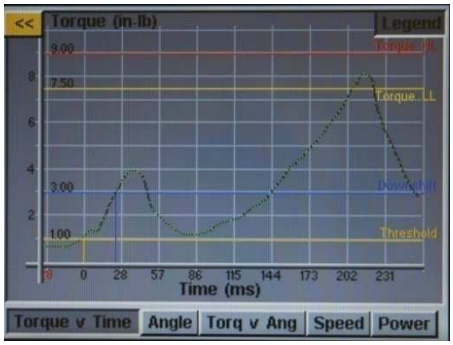
Output Wiring Example



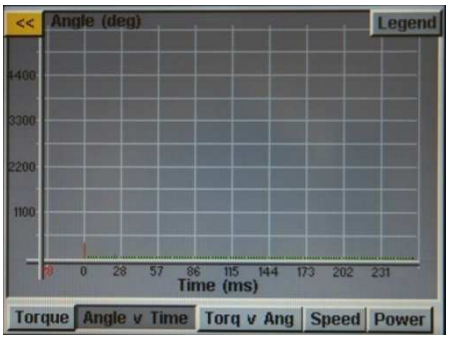
Graph Screens

In order to assist the user with setting up and trouble-shooting problem joints, the latest rundown is stored in the controller in graph form. From the 'Run Tool' screen, tap the 'Graph' button at the bottom of the screen. Along the bottom of the screen can be found the available graphs, tap the appropriate button to view:

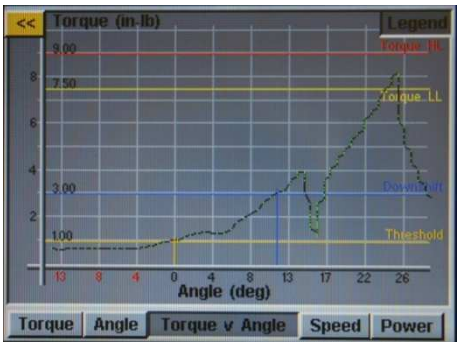
- Torque vs. Time: Graphs the last rundown with Torque on the Y axis in whatever units are specified in the parameter, and Time on the X axis in milliseconds (ms).



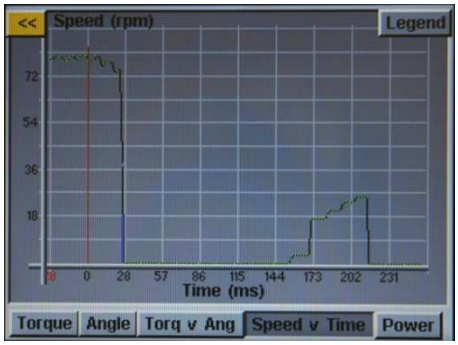
- Angle vs. Time: Graphs the last rundown with Angle on the Y axis in degrees (deg), and Time on the X axis in milliseconds (ms).



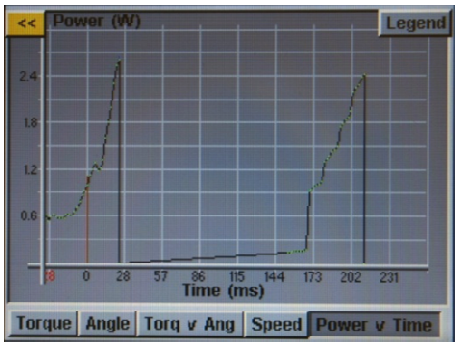
- Torque vs. Angle: Graphs the last rundown with Torque on the Y axis in whatever units are specified in the parameter, and Angle on the X axis in degrees (deg).



- Speed vs. Time: Graphs the last rundown with Speed on the Y axis in rotations per minute (rpm), and Time on the X axis in milliseconds (ms).



- Power vs. Time: Graphs the last rundown with Power on the Y axis in Watts (W), and Time on the X axis in milliseconds (ms).



In each graph there is a 'Legend' button on the top of the screen. Tapping this button will affix labels to the lines overlaying each graph (where applicable) showing High Limits, Low Limits, Thresholds, etc as defined by the parameter of the rundown. The tool can be used while the controller displays the graph, just be aware that the graph will change with each cycle of the tool since the controller only stores the most recent rundown in graph form.

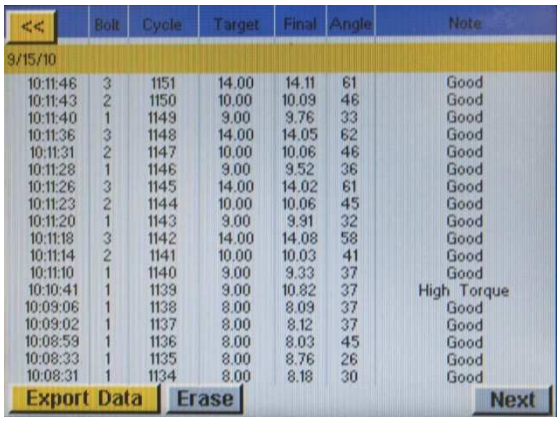
NOTE: The default view of each graph begins with Time or Angle equal to 0, which is defined by your Threshold set in the parameter of the rundown. Tapping on the graph once, will switch the view to a wider view that begins with the time the tool is triggered. Tap one more time to return to the original view.

Data Screen

For data traceability, rundown information is stored in table form for view and download from the controller. To access this data, tap the 'Data' button on the bottom of the 'Run Tool' screen. A limited amount of information from the last 100 rundowns since the controller was powered up is available to view on screen. The data available to view on screen is:

- Date/Time
- Bolt Number
- Tool Cycle
- Note (Good, High Torque, Low Angle, etc)
- Target Torque/Angle
- Final Torque
- Final Angle

To page through the on-screen data, use the 'Next' and 'Previous' buttons available at the bottom of the screen.



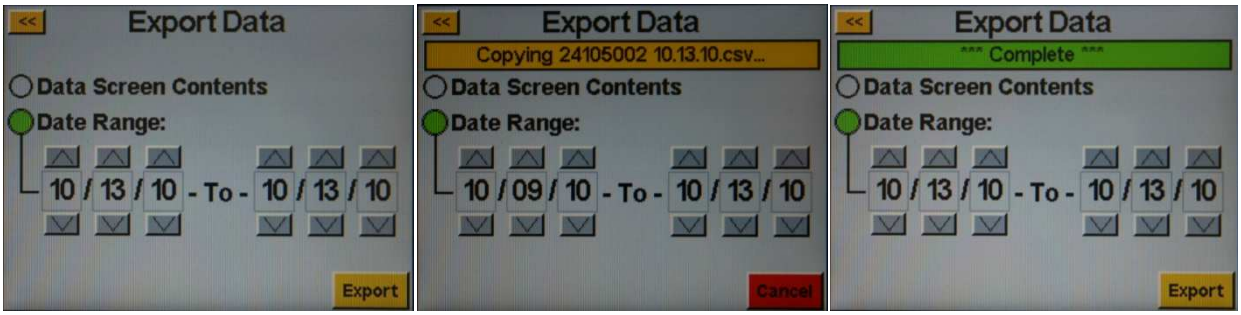
NOTE: turning off the controller will clear the table of all data. The data is retained in memory for download, but will not be available for on-screen viewing.

Erasing Data

To erase the data shown on the screen, tap the 'Erase' button at the bottom of the chart. A screen will ask you to confirm your intentions to erase the data before the data is cleared. NOTE: Erasing the data with this button will not clear the data from the internal memory of the controller; it will merely remove it from view in the table. Any erased data is still available for download to USB as described in the next section.

Downloading Data

To download data to a USB flash drive, insert a flash drive with available memory into the port on the bottom of the controller. Tap the 'Export Data' button at the bottom of the data table, and then select either to download just the Data Screen Contents, or choose a date range for which you wish to download the data. Tap the 'Export' button to copy the information to the flash drive.



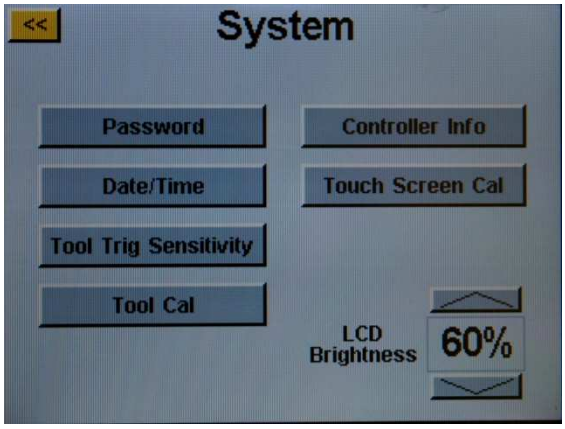
To view the data downloaded to USB, insert the flash drive into a computer and open to view the files and folders. The controller will create a folder on your flash drive called your controller name (if you have named your controller 'Station 1' in the 'Controller Information' screen, you will find a folder on your flash drive named 'Station 1'. See the Controller Information section of this manual for more information). Inside this folder will be a folder called 'Data' which contains the files exported to the flash drive. Note: if multiple days are selected for download, the controller will save a file for each day on the flash drive. For example, if 5 days are selected for data export, you will find 5 files on the flash drive (unless the tool was not used during some of those days). Data available in these files includes the following:

- Date
- Time
- Tool Model Number
- Tool Serial Number
- Tool Cycle Number
- Task Number
- Bolt Number
- Torque Units
- Parameter Target
- Final Torque Reading
- Final Angle Reading
- Cycle Time
- Note
- Parameter Name
- Parameter Type
- Parameter Torque HL
- Parameter Torque LL
- Parameter Angle HL
- Parameter Angle LL
- Downshift Torque
- Rundown Speed
- Downshift Speed
- Hand of Rotation

The downloaded files are a CSV format (comma separated value) and will open automatically in typical spreadsheet programs.

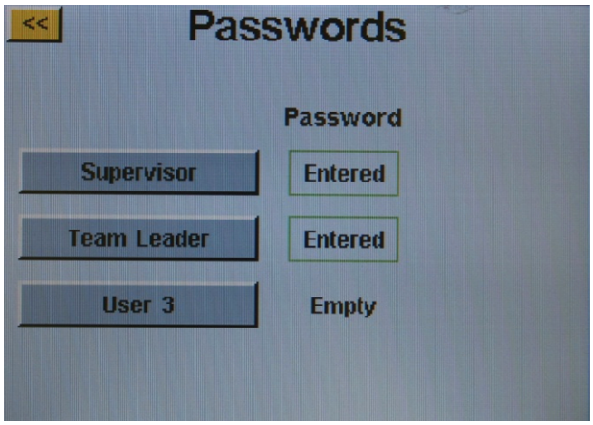
System Setup Screen

The 'System Setup' screen allows the user to set system controls and tool settings. See the following sections for further information.



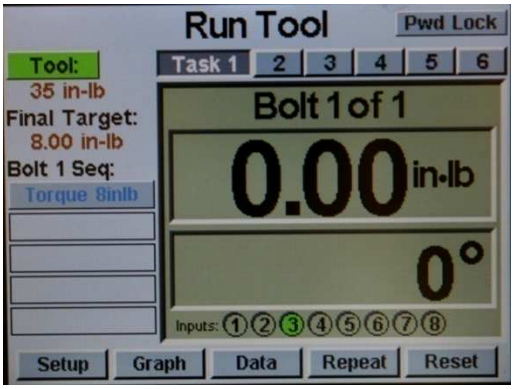
Passwords

From the 'System Setup' screen, tap the 'Passwords' button. The controller allows (3) individual passwords, each password allows access to the controller when locked. Each password allows full access to unlock the controller. When a controller is locked, the controller will still navigate to most screens and settings will be viewable.

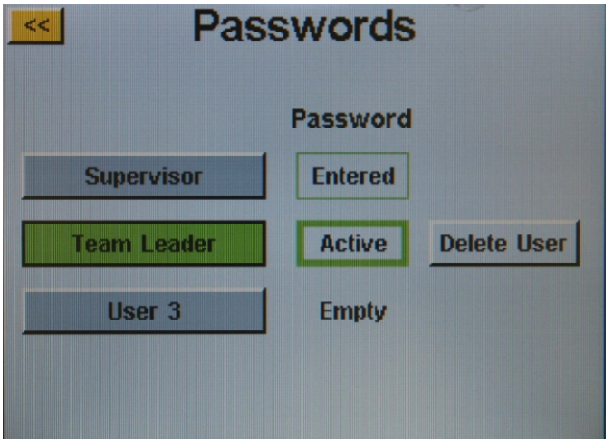


Creating a User(s)/Password(s): Tap an available user button and enter a User Name when prompted. Next enter a password, and then confirm the password. The controller will return to the 'Passwords' screen, and the entered user name should be visible in one of the buttons. Return to the 'Setup' screen by tapping the << button twice. You will notice that the screen appears differently than before, many of the fields are "greyed-out" signifying that the controller is locked and those fields are no longer accessible.

Modifying features in a locked controller: Navigate to the setting or feature that needs to be modified and tap the appropriate button or number. The controller will then prompt the user for a password to unlock the controller. Once a password is accepted, settings can be changed on any screen. To re-lock the controller again after modifications have been made, tap the 'Pwd Lock' button at the top right-hand corner of the 'Run Tool' screen.

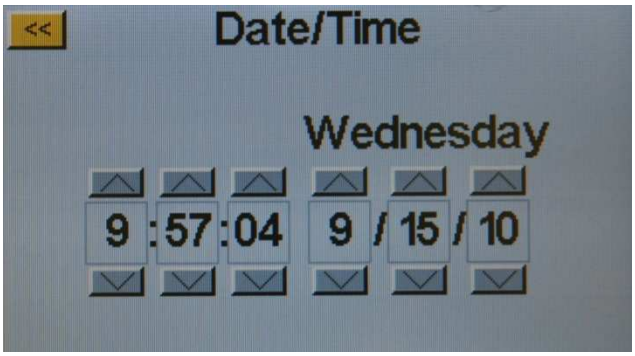


Deleting User(s)/Password(s): From the 'Passwords' screen, tap the name of the user that is to be deleted, enter the password when prompted. The screen will show that the password is now active, and create a button next to that user called 'Delete User'. Tap the 'Delete User' button to remove the user from the controller.



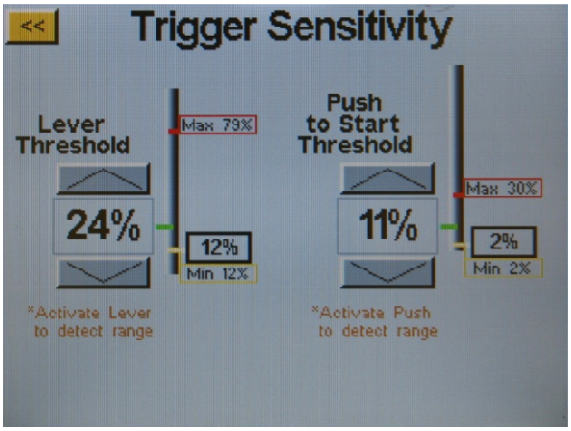
Date/Time Settings

To set the controller's date and time, tap the 'Date/Time' button on the 'System Setup' screen. Adjust the date and time with the up and down arrow keys above and below each number. Tap the << button to return to the previous screen and save changes.



Tool Trigger Sensitivity

The controller allows the user to set the sensitivity of both the Push-to-Start and the Lever Start (when equipped) features of the ASG-SD2500 tool to suit individual user or application preferences. To adjust these settings, tap the 'Tool Trig Sensitivity' button on the 'System' screen.



On the 'Trigger Sensitivity' screen there are two slider bars, one for the Lever, and one for the Push-to-Start. On each slider there is the following:

- Yellow bar – shows the minimum trigger reading
- Red bar – shows the maximum trigger reading
- White bar – shows the current trigger reading
- Green bar - shows the trigger reading threshold

To adjust the threshold, use the up and down arrow keys to move the green bar up or down the slider. To test, push the lever or pull chuck to move the white bar up to the green threshold bar and verify the tool begins to run when desired.

Tool Calibration

To view the calibration value of the tool connected to the controller, tap the 'Tool Cal' button on the 'System' screen. The calibration value will be displayed, and can be modified if required.

CAUTION: Tapping on the Calibration Value will take you to a screen where the value can be manually changed. This screen is for qualified calibration technicians only. Improperly changing the calibration value of the tool could lead to inaccurate torque readings and potential tool damage.

Controller Information

To view basic information about the controller and to give the controller a name, tap the 'Controller Info' button on the 'System' screen. This screen displays the following:

- Controller Name
- Controller Serial Number
- GUI Board Firmware Version
- Controller Board Firmware Version

Changing the Controller Name: To change the controller name, tap the button on the 'Controller Information' screen that shows the current name, and then enter the new name on the screen.

NOTE: When exporting data to a USB flash drive from the controller, the name of the folder created on that flash drive will be the same name as the controller. This will assist the user if downloading data from multiple controllers onto one single flash drive. See the Data Screen section for more information on downloading data to USB.

Touch Screen Calibration

Should the user feel the need to recalibrate the touch screen, this option is available under the 'System' screen. Tap the 'Touch Screen Cal' button and follow the on-screen directions to complete this process.

LCD Brightness

Should the controller be used in extremely dark or light environments, the LCD touch screen brightness can be adjusted under the 'System' screen. Use the up and down arrow buttons to adjust the brightness. The controller comes factory set at 60%.

Service & Warranty

Service

Should a product need to be returned for any reason, please contact ASG for a return authorization number prior to shipping an item for repair. Call us at (888) 486-6163 or email us at service@asg-jergens.com

- No items will be received without prior authorization
- Be sure to include a brief description of the problem, your company name, address, phone number and contact name
- An ASG technician will contact you with a quotation and information regarding your repair

Warranty

ASG Precision Fastening warrants to the original purchaser buying an ASG-SD2500 product with the intention of use rather than for resale, for a period of one (1) year from the first in-service date or one million (1,000,000) cycles.
Within the warranty period, ASG Precision Fastening will replace or repair those items found to be defective or otherwise fail to conform. The buyer's remedies with respect to any item found to be defective or otherwise not conforming shall be limited EXCLUSIVELY to the right of replacement. In no event shall ASG be liable for any incidental special or consequential damages or for damages in the nature of penalties.

Disclaimer: Seller makes no other warranty whatever, expressed or implied, and all implied warranties of merchantability and fitness for a particular purpose are disclaimed and excluded from this transaction and shall not apply to the goods sold hereunder.

Available Accessories

ASG Precision Fastening offers a range of accessories to theASG-SD2500 Screwdrivers and ASG- CT2500 Controller see the table below for a complete list.

To order, contact Customer Service at (888) 486-6163.

Tools

ASG Part #	Description
ASG-SD2500-10PL	10 in.lb Push/Lever Start Combo Tool
ASG-SD2500-20PL	20 in.lb Push/Lever Start Combo Tool
ASG-SD2500-35PL	35 in.lb Push/Lever Start Combo Tool
ASG-SD2500-50PL	50 in.lb Push/Lever Start Combo Tool
ASG-SD2500-10PS	10 in.lb Push Start Tool
ASG-SD2500-20PS	20 in.lb Push Start Tool
ASG-SD2500-35PS	35 in.lb Push Start Tool
ASG-SD2500-50PS	50 in.lb Push Start Tool
ASG-SD2500-10FX	10 in.lb Fixture Mount Tool
ASG-SD2500-20FX	20 in.lb Fixture Mount Tool
ASG-SD2500-35FX	35 in.lb Fixture Mount Tool
ASG-SD2500-50FX	50 in.lb Fixture Mount Tool

Heavy-Weight Cables

ASG Part #	Description
ASG-CB2500-05HW	5 ft Screwdriver to Controller Cable w/Heavy Weight Connector
ASG-CB2500-10HW	10 ft Screwdriver to Controller Cable w/Heavy Weight Connector
ASG-CB2500-15HW	15 ft Screwdriver to Controller Cable w/Heavy Weight Connector
ASG-CB2500-20HW	20 ft Screwdriver to Controller Cable w/Heavy Weight Connector
ASG-CB2500-25HW	25 ft Screwdriver to Controller Cable w/Heavy Weight Connector
ASG-CB2500-30HW	30 ft Screwdriver to Controller Cable w/Heavy Weight Connector
ASG-CB2500-35HW	35 ft Screwdriver to Controller Cable w/Heavy Weight Connector
ASG-CB2500-40HW	40 ft Screwdriver to Controller Cable w/Heavy Weight Connector
ASG-CB2500-45HW	45 ft Screwdriver to Controller Cable w/Heavy Weight Connector
ASG-CB2500-50HW	50 ft Screwdriver to Controller Cable w/Heavy Weight Connector

Right Angle Cables

ASG Part #	Description
ASG-CB2500-05RA	5 ft Screwdriver to Controller Cable w/Right Angle Connector
ASG-CB2500-10RA	10 ft Screwdriver to Controller Cable w/Right Angle Connector
ASG-CB2500-15RA	15 ft Screwdriver to Controller Cable w/Right Angle Connector
ASG-CB2500-20RA	20 ft Screwdriver to Controller Cable w/Right Angle Connector
ASG-CB2500-25RA	25 ft Screwdriver to Controller Cable w/Right Angle Connector
ASG-CB2500-30RA	30 ft Screwdriver to Controller Cable w/Right Angle Connector
ASG-CB2500-35RA	35 ft Screwdriver to Controller Cable w/Right Angle Connector
ASG-CB2500-40RA	40 ft Screwdriver to Controller Cable w/Right Angle Connector
ASG-CB2500-45RA	45 ft Screwdriver to Controller Cable w/Right Angle Connector
ASG-CB2500-50RA	50 ft Screwdriver to Controller Cable w/Right Angle Connector

ESD Tool Cables

ASG Part #	Description
ASG-CB2500-05ESD	5 ft ESD Screwdriver to Controller Cable
ASG-CB2500-10ESD	10 ft ESD Screwdriver to Controller Cable
ASG-CB2500-15ESD	15 ft ESD Screwdriver to Controller Cable
ASG-CB2500-20ESD	20 ft ESD Screwdriver to Controller Cable
ASG-CB2500-25ESD	25 ft ESD Screwdriver to Controller Cable

Extension Cables

ASG Part #	Description
ASG-CB2500-20EX	20 ft Controller Cable Extension Cable
ASG-CB2500-30EX	30 ft Controller Cable Extension Cable
ASG-CB2500-50EX	50 ft Controller Cable Extension Cable
ASG-CB2500-70EX	70 ft Controller Cable Extension Cable

Optional Accessories

ASG Part #	Description
ASG-AC2500-FG	Foam grip for In-line SD2500 Screwdriver
ASG-AC2500-FGNC	Foam grip for In-line SD2500 Screwdriver w/no cutout
ASG-AC2500-PG	Pistol grip attachment for In-line SD2500 Screwdriver
ASG-AC2500-SB	Suspension bail for all SD2500 Screwdriver
ASG-AC2500-MPDF	Mounting plate, double flange (fixture tools)
ASG-AC2500-MPSF	Mounting plate, single flange (fixture tools)
ASG-AC2500-SPEX	Spindle Unit Extended
ASG-AC2500-SP	Spindle Unit
ASG-AC2500-IC20	CT2500 Controller Input Cable - 20ft
ASG-AC2500-OC20	CT2500 Controller Output Cable - 20ft
ASG-AC2500-BT4	CT2500 Controller 4-position Bit Tray
ASG-AC2500-BT6	CT2500 Controller 6-position Bit Tray

Replacement Parts

ASG Part #	Description
MTQ10057	Push to Start Spring
MTQ10090	Throttle Lever Assembly
MTQ10061	Throttle Lever Spring
MTQ10062	Throttle Lever Block
MTQ10026	Throttle Lever/Block Pin

Networking Modules

ASG Part #	Description
ASG-NW2500-PFCS	PFCS-Chrysler
ASG-NW2500-ACOP	ACOP
ASG-NW2500-DN	DeviceNet
ASG-NW2500-EIP	Ethernet IP