STANLEY Assembly Technologies

Alpha Controller User Manual v3.0

Important Safeguards

For your protection, please read these instructions completely, and keep this manual for future reference. Carefully observe and comply with all warnings, cautions and instructions placed on the equipment or described in this manual.

www.StanleyAssembly.com
QA Alpha V 3.0 0308

Contents

Getting Started

This manual is intended to promote proper and safe use and give guidance to owners, employers, supervisors, and others responsible for training and safe use by operators and maintainers. Please contact your Stanley Sales Engineer for further information or assistance on Stanley training or assembly tool operations.

1.1 Warnings and Cautions

Definitions

The safety notices and warnings for protection against loss of life (the users or service personnel) or for the protection against damage to property are highlighted in this document by the terms and pictograms defined here. The terms used in this document and marked on the equipment itself have the following significance:

Warning - Indicates that death or severe personal injury **may** result if proper precautions are not taken.

Caution - Indicates that property damage may result if proper precautions are not taken.

 - Indicates an electrical hazard. This icon appears as a part of a Danger, Warning, or Caution notice.

 - Indicates a general hazard. This icon appears as a part of a Danger, Warning, or Caution notice.

 - Indicates that eye protection should be worn. This icon appears as a part of a Danger, Warning, or Caution notice.

 - Read and understand all the safety recommendations and all operating instructions before operating tools and controllers.

 - Indicates an item of special interest.

W A R N I N G
To Avoid Injury: • Read and understand all the safety recommendations and all operating instructions before operating tools and controllers. Save these instructions for future reference. • Train all operators in the safe and proper use of power tools. Operators should report any unsafe condition to their supervisor. • Follow all safety recommendations in the manual that apply to the tools being used and the nature of the work being performed. • Verify that all warning labels illustrated in this manual are readable. Replacement labels are available at no additional cost from **STANLEY ASSEMBLY TECHNOLOGIES**.

Qualified Personnel

W A R N I N G

To Avoid Injury:

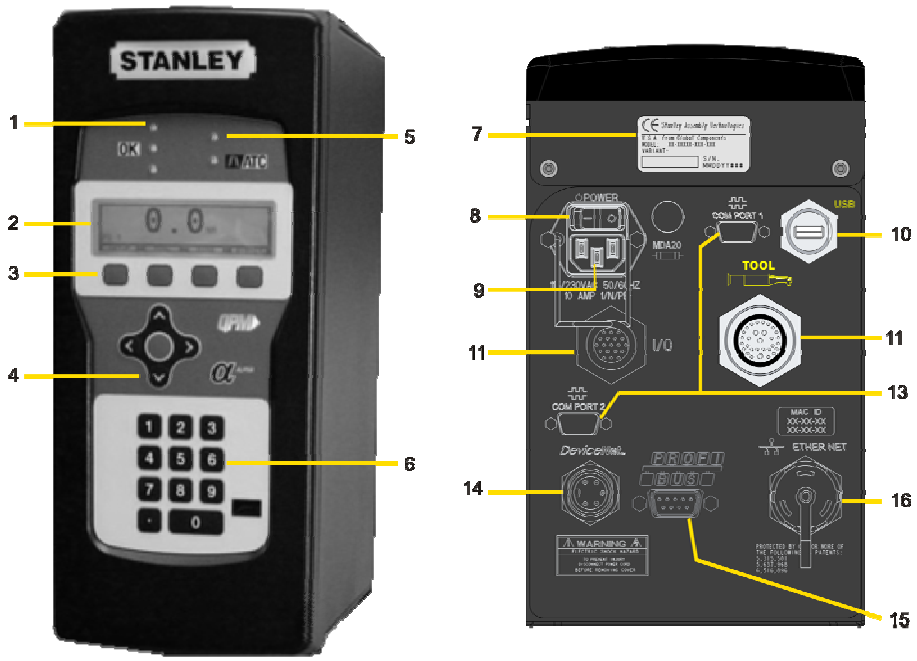
- Only allow suitably qualified personnel to install, program, or maintain this equipment and or system.
- These persons must be knowledgeable of any potential sources of danger and maintenance measures as set out in the Installation, Operations, and Maintenance manual.
- This product must be transported, stored, and installed as intended, and maintained and operated with care to ensure that the product functions correctly and safely.
- Persons responsible for system planning and design must be familiar with the safety concepts of automation equipment.

1.2 User Manual Conventions

Underlined text indicates glossary terms. Menu options appear in ***Arial 10 bold italic***.

1.3 Specifications, Layout and Display

Dimensions	Width:	6.0 in	152 mm		
	Height:	14.2 in	361 mm		
	Depth:	10.3 in	262 mm		
Weight:		17 lb	7.7kg		
Operating Conditions:	Temperature:	32 to 122 ºF (0 to +50 ºC)			
	Humidity:	0 to 95 % non-condensing			
Power Source:	100 – 120 VAC, 50/60 Hz, 15 service or 220 – 240 VAC, 50/60 Hz, 15 service				
Power Consumption:	Stand by:		0.2 A (amperes)		
	Continuous:		1-2.5 kVA		
Tool Motor Power:	Service Rating:	E02/E_23	E_33/E_34	E44/E45	E55
Consumption	@ 115 VAC:	15A	15A	20A	-
	@ 230 VAC:	10A	10A	10A	16A
	Continuous kVA:	0.3	0.7	1	1.7



Item	Functional Description
1	Red, Green, Yellow LEDs for Limits Evaluation
2	Display
3	Function Keys with Active Label Above
4	Cursor Keys with Center Button to Expand Lists
5	Maintenance Due and ATC Active LEDs
6	Numeric Keypad to Enter Numbers or Select Options
7	Controller Label and Serial Number
8	Power Switch
9	Power Input
10	USB Port for Data Transfer
11	Optional 24 VDC Input/Output Connector
12	Tool Connector
13	Serial Connectors
14	Optional Device-Net Connector
15	Optional Profibus Connector
16	Ethernet Connector

1.4 Installation Instructions

W A R N I N G

To Avoid Injury:

- Always wear eye and foot protection when installing equipment.
- Only use equipment and accessories specifically designed to operate with Stanley assembly tools and use them only in the manner for which they are intended.
- Do not install worn, damaged, or modified equipment that may be unsuitable for safe use.
- Train all operators in the safe and proper use of power tools. Operators should report any unsafe condition.
- Store idle tools and accessories in a safe location accessible only by trained persons.
- Disconnect power source (air, electricity, etc.) from tool prior to making adjustments, changing accessories, or storing.
- Prior to operation, always check and test tools and accessories for damage, misalignment, binding or any other condition that may affect operation. Maintenance and repair should be performed by qualified personnel.
- Do not operate tools in or near explosive environments or in the presence of flammable liquids, gases, dust, rain or other wet conditions.
- Keep the work area clean, well lit and uncluttered.
- Keep unauthorized personnel out of the work area.
- Install modules in dry, indoor, non-flammable, and non-explosive environments only.
- Qualified personnel should perform installation and programming. Follow all manufacturer installation instructions, applicable regulatory electrical codes, and safety codes.
- Limit module access to trained and qualified personnel. Lock module cabinets.

DC Electric Tools & Controllers:

- Install tools in dry, indoor, non-flammable, and non-explosive environments only – Humidity: 0 to 95% non-condensing and Temperature: 32 to 122 ºF (0 to +50 ºC).
- Installation, maintenance and programming should be performed by qualified personnel. Follow all manufacturer installation instructions and applicable regulatory electrical codes and safety codes.
- Tool and controller plugs must match the outlet. This equipment must be earth grounded. Never modify a plug in any way or use any adaptor plugs.
- Avoid body contact with electrically energized surfaces when holding a grounded tool**.**
- Prior to connecting a power source, always ensure the tool or controller is turned off.
- Limit controller access to trained and qualified personnel. Lock controller cabinets.

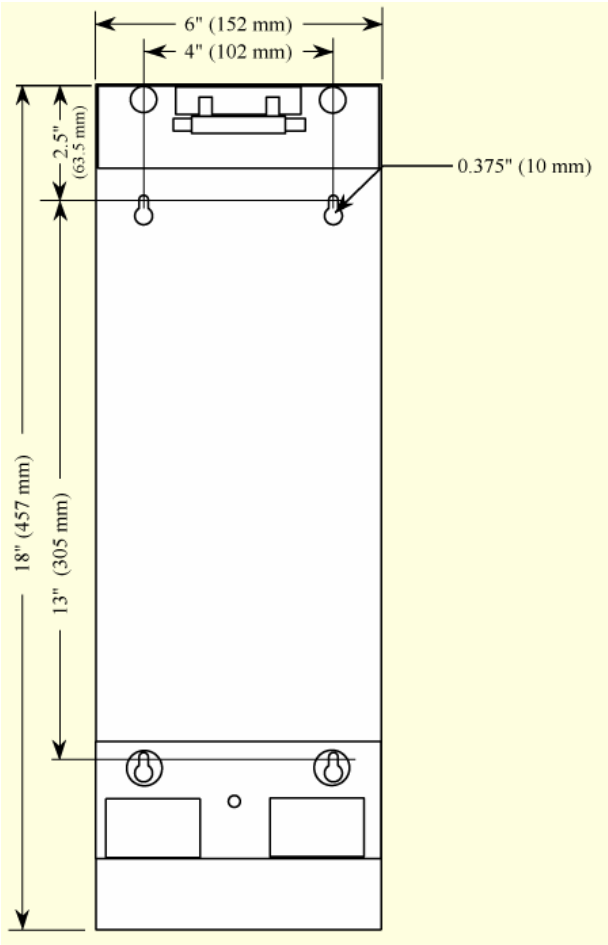
W A R N I N G

ELECTRICAL HAZARD

To Avoid Injury:

- Do not use this product near water, for example near a washbowl, wet basement, or the like.
- This product should be located away from heat sources such as radiators or other devices that produce heat.
- This product should not be subjected to vibration or shock or in close contact with water or other liquids.
- To minimize electrical interference, place the module as far away from possible sources of electrical noise, such as arc welding equipment.

1.4.1 Plinth



Plinths are used as wall mount brackets for Alpha Controllers. This allows for easy installation, quick change out and provides for neat cable management.

Plinths and Alphas can be mounted individually for single tool operation or grouped for multiple applications.

Plinths connect to each other with four 10-32 machine screws through openings on the top and right side to threaded openings on the bottom and left side. When plinths are mounted next to each other, the center to center distance between the mounting holes in different plinths is 2" (50.8 mm). When plinths are mounted one above another, the center to center distance between the mounting holes in different plinths is 6" (152.4 mm).

1. Install the Alpha Controller either directly to the wall or to a plinth.

2. Fasteners through four mounting holes secure plinths to a wall or other surface. Plinths can be connected using 10-32 threaded holes on the bottom and left side and through holes on the top and right side.

1.4.2 Controller

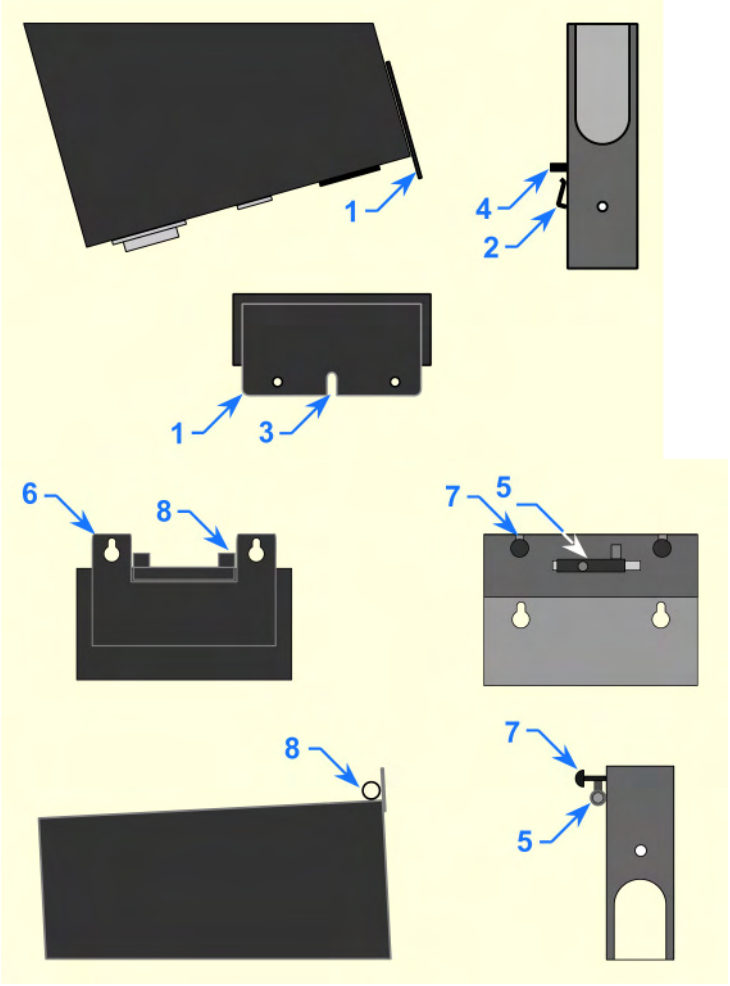
1. Make sure the bolts of the barrel-latches [5] on the plinth are retracted. Place the lower flange of the Alpha controller [1] into the lip [2] on the plinth.

2. Align the slot [3] in the flange with the lower mounting-pin [4] on the plinth while placing. Rotate the top of the controller back towards the plinth.

3. Place the openings on the upper flange of the controller [6] over the upper mounting pins [7] on the plinth. Release the bolts on the barrel-latches [5] making sure the bolts enter the two barrels [8] on the controller.

4. Connect the Alpha Controller to a power source.

5. Connect the tool cable to the Alpha controller and press the power switch on the controller.

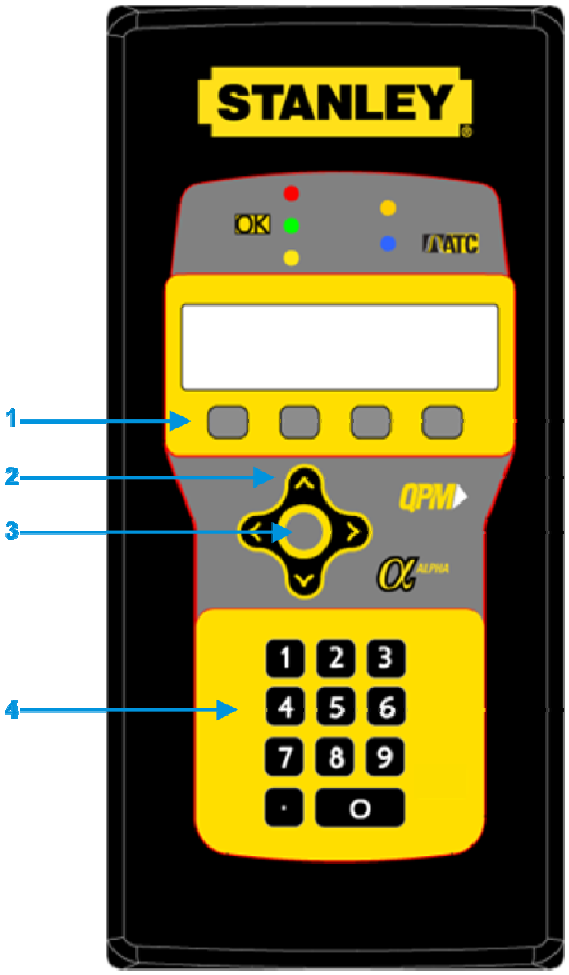


1.4.3 Alpha Controller E-Stop Precaution

W A R N I N G
INTEGRATED E-STOP CIRCUIT NOT PRESENT **To Avoid Injury:** When an Alpha controller connects to a tool where a fault can result in personal injury or substantial damage to property, an E-stop circuit is required. An E-stop circuit must be created in the external power supply line.

Programming

2.1 QA Alpha Controller Navigation and Programming



The Alpha controller's three navigation and input areas facilitate menu navigation, selection and data input:

- Menu buttons
- Arrows and Toggle button
- Keypad

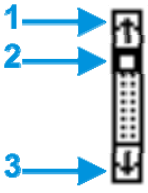
Labels for the four interactive menu buttons [**1**] change with menu selection. If the label is blank, the button has no function for the current display.

The up/down arrows [**2**] navigate menu and character selections; the left/right arrows enable backspace and space, as well as navigate between tabs. The toggle button [**3**] switches between modes and selects/accepts choices (synonymous with ***OK*** menu button).

The numeric keypad [**4**] facilitates data input, menu selection (where applicable) and job/task selection when enabled.

2.2 Display

2.2.1 Scroll Bar



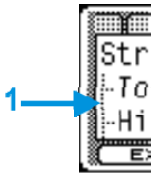
A scroll bar appears when more items are available than space within the display to allow them to be visible. The up arrow [**1**] and down arrow [**3**] direct scrolling. The black/white scroll bar [**2**] indicates which list items are currently displayed. No scroll bar means all items are currently displayed.

To navigate between menu items, use the up/down arrows or, if available, use the keypad to identify the corresponding menu item number.

2.2.2 Dropdown

A dropdown [**1**] arrow appears to the right of menu items with multiple choices. To view these choices, first select the menu item using the up/down arrows or, if available, use the keypad to identify the corresponding menu item number. Then, use the toggle button to expand the dropdown. The up/down arrows scroll through the choices and the toggle button selects/accepts the highlighted choice.

2.2.3 Menu Tree

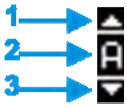


A menu tree [**1**] appears beside related menu items.

2.2.4 Tabs

Tabs [**1**] appear at the top when multiple menu selections exist. To navigate between tabs, use the left/right arrows. The active tab is white; inactive tabs are grey.

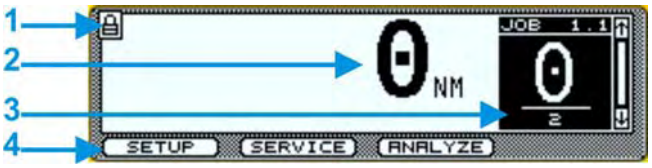
2.2.5 Character Scrollbar



This scrollbar enables adding: a-z, A-Z, 0-9, space, _, -, &, *, $, #, @, !, and a period (language and/or field determines character availability). The up arrow [**1**] and down arrow [**3**] direct scrolling with the active character [**2**] displayed between. Use the Alpha Controller's up/down arrows to scroll through character choices. The left arrow backspaces. The right arrow moves one position to the right to input next character. Push toggle button or OK menu button to accept entry.

The following screens contain the character scrollbar option: Job (Name), Job (Barcode ID), Task (Name), Step (Name), System (General), System (Users), System (Date/Time), System (Network), System (Maintain).

2.2.6 Run Display



Displays last torque reading and units [**2**] when a tool is connected. Icons [**1**] identify controller events (see list below). Specifies current job [**3**]. The run screen displays unless other programming functions [**4**] are in use.

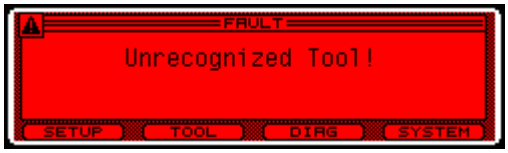
Run Display Codes indicate why a tightening cycle shutoffs prior to completion.

Run Display Code	Description
TIME	Tightening time exceeds programmed cycle abort time value
STOP	Spindle stopped by either the operator or other device
125%	Spindle stopped due to torque achieving greater than 125% torque limit for the spindle
FAULT	Precedes a fault described in 2.3
STALL	Spindle in stall status

Alpha Controller Icons

Icon	Status	Description
	Locked	Password required to make changes
	Unlocked	Changes possible, automatically re-locks in time
	Busy/working	Wait
	Message waiting	Check the run screen
	Warning system not operable	Check the run screen
	Force on or off	Identifies an input/output forced on or off
	Stop	No strategy selected

2.3 Faults



The display background color in normal operation is white. In the event of a fault, the display background becomes red and the fault description appears on screen.

System Faults:

Overcurrent Fault!

Logic Voltage Fault!

Position Feedback Fault!

Transducer Span Fault!

Temperature Fault!

Unrecognized Tool!

Tool Communications!

Transducer Current Fault!

Transducer Zero Fault!

NO STRATEGY SELECTED!

Can't run the wizard! Unknown Tool!

2.4 Log

From the main menu (run display), press the down arrow to view the log of controller events.

The log lists events by occurrence date and time using the internal clock as set by the user. Events included in the log are rundowns and faults.

The data stored for each rundown includes:

????

The data stored for each fault includes:

????

To access the data, use the up/down cursor keys to scroll. Highlight an event and press the toggle key to view the event's data screen. Use the up/down cursor keys to scroll through the data if there is more than will fit on the screen.

The data cannot be exported from the log screen. This action is performed via the STATS screen under Analyze. See 2.5.6.

2.5 Alpha Controller Programming

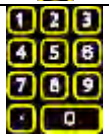
W A R N I N G

EXCESSIVE TORQUE CONDITION
To Avoid Injury:

- Only trained and qualified personnel should program controllers.
- Never set control limits above the maximum rating of the tool.
- Setting control limits above the maximum rating of the tool can cause high reaction torque.
- Always test for proper tool operation after programming the controller.

The controller uses three main menus to display information and enable programming:

- ***Setup*** menu
- ***Service*** menu
- ***Analyze*** menu

Icon Legend	Icon Description	Navigation
	Menu Buttons	Press to activate menu option noted above button.
	Left/Right Arrow Keys	Navigate tabs as well as backspace and space.
	Up/Down Arrow Keys	Scroll through menu selection and character selection.
	Toggle Button	Selects option for data input, accepts changes.
	Numeric Keypad	Data input and, when applicable, menu selection. Can be used for job/task selection when enabled to do so.

The left column shows the currently defined Alpha Controller settings and menu choices. The Options Screen column shows options for each selection. Screen navigation options appear above each screen.

Default Screens	Options Screen
	

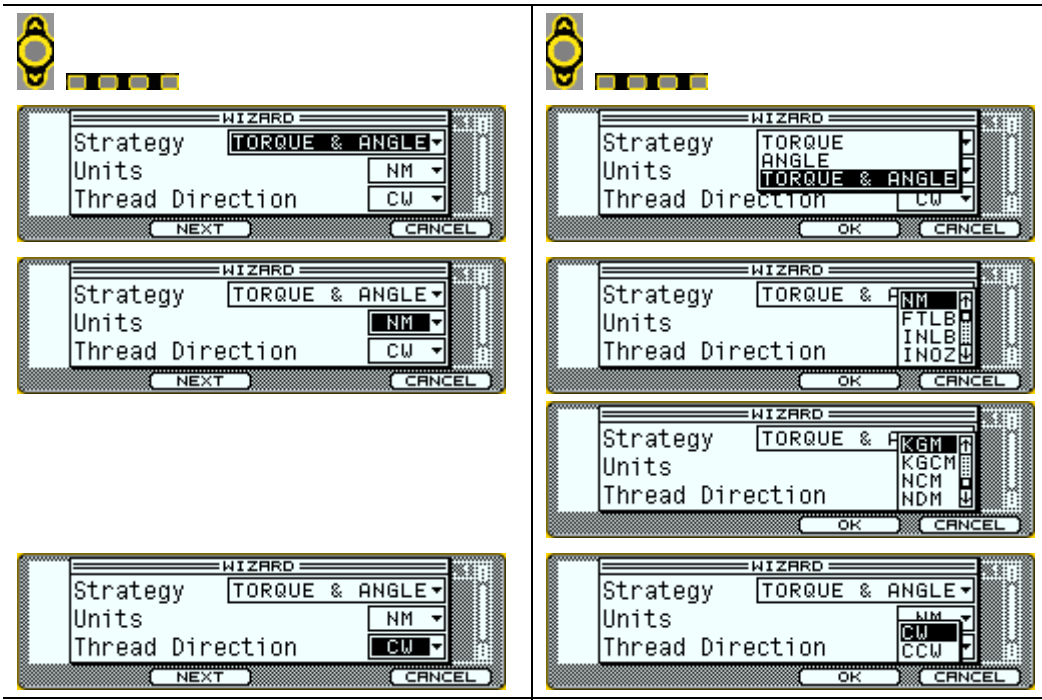
2.5.1 Setup Menu: 1. Jobs

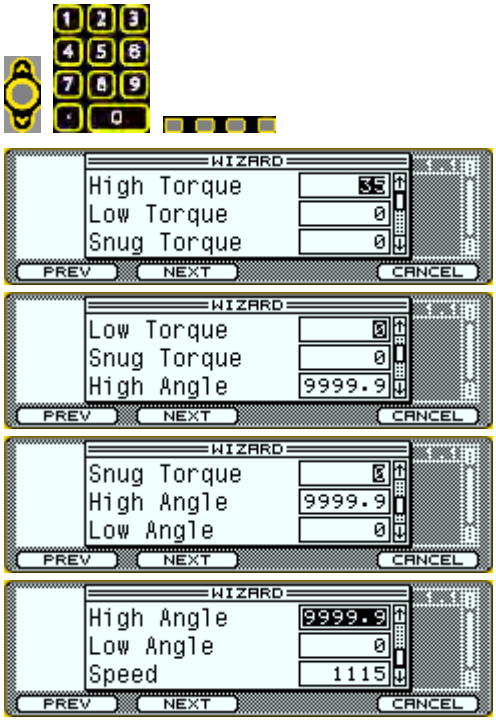
The ***Setup*** menu programs the controller to operate a spindle or tool. Settings are saved per Job with optional Task and Step assignments. Most controllers will operate with a single Job, Task and Step. Tasks control tool operation for tightening a fastener which can have one or more steps. Steps are defined by available strategies such as TC/AM (Torque Control, Angle Monitoring). The Wizard can be used to setup a Task for simple rundowns. Creating a name for Jobs, Tasks and Steps is optional but helpful when multiples Jobs and Tasks exist.

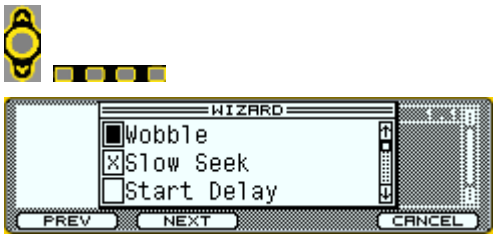
2.5.1.1 Wizard Screens

Wizard Screens	Options Screen

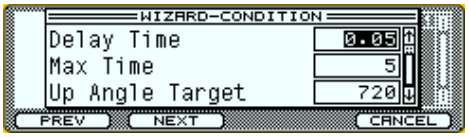
The ***Wizard*** assists with programming the controller to assign a Task which operates a single spindle. To function, the ***Wizard*** requires a tool to be connected. This example shows Torque & Angle Strategy. Selecting another Strategy affects subsequent screen options. The wizard automatically appears when there are no configured jobs. To access the wizard when jobs exist, choose Setup, 1. Jobs, Manage, 1. Add, then choose before or after selected tab.

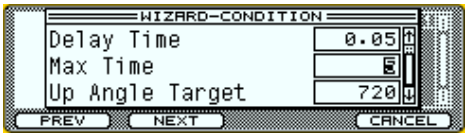


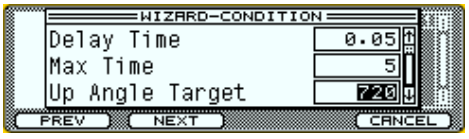


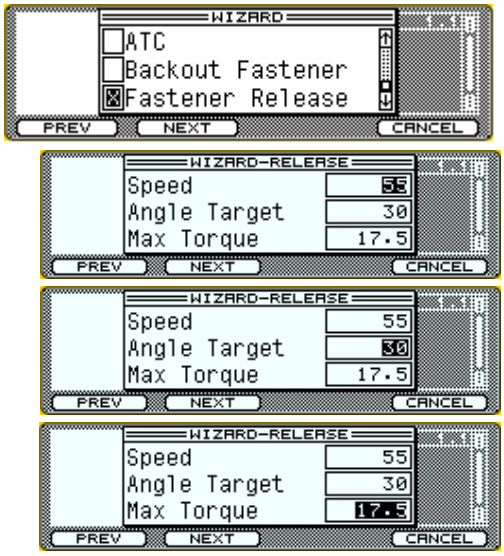
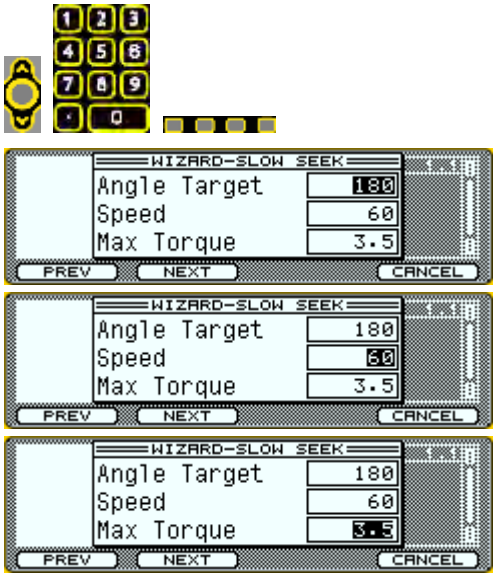
Wizard Screens	Options Screen
 	
	    
	   

Wizard Screens	Options Screen

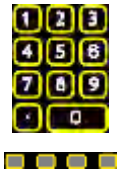
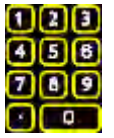
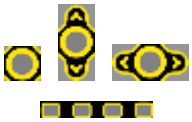
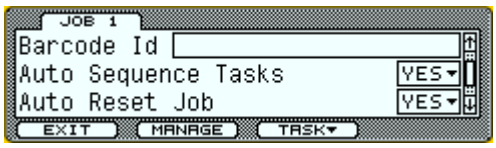
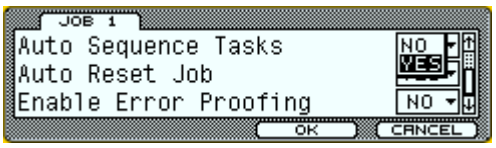
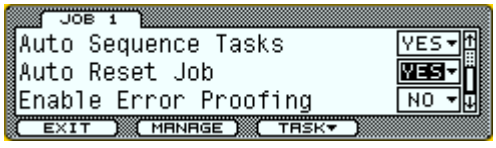


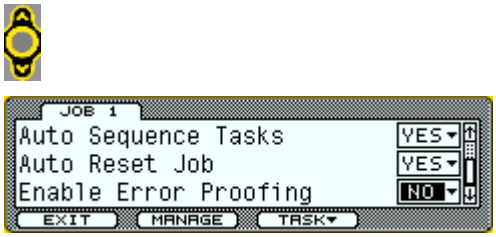
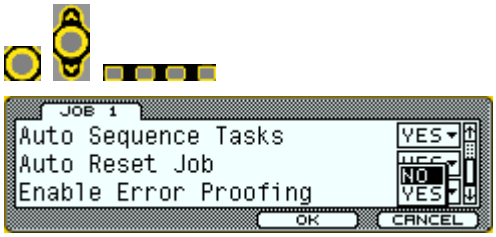




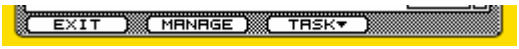
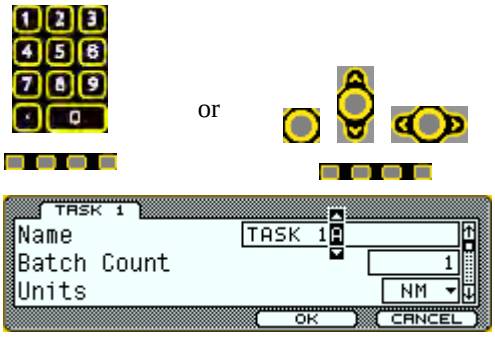
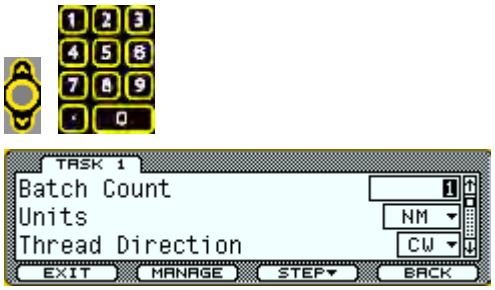
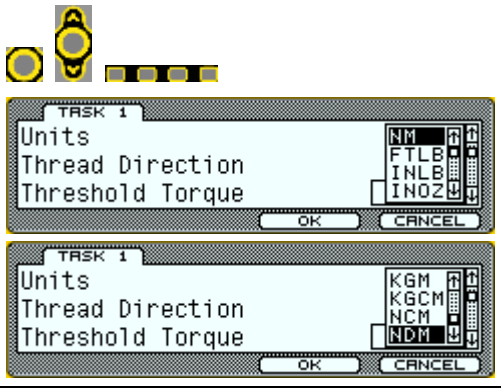
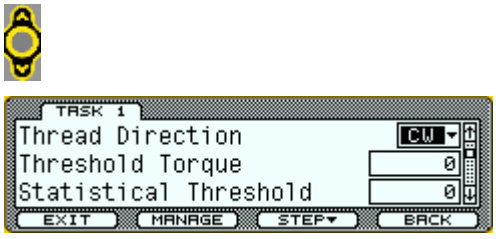
Wizard Screens	Options Screen
	
	
	

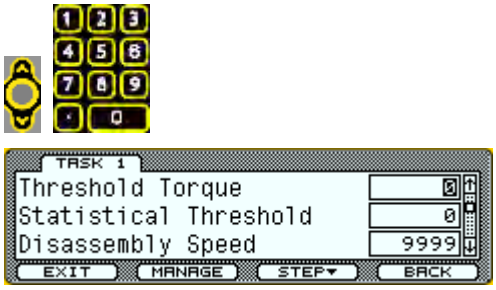
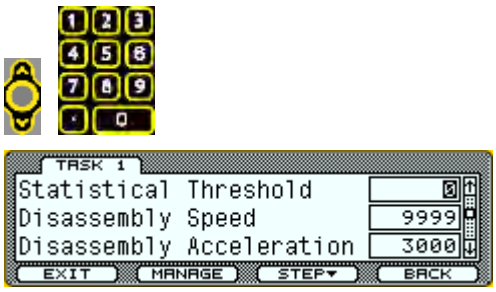
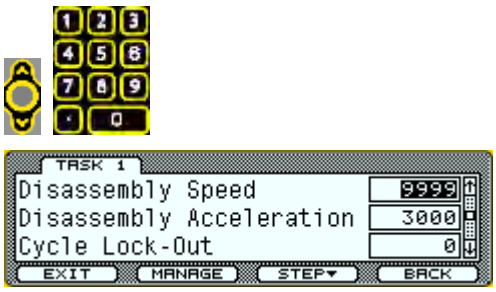
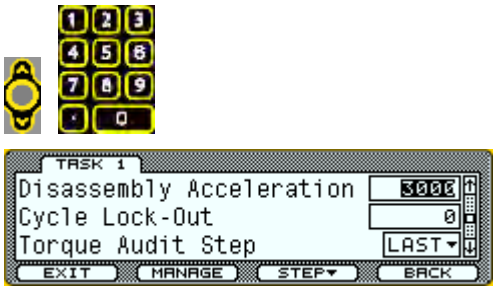
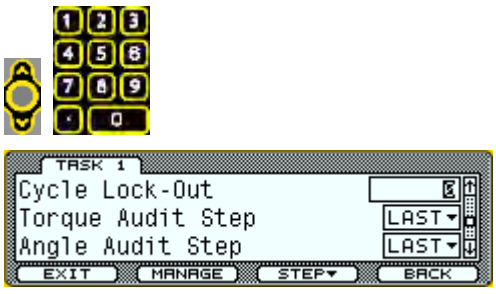
2.5.1.2 Setup: Job Tab

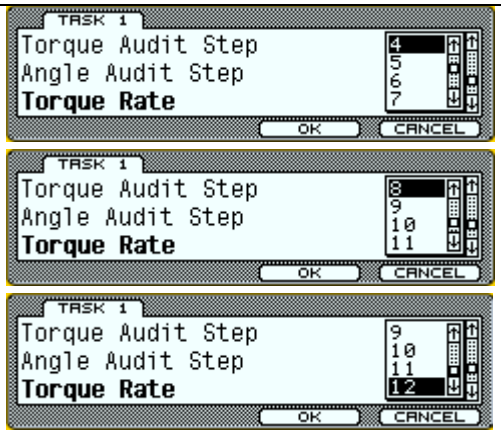
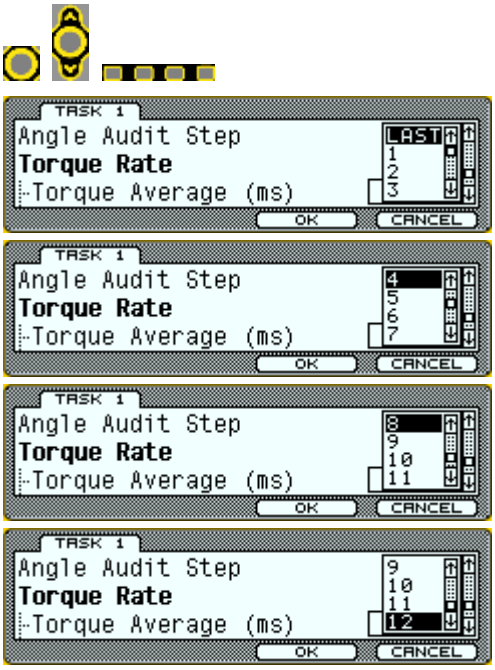
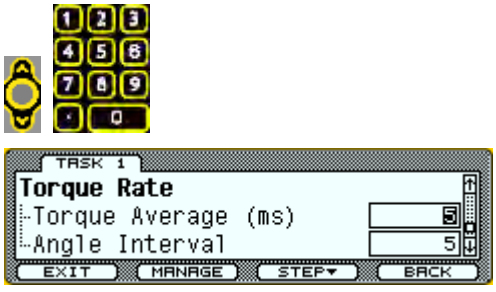
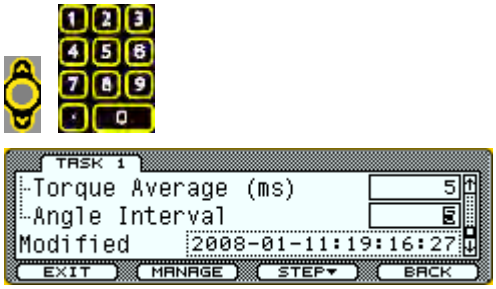
Job Tab Screens	Options Screens
Tool settings apply to all Tasks.	
 	
 	 or  
 	 
 	 
 	 

Job Tab Screens	Options Screens
	

2.5.1.3 Setup: Task Button

Task Tab Screens	Options Screens
A maximum of 99 tasks can be created.	
	
	
	
	
	

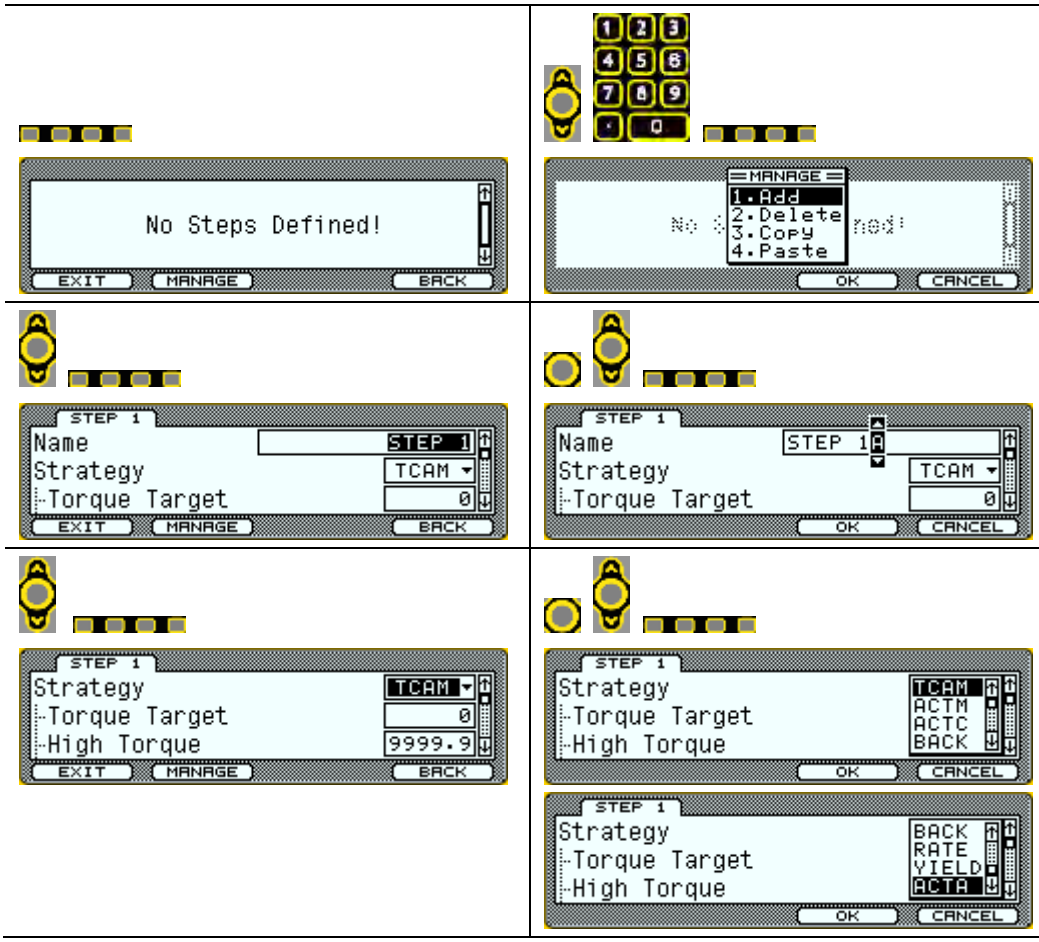
Task Tab Screens	Options Screens
	
	
	
	
	
	

Task Tab Screens	Options Screens
	
	
	
	

2.5.1.4 Setup: Step Button (Step 1 – Step 12)

Step Screens (Step 1 – Step 12)	Options Screens

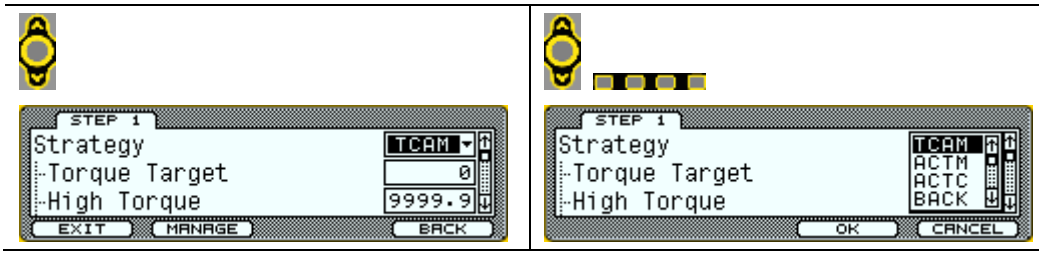
Step settings affect only the active Task. Each strategy selection has different configuration options.

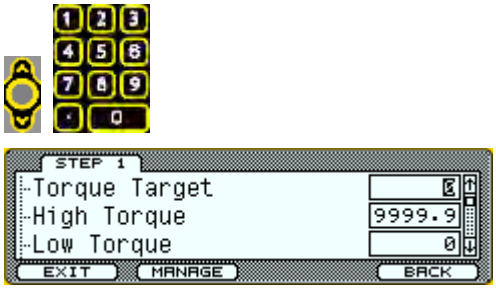
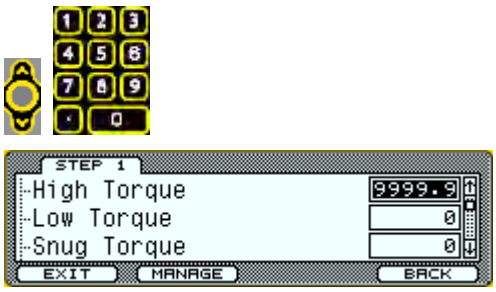
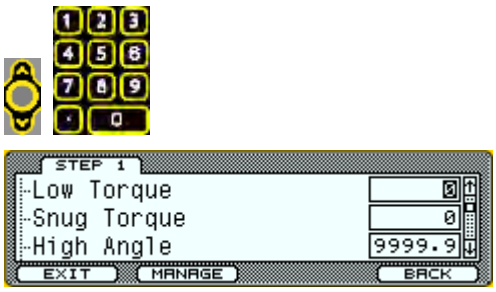
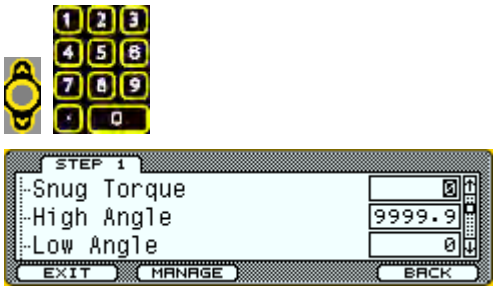
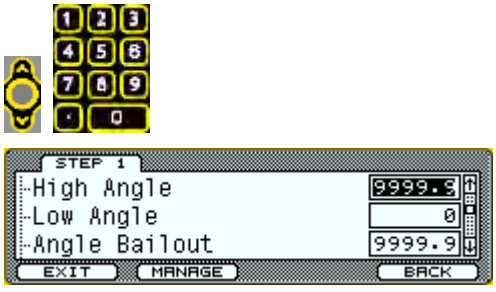


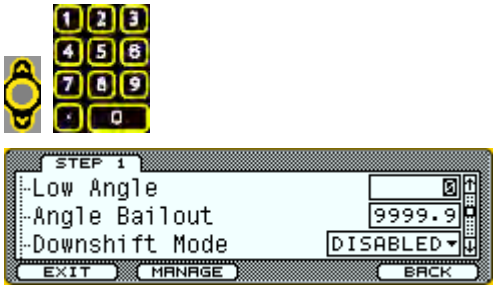
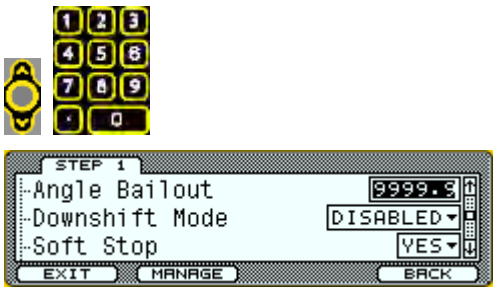
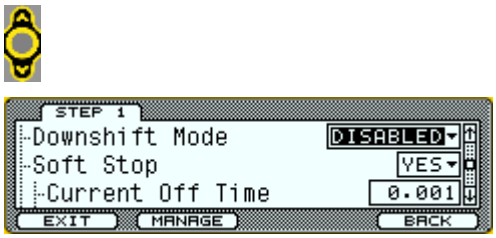
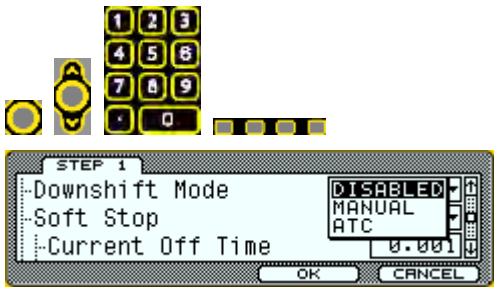
2.5.1.4.1 Strategy TC/AM

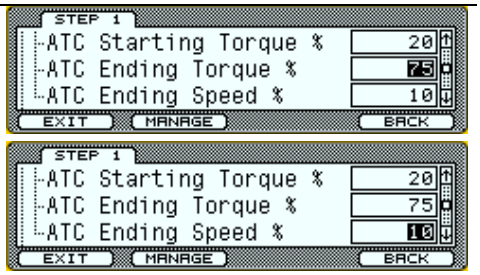
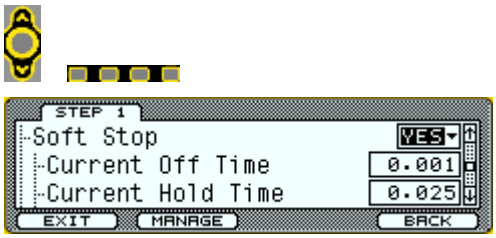
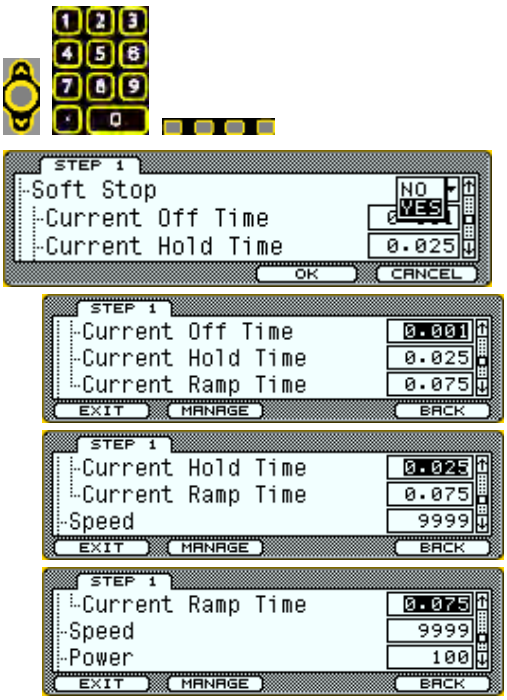
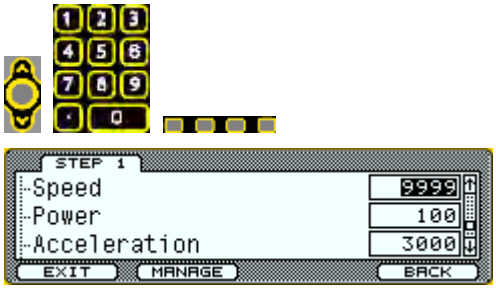
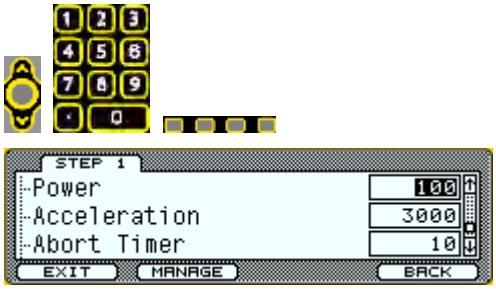
Strategy TC/AM Screens	Options Screens

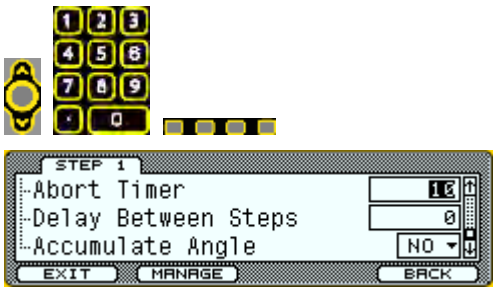
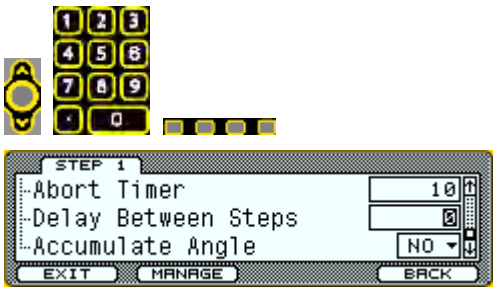
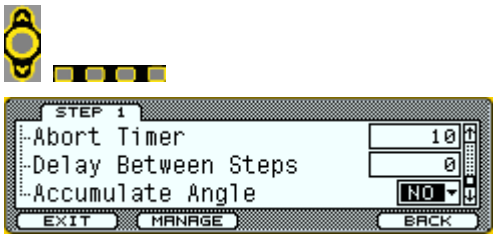
Step settings affect only the active Task.



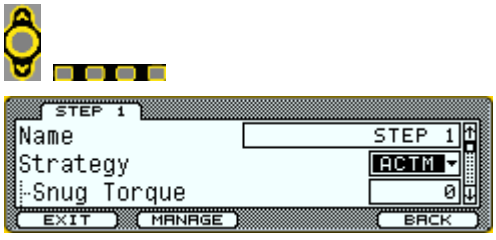
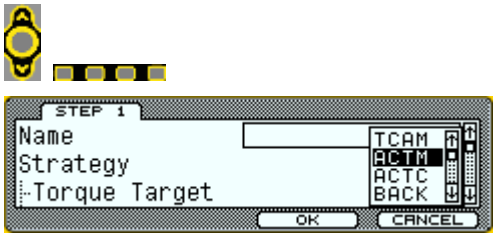
Strategy TC/AM Screens	Options Screens
	
	
	
	
	

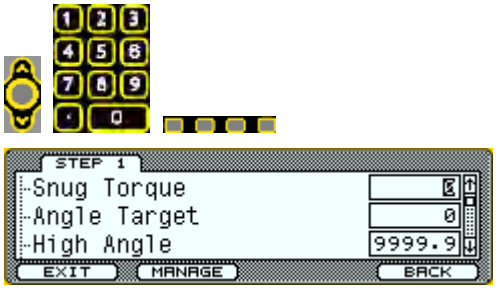
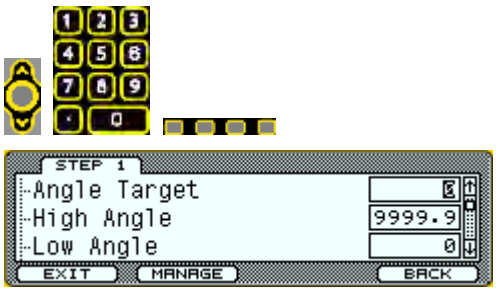
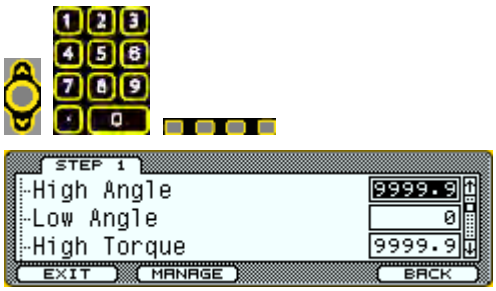
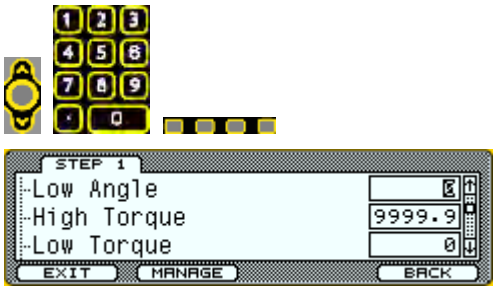
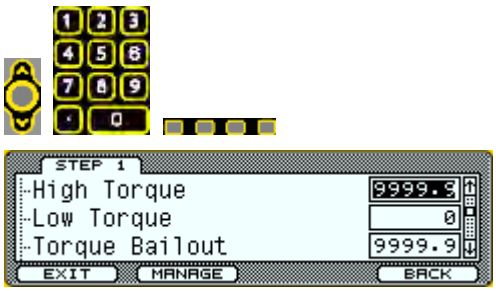
Strategy TC/AM Screens	Options Screens
	
	
	     

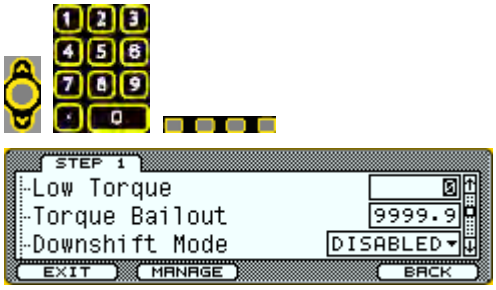
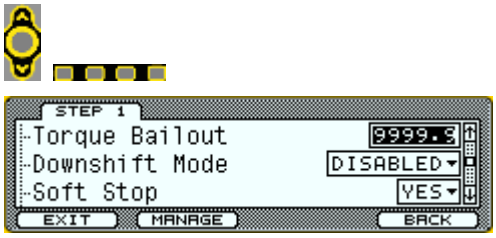
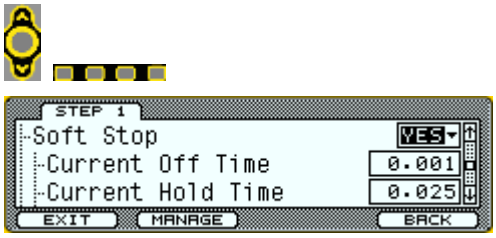
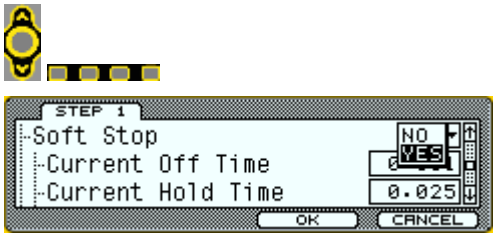
Strategy TC/AM Screens	Options Screens
	
	
	
	

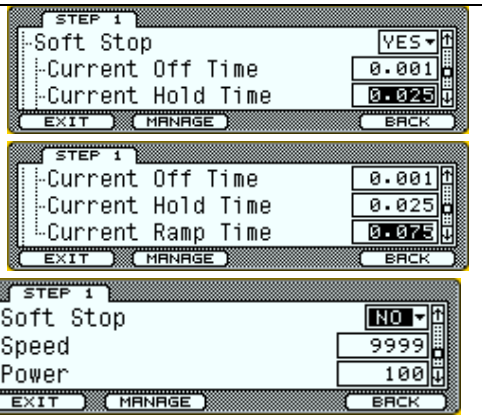
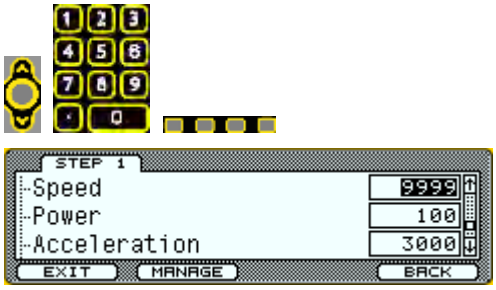
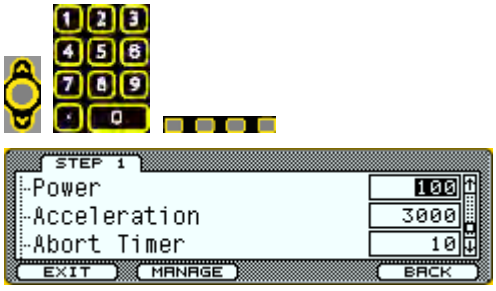
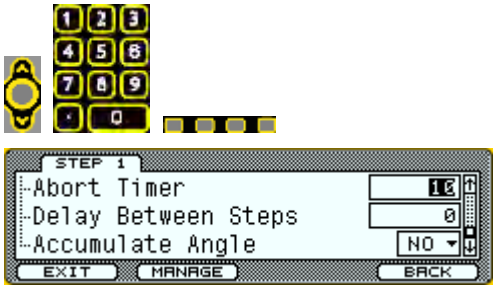
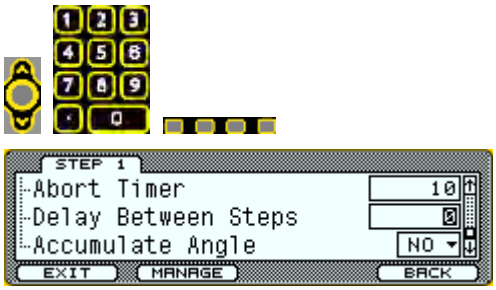
Strategy TC/AM Screens	Options Screens
	
	
	
	

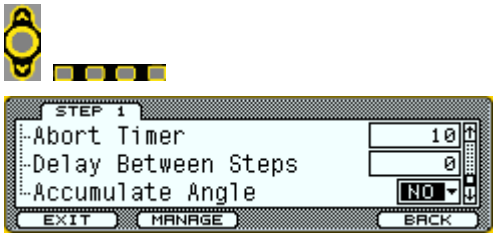
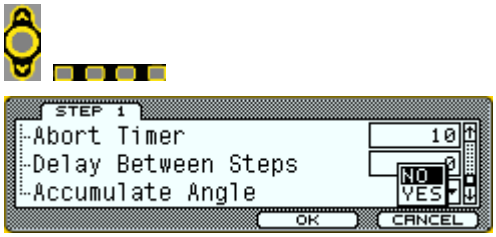
2.5.1.4.2 Strategy AC/TM

Strategy AC/TM Screens	Options Screen
Step settings affect only the active Task.	
	

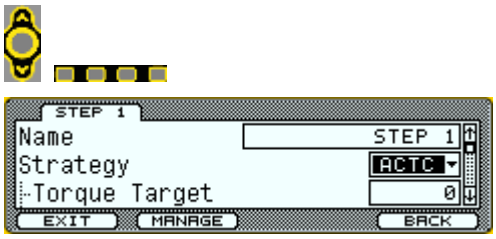
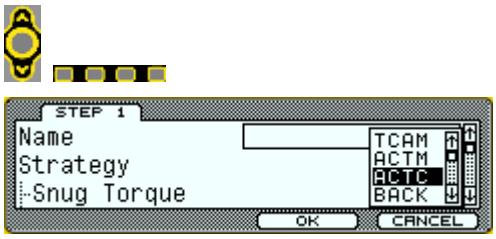
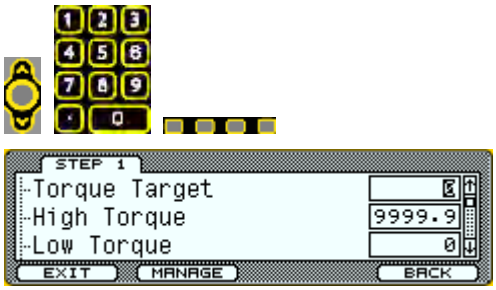
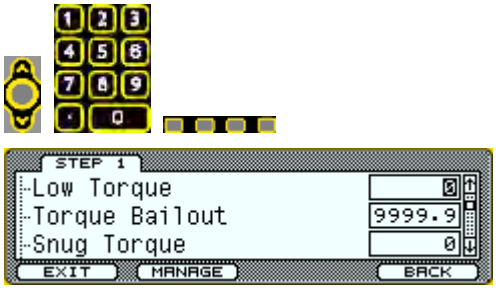
Strategy AC/TM Screens	Options Screen
	
	
	
	
	

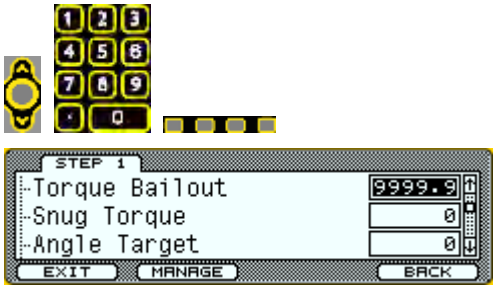
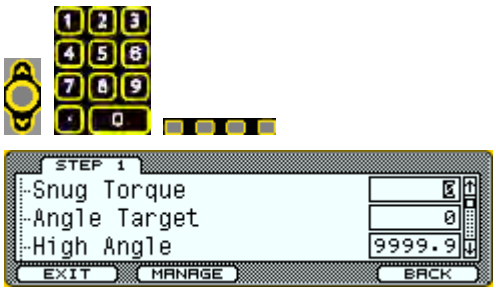
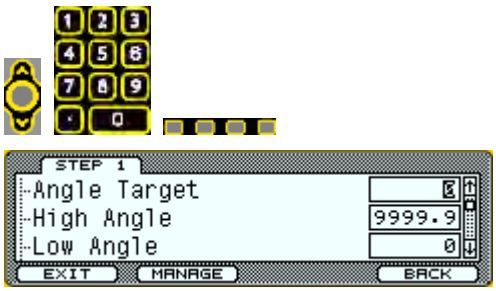
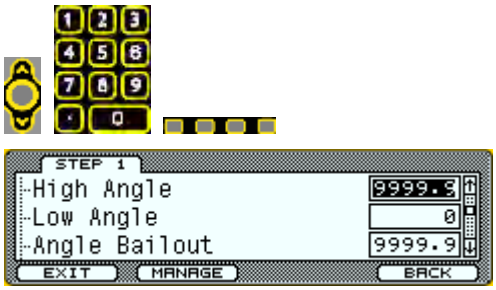
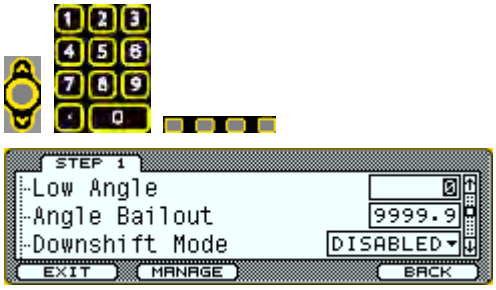
Strategy AC/TM Screens	Options Screen
	
	
	   
	 

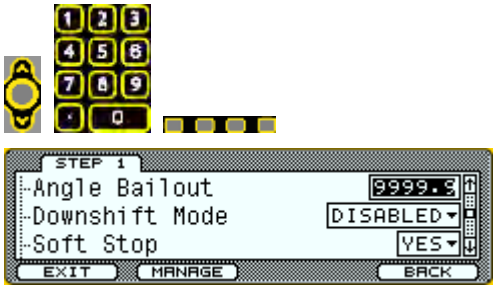
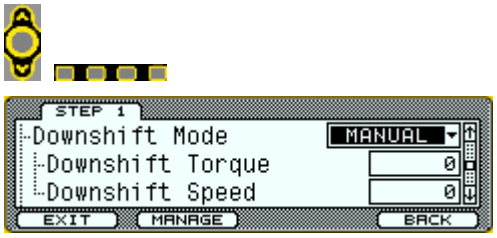
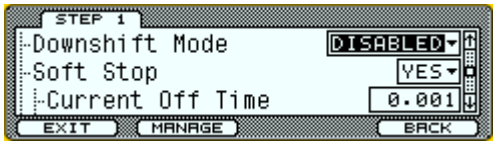
Strategy AC/TM Screens	Options Screen
	
	
	
	
	

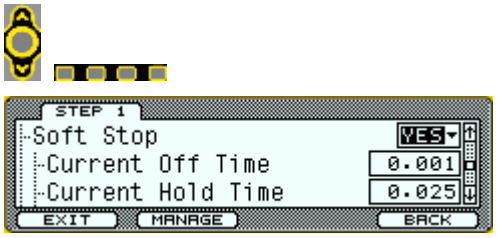
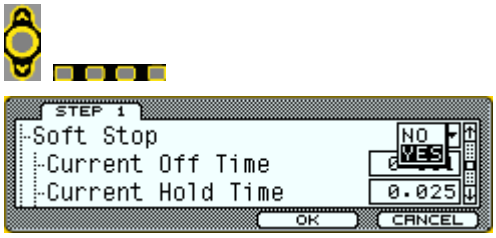
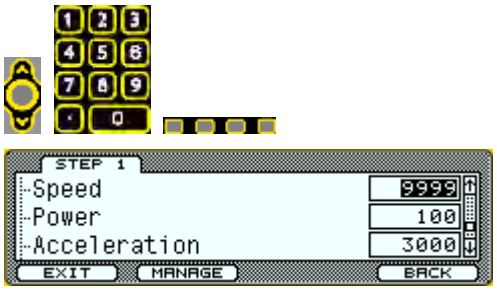
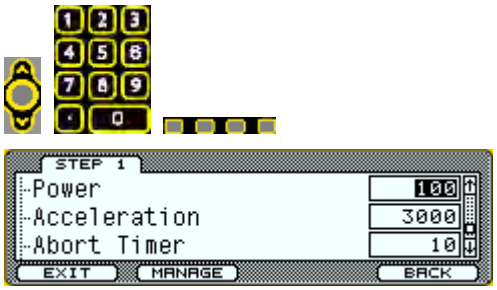
Strategy AC/TM Screens	Options Screen
	

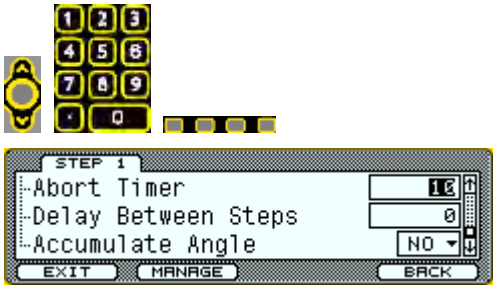
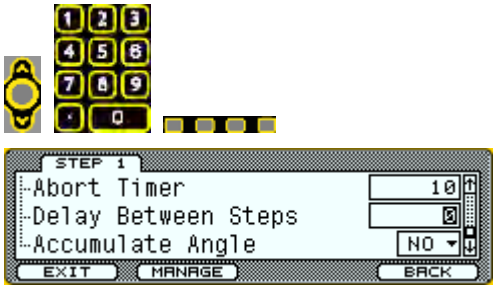
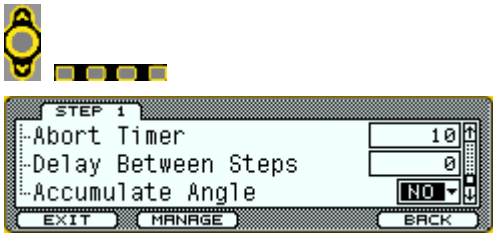
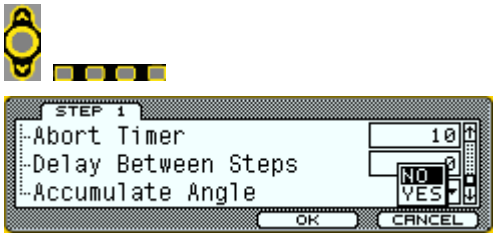
2.5.1.4.3 Strategy AC/TC

Strategy AC/TC Screens	Options Screen
Step settings affect only the active Task.	
	
	
	
	

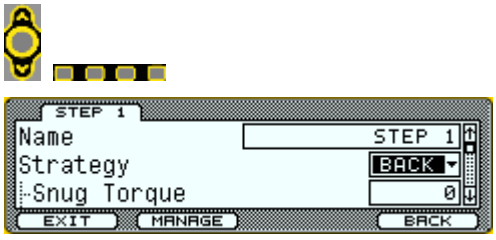
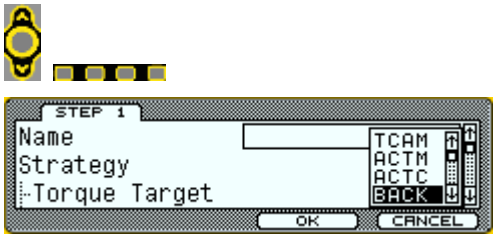
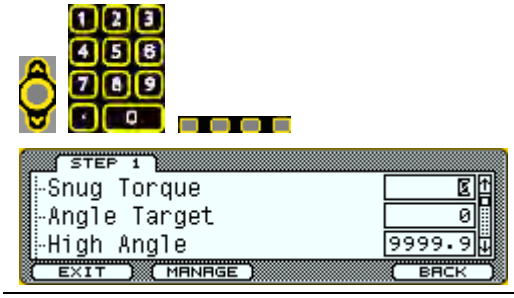
Strategy AC/TC Screens	Options Screen
	
	
	
	
	

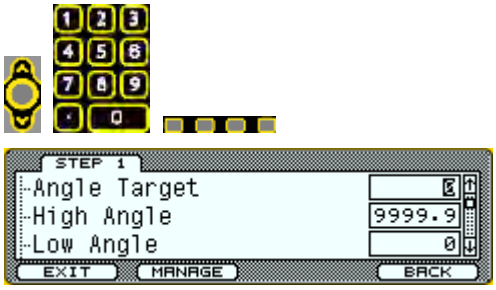
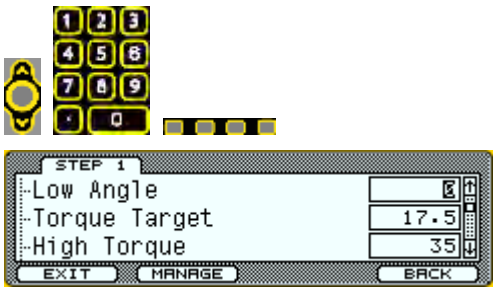
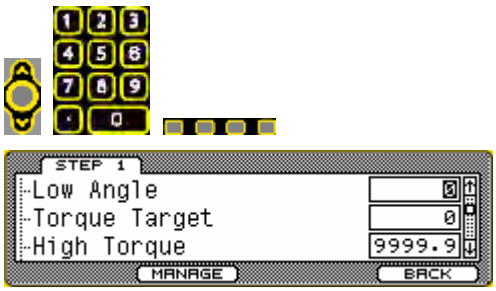
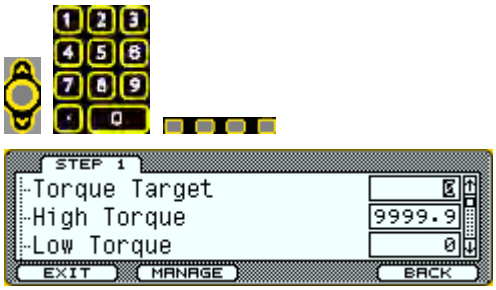
Strategy AC/TC Screens	Options Screen
	
	
	
	
	
	
	
	
	

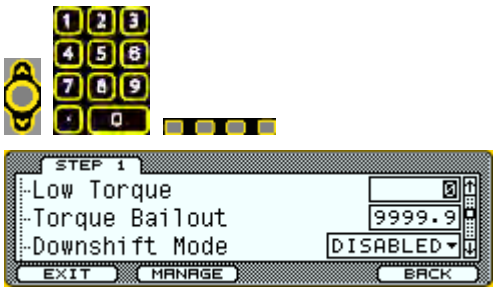
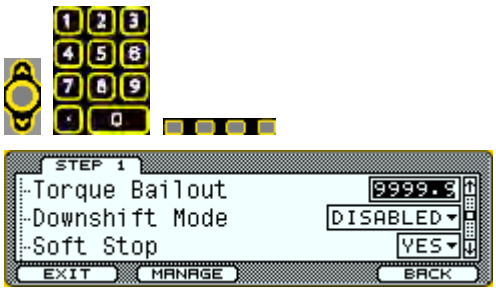
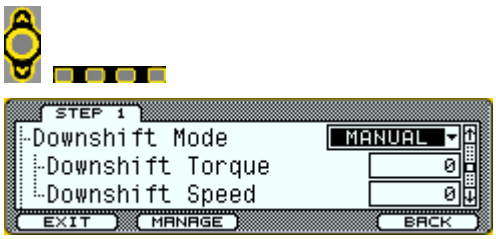
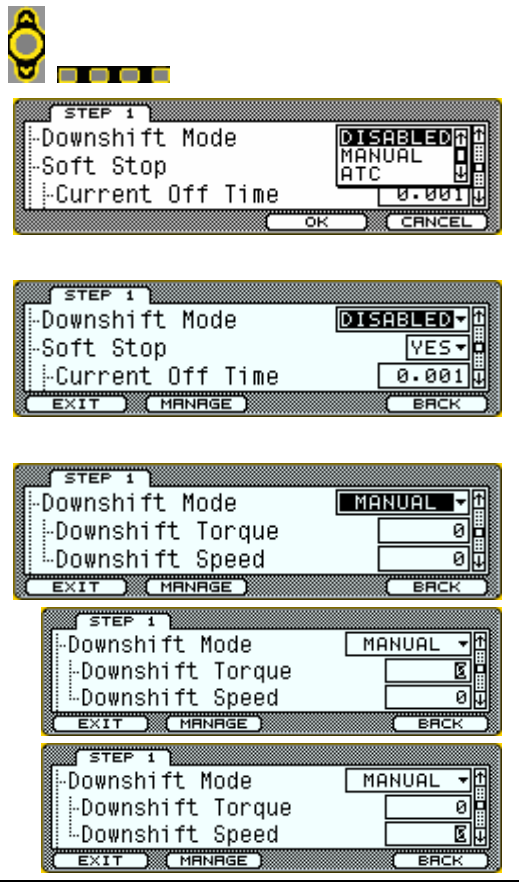
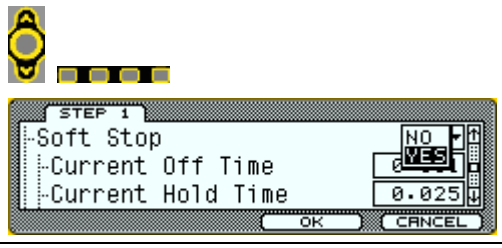
Strategy AC/TC Screens	Options Screen
	
	    
	
	

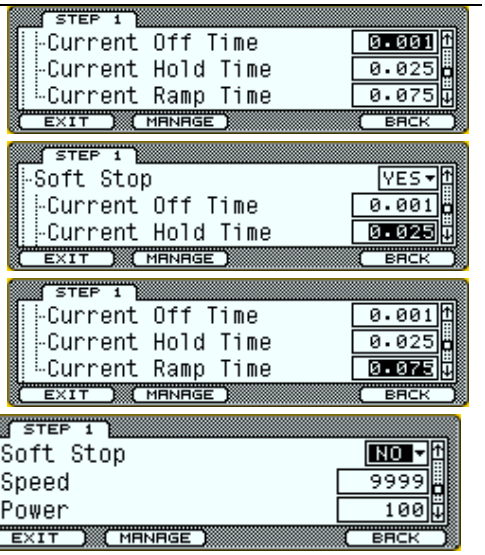
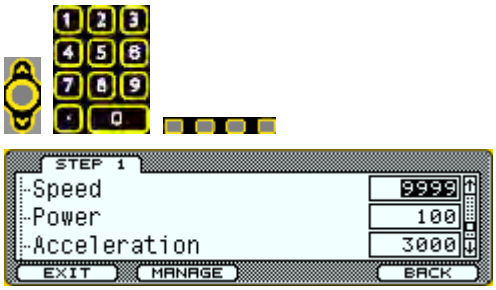
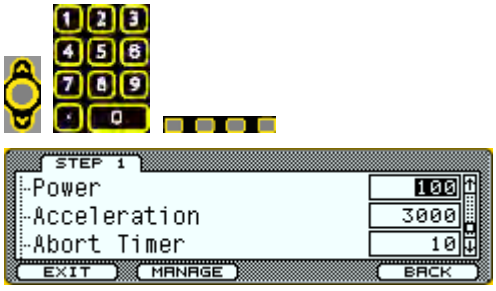
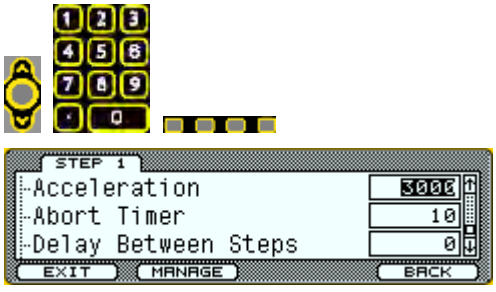
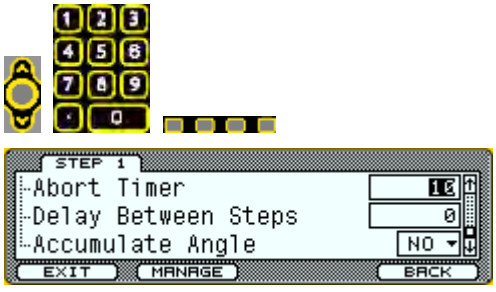
Strategy AC/TC Screens	Options Screen
	
	
	

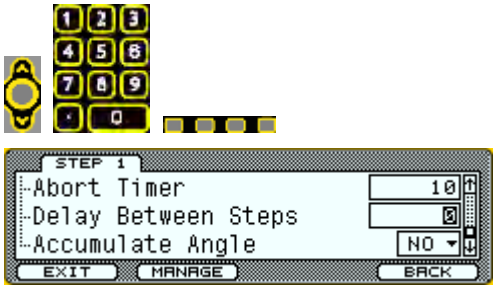
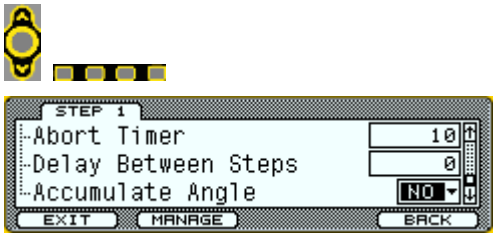
2.5.1.4.4 Strategy BACK (Backoff)

Strategy BACK (Backoff) Screens	Options Screen
Step settings affect only the active Task.	
	
	

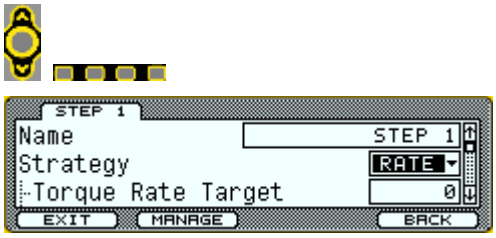
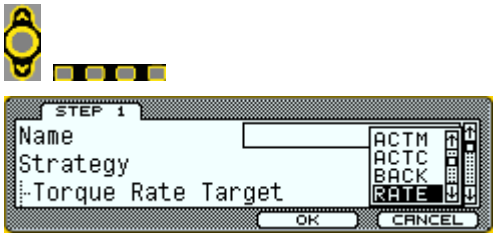
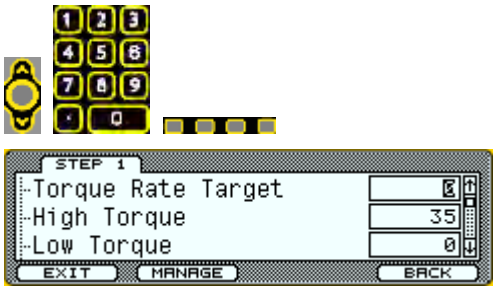
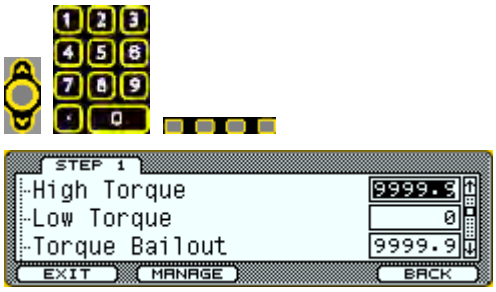
Strategy BACK (Backoff) Screens	Options Screen
	
	
	
	
	

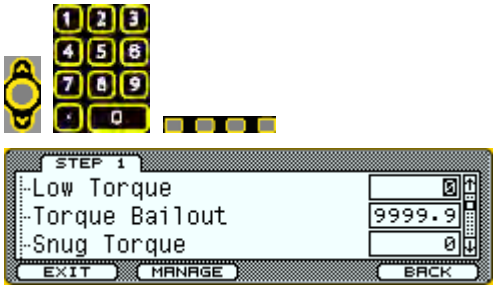
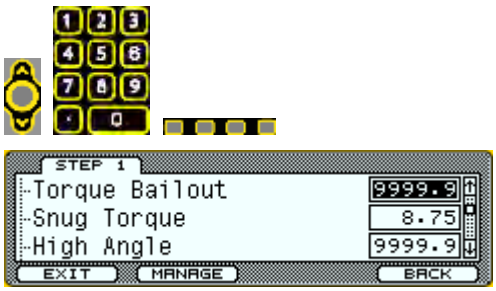
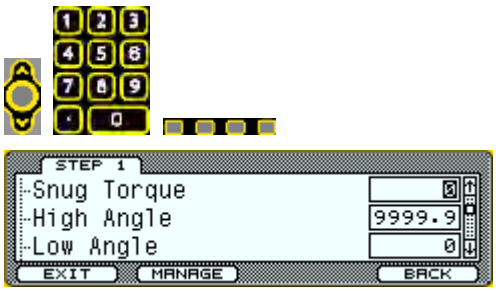
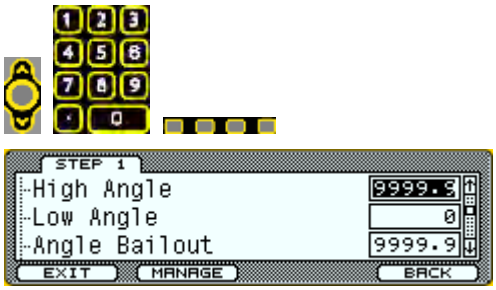
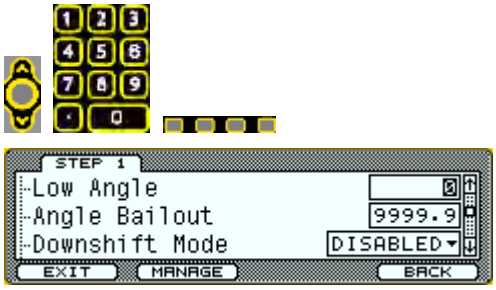
Strategy BACK (Backoff) Screens	Options Screen
	
	
	
	

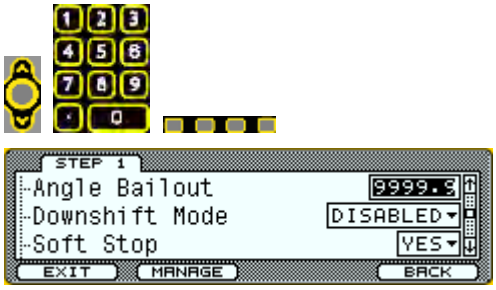
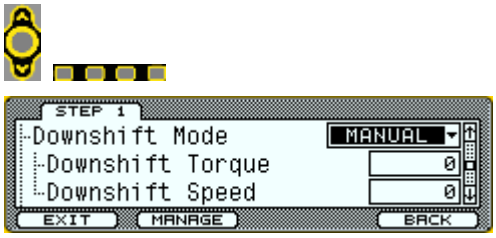
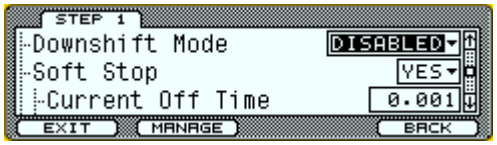
Strategy BACK (Backoff) Screens	Options Screen
	
	
	
	
	

Strategy BACK (Backoff) Screens	Options Screen
	
	

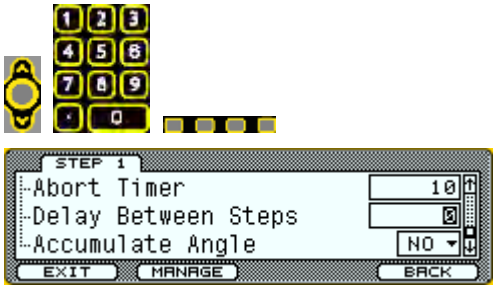
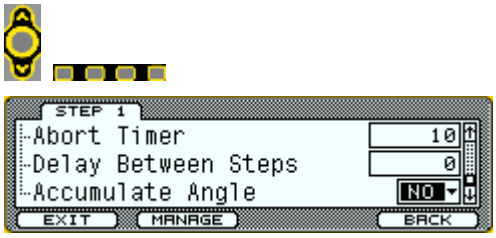
2.5.1.4.5 Strategy RATE

Strategy RATE Screens	Options Screen
Step settings affect only the active Task. Torque rate strategy (Torque Average and Angle Interval) configuration is set in the Task tab.	
	
	
	

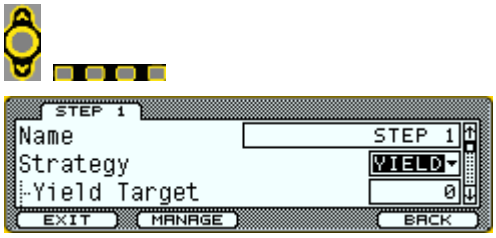
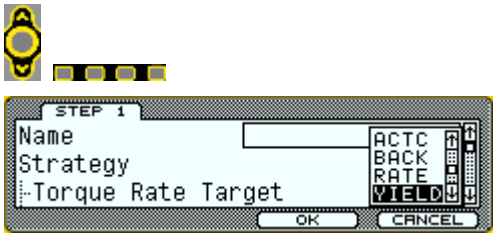
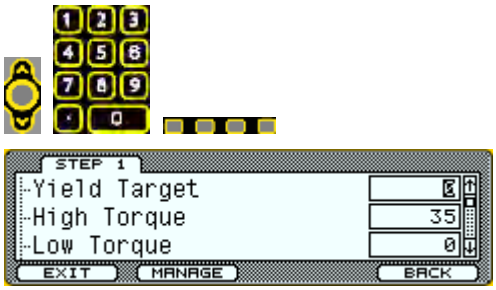
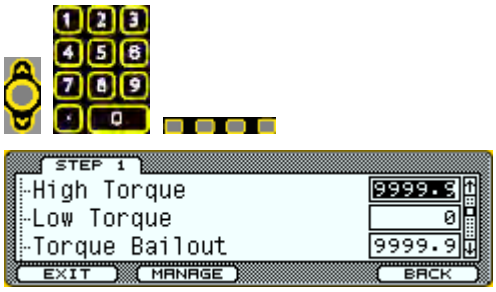
Strategy RATE Screens	Options Screen
	
	
	
	
	

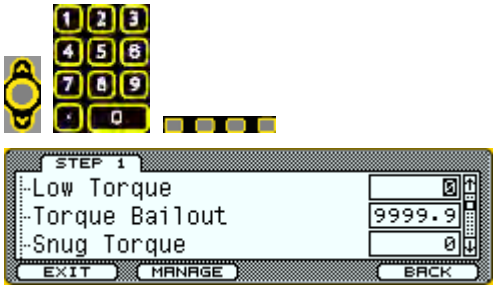
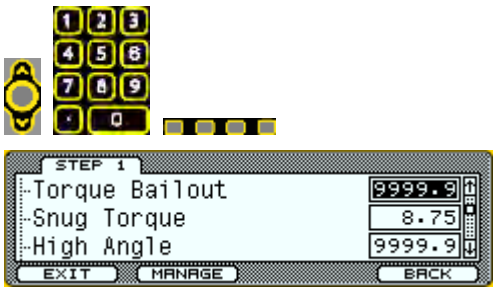
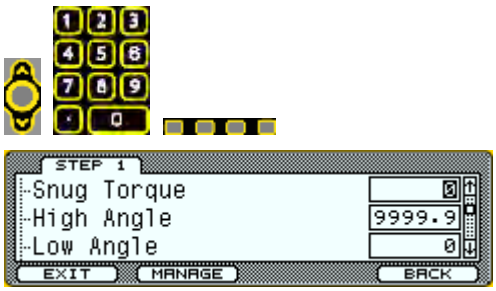
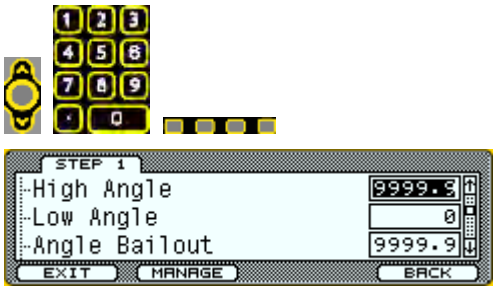
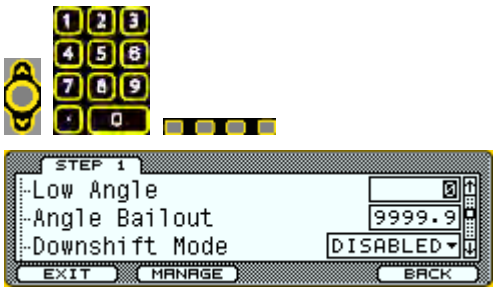
Strategy RATE Screens	Options Screen
	
	    
	  

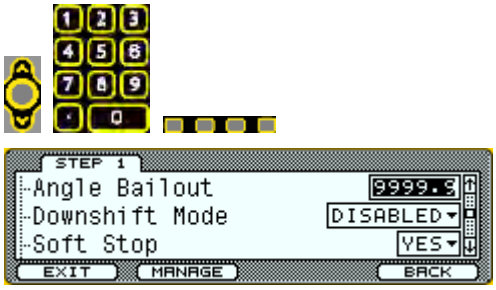
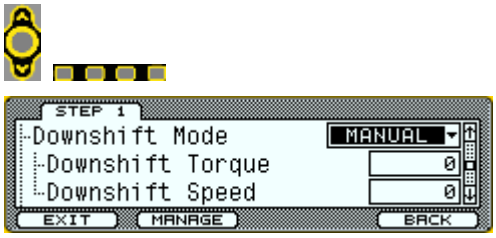
Strategy RATE Screens	Options Screen
	 
 	
 	
 	
 	

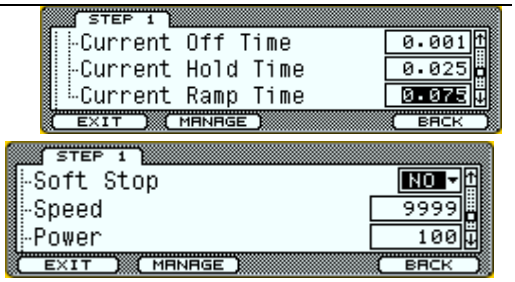
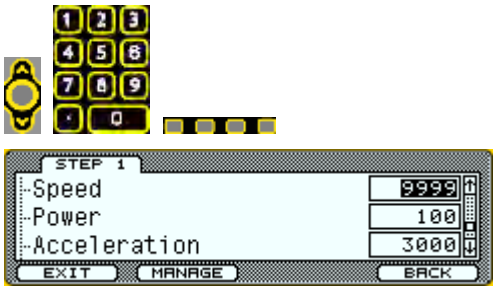
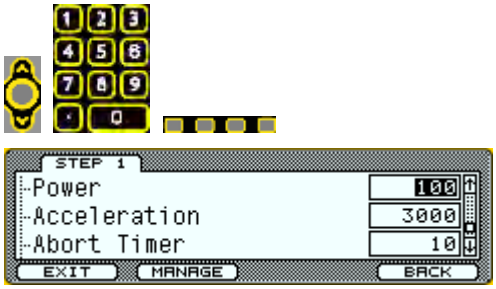
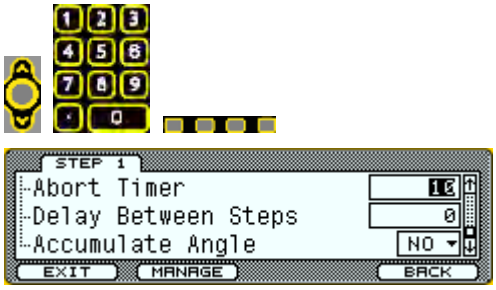
Strategy RATE Screens	Options Screen
	
	

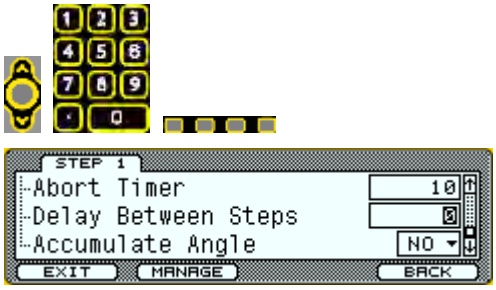
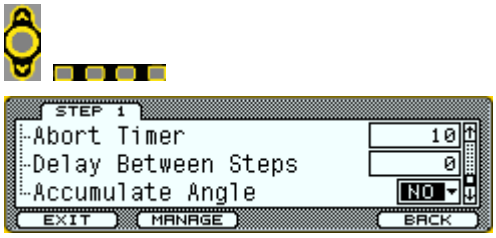
2.5.1.4.6 Strategy YIELD

Strategy YIELD Screens	Options Screen
Step settings affect only the active Task. Torque rate strategy (Torque Average and Angle Interval) configuration is set in the Task tab.	
	
	
	

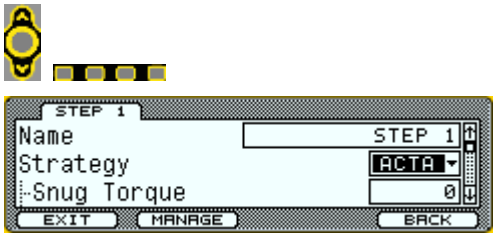
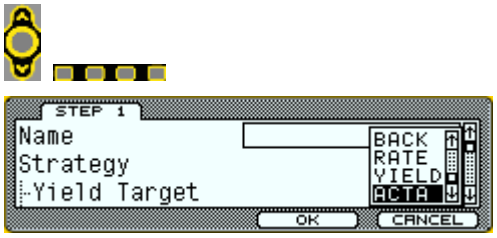
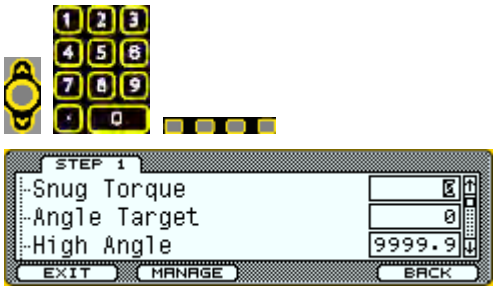
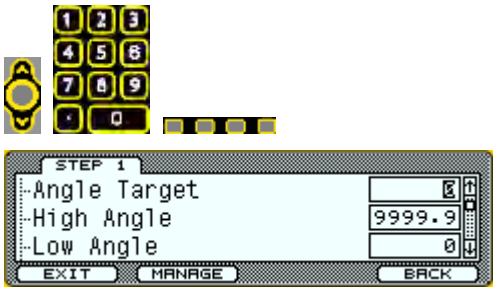
Strategy YIELD Screens	Options Screen
	
	
	
	
	

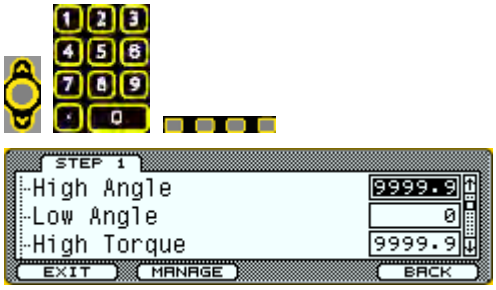
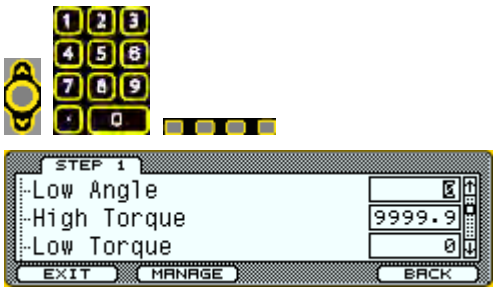
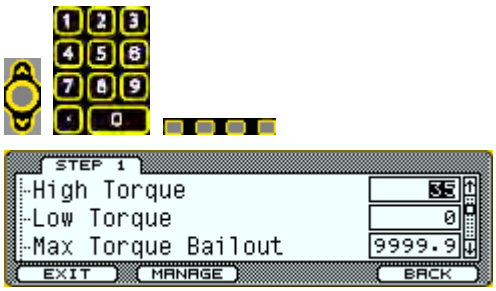
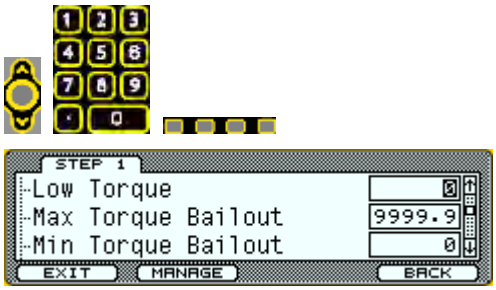
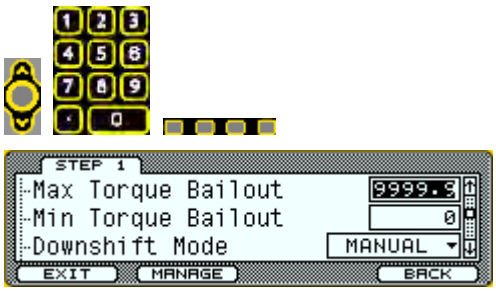
Strategy YIELD Screens	Options Screen
	
	    
	  

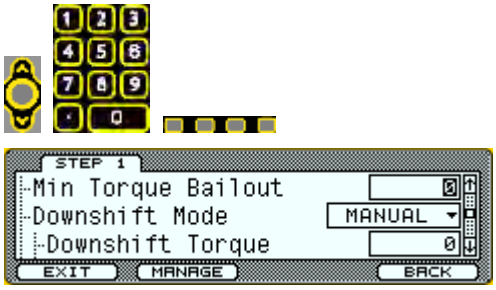
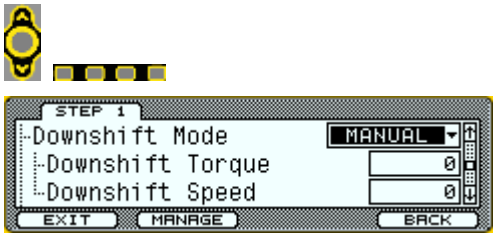
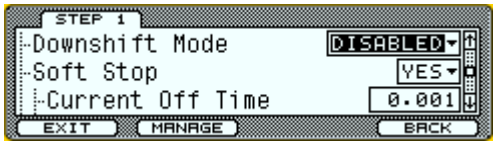
Strategy YIELD Screens	Options Screen
	
	
	
	
	

Strategy YIELD Screens	Options Screen
	
	

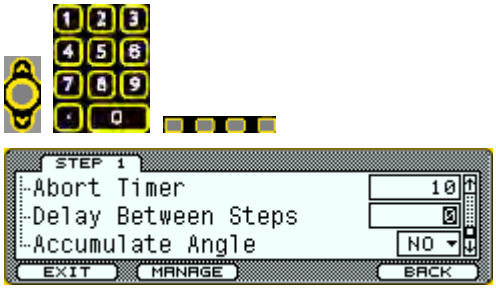
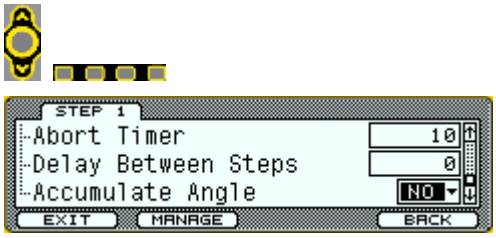
2.5.1.4.7 Strategy AC/TA

Strategy AC/TA Screens	Options Screen
Step settings affect only the active Task. Torque rate strategy (Torque Average and Angle Interval) configuration is set in the Task tab.	
	
	
	

Strategy AC/TA Screens	Options Screen
	
	
	
	
	

Strategy AC/TA Screens	Options Screen
	
	    
	  

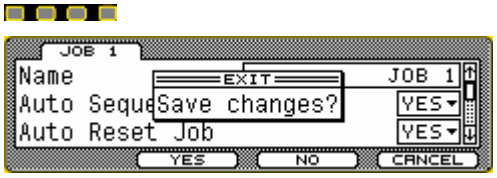
Strategy AC/TA Screens	Options Screen
	 
 	
 	
 	
 	

Strategy AC/TA Screens	Options Screen
	
	

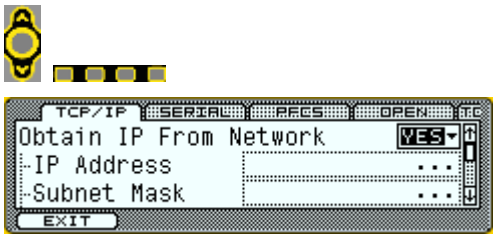
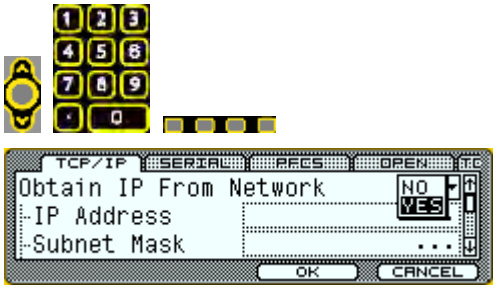
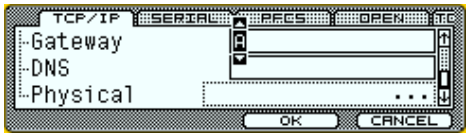
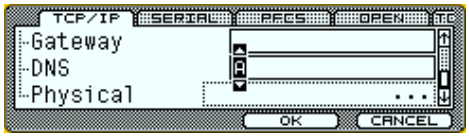
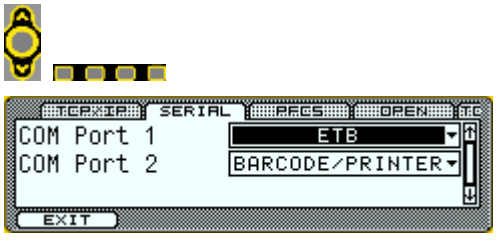
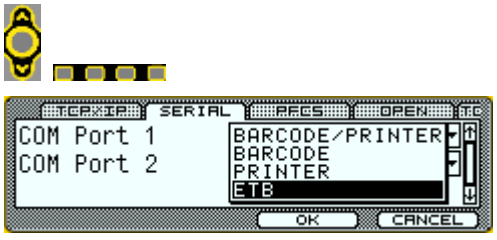
2.5.1.5 Setup: Manage

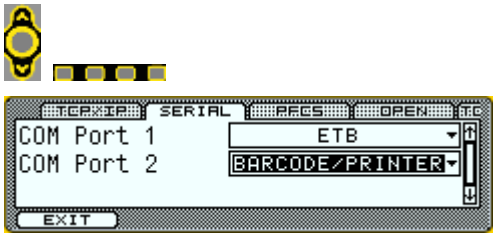
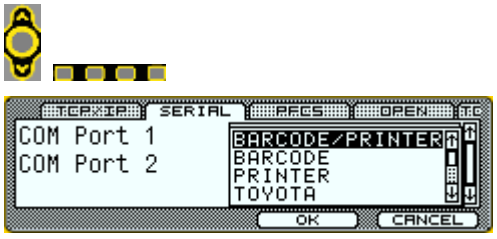
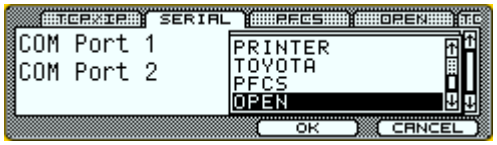
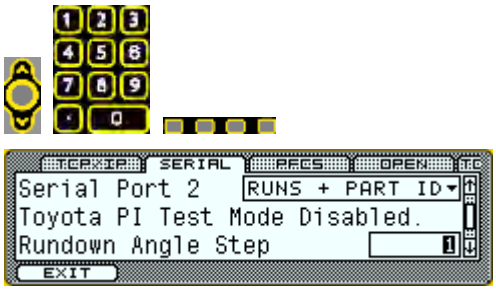
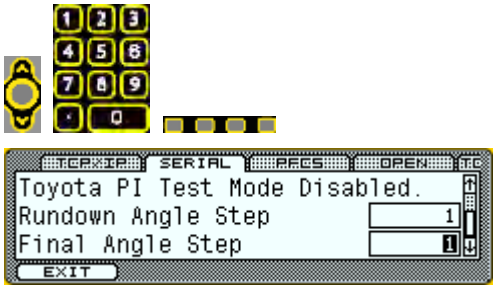
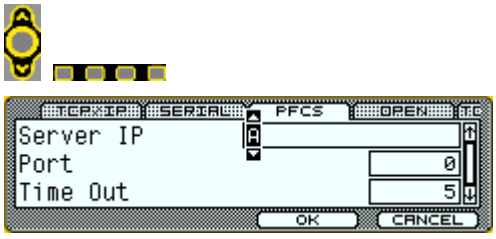
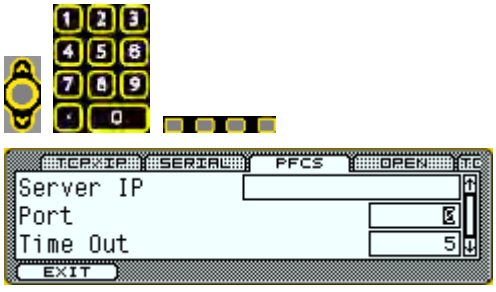
Manage Screens	Options Screen
Manage enables active tab settings to be added, deleted, and/or copied to the clipboard and pasted into another tab. The “Nothing to Paste” error indicates an attempt to paste information to the wrong tab type.	
	

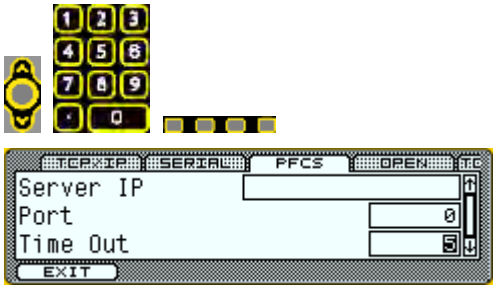
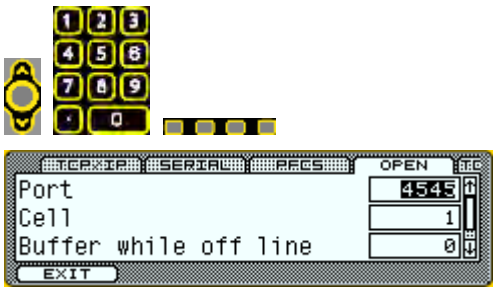
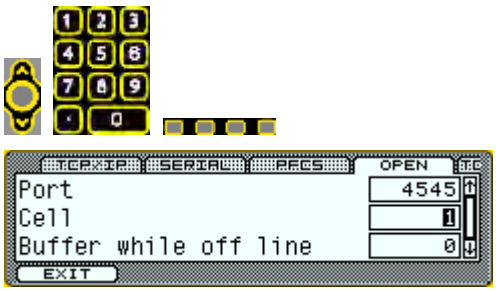
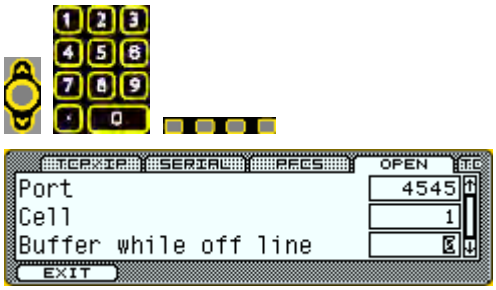
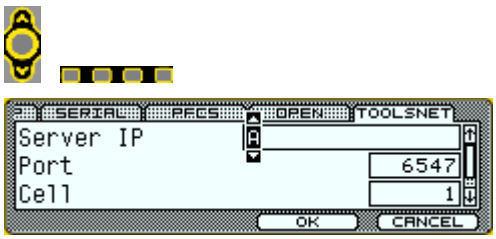
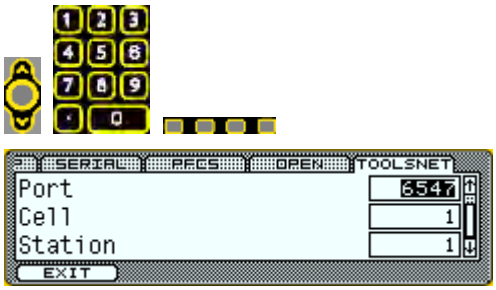
2.5.1.6 Setup: Exit

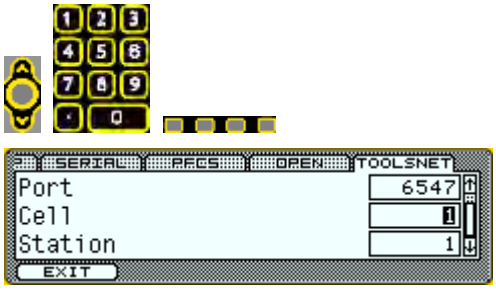
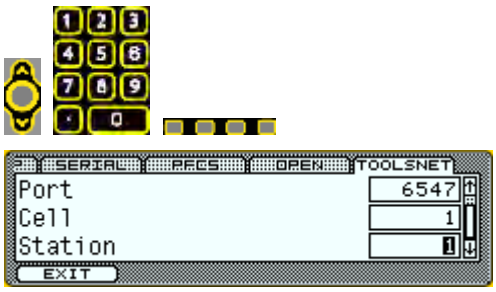
Exit Screens	Options Screen
Programming changes are stored after exiting current menu.	
	

2.5.2 Setup Menu: 2. Communications

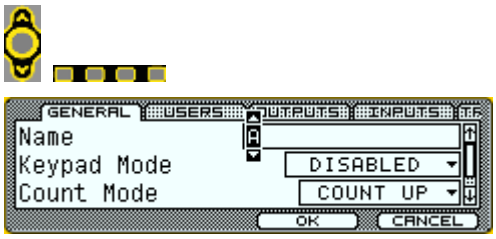
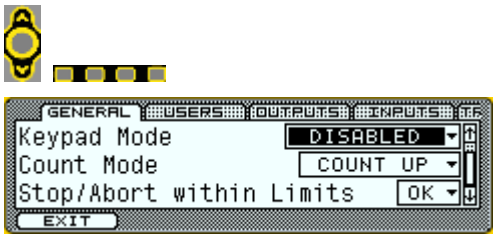
Communication Screens	Options Screen
Programming changes are stored after exiting current menu.	
	
	
	
	
	
	
	
	

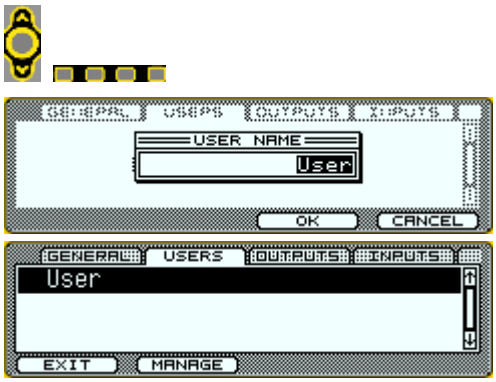
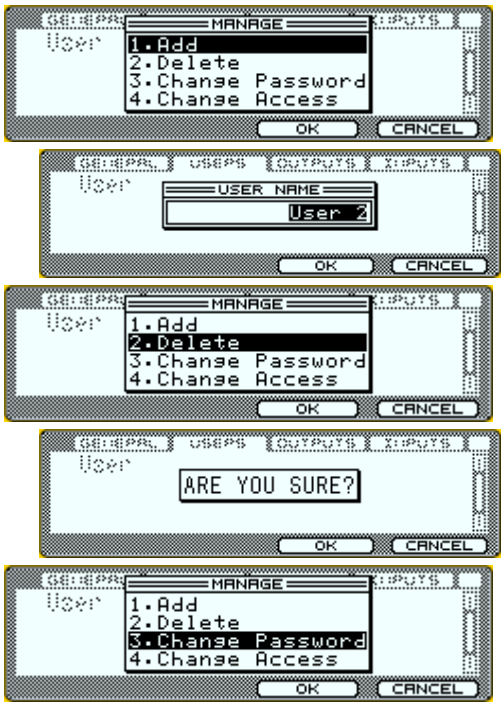
Communication Screens	Options Screen
	 
	
	
	
	

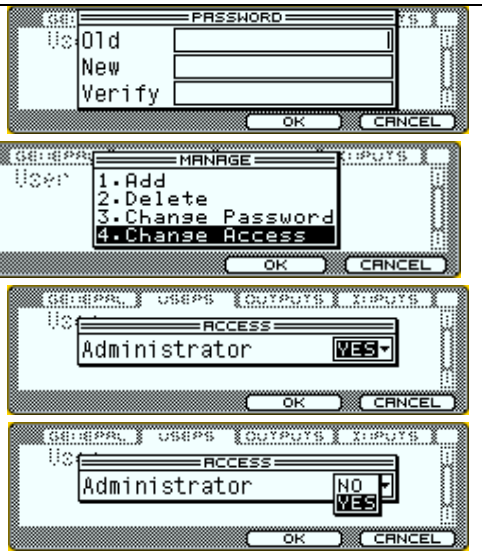
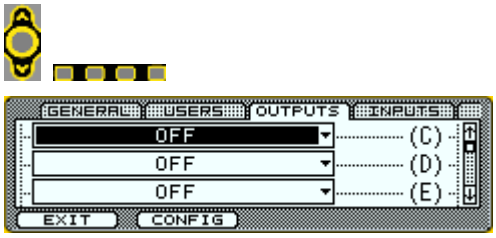
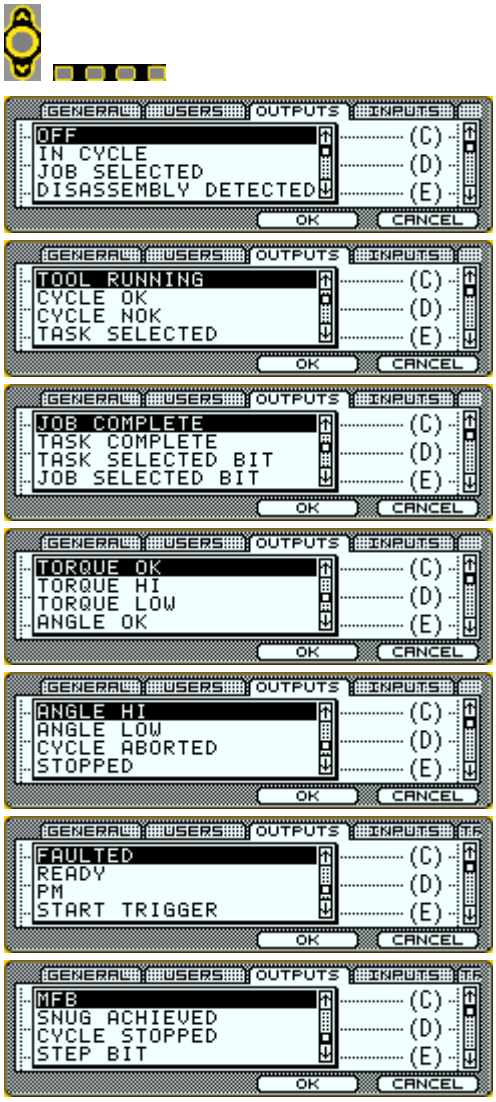
Communication Screens	Options Screen
	
	
	
	
	
	

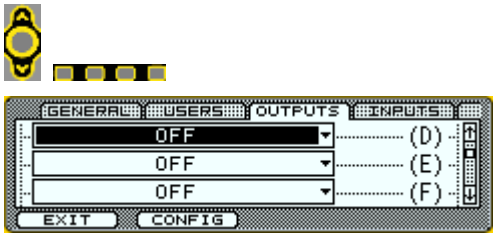
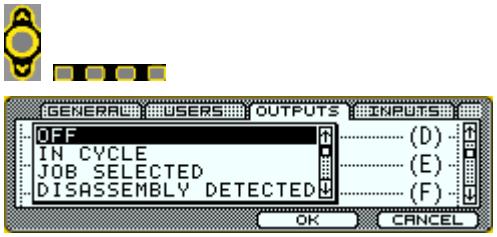
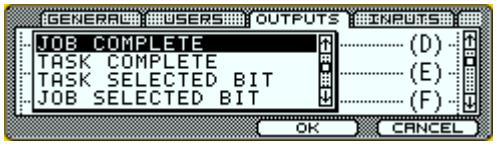
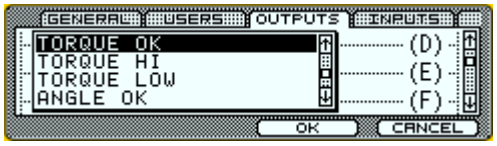
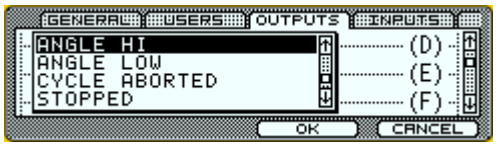
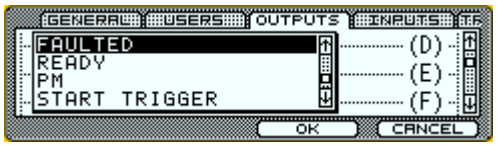
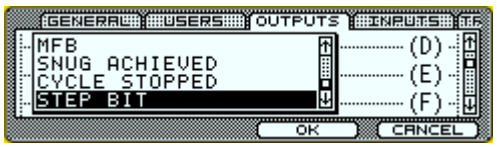
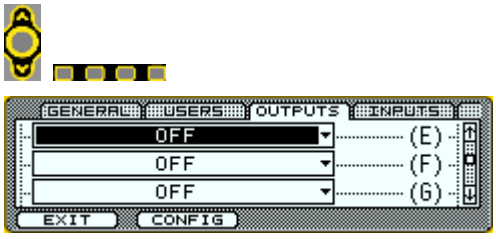
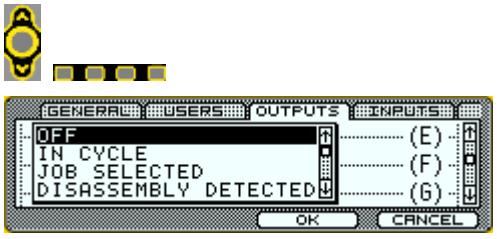
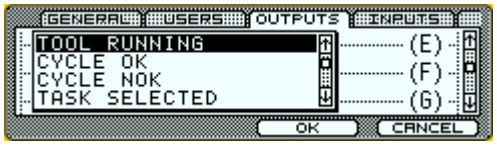
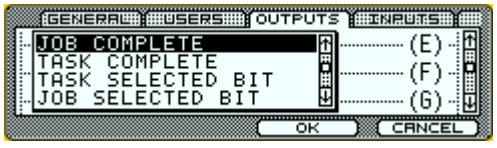
Communication Screens	Options Screen
	
	

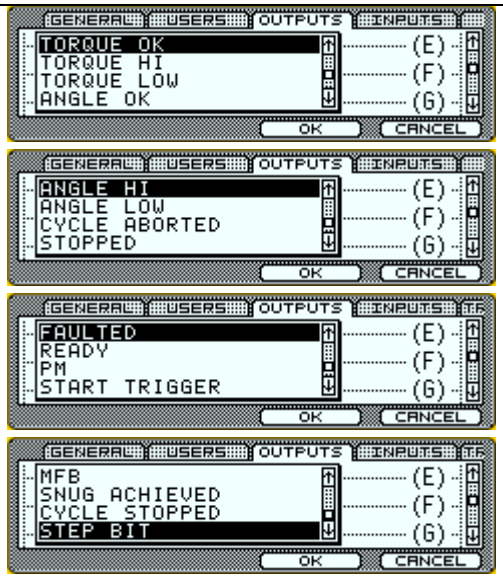
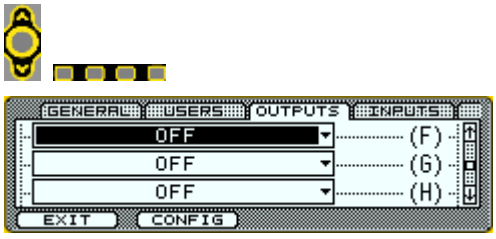
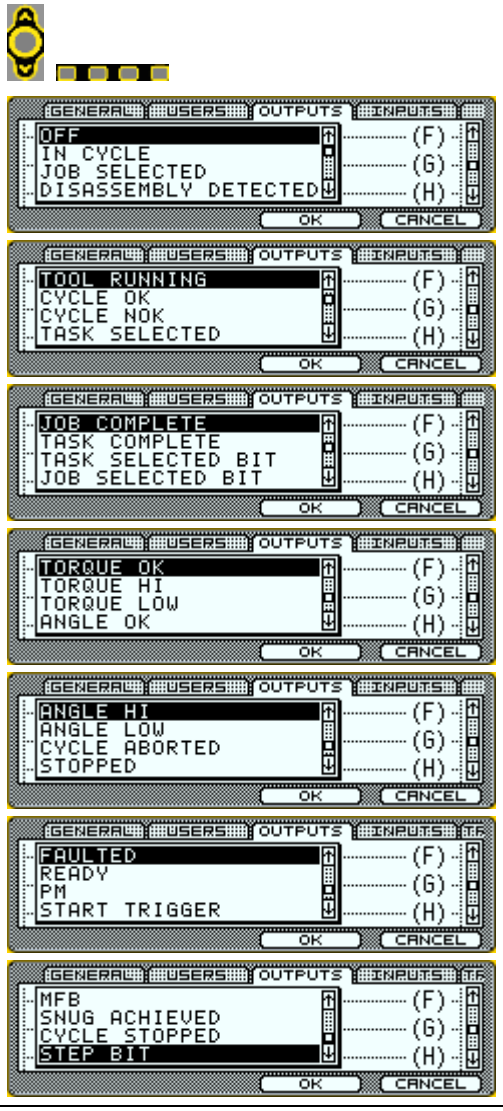
2.5.3 Setup Menu: 3. Other

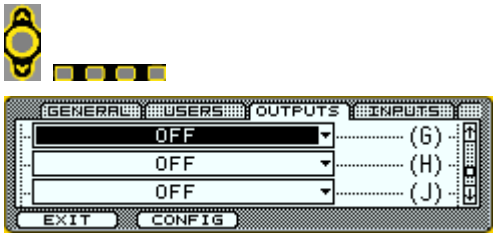
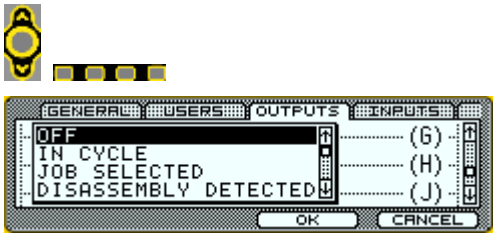
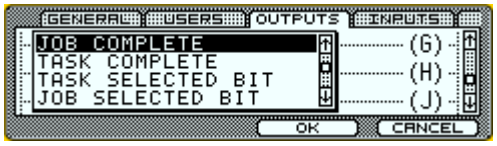
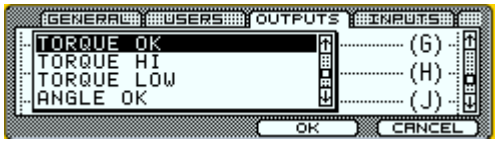
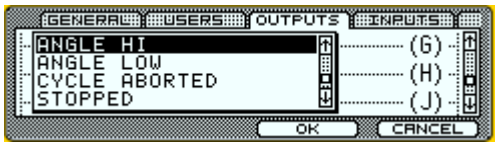
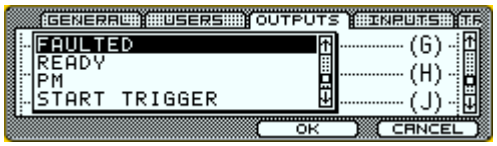
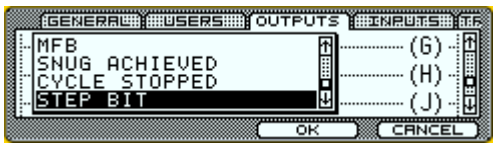
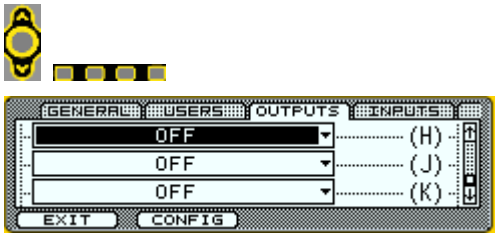
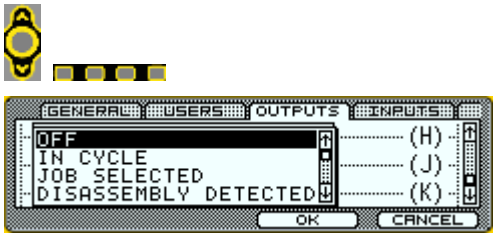
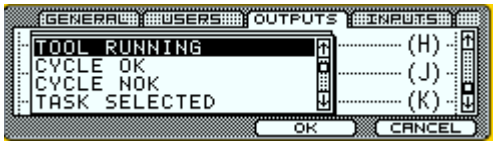
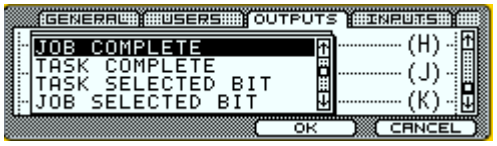
Other Screens	Options Screen
Programming changes are stored after exiting current menu.	
	
	
	

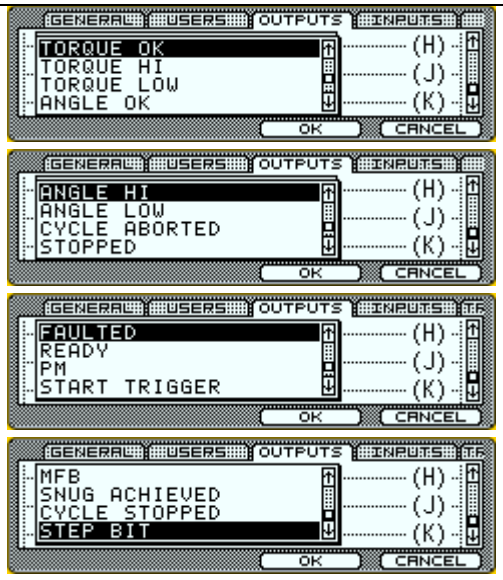
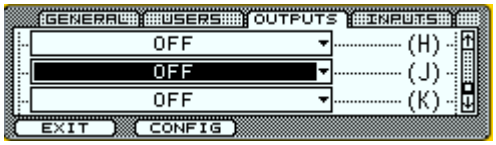
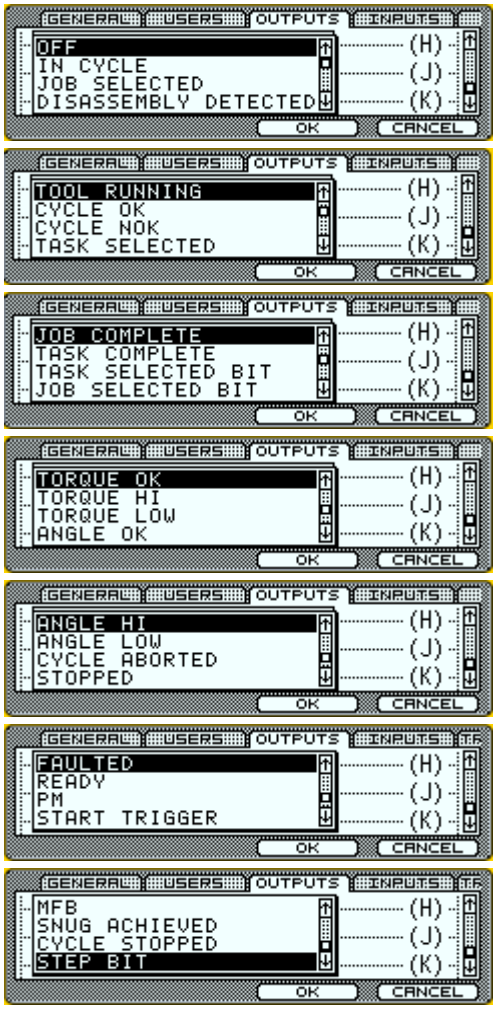
Other Screens	Options Screen
	
	
	 MANAGE 

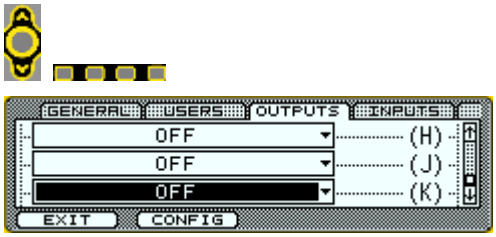
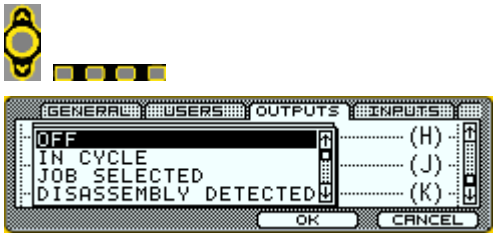
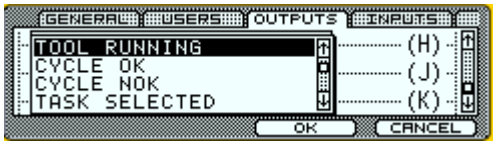
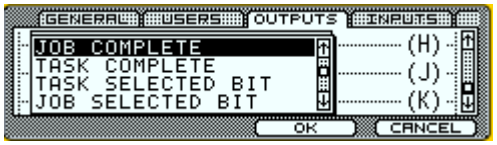
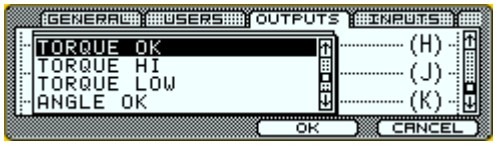
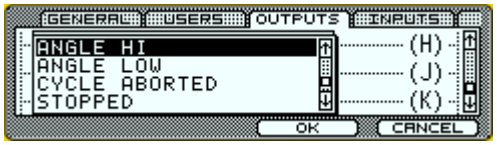
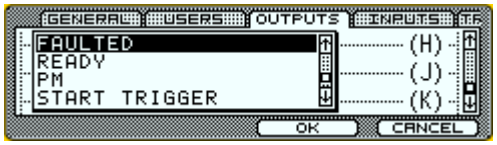
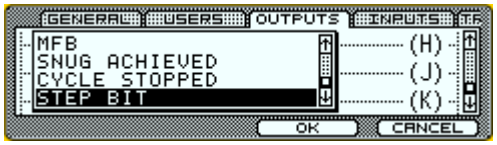
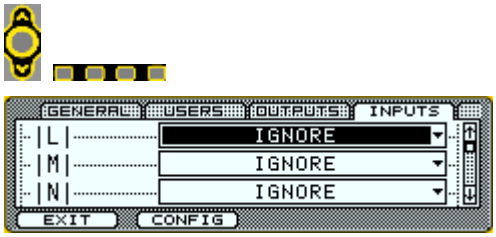
Other Screens	Options Screen
	
	

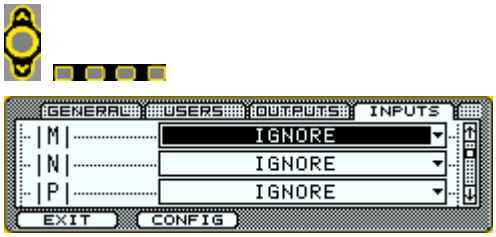
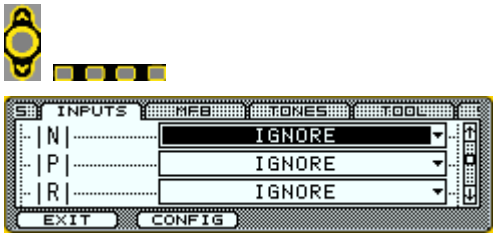
Other Screens	Options Screen
	
	
	
	
	
	
	
	
	
	

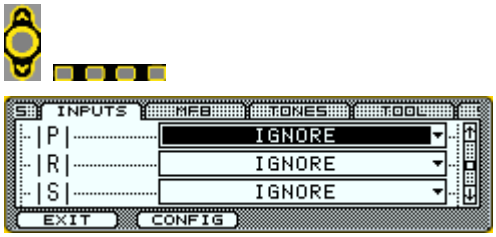
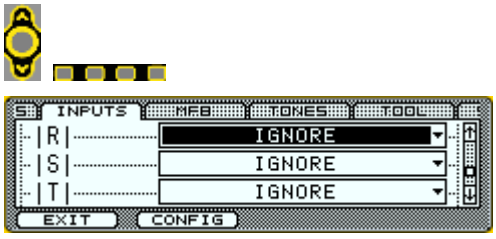
Other Screens	Options Screen
	
	

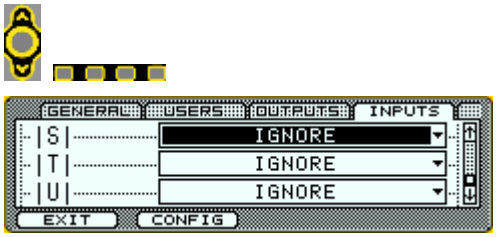
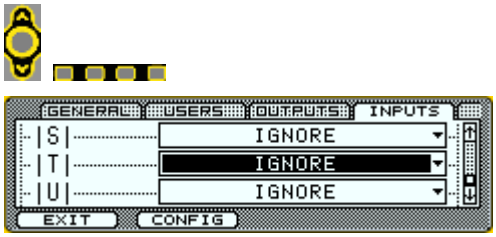
Other Screens	Options Screen
	
	
	
	
	
	
	
	
	
	

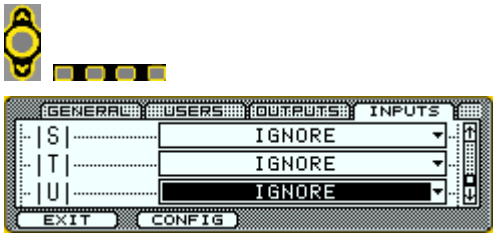
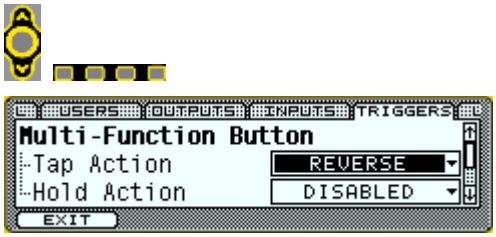
Other Screens	Options Screen
	
 	 

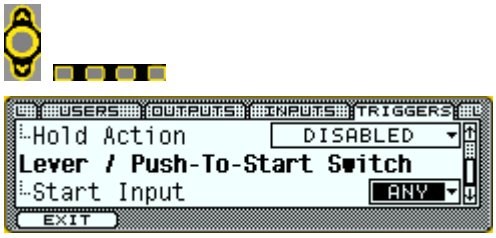
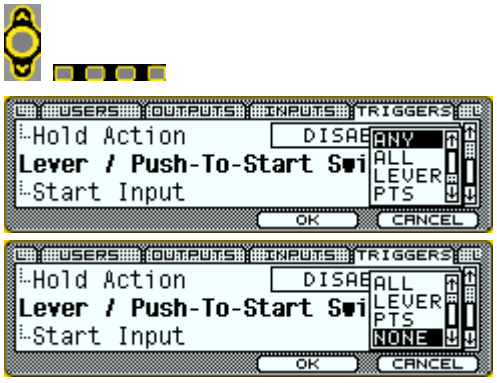
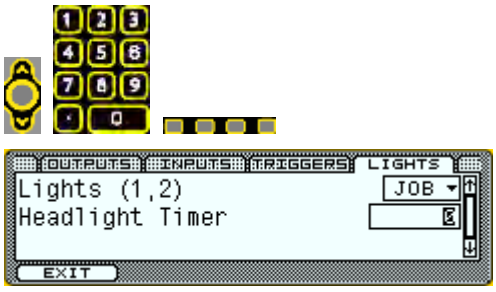
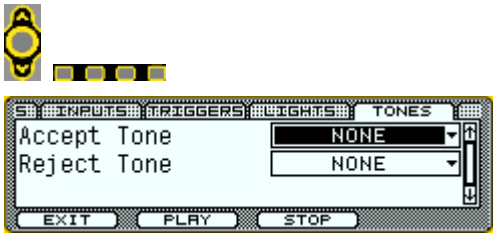
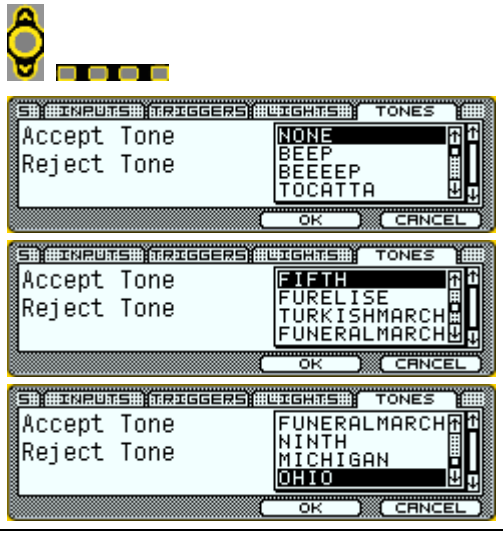
Other Screens	Options Screen
	
	
	
	
	
	
	
	
	
	

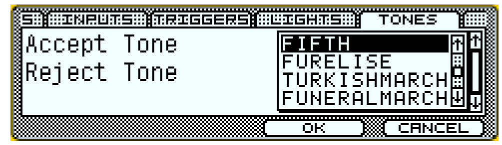
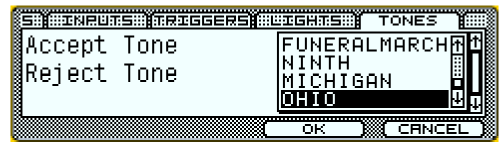
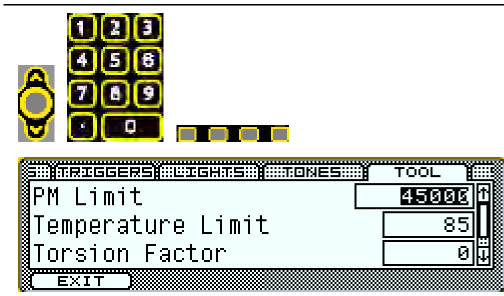
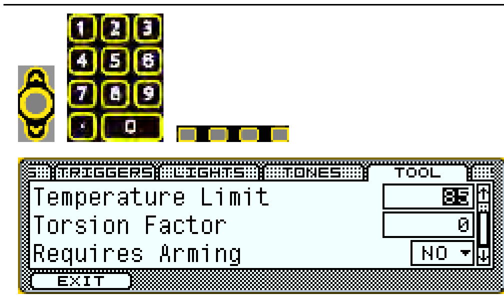
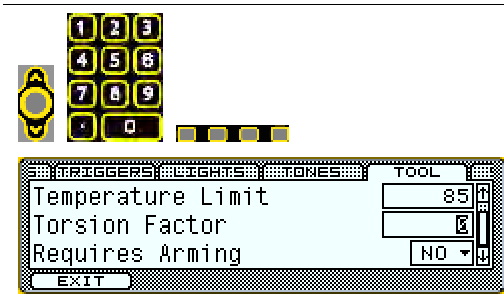
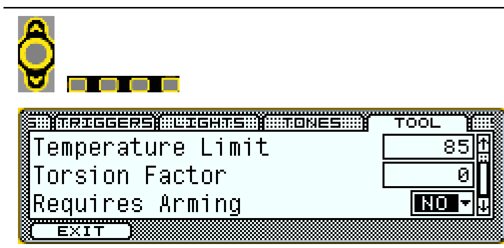
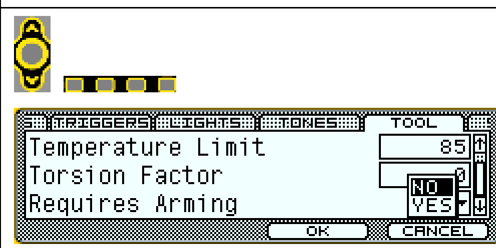
Other Screens	Options Screen
	 
	    
	  

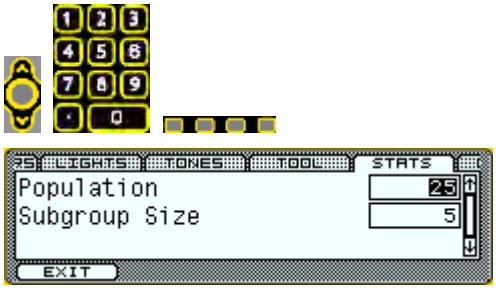
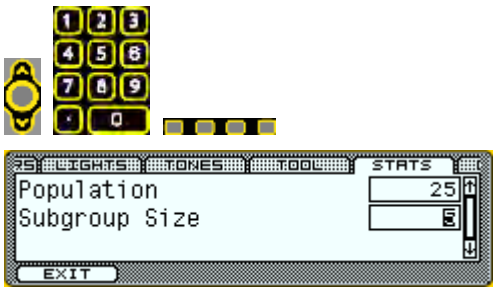
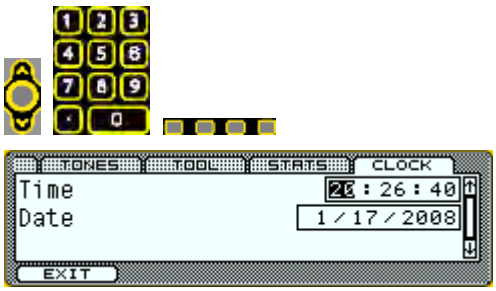
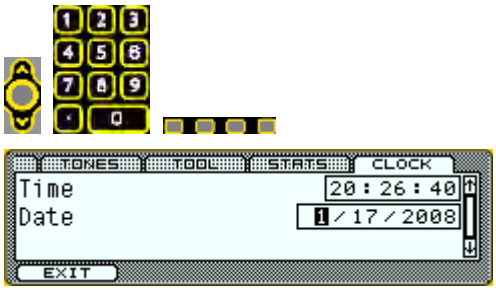
Other Screens	Options Screen
	 
	    
	  

Other Screens	Options Screen
	 
	    
	  

Other Screens	Options Screen
	 
	    
	 
	

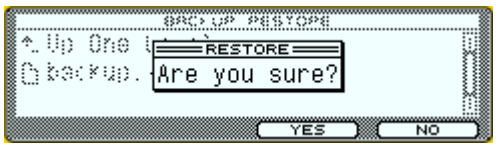
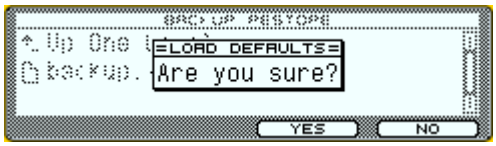
Other Screens	Options Screen
	
	
	
	
	

Other Screens	Options Screen
	  
	
	
	
	

Other Screens	Options Screen
	
	
	
	

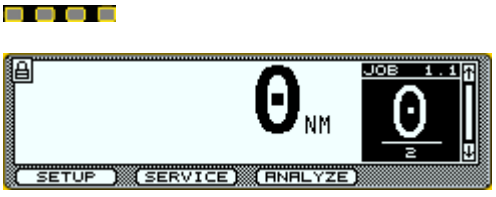
2.5.4 Setup Menu: 4. Full Backup/Restore

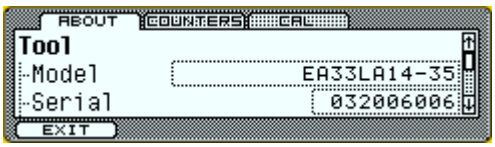
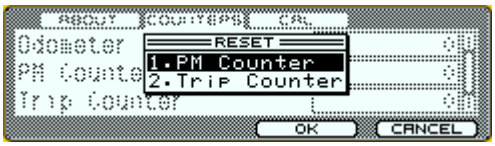
Full Backup/Restore Screens	Options Screen
	

Full Backup/Restore Screens	Options Screen
	     To select a file, use the up and down arrow keys to scroll through list. To change directories, highlight “Up One Level” and then press the center button.   The default button loads current software factory defaults.

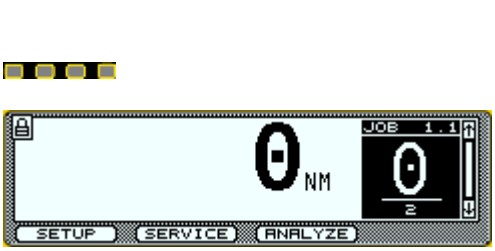
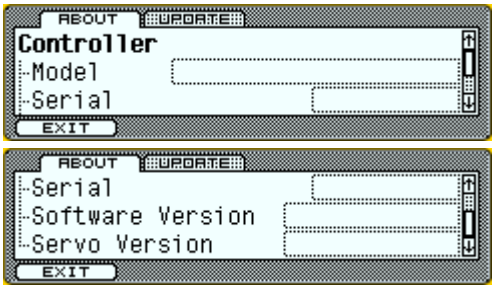
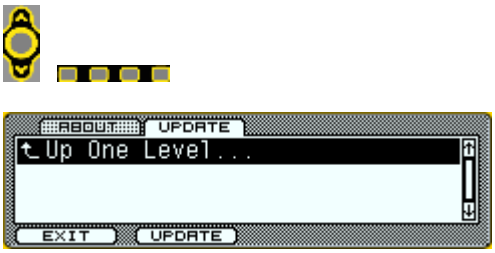
2.5.5 Service

2.5.5.1 Tool

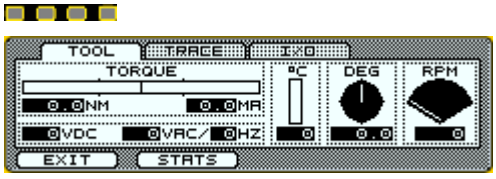
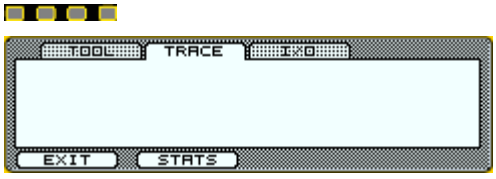
Tool Tab Screens	Options Screen
The odometer increments after every in cycle.	
	

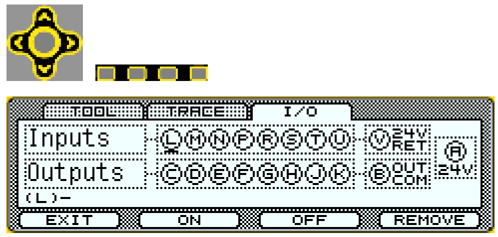
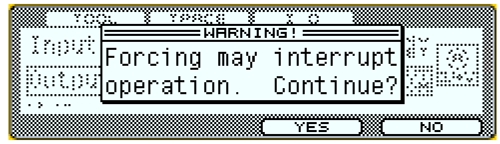
Tool Tab Screens	Options Screen
  	
 	
 	   
 	

2.5.5.2 Controller

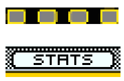
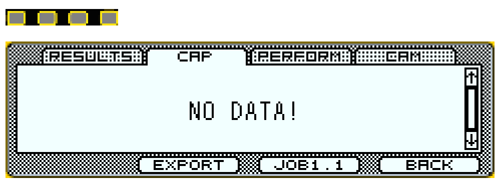
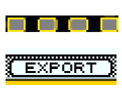
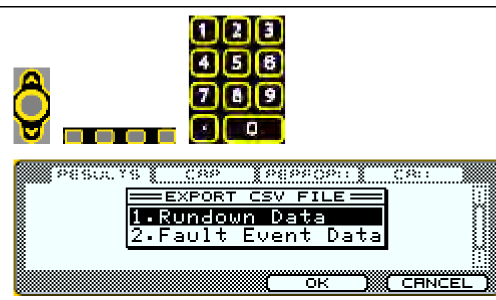
Controller Tab Screens	Options Screen
The odometer increments after every in cycle.	
	
	
	

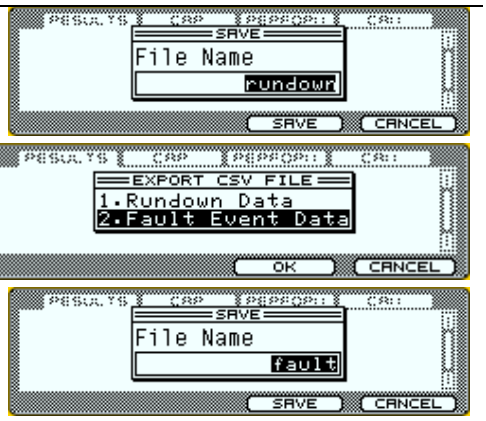
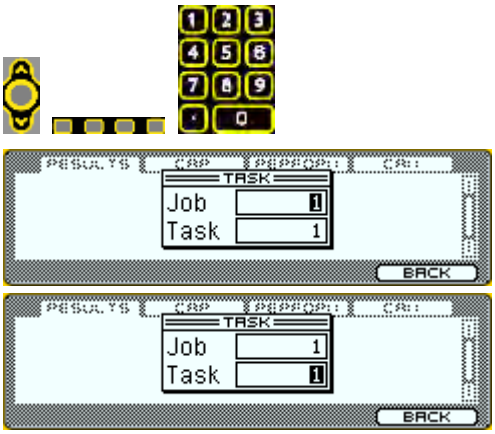
2.5.6 Analyze

Diag Screens	Options Screen
Diag displays tool and controller diagnostic information, statistics, traces and I/O status.	
	
	

Diag Screens	Options Screen
	 When forcing I/O changes during an operation, the system provides a warning first. 

Clear = off, Dark = on

Diag Screens – STATS Button	Options Screen
	
	
	
	
	
	

Diag Screens – STATS Button	Options Screen
	
	

QPM DC Electric Tools

This chapter is intended to promote proper and safe use and give guidance to owners, employers, supervisors and others responsible for training and safe use by operators. DC Electric tools from STANLEY ASSEMBLY TECHNOLOGIES are intended for use in industrial threaded fastening or precision position and or adjustment applications only. Some instructions may not apply to all tools. Please contact your Stanley Sales Engineer for information or assistance on Stanley training for assembly tool operation.

3.1 Tool Specifications

Operating Conditions	Temperature	32 to 122 ºF (0 to +50 ºC)
	Humidity	0 to 95 % non-condensing

Noise Level: A-weighted emission sound pressure level at the work station < 70dBA (ref 20µPa) as determined according to ISO 15744-2002.

Vibration Level: Weighted root mean square acceleration value at the handle < 2.5 m/s^2 as determined according to ISO 8662.

3.2 Operator Protection

W A R N I N G

ROTATING EQUIPMENT
To Avoid Injury:

- Always wear eye and foot protection when operating, installing, or maintaining power tools, and when in areas where power tools are being used, maintained, or installed. Some applications may require the use of safety glasses and face shields. Use eye protection that conforms to ANSI Z87.1.[3] and ANSI Z41-PT99M I/75 C/75.
- Always stay alert when operating tools and/or their accessories. Do no operate tools and/or their accessories while tired, under the influence of drugs, alcohol or any other mind-altering substance.
- Repetitive work motions or vibration may be harmful to your hands, arms, shoulders or back.
- Use suitable protective equipment and work methods whenever an application presents a hazard.

Repetitive Motion

The use of power tools may involve highly repetitive motions of the fingers, hands, wrists, and shoulders. These repetitive motions can lead to cumulative trauma disorders (CTD). Many personal and workplace factors can contribute to these disorders.

Currently available data have identified the following risk factors. These risk factors are not necessarily causation factors of CTDs. The mere presence of a risk factor does not necessarily mean there is excessive risk of injury. Generally, the greater the exposure to a single risk factor or combination of factors the greater the risk for CTDs.

- Forceful exertions and motions
- Extreme postures and motions
- Repetitive exertions and motions
- Intended duration of exertion, postures, motions, vibration, and cold
- Insufficient rest or pauses
- Work organization risk factors
- Environmental risk factors

These risk factors span job design and content, operator training, work method, work pace, work environment, proper tool selection and other work place factors beyond the control of the tool

manufacturer. Tool owners and employers should analyze jobs for all of the risk factors identified above and take appropriate action.

Some measures which may reduce the risk of CTDs:

- Use minimum hand grip force consistent with proper control and safe operation.
- Keep wrists as straight as possible.
- Avoid repetitive movements of the hands and wrists.
- If wrist pain, hand tingling, numbness, or other disorders of the shoulders, arm, wrist or finger occur; notify supervisor, discontinue task, reassign user to a different job; if relief is not found contact experts skilled in treating such disorders.

Wrist supports, torque reaction devices, and balancers should be used if it can be determined that such devices can reduce the risk of repetitive motion disorders.

3.2.1 Hearing Protection

Power tool operators and adjacent personnel may be exposed to excessive sound levels. The tool in use is generally only one of many sources of noise that an operator experiences. Other tools and machines in the area, joint assembly noise, work processes, and other ambient noise sources all contribute to the sound level operators are exposed to.

The actual sound level an individual is exposed to and the individual's exposure time over the work day are important factors in determining hearing protection requirements. Worker sound level exposure can only be determined at the job site and is the responsibility of tool owners and employers.

Measure worker sound level exposure and identify high-risk noise areas where hearing protection is required.

Follow federal (OSHA), state or local sound level statues, ordinances and or regulations.

3.2.2 Vibration

Power tools can vibrate during use. To minimize the possible effects of vibration:

- Keep hands and body dry.
- Avoid anything that inhibits blood circulation such as tobacco, cold temperatures and certain drugs.
- Operators should notify their employer when experiencing prolonged symptoms of pain, tingling, numbness or blanching of the fingers.
- Wear vibration damping gloves if it can be determined that they reduce the risk of vibration disorders without introducing other hazards.

3.2.3 Breathing Protection

Respirators shall be used where contaminants in the work area present a hazard.

3.3 Tool Installation

W A R N I N G
To Avoid Injury: • Always wear eye and foot protection when installing equipment. • Only use equipment and accessories specifically designed to operate with Stanley assembly tools and use them only in the manner for which they are intended. • Do not install worn, damaged, or modified equipment that may be unsuitable for safe use. • Train all operators in the safe and proper use of power tools. Operators should report any unsafe condition. • Store idle tools and accessories in a safe location accessible only by trained persons. • Disconnect power source (air, electricity, etc.) from tool prior to making adjustments, changing accessories, or storing. • Prior to operation, always check and test tools and accessories for damage, misalignment, binding or any other condition that may affect operation. Maintenance and repair should be performed by qualified personnel. • Do not operate tools in or near explosive environments or in the presence of flammable liquids, gases, dust, rain or other wet conditions.

- Keep the work area clean, well lit and uncluttered.
- Keep unauthorized personnel out of the work area.

DC Electric Tools & Controllers:

- Install tools in dry, indoor, non-flammable, and non-explosive environments only – Humidity: 0 to 95% non-condensing and Temperature: 32 to 122 ºF (0 to +50 ºC).
- Installation, maintenance and programming should be performed by qualified personnel. Follow all manufacturer installation instructions and applicable regulatory electrical codes and safety codes.
- Tool and controller plugs must match the outlet. This equipment must be earth grounded. Never modify a plug in any way or use any adaptor plugs.
- Avoid body contact with electrically energized surfaces when holding a grounded tool**.**
- Prior to connecting a power source, always ensure the tool or controller is turned off.
- Limit controller access to trained and qualified personnel. Lock controller cabinets.

Turn controllers off when attaching tools.

Stanley electric tools must be connected to a controller to operate. To ensure superior performance and safe operation, use a Stanley controller specifically designed for each tool. These instructions are specific to Stanley Electric Tools when used with Stanley Electric Tool Controllers and accessories. Some features may not be applicable, performance may be degraded and some safety systems may not be available when tools are connected to non-Stanley controllers and accessories.

3.3.1 Sockets and Adapters

Use only industrial grade sockets and adapters (power bit and power or impact socket type).

Replace worn or damaged sockets that are unsuitable for safe operation immediately.

Always ensure drive socket is fully seated and locked into position before connecting power to tool.

3.3.2 Suspension Devices

Tool suspension devices or bails help support the weight of the tool during tightening operations. Attach these devices securely and periodically inspect them for damage or loosening.

3.3.3 Cable Installation

W A R N I N G

ELECTRICAL HAZARD
To Avoid Injury:

- Never use a tool with a damaged cable.
- Never abuse a cable, carry a tool by its cable, hang a tool by its cable, or pull on a cable to disconnect it from the tool or the controller.

To ensure superior performance and safe operation, use the Stanley cables specifically designed to operate these tools.

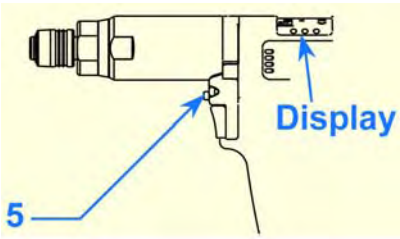
Never use a tool with a damaged cable. Never abuse a cable, carry a tool by its cable or pull a cable to disconnect it. Also, keep the cord away from heat, sharp edges, or moving parts.

Use cables of appropriate length (60M maximum) for each application; position and or suspend them in such a way as to prevent tripping and cable damage, and to provide good work area maneuverability.

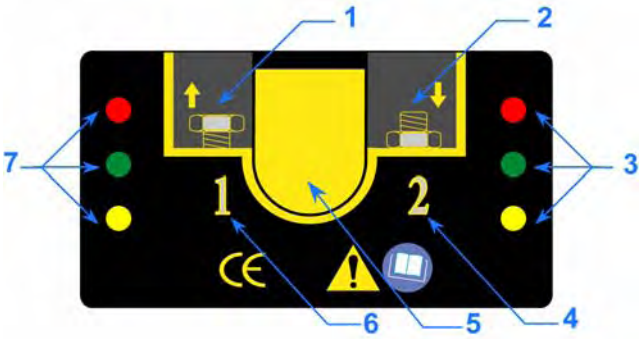
3.4 QPM Tools

3.4.1 Display and Multiple Function Button for Hand Held Tools

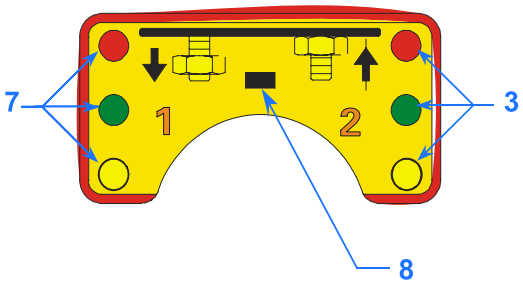
Handheld QPM tools have a display and a multiple function button. Two sets of lights [**3** and **7**] indicate tool status. Two blue lights indicate tool rotation direction, disassembly [**1**] or assembly [**2**]. A single multiple function button [**5**] can change tool direction and or tasks. When the button is used to select the task, one of two orange indicators [**4** or **6**] illuminates to show the active task. EA tools have four sets of lights [**3** and **7**] and an LED [**8**] that indicates when the tightening cycle count exceeds the PM limit.



Display and MFP Button
for E02P to E34P (pistol) Models



Display and MFP Button
for E23L to E55L (lever) Models



Display for EA23L to EA34L (lever) Models

3.4.2 MFP Mode

The *MFP Mode* configures the multiple function button for handheld QPM tools. The button can be configured to operate-in any of the following modes.

Disable (default)	The button does nothing. Pressing the button causes the tool alarm to "beep" once. Only the assembly blue light [**2**] illuminates.
Reverse (Disassembly)	Pressing the button toggles between assembly and disassembly and illuminates the appropriate blue light [**1**] or [**2**]. All tool status lights [**3**] and [**7**] flash when the tool is in disassembly mode.
Task Select	Pressing the button toggles between tasks and illuminates the appropriate orange light [**6**] or [**4**].
Arm	Pressing the button arms (activates) the start function but does not start the tool. The blue assembly light [**2**] comes on to show that the tool is armed.
Reset Reject	Pressing the button stops the reject tone.

3.4.3 Tool Memory

QPM tools have an onboard tool memory that stores tool identification, calibration factors and tightening cycle counters. Memory parameters include:

- *Model Number*
- *Serial Number*
- *Torque Cal* (calibration) factor
- *Angle Cal* (calibration) factor
- Tightening cycle counters

3.4.4 Tightening Cycle Counters

QPM tools have onboard counters that record the number of tightening cycles completed by the tool.

- *Master Counter.* Records the total number of tightening cycle completed.
- *Cycle Counter.* Records the number of tightening cycles completed since the last time it was reset.
- *PM Counter*. Records the number of tightening cycles completed since the last time it was reset.
- *PM Threshold*. When the PM Counter exceeds the PM Threshold (Limit), the controller provides a maintenance alert.

Each time the controller is turned on, it reads the tightening cycle counters.

3.5 Tool Operation

W A R N I N G

ROTATING SPINDLE
To Avoid Injury:

- Always wear eye and foot protection when operating and when in areas where power tools are being used.
- Keep all body parts and clothing away from the rotating end of the tool. Dress properly. Do not wear loose-fitted clothing or jewelry.

TORQUE REACTION FORCE
To Avoid Injury:

- Be alert and maintain good balance, footing, and posture at all times in anticipation of the tool's torque reaction. Do not over-extend or over-reach.
- Be prepared for the change in direction and or a higher reaction force when a tool is in reverse.
- The start lever should be positioned to avoid trapping the operator's hand between the tool and the work piece.

TOOL MAY NOT SHUT OFF
To Avoid Injury:

- If the tool does not shut off at the end of the tightening cycle, contact the person responsible for tool installation or repair. Note: When the tool does not shut off, a stall condition occurs. A stall condition can cause a higher than expected torque reaction impulse.
- Ensure tool is properly installed, adjusted and in good working order.
- Do not use the power tool if the switch does not turn it on and off.
- Apply the tool to the joint following all recommendations in this manual.
- Check to ensure the drive socket is fully seated and locked into position before connecting power to the tool.

Prepare to resist the tool's torque reaction:

Start the tool by depressing the start lever or trigger.

Release start lever after the cycle is complete.

3.5.1 Directional Control

W A R N I N G

UNEXPECTED REACTION FORCES
To Avoid Injury:

- Be prepared – when a tool operates in reverse, the tool's torque reaction is opposite to the reaction produced when the tool operates in forward direction.
- The tool can have a higher initial reaction force when loosening a fastener.
- Always stop the tool before changing direction of spindle rotation.

3.5.2 Torque Reaction Devices

W A R N I N G

PINCH POINT BETWEEN TORQUE REACTION BAR AND WORK PIECE
To Avoid Injury:

- Never place any body part between a reaction bar and the work piece.
- Before starting the tool, position the reaction bar firmly against a stationary rigid member that is opposite to the spindle rotation.

Torque reaction devices absorb tool torque reaction forces. Always use reaction devices when high reaction force could injure an operator.

Some reaction devices may require modification to fit the application. Follow all appropriate installation instructions.

3.5.3 Tool Temperature

W A R N I N G

POTENTIAL BURN HAZARD
Fixtured tools have higher operating temperatures and do not have additional thermal protection.
To Avoid Injury:
Wear thermal protective gloves when handling fixtured tools.

Stanley electric tools are thermally protected to prevent overheating. The thermal protection does not allow the tool to operate if the tool temperature rises abnormally – the thermal protector automatically resets when the tool cools down.

Controller task settings can have a significant effect on tool operating temperatures.

3.5.4 Tool Status Lights

Handheld tools from STANLEY ASSEMBLY TECHNOLOGIES have three (green, yellow, and red) status lights. The status light mirror or copy the status lights on the controller or control panel.

Green	Tightened to specified limits	The tightening cycle meets all of the specified parameters.
Yellow	Low torque or angle	The tightening cycle was rejected for not reaching either low torque or low angle.
Red	High torque or angle	The tightening cycle was rejected for exceeding either high torque or high angle.
All lights	Reverse	The next time the start trigger is engaged the tool will release the fastener.

3.5.5 Setting Torque, Angle, and Other Operating Parameters

W A R N I N G

EXCESSIVE TORQUE CONDITION
To Avoid Injury:
- Only trained and qualified personnel should program controllers.
- Never set control limits above the maximum rating of the tool.
- Setting control limits above the maximum rating of the tool can cause high reaction torque.
- Always test for proper tool operation after programming the controller.

The Alpha controller can be setup to change tightening parameters from the tool.

3.6 Special Application Tools

3.6.1 Exposed Gear Socket Tools

W A R N I N G

PINCH POINT AT THE EXPOSED GEARS OR TEETH
To Avoid Injury:
Keep body parts and clothing away from the exposed gear sockets. Dress properly. Do not wear loose-fitted clothing or jewelry.

Exposed gear socket tools are designed to fit into tight spaces where other tools do not fit. These tools have exposed gears or ratchet teeth.

3.6.2 Tubenut Nutrunners

W A R N I N G

PINCH POINT AT THE EXPOSED GEARS OR TEETH
To Avoid Injury:
- Never place body parts or clothing, near the socket opening. Dress properly. Do not wear loose-fitted clothing or jewelry.
- Follow the Tubenut Nutrunner Sequence of Operation

Tubenut nutrunners are used for installing tube fittings.

Tubenut Sequence of Operation (QPM Tools)
- Place nutrunner socket on fastener
- Press the button on the multiple function panel to “arm” the start function (not required in modes 0 and 2)
- Depress start lever
- The tool stops after reaching torque
- Release the lever and lift the tool from the fastener, all tool status lights flash to indicate the tool will now run in reverse to open the socket
- Depress the start lever until the socket returns to the open position
- Release the lever
- Remove the tool

Controller Connections and Inputs/Outputs

Each Alpha Controller can have a different combination of connectors. These connectors serve several purposes, such as:

- Power
- Tool Connections
- Discrete inputs and outputs

C A U T I O N
POTENTIAL ELECTROSTATIC DISCHARGE HAZARD AND WATER AND DIRT INGESTION **To Avoid Damage:** If not using a connector, keep the connector securely covered with the provided cap. This reduces the opportunity for transfer of static electricity and prevents dirt and water from entering the controller.

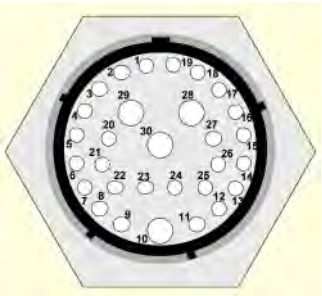
4.1 Alpha Controller Connections

4.1.1 Alpha Controller Power Cord

Alpha Controllers use an IEC 60320 style connector. The power source connector for the power cord is based on customer requirements. The power cord should be rated at either 15A/125V for 115 V or 10A/250V for 230 V use of the controller.

4.1.2 Alpha Controller Tool Connector

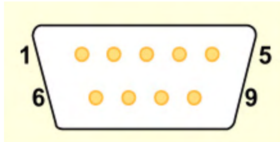
Alpha controllers use a single 30 pin connector to connect two types of QPM DC electric tool cables (patent pending). QPM E__ DC electric tool cables use a MIL-C-38999 Series III connector. The connector is a 17-30S with the insert clocked in the normal position (30-pin Tool Connector). QPM EA DC electric tools use a similar connecter except for B clocking.



30-pin Tool Connector

4.1.3 Alpha Controller Serial Connector

Alpha Controllers have two male DB-9 connectors. One labeled COM PORT 1 connects a laptop computer for access to Embedded Toolbox software. The connection between the computer and the controller is a simple null-modem cable.



DB-9 Connector Pins

Pin	Function	Pin	Function	Pin	Function
1	Carrier Detect	4	Data Terminal Ready	7	Request to Send
2	Receive Data	5	Signal Ground	8	Clear to Send
3	Transmit Data	6	Data Set Ready	9	Ring Indicator

A second DB-9 connector COM PORT 2 is setup as 9600,8,N,1 and is not programmable. When the box is setup for PFCS protocol over serial the barcode and printout feature is disabled.

```
S01, PS01 ______________________ 01/01/1988 00:03:38 __0.9A ____0A A•
||      |              |               |        |       |  |   |  | ||
||      |              |               |        |       |  |   |  | |Carriage Return '\r'
||      |              |               |        |       |  |   |  | Overall Status 'A','R'
||      |              |               |        |       |  |   |  Angle Status 'L','A','H'
||      |              |               |        |       |  |   six characters for Angle
||      |              |               |        |       |  Torque Status 'L','A','H','R'
||      |              |               |        |       six characters for Torque
||      |              |               |        eight characters for Time
||      |              |               ten characters for Date
||      |              thirty two characters for VIN
||      two digits for Task
|two digits for Spindle Number
|
Always an 'S'
```

L = *low* for Torque or Angle
A = *accept* for Torque, Angle, or Overall status
H = *high* for Torque or Angle
R = *replace* for Torque and *reject* for Overall status

The barcode input monitors inter character timing. When there is a 500ms gap between characters, a complete barcode is assumed. When received, it flashes the new barcode on the display and logs it with all rundowns until another barcode is received. If the incoming barcode is longer than 32 characters then the last 32 characters received is used.

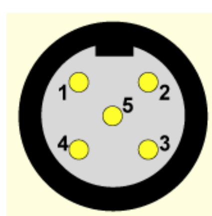
4.1.4 Alpha Controller Ethernet Connector

Alpha Controllers have a single RJ-5 Ethernet connection located on the bottom of the module for connecting to a plant-wide fastening network.

4.1.5 Alpha Controller (Model QA1001 _D_) DeviceNet™

Alpha Controllers can have a single Micro DeviceNet™ port for connecting the Alpha Controller to a Sigma Interface or to a master controller from another manufacturer. In addition, error proofing is available through this port.

Pin	Slave
1	Shield
2	V+
3	V-
4	CAN H
5	CAN L



Alpha Controllers Micro DeviceNet™ Connector

4.1.6 Alpha Controller (Model QA1001 _P_) Profibus Port

Alpha Controllers can have a single Profibus port for connecting the Alpha Controller to a master controller from another manufacturer.

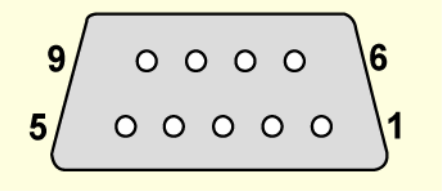


Figure 4-1 DB-9 Connecter Pins (Profibus Port)

Pin	Function	Pin	Function	Pin	Function
1	Empty	4	Repeater	7	Blank
2	Empty	5	Data Ref	8	Data Line Inverse
3	Data Line	6	Power Supply	9	Empty

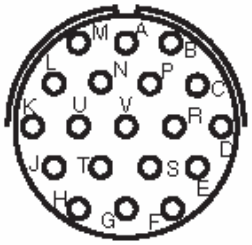
4.1.7 Alpha Controller (Model QA1001 __V) Input and Output Connector

All inputs and outputs are optically isolated 24 VDC

- Internal 24 VDC supply: Maximum = 1 ampere total
- External 24 VDC supply: Maximum = 1 ampere per output

The Alpha controller has a MIL-C-26482 Series II bayonet connector for 24VDC I/O. The connector uses a 12-8S insert in the normal position. Connector options are listed below.

Part No.	19-pin 24V I/O Port	Included
21C104800	Mating Connector - Solder pins	Standard
21C104802	Mating Connector - Crimp pins	Optional
21C104804	Mating Connector - Crimp pins, crimp tool	Optional
21E102202	Breakout Box for plinth mounting	Optional
21C202005	Extension Cable 5M	Optional
21C202010	Extension Cable 10M	Optional
21C202020	Extension Cable 20M	Optional



When all of the inputs are off (binary 0) the controller looks to the tool for the parameter selection.

When the Alpha controller is used with fixtured tools, it must use a Remote Start/Stop/Reverse pendent to the controller to provide basic switching control for the tool.

4.2 Assignable Input/Output Functions

The following Input/Output functions apply to DeviceNET, Profibus, Modbus/TCP, and 24V. There are 8 maximum inputs and outputs for 24 VDC. See Appendix A for assignment of inputs and outputs using Embedded Tool Box.

Inputs	Description	Controller I/O Configuration Options
IGNORE	Input is ignored	**Bit width
START	Start the tool	N.O./N.C., Latch Y/N, Timer
SELECT JOB	Select a job	N.O./N.C., Job #, Disable when open Y/N
SELECT TASK	Select a task	N.O./N.C. , Task #, Disable when open Y/N
STOP	Stop the tool	N.O./N.C.
RESET JOB	Reset a job	N.O./N.C.
TASK SELECT BIT	One bit in a series to select the task	N.O./N.C., Bit #
JOB SELECT BIT	One bit in a series to select the job	N.O./N.C., Bit #
REVERSE	Put the tool in reverse	N.O./N.C.
DISABLE TASK	Disable the task	N.O./N.C., Task #
DISABLE JOB	Disable the job	N.O./N.C., Job #
TASK VERIFY	Verify the selected task to the inputs	N.O./N.C., Task #
JOB VERIFY	Verify the selected task to the inputs	N.O./N.C., Job #
TASK VERIFY BIT	Verify the selected task to one of the input bits	N.O./N.C., Bit #
JOB VERIFY BIT	Verify the selected job to one of the input bits	N.O./N.C., Bit #
RESET RESULT STATUS	Clear the result status	N.O./N.C.
REVERSE START	Put the tool in reverse and start the tool	N.O./N.C.
*PART ID	Set the part identification	Length, Trigger auto/manual
DISABLE TOOL	Disable the tool.	N.O./N.C.
*PART ID TRIGGER	Trigger for part ID/Resets Part ID changed output.	N.O./N.C.

* Input not available on 24V

** Does not apply to 24V

Outputs	Description	Controller I/O Configuration Options
OFF	Output is turned off	**Bit width
IN CYCLE	The tool is in cycle	N.O./N.C., Type normal/timed/flash, Time
JOB SELECTED	Indicate job select	N.O./N.C., Type normal/timed/flash, Time, Job #
DISASSEMBLY DETECTED	Fastener removed	N.O./N.C., Type normal/timed/flash, Time
TOOL RUNNING	The tool is running	N.O./N.C., Type normal/timed/flash, Time
CYCLE OK	Self explanatory	N.O./N.C., Type normal/timed/flash, Time
CYCLE NOK	Self explanatory	N.O./N.C., Type normal/timed/flash, Time
TASK SELECTED	Indicate task selected	N.O./N.C., Type normal/timed/flash, Time, Task #
JOB COMPLETE	Job complete	N.O./N.C., Type normal/timed/flash, Time
TASK COMPLETE	Task complete	N.O./N.C., Type normal/timed/flash, Time, Task #
TASK SELECTED BIT	Indicate a bit of the selected task	N.O./N.C., Bit #, Binary/Binary +1
JOB SELECTED BIT	Indicate a bit of the selected job	N.O./N.C., Bit #, Binary/Binary +1
TORQUE OK	Self explanatory	N.O./N.C., Type normal/timed/flash, Time, Step Audit/Audit -1, Audit -2
TORQUE HIGH	Self explanatory	N.O./N.C., Type normal/timed/flash, Time, Step Audit/Audit -1, Audit -2
TORQUE LOW	Self explanatory	N.O./N.C., Type normal/timed/flash, Time, Step Audit/Audit -1, Audit -2
ANGLE OK	Self explanatory	N.O./N.C., Type normal/timed/flash, Time, Step Audit/Audit -1, Audit -2
ANGLE HIGH	Self explanatory	N.O./N.C., Type normal/timed/flash, Time, Step Audit/Audit -1, Audit -2
ANGLE LOW	Self explanatory	N.O./N.C., Type normal/timed/flash, Time, Step Audit/Audit -1, Audit -2
CYCLE ABORTED	The rundown was aborted	N.O./N.C., Type normal/timed/flash, Time
STOPPED	The rundown was stopped by the operator	N.O./N.C., Type normal/timed/flash, Time
FAULTED	A fault condition is active	N.O./N.C., Type normal/timed/flash, Time
READY	The tool is ready to run	N.O./N.C., Type normal/timed/flash, Time
PM	The tool requires service	N.O./N.C., Type normal/timed/flash, Time
TORQUE *	Torque results	Format float/int16/int32/fixed, precision, Step Audit/Audit -1, Audit -2
ANGLE *	Angle results	Format float/int16/int32/fixed, precision, Step Audit/Audit -1, Audit -2
FAULT CODE *	Fault code	Format float/int16/int32/fixed, precision
PARAMETER *	Parameter	Format float/int16/int32/fixed, precision, Step Audit/Audit -1, Audit -2
START TRIGGER	Shows state of start lever or trigger.	N.O./N.C., Type normal/timed/flash, Time
MULTIFUNCTION BUTTON	Shows state of multifunction button.	N.O./N.C., Type normal/timed/flash, Time
SNUG ACHIEVED	Snug torque is achieved.	N.O./N.C., Type normal/timed/flash, Time
CYCLE STOPS	Stop shut off code before cycle complete.	N.O./N.C., Type normal/timed/flash, Time
*PART ID CHANGED	When the part ID changes	N.O./N.C., Type normal/timed/flash, Time
STEP BIT	Indicates last step of rundown	N.O./N.C., Bit #, Binary/Binary +1

* Outputs not available on 24V

** Does not apply to 24V

Glossary

Abort Timer	The tightening cycle aborts if the tool does not shutoff before this pre-selected time.
Acceleration	How fast the controller changes the speed of the tool from 0 (stopped) to the rated speed.
Accept Tone	Controls the tone made from the handle of handheld QPM tools for accepted tightening cycles. Allows distinct tones for tools in adjacent workstations.
AC/TA	Angle Control Torque Averaging.
AC/TC	Angle Control Torque Control. This strategy controls a tool based on angle and Torque.
AC/TM	Angle Control with Torque Monitor. This strategy controls a tool based on angle and monitors the torque limits defined by user.
Angle Interval	(Rate, Yield and AC/TA) Angle interval is used to calculate Torque vs. Angle Rate. A larger interval tends to give a smoother rate.
ATC	Allows Adaptive Tightening Control modes to be selected, so that consistent torque can be maintained over a wide range of joints. Manual downshift should be used when: • High Prevailing Torques – Prevailing Torque > 20% of the Torque Set Point (TSP). • High Starting Torque –Starting Torque > 20% of TSP.
Auto Sequence Tasks	Enables the tool setup for the next task after the batch count is achieved for the prior task in a Job.
BACK	Back-Off. This strategy functions after Angle Control with Torque Monitor (AC/TM). It loosens the fastener (turns it the opposite direction from tightening).
Batch Count	The number of tightening cycles required to be within specified limits to complete a batch. The Run display shows the batch count and number of complete tightening cycles. Defines the number of rundowns required to be completed for each task.
Downshift Mode	Disable: no downshift; Manual: Occurs at specified torque; ATC automatically adapts to the joint.
Downshift Speed	Once the tool reaches the Downshift Torque point, the controller changes the operating speed of the tool from the initial Tool Speed to the Downshift Speed.
Downshift Torque	The controller changes the operating speed of the tool from the initial Tool Speed to the Downshift Speed at the Downshift Torque level.
High Angle	Anytime the peak angle recorded exceeds the High Angle, the tightening cycle is recorded as a reject for high angle, the high angle light (red) illuminates and the tightening cycle is given an overall status of NOK.
High Torque	Anytime the peak torque recorded exceeds the High Torque, the tightening cycle is recorded as a reject for high torque, the high torque light (red) illuminates and the tightening cycle is given an overall status of NOK.
Jobs	Define one or more assembly sequences that can include multiple fasteners controlled by one or more tasks.
Low Angle	Anytime the peak angle recorded during the Angle Audit Step fails to reach the Low Angle, the tightening cycle is recorded as a reject for low angle, the low angle light (yellow) illuminates and the tightening cycle is given an overall status of NOK.
Low Torque	When the peak torque recorded fails to reach the Low Torque, the tightening cycle is recorded as a reject for low torque, the low torque light (yellow) illuminates and the tightening cycle is given an overall status of NOK.
MFP Mode	Controls the operation of the multiple-function panel (MFP) on QPM tools. Choices includes: MFB Tap (Disabled, Reverse, Task Sel, Arm, Rst Rej, Job Sel,

	Job Rst) and MFB Hold (Disabled, Reverse, Task Sel, Arm, Rst Rej, Job Sel, Job Rst). The default value is Disabled.
Odometer	The odometer increments after every in cycle to tracks the total tool cycles. It cannot be reset.
Parameter Set	Now referenced as a Task.
PM Counter	Records the number of tightening cycles completed since the last time it was reset for Planned Maintenance.
PM Counter	The PM (preventative maintenance) counter tracks the total tool cycles until maintenance is required.
PM Limit	When the PM Counter exceeds the PM Limit, the controller provides a maintenance alert.
RATE	RCAM Torque Rate Control. This strategy uses an increase in Torque Rate Control to a specified level to indicate a fastening process event.
Reject Tone	Controls the tone made from the handle of handheld QPM tools for rejected tightening cycles. Allows distinct tones for tools in adjacent workstations.
Slow Seek	Slow Seek helps engage the socket or fastener at a pre-selected speed, torque level and angular rotation. Once engaged, the tightening cycle completes at a higher speed. Slow Seek prevents cross threaded fasteners and previously secured fasteners from being counted in a batch.
Snug Torque	The controller begins to monitor the tool for angle at a pre-selected threshold torque. Any increase in angle after the snug point results in a corresponding increase in the tension or clamp load within the joint.
Soft Stop	Soft stop minimizes the torque impulse to the operator during tool shutoff at the end of the tightening cycle.
Speed	The speed at which the tool operates during the initial portion of the tightening cycle prior to ATC or downshift.
Spindle	A spindle represents a connection to a hand held or fixtured tool connected to a controller.
Steps	Instructions to operate a tool defined by available strategies such as TC/AM (Torque Control, Angle Monitoring).
Strategy	Identifies what variables will be used to control the tool during a tightening cycle.
System Outputs	(Tool Running, In Cycle, Cycle OK, Cycle NOK, Disassembly Detected, Indicate Job) also fixed and pulsed
Task	Control tool operation for tightening a fastener which can have one or more steps. A collection of instructions that define how the tool should perform the tightening process. It may be selected from the keypad or 24V device such as a socket tray. Formerly referenced as Parameter Set.
TC/AM	Torque Control with Angle Monitoring. This strategy controls a tool based on torque and monitors the angle limits defined by user.
Thread Direction	Sets assembly direction to clockwise (CW) or counter clockwise (CCW).
Threshold Torque	Sets the point at which the tool is "In Cycle." When the tool is "In Cycle" the tool and controller tightening cycle status lights turn off, the controller displays dashes (-) for data, and the "In Cycle" output is turned on.
Tool Tones	Distinctive sounds assigned to tool functions.
Torque Average	(Rate, Yield and AC/TA) Number of torque samples averaged for rate calculation. Torque samples are taken every millisecond. A running average is calculated based on these samples. A higher number gives a smoother rate.
Torque Calibration	Determines how torque values are assigned to the electrical signals from the torque transducer on the tool. This value is unique to each tool and changes over time.
Torque Target	When the tool is being controlled for torque, the torque target instructs the controller when to shutoff the tool. The torque target should be greater than Low Torque and less than High Torque, and is required for torque control.
Trace	A display plot of torque versus time (or angle) of a tightening cycle.
Trip Counter	Records the number of total tool tightening cycles completed since the last time it was reset. It is usually used as a supplementary count of the PM Counter.

Units

The following torque units and associated labels are used with Stanley controllers and tools.

Abbreviation	Common Term	= 1 lbfft	= 1 Nm
Nm	Newton meter	1.355 818	1
Ncm	Newton centimeter	135.581 8	100
Ndm	Newton decimeter	13.5582	10
kgm	Kilogram meter	0.138 255 2	0.101 971 6
kgcm	Kilogram centimeter	13.825 52	10.197 16
ftlb	Foot pound	1	0.737 562 1
inlb	Inch pound	12	8.850 745
inoz	inch ounce	192	141.611 9

YIELD

YCAM Yield Control. This strategy uses Torque vs. Angel Rates as the control variable.

Software Map

6.1 Setup

6.1.1 Wizard

- Strategy (Torque, Angle, Torque & Angle)
- Units (NM, FTLB, INLB, INOZ, KGM, NCM, NDM)
- Thread Direction (CW CCW)
- High Torque
- Low Torque
- Snug Torque
- High Angle
- Low Angle
- Speed
- Wobble (Angle Target, Speed, Max Torque)
- Slow Seek (Angle Target, Speed, Max Torque)
- Start Delay (Delay Time, Max Torque)
- Conditioner Fastener (Down Target Torque, Delay Time, Max Time, Up Angle Target)
- Pre-Torque (Torque Target, Delay Between Steps)
- ATC
- Backout Fastener (Angle Target, Torque Target, Speed
- Fastener Release (Speed, Angle Target, Max Torque)

6.1.2 Job

- Name
- Barcode ID
- Auto Sequence Tasks (Yes, No)
- Auto Reset Job (Yes, No)
- Enable Error Proofing

6.1.2.1 Task

- Name
- Batch Count
- Units (NM, FTLB, INLB, INOZ, KGM, NCM, NDM)
- Thread Direction (CW, CCW)
- Threshold Torque
- Statistical Threshold
- Disassembly Speed
- Disassembly Acceleration
- Cycle Lock-Out
- Torque Audit Step (Last, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12)
- Angle Audit Step (Last, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12)
- Torque Rate

- Torque Average
- Angle Interval
- Modified

6.1.2.2 Step

- Name
- Strategy TC/AM
  - Torque Target
  - High Torque
  - Low Torque
  - Snug Torque
  - High Angle
  - Low Angle
  - Angle Bailout
  - Downshift Mode (Disabled, Manual, ATC)
    - Manual: Downshift Mode
    - Manual: Downshift Speed
    - ATC: Starting Torque %
    - ATC: Ending Torque %
    - ATC: Ending Speed %
  - Soft Stop (Yes, No)
    - Yes: Current Off Time
    - Yes: Current Hold Time
    - Yes: Current Ramp Time
  - Speed
  - Power
  - Acceleration
  - Abort Timer
  - Delay Between Steps
  - Accumulate Angle (Yes, No)
- Strategy AC/TM
  - Snug Torque
  - Angle Target
  - High Angle
  - Low Angle
  - High Torque
  - Low Torque
  - Torque Bailout
  - Downshift Mode (Disabled, Manual)
    - Manual: Downshift Mode
    - Manual: Downshift Speed
  - Soft Stop (Yes, No)
    - Yes: Current Off Time
    - Yes: Current Hold Time
    - Yes: Current Ramp Time

- Speed
- Power
- Acceleration
- Abort Timer
- Delay Between Steps
- Accumulate Angle (Yes, No)

- Strategy AC/TC
  - Torque Target
  - High Torque
  - Low Torque
  - Torque Bailout
  - Snug Torque
  - Angle Target
  - High Angle
  - Low Angle
  - Angle Bailout
  - Downshift Mode (Disabled, Manual, ATC)
    - Manual: Downshift Mode
    - Manual: Downshift Speed
    - ATC: Starting Torque %
    - ATC: Ending Torque %
    - ATC: Ending Speed %
  - Soft Stop (Yes, No)
    - Yes: Current Off Time
    - Yes: Current Hold Time
    - Yes: Current Ramp Time
  - Speed
  - Power
  - Acceleration
  - Abort Timer
  - Delay Between Steps
  - Accumulate Angle (Yes, No)
- Strategy BACK
  - Snug Torque
  - Angle Target
  - High Angle
  - Low Angle
  - Torque Target
  - High Torque
  - Low Torque
  - Torque Bailout
  - Downshift Mode (Disabled, Manual, ATC)
    - Manual: Downshift Mode
    - Manual: Downshift Speed

        - ATC: Starting Torque %
        - ATC: Ending Torque %
        - ATC: Ending Speed %
    - Soft Stop (Yes, No)
        - Yes: Current Off Time
        - Yes: Current Hold Time
        - Yes: Current Ramp Time
    - Speed
    - Power
    - Acceleration
    - Abort Timer
    - Delay Between Steps
    - Accumulate Angle (Yes, No)
- Strategy RATE
    - Torque Rate Target
    - High Torque
    - Low Torque
    - Torque Bailout
    - Snug Torque
    - High Angle
    - Low Angle
    - Angle Bailout
    - Downshift Mode (Disabled, Manual, ATC)
        - Manual: Downshift Mode
        - Manual: Downshift Speed
        - ATC: Starting Torque %
        - ATC: Ending Torque %
        - ATC: Ending Speed %
    - Soft Stop (Yes, No)
        - Yes: Current Off Time
        - Yes: Current Hold Time
        - Yes: Current Ramp Time
    - Speed
    - Power
    - Acceleration
    - Abort Timer
    - Delay Between Steps
    - Accumulate Angle (Yes, No)
- Strategy YIELD
    - Yield Target
    - High Torque
    - Low Torque
    - Torque Bailout
    - Snug Torque

- High Angle
- Low Angle
- Angle Bailout
- Downshift Mode (Disabled, Manual, ATC)
  - Manual: Downshift Mode
  - Manual: Downshift Speed
  - ATC: Starting Torque %
  - ATC: Ending Torque %
  - ATC: Ending Speed %
- Soft Stop (Yes, No)
  - Yes: Current Off Time
  - Yes: Current Hold Time
  - Yes: Current Ramp Time
- Speed
- Power
- Acceleration
- Abort Timer
- Delay Between Steps
- Accumulate Angle (Yes, No)

- Strategy AC/TA
  - Snug Torque
  - Angle Target
  - High Angle
  - Low Angle
  - Torque Target
  - High Torque
  - Low Torque
  - Max Torque Bailout
  - Mind Torque Bailout
  - Downshift Mode (Disabled, Manual, ATC)
    - Manual: Downshift Mode
    - Manual: Downshift Speed
    - ATC: Starting Torque %
    - ATC: Ending Torque %
    - ATC: Ending Speed %
  - Soft Stop (Yes, No)
    - Yes: Current Off Time
    - Yes: Current Hold Time
    - Yes: Current Ramp Time
  - Speed
  - Power
  - Acceleration
  - Abort Timer
  - Delay Between Steps

- Accumulate Angle (Yes, No)

6.1.3 Communications

- Obtain IP From Network (No, Yes)
  - IP Address
  - Subnet Mask
  - Gateway
  - DNS
  - Physical
- Serial
  - Serial Port 1 (Barcode/Printer, Barcode, Printer, ETB)
  - Serial Port 2 (Barcode/Printer, Barcode, Printer, Toyota, PFCS, Open)
- PFCS
  - Server IP
  - Port
  - Time Out
- Open
  - Port
  - Cell
  - Buffer while off line
- Toolsnet
  - Server IP
  - Port
  - Cell
  - Station

6.1.4 Other

- General
  - Name
  - Keypad Mode (Disabled, Task Select, Job Select, Part ID)
  - Count Mode (Count Up, Count Down)
  - Stop/Abort within Limits (OK, NOK)
- Users
  - Add
    - Manage
      - 1. Add
      - 2. Delete
      - 3. Change Password
      - 4. Change Access
- Outputs
  - C (Off, In Cycle, Job Selected, Disassembly Detected, Tool Running, Cycle OK, Cycle NOK, Task Selected, Job Completed, Task Complete, Task Selected Bit, Job Selected Bit, Torque OK, Torque Hi, Torque Low, Angle OK, Angle Hi, Angle Low, Cycle Aborted, Stopped, Faulted, Ready, PM, Start Trigger, MFB, Snug Achieved, Cycle Stopped, Step Bit)
  - D (Off, In Cycle, Job Selected, Disassembly Detected, Tool Running, Cycle OK, Cycle NOK, Task Selected, Job Completed, Task Complete, Task Selected Bit, Job Selected

Bit, Torque OK, Torque Hi, Torque Low, Angle OK, Angle Hi, Angle Low, Cycle Aborted, Stopped, Faulted, Ready, PM, Start Trigger, MFB, Snug Achieved, Cycle Stopped, Step Bit)

- E (Off, In Cycle, Job Selected, Disassembly Detected, Tool Running, Cycle OK, Cycle NOK, Task Selected, Job Completed, Task Complete, Task Selected Bit, Job Selected Bit, Torque OK, Torque Hi, Torque Low, Angle OK, Angle Hi, Angle Low, Cycle Aborted, Stopped, Faulted, Ready, PM, Start Trigger, MFB, Snug Achieved, Cycle Stopped, Step Bit)
- F (Off, In Cycle, Job Selected, Disassembly Detected, Tool Running, Cycle OK, Cycle NOK, Task Selected, Job Completed, Task Complete, Task Selected Bit, Job Selected Bit, Torque OK, Torque Hi, Torque Low, Angle OK, Angle Hi, Angle Low, Cycle Aborted, Stopped, Faulted, Ready, PM, Start Trigger, MFB, Snug Achieved, Cycle Stopped, Step Bit)
- G (Off, In Cycle, Job Selected, Disassembly Detected, Tool Running, Cycle OK, Cycle NOK, Task Selected, Job Completed, Task Complete, Task Selected Bit, Job Selected Bit, Torque OK, Torque Hi, Torque Low, Angle OK, Angle Hi, Angle Low, Cycle Aborted, Stopped, Faulted, Ready, PM, Start Trigger, MFB, Snug Achieved, Cycle Stopped, Step Bit)
- H (Off, In Cycle, Job Selected, Disassembly Detected, Tool Running, Cycle OK, Cycle NOK, Task Selected, Job Completed, Task Complete, Task Selected Bit, Job Selected Bit, Torque OK, Torque Hi, Torque Low, Angle OK, Angle Hi, Angle Low, Cycle Aborted, Stopped, Faulted, Ready, PM, Start Trigger, MFB, Snug Achieved, Cycle Stopped, Step Bit)
- J (Off, In Cycle, Job Selected, Disassembly Detected, Tool Running, Cycle OK, Cycle NOK, Task Selected, Job Completed, Task Complete, Task Selected Bit, Job Selected Bit, Torque OK, Torque Hi, Torque Low, Angle OK, Angle Hi, Angle Low, Cycle Aborted, Stopped, Faulted, Ready, PM, Start Trigger, MFB, Snug Achieved, Cycle Stopped, Step Bit)
- K (Off, In Cycle, Job Selected, Disassembly Detected, Tool Running, Cycle OK, Cycle NOK, Task Selected, Job Completed, Task Complete, Task Selected Bit, Job Selected Bit, Torque OK, Torque Hi, Torque Low, Angle OK, Angle Hi, Angle Low, Cycle Aborted, Stopped, Faulted, Ready, PM, Start Trigger, MFB, Snug Achieved, Cycle Stopped, Step Bit)

- Inputs
  - L (Ignore, Start, Select Job, Select Task, Stop, Reset Job, Task Select Bit, Job Select bit, Reverse, Disable Task, Disable Job, Task Verify, Job Verify, Task Verify Bit, Job Verify Bit, Reset Result Status, Reverse Start, Disable Tool)
  - M (Ignore, Start, Select Job, Select Task, Stop, Reset Job, Task Select Bit, Job Select bit, Reverse, Disable Task, Disable Job, Task Verify, Job Verify, Task Verify Bit, Job Verify Bit, Reset Result Status, Reverse Start, Disable Tool)
  - N (Ignore, Start, Select Job, Select Task, Stop, Reset Job, Task Select Bit, Job Select bit, Reverse, Disable Task, Disable Job, Task Verify, Job Verify, Task Verify Bit, Job Verify Bit, Reset Result Status, Reverse Start, Disable Tool)
  - P (Ignore, Start, Select Job, Select Task, Stop, Reset Job, Task Select Bit, Job Select bit, Reverse, Disable Task, Disable Job, Task Verify, Job Verify, Task Verify Bit, Job Verify Bit, Reset Result Status, Reverse Start, Disable Tool)
  - R (Ignore, Start, Select Job, Select Task, Stop, Reset Job, Task Select Bit, Job Select bit, Reverse, Disable Task, Disable Job, Task Verify, Job Verify, Task Verify Bit, Job Verify Bit, Reset Result Status, Reverse Start, Disable Tool)
  - S (Ignore, Start, Select Job, Select Task, Stop, Reset Job, Task Select Bit, Job Select bit, Reverse, Disable Task, Disable Job, Task Verify, Job Verify, Task Verify Bit, Job Verify Bit, Reset Result Status, Reverse Start, Disable Tool)

    - T (Ignore, Start, Select Job, Select Task, Stop, Reset Job, Task Select Bit, Job Select bit, Reverse, Disable Task, Disable Job, Task Verify, Job Verify, Task Verify Bit, Job Verify Bit, Reset Result Status, Reverse Start, Disable Tool)
    - U (Ignore, Start, Select Job, Select Task, Stop, Reset Job, Task Select Bit, Job Select bit, Reverse, Disable Task, Disable Job, Task Verify, Job Verify, Task Verify Bit, Job Verify Bit, Reset Result Status, Reverse Start, Disable Tool)
- Triggers
    - Tap Action (Disabled, Reverse, Task Select, Arm, Reset Reject, Job Select, Job Reset)
    - Hold Action (Disabled, Reverse, Task Select, Arm, Reset Reject, Job Select, Job Reset)
    - Start Input (Any, All, Lever, PTS, None)
- Lights
    - Lights (1,2) (Task, Job)
    - Headlight Timer
- Tones
    - Accept Tone (None, Beep, Beeeep, Tocatta, Fifth, Turkishmarch, Funeralmarch, Ninth, Michigan, Ohio)
    - Reject Tone (None, Beep, Beeeep, Tocatta, Fifth, Turkishmarch, Funeralmarch, Ninth, Michigan, Ohio)
- Tool
    - PM Limit
    - Temperature Limit
    - Torsion Factor
    - Requires Arming (No, Yes)
- Stats
    - Population
    - Subgroup Size
- Clock
    - Time
    - Date

6.1.5 Full Backup/Restore

- Backup
- Restore
- Defaults

6.2 Service

6.2.1 Tool

- About
    - Model
    - Serial
    - Software Version
    - Max Torque
    - Max Speed
- Counters
    - Odometer
    - PM Counter
    - Trip Counter

Alpha Controller

- Cal
  - Nominal Cal
  - Torque Cal
  - Modified

6.2.2 Controller

- About
  - Model
  - Serial
  - Software Version
  - Servo Version
- Update

6.3 Analyze

- Results
- Cap
- Perform
- Cam
- Export
  - 1. Rundown Data (save)
  - 2. Fault Event Data (save)
- Job1.1 (Job, Task)
- 1. Rundown Data

Warranty

Mechanical Products Limited Warranty:

STANLEY ASSEMBLY TECHNOLOGIES (“Stanley”) warrants its Assembly Technologies mechanical products to the original purchaser to be free from deficiencies in material or workmanship for the useful life of the product.

Under this lifetime limited warranty Stanley will, at its discretion, repair or replace any product which, upon inspection, is acknowledged by Stanley to be defective.

This limited lifetime warranty shall apply to products which have been used under normal operating conditions for their intended use and shall not apply to products which have been subjected to: abnormal wear and tear, abuse, misuse, improper maintenance, negligence, continued use after partial failure, accident, alterations or repairs with non-genuine Stanley replacement parts.

Electronic Products Limited Warranty:

Stanley warrants its Assembly Technologies electronic products to the original purchaser to be free from deficiencies in material or workmanship for a period of one year after the date of shipment.

Under this limited warranty Stanley will, at its discretion, repair or replace any product which, upon inspection, is acknowledged by Stanley to be defective.

This warranty shall apply to products which have been used under normal operating conditions for their intended use and shall not apply to products which have been subjected to: abnormal wear and tear, neglect, component degradation, improper handling, overload, abuse, misuse, improper maintenance, use with improper accessories, or where alterations have been made.

Software Products Limited Warranty:

Stanley warrants its Assembly Technologies software products to the original purchaser to be free from deficiencies in material or workmanship for a period of one year after the date of shipment.

Under this limited warranty Stanley will, at its discretion, make available replacement software or an upgrade for any product which, upon inspection, is acknowledged by Stanley to be defective. Installation of the software shall be the responsibility of the requestor.

This warranty shall apply to products which have been used with specified, compatible hardware under normal operating conditions for their intended use and shall not apply to products which have been: modified, misused, improperly handled, improperly maintained, or used with non-compatible hardware or accessories.

OEM Products Limited Warranty:

Some Stanley Assembly Technologies custom engineered systems include components manufactured by others. The limited warranties of each individual manufacturer shall apply to these components and Stanley makes no representation or warranty of any kind, expressed or implied, with respect to such components.

General Terms:

This limited warranty gives you specific legal rights and is in lieu of all other warranties, expressed or implied, including the implied warranties of merchantability and fitness for a particular purpose. Some states and countries do not allow limitations on implied warranties, so the above may not apply to you. You may also have other rights which vary by state or country.

Stanley shall not be responsible for incidental or consequential damages or the inability to use its products for any purpose whatsoever. Stanley's maximum liability shall not in any case exceed the

contract price for the products claimed to be defective. Some states and countries do not allow the exclusion or limitation of incidental or consequential damages, so this specific limitation or exclusion may not apply to you.

Specification Changes:

Stanley retains the right to discontinue and/or change specifications of any Assembly Technologies products without responsibility for incorporating changes in products already sold.

Warranty Claims:

To apply for warranty consideration, the original purchaser should take the following action:

Contact the Stanley Assembly Technologies customer service department to obtain a "Return Authorization Number" and "Warranty Claim Report Form."

Package the product including proof of purchase and the completed warranty claim form.

Note the Return Authorization Number on the exterior of the package and return freight to:

Stanley Assembly Technologies
5335 Avion Park Drive
Cleveland, Ohio 44143-2328

In the event that a product is repaired or replaced under the terms of the warranty, the warranty period of the repaired or replacement product shall be limited to the remaining portion of the original warranty period.

Product Services

Stanley provides full services for design, modification, service, repair, and training on Stanley products.

Contact STANLEY ASSEMBLY TECHNOLOGIES or their agents for information on training courses to aid users in becoming familiar with operations, maintenance, or programming of the Stanley DC electric tools and controllers.

No modification of Stanley tools and controllers can be made without the express permission of STANLEY ASSEMBLY TECHNOLOGIES. Refer all service to STANLEY ASSEMBLY TECHNOLOGIES, or their representatives.

Return Material Authorization (RMA) Procedures

A Return Material Authorization or RMA is required before returning any material for warranty or repair service.

- Contact STANLEY ASSEMBLY TECHNOLOGIES or their agents.
- Request Customer Service or Repair Services.

NOTE:
An RMA can be given without a purchase order. However, non-warranty repairs cannot be performed until a written purchase order or credit card authorization is received.

- Have the following information available for the person answering the telephone to obtain an RMA:
  - Company name and address.
  - A contact name and telephone number. If possible, have facsimile and pager numbers (if any) available.
  - The Stanley model number, serial number, and description for the item
  - A short description of the problem.

Contacts

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Appendix A – Embedded Toolbox

Features, Navigation and Menu

1.1 Introduction

Embedded Toolbox enables communication to an Alpha controller using a networked computer's web browser. To get started, point the browser to the controller's IP address.

1.2 Installation

1.2.1.1 Requirements for Alpha Controllers (Ethernet Connection):

- Javascript enabled Internet browser with Flash 9 for Windows, Macintosh, or Linux running over an Ethernet TCP/IP connection
- Adobe Flash Player v9 or above (http://www.adobe.com)
- QA1001 Alpha Controller Version 3.0 or above
- Q1001 Alpha Controller Version 4.0 or above

Connect to the controller using the IP address in the browser. Alpha controllers can also connect through the Controller Gateway using the serial port as described for the Q0001 Kappa controller.

1.2.1.2 Requirements for Alpha Controllers Using the Controller Gateway (Serial Connection):

- Microsoft Windows XP (for serial connection to a controller)
- QA1001 Alpha Controller Version 3.0 or above
- Q1001 Alpha Controller Version 4.0 or above
- Javascript enabled browser and Adobe Flash Player described above

The Controller Gateway is a Windows based software program that provides a web based interface to an Alpha controller connected via a serial link.

1.2.1.3 Installing the Controller Gateway

Using the provided installation media, run the setup program and follow the on-screen instructions. During installation, TCP/IP ports for the web interface and the live event interface can be set. Leave the default values unless you understand their meaning and require a port change for your specific environment.

1.2.1.4 Running the Controller Gateway?

The installer sets the Controller Gateway to automatically launch each time the computer is started. When Controller Gateway is running, a small icon appears on the system tray or Windows Task bar (typically at the bottom right corner of the screen).

Right-clicking on the Controller Gateway icon displays its menu. From the menu, select the Auto-Connect option. Note that Auto-Connect is the default option; this means that double-clicking the Controller Gateway icon also starts the auto-connection process.

The auto-connection process launches the default web browser and examines the computers available serial ports. The Controller Gateway looks port by port for a compatible Stanley controller connection. When one is found, the browser redirects to the controller's main menu. From the menu, setup, maintenance and analysis functions can be performed.

If a compatible controller is not found, the auto-connect mechanism offers to try again. If you choose to not try again, the browser is redirected to an "Offline Mode" menu. In offline mode, setups and configuration file exports can be created. These files can be imported to a connected controller in the future.

1.3 Navigation

A lock/unlock icon  connects or disconnects the controller. An amplifying signal icon  shows green when connected and red when disconnected.

NOTE:
Use the Show All button  – not the browser's back button – to return to the main menu .

1.4 Menu Options

Quick Start gives wizard capability to configure simple tightening cycles for a specific job.

Jobs Management configures tightening cycles with full controller capability to manage jobs, tasks and steps.

Systems Management configures system name, multiple-function button (MFB) mode, keypad mode and tones.

Input / Output configures 24 volt input/output, fieldbus input/output, modbus TCP input/output using either a table or graphical view.

Setup
- Quick Start
- Jobs Management
- System Management
- Input / Output

Rundown Analysis enables data import/export/print and analysis including traces, statistics, historical data and xbar/range views.

Tool Diagnostics shows real time tool parameters such as speed and temperature.

I/O Diagnostics enables real time analysis and stimulus for 24 volt input/output, fieldbus input/output, modbus TCP input/output.

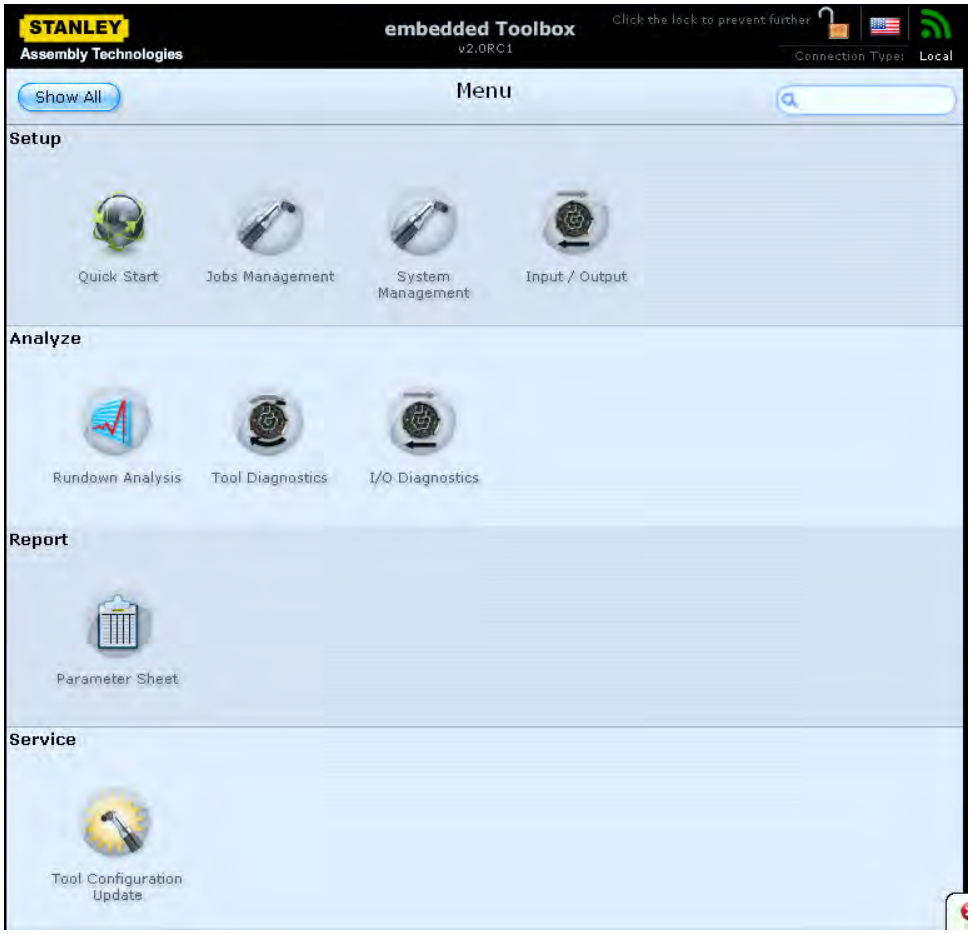
Analyze
- Rundown Analysis
- Tool Diagnostics
- I/O Diagnostics

Reports shows, saves and prints detail controller reports for: system, jobs, tasks and/or combined jobs and tasks.

Report
- Parameter Sheet

Tool Configuration Update upgrades tool configuration information.

Service
- Tool Configuration Update


STANLEY
Assembly Technologies
embedded Toolbox
v2.0RC1
Click the lock to prevent further
Connection Type: Local
Show All
Menu
Setup
Quick Start
Jobs Management
System Management
Input / Output
Analyze
Rundown Analysis
Tool Diagnostics
I/O Diagnostics
Report
Parameter Sheet
Service
Tool Configuration Update

1.4.1 Setup


Setup
Quick Start
Jobs Management
System Management
Input / Output

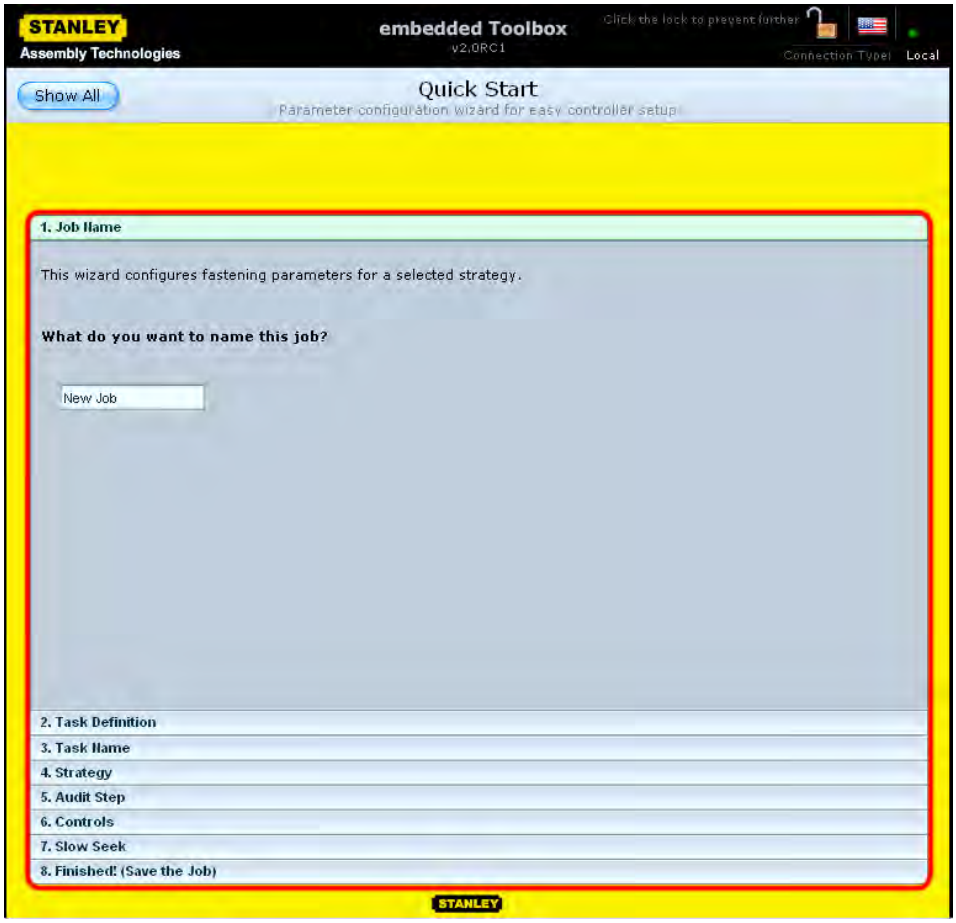
1.4.1.1 Quick Start

Quick Start provides a graphical user interface (GUI) for wizard programming Alpha controllers.

1.4.1.1.1 Job Name

Enter job name on the opening screen.

Setup
- Quick Start
  - o Job Name



1.4.1.1.2 Task Definition

Identify the number of bolts to be fastened and whether they will be fastened using the same parameters. If no, then a bolt control option appears at top.

Setup
- Quick Start
  - o Job Name
  - o Task Definition

1.4.1.1.3 Task Name

Enter the task name to identify this set of fastening parameters.

1.4.1.1.4 Strategy

Strategy options include Torque, Angle and Torque & Angle. Use this screen to also set units and fastening direction.

Setup
- Quick Start
  - o Job Name
  - o Task Definition
  - o Task Name
  - o Strategy

1.4.1.1.5 Audit Step

The Audit Step sets the high and low limits for torque and/or angle depending on the strategy selected. Free speed of the tool is also set. For angle limits, the snug torque determines the starting point for angle measurement.

Setup
- Quick Start
  - o Job Name
  - o Task Definition
  - o Task Name
  - o Strategy
  - o Audit Step

1.4.1.1.6 Controls

Controls enables setting the variables for:

- Wobble
- Slow Seek
- Start Delay
- Condition Fastener
- Pre-Torque
- ATC
- Backout Fastener
- Release Fastener

The default is Slow Seek selected and ATC enabled.

Setup
- Quick Start
  - o Job Name
  - o Task Definition
  - o Task Name
  - o Strategy
  - o Audit Step
  - o Controls

1.4.1.1.7 Wobble

Set output rotate (degrees), tool speed and maximum torque.

Setup
- Quick Start
  - o Job Name
  - o Task Definition
  - o Task Name
  - o Strategy
  - o Audit Step
  - o Controls
  - - Wobble

1.4.1.1.8 Slow Seek

Set output rotate (degrees), tool speed and maximum torque.

Setup
- Quick Start
  - o Job Name
  - o Task Definition
  - o Task Name
  - o Strategy
  - o Audit Step
  - o Controls
  - - Wobble
  - - Slow Seek

1.4.1.1.9 Start Delay

Set delay time (seconds) and high torque.

Setup
- Quick Start
  - o Job Name
  - o Task Definition
  - o Task Name
  - o Strategy
  - o Audit Step
  - o Controls
  - - Wobble
  - - Slow Seek
  - - Start Delay

1.4.1.1.10 Condition Fastener

Set down torque target (NM), delay between steps (seconds), cycle abort time (seconds) and angle target (degrees).

Setup
- Quick Start
  - o Job Name
  - o Task Definition
  - o Task Name
  - o Strategy
  - o Audit Step
  - o Controls
  - - Wobble
  - - Slow Seek
  - - Start Delay
  - - Condition Fastener

1.4.1.1.11 Pre-Torque

Set target torque (NM) and delay between steps (seconds).

Setup
- Quick Start
  - o Job Name
  - o Task Definition
  - o Task Name
  - o Strategy
  - o Audit Step
  - o Controls
  - - Wobble
  - - Slow Seek
  - - Start Delay
  - - Condition Fastener
  - - Pre-Torque

1.4.1.1.12 Backout Fastener

Set output rotation (degrees), high torque (NM) and tool speed (RPM).

Setup
- Quick Start
  - o Job Name
  - o Task Definition
  - o Task Name
  - o Strategy
  - o Audit Step
  - o Controls
  - - Wobble
  - - Slow Seek
  - - Start Delay
  - - Condition Fastener
  - - Pre-Torque
  - - Backout Fastener

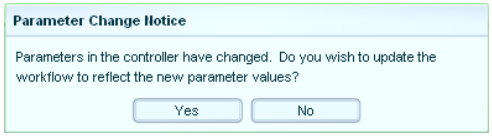
1.4.1.1.13 Release Fastener

Set tool speed (RPM), output rotation (degrees) and maximum torque (NM).

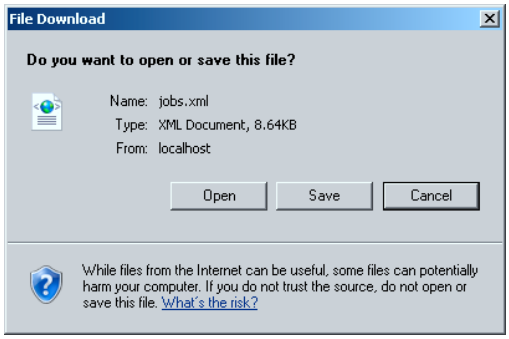
Setup
- Quick Start
  - o Job Name
  - o Task Definition
  - o Task Name
  - o Strategy
  - o Audit Step
  - o Controls
  - - Wobble
  - - Slow Seek
  - - Start Delay
  - - Condition Fastener
  - - Pre-Torque
  - - Backout Fastener
  - - Release Fastener

1.4.1.1.14 Finished

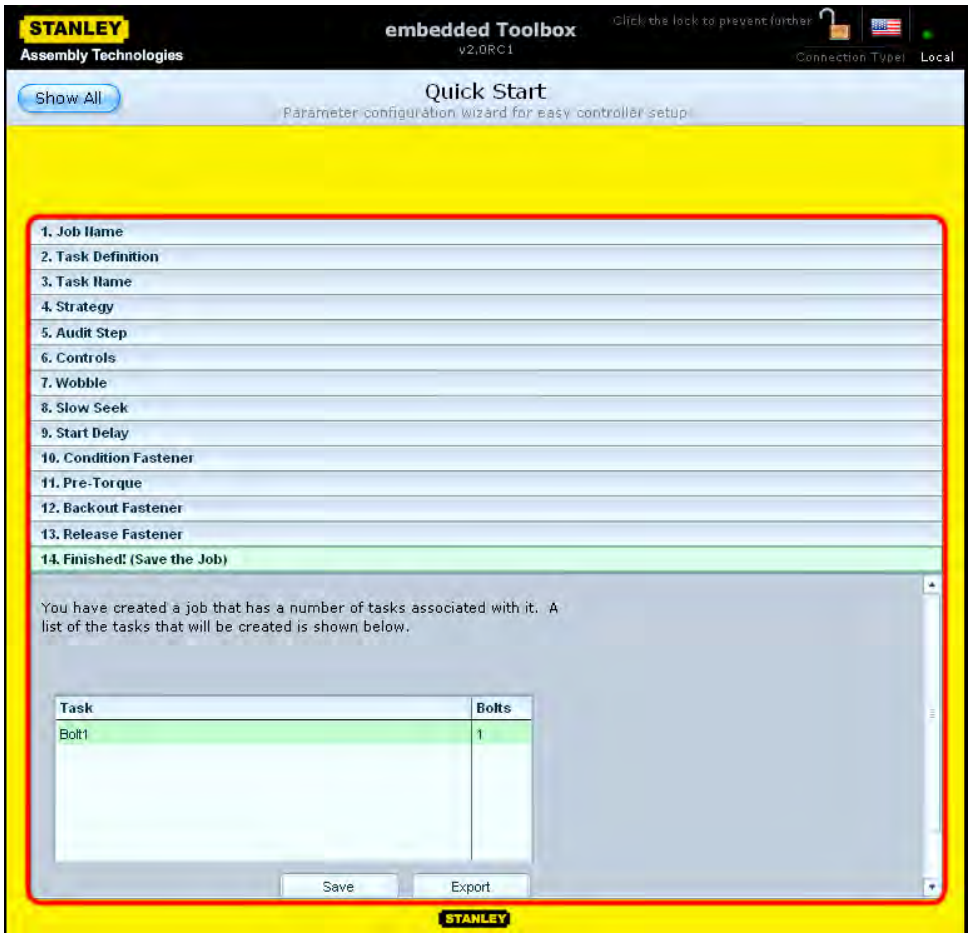
Use the save button [Save] to record the recently defined tasks.



Use the export button [Export] to make the defined tasks available outside of this controller definition.



Setup
- Quick Start
  - o Job Name
  - o Task Definition
  - o Task Name
  - o Strategy
  - o Audit Step
  - o Controls
  - - Wobble
  - - Slow Seek
  - - Start Delay
  - - Condition Fastener
  - - Pre-Torque
  - - Backout Fastener
  - - Release Fastener
  - - Finished

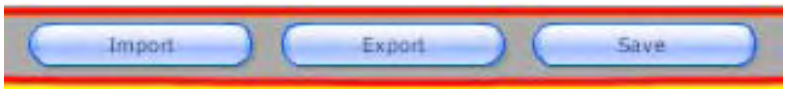


1.4.1.2 Jobs Management

Setup
- Quick Start
- Jobs Management

Jobs Management configures tightening cycles with full controller capability to manage jobs, tasks and steps. The number of configurations appears directly following the name in parenthesis. The windows display the items already setup for the controller. To define a new setup, copy and modify an existing setup, step-by-step setup options are displayed below the highlighted active window.

Setups can be imported, exported or saved using the appropriate button at the bottom of the screen.



Use the plus button  to add a new job, task or step.

Use the minus button  to delete the selected job, task or step.

Use the duplicate button  to duplicate the selected job, task or step.

1.4.1.2.1 Jobs

Setup
- Quick Start
- Jobs Management
  - o Jobs

Jobs setup includes: job name, auto sequence task, auto reset job, enable error proofing and disable reverse on OK options.

1.4.1.2.2 Tasks

1.4.1.2.2.1 General

General setup includes: task name, disassembly speed and disassembly acceleration. The date of last modification appears at the bottom of the screen.

Setup
- Quick Start
- Jobs Management
  - o Jobs
  - o Tasks
  - - General

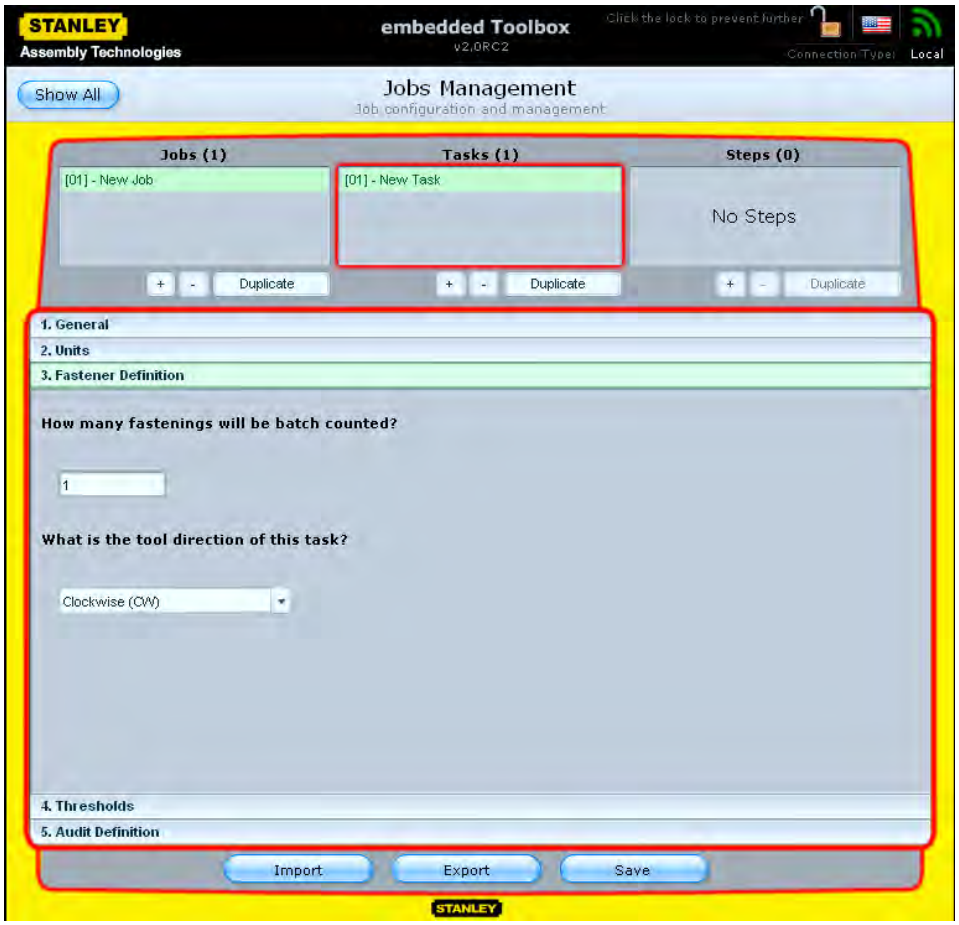
1.4.1.2.2.2 Units

Units setup choices include: NM, FTLB, INLB, INOZ, KGM, KGCM, NCM and NDM.

1.4.1.2.2.3 Fastener Definition

Fastener Definition options include: batch counting fastenings, number of fastening to be batch counted and tool direction.

Setup
- Quick Start
- Jobs Management
  - Jobs
  - Tasks
    - General
    - Units
    - Fastener Definition



1.4.1.2.2.4 Thresholds

Threshold setup choices include: beginning torque threshold, angle for torque rate measurement and number of torque readings to average.

1.4.1.2.2.5 Audit Definition

Audit Definition identifies the step for torque and/or angle audit.

1.4.1.2.3 Steps

1.4.1.2.3.1 General

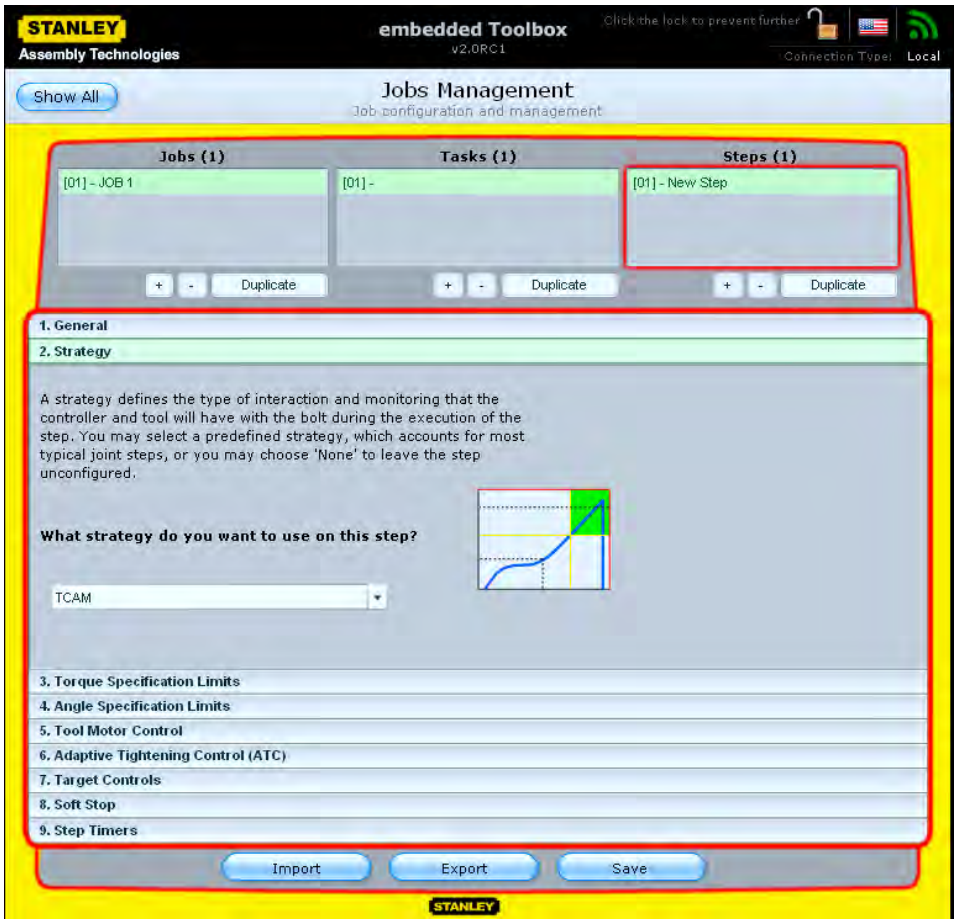
General identifies the step name.

Setup
- Quick Start
- Jobs Management
  - Jobs
  - Tasks
  - Steps
    - General

1.4.1.2.3.2 Strategy

Strategy choices include: TC/AM, AC/TM, AC/TC, BACKOFF, RATE, YIELD and AC/TA.

Setup
- Quick Start
- Jobs Management
  - o Jobs
  - o Tasks
  - o Steps
    - General
    - Strategy

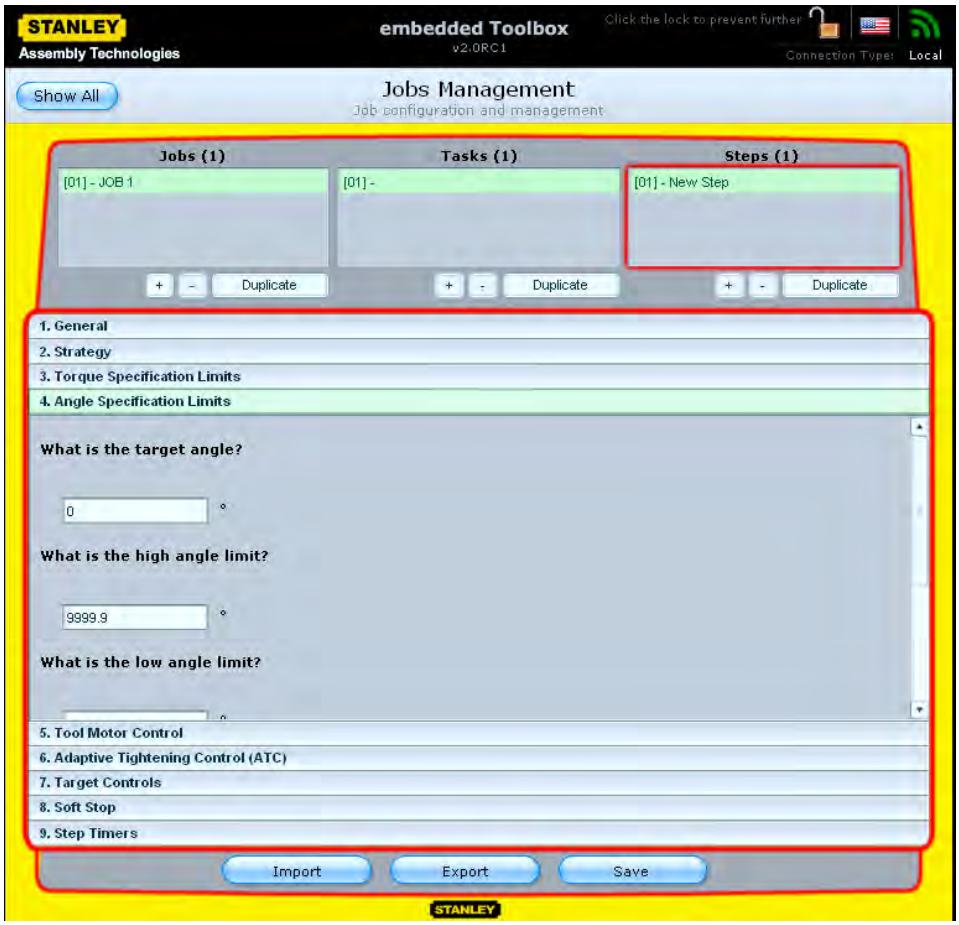


1.4.1.2.3.3 Torque Specification Limits

Torque Specification Limits choices include: target torque, high and low torque limits, bail-out torque limit and minimum, snug torque limit and accumulate torque identification.

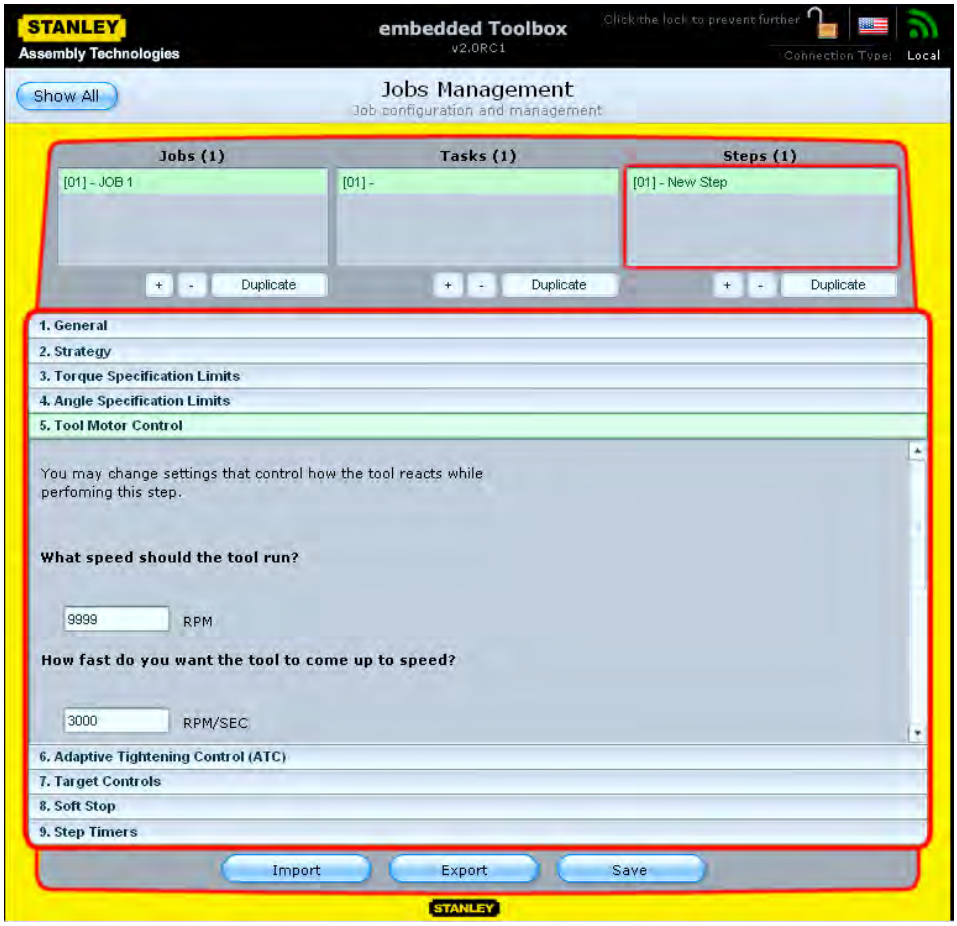
1.4.1.2.3.4 Angle Specification Limits

Angle Specification Limits choices include: target angle, high and low angle limits, bail-out angle limit and a check box to accumulate angle.



1.4.1.2.3.5 Tool Motor Control

Tool Motor Control option identifies: tool speed, tool acceleration rate to speed, downshift torque, downshift speed and shutoff mode (Coast or Soft Stop).

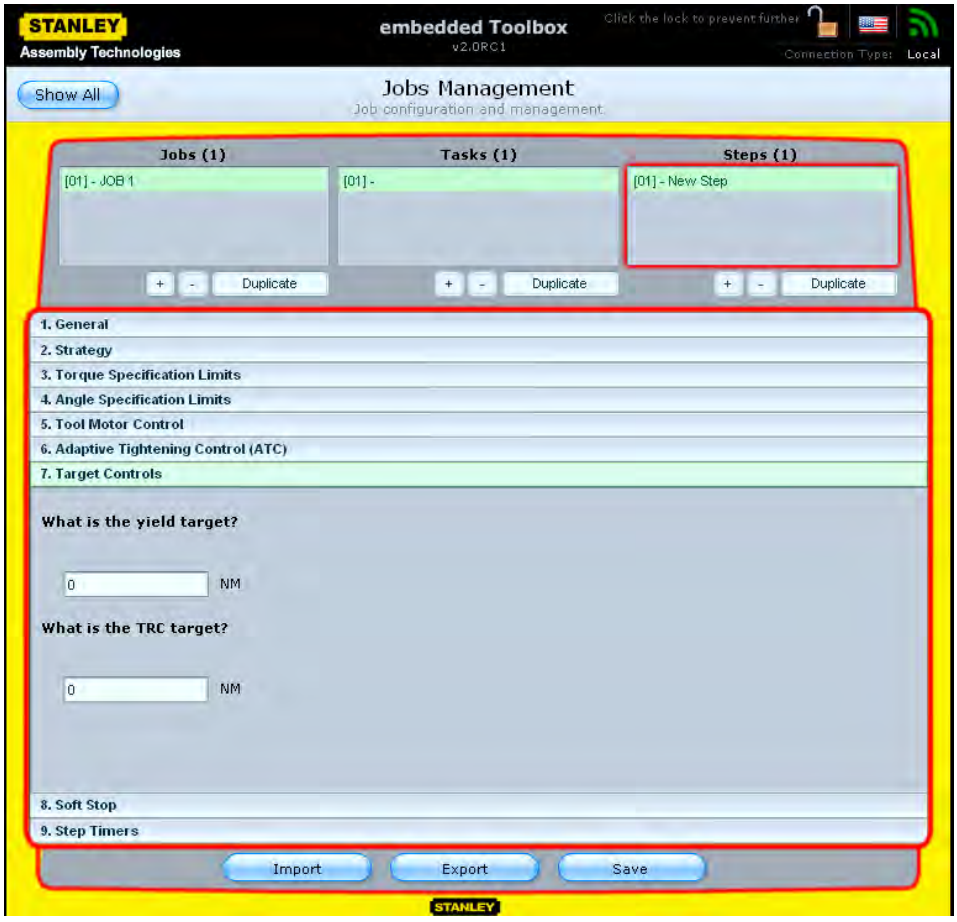


1.4.1.2.3.6 Adaptive Tightening Control (ATC)

Adaptive Tightening Control option identifies: downshift mode, starting and ending torque and ending speed.

1.4.1.2.3.7 Target Controls

Target Controls choices include yield and TRC targets.

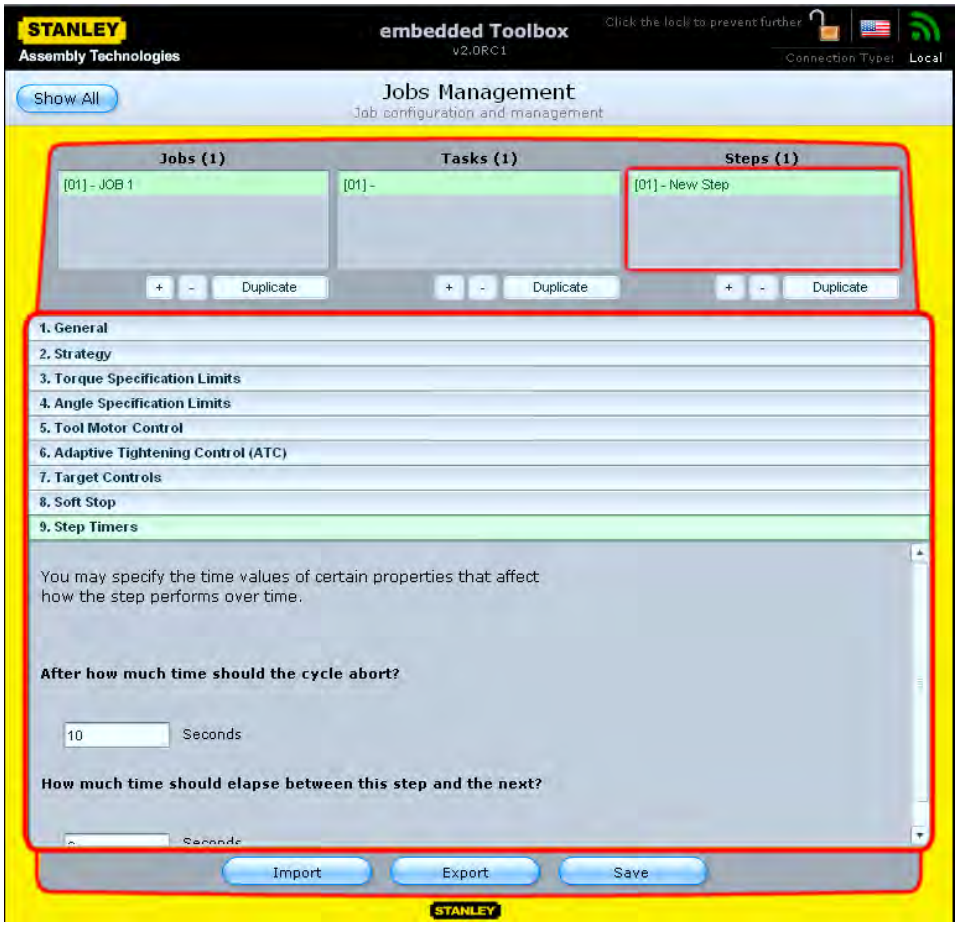


1.4.1.2.3.8 Soft Stop

Soft Stop enables identifying the current off time, hold time and ramp time.

1.4.1.2.3.9 Step Timers

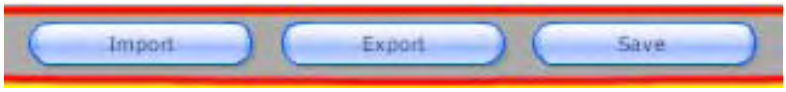
Step Timers sets cycle abort time and elapse time between steps.



1.4.1.3 System Management

System Management enables custom controller configuration for triggers and tones.

Setups can be imported, exported or saved using the appropriate button at the bottom of the screen.



Setup
- Quick Start
- Jobs Management
- System Management

1.4.1.3.1 General

General enables naming the controller and specifying keypad mode.

Setup
- Quick Start
- Jobs Management
- System Management
  - o General

1.4.1.3.2 Triggers

Triggers controls operation, action and start mode of the multiple-function button (MFB).

1.4.1.3.3 Lights

Lights identifies mode and headlight timer value.

1.4.1.3.4 Tones

Tones sets sound options for accepted and rejected rundowns.

Setup
- Quick Start
- Jobs Management
- System Management
  - General
  - Triggers
  - Lights
  - Tones

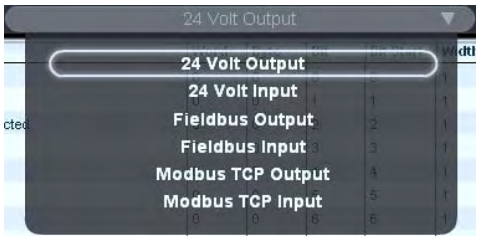
1.4.1.4 Input / Output

Use the graphical button  or table button  to swap view options. Yellow highlight surrounds active button choice.

Configurations can be added, deleted, saved, imported, exported or printed using the appropriate button at the middle of the screen.

1.4.1.4.1 Configuration Dropdown

Use the dropdown to choose a configuration for setup.



1.4.1.4.2 Add/Insert/Delete Bit Assignments

To add a bit assignment at the end of list, click the add button 

. There are eight maximum assignments available for the 24 volt options.

To add a bit assignment before a selected bit assignment, first select position with green highlight – click a line once using the left mouse button – then click the insert button 

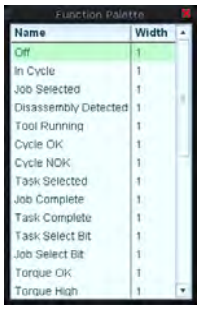
(the add button changes to insert).

To remove a bit assignment, highlight and click the delete button 

.

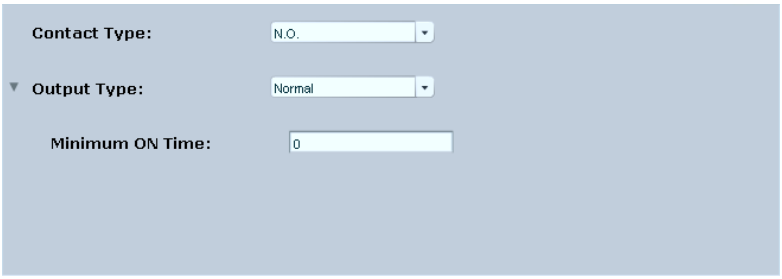
1.4.1.4.3 Function Palette: Bit Function Assignment

The Function Palette appears after selecting a bit assignment (left click once). To assign a function, double click it. Click the red X button in the right corner to close window.



1.4.1.4.4 Bit Assignment Options

The options for a selected bit assignment's function appear at screen bottom. Activate field for changes by pointing to and left clicking field once using mouse pointer, then adjust.



Setup
- Quick Start
- Jobs Management
- System Management
- Input / Output

1.4.1.4.5 Screen Examples

1.4.1.4.5.1 24 Volt Output

See page 83 for 24 volt assignable Output functions.

1.4.1.4.5.2 24 Volt Input

See page 82 for 24 volt assignable Input functions.

1.4.1.4.5.3 Fieldbus Output

See page 83 for fieldbus assignable Output functions.

1.4.1.4.5.4 Fieldbus Input

See page 82 for fieldbus assignable Input functions.

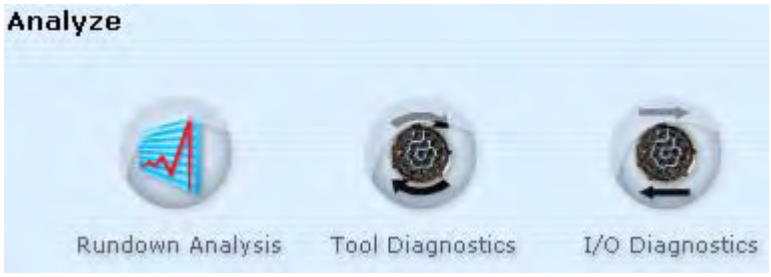
1.4.1.4.5.5 Modbus TCP Output

See page 83 for Modbus TCP assignable Output functions..

1.4.1.4.5.6 Modbus TCP Input

See page 82 for Modbus TCP assignable Input functions.

1.4.2 Analyze



1.4.2.1 Rundown Analysis

Rundown Analysis display options include the controller rundown, traces, summary statistics, histogram and x-bar/range. Prior rundown results are shown at screen bottom with results not included in the statistics struck out.

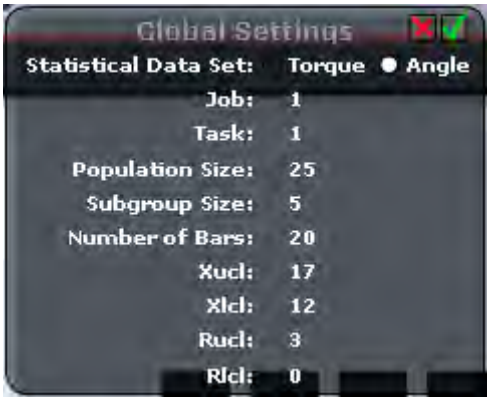
Use the buttons located at the middle right of screen to swap view options (Rundown, Trace, Statistics, Histogram and Xbar/range). Yellow highlight surrounds active button choice.

Use the buttons located at the middle left of screen to import, export and print rundowns.

1.4.2.1.1 Rundown

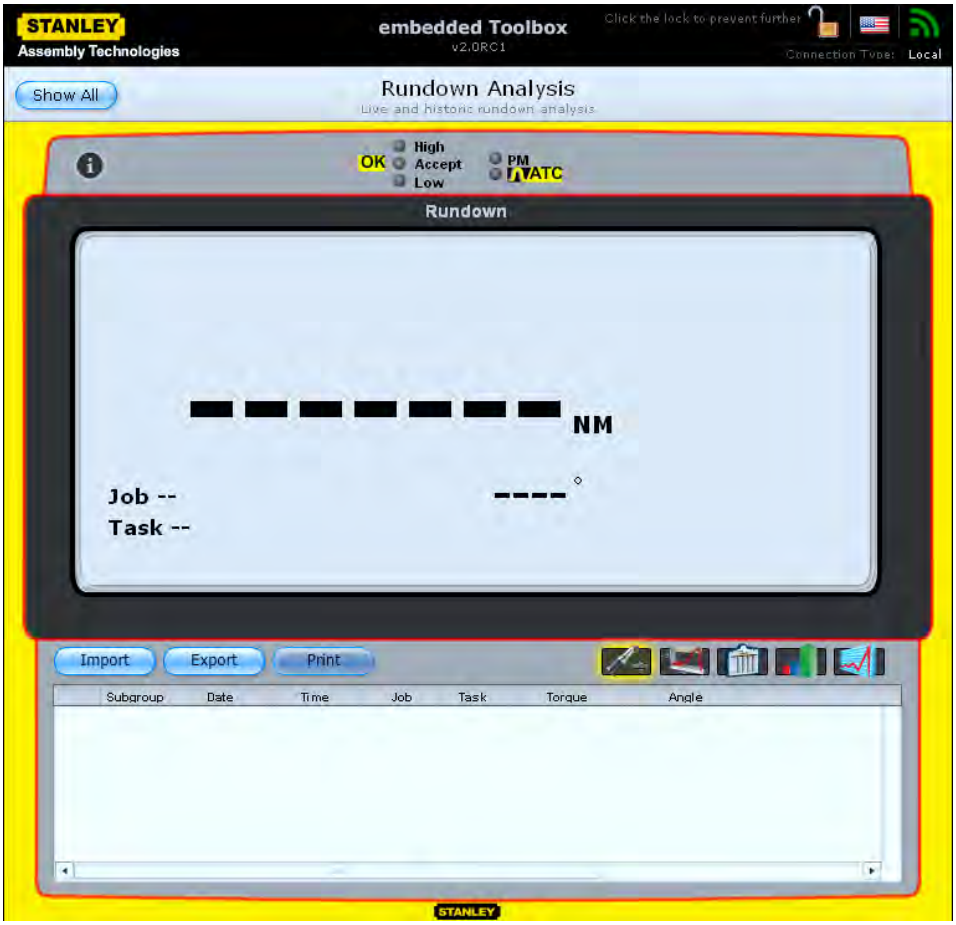
The Rundown view displays details for current rundown.

Click on the information icon to choose either torque or angle data. After making data selections, click the green check to accept or the red x to abort. Click the information icon again to close.



Analyze

- Rundown Analysis
  - o Rundown



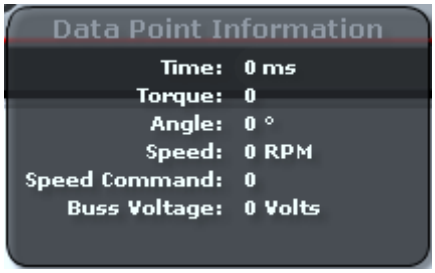
1.4.2.1.2 Trace

Analyze

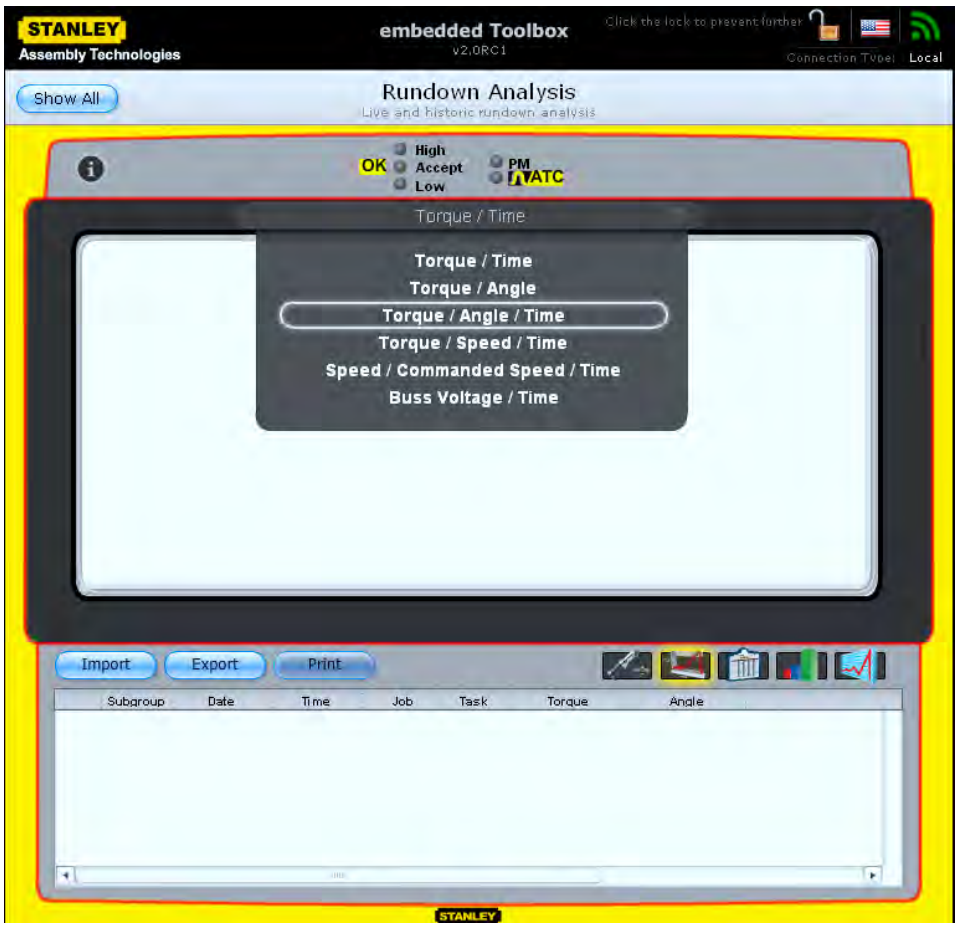
- Rundown Analysis
  - o Rundown
  - o Trace

The Trace view displays a plot of selected tightening variables.

Click on the information icon to show data point information at the location of the vertical cursor. Click again to remove the information. The right or left arrow keys move the cursor on the X axis to different data points (hold the shift key to increase movement).



Use the dropdown to select variables plotted:



1.4.2.1.2.1 Axis Torque vs. Time Selected

The Trace displayed reflects the rundown selected below the screen.

To adjust magnification area, position mouse pointer below the x-axis (pointer changes from an arrow to a hand).

Next press and hold left mouse button, drag left or right to highlight, then release to display.

Analyze

- Rundown Analysis
  - o Rundown
  - o Trace

1.4.2.1.2.2 Initial Magnification

Click the back arrow (lower left of trace) to return to the initial magnification.

Analyze

- Rundown Analysis
  - o Rundown
  - o Trace

1.4.2.1.3 Statistics

The Statistics view displays statistical overview summary.

Click on the information icon to choose either torque or angle data. After making data selections, click the green check to accept or the red x to abort. Click the information icon again to close.

Analyze

- Rundown Analysis
  - o Rundown
  - o Trace
  - o Statistics

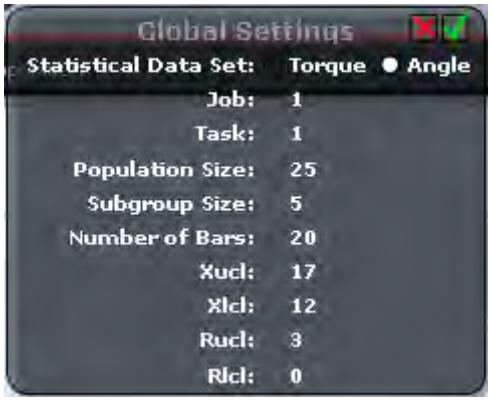
1.4.2.1.4 Histogram

The Histogram view shows the histogram for torque or angle.

Click on the information icon to choose either torque or angle data. After making data selections, click the green check to accept or the red x to abort. Click the information icon again to close.

Analyze

- Rundown Analysis
  - o Rundown
  - o Trace
  - o Statistics
  - o Histogram

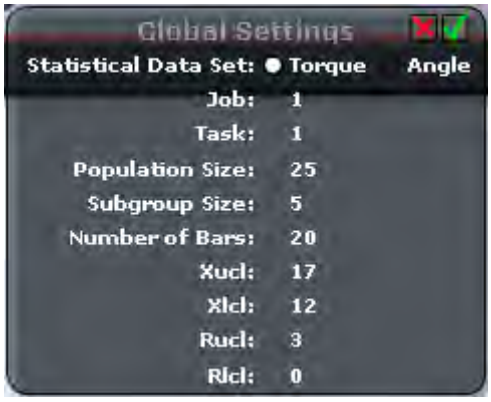


1.4.2.1.5 X-Bar/Range

The X-Bar/Range view uses the information icon to display a dropdown showing either torque or angle data. Click on the information icon to choose either torque or angle data. After making data selections, click the green check to accept or the red x to abort. Click the information icon again to close.

Analyze

- Rundown Analysis
  - o Rundown
  - o Trace
  - o Statistics
  - o Histogram
  - o X-Bar/Range

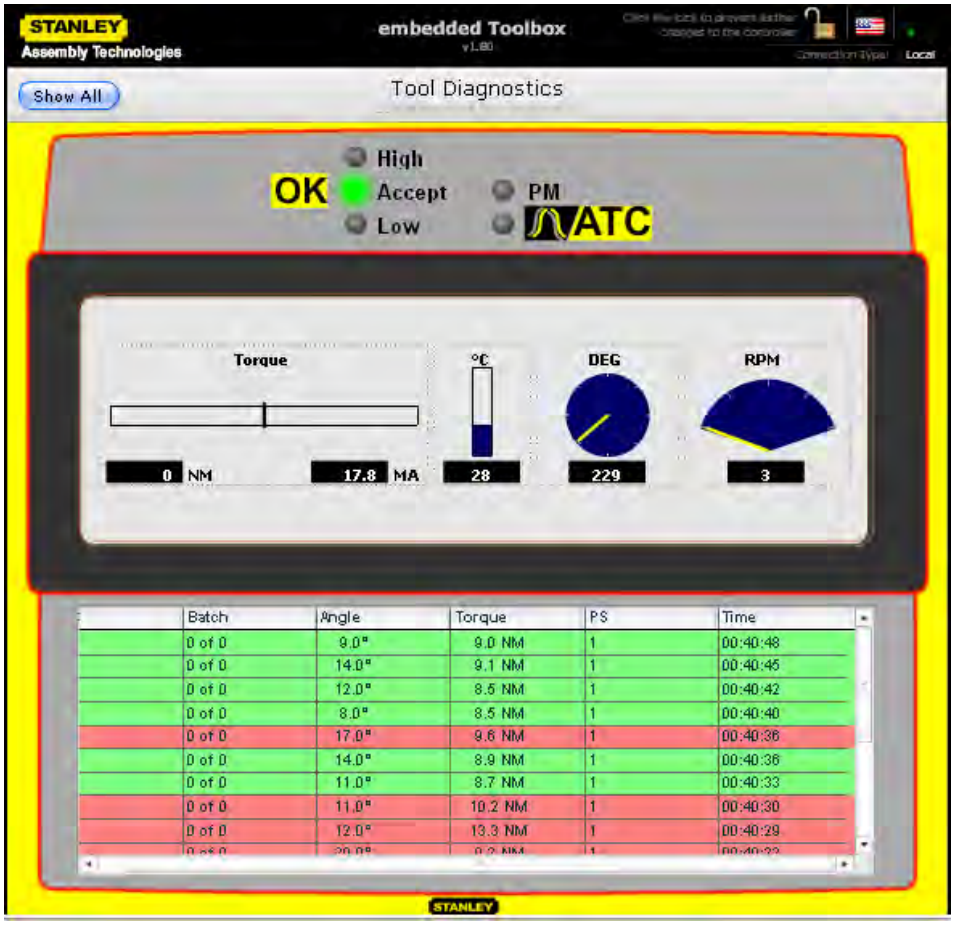


1.4.2.2 Tool Diagnostics

Tool Diagnostics displays tool torque, current, temperature, angle and speed. Setup and pass/fail data for rundowns done while the screen is active are listed. Exiting the screen erases the data.

Analyze

- Rundown Analysis
- Tool Diagnostics



1.4.2.3 I/O Diagnostics

I/O Diagnostics displays input and output.

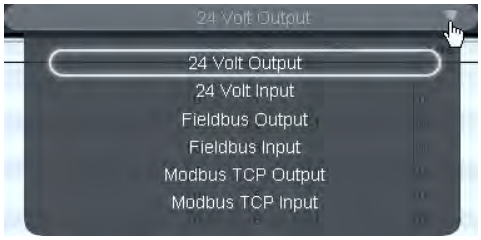
Use the graphical button  or table button  to swap view options. Yellow highlight surrounds active button choice.

Analyze

- Rundown Analysis
- Tool Diagnostics
- I/O Diagnostics

1.4.2.3.1 Configuration Dropdown

Use the dropdown to choose a configuration to view.



Analyze

- Rundown Analysis
- Tool Diagnostics
- I/O Diagnostics

1.4.2.3.2 Options

The options for a selected bit assignment's function appear at screen bottom.

Analyze

- Rundown Analysis
- Tool Diagnostics
- I/O Diagnostics

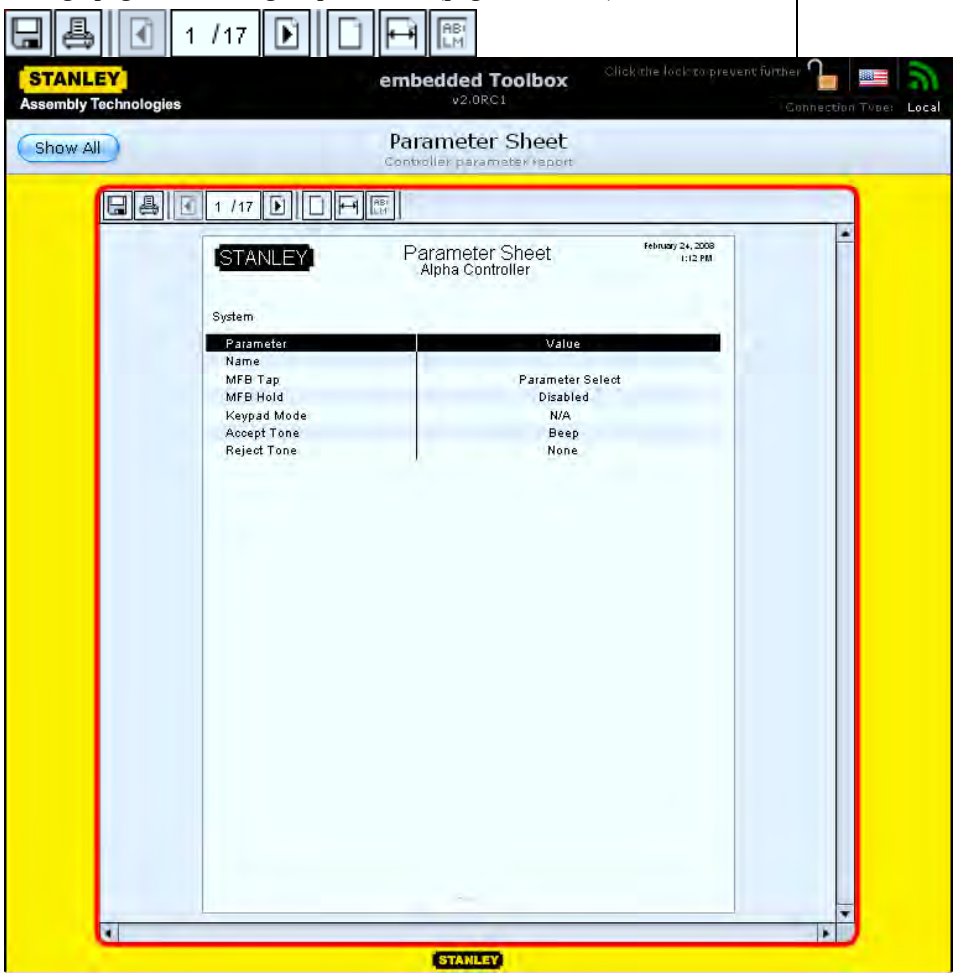
1.4.3 Report

Parameter Sheet provides a summary for: System, Jobs, Tasks, and all Job and Task combinations.

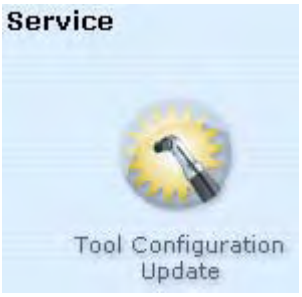
Use the buttons that appear directly above report to save, print, scroll through pages, and change report views (page and width).

Reports

- Parameter Sheet



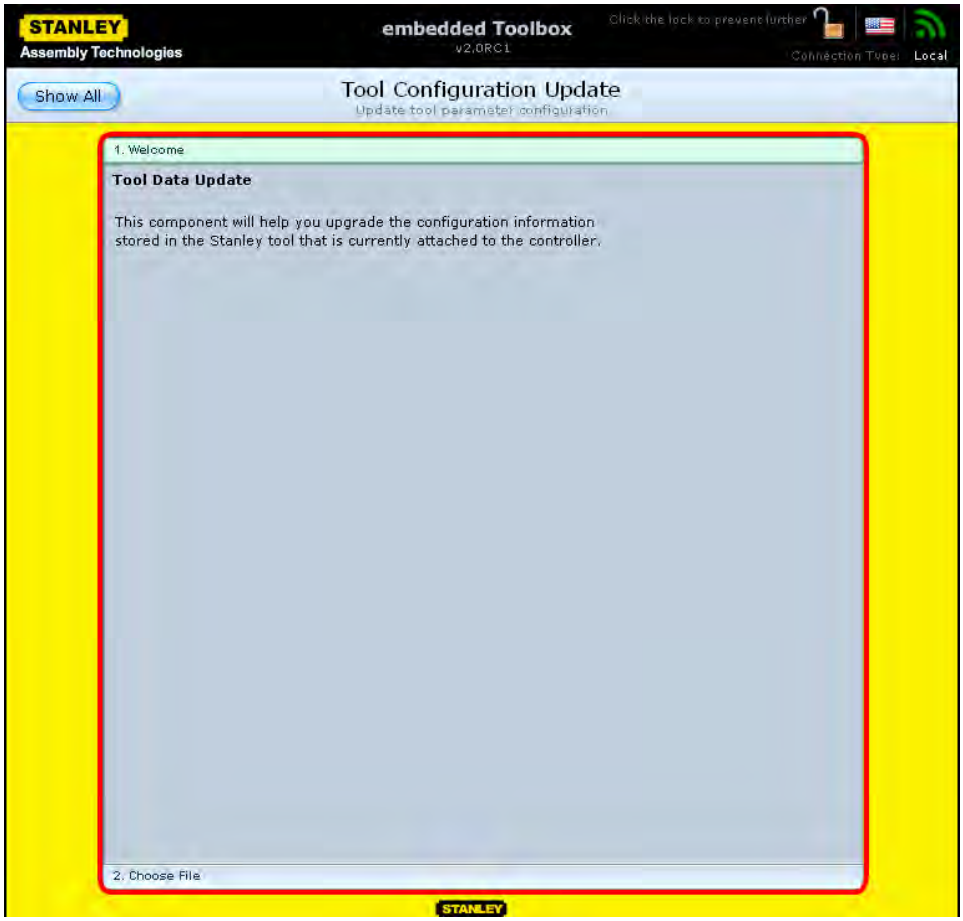
1.4.4 Service

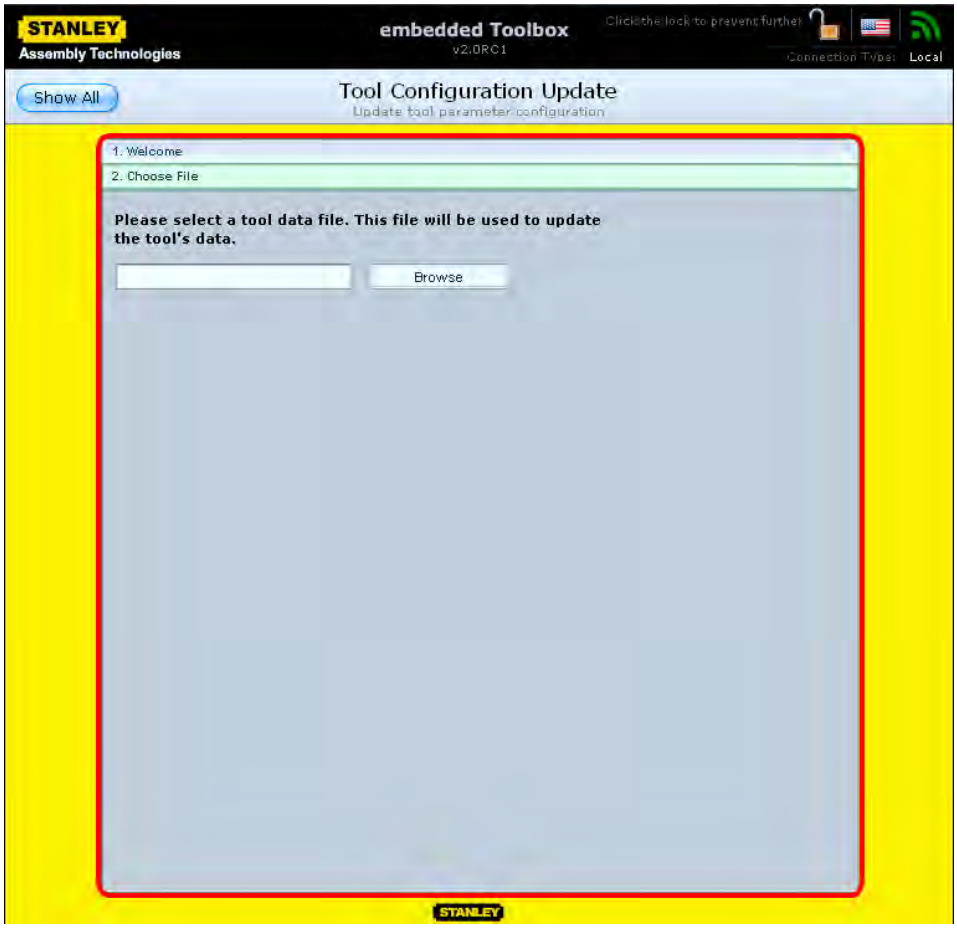


Tool Configuration Update enables upgrading tool configuration information for currently attached tool.

Service

- Tool Configuration Update




STANLEY
Assembly Technologies
embedded Toolbox
v2.0RC1
Click the lock to prevent further
Connection Type: Local
Show All
Tool Configuration Update
Update tool parameter configuration
1. Welcome
2. Choose File
Please select a tool data file. This file will be used to update the tool's data.
Browse
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