SM Technik
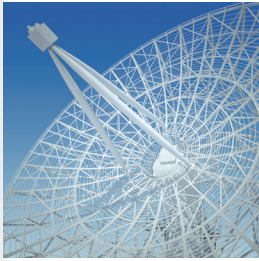
www.sm-technik.de

Lena Christ Str50, 82152 Planegg

ASG
Assembly • Industrial • Precision Fastening

X-PAQ™ Products: SD2500 and EH2

Products and Solutions for Assembly

X-PAQ™
PRECISION | ACCURACY | QUALITY

About ASG

We are personally committed to understanding and exceeding our customers' requirements. We are committed to continuously improving our products and processes.

We are dedicated to delivering products, services, and solutions on time and at a competitive value.

ASG, Division of Jergens, Inc. is an ISO 9001:2008 certified manufacturer, distributor and service center for products and solutions focused around threaded assembly. Since the 1970s, we have developed a first-class reputation unrivaled in the industry offering a wide range of world class products.

We offer a wide selection of ASG brand products including torque control, error-proofing and process control products, digital calibration equipment, X-PAQ™ precision fastening systems, production aides and assembly workstation accessories. ASG is proud to be a long-time U.S. Premier Distributor of HIOS® electric torque control screwdrivers and accessories, and the exclusive North American Master Distributor of Fiam® air tools.

ASG also offers a selection of value-added products and solutions including engineering and consulting services, financing, and extended protection and maintenance plans.

Industry Commitment

ASG is committed to the highest quality standards, ensuring that all processes and procedures are followed to produce the best products for our customers. We maintain ISO 9001:2008 certification for the manufacture, distribution, and service of assembly tools. Maintaining membership in key industry organizations in order to stay abreast of the most current industry trends and information is vital to serving our customers.

About X-PAQ™

ASG introduced the X-PAQ™ transducerized, torque/angle control brushless DC tools in 2010. The focus of this product line is to offer an affordable precision torque control and data management system with intuitive, user friendly programming. This coupled with ASG's reputation for being "easy to do business with" and a strong capable distribution network has made the X-PAQ™ very successful.

Precision Fastening Product Group
Controlled Performance

The ASG Precision Fastening product group fills the needs of manufacturers requiring tight tolerances, high levels of error-proofing and traceability. Our line of transducerized DC electric torque control screwdrivers and nutrunners work with X-PAQ™ controllers for applications covering a torque range from 1 to 309.8 lbf.in (0.1 to 35 N.m) across the full range of products.
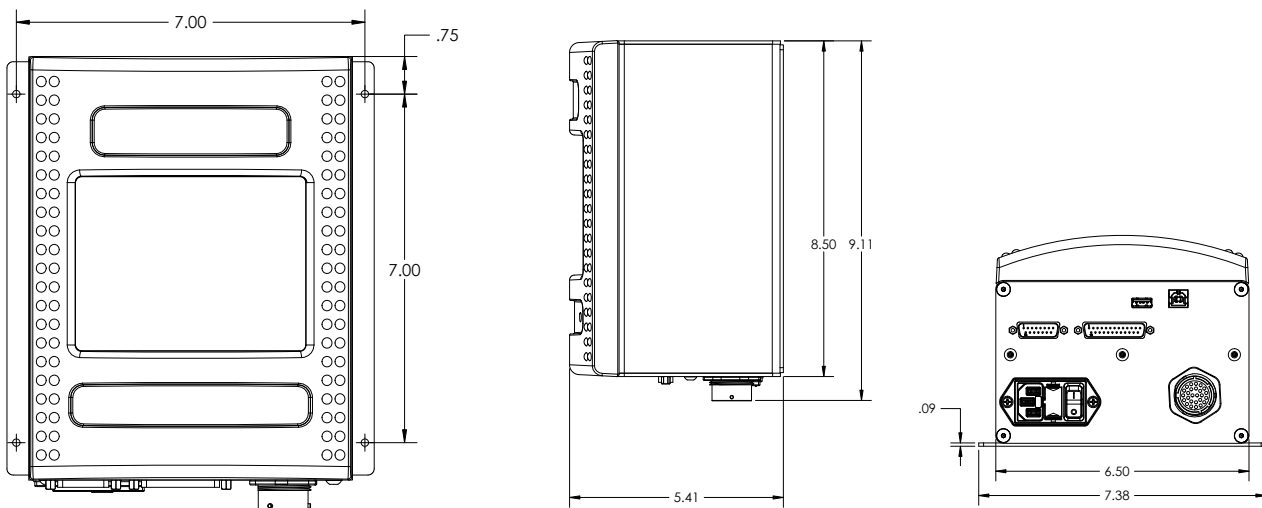

Table of Contents

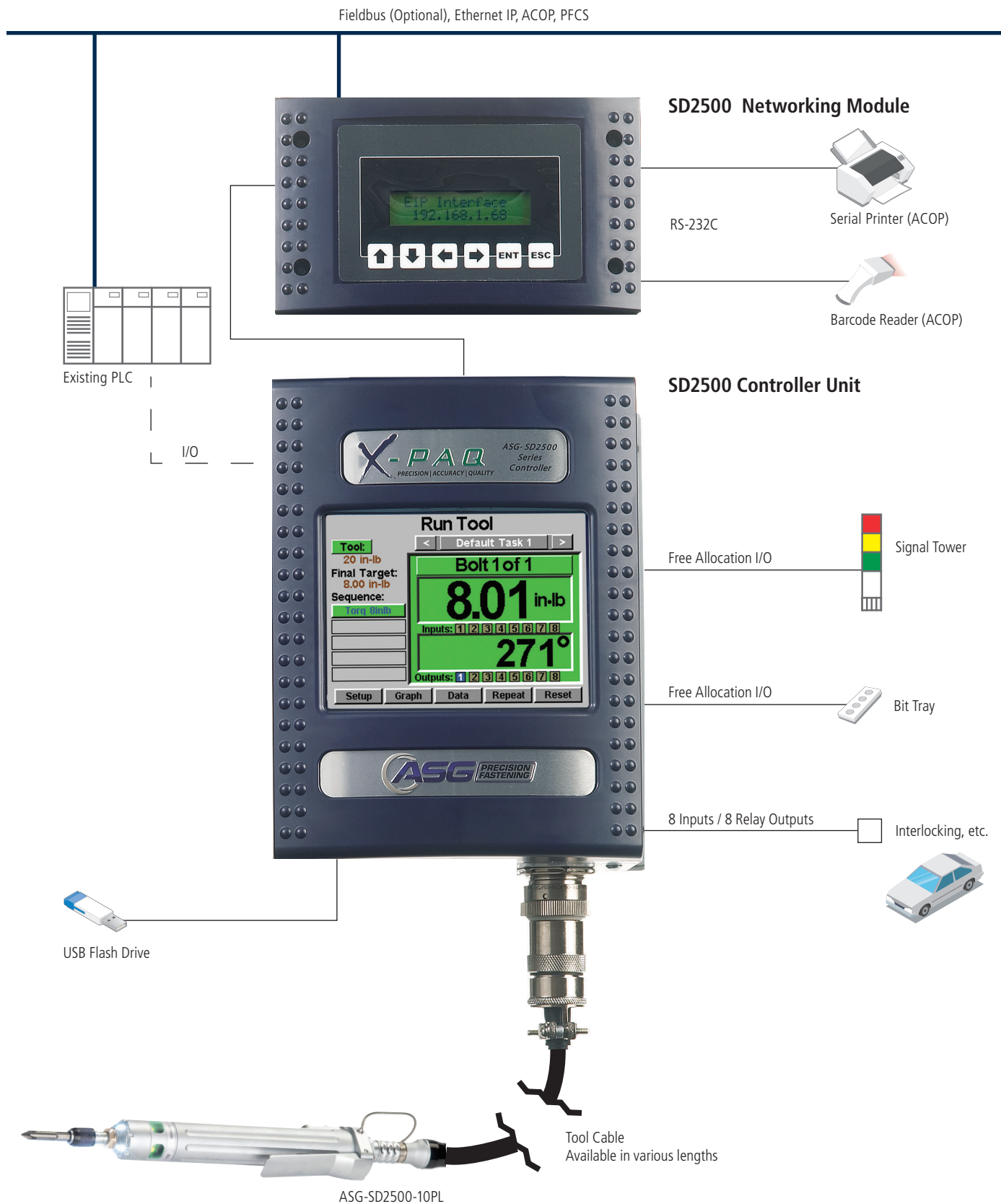# | Section 1: X-PAQ™ Controller for SD2500 Series Tools

X-PAQ™ SD2500 controller features a large, color touch screen for intuitive setup, eliminating the need for external software. A variety of integration options are possible.

- Torque and angle control monitoring with color coded results

- 32 task storage keys for multiple assembly setups with 8 available parameters within each task

- Easily import/export task files with USB drive

- Multi-bolt programmable fastening

- Programmable I/O for process control

- Parameter status bar

- Data collection and rundown graphing

- Automatic tool recognition

- Selectable tool triggering and trigger sensitivity control

- Password protection for 3 users

- Universal power supply (international power cords available)
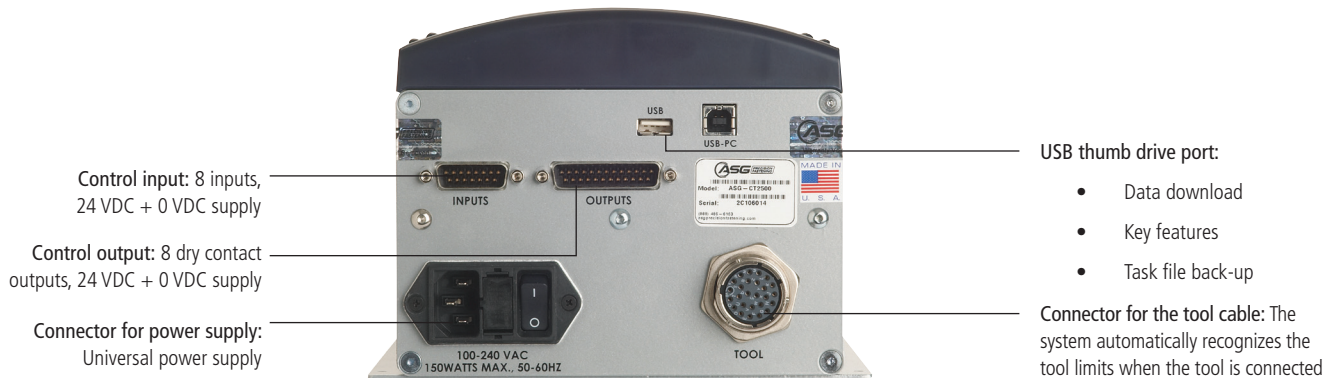
ASG-CT2500 Controller

Dimensional drawings in inches

Fieldbus (Optional), Ethernet IP, ACOP, PFCS

SD2500 Networking Module

EIP Interface
192.168.1.68

↑ ↓ ◄ ► ENT ESC

RS-232C

Serial Printer (ACOP)

Barcode Reader (ACOP)

Existing PLC

I/O

SD2500 Controller Unit

X-PAQ
PRECISION | ACCURACY | QUALITY

ASG- SD2500
Series
Controller

Run Tool
◄ Default Task 1 ►

Tool:
20 in-lb
Final Target:
8.00 in-lb
Sequence:
Torq 8inlb

Bolt 1 of 1

8.01 in·lb

Inputs: 1 2 3 4 5 6 7 8

271°

Outputs: 1 2 3 4 5 6 7 8

Setup Graph Data Repeat Reset

ASG PRECISION FASTENING

Free Allocation I/O

Signal Tower

Free Allocation I/O

Bit Tray

8 Inputs / 8 Relay Outputs

Interlocking, etc.

USB Flash Drive

Tool Cable
Available in various lengths

ASG-SD2500-10PL

X-PAQ™ Controller for SD2500 Series Tools

Controller Bottom Panel

Control input: 8 inputs, 24 VDC + 0 VDC supply

Control output: 8 dry contact outputs, 24 VDC + 0 VDC supply

Connector for power supply: Universal power supply

USB thumb drive port:
- Data download
- Key features
- Task file back-up

Connector for the tool cable: The system automatically recognizes the tool limits when the tool is connected

SD2500 Controller

Model Number	Description	Weight	
		lb.	kg
ASG-CT2500	X-PAQ™ Controller for SD2500 Series Tools	9	4.1

* Consult ASG for additional options

SD2500 Networking Modules

Model Number	Ethernet IP	ACOP	RF Wireless
ASG-NW2500-EIP	•		
ASG-NW2500-ACOP		•	
ASG-NW2500-RFT			•

Program Screens and Menus

Run Tool Screen

Error notifications

Current task

Colored process status indicator

Sequence parameters on each bolt
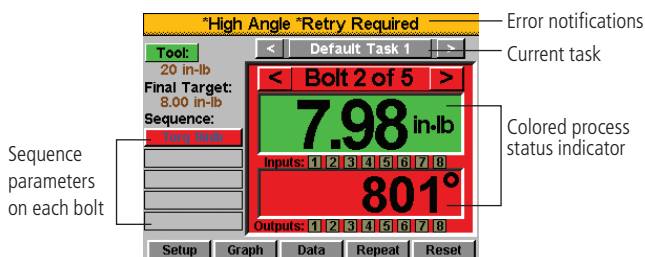
Torque Rundown Parameter

Rotation direction control

Nameable parameters

Attached tool limits

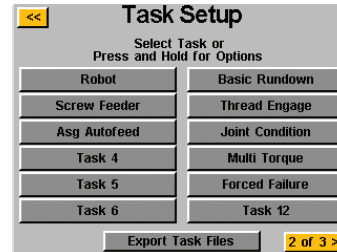Multiple units

Torque control or angle control
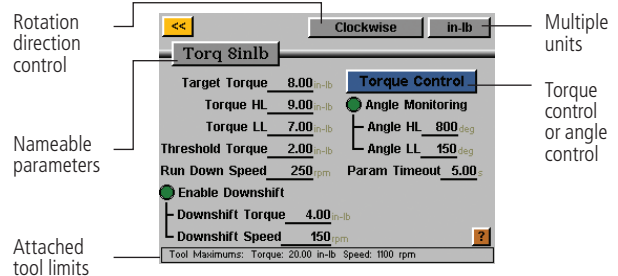
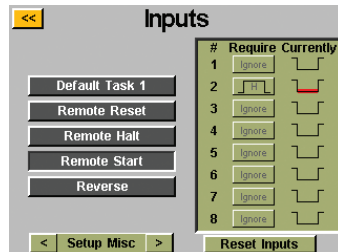# X-PAQ™ Controller for SD2500 Series Tools

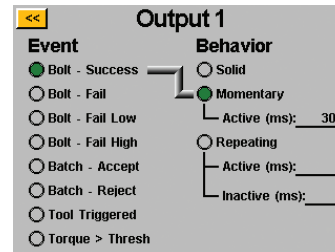## Task Menu
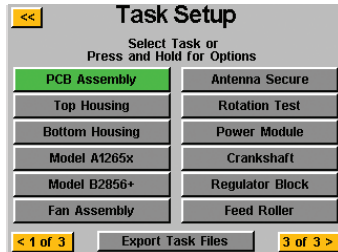
- 32 available tasks

- Nameable tasks for easy selection and recognition
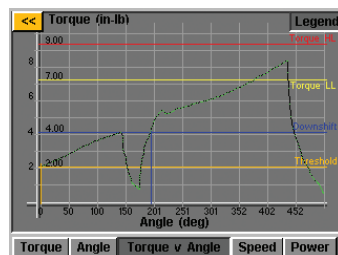- Task file export to USB

Inputs

- 8 available 24 VDC opto-isolated inputs
- Assignable inputs for each command. No dedicated channels
- Binary combination compatible

Outputs

- 8 available mechanical dry-contact relay outputs
- Programmable outputs
- Most output durations may be set. Trigger and threshold outputs are only available in solid mode
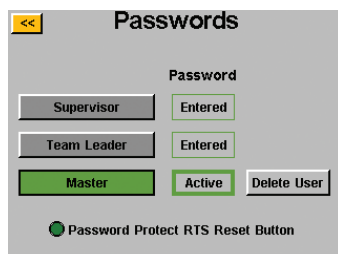
Graphing Data

- On screen graphing capability for joint evaluation
- Graph data points export to USB possible during rundown

Rundown Data

- Last 100 rundown data viewable on screen with larger data sample downloadable to USB in .csv format

Password Protection

- 3 programmable access passwords to prevent unintended access by production line operators
- All passwords have the same access, the controller is either locked or unlocked
- Reset button on 'Run Tool' screen may even be enabled or disabled when the controller is locked

SD2500 Screwdrivers and Nutrunners

Sleek, compact and durable, the SD2500 is the ultimate lightweight tool for transducerized precision fastening.

SD2500 screwdrivers and nutrunners are premium quality transducerized DC electric tools. Inline screwdrivers are available with push, lever or remote start operation and 1/4 in. hex drive. Fixture mount models with threaded end are available in each torque range for automated or robotic applications. Right angle nutrunners are available with either 1/4 in. hex or 1/4 in. square drive.

- Transducerized torque and angle control with compact, lightweight, brushless motor for unparalleled clean, quiet and accurate operation

- Sleek aluminum body with high intensity LED tool indicator lights

- Foam grip included is standard with all inline models to provide ergonomic comfort for the operator

RQ Model

RP Model

FX Model
Threaded End
(Fixtured)

PL Model
(Push or Lever Start)

PS Model
(Push to Start Only)

Purchase a System or Configure Your Own

ASG offers the X-PAQ™ SD2500 as both pre-packaged systems (in the U.S., Canada, and Mexico only) and individually sold items.

Systems are available with each tool as follows:

- **Complete X-PAQ™ System**: includes X-PAQ™ controller, SD2500 tool and 10ft (3m) heavy weight strain relief tool cable. To determine the model number for a complete system: add '-SY' to the SD2500 tool model number.
  Example: ASG-SD2500-10PL-SY

- **X-PAQ™ System without Tool Cable**: includes X-PAQ™ controller and SD2500 tool. To determine the model number for a system without the tool cable: add '-SY-NC' to the SD2500 tool model number. Customers may then order their preferred cable separately.
  Example: ASG-SD2500-10PL-SY-NC

Easy robotic integration with a vacuum pick-up option.

| SD2500 Tool Specifications

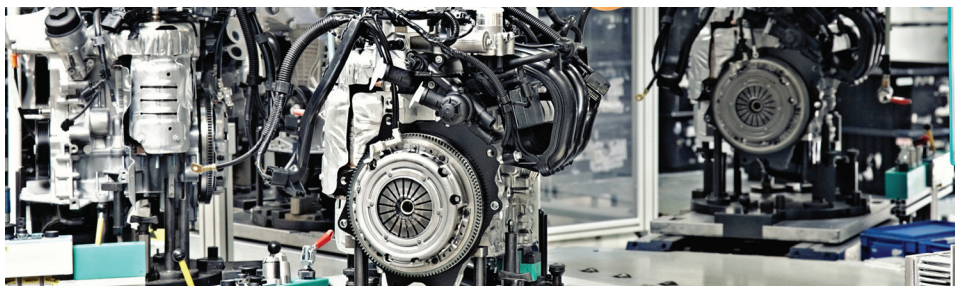| Model Number	Driver Type	Torque Range		Length		Weight		Max. RPM	Drive Size
		lbf.in	N.m	in.	mm	lb.	kg		
ASG-SD2500-10PL		1 - 10	0.1 - 1.1	9.5	240	1.00	0.46	1700	1/4 Hex
ASG-SD2500-10PS		1 - 10	0.1 - 1.1	9.5	240	1.00	0.46	1700	1/4 Hex
ASG-SD2500-10FX		1 - 10	0.1 - 1.1	9.5	240	1.00	0.46	1700	1/4 Hex
ASG-SD2500-10RP		1 - 10	0.1 - 1.1	10.4	264	1.25	0.57	1700	1/4 Square
ASG-SD2500-10RQ		1 - 10	0.1 - 1.1	10.4	264	1.25	0.57	1700	1/4 Hex*
ASG-SD2500-20PL		2 - 20	0.2 - 2.3	9.5	240	1.00	0.46	1100	1/4 Hex
ASG-SD2500-20PS		2 - 20	0.2 - 2.3	9.5	240	1.00	0.46	1100	1/4 Hex
ASG-SD2500-20FX		2 - 20	0.2 - 2.3	9.5	240	1.00	0.46	1100	1/4 Hex
ASG-SD2500-20RP		2 - 20	0.2 - 2.3	10.4	264	1.25	0.57	1100	1/4 Square
ASG-SD2500-20RQ		2 - 20	0.2 - 2.3	10.4	264	1.25	0.57	1100	1/4 Hex*
ASG-SD2500-35PL		3.5 - 35	0.4 - 3.9	9.5	240	1.00	0.45	800	1/4 Hex
ASG-SD2500-35PS		3.5 - 35	0.4 - 3.9	9.5	240	1.00	0.45	800	1/4 Hex
ASG-SD2500-35FX		3.5 - 35	0.4 - 3.9	9.5	240	1.00	0.45	800	1/4 Hex
ASG-SD2500-35RP		3.5 - 35	0.4 - 3.9	10.4	264	1.25	0.57	800	1/4 Square
ASG-SD2500-35RQ		3.5 - 35	0.4 - 3.9	10.4	264	1.25	0.57	800	1/4 Hex*
ASG-SD2500-50PL		5 - 50	0.6 - 5.6	9.7	246	1.10	0.49	500	1/4 Hex
ASG-SD2500-50PS		5 - 50	0.6 - 5.6	9.7	246	1.10	0.49	500	1/4 Hex
ASG-SD2500-50FX		5 - 50	0.6 - 5.6	9.7	246	1.10	0.49	500	1/4 Hex
ASG-SD2500-50RP		5 - 50	0.6 - 5.6	10.7	271	1.35	0.61	500	1/4 Square
ASG-SD2500-50RQ		5 - 50	0.6 - 5.6	10.7	271	1.35	0.61	500	1/4 Hex*

Legend				
Inline Push / Lever Start Combination	Inline Push to Start	Inline Fixture Mount (Push to Start)	90º Angle Lever Start	* 1/4 in. hex insert bits recommended

All tools remote start capable

For applications requiring less than 2 lbf.in (0.2 N.m) torque, please consult ASG

| Right Angle Dimensions

SD2500 RP

ASG-SD2500-10RP
ASG-SD2500-20RP
ASG-SD2500-35RP

1/4" SQUARE DRIVE (PIN DETENT)

1.61

2.58

10.4

ASG-SD2500-50RP

1/4" SQUARE DRIVE (PIN DETENT)

1.61

2.58

10.7

0.795

SD2500 RQ

ASG-SD2500-10RQ
ASG-SD2500-20RQ
ASG-SD2500-35RQ

1/4" HEX (INSERT BITS RECOMMENDED)

1.84

2.59

10.4

ASG-SD2500-50RQ

1/4" HEX (INSERT BITS RECOMMENDED)

1.84

2.59

10.7

0.795
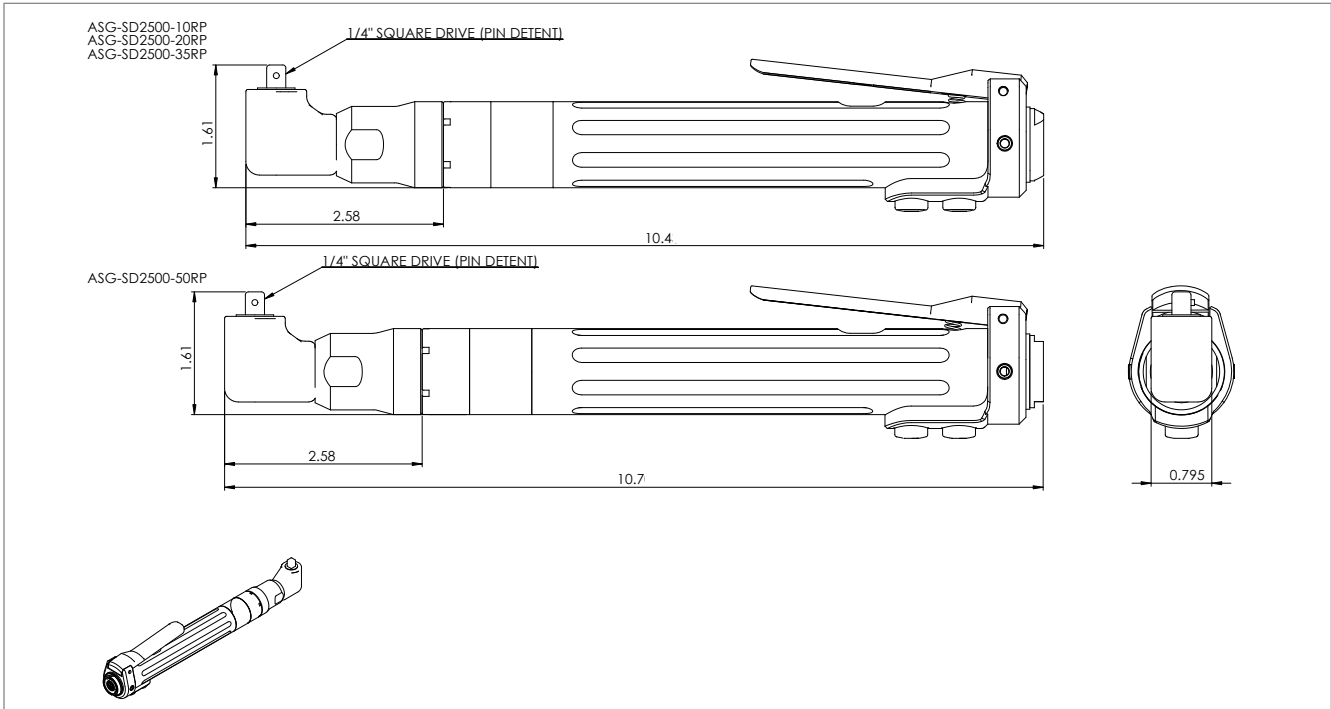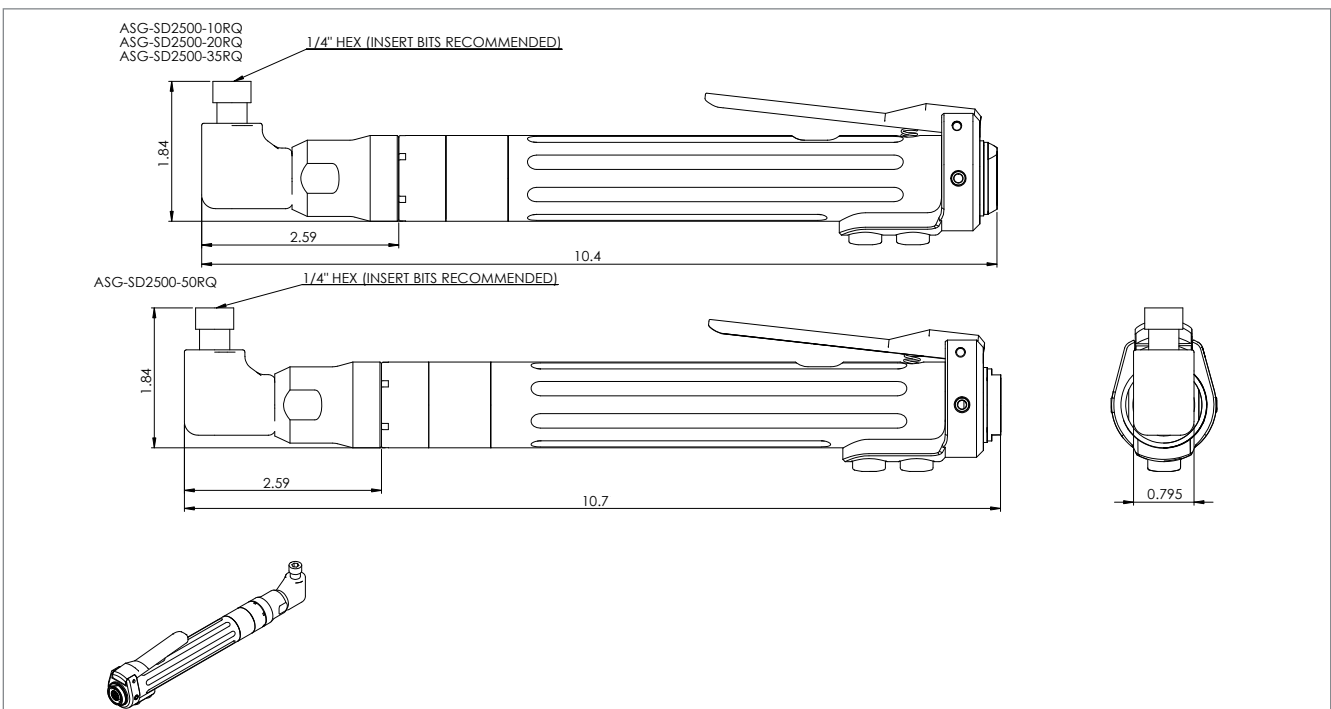
Dimensional drawings in inches

| Inline Dimensions

SD2500 FX

ASG-SD2500-10FX
ASG-SD2500-20FX
ASG-SD2500-35FX

Ø 1.125

9.46
8.35
8.15
7.84

ASG-SD2500-50FX

9.73
8.62
8.43
8.12
1.723

7/8-26 UN LH, 2A THREAD

SD2500 PL and SD2500 PS

ASG-SD2500-10PL
ASG-SD2500-20PL
ASG-SD2500-35PL

ASG-SD2500-10PS
ASG-SD2500-20PS
ASG-SD2500-35PS

Ø 1.125

9.45
8.35
7.91

ASG-SD2500-50PL
ASG-SD2500-50PS

Ø 1.125

9.73
8.62
8.19
1.788
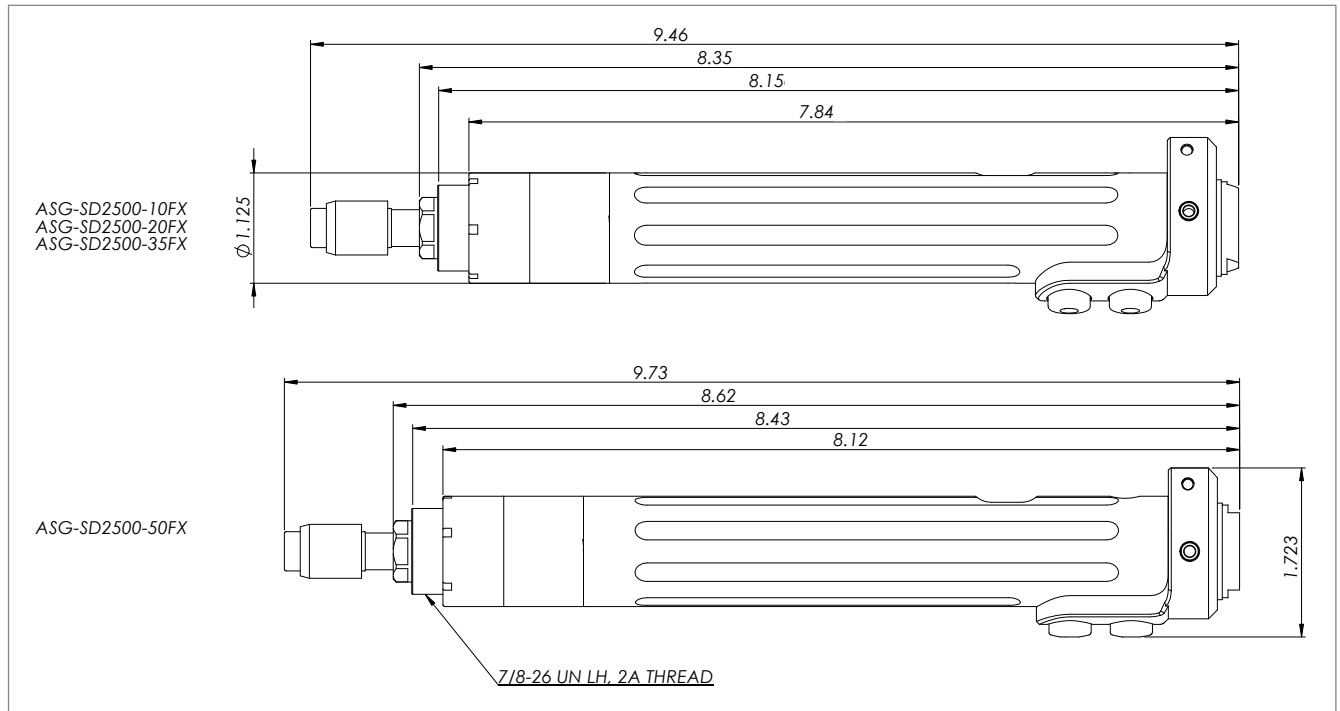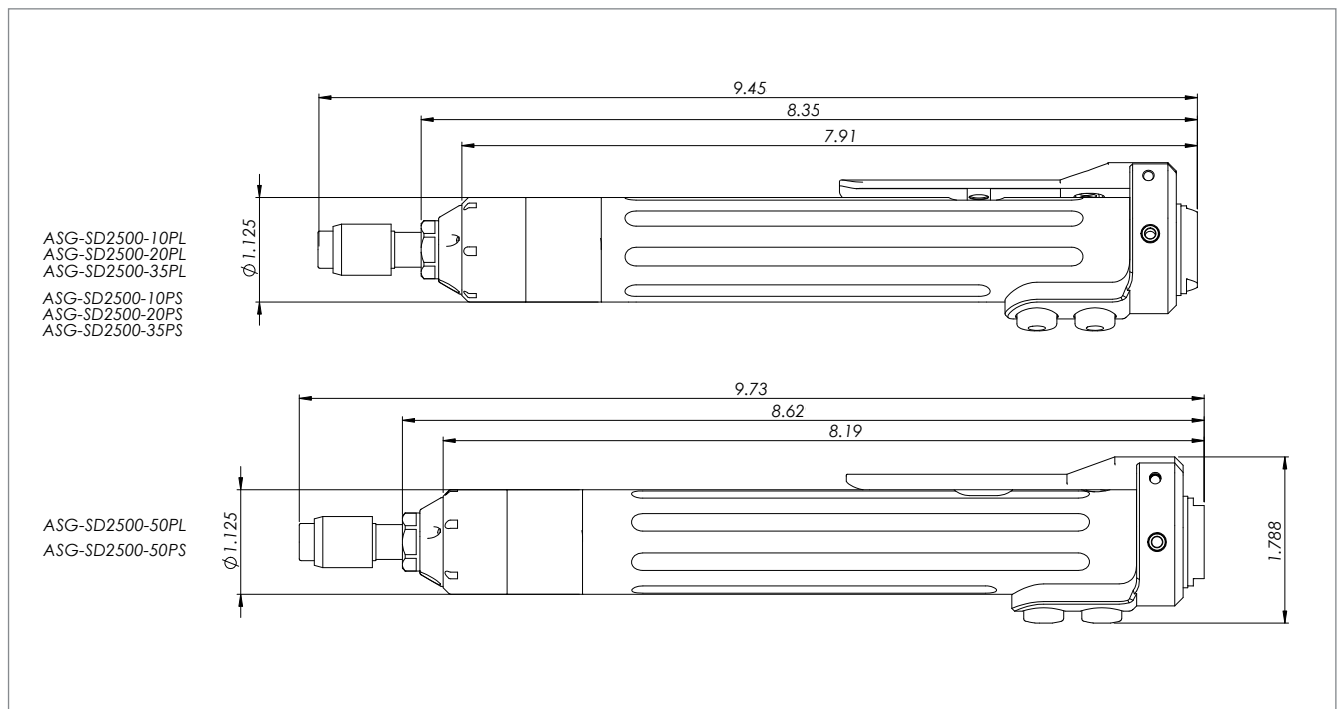
Dimensional drawings in inches

SD2500 Tool Cables and Accessories

Tool Cables

Tool cables are available in lengths 01 - 50 ft. (0.3 - 15.2 m) for connecting between the X-PAQ™ controller and SD2500 tools. Extension cables are available in lengths to 70 ft. (21.3 m). Maximum total length with tool and extension cables combined is 90 ft. (27.4 m).

ASG-CB2500 Heavy Weight Strain Relief (HW) 10 models	ASG-CB2500 ESD Safe (ESD) 5 models	ASG-CB2500 Right Angle (RA) 10 models	ASG-CB2500 Extension Cable (EX) 5 models	ASG-CB2500 Right Angle Extension (RAEX) 1 model

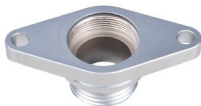| Beginning Model Number	Add Length Code (ft)										Add Type Code	Popular Model Number
ASG-CB2500-	05	10	15	20	25	30	35	40	45	50	HW	ASG-CB2500-10HW
	05	10	15	20	25						ESD	ASG-CB2500-10ESD
	05	10	15	20	25	30	25	40	45	50	RA	ASG-CB2500-05RA
	10	20	30	50	70						EX	ASG-CB2500-20EX
	01										RAEX	ASG-CB2500-01RAEX

Tool and Controller Accessories

FX Tool Mounting Plates

ASG-AC2500-MPSF
Single Flange

ASG-AC2500-MPJR
Double Flange with External Thread

ASG-AC2500-MPDF
Double Flange

Hangers

ASG-AC2500-SC
Suspension Clip
(Pistol Grip and Right Angle Tools)

ASG-AC2500-SB
Suspension Bail
(Inline Tools)

Grips

ASG-AC2500-PG
Pistol Grip
(shown installed)

ASG-AC2500-FGNC
Non-Lever Tool

ASG-AC2500-FG
Lever Tool

Torque Arm Mounts

ASG-AC2500-TMA
For use with ASG Articulating Arm

ASG-AC2500-TML
For use with ASG Linear Arm

SD2500 Tool Cables and Accessories

Vacuum Pick-up Kits

* Brass finder sold separately.

ASG-AC2500-VP
Handheld

ASG-AC2500-VPM
Mounted

Spindle Unit Kit

Set screws for locking bits into place.

ASG-AC2500-SP
Standard

ASG-AC2500-SPEX
Extended

LED Signal Towers

Consult ASG for your specific application.

- Choose from 20 models
- Tall or short body style
- With or without audible alarm
- 1, 2, 3, 4, or 5 Color LEDs

ASG-AC2500-STS1A

How to Read the Model Numbers

SD2500 Series

ASG-AC2500-STS 1 A

Tower type
STS: Signal tower short
STT: Signal tower tall

With audible alarm

Number of lights
1-5
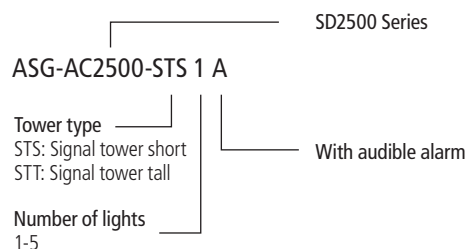
Controller Mounts

ASG-AC2500-CM
For use with 65003 and 65006

ASG-AC2500-VESA
For use with ASG monitor arms

Bit Trays

ASG-AC2500-BT4
4 position

ASG-AC2500-BT6
6 position

International Power Cords

Consult ASG for additional country options.

China
ASG-CT2500-PCI

France/Belgium
ASG-CT2500-PCE

India
ASG-CT2500-PCD

I/O Cables

Input: ASG-AC2500-IC20   Output: ASG-AC2500-OC20
(shown)

SD2500 Sequence Recognition System

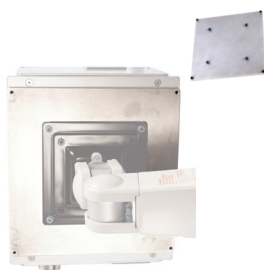**Every SR system must be specified according to custom application requirements.**

The sequence recognition system is the solution for applications such as those requiring uniform compression of all components within your product assembly. The ASG SRS ensures that the operator installs fasteners in a specific pre-programmed sequence.

- Integrate with the ASG X-PAQ™ Precision Fastening System to help control manufacturing processes by ensuring that proper torque, sequence and revolution tolerance is achieved

- Provides feedback to disable or enable the handheld tool based upon preprogrammed characteristics for proper fastener tightening sequence

Model Number	Typical SRS Components
ASG-SRS-SY	Standard Infra Red Vision Camera & Software, Basic PLC Program, I/O Cable, Ethernet Cable, 24VDC Power Supply, PLC & Power Supply Enclosure

Key Features and Information

Infrared Camera Technology: The IR camera detects the position of the tool, monitors fastener tightening sequence and minimizes the effects of workstation lighting on the assembly process.

Multiple Assembly Sequence Storage Capability: Provides outstanding process flexibility for multiple assemblies at a single workstation (high mix/low volume).

Tight Center to Center Distances: Allows the ability to distinguish between fasteners with 0.25 in. (6.35 mm) center to center distances and greater.
*Subject to application analysis

Workstation Controls Integration Capability: Allows further process control using workstation clamping, signal lights, bar code readers, etc.

Single Sensor Mounted High above Operator Work Envelope: Similar products incorporate several sensors mounted along the torque arm. The SRS single sensor mounted outside the operator work envelope eliminates the risk of accidental damage and wear and tear due to exposure to operator movement.

Example: Incorporating the SRS in Assembly

Visit our website, www.asg-jergens.com and submit your application analysis to begin the quote process.
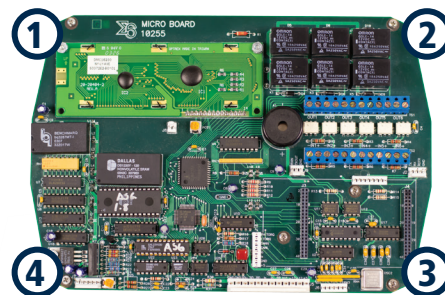
Step 1: Part is inserted into workstation fixture (clamps close).

Step 2: Fasteners are tightened to 1 N.m at 4 locations.

Step 3: Batch complete signals finished part (clamps open).

| SD2500 Protection and Investment Plans

X-Guard Protection Plan

Additional Months	6 Months	12 Month	18 Months	24 Months
Additional Cycles	500,000	1,000,000	1,500,000	2,000,000
X-Guard Model Number	ASG-XG2500-6SY	ASG-XG2500-12SY	ASG-XG2500-18SY	SG-XG2500-24SY
X-PAQ™ Controller				
Firmware updates*	•	•	•	•
Replacement or repair of parts required to restore functionality	•	•	•	•
SD2500 Screwdrivers				
Recalibration	1	1	2	2
Preventative maintenance	—	1	1	2
Replacement or repair of parts required to restore functionality**	•	•	•	•
CB2500 Screwdriver Cables				
Replacement or repair of parts required to restore functionality***	•	•	•	•

Additional Months	6 Months	12 Months	18 Months	24 Months
X-Guard Model Number	ASG-XG2500-6NW	ASG-XG2500-12NW	ASG-XG2500-18NW	ASG-XG2500-24NW
X-PAQ™ Networking Modules				
Firmware updates*	•	•	•	•
Replacement or repair of parts required to restore functionality	•	•	•	•

* Within original controller firmware level
** Consumable items such as suspension bails, bits, sockets and mounting brackets are not covered
*** ASG reserves the right to deem a cable damaged by abuse due to misuse or improper cable management and deny warranty claims

X-Lease Financing

ASG offers flexible financing for X-PAQ™ systems and products, including X-GUARD™ extended protection and maintenance plans covering X-PAQ™ systems.

Opt for a monthly lease investment and you can:

- Acquire equipment without a large cash outlay
- Avoid affecting lines of credit
- Match payments to cash flow
- X-GUARD™ protection plans can be built into your financing plan

Financing provided by: