

# Electric Screwdrivers and Nutrunners for Automation

Products and Solutions for Assembly



## | 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 9001:2015 certified manufacturer, provider and service center for products and solutions focused around assembly. Since the 1970s, we have developed a first-class reputation unrivaled in the industry offering a wide range of world class products through our various world wide locations.

We offer a wide selection of products including: electric, pneumatic and manual torque control screwdrivers; torque and angle control precision fastening systems; automatic screw feeders and screw presenters; torque testers and calibration services; custom designed automation equipment as well as a full line of accessories.

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 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.



# | About HIOS®

HIOS Inc. has specialized in the manufacture of screw tightening equipment since its establishment in 1970. HIOS continues to develop business today while considering global environment and improving overall work efficiency. HIOS aims to provide the highest quality equipment and to create a comfortable working environment. ASG is proud to be a premiere provider of HIOS brand electric tools and accessories for the assembly market in North America and Europe.



# | About ASG Automation

The ASG Automation group provides pre-engineered and custom solutions to meet the comprehensive expectations of our clients. Underpinned by world class knowledge of threaded fastening, our systems are distinctive in their operation; providing market leading precision. With robust elements of flexibility and expansion built in, the systems are designed to persevere life cycle changes to provide our customers with longevity in an automated solution.



# | Table of Contents

About ASG .....	2
About X-PAQ™, About HIOS®, About ASG Automation .....	3
Section 1: X-PAQ™ EH2 Series .....	4
Section 2: X-PAQ™ SD2500 Series .....	12
Section 3: HIOS® BLF Series .....	17
Section 4: HIOS® CLF, AF, and CL-A Series .....	20

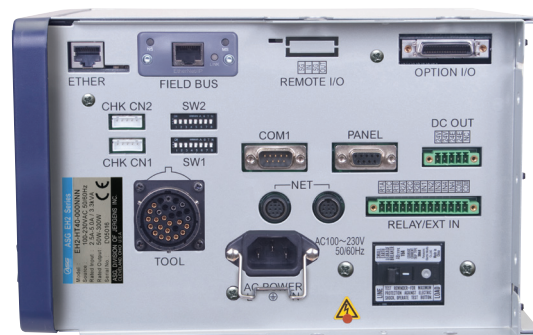
# | Section 1: X-PAQ™ EH2 Series

**X-PAQ™ EH2 controllers are equipped with simplified PLC functionality. A wide variety of integration options are possible.**

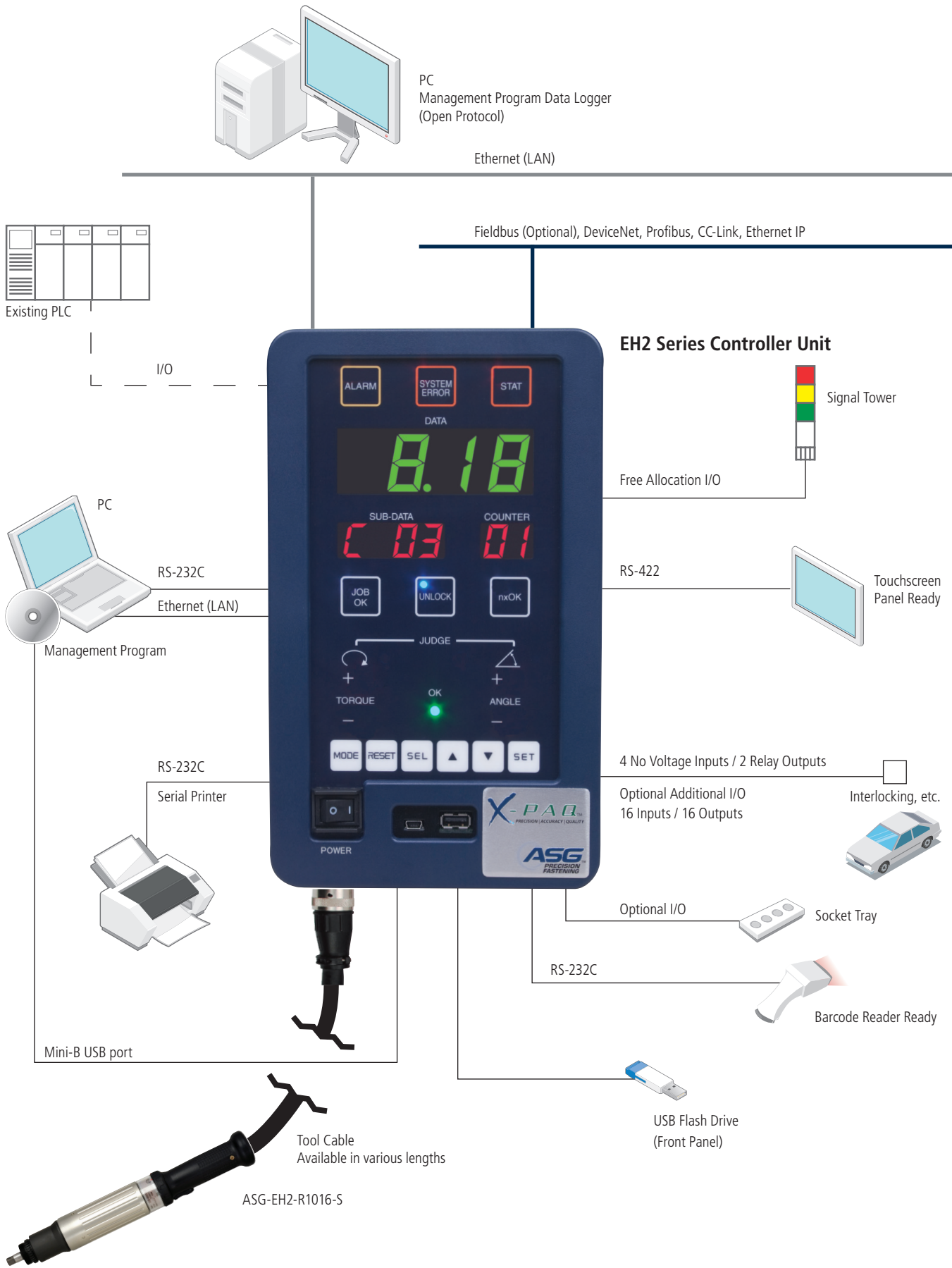
- Operates in direct drive or pulse fastening mode with automatic switch from direct mode to pulse fastening at a selectable torque level
- 99 fastening channel settings
- 99 assembly job settings
- Data storage up to 33,000 records (free allocation)
- Torque curve history (last 20 OK/10 NOK records internally or continuous history via PC)
- Multi-spindle synchronization for up to 10 tools
- Process monitoring
- Automatic over shoot reduction
- Quick set-up
- Built-in PLC functionality with customizable ladder logic capability
- Management software for controlling, monitoring, reporting and maintenance via PC. Software included with each controller purchase.

## X-PAQ™ EH2 Series Controller

Model Number	Device-Net	Profibus	CC-Link	Ethernet IP	Optional I/O	Weight	
						lb.	kg
ASG-EH2-HT40-000NNN						21	9.5
ASG-EH2-HT40-000NNP					•	21	9.5
ASG-EH2-HT40-000NDN	•					21	9.5
ASG-EH2-HT40-000NPN		•				21	9.5
ASG-EH2-HT40-000NCN			•			21	9.5
ASG-EH2-HT40-000NEN				•		21	9.5
ASG-EH2-HT40-000NDP	•				•	21	9.5
ASG-EH2-HT40-000NPP		•			•	21	9.5
ASG-EH2-HT40-000NCP			•		•	21	9.5
ASG-EH2-HT40-000NEP				•	•	21	9.5



X-PAQ™ EH2 Controller Bottom Panel



# X-PAQ™ EH2 Series

Transducerized DC Electric tools with both continuous and discontinuous pulse fastening technology.



## X-PAQ™ EH2 Screwdrivers and Nutrunners

EH2 screwdrivers and nutrunners are premium quality transducerized DC electric tools featuring pulse fastening technology. Models are available with different grips, operation and drive sizes.

- Transducerized torque and angle control with lightweight brushless resolver motor for unparalleled clean, quiet and accurate operation
- Customizable 7-color high intensity LED indicator lights
- Sleek aluminum body with break resistant handle, inner shell cable connector and ergonomic grip for ultimate durability and operator comfort
- Easily accessible forward/reverse selection switch with reset function
- Nutrunners feature high tensile, lightweight titanium alloy angle head, reducing operator strain and providing excellent durability



ASG-EH2-R1016-PH  
ASG-EH2-R1020-PH



ASG-EH2-R0005-SC  
ASG-EH2-R0010-SC



ASG-EH2-R0005-SL  
ASG-EH2-R0010-SL



ASG-EH2-R2035-S



ASG-EH2-R1016-S

Model Number	Driver Type	Torque Range		Length		Weight		Max. RPM	Drive Size
		lbf.in	N.m	in.	mm	lb.	kg		
ASG-EH2-R0005-SL	Inline Lever Start	8.8 - 44.3	1 - 5	11.7	296	2.6	1.2	1694	1/4" Hex
ASG-EH2-R0005-SP	Inline Push to Start	8.8 - 44.3	1 - 5	11.7	296	2.6	1.2	1694	1/4" Hex
ASG-EH2-R0005-SC	Inline Remote Start Only	8.8 - 44.3	1 - 5	9.0	228	2.4	1.1	1694	3/8" Square
ASG-EH2-R0010-SL	Inline Lever Start	17.7 - 88.5	2 - 10	11.7	296	2.6	1.2	942	1/4" Hex
ASG-EH2-R0010-SP	Inline Push to Start	17.7 - 88.5	2 - 10	11.7	296	2.6	1.2	942	1/4" Hex
ASG-EH2-R0010-SC	Inline Remote Start Only	17.7 - 88.5	2 - 10	9.0	228	2.4	1.1	942	3/8" Square
ASG-EH2-R1016-PH*	Pistol Grip Trigger Start	28.3 - 141.6	3.2 - 16	8.7	220	3.1	1.4	1247	3/8" Square
ASG-EH2-R1016-S*	Inline Lever Start	28.3 - 141.6	3.2 - 16	13.5	344	2.9	1.3	1247	3/8" Square
ASG-EH2-R1020-PH*	Pistol Grip Trigger Start	35.4 - 177.0	4 - 20	8.7	220	3.1	1.4	1053	3/8" Square
ASG-EH2-R1020-S*	Inline Lever Start	35.4 - 177.0	4 - 20	13.5	344	2.9	1.3	1053	3/8" Square
ASG-EH2-R2035-S	Inline Lever Start	61.9 - 309.8	7 - 35	16.0	406	4.4	2.0	1169	3/8" Square

\* Built-in spline for use with reaction plates | All tools remote start capable

# X-PAQ™ EH2 Series



Double Shell Construction  
Molded Connector

## Tool Cables

Sturdy, double-shell construction, straight tool cables are available in different lengths from 5 - 30 m (16.4 - 98.4 ft.) for connecting between the X-PAQ™ controller and EH2 Series tools. Retracting tool cable in 3 m (9.8 ft.) length and extension cables are also available.



ASG-EH2-CVC  
Coiled



ASG-EH2-CVS  
Straight



ASG-EH2-CVE  
Extension

Beginning Model Number	Add Type Code	Add Length Code (m)						Popular Model Number
ASG-EH2-	CVC	03						ASG-EH2-CVC03-SS
	CVS	05	10	15	20	25	30	ASG-EH2-CVS05-SS
	CVE	05	10	15				ASG-EH2-CVE10-SS

## Tool and Controller Accessories

### Tool Cable Adapters



ASG-EH2-CVA-CVAD-L  
90°



ASG-EH2-CVAD-U  
180°

### I/O Connectors



ASG-EH2-FCN13-RL (13 wire)  
ASG-EH2-FCN5-DC (5 wire)



ASG-ENRZ-CN36-EX  
(Optional I/O)

### Support Handles and Levers and Spindle



ASG-ENRH-SH01



ASG-ENRH-SH02  
With Selector Switch and Trigger



Installed  
Handles



Sample  
Multi Spindle

### Socket Tray



ASG-EH2-ST4 (4 position)  
ASG-EH2-ST8 (8 position)

### Tool Reaction Plates and Locking Nut



ASG-ENRH-RP20W  
Double Flange Spline



ASG-ENRH-RP20S  
Single Flange Spline



ASG-ENRH-LNM30  
Lock Nut  
(Required for Spline Reaction Plates)



ASG-ENRH-RP35W  
Double Flange

# X-PAQ™ EH2 Series

## Tool and Controller Accessories (Continued)

### Serial Communication Cables



Available in 3 lengths  
 ASG-ENRZ-CVSR-015 (1.5m)  
 ASG-ENRZ-CVSR-050 (5.0m)  
 ASG-ENRZ-CVSR-100 (10m)

### NET Cables and Termination Resistor



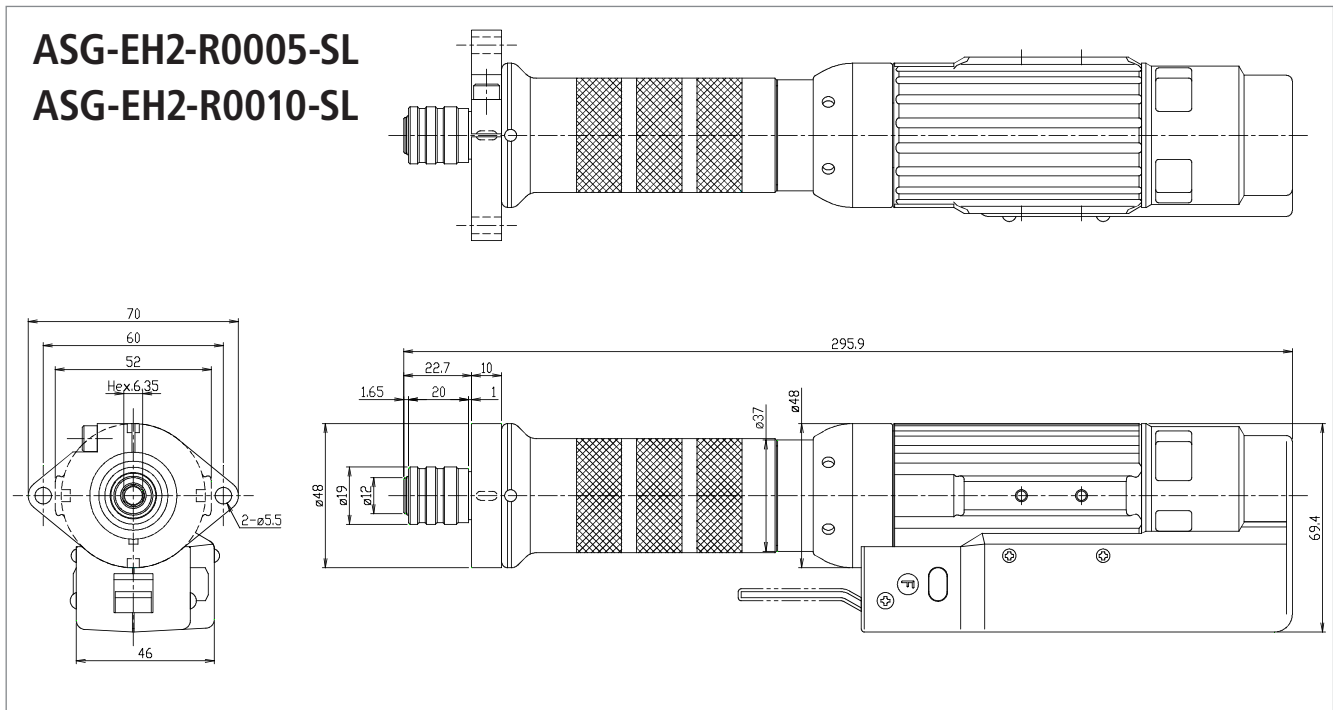
Available in 3 lengths  
 ASG-EH2-CVNK-005 (0.5m)  
 ASG-EH2-CVNK-010 (1m)  
 ASG-EH2-CVNK-030 (3m)  
 Termination Resistor  
 ASG-EH2-CNST

### Controller Base



ASG-EH2-CF02

## External Dimensions

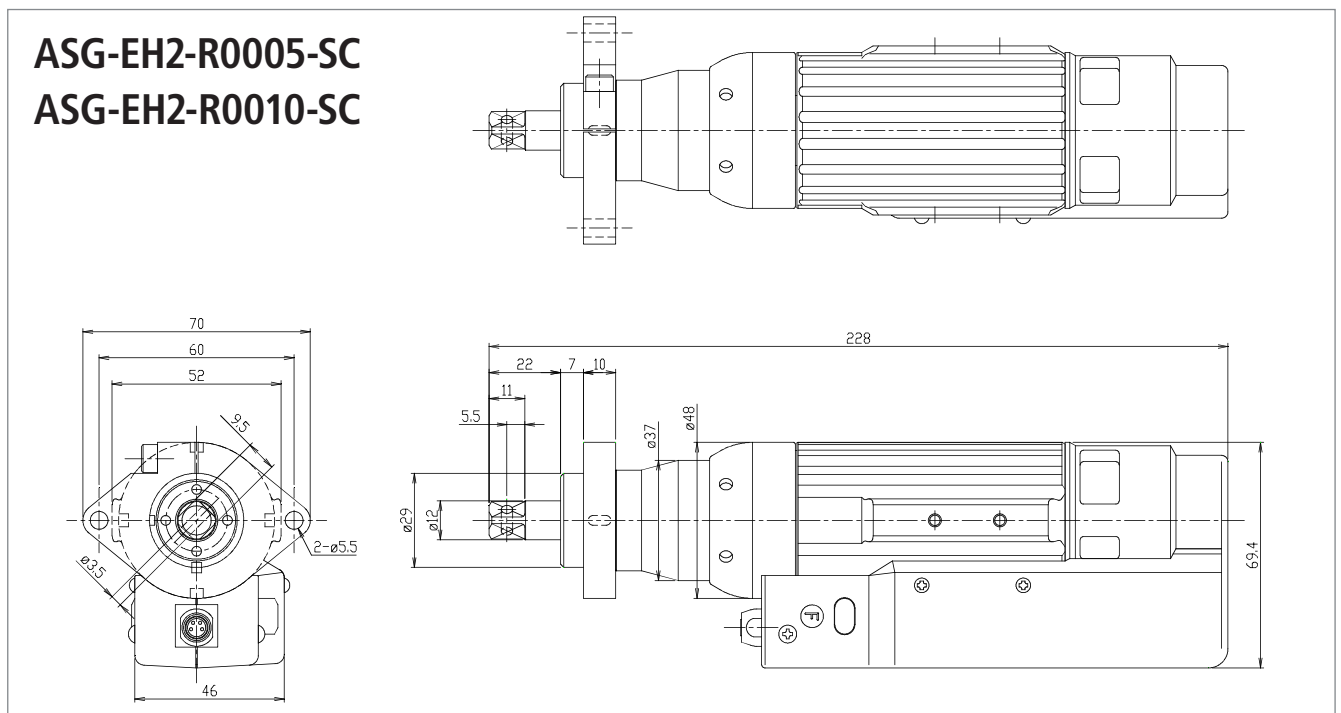
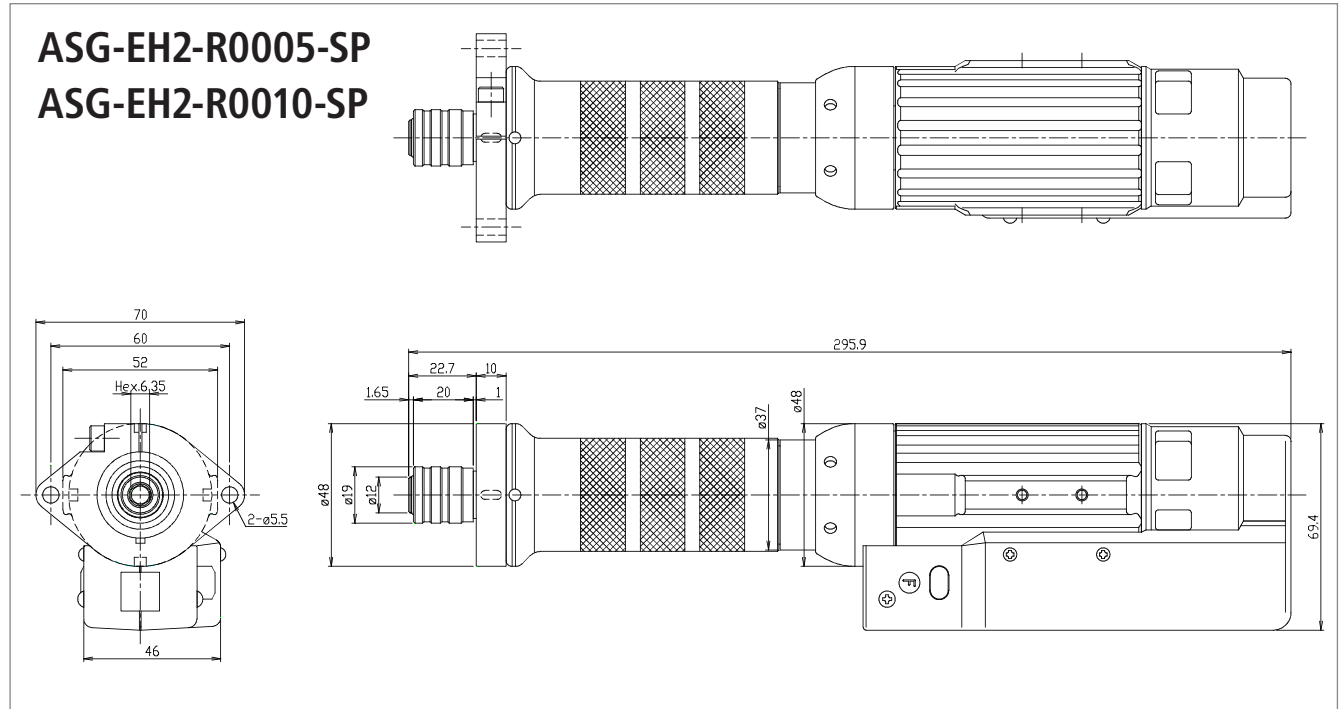


Dimensional drawings in mm



# X-PAQ™ EH2 Series

## External Dimensions

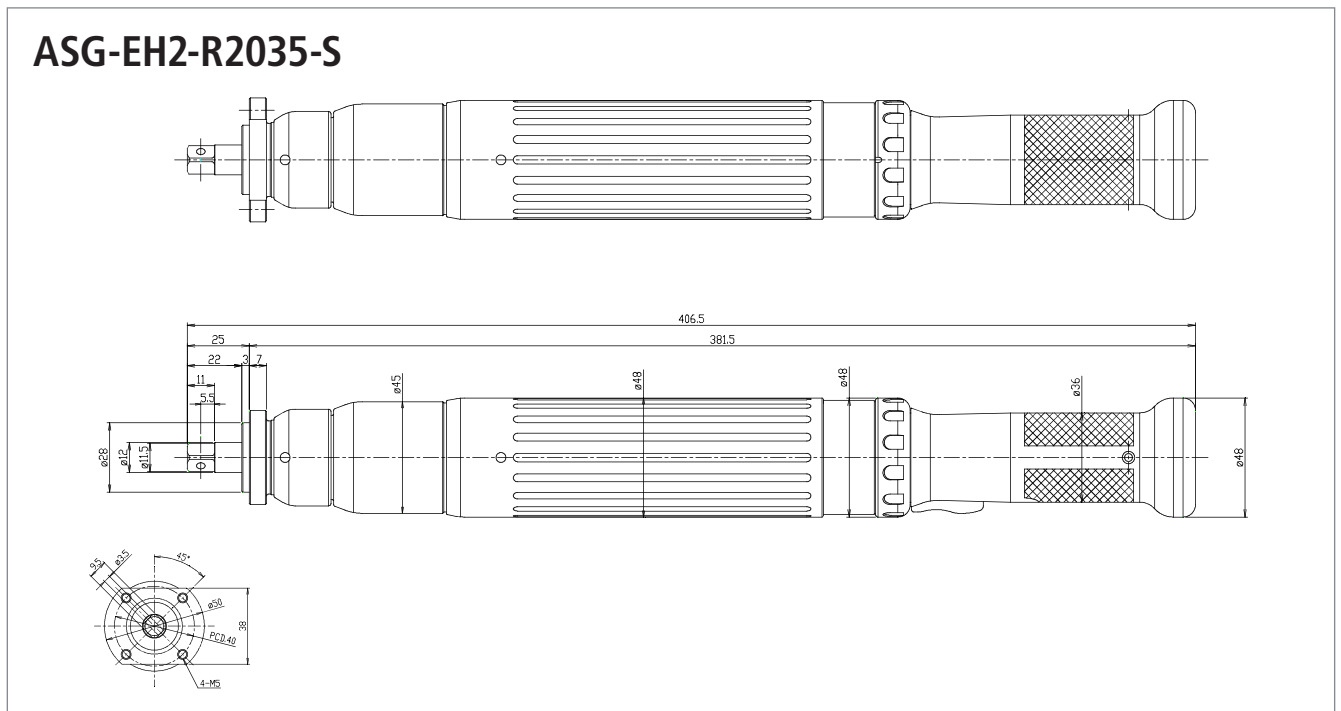
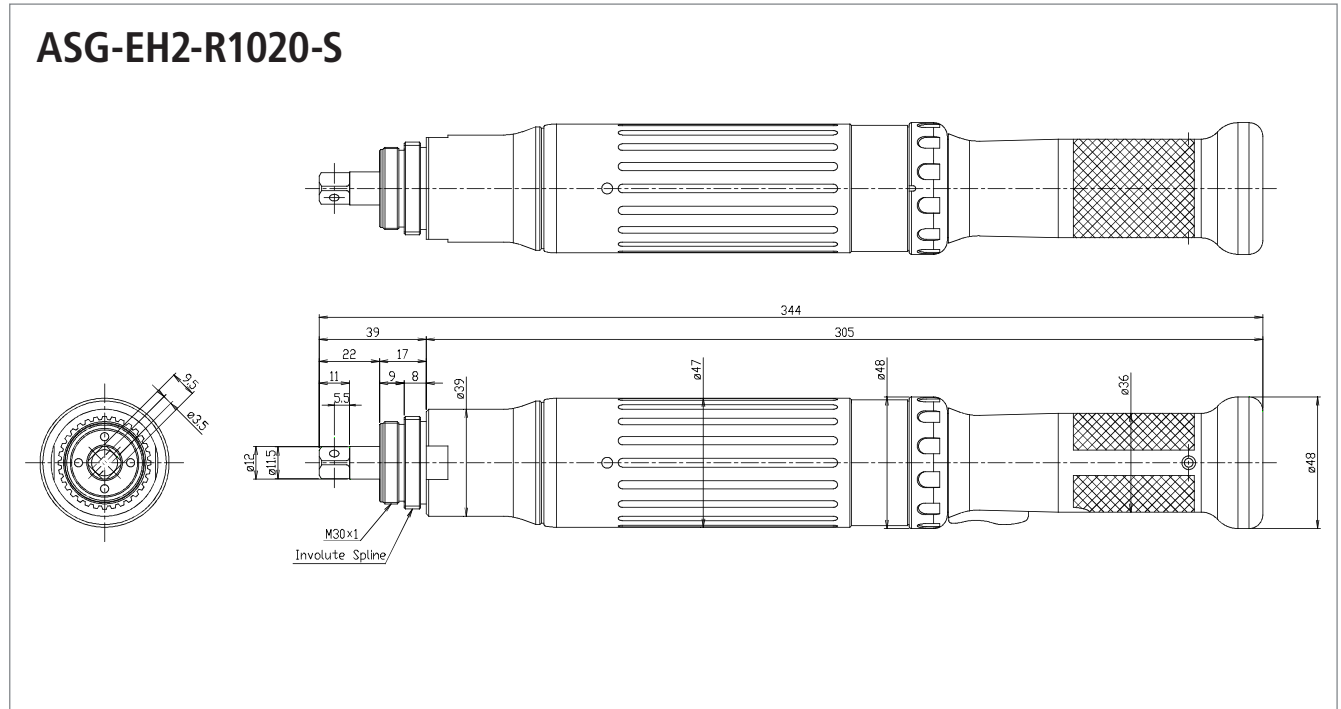


Dimensional drawings in mm



# X-PAQ™ EH2 Series

## External Dimensions



Dimensional drawings in mm

# Section 2: X-PAQ™ SD2500 Series

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
- Password protection for 3 users
- Universal power supply (international power cords available)

## 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



X-PAQ™ SD2500 Controller Bottom Panel

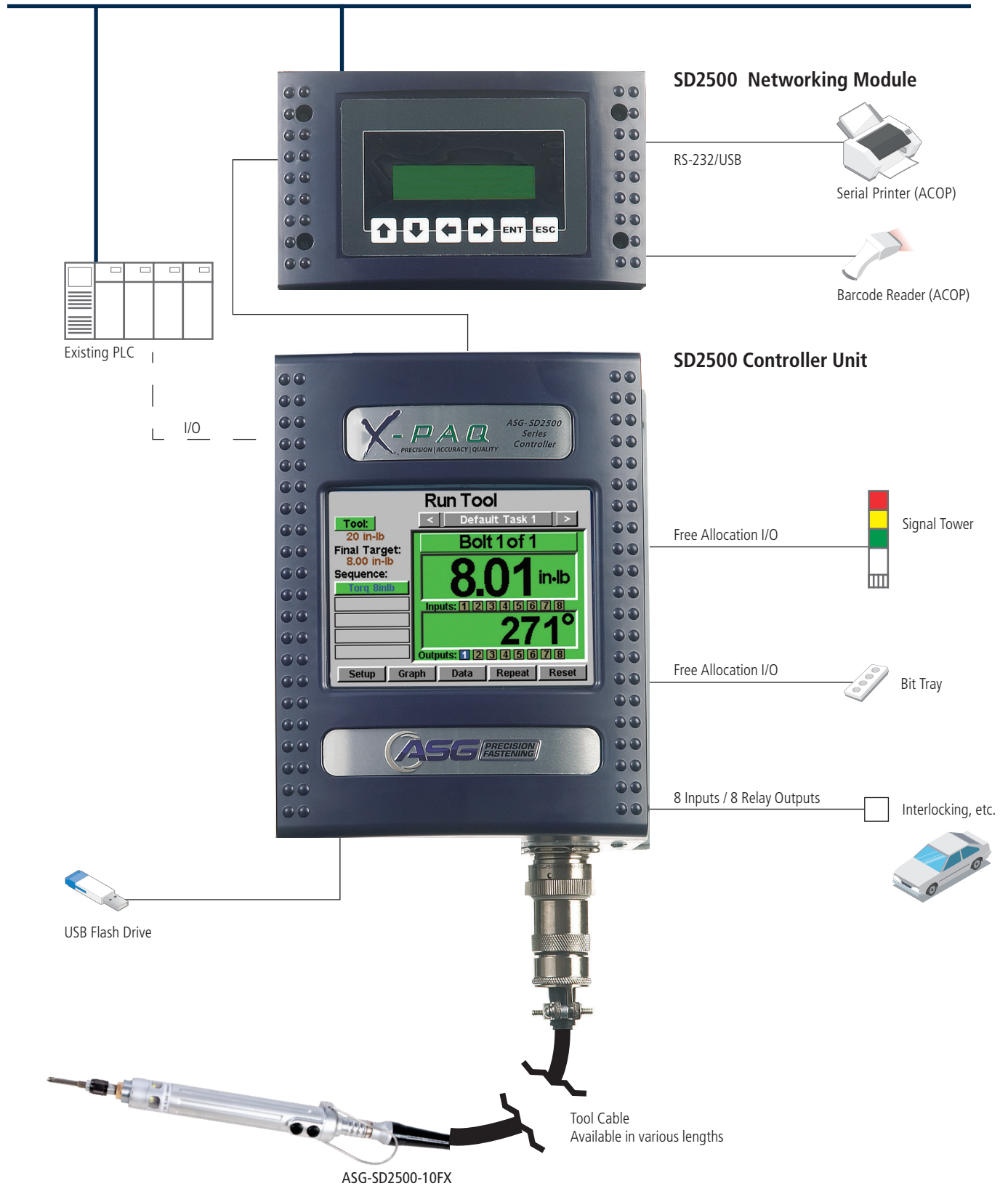
## SD2500 Networking Modules



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

# X-PAQ™ SD2500 Series

Fieldbus (Optional), Ethernet IP, ACOP, ToolsNet



# X-PAQ™ SD2500 Series



FX Model  
Threaded End  
(Fixtured)

## X-PAQ™ SD2500 Screwdrivers and Nutrunners

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" 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" hex or 1/4" 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

Model Number	Driver Type	Torque Range		Length		Weight		Max. RPM	Drive Size
		lbf.in	N.m	in.	mm	lb.	kg		
ASG-SD2500-10FX	Inline Fixture Mount (Push to Start)	1 - 10	0.1 - 1.1	9.5	240	1.00	0.46	1700	1/4" Hex
ASG-SD2500-20FX	Inline Fixture Mount (Push to Start)	2 - 20	0.2 - 2.3	9.5	240	1.00	0.46	1100	1/4" Hex
ASG-SD2500-35FX	Inline Fixture Mount (Push to Start)	3.5 - 35	0.4 - 3.9	9.5	240	1.00	0.45	800	1/4" Hex
ASG-SD2500-50FX	Inline Fixture Mount (Push to Start)	5 - 50	0.6 - 5.6	9.7	246	1.10	0.49	500	1/4" Hex

All tools remote start capable | For applications requiring less than 2 lbf.in (0.2 N.m) torque, please consult ASG

## 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

# X-PAQ™ SD2500 Series

## Tool and Controller Accessories

### FX Tool Mounting Plates



ASG-AC2500-MPSF  
Single Flange



ASG-AC2500-MPIR  
Double Flange with  
External Thread



ASG-AC2500-MPDF  
Double Flange

### Thrust Bearing Module



6F0882  
(shown installed)

### Vacuum Pick-up Kits

\* Brass finder sold separately.



ASG-AC2500-VP  
Handheld



ASG-AC2500-VPM  
Mounted

### Spindle Unit Kit



ASG-AC2500-SP  
Standard



ASG-AC2500-SP-4MM  
Optional Accessory – For use  
with: 4mm winged JIS Style Bits

Example of Bit:



ASG-AC2500-SPEX  
Optional Accessory – For use  
with: 1/4" Hex Power Bits

Set screws for  
locking bits  
into place.

### International Power Cords

Consult ASG for additional country options.



China  
ASG-CT2500-PCI



France/Belgium  
ASG-CT2500-PCF



India  
ASG-CT2500-PCD

### I/O Cables



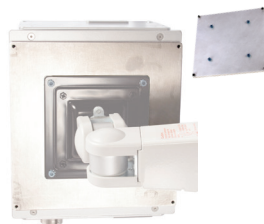
Input: ASG-AC2500-IC20

Output: ASG-AC2500-OC20  
(shown)

### Controller Mounts



ASG-AC2500-CM  
For use with 65003 and 65006



ASG-AC2500-VESA  
For use with ASG monitor arms

# X-PAQ™ SD2500 Series

## Tool and Controller Accessories (Continued)

### LED Signal Towers

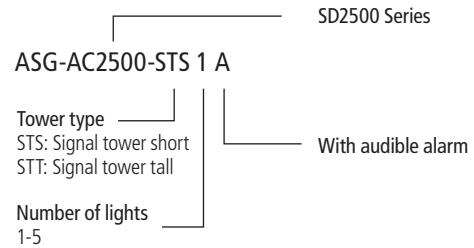
Consult ASG for your specific application.

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

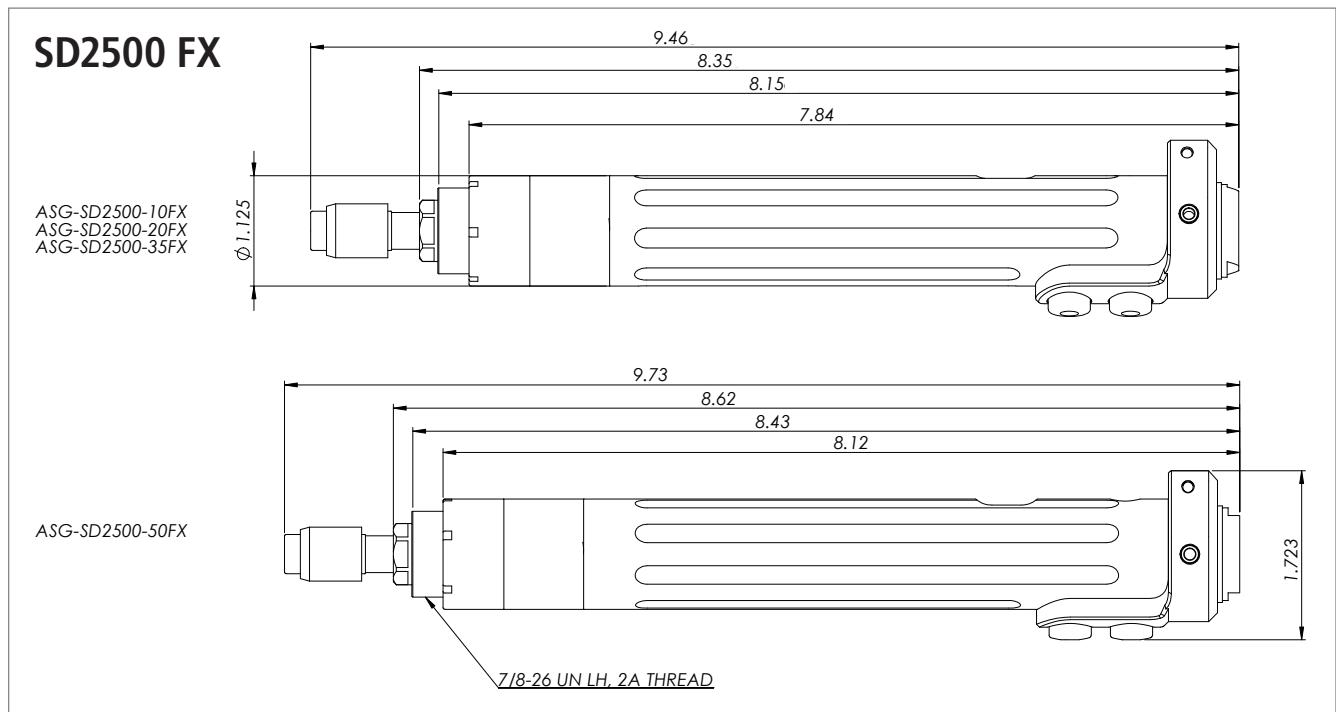


ASG-AC2500-STS1A

### How to Read the Model Numbers



## External Dimensions



Dimensional drawings in inches



# | Section 3: HIOS® BLF Series



BLF Model



BLFQ Model



BLFR Model

## BLF Brushless Screwdrivers for Automated Assembly Machines

- Simple structure provides high durability and easy maintenance
- Tools offer accurate torque to uniform fastening quality
- BLF-Q: Vacuum pick-up, attachment can pick up non-ferrous screws such as stainless steel screws. It can also be used to remove powder dust generated from screw tightening
- BLF-R: Deep hole fastening attachment. Vacuum pick-up, ideal for accessing fasteners in recessed locations

Model Number	Torque Range		Speed		Drive Size
	lbf.in	N.m	LOW (20V)	HI (30V)	
BLF-2000, BLFQ-2000	0.26 - 3.0	0.03 - 0.35	120 - 345	690 - 975	HIOS H4
BLF-5000, BLFQ-5000, BLFR-5000	2.6 - 8.8	0.3 - 1.0	115 - 320	660 - 940	HIOS H5 and 5Hex
BLF-7000, BLFQ-7000	6.0 - 17.0	0.7 - 2.0	150 - 450	495 - 735	HIOS H5
BLF-7000X, BLFR-7000X	6.0 - 17.0	0.7 - 2.0	150 - 450	495 - 735	1/4" Hex
BLF-7025X, BLFR-7025X	9.0 - 22	1 - 2.5	120 - 350	400 - 600	1/4" Hex

## BLF Compatible Power Supplies

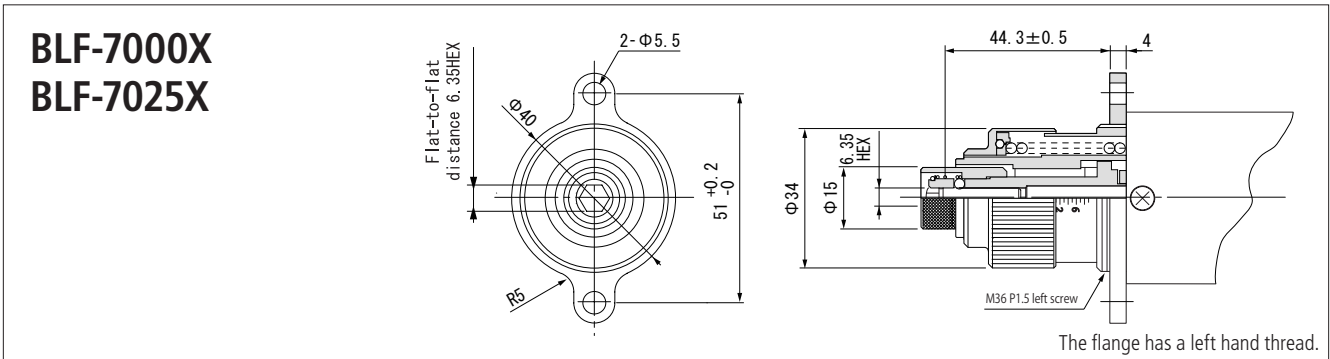
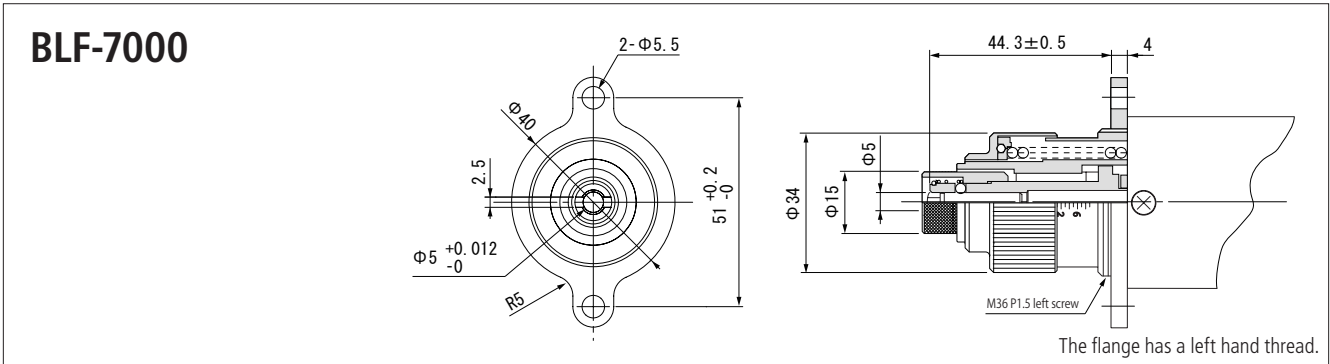
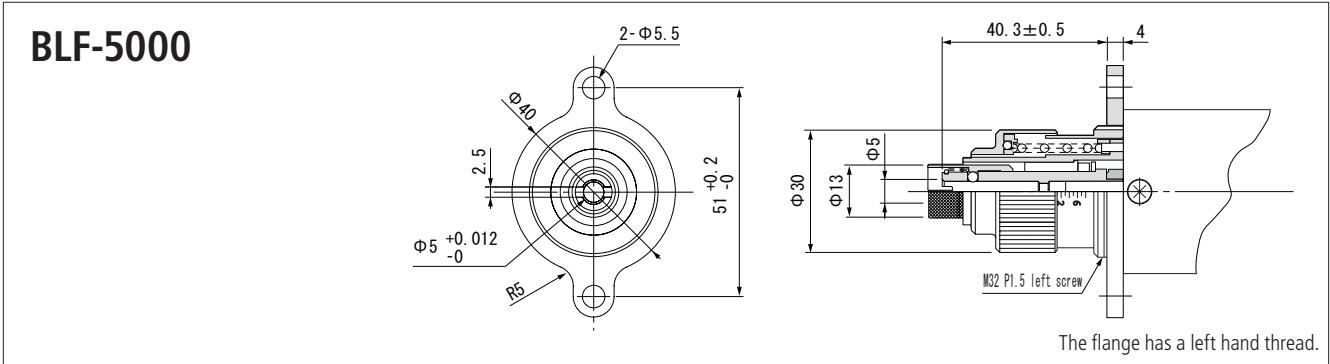
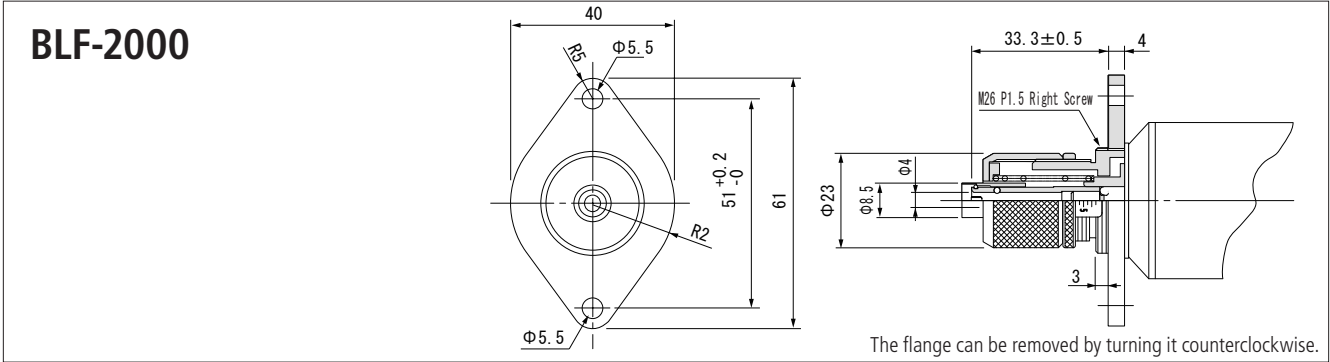
- 2WS (2 speed) and REV (Reversing) capabilities as standard
- Can be connected to external controls, such as a PLC, to control the direction and speed of the driver.
- BLT-AY-61: Compatible with BLF-2000, BLF-5000
- BLT-AY-71: Compatible with BLF-7000, BLF-7000X, BLF-7025X

Model Number	BLT-AY-61, BLT-AY-71
Primary Input	AC100-240 V, 47-63 Hz
Secondary Output	LOW: 5V-15V, HI: 20V-30V (11 step switchable)
Dimensions (WxDxH)	202 x 143 x 87 mm (8.0 x 5.6 x 3.4 in.)
Weight	1.75 kg (3.85 lb)
Accessories	(1) Power Supply Cord with Ground Wire, (1) Terminal Block Connector



# HIOS® BLF Series

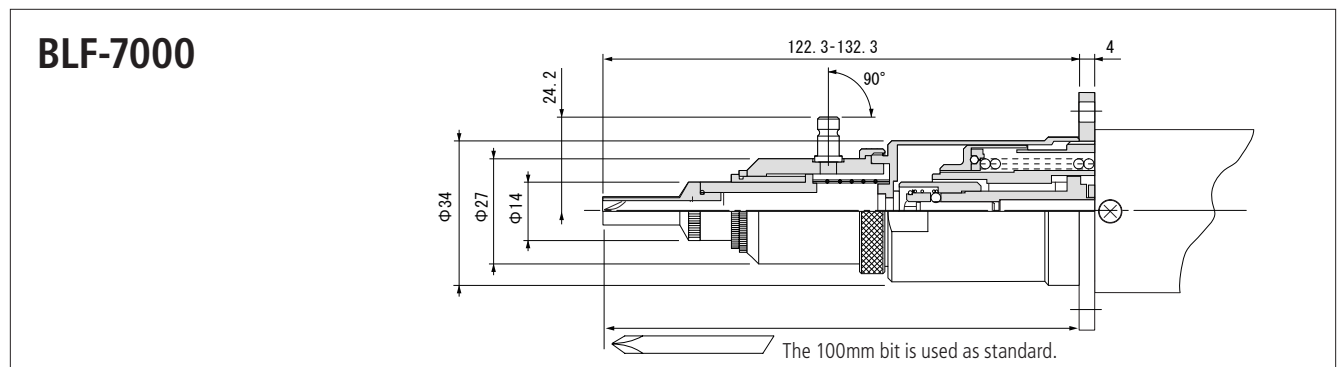
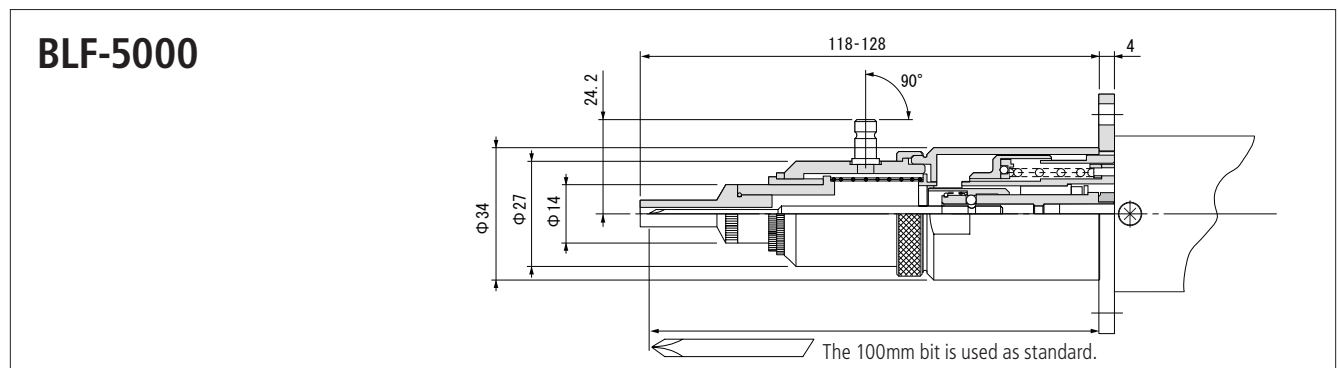
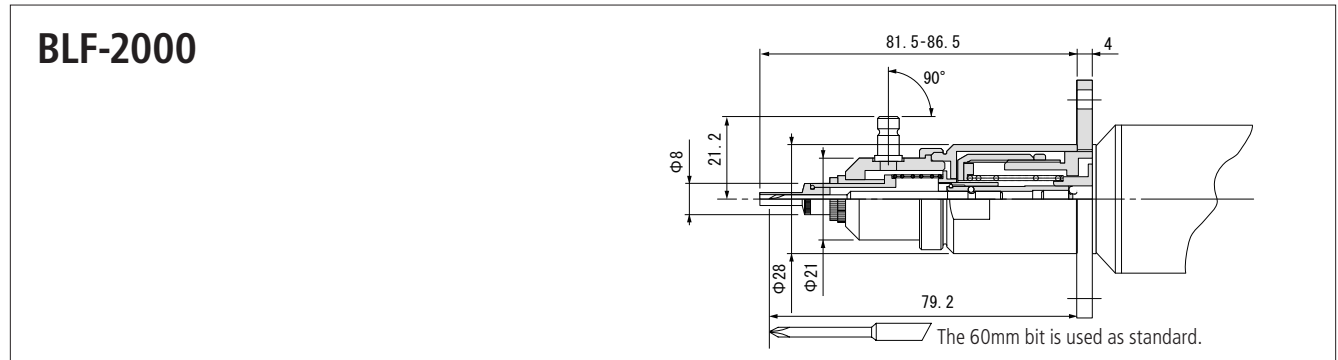
## External Dimensions



Dimensional drawings in mm

# | HIOS® BLF Series

## External Dimensions with Vacuum Pick-Up Attachments



Dimensional drawings in mm

## Section 4: HIOS® CLF, AF, and CL-A Series



### Brushed Screwdrivers for Automated Assembly Machines

- Suitable for automated assembly machines
- Easy to install to the existing assembly system
- Compact body
- CLF Series: Low Torque Series; AF Series: High Speed; CL-A Series: High Torque
- CLFQ and AFQ Series: Vacuum pick-up available for CLF and AF models

Model Number	Torque Range		Speed $\pm 10\%$	Drive Size	Vacuum Attachment Kit Bit Length (CLFQ, AFQ models)
	lbf.in	N.m	RPM		
CLF-3000	0.3 - 1.3	0.03 - 0.15	1000 - 560	H4	H4 60mm
CLF-4000	0.9 - 3.1	0.1 - 0.35	1000 - 560	H4, 1/4" Hex	H4 60mm
CLF-6000	3.0 - 5.3	0.3 - 0.6	750 - 400	H5, 1/4" Hex	H5 100mm
CLF-6500	3.5 - 9	0.4 - 1.0	850 - 440	H5, 1/4" Hex	H5 100mm
CLF-7000	4.3 - 13	0.5 - 1.5	780 - 420	H5, 1/4" Hex	H5 100mm
AF-4500	3.5 - 5.3	0.4 - 0.6	1700 - 940	H4, 1/4" Hex	H4 60mm
AF-5000	3.5 - 6.6	0.4 - 0.75	1100 - 600	H4, 1/4" Hex	H4 60mm
AF-6500	4.3 - 9.7	0.5 - 1.1	1700 - 950	H5, 1/4" Hex	H5 100mm
CL-816A	13 - 22	1.5 - 2.5	550 - 310	1/4" Hex	
CL-825A	17 - 35	2.0 - 4.0	370 - 210	1/4" Hex	
CL-850A	21 - 39	2.4 - 4.5	570 - 320	1/4" Hex	

### CLF, AF, and CL-A Compatible Power Supplies



- CLT-AY-61: Compatible with CLF-3000, CLF-4000, CLF-6000, CLF-6500, CLF-7000, AF-4500, AF-5000, AF-6500
- CLT-AY-81: Compatible with CL-816A, CL-825A, CL-850A
- Additional options available, however, cannot be added after purchase
  - 2WV: Low rotation, can be externally controlled (CLT-AY-61-2WV, CLT-AY-81-2WV)
  - REV: Reverse rotation, can be externally controlled (CLT-AY-61-REV, CLT-AY-81-REV)
  - 2WV + REV: CLT-AY-61-REV-2WV, CLT-AY-81-REV-2WV

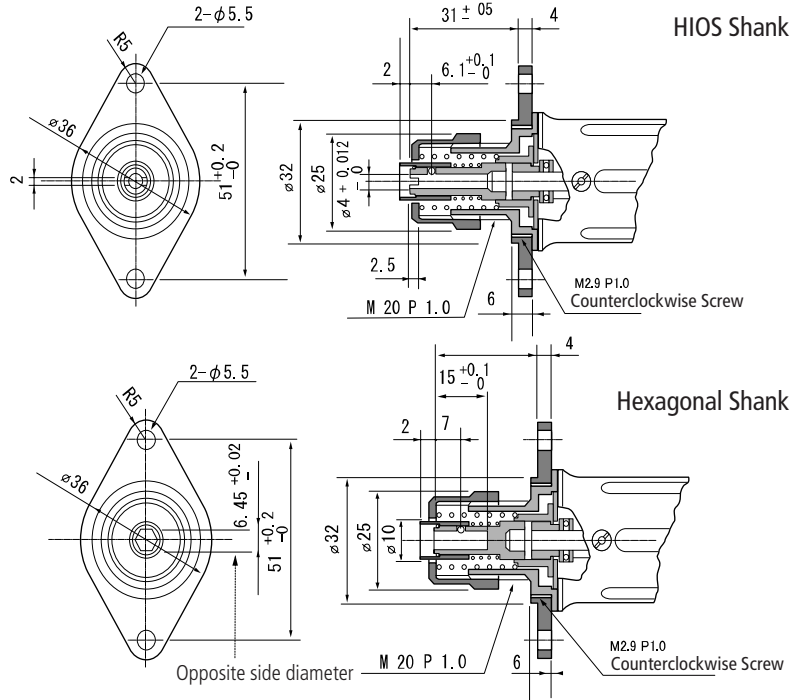
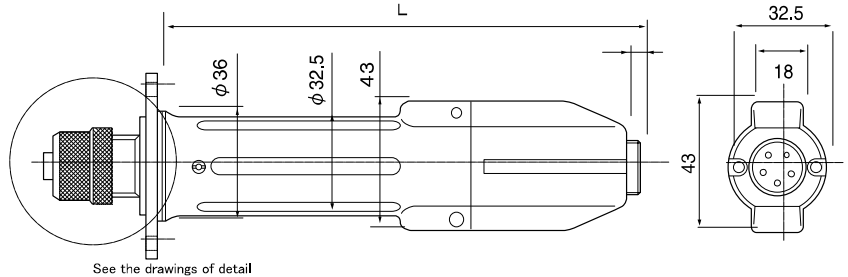
Model Number	CLT-AY-61	CLT-AY-81
Primary Input	AC100V $\pm 5\%$ , 50/60Hz	AC100V $\pm 5\%$ , 50/60 Hz
Secondary Output	About DC17-30V (stepless adjustment)	
Dimensions (WxDxH)	232 x 177 x 106 (9.1 x 7.0 x 4.2 in.)	320 x 220 x 154 (12.6 x 8.7 x 6.1 in.)
Weight	4.2 kg (9.3 lb)	13.5 kg (29.8 lb)
Accessories	(1) 1.8m Power Supply Cord with Ground Wire, (1) Spare Fuse, (5) Fork Terminals	

# HIOS® CLF, AF, and CL-A Series

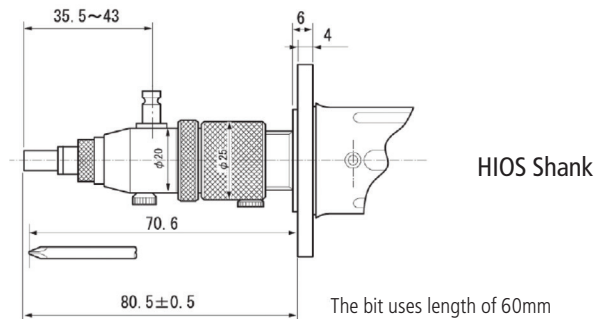
## External Dimensions

CLF-3000  
CLF-4500  
AF-4500  
AF-5000

Model Number	L Dimensions Indication	
	HH HN	XH XN
CLF-3000	145	—
CLF-4000	160	—
AF-4500	170	—
AF-5000	170	—



## Exterior Dimensions with Vacuum Attachment



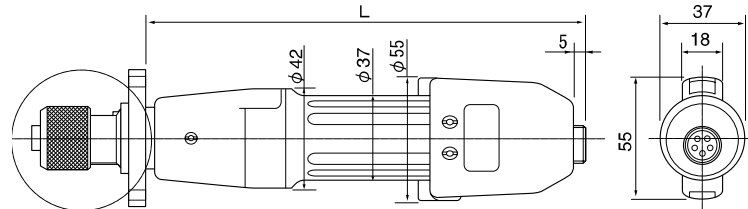
Dimensional drawings in mm

# HIOS® CLF, AF, and CL-A Series

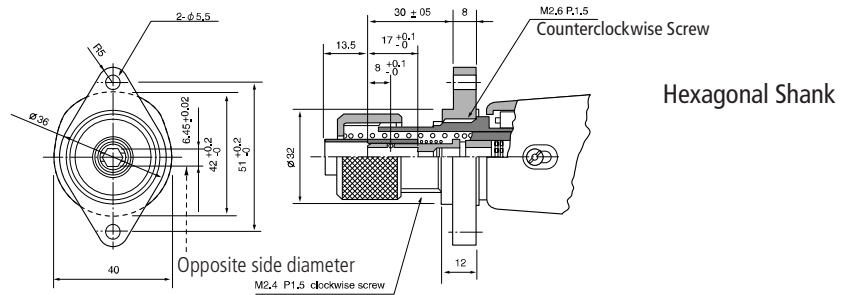
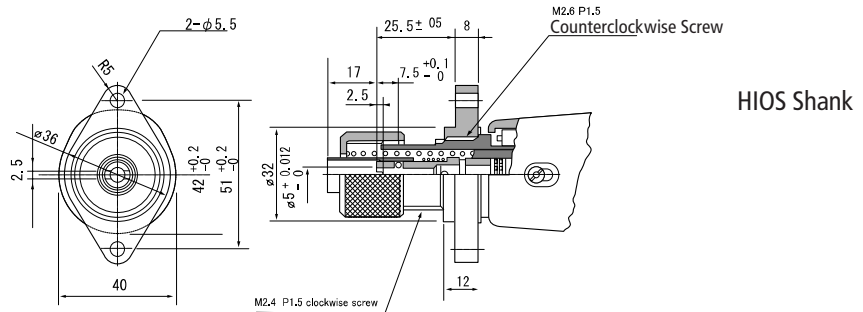
## External Dimensions

CLF-6000  
CLF-6500  
CLF-7000  
AF-6500

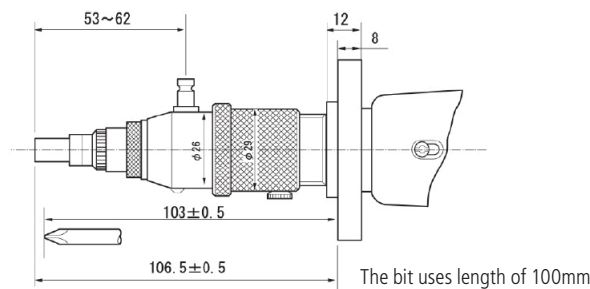
Model Number	L Dimensions Indication	
	HH HN	XH XN
CLF-6000	183	
CLF-6500	197	
CLF-7000	217	
AF-6500	197	



See the drawings of detail



## Exterior Dimensions with Vacuum Attachment

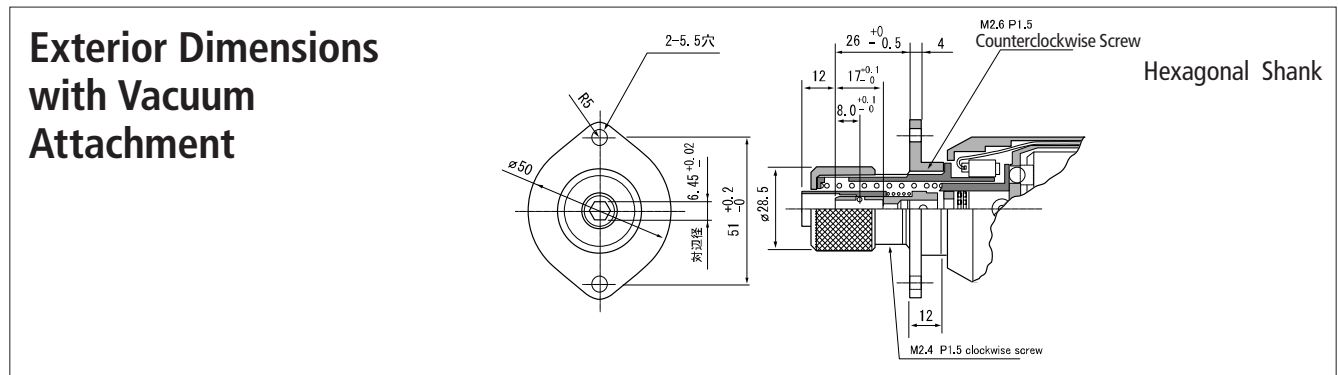
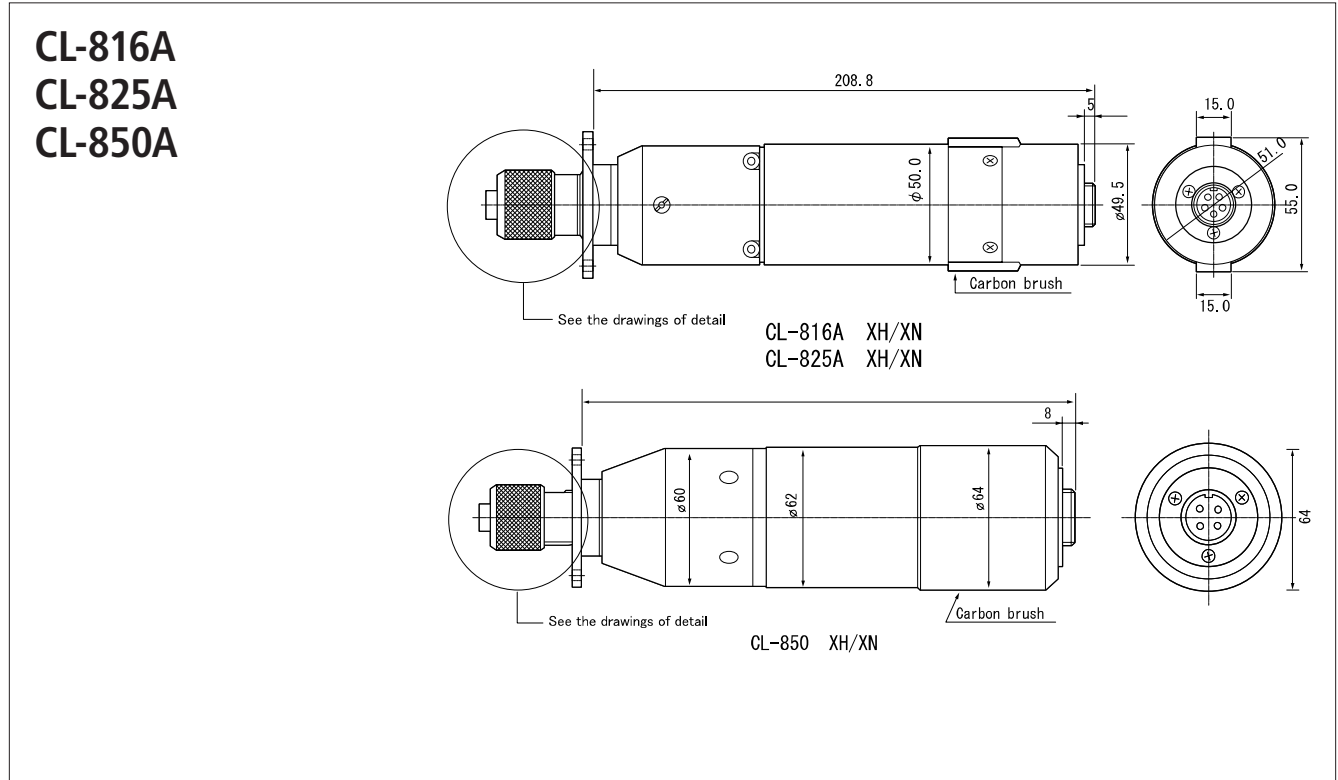


HIOS Shank

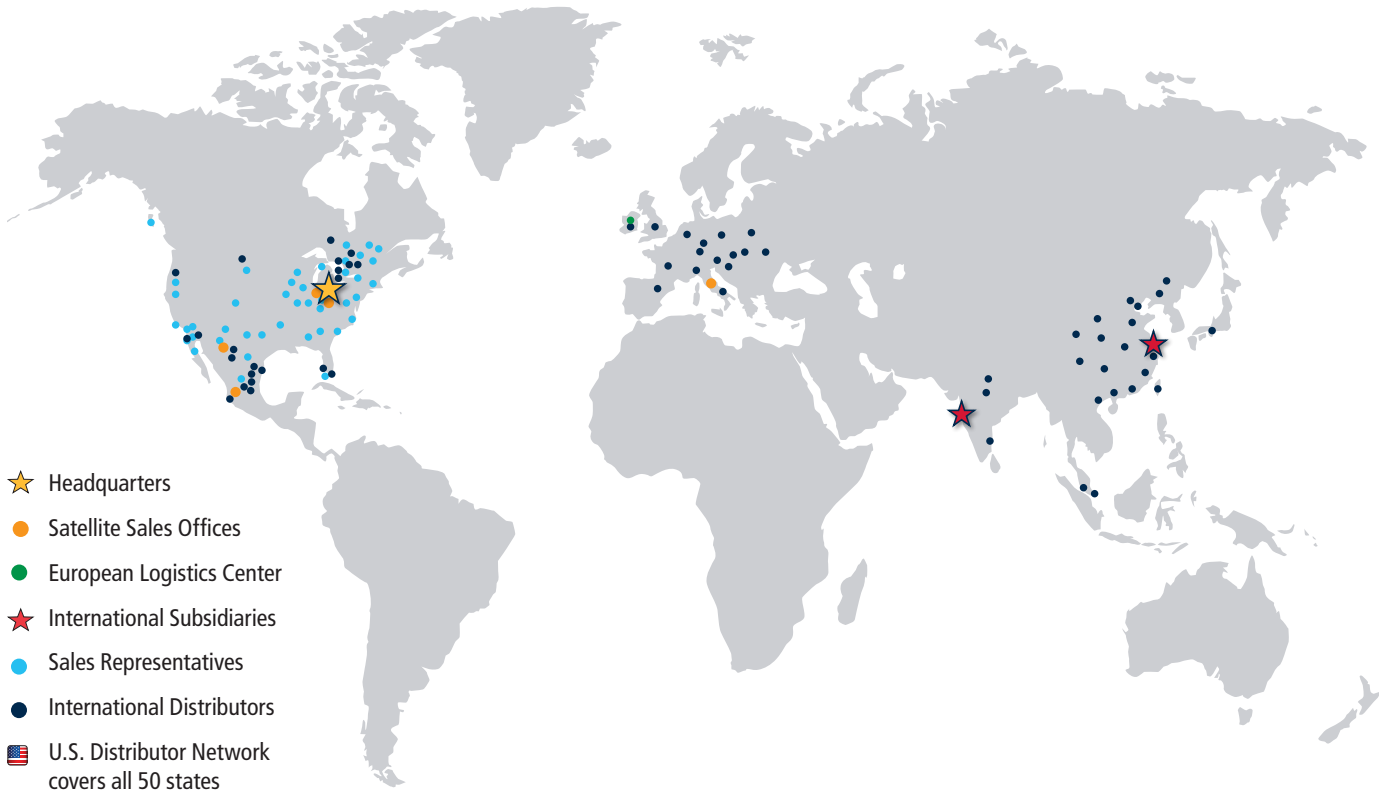
Dimensional drawings in mm

# HIOS® CLF, AF, and CL-A Series

## External Dimensions



Dimensional drawings in mm



## Global Support

**Our footprint covers the globe!**

ASG employs a team of technical experts to provide support, repair, calibration and preventative maintenance services. We welcome the opportunity to provide assistance by telephone or online chat Monday through Friday, 8 a.m. to 5 p.m. (U.S. Eastern Time) excluding holidays.

ASG maintains subsidiaries in Shanghai, China and Mumbai, India, and a sales office in Guadalajara, Mexico and Italy to provide direct support to our international customers. We work together with our global Field Sales Representative and Distributor Network to help customers standardize their assembly equipment and processes around the world.

Distributor:



## Products and Solutions for Assembly

January 2020

**ASG USA Headquarters**  
 Jergens Way, 15700 S. Waterloo Road  
 Cleveland, OH 44110-3898 USA  
 Phone: (216) 486-6163  
 Toll-free USA: (888) 486-6163  
 Fax: (216) 481-4519  
 Email: [asginfo@asg-jergens.com](mailto:asginfo@asg-jergens.com)

**ASG China Subsidiary**  
 Unit 301 Level 3, Block A  
 A-REIT City at Jinqiao, 200 Jinsu Road,  
 Shanghai, Pudong 201206 CHINA  
 Phone: +86 21 58356226  
 Fax: +86 21 58353696  
 Email: [rafael.qi@asg-jergens.com](mailto:rafael.qi@asg-jergens.com)

**ASG India Subsidiary**  
 UNIT NO. 505, FIFTH FLOOR,  
 ORION BUSINESS PARK, GHODBUNDER ROAD,  
 NEXT TO CINEWONDER, THANE WEST  
 Thane, Maharashtra-400607 INDIA  
 Mobile: +91 9833404986  
 Email: [jpk@asg-jergens.com](mailto:jpk@asg-jergens.com)