DIXON®

SD-2000 Series Compact Blow-Fed Screw/Nut Driving Heads

World-Class Assembly Automation Technology

The Dixon SD-2000 Series Blow-Fed Screw/Nut Driving Heads are available in four (4) basic head sizes with varying strokes to handle a wide range of customized driving applications. The Screw/Nut driving heads are compact in design, easily tooled, efficient, and maintenance free. Each driving head can be mounted vertically, horizontally, inverted, or at any other position to suit a specific driving application. Each driving head can be supplied with or without a feed system. The heads can be mounted stationary, and are also ideally suited for robotic applications. The vibratory bowl feed system used to blow feed the fasteners to the driving head can be mounted in a remote location away from the driving operation.

A selection of various driving head tooling configurations provide for torque or depth drive applications, vacuum tooling, jaw rotation features to clear restrictions in a workpiece, extended jaw options for deep access locations, part sensors, and more. Both pneumatic and DC electric motors are available to suit the (4) head sizes and specific driving criteria. Torque range up to 310 in. lbs. (35Nm).

SD-2000 Driver Models

Model SD-2040 Driver

Model SD-2030 Driver

Model SD-2020 Driver

Model SD-2010 Driver

Driving Head Options

Pneumatic Motors With:

- Adjustable mechanical clutch
- Stall torque sensing
- Magnetic particle clutch

Electric Motors:

- Transducer torque control
- Transducer torque/angle control
- Current sensing torque control

Depth Control Features:

- Hall sensor for standard forward position
- Proximity switches sense high/low limits
- Analog output of exact depth setting

The lower section of the driving head "opens" for fast and easy removal and replacement of the drive bit. Holder and bit can be replaced in a few seconds without tools.

SD-2000 Series Tooling Options

DC Electric Motor

Pneumatic Motor

Inverted Drive Motor with Offset Attachment

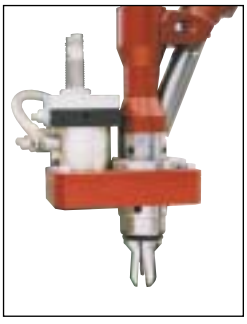
Vacuum Attachment

Analog Sensor Module to control accurate driving depth of fastener (SD-2010 & 2020 heads only)

TUZ precision depth Sensing Module to control High/Low driving depth of fastener

Cross Shuttle Escapement Attachment. Ensures positive placement of short fasteners into the jaws.

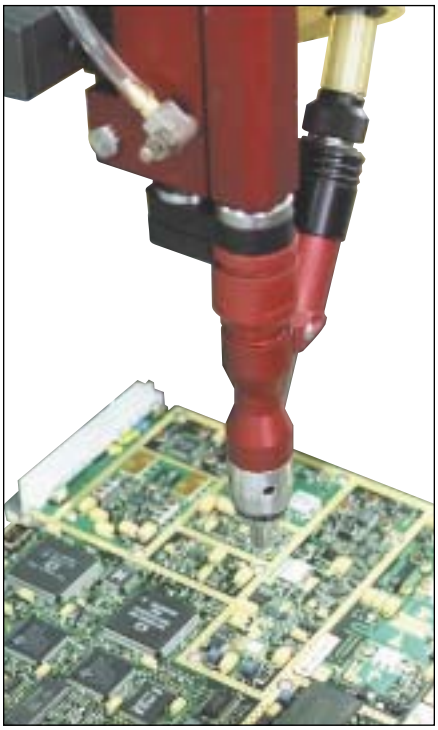
Extended Placement Jaws



Rotating Jaw Attachment

Standard Placement (Receiver) Jaws

Screwdriving Applications



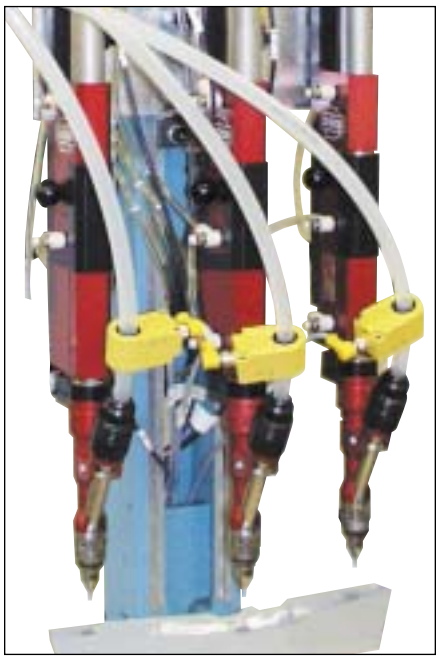
Model SD-2020 with DC electric motor drives a quantity of M4 Torx head fasteners into a circuit board to a light torque setting, dwell, and then re-tightens them all to a higher torque limit completing the drive cycle.

Model SD-2040 Driver with DC electric motor drives a M6 indented hex washer head screw with "thread locking patch" into a casting within a specific torque of 101 in. lbs. (11.5Nm).

Model SD-2020 Driver with a TUZ Precision – Depth Sensing Module to assure a "high/low limit" height setting during the driving cycle.

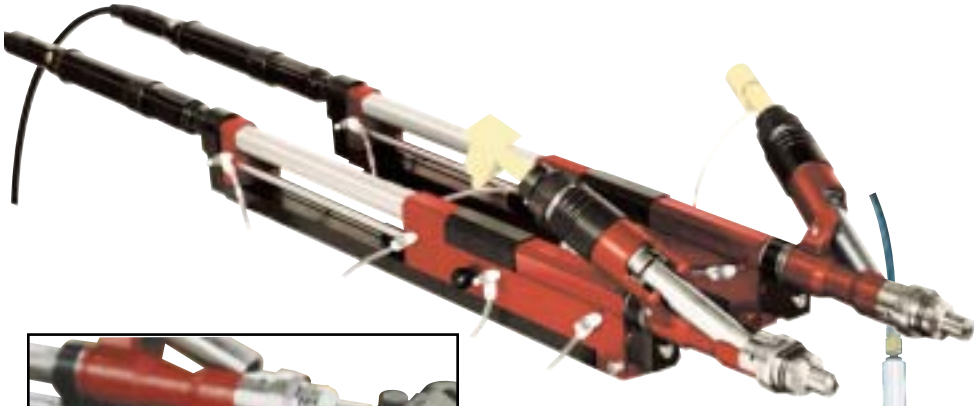
Model 2040 Driver with DC electric motor and "extended jaw" tooling. Two M4 Torx fillister head screws with captive lock washers. The fasteners are driven into a compressor assembly at two separate stations. Our engineers sometimes refer to this extended jaw as a "beak jaw".

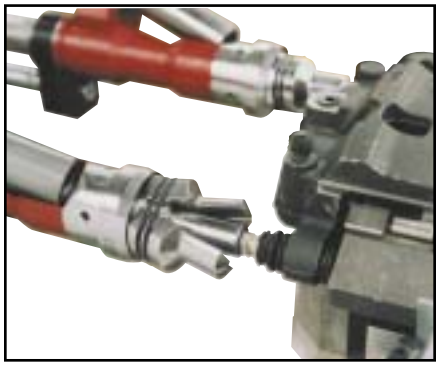
Model SD-2010 Driver used as a part placer station to insert small headed rivets into a plastic housing assembly.



Three SD-2030 Driving Heads complete with feed system (not shown). Drives (3) #10 fasteners into a plastic dryer drum paddle at 35 in. lbs. (4Nm) torque.

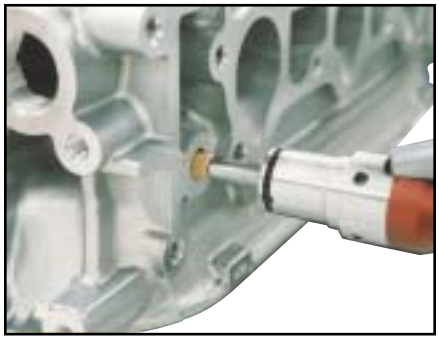
Screwdriving Applications





Two Model SD-2040 Drivers with DC electric motors and torque monitoring controls. Drives two M8 Torx fasteners "horizontally" into a brake caliper assembly to 280 in. lbs. (32Nm) torque.

Model SD-2020 Driver with an electromagnetic particle clutch application. A #6 cross recess screw is driven into a speaker assembly within specific torque limits.



Model SD-2040 Driver tooled to drive a pipe plug "horizontally" into an engine block at 147 in. lbs. (16.7Nm) torque setting, ±3Nm.

Two Model SD-2020 Drivers are shown with DC electric motor option.

Applications

Model SD-2020 Driver equipped with a rotating jaw attachment in order to reposition the jaws to clear restrictions in a workpiece. The jaws can be rotated at various locations on the workpiece as required.

Model SD-2020 Driver shown with vacuum tooling to insert #2 Pozidrive screws between fuse clip barriers at 20 in. lbs. (2.25Nm) torque.

Motor option 180°-angle drive offset arrangement. Reduces the overall length of the Driver when placed in an inverted position to drive fasteners from underneath the workpiece as shown.

Robotic Application

Model SD-2020 Driver mounted on an X-Y-Z robot. Jaw stroke is fixed on a robotic application. Six (6) flat head screws are driven to 25 in. lbs. (2.8Nm) torque into a lamp assembly at different elevations.

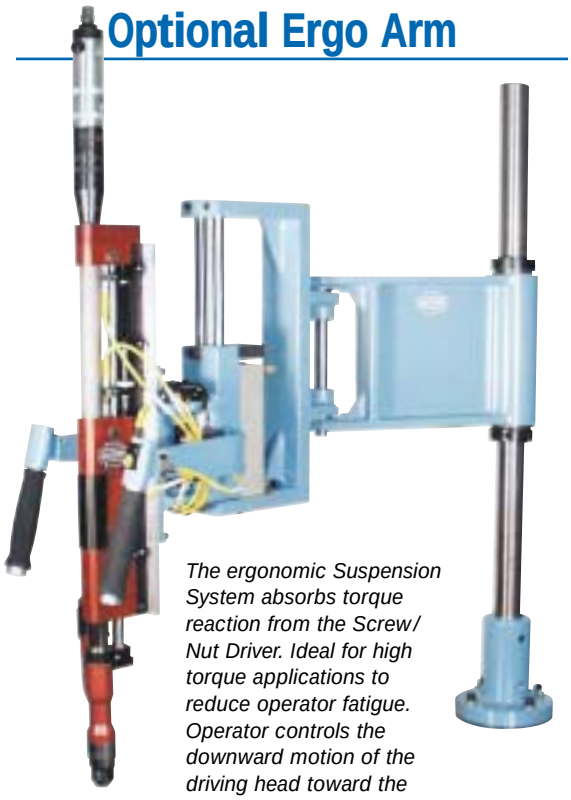
Nut Driving Tooling Options

Model SD-2040 Nut Driver tooled with pneumatically powered centering pin and socket to drive a M8 hex nut onto a compressor assembly at 150 in. lbs. (17 Nm) torque.

Model SD-2040 Vacuum Driver with DC–electric motor and nut transfer escapement and jaw assembly. Ideally suited for lube fittings and other fasteners that require the orientation to be controlled when entering the placement jaws.

Model SD-2040 Nut Driver shown with vacuum tooling for a hex flange nut driving application.

Optional Ergo Arm



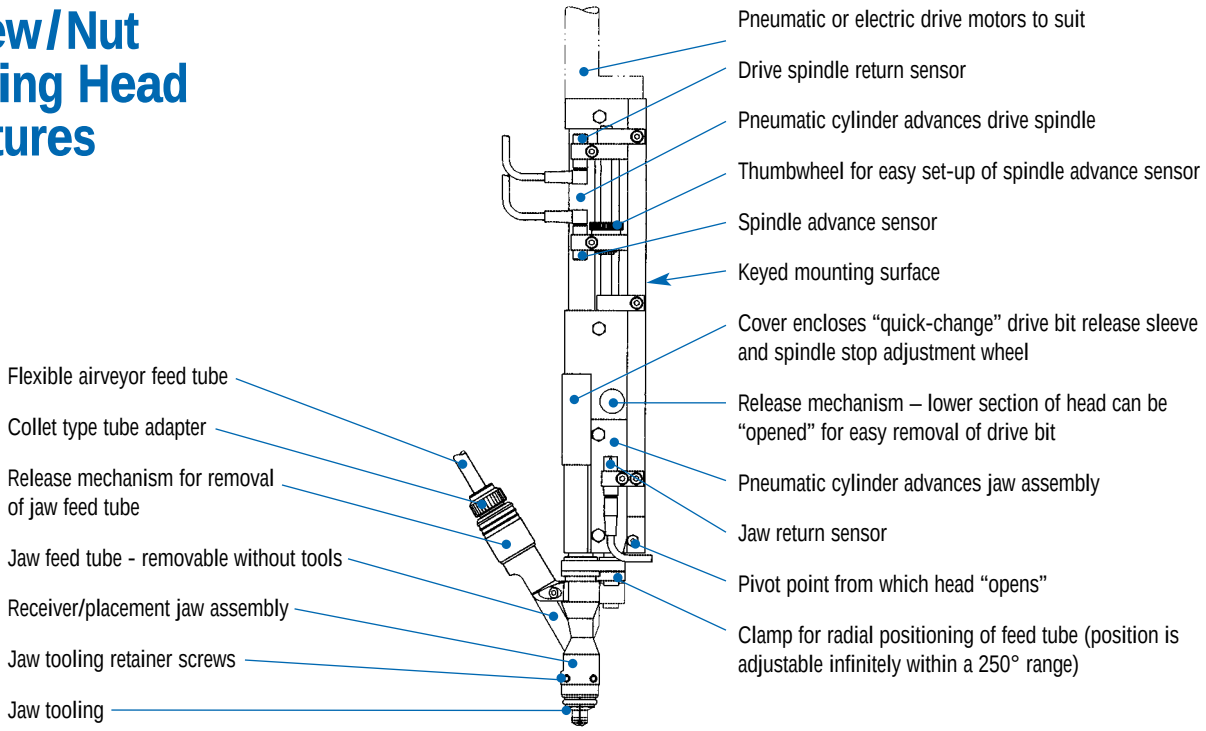
The ergonomic Suspension System absorbs torque reaction from the Screw/Nut Driver. Ideal for high torque applications to reduce operator fatigue. Operator controls the downward motion of the driving head toward the workpiece and start cycle.

Typical Vibratory Bowl Feed Systems

For the SD-2000 Series Screw/Nut Drivers

SD-2000 Series Compact Blow-fed Screw/Nut Driving Heads

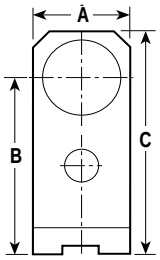
Screw/Nut Driving Head Features



Driving Head Specifications

Model	Torque range	Max. screw head dia.	Max. screw overall length	Head Thrust 45 psi	Head Thrust 90 psi	Jaw stroke / spindle stroke	Dim. A	Dim. B	Dim. C
2010	.03 to 1.4 Nm (1/4 to 12 in.-lbs.)	7mm (.275")	30mm (1.180")	13.5 lbs	23 lbs	15 / 80mm (.590" / 3.150")	25mm (.984")	42mm (1.653")	54.5mm (2.145")
						15 / 110mm (.590" / 4.330")			
						30 / 110mm (1.181" / 4.330")			
						30 / 125mm (1.181" / 4.921")			
2020	.2 to 4.0 Nm (2 to 35 in.-lbs.)	11mm (.433")	50mm (1.968")	21 lbs	36 lbs	25 / 110mm (.984" / 4.330")	30mm (1.181")	58mm (2.283")	73mm (2.874")
						25 / 150mm (.984" / 5.905")			
						50 / 150mm (1.969" / 5.905")			
						50 / 175mm (1.969" / 6.890")			
2030	.8 to 11 Nm (7 to 97 in.-lbs.)	15mm (.590")	70mm (2.755")	33 lbs	56.5 lbs	35 / 140mm (1.377" / 5.512")	35mm (1.377")	68mm (2.677")	85.5mm (3.366")
						35 / 180mm (1.377" / 7.087")			
						70 /180mm (2.756" / 7.087")			
						70 / 215mm (2.756" / 8.465")			
2040	1.5 to 42 Nm (13 to 370 in.-lbs.)	24mm (.944")	100mm (3.937")	54 lbs	92.5 lbs	50 / 180mm (1.968" / 7.087")	43mm (1.692")	86mm (3.385")	107.5mm (4.232")
						50 / 230mm (1.968" / 9.055")			
						100 / 230mm (3.937" / 9.055")			
						100 / 280mm (3.937" / 11.023")			

NOTE: *Diagram shows driving head configuration without drive motor, sensors, and hardware. To mount driving heads close together, sensors and hardware can be mounted on either left or right side. Drive motor can be offset from spindle centerline if required.*



We reserve the right to make further technical changes without notice.

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