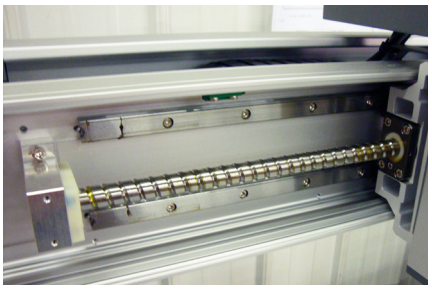
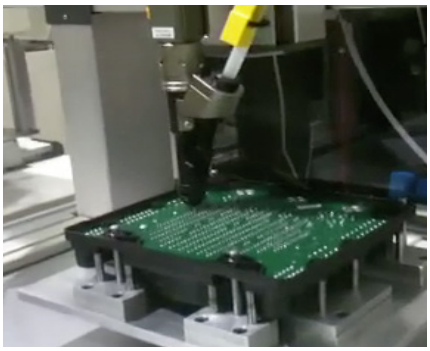
CALL US: +1-844-762-6737

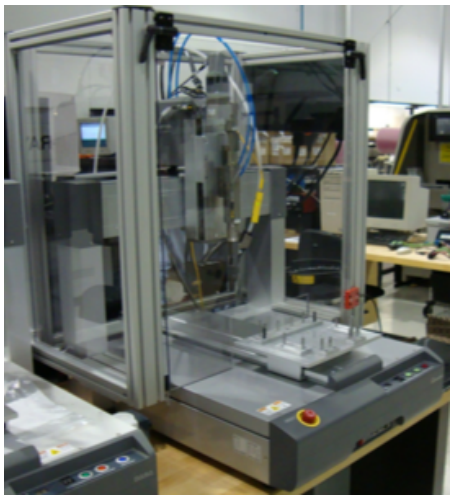
ROBOREPS®

www.roboreps.com
info@roboreps.com

Note the wide vertical spread of the bearings supporting the Z axis. This makes the Z axis screwdriver stable.







DTR with Weber Screwdriver, bowl and Blow-feeder, Safety Enclosure

ROBOTIC SCREWDRIVING

Repeatable downforce at any drive speed

TOOLING PAYLOAD	PART SIZE CAPABILITY	MAX SPEED	EXTREMELY DURABLE
up to **35 kg**	up to **1,500 x 700** mm	1,000 mm/sec	**Heavy duty** extrusion frame

The high gantry clearance on Desktop Robot (DTR) units allows mounting the driver so it has low movement on the Z axis. This keeps the driver/robot geometry consistent for long-term trouble-free operation and less re-programming.

5782 James Drive Stevensville, MI 49127
info@roboreps.com | www.roboreps.com
+1-844-762-6737

SUCCESSFUL SCREWDRIVING

One of the most common complaints of the screwdriver suppliers we work with is that a customer has already purchased a robot, then decides to integrate the screwdriver. Or, a robot was recommended without knowing the needs of the application. There are a handful of keys to success in this application.

WHAT ROBOT ATTRIBUTES ARE BEST FOR SCREWDRIVING?

First, think about what a screwdriver is doing, and what is needed to support this:

Need	Feature Required
Servo drive motor	Servo drive motor, single or dual available
Drive to a preset depth repeatably	Stable Z throughout the driving
Avoid cross-threading and stripped fastener heads	Repeatable position in X-Y, as well as Z, throughout the driving
Avoid stripped fastener heads	Sufficient following performance of Z throughout the driving, and excess down-force capacity
Long-term repeatability of position and minimized position movement during driving	Stiff mechanical elements with high moment of inertia, high capacity bearings with centers as wide as practical
Long-term machine stability	Ample mounting area for the screwdriver, with mounting as centered as possible on Z slider

Next, look at the robot candidates and see how well needs are met. We do know that the Hyulim robots are very well suited to this application. We have heard comments from screwdriver manufacturers' representatives that they like Hyulim because they get fewer callbacks due to robot issues. Here are our observations:

- We only recommend servo drive for screwdriving. Servos will self-correct for position and following error. Long-term repeatability and control is far superior to steppers.
- Hyulim Servo Desktops give a very repeatable Z axis speed to follow the faster in. The X-Y repeatability and ability to hold position is also excellent.
- Z Axis Screw has a lower 5mm pitch, giving better Z resolution per revolution, and heavier load capacity and stability. Anti-backlash ballscrew nuts give long-term stability/repeatability.
- The whole robot is made of very heavy extrusion that is very stiff and stable. A typical Hyulim desktop machine weighs 2X competitive models! Bearing are high-capacity rail-and-slider type, with wider bearing centers than competitive models. Flexing is minimal.

ROBOREPS®

CALL US: +1-844-762-6737
www.roboreps.com
info@roboreps.com

5782 James Drive Stevensville, MI 49127
info@roboreps.com | www.roboreps.com
+1-844-762-6737