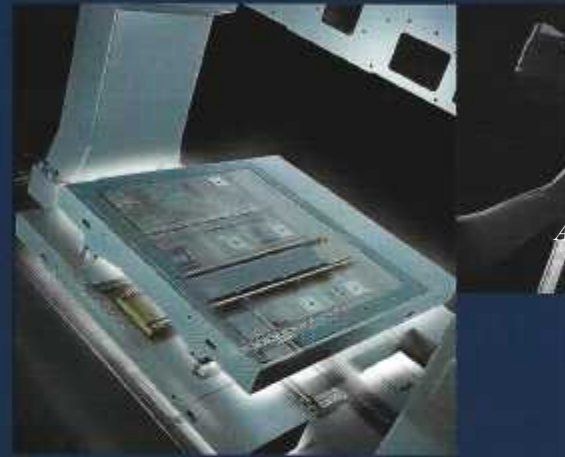
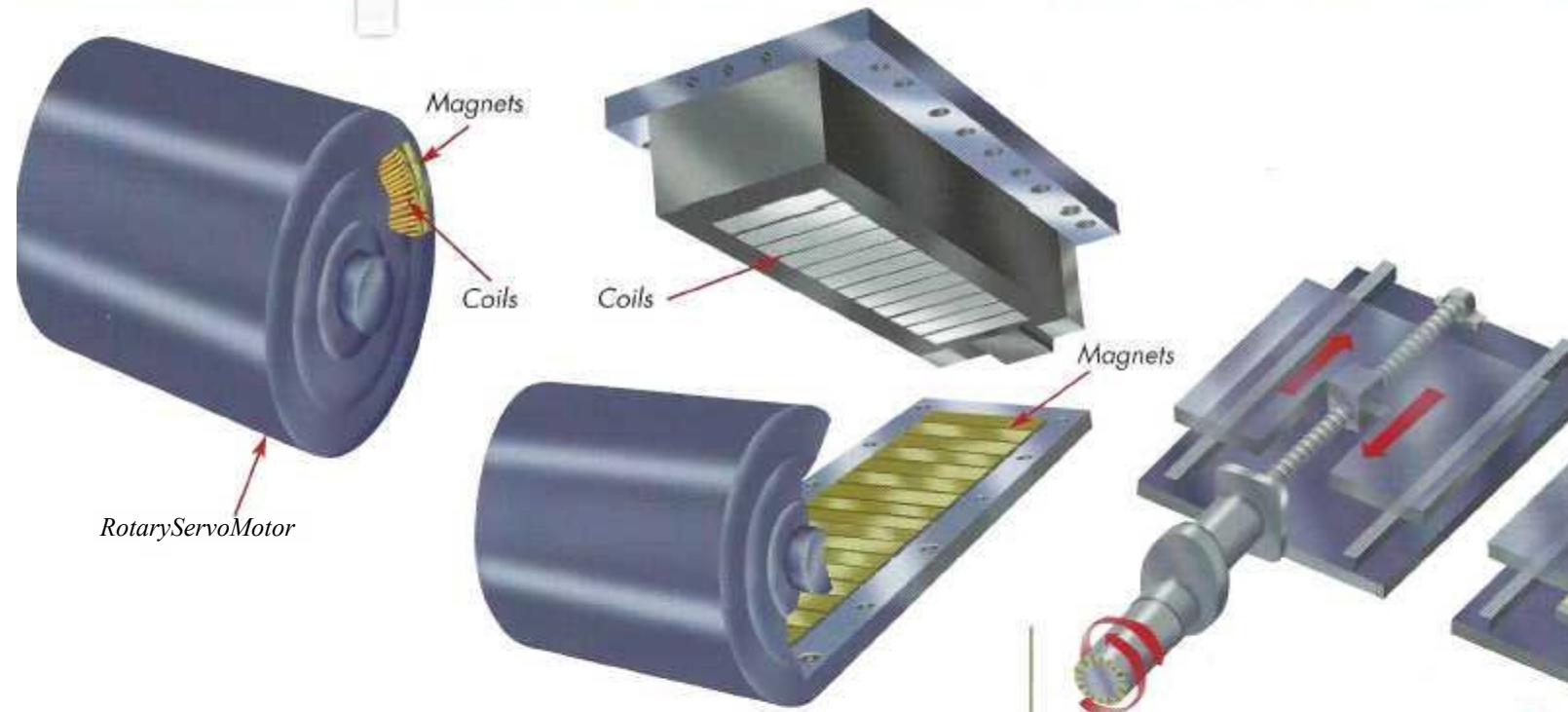


## Features

- World's first linear motor EDM
- Increased machining speed
- Increased machining accuracy
- 1 skimpasstechnology
- NoflushEDMing
- InstantaneousServo Response



# Speed and Accuracy



*Rotary Servo Motor*

### The Linear Story

Think of a linear motor as a rotary servo-motor that has been unrolled and flattened, with all the magnets on one surface and all the coils on another. Controlling the electrical current that flows through the coils, causes one surface to move with respect to the other. This simple explanation defines a linear motor which provides a multitude of advantages that reduces your downtime, improves your machining time and your profitability without increasing your initial investment.

### The Modern Technology

For hundreds of years, engineers have been fighting the inaccuracies caused by backlash. Linear motors eliminate this problem.



## The **Sodick** Advantage

Over 35,000 users have switched to linear EDM's



# Accuracy

## — ADVANTAGES

### *FlatMotors*

The major advantage of Sodick linear drive (flat motors) over round motors, besides economy, is the instantaneous precise servo response. Conventional motors must convert their rotational motion into linear motion through the use of belts, gearboxes, drivescrews or ballscrews. All of these conversions introduce issues of mass, inertia, backlash, **lagtime**, overshoot, friction and heat. Then once set in motion, an equal amount of energy and time is required to stop or redirect this motion. With linear motors most of these issues are reduced or eliminated.

superior conditions in the gap than conventional motors. The faster motion also provides very quick peak-cycles resulting in significantly reduced machining times.

### *WireEDM*

Sodick Inc. has incorporated the same linear motor technology into wire EDMs. The faster servo response and increased sensitivity of linear motors maximizes the cutting efficiency. This improved servo response and sensitivity results in quicker and more accurate wire alignments and touch-off routines, increased machining speed, better finishes and sharpen geometry and detail.

### *VerticalEDM*

Enhanced servo time. A CNC sinker equipped with linear motors can advance and retract the advancing axis quicker, faster and more accurately than a conventional drive. This translates into reduced machining times, improved uniform finishes and the elimination of DC arcing.

### *Not all linear drives are created equal*

Sodick, Inc. has engineered and designed their linear motors to maximize its benefits through the extensive use of ceramic components, patented Sodick Motion Control (KSMC) and  $.1\mu\text{m}$  (.000004 in.) glass scale feedback. Sodick has pioneered the use of linear motion in EDMs and they are used exclusively on all their machines. Sodick's linear motor EDM's use 30% less power than their previous ball screw driven model.

Furthermore, linear fast servo speed eliminates the need for additional flushing. The self-flushing motion of a linear drive, cools and cleans the cavity and provides

## — C O M P A R I S O N C H A R T —

LINEAR MOTOR		ROTARY SYSTEM	
<b>Speed</b>	Rapidfeeds as high as 1440 ipm. No limit to potential <i>velocity</i> .	Feed speed limited to 63-393 ipm limited by their mass and inertia.	
<b>Trove/</b>	No <b>limit</b> . (have been used for high speed trains)	Limited by their own size and weight.	
<b>Accuracy</b>	Limited by feedback device only	Limited by sensing device, backlash, elastic deformation, lost motion and wear.	
<b>Smoothness</b>	Extremely smooth. Linear motors have no contacting surfaces	Not as smooth due to mechanical motion and vibration.	
<b>Maintenance</b>	Extremely long. Maintenance free-life.	Require frequent lubrication and eventual replacement because of wear.	