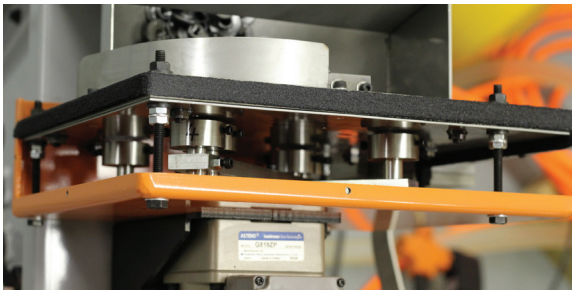
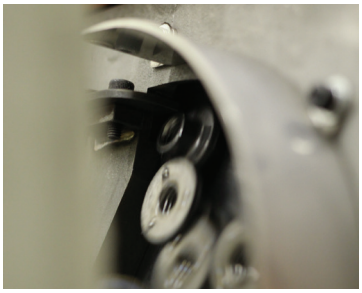
SEKI FEEDER, INC. Nut & Bolt Feeders

The SEKI Feeder family of nut and bolt feeding systems provide unique solutions for reliable, repeatable placement in projection and clinch welding applications.

The common component between the three systems is **SEKI's Selector Unit** (*right*). In place of a vibratory bowl, the Selector Unit uses magnets and a fine-tolerance selector gate — without requiring constant vibration or tuning — to send aligned nuts and bolts to the feed head.

- **Non-vibratory operation** — Rotating magnets *(pictured below, left)* draw oriented fasteners through selector gate *(below, right)*
- **Small footprint (10"x19"x42")** vs. vibratory bowls
- Feeds 50 M6 square nuts per minute to tube (6,000 M6 square nut hopper capacity)
- Few moving parts; easy to maintain





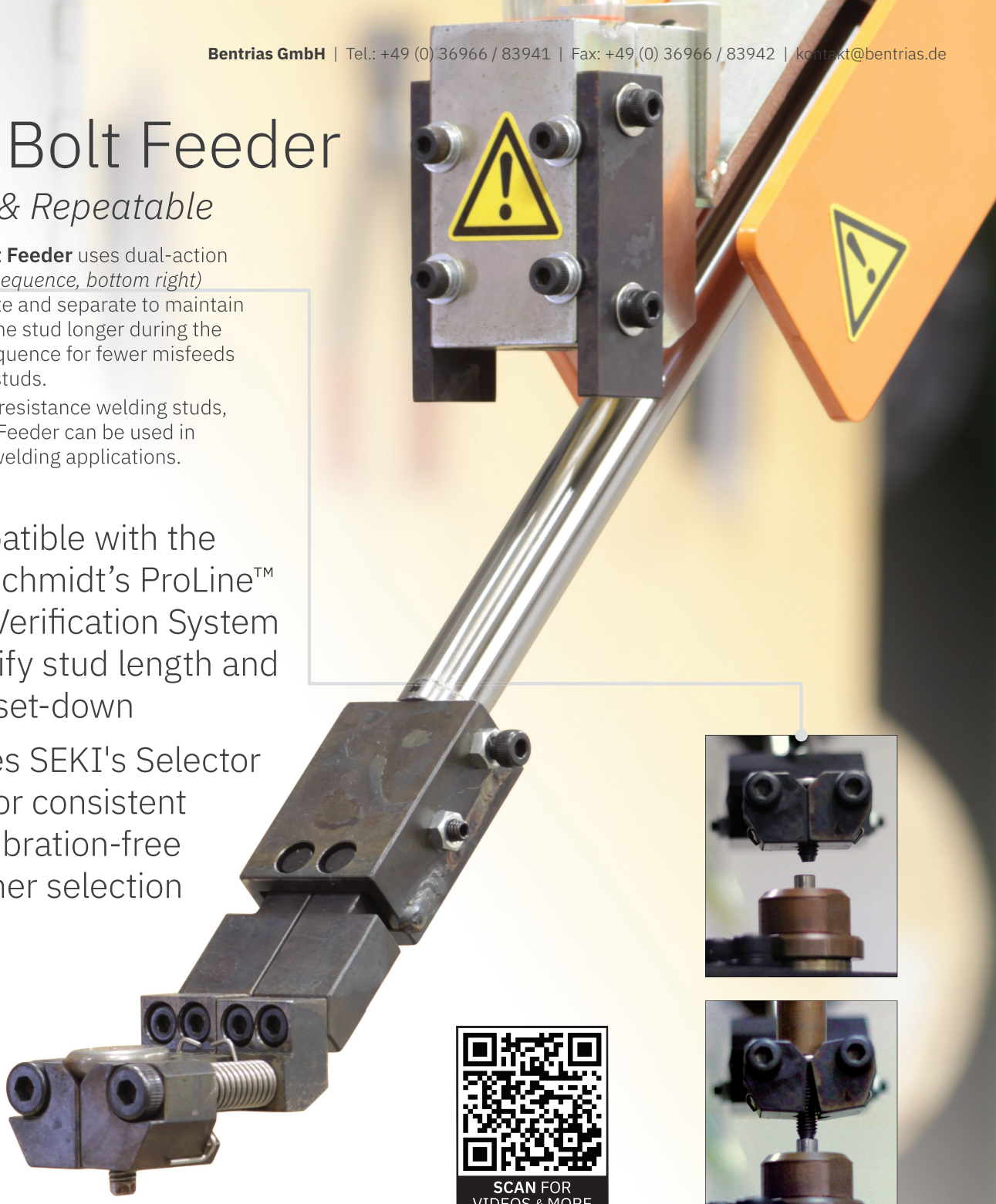
SEKI Bolt Feeder

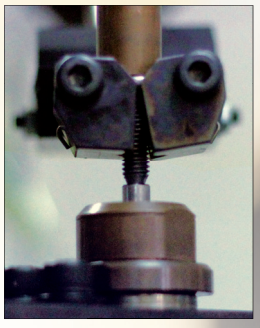
Precise & Repeatable

The **SEKI Bolt Feeder** uses dual-action jaws *(picture sequence, bottom right)* that both rotate and separate to maintain contact with the stud longer during the placement sequence for fewer misfeeds and dropped studs.

In addition to resistance welding studs, the SEKI Bolt Feeder can be used in select clinch welding applications.

- Compatible with the G.E. Schmidt's ProLine™ Stud Verification System to verify stud length and weld set-down
- Utilizes SEKI's Selector Unit for consistent and vibration-free fastener selection





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Bolt Feeder Specifications	
Power Supply	110/220 V – 50/60 Hz
Air Pressure	0.4-0.5 Mpa
Control	Mitsubishi, OMRON, Allen-Bradley
Bolt Sizes	M5-M12 diam.; 12-50 mm length
Supply Tube Length	2.5–10 m

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SEKI Air Rod Feeder

Reliable & Consistent Feeds

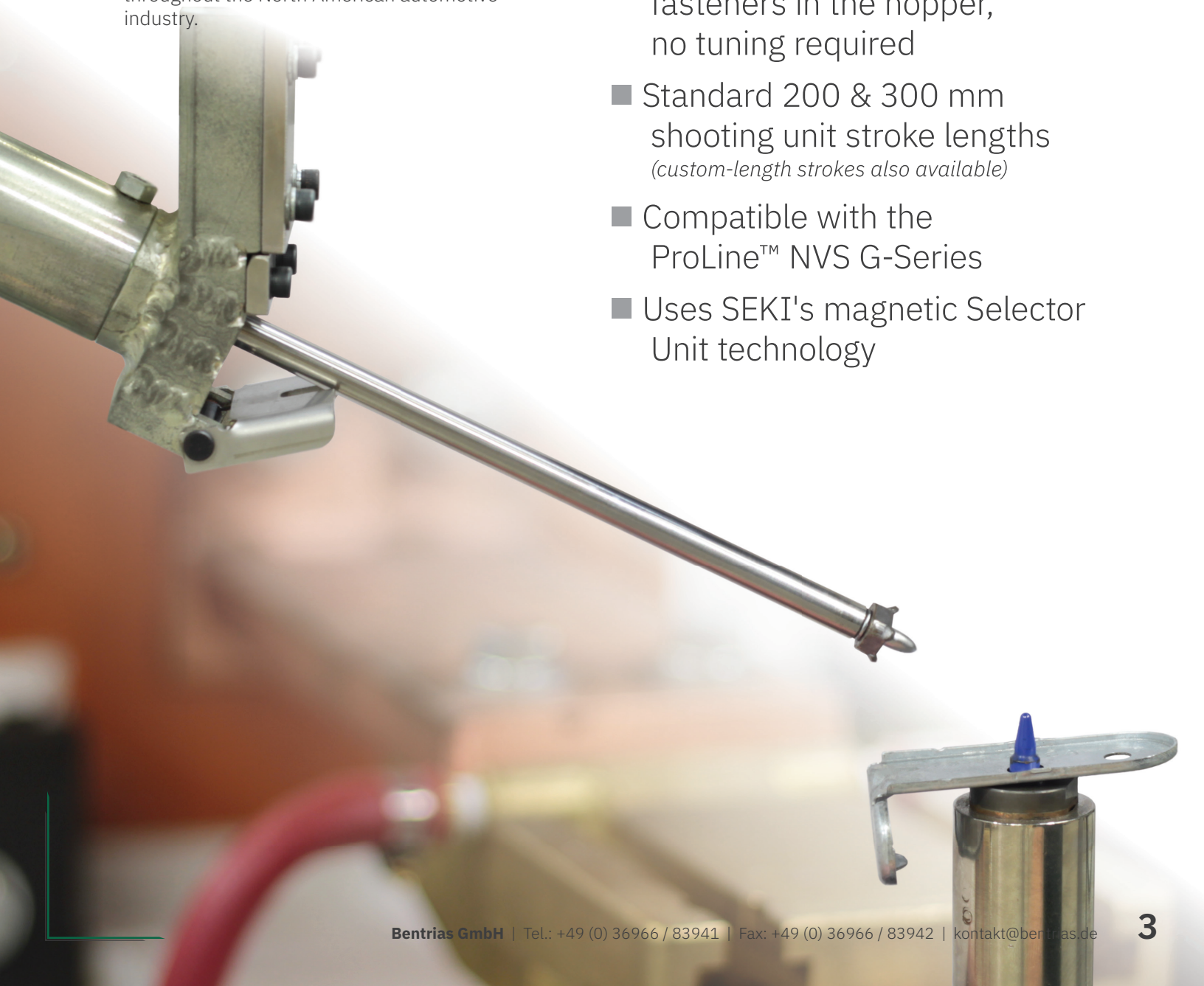
The **SEKI Air Rod Feeder** uses its unique Jet Pin™ technology, not electromagnetism, to secure the fastener to the end of the stroke *(see the picture at right)*.

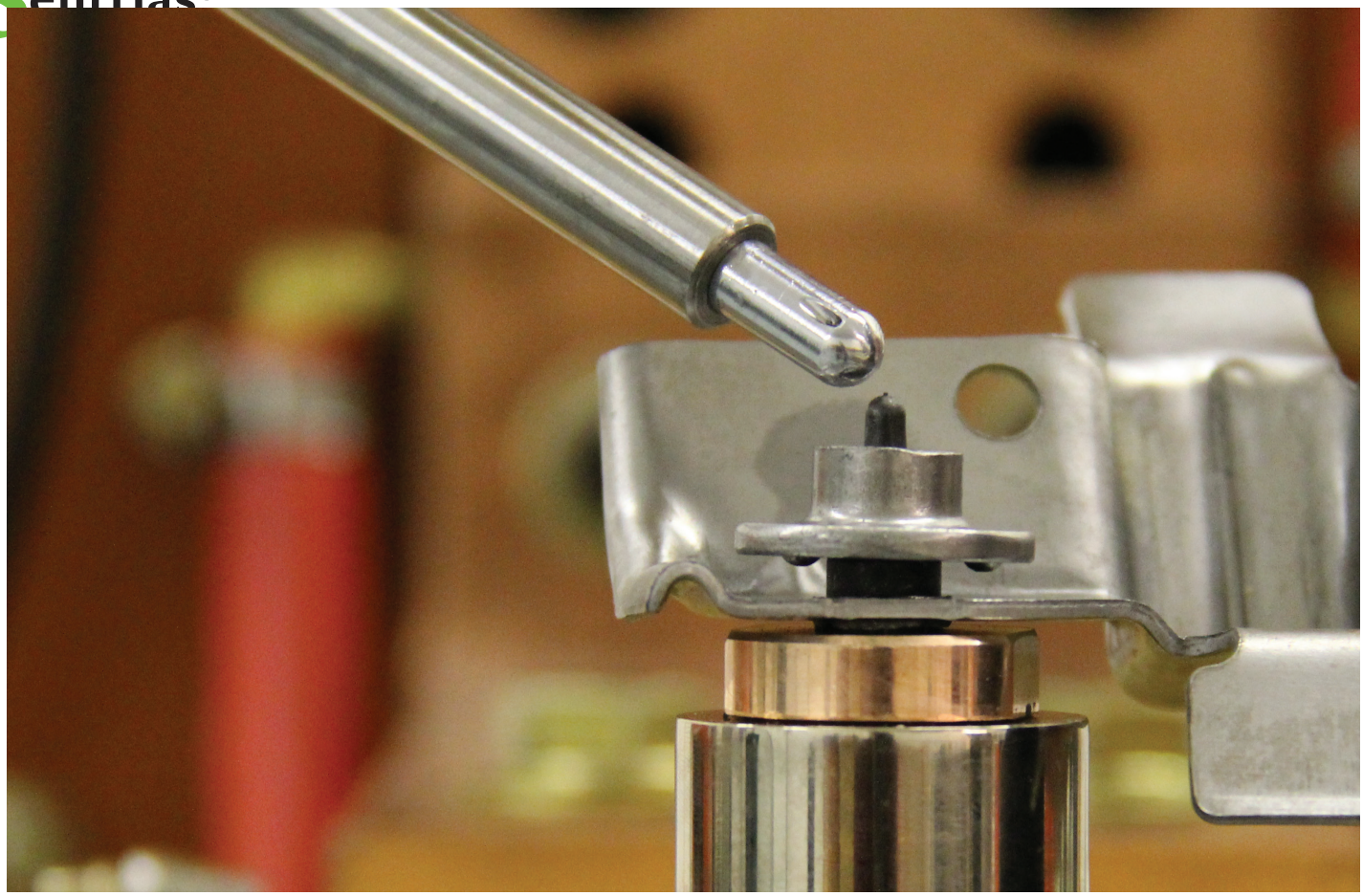
As a result, the Air Rod Feeder places — doesn't "throw" — the nut onto the weld pin, giving SEKI Feeders more reliable performance than the competition.

The pneumatic wall of air doesn't fade over time, and does not require adjustments.

That's what makes SEKI Feeders a standard for OEMs, and Tier 1 and 2 manufacturers throughout the North American automotive industry.

- Uses air, not magnetism, to secure the fastener during delivery to the weld pin
- Can operate on a wider range of angles than other feeders, from nearly **0° to 90°**
- Works with any amount of fasteners in the hopper, no tuning required
- Standard 200 & 300 mm shooting unit stroke lengths *(custom-length strokes also available)*
- Compatible with the ProLine™ NVS G-Series
- Uses SEKI's magnetic Selector Unit technology





SEKI Jet Pin technology

The **SEKI Air Rod Feeder's** robust design makes it a favorite of maitenance and operations staff; faster and easier cleaning means less down time and manpower.

Common-wear items — and many others components — are kept in stock in the United States for responsive shipment.

The SEKI Air Rod Feeder is also compatible with fasteners that require orientation during placement on the stamping; clinch welding nuts; inverted nuts for feeding into deep channels and recesses; and many other challenging applications.

SEKI Feeders are imported via air freight for shorter, more consistent lead times and fewer uncontrollable delays.

Air Rod Feeder Specifications	
Power Supply	110/220 V – 50/60 Hz
Air Pressure	0.4-0.5 Mpa
Control	Mitsubishi, OMRON, Allen-Bradley
Nut Sizes	M5–M14
Supply Tube Length	2.5–12 m

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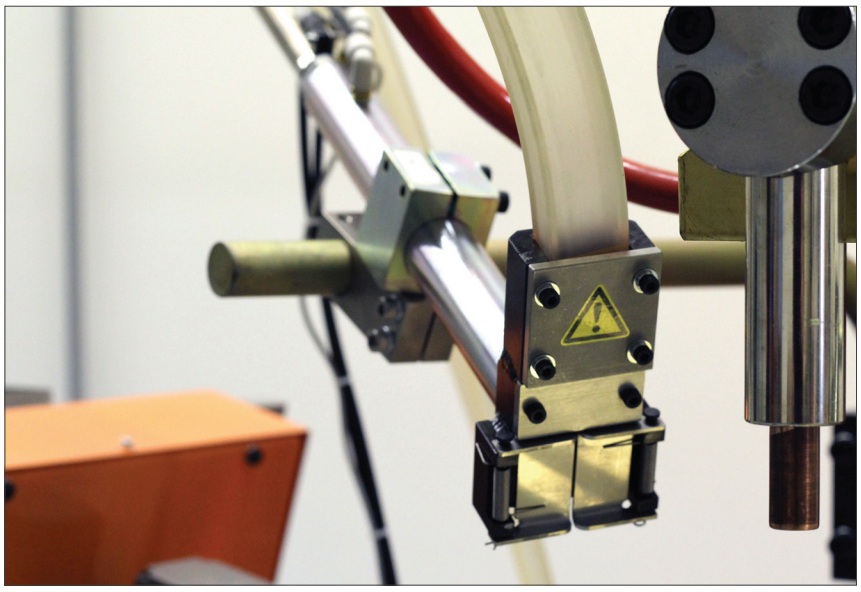

Air Rod Feeder shooting unit mounting

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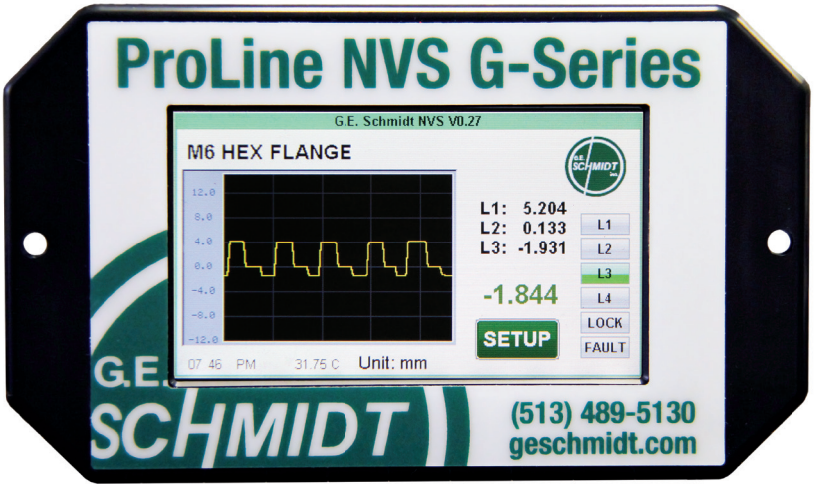
NVS G-Series *(Nut Verification System)*

The ProLine **Nut Verification System** is much more than simply a pin return unit. The NVS is the leading inline nut weld detection system in the projection welding industry.

By monitoring the weld pin position, the NVS minimizes issues with missing, wrong size, and upside-down nuts and out-of-spec weld set-downs. Bad welds can cost much more than materials alone: Welding errors affect throughput, consistency and end-product quality.

SCAN FOR VIDEOS & MORE

The NVS G-Series adds a graphic user interface and a host of advanced programming options, including binary outputs and inputs, to the classic NVS to refine nut weld detection.



NVS G-Series Meter displaying live weld screen

The new interface also allows for easy visual monitoring and fast and intuitive profile programming — new fastener setups take one minute to set up.

The Nut Verification System can ensure quality using standard or custom weld pins on many styles of welders for most applications in manual or robotic weld cells. The system can also serve as a Stud Verification System in stud welding cells.

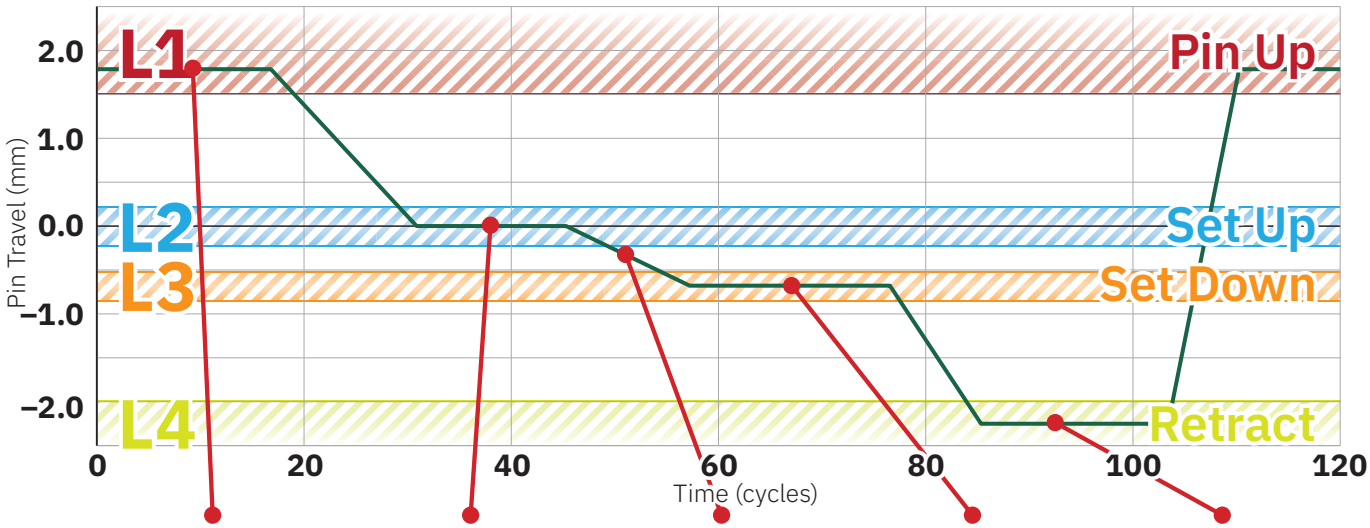
The NVS is available in a horn-mount version (*pictured right*) and a platen mount unit (*pictured below left*).

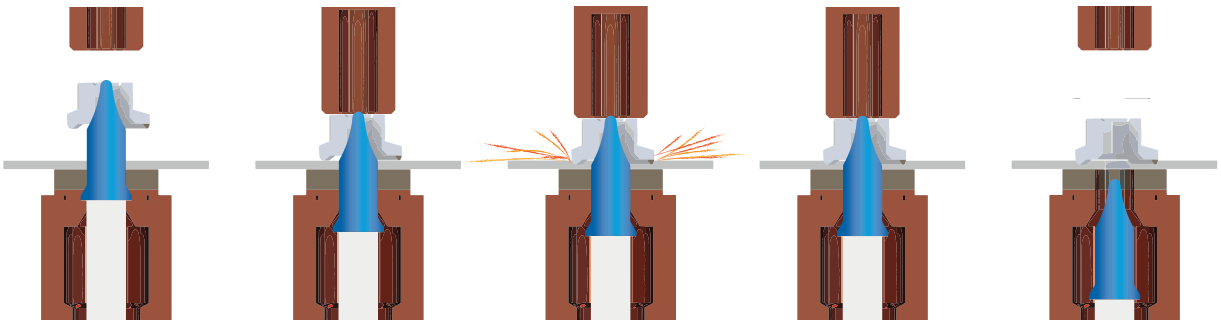
NVS-G Platen unit (not to scale with meter)

EASY "TEACHING"	The teach function is a fast step-by-step setup guide that walks the user through each stage of the schedule, using approved projections, stampings and welded parts. Profile programming can be completed in less than a minute.
FASTENER PROFILES	The NVS G-Series allows users to program, name and store up to 10 separate weld profiles at one time. Users can recall a weld profile with just a few button presses for fast switching between fasteners.
BINARY INPUT/ OUTPUT	The binary input lets a PLC change the NVS profile automatically, allowing systems with multiple stamping thicknesses or fasteners to utilize the quality assurance of the NVS on every weld. With the binary output feature, the NVS can automatically set the matching weld schedule on the weld control, saving duplicate set-up time.
DATA LOGGING	Every stage reading from every weld can be stored on a USB drive in .CSV file format, readable by common spreadsheet programs. Use the data to examine weld issues, archive production information or analyze trends and identify gradual changes before they become costly issues.

NVS-G Lower Barrel Unit (not to scale with meter)

NVS G-Series: How It Works





Pin Up
The weld pin is ready for nut feeding

Set Up
The head lowers onto the nut and stamping

Weld
The current fires, welding nut to stamping

Set Down
The welded nut collapses into stamping

Pin Retract
Weld pin retracts for protection as stamping moves

The NVS monitors pin position during the weld cycle (*refer to the chart above*):

L1 The pin-up stage ensures the pin is in the start position and gives the feeder permission to feed.

L2 The set-up stage is a precise window that gauges nut orientation, presence and nuts, bolts or stampings out of tolerance.

L3 The set-down stage measures the nut height after the weld is made. The difference between L2 and L3 is the amount the nut or bolt collapsed into the stamping.

L4 The pin-retract stage ensures that the pin is below the threshold of the lower electrode, protected during stamping movements.

The LVDT sensor has an accuracy of 0.0029 in. (0.075 mm), and the meter has a resolution of 0.0000078 in. (0.002 mm).

PROBLEMS CAUGHT
Missing Nuts/Bolts
Upside-Down Nuts/Bolts
Incorrect, Irregular or Damaged Stampings/Fasteners
Pin and Electrode Wear
Inconsistent Weld Set-Down
Pin Extension/Retraction Failures