

**MODELS 1010 & 1020**

# Plastics Spin Welding Systems



Model 1010 Spin Welder



SPX Power Supply

## SPIN WELDING

SPIN WELDING, also referred to as rotary friction welding, is the joining technology of choice when assembling spherically or cylindrically shaped thermoplastic parts.

In spin welding, one part, which has a circular cross section at the weld interface, is rapidly spun against its mating part which is held stationary in a nest fixture. The resulting heat that is generated by the combination of spinning action and friction brings the plastic material to its melt point and fuses the two parts together, producing a strong and impervious seal. Hermetic seals are also attainable depending upon the materials used and the weld joint configuration.

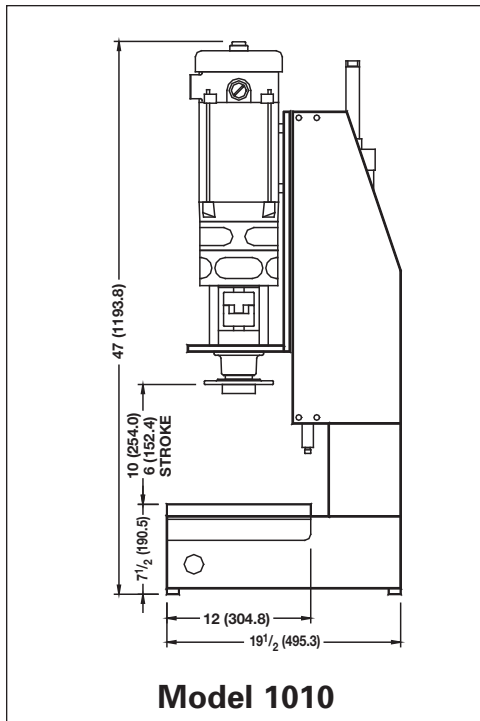
While spin welding works with all thermoplastics, and can accommodate virtually any diameter part, it is particularly suited for crystalline resins such as polyethylene and polypropylene.

**Model 1010** – 10" (254 mm) fixed vertical opening

**Model 1020** – 10" - 20" (254 - 508 mm) adjustable opening

## STANDARD FEATURES INCLUDE:

- Direct Drive Electric Motor System
- Dynamic Braking
- Single and Two-Stage Cycle Modes
- 1/2" (12.7 mm) Steel Welded Framing
- Spin Power Head on Dual Columns
- 12" x 15" (304.8 mm x 381.0 mm) Fixture Tooling Platen
- Heavy Duty Spindle Bearing
- Cushioned Power Head Descent
- Dual, Anti Tie-Down, Palm-Start Buttons with Emergency Stop
- Vacuum Assist Drive Head Capability
- 3.25" (82.55 mm) Bore Power Head Cylinder
- Brand Name Quality Components Throughout

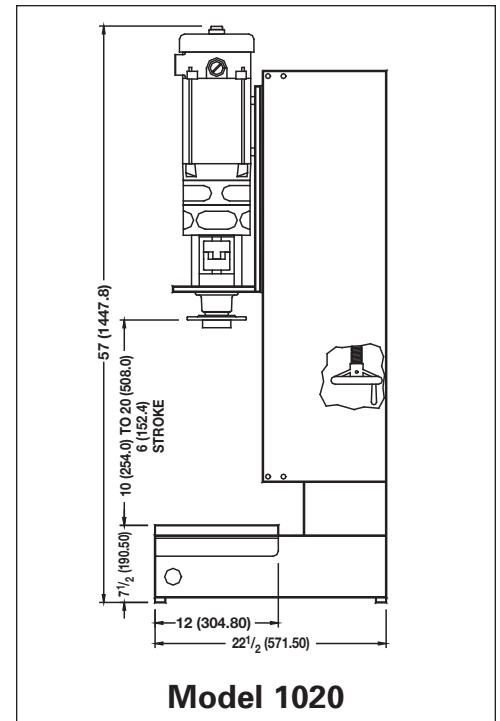


**Model 1010**

**Ultra Sonic Seal offers two standard Spin Welder stands or presses.**

- **Model 1010 features a fixed, vertical opening that provides 10" (254 mm) of space between the drive head bearing and the nest fixture platen.**
- **Model 1020 offers an adjustable space opening from 10" - 20" (254 - 508 mm).**

Both models are designed to accommodate a wide range of application tooling and allow for easy part loading and unloading.



**Model 1020**

**POWER SUPPLIES**

Ultra Sonic Seal Spin Welders are powered by a PLC logic-controlled power supply, and the system's single or two-stage cycle mode, time-based weld settings and rpm adjustments are made through the PLC's front panel operator interface.

**TORQUE RANGES**

Depending on the composition of the thermoplastic material and the diameter of the part to be spin welded, Ultra Sonic Seal offers the following continuous duty electric drive motors (listed in the table below) as standard on either the Model 1010 or Model 1020 stand:

**SPIN WELDING TOOLING**

The Drive Head, the tool that holds the part to be spun, is attached to the drive bearing of the spin motor. Typically, Drive Heads are fabricated from aluminum and are either two-piece, compression spring loaded for single-stage spin welding or, are cast with a urethane core for vacuum-assisted, two-stage spin welding. The Nest Fixture is the tool that holds the stationary part in a fixed (non-rotating) position during the welding process. It is attached to the tooling platen directly beneath – and opposite – the drive head. Nest Fixtures are typically made of aluminum and occasionally require pneumatic or mechanical clamping to prevent the plastic part from "spinning out" during the weld cycle.

ITEM	LTR: Low Torque Range	MTR: Medium Torque Range	HTR: High Torque Range
HORSEPOWER	2.0	2.0	3.0
RPM	500 to 2500	350 to 1750	350 to 1750
IN/LBS OF TORQUE	50.0	72.0	108.0
TYPICAL DIAMETERS	Up to 2.0" (50.8 mm)	Up to 5.0" (127 mm)	Up to 8.0" (203.2 mm)

**CUSTOM EQUIPMENT CONFIGURATIONS**

Ultra Sonic Seal spin welding equipment can be designed to meet application-specific requirements. Typical customizing may include: horizontal units for long extrusions; added throat depth and/or increased horsepower for large diameter parts; reverse anvil models to accommodate turntables and conveyors; and customer-preferred system component specifications.