

## **Spin Welding Process**

Spin Welding is the process of Friction Welding fittings to Containers or Tanks with high RPM. When properly done the fitting becomes integral with the Container and will become almost as durable as the Container.

The fitting and the container must be molded of compatible materials. Our fittings are molded from a high molecular weight Low Density Polyethylene with additives for good adhesion and toughness.

Our fittings are compatible with all grades of polyethylene except Cross Link Materials. We do not recommend Spin Welding for Cross Link parts. Also, we do not advise using Spin Weld Fittings molded from High Density Polyethylene. High Density material does not have long term ESCR capabilities, therefore Stress Cracking can appear at an early stage.

### **Please consider the following when Spin Welding:**

1. When attaching a Spin Weld Fitting, select an area as flat as possible, where the fitting and Driving Tool can turn freely.
2. With the proper size Hole Saw, drill a hole in the container slightly larger than the pilot on the fitting. The fitting must be able to rotate freely.
3. On small fittings (1/2" and smaller) you can use a 1 HP Electric Router. On fittings measuring 3/4" to 1-1/2", a 1 to 1-1/2 HP to 2 HP Electric Router is acceptable. On fittings 2" and larger, we recommend a 3 HP Electric Router with at least 14 amps. On small fittings 1/2" and smaller, we supply drivers with 1/4" shanks. Our fittings 3/4" and larger, we supply drivers with 1/2" shanks. All electric routers should have 18,000 to 25,000 RPM's.
4. Place fitting pilot in the hole of the container. Holding the Router in your hands and having the driving tool attached to the fitting, turn on the power and apply slight pressure so that molten plastic starts to flow around the outside diameter of the fitting. You will develop a technique as to how to apply pressure. The melting process will only take 2-3 seconds. Turn off the power and keep the driver in position with applied pressure for another 5 seconds. This will ensure a good bond with approximately 1/4" molten surrounding the diameter of the fitting.
5. After 1 minute you can apply testing procedures, such as tapping with a hammer or prying with leverage.
6. We do not recommend Spin Welding with the use of a Hand Drill or a Drill Press because you cannot attain the required RPM.
7. We do not recommend Pneumatic Routers although they may have the required HP. They are not able to accelerate the required RPM and will tend to "drag" and not melt the plastic of the fitting and container in order for the molten plastic to flow properly.
8. Pigment in the plastic fitting will have little or no effect on Spin Welding.