How to Build Press Roll Side Shields

Background

Press roll side shields, or side dams, are designed to help hold the side of the roll in place while unwinding or rewinding. These shields are especially useful if rolls are wound loose or if bad roll formation is encountered.

The shields are simple disks which are placed on the sides of the rolls when they are mounted on the press. They are held in place by the shaft's air bladder system. Shields can be very simple, inexpensive parts or high quality pieces. The following information is a basis for assembling these parts in-house, eliminating the cost of an outside source.

Basic Wooden Shields

Wooden shields are the simplest to make. Some rolls may be received with wooden roll edge protectors and these can be used as a side shield. If these are not available, a local hardware store usually sells pre-cut plywood rounds. If neither of these options are available, select a

4'x 8' piece of plywood to make your own. Choose ¾" thick plywood material, as it is solid enough to withstand temperature and moisture changes.

First, determine the maximum outer diameter of all materials being used on your press. Typically this dimension will be between 28" and 45". Find the exact center of the disk or round, and mark this point. From this center point you must now drill a 3" diameter hole. Finish by sanding, so all the edges are clean and smooth. See **Figure 1.**

The wood shields are placed alongside the roll when mounted on the shaft. Place a small piece of core material on the outside of the shield to help hold it in place. This is shown in **Figure 2.**

The negative of a solid wooden disk is that it's very difficult to determine how much of the roll is remaining on the unwind. This is easily corrected by routing an elongated hole, from near the top of the shield to near the core opening. This is illustrated in **Figure 1** as well. In this instance, we have provided two elongated holes for roll viewing. These are marked with the letter "A."

Clear Plastic Shields

An alternative to the solid wooden disk is a clear lexan or polycarbonate shield. This plastic is available at most plastic suppliers and in many cases they can cut and finish the clear disk to your desired dimensions.

As with the above shields you must first establish the dimensions. The shield should be finished so the edges are not rough. A simple disk made from 1/2" to 5/8" lexan or polycarbonate is best as the material is strong and resistant to cracking. Acrylic material can be used, but is more fragile.

This plastic disk can be mounted similar to the wooden disk but typically is modified by the addition of an aluminum collar. Although a more costly method, as you will need to have a machined aluminum collar made to your specification, this will result in a much finer piece of equipment.

The collar must have a 3" diameter center opening and an outside diameter of 5" to 6" made of 1/2" to 5/8" aluminum. The collar must have at least four holes for mounting to the plastic shield. This is illustrated in **Figure 3.**

Mounting screws can be secured from the inside of the shield (see **Figure 4**) or from the outside of the shield (see **Figure 5**). The holes need to be countersunk and must securely hold the shield in place. The key watch-out is that the side of the shield that contacts the roll must be perfectly smooth, as any rough spot may damage the material roll.

Aluminum Shields

The most expensive, but durable option to manufacture are aluminum shields. As before, you must establish your dimensions. The center will have a 3" diameter hole. Aluminum plate thickness should be ¼" to ". See **Figure 6.**

As with the plastic shield, the aluminum plate will need an attached collar. The collar can be attached via screws or by heliarching (welding aluminum). In this instance, a section of 1/2" to 3/8" long aluminum pipe or tube is used for the collar.