Application Note

Product: **Cushioned Sensor Mount**

Application: **Sawmills - Head saw feeding via stop-n-loader**

Photo 1. A 18mm prox with Cushioned Sensor Mount installed below a sawmill "Stop-N-Loader".

The quick take away...

Not all machinery systems are built to exacting standards. Precision can be expensive and over-kill, whether a new design or trying to maintain one. When plus or minus a ¼" works, even the versatile inductive proximity sensor can be successfully applied. Using a spring-return mounting bracket, sensor damage due to worn machine components, or low precision mechanisms can be solved quickly, and without expensive machine repairs.

The Application

The first stages in a typical saw mill operation are places where large logs must be handled. The action is very rough, especially if you're the log! Equipment is fabricated to be super strong and the environment for factory automation controls brutal. Yet, as described here, even a delicate proximity switch can survive.

Prior to down-stream operations, where accurate cutting is a must, logs at debarking and the "Head sawing" areas are routinely tossed about. The action here can often looks like a pit bull playing with his chew toy. Logs that weigh hundreds and even thousands of pounds are processed by equipment built to handle extremely heavy and repetitive, loads. Accuracy is not a main objective and positional locations are plus or minus inches.

For example, loading logs into the "Head Saw" (where they'll be sliced into planks), is the job of a "Stop-N-Loader". As shown in figure 1, the crescent-shaped jaws of the Stop-N-Loader rock back-and-forth, grasping and presenting logs to the Head saw's carriage. This motion goes on, day -in and day- out. The forces and bearings are huge and wear heightened by the messy environment of dirty, wet, bark and slurries of the same.

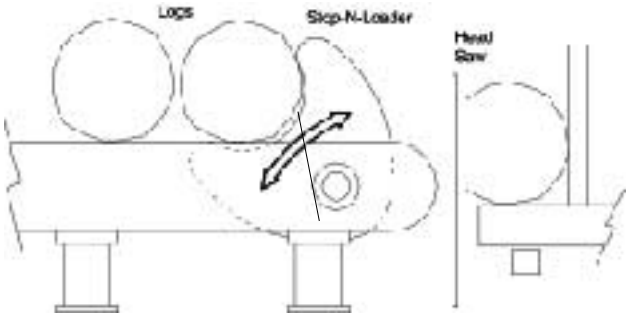

Figure 1. A sawmill "Stop-N-Loader" throws logs around in the mill. The sensor (not shown) signals each time a log is sent to the head saw.

In this application a manufacturer of shovels and rakes was seeking new features that automation controls bring. The Stop-N-Loader's underside was outfitted with a "Log Presence" sensor. This was accomplished with a typical 18mm proximity sensor. The sensor was selected since it was a stock item, and used in numerous places elsewhere in the plant. And while the precision of the sensor was ill-matched to wear seen by the bearings of the Stop-N-Loader, the location underneath the action was ideal.

The Solution

To solve the application a spring-loaded SN-18 was specified. This Cushioned Sensor Mount allowed the 18mm proximity sensor to reliably sense the target. The prox safely positioned away from action and adjusted for non-contact sensing, as recommended by the manufacturer. The Cushioned Sensor Mount was there to eliminate the chance of impact damage, poor signal reception, or mal-adjustments that are common during setup and debugging.

The Result

The manufacturer was able to use their standard sensor inventory, the new control features were accomplished and the chance for future downtime due to accidental sensor impact (or crashes) was eliminated. Contact your local Automation Distributor to learn how Cushioned Sensor Mounts, and their helpful spring-loaded action, can increase the reliability of your proximity sensors.

Ordering Information

Ask your Automation Distributor, or contact us at softnoze.com
In North America, call (315)732-2726