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Accumulators used for flotation range in size from 30 cubic inches up to 2-gallons. Remember to request CE accumulators for equipment headed to Europe.

Flotation Systems on Mobile Equipment

By Steve Hansen

Many types of mobile equipment perform their work with a header, deck, or other attachment in close contact with the ground. Often these types of applications can benefit from the use of a hydraulic accumulator for the purpose of flotation.

Combines provide a prime example of header flotation. Unlike wheat with the grain held high at the top of the plant, soybeans produce pods throughout the length of the stem. It is desirable to have the header follow as close to the ground as possible so that the entire soybean plant can be harvested. With today's large combines, the header can weigh several thousand pounds. Tremendous energy would be expelled if we were to lower the header to the ground and push the entire weight of the header across the field. Fuel cost would soar in addition to the excessive wear and tear on the combine header.

By bringing an accumulator into the hydraulic lift circuit of the header, the system can be set in flotation. The accumulator

size and precharge is optimized so the header can rest on the ground exerting only about 100 pounds of force. As changes in the terrain occur the header can easily float up or down to maintain close contact with the ground and harvest the entire soybean crop. Flotation also allows the header the flexibility to move up and over rocks that can wreak havoc with the combine.

Self-propelled hay harvesters are similar in application. The header is not as large as those found on the combine but requirements can be equally challenging. The hay header is required to float through a large range of motion as the machine moves rapidly through the field to harvest the hay crop. The accumulator keeps the majority of the header weight on the machine and off of the ground.

One final example that I saw recently involved a small lawn tractor with a front mounted mower deck. The operator had the option of allowing the full weight of the deck to ride on the deck wheels or, by operating the lift cylinder against an accumulator; the operator could float the deck and keep the weight on the tractor. When traction was needed the extra weight of the deck could make the difference.

The weight of the implement and the required range of motion impact the size of the accumulator in flotation applications. Any mobile application that involves contact of an implement with the ground is a potential flotation application. Contact an application engineer at HAD to discuss opportunities with your customers for flotation applications.

