DFP Monthly

February
2009
Volume 3
Issue 10

40 Cedar Street -- Tillsonburg Ontario -- 1(800)265-2656

Air Infiltration

Air typically enters the hydraulic system through the the pump inlet and, under certain conditions, past the rod seal of a double-acting cylinder.

But air can also invade the system through joints in pressurized plumbing.

When fluid travels through a pipe or hose at relatively high velocity - in a pressure line for example, and has to change direction through a tee or elbow, a venturi effect can be created.

Because the sealing arrangement of the hydraulic connector is designed to withstand positive pressure - but not negative pressure, air can be drawn into the system - even when the plumbing has no apparent leaks.

It can be described this way:

If you made a glass model of a pipe elbow and connected a measuring point in the middle of the angle, you would see a negative pressure when fluid passed through the elbow at high velocity.

And if you looked carefully, you'd likely see air bubbles entering the system through the seal of the measuring connection.

The moral to this story is of course to use as few sharp angles - tee-pieces, elbows, etc in hydraulic plumbing as possible

Engineers

An engineer dies and reports to the pearly gates. St. Peter checks his dossier and says, "Ah, you're an engineer — you're in the wrong place." So the engineer reports to the gates of hell and is let in. Pretty soon, the engineer gets dissatisfied with the level of comfort in hell, and starts designing and building improvements. After a while, they've got air conditioning, flush toilets and escalators, and the engineer is becoming a pretty popular guy.

One day God calls Satan up on the telephone and asks with a sneer, "So, how's it going down there in hell?" Satan replies, "Hey, things are going great. We've got air conditioning, flush toilets and escalators, and there's no telling what this engineer is going to come up with next." God replies, "What??? You've got an engineer? That's a mistake — he should never have gotten down there; send him up here." Satan says, "No way! I like having an engineer on the staff, and I'm keeping him." God says, "Send him back up here or I'll sue." Satan laughs uproariously and answers, "Yeah right. And just where are YOU going to get a lawyer?" (KS)

DFP Monthly

February
2009
Volume 3
Issue 10

40 Cedar Street -- Tillsonburg Ontario -- 1(800)265-2656

IQAN Controller Module

Customer Unmet Need...

Higher population density has made it increasingly difficult for traditional utility equipment to service utilities in suburban areas. Traditional digger derricks have been truck-mounted and cannot enter small areas. With most utility service behind housing in suburban areas, it is important to have digger derricks small enough to enter through a fence gate or other small opening between houses.

Solution...

The IQAN system coupled with ferrous proximity sensors measure the outrigger position to ensure the outriggers are fully deployed before the boom can operate at the full envelope. Also, boom position sensors and load sensors measure the orientation of the boom for load moment calculation.

The IQAN MD3 display shows the operator the condition of the machine as well as any faults and error messages. The error and event log in the MD3 allows the OEM to see faults or errors that may have affected machine operation and safety.

This new unit has several new safety features including safety interlocks on the outriggers, load moment calculation to prevent over tipping, plus a fault/event logging and a color user interface for clear text fault messages.

- No air to bleed
- Load moment measurement ensures the boom is within the safe envelope.
- Diagnostic tools and display reduce field service time by 50% over 1st generation machine.
- Excellent control of hydraulics and adjustability increases productivity by 20%.
- Development time cut by 66% over the previous machine generation.
- User programmability allows the customer specific features to be offered at 15%-20% higher gross margin.

If you have questions please contact your salesperson or customer service representative.