



Standard Operation

Starwheels - The operator can control the position of the starwheels and will feel a slight wobble of the chair when they hit the bottom.

Ladder/Auger - While the dredge is digging, the auger pressure, slurry pump hydraulic pressure, and discharge pressure react accordingly. The ladder depth is shown on the display above the gauges.

Engine - Once the engine is running, the operator may throttle up to 1900 RPMs.

Starwheel Engagement

The dredge is lodged in loose mud and the starwheels cannot gain traction, so the operator will notice the wheels develop about half of normal pressure. The dredge will not move and the wheels remain at the bottom.

Blocked Suction

The slurry pump hydraulic pressure will drop to about 2700psi since it is not moving material. Slurry discharge pressure will drop to zero and the motion base will shake slightly simulating pump cavitation.

Auger Stalling

A piece of material is lodged in the auger's tines so the auger hydraulic pressure will jump to around 2500psi and not fluctuate. While stalled, the operator will be unable to move the dredge or ladder.

Control System Error

The operator will see an alarm on the screen pointing him/her to the output with the fault. The operator will not be able to lift the ladder while this condition is active.

Digging in a Hole

As long as the starwheel float switch is on, both starwheels will extend completely. They will not reach the bottom and the dredge will have no traction. Operator will not be able to move the dredge.

Climbing Over an Object

The motion base will tilt up as the operator moves forward, then level out, tilt down, and level out again.

Auger Walking

The dredge will take random "steps" forward and the operator will be able to see it moving as well as feel the dredge shake slightly. The auger hydraulic pressure will also jump.

Auger Cave-In

The massive amount of material at the auger head will cause the suction to become blocked. The slurry pump discharge pressure and the slurry pump hydraulic pressure will drop. Forward motion of dredge is prevented.

Low Hydraulic Oil

The hot/low hydraulic oil lamp will illuminate and the engine will shut off. The operator will see a "low hydraulic oil" alarm on the IQAN screen.

Clogged Pipeline

The operator will see the discharge and pump hydraulic pressures shoot up and then settle around 75 and 2500 psi respectively. The dredge will begin to rumble, which simulates pump cavitation.

Buried Starwheel

This condition simulates loose, soft mud that engulfs a starwheel and keeps it from being lifted up. The operator will attempt to raise both starwheels and surface paddle to find a better bottom. The port star wheel will lift normally, but the starboard wheel will be stuck.