Omni-System® Electronic Spreader Package

Vehicle's spreader system and circuit shall be controlled by a complete electronic console and valve/manifold package. Groundspeed orientation shall be a standard integrated feature. Components shall consist of in-cab control console, valve/manifold unit, and cable assembly. Design and quality shall be that of Muncie Power Products' Omni-System ESP. Details of each component are as follows:

Valve/Manifold Assembly

All solenoid valves shall have direct acting wet armature solenoid operators and manual overrides. These valves shall be top mounted to a common manifold.

Valves shall be proportional flow controls with infinite resolution from 0–8 GPM for the spinner, 0–17 GPM for the auger/conveyor, and 0–6 GPM for liquid respectively. Independent pressure compensation shall be provided for each with individual cartridge compensators mounted in the manifold assembly.

Manifold assembly shall include a relief cartridge assembly screw adjustable from 300–3,000 PSI, rated for 30 GPM of flow. This relief cartridge shall provide isolated spreader system protection. Pump bypass cartridge shall also be part of manifold assembly to provide automatic oil flow unloading.

Manifold circuit design shall include a hydraulic logic shuttle cartridge valve to prevent interactions of spinner, conveyor, and liquid regardless of independent or simultaneous operations. Logic shuttle shall prevent interaction regardless of load requirements.

Manifold to be anodized aluminum with dimensions of 5.5" width, 6" height, and 5" length. All manifold work porting to be SAE O-Ring type contained on one of the manifold sides. Test port shall be for easy accessibility of pressure gauge installation.

Control Console

Electronic operator control console shall be mounted in cab environment to provide easy access for operator use. Console dimensions to be of approximate size 1.5" width, 4.25" height, and 4.25" length. Console housing shall contain all electronic circuits and operator controls. Electronics shall be contained on a printed circuit board format with micro-processor logic.

Operator Controls

Operator controls shall consist of buttons, control knobs, and displays with the following descriptions:

- Control knobs shall be used to adjust auger feed rate, liquid (pre-wet) rate, and spinner spread width.
- Shall operate in either auto or manual mode
- Blast condition shall apply when button is depressed and for 5 seconds after release.
- Pause button shall latch until pressed again.
- Digital readout shall display auger, liquid feed rate, and spinner rate.

Electronic Operating Logic

Electronic circuitry to perform the following:

Groundspeed Orientation Control – The auto selection cause the hydraulic flow of the auger/conveyor valve to respond proportionally to the truck velocity.

The relationship of the hydraulic flow to the truck velocity (GPM/MPH) shall be adjustable and thereby establish the maximum auger/conveyor speed at the 100% rate selection for any truck velocity 0–60 MPH. Other rate selections shall be proportionally less.