Mining Trucks

- Brake System
 - <u>Needs</u>
 - Service Brakes
 - Emergency Brakes
 - Retarding
 - Parking Brakes
 - <u>Solution</u>
- Fan Control
 - <u>Needs</u>
 - <u>Solution Hydraulic</u>
 - Solutions Electronic



• <u>Return to applications page</u>



Brake System Needs

- Service Brakes are hydraulically activated
- Emergency Brakes must operate before hydraulic pressure falls below standard brake operating pressure
- Brake retarding is done manually
- Parking brake is spring applied and hydraulic release



HF Brake Solutions



Image: Constraint of the systemImage: Constraint of the system<

- Proportional Pressure Control valves are used for controlling brake system pressures
 - <u>TS98-T34 Catalog page</u>
- Heavy Duty in cab <u>DISPLAY</u> is used for viewing data and light calibration
- Heavy duty <u>PRESSURE SENSORS</u> are used in monitoring the brake system pressures



• <u>ECU</u> provided for closed loop electronics



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Fan Control Needs

- Because of the need to fail to maximum cooling capabilities a special proportional pressure control valve is needed.
- Maximum pressure with zero current applied is the key to a cost effective fan drive cooling system





Image: ControlHydraForce Fan ControlSolutions

- HydraForce has developed and received a patent on its innovative proportional fan control valve.
- The unique features of the valve is that with no current applied or loss of electrical signal, the valve will provide maximum pressure, which equates to maximum fan speed for cooling.
 - <u>TS08-27 catalog page</u>
 - TS10-27 catalog page
 - TS12-27 catalog page

HF Fan Control Solutions Continued

Image: Market AllHydraForce Fan ControlSolution Continued

- Since HydraForce is the World leader in designing and manufacturing proportional cartridge valves, who better than to also know how to drive and control those valves.
- HydraForce has worked closely with our suppliers to create a specific fan drive controller for operation with out patented valves.
 - <u>Fan Drive Controller catalog page</u>
 - Fan Drive Applications paper