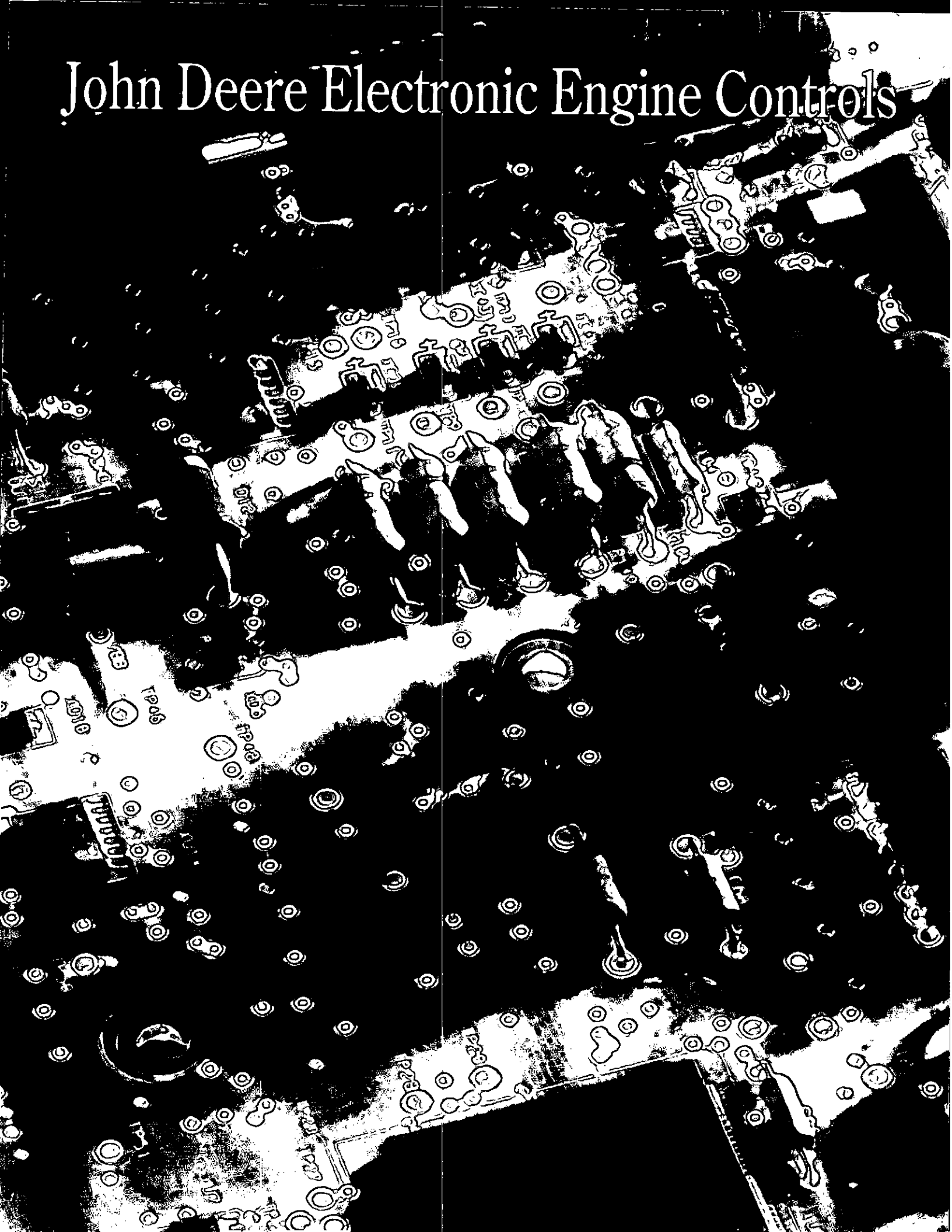
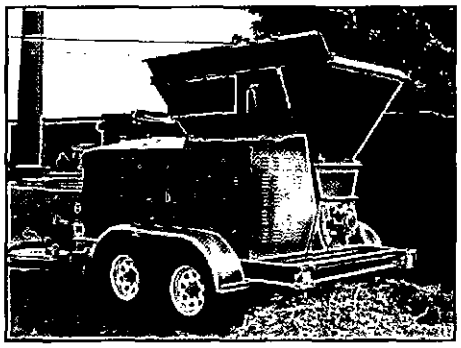
John Deere Electronic Engine Controls



Making The Most

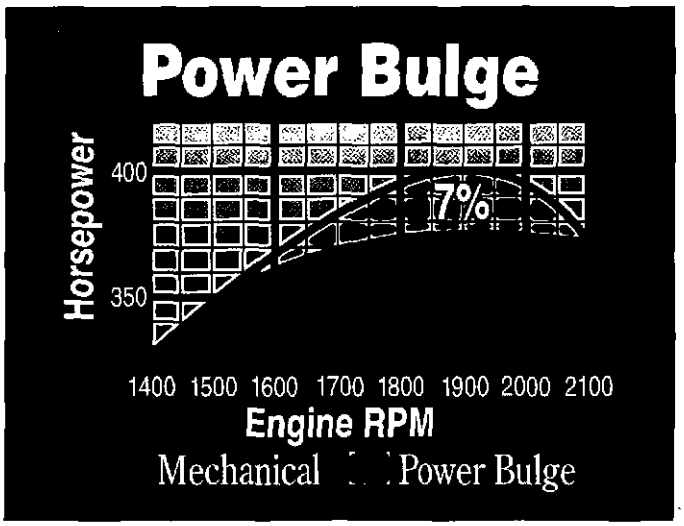
Extra Power For Intermittent Applications

A bigger engine isn't always better. If your application has short peak power demands, a John Deere engine with electronic controls can do the same work as a mechanical engine with a higher rated horsepower. In some instances, a smaller displacement engine with less engine weight at a lower cost may be utilized.



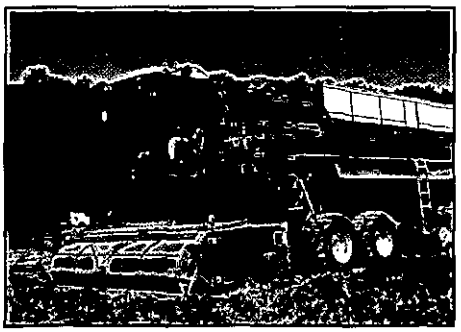
John Deere engines with electronic controls deliver up to a 7% Power Bulge for short-term power demands. That's 26 additional horsepower on a 375 hp engine, or 19.4 kW added to a 280 kW engine. When your application encounters an extra load, the electronic control system provides an increase in power to let your engine push through without slowing down or sacrificing other operations.

If you need extra power to operate additional machine functions or improve machine performance, John Deere also offers a Power Boost. It provides up to 10% more horsepower for a limited time in applications like unloading a combine grain tank on-the-go, or filling a bucket on an industrial loader.



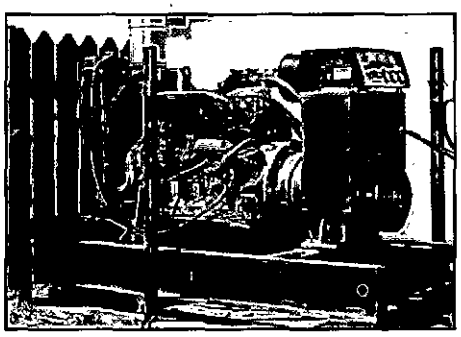
Multiple Programmable Torque Curves

John Deere electronic engines provide up to 20 torque curves to maximize performance during engine operation. Torque curve selection can be tied to temperature, load, speed, gear, or torque requirements. Electronic controls offer precise control of the curve shape which lets your engine operate at optimum efficiency at all times.



Multiple torque curves also provide multiple protection. By selecting the right torque curve at the right time, the electronic control system can protect the transmission, driveline, or the engine itself. Torque curves can be selected using external switches, measured parameters, or through the SAE J1939 CAN communications bus.

Enhanced Vehicle Integration

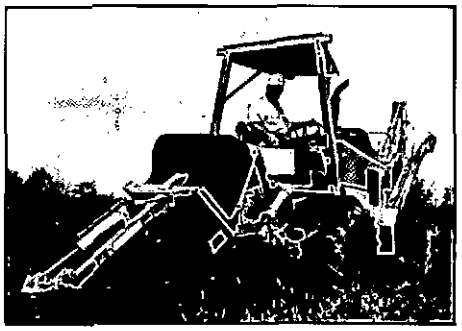


Electronic controls eliminate many mechanical linkages including throttle cables. It also gives you the flexibility of multiple throttles. You can choose dual analog throttles for both foot and hand control, tri-state throttle which provides three preset engine speeds, or pulse width modulated throttles for speed commands issued from other controllers like the transmission. Engine parameters such as speed, fuel delivery, oil pressure, engine temperature, or throttle can be sent to external monitoring equipment for analysis, logging, or display via the J1939 CAN bus.

Of Every Situation

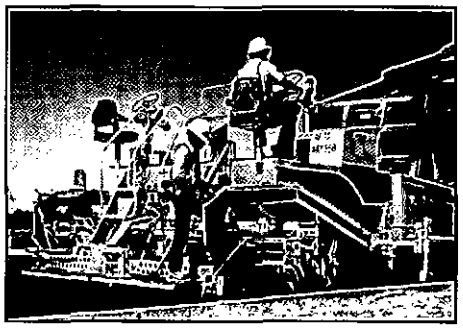
Reduced Emissions

Electronic controls not only reduce smoke at startup, they also reduce emissions during everyday operation. When you increase throttle on a turbocharged engine, there is a natural time lag when the engine can't cleanly burn all the fuel until the turbo gets up to speed. With a John Deere electronic engine, fuel is increased proportionally as turbo speed increases so none is lost or wasted. This delivery of fuel happens so quickly, that you notice no difference in response, but you will notice the improvements in emissions and fuel efficiency.



Improved Cold/Hot Starting

Whether you're starting a cold engine on a frigid morning, or a hot engine on a blazing afternoon, John Deere Electronic Engine Controls provide faster, easier, and cleaner starting.

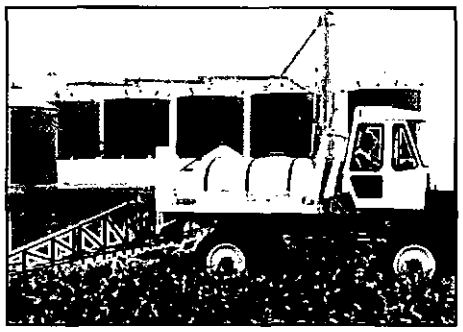


Instead of relying on a single fuel setting for all starting conditions, the electronic controls adapt the fueling amount to engine temperature. When the engine is cold, the system provides more fuel to reduce starting time and faltering. When it's hot, the system reduces fuel delivery to reduce black smoke at startup.

Electronic controls provide optional intake air heaters to improve cold starting without ether. The air heaters provide quick starting and reduce white smoke after a start under cold conditions. Cold engine idle stability is also improved, so you'll never have to ride the throttle again to warm up the engine.

RPM Cruise Control

This feature lets you select a desired engine speed by a simple turn of a dial. When the rpm cruise control is engaged the electronic control system switches to isochronous or zero speed droop operation. Now you can maintain consistent operating speed in a variety of applications such as uniformly incorporating chemicals or fertilizers, even in varying soil conditions. Automotive-type cruise control is also available.



Engine Protection & Monitoring

Integral engine protection can be used to reduce engine power or cause engine shutdown if low oil pressure, high engine temperatures, loss of coolant, or other engine damaging conditions are detected. Integral protection can reduce system costs and provide enhanced protection compared to typical external engine protection systems. The engine can also be shut down using external systems if required by the application.

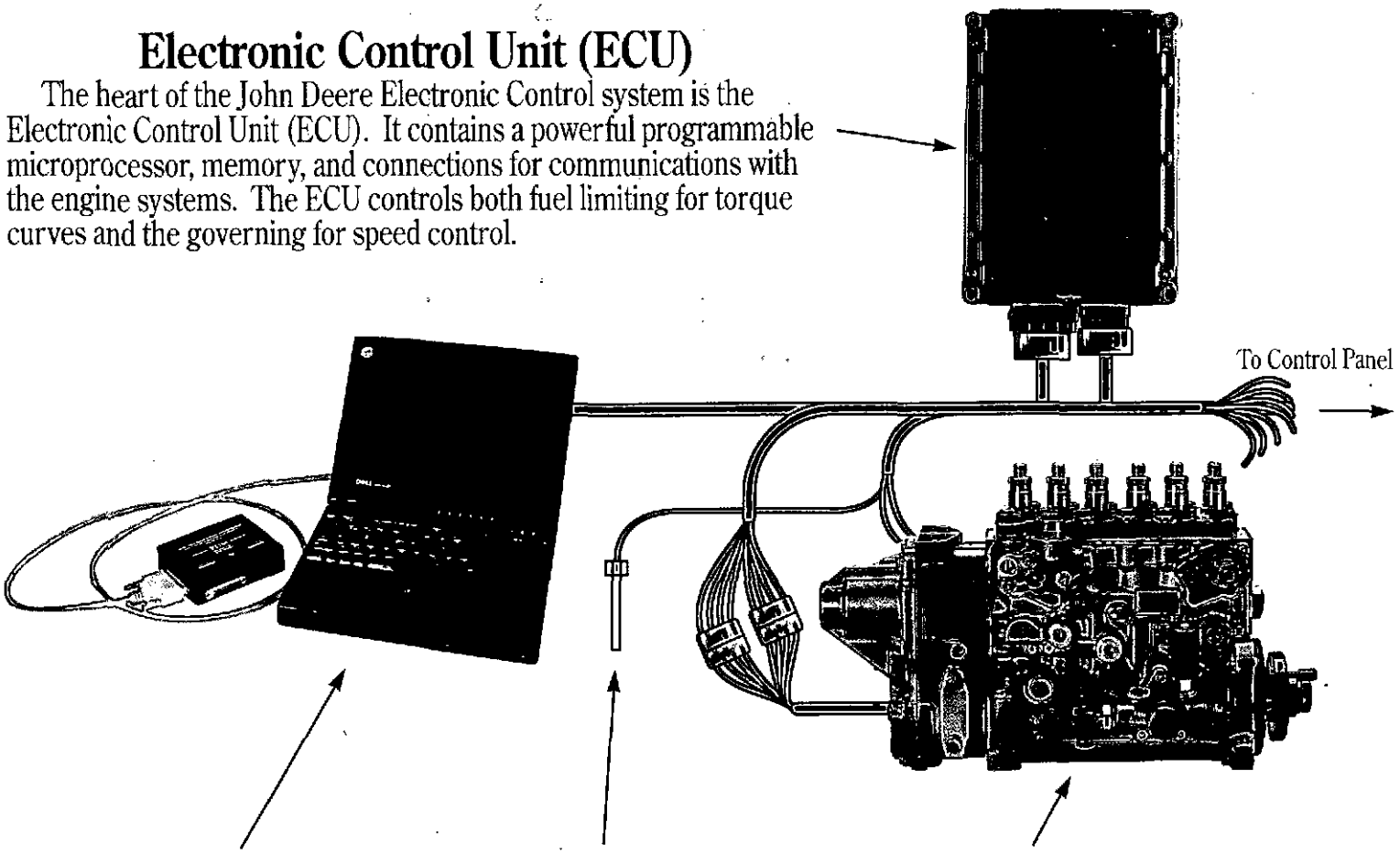
John Deere Electronic Engine Controls Make The Most Of Every Situation, Including Yours

John Deere technical engineers will work with you to program an electronic engine system with the optimal torque curves, throttles, and droop for your application. Many switch selectable options can also be incorporated into the system. Call Deere Power Systems at 1-800-J D ENGINE to find out how John Deere Electronic Engine Controls can make the most of your engine application.

John Deere Electronic Engine Controls

Electronic Control Unit (ECU)

The heart of the John Deere Electronic Control system is the Electronic Control Unit (ECU). It contains a powerful programmable microprocessor, memory, and connections for communications with the engine systems. The ECU controls both fuel limiting for torque curves and the governing for speed control.



Diagnostics

The ECU continuously monitors the complete electronic system for potential problems. If a problem occurs, a fault code is stored in memory. This diagnostic tool allows service people to display and interpret fault codes stored in ECU memory.

Engine Sensors

The ECU monitors engine functions through remote mounted engine sensors. These can read functions ranging from temperature to pressure.

Fuel Injection Pump

The fuel pump receives commands from the ECU. It can adjust its fuel rack position many times each second to react to the slightest changes in load, temperature, and other inputs.

John Deere Electronic Engine Controls Are Available On A Variety Of Engine Models

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