

Energy Edicts

By James W. Garthe

Penn State Ext. ag engineer

Today's technology has made farm tractors so powerful and efficient that they allow a very small percentage of the United

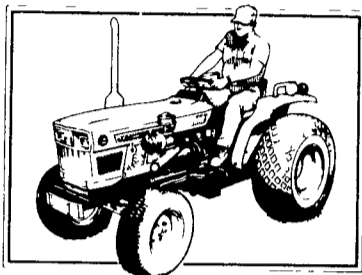
States' population to produce enough food for this country and still export many products, says James. W. Garthe, Penn State

Extension agricultural engineer. The tractors that do the most work with the least amount of fuel are turbocharged diesels. Turbochargers increase power by forcing more air into the cylinders. Exhaust gases that are usually wasted are harnessed and used to spin a turbine at extremely high speeds. This turbine is then used to compress incoming air to make more fit into the cylinders. This added compressed air boosts the volumetric efficiency of the engine and changes the burning characteristics of the fuel-air mixture.

In the past, only high-powered racing cars had turbochargers. The same principles, however, have now been successfully applied to all types of cars, trucks and tractors, says Garthe. Diesel powered tractors made up an extremely small percentage of farm tractors, but today most tractors on the market are diesel. Diesel engines are 30 percent to 35 percent more efficient than gasoline engines and tractor trailer rigs have been using diesel engines for years. However, they were far less powerful than gasoline engines of the same size.



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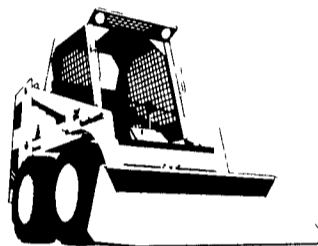
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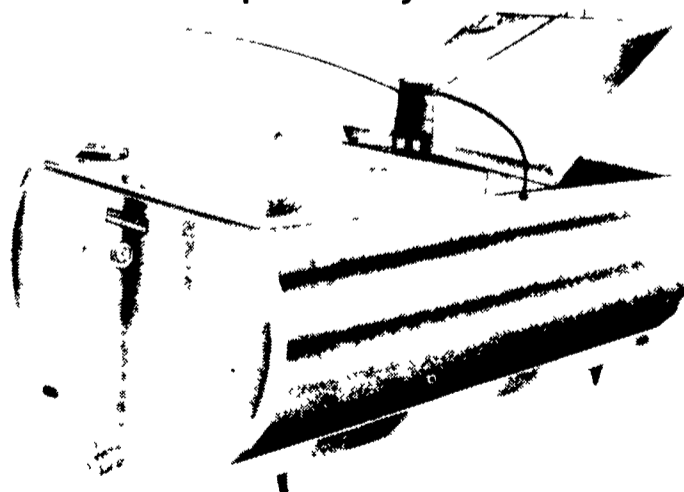
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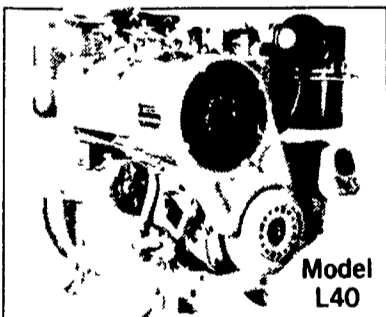
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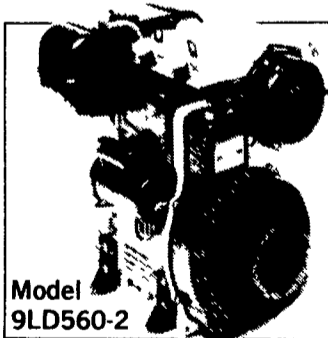
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