



Air-Kwik Air-Powered Firefighting System Dale K. Dague, Fire Program Assistant

Background

The Air-Kwik air-powered firefighting system provides an alternative to conventional gasoline-powered pump slip-on units used by quick-response and fire-patrol vehicles. This firefighting system utilizes high-pressure compressed air to propel water and class A or B foams. The Air-Kwik air-powered firefighting system, using an 80-gallon water tank mounted on a standard 1/2-ton pickup truck bed, was demonstrated at San Dimas Technology and Development Center (SDTDC). The unit is compact and has no engine noise or exhaust fumes.

The Product

The system activates when the airflow valve is opened. A fire service self-contained breathing apparatus tank (or scuba tank) and regulator are used to pressurize the water tank that delivers 30 gallons/minute at 100 pounds/square inch nozzle pressure until the air is exhausted in the tank. The Air-Kwik unit comes with a 50-, 80-, or 100-gallon water tank and includes a hose tray compartment capable of holding 300 feet of 1-inch synthetic hose. See figure 1. There is an optional live reel providing an additional 100 feet of 1-inch hardline hose. The operating weight of each unit when filled is 650, 950, and 1,225 pounds respectively.

The water tanks are powdercoated with an ultraviolet-resistant exterior and corrosion-resistant epoxy interior that allows the foam to be premixed in the storage tank. To date, the corrosion-resistance ability of the storage tank has not been tested.

A vehicle battery-powered water level light gauge and a low-water level audible alarm are built into the unit's control panel. The battery also supplies power to the electric rewind on the optional live-reel unit.



Figure 1—The Air-Kwik unit comes with a 50-, 80-, or 100-gallon size water tank and includes a hose tray compartment.

Operation

The Air-Kwik system is faster and easier to operate than gas-powered units. There are no problems like those commonly associated with starting or running gas-powered engines such as fouled plugs, carburetor clogs, fuel problems, engine flooding, and pump priming. The tradeoff is the pressurized air requirement. A gas-powered system can keep supplying water as long as the water tank is kept full. Air-Kwik requires the replacement of compressed air as well as water.



Conclusion

The Air-Kwik firefighting system provides a cost effective alternative to gas-powered engine and pump slip-on units for initial attack of small fires. For more information on the Air-Kwik air-powered firefighting system contact:

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Approximate English to Metric System Conversion Factors

To Change	To	Multiply by
inches	millimeters	25.4
feet	meters	0.305
gallons	liters	3.785
gallons/minute	liters/second	0.063
pounds	kilograms	0.454
pounds/square inch	kilopascal	6.894

About the Author

Dale joined the San Dimas Technology and Development Center in January 2001 as the fire program assistant. He serves as the project leader for National Wildfire Coordination Group (NWCG) publications, the Access Guide for Incident Facilities, and Fire Prevention Technical Assistance.



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