

Press Release

Axial piston variable pump A1VO for small tractors and auxiliary drives

Small Variable Pump Saves Fuel Starting from 50 HP

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By introducing the A1VO axial piston variable pump in the new size 18, Rexroth reduces the price gap to gear pumps of identical compact size.

Lower exhaust emissions and better fuel economy are right at the top of the requirements lists for manufacturers and users of tractors and agricultural machines. A vital contribution here is provided by hydraulic systems with demand-controlled power generation supplied by variable pumps. In the past they were not fitted to small tractors for cost reasons. By introducing the A1VO axial piston variable pump in the new size 18, Rexroth closes the price gap to gear pumps of identical compact size. The path is now free to fit consumption-reducing technology on tractors of 50 HP and higher and auxiliary drives on larger vehicles.

Simulations were performed on the A1VO size 35 which was successfully launched on the market for tractors up to 90 HP. The simulations show that potential savings of up to 10,000 liters of diesel fuel are achievable across the entire service life by changing from a fixed pump to the A1VO. The calculation figures were confirmed by user experiences. With the new size 18, Rexroth now offers the benefits of variable pumps to lower power ranges. Tractor manufacturers can achieve better fuel economy in tractors with power outputs starting from 50 HP and lower exhaust emissions at the same time.

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In addition, the A1VO enhances operator convenience and productivity. The variable pump is fitted with an integrated load-sensing controller to assume demand-controlled power generation in load-sensing systems. This raises the efficiency of the implement hydraulics and improves the response of loads.

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What is more, the variable pump is designed for applications such as auxiliary drives in large vehicles. For example, it functions as a supply unit for hydrostatic fan drives. This is why Rexroth has supplemented the controller portfolio of the A1VO to include a cartridge-style electro-hydraulic controller. This design achieves compactness and allows the controller to be integrated in the port plate. Manufacturers can now decouple the rotational speed of the diesel engine from the fan speed and maintain the engine at the ideal temperature to achieve low exhaust emissions, meet actual demands, and save fuel.

Constant-displacement pumps previously fitted can be replaced without major design changes. The A1VO has an efficiency of almost 90 percent. On the new size 18, Rexroth has raised the permitted speed in continuous duty and at maximum swivel angle to 3300 rpm. As a result, the variable pump covers an even wider performance range.

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