Rear PTO Boosts Payload and Profits

Cat® C7, C9, C11, & C13 Rear-Mounted Power Take-Off (PTO) Truck Engines

For your most demanding PTO operations, the Cat® C7, C9, C11, and C13 engines with optional rear-mounted PTOs can put you on top with bigger payloads, bigger profits. When you pair a rear-mounted PTO with the Cat® C7, C9, C11, or C13 engine — all of which offer class-leading fuel economy — you’ve got the power to get the job done at the lowest cost.

BIGGER PAYLOADS
One of the main benefits of a rear-mounted PTO is its significant payload advantage over front-mounted PTOs. With a rear-mounted PTO, you can spec a longer wheelbase chassis without exceeding length restrictions, and at the same time, improve weight distribution to meet legal axle weights. Under the “Federal Bridge Law” formula, by spec’ing a chassis that’s up to 24” longer, you’ll be able to increase payload by as much as 1,500 lbs. (681kg). The lightweight C7, C9, C11, and C13 engines offer up to 500 lbs. additional payload capacity compared to other diesel engines in their horsepower range. Thus, that actual payload advantage of a truck equipped with one of these engines and a rear-mounted PTO is up to 2,000 lbs.

BIGGER PROFITS
With the C7, C9, C11, and C13 rear-mounted PTO engines, more payload equals more profit on your bottom line. The engines’ lower operating costs help you boost profits as well. The rear-mounted PTO has a simpler design than most front PTO’s, which means less maintenance and downtime. For example, a shorter hydraulic hose on the rear PTO leads to less wear and tear. And a rear PTO doesn’t require the costly engineering, modified radiators, complicated drive couplings and extended front frames and bumpers associated with front PTOs. In addition to the maintenance savings, the fully electronic C7, C9, C11, and C13 engines provide a full range of programmable settings tailored for use with a wide range of PTO applications.

MORE POWER TO YOU
The rear PTO is gear-driven off the rear of the engine crankshaft and is an integral part of the SAE 1 aluminum flywheel housing. This arrangement gives you the same horsepower output as front-mounted PTOs.

The rear-mounted PTO has a three-gear drive system. A drive gear is mounted on the engine crankshaft between the block and the flywheel. An idler gear transmits power from the drive gear to the driven gear on the output, or PTO, shaft. The PTO shaft rotates in the same directions as the engine. The result is efficient power for your most demanding PTO operations.
REAR PTO SPECIFICATIONS

<table>
<thead>
<tr>
<th></th>
<th>C9, C11, &amp; C13</th>
<th>C7</th>
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<tbody>
<tr>
<td>Torque Capacity (Continuous)</td>
<td>484 lb-ft</td>
<td>340 lb-ft</td>
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<tr>
<td>Output Shaft Ratio</td>
<td>1.31:1</td>
<td>1.31:1</td>
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<tr>
<td>Added Engine Length</td>
<td>3.50” (88.9 mm)</td>
<td>2.56” (66 mm)</td>
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<tr>
<td>Output Location</td>
<td>1 o’clock (24.5°)</td>
<td>1 o’clock (29.0°)</td>
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<tr>
<td>Added Engine Weight</td>
<td>150 lbs. (68.0 kg)</td>
<td>83 lbs. (37.6 kg)</td>
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REAR PTO ADVANTAGES

- Maintains speed-up ratio of 1.31:1 so you don’t have to rev the engine as high and is ideal for most pumping operations.
- Increased output speeds allow chassis builders to use smaller hydraulic pumps for lower cost installations.
- Powered directly from the crankshaft, behind the flywheel.
- Provides easier serviceability than competitive rear PTOs because the output flange is accessed from the transmission side instead of the engine side.
- Features internal lube lines, eliminating the possibility of leaks or damage to the lines.
- Pressure-lubricated from engine oil and has high contact ratio spur gears for long life.
- Provides shorter turning radius than trucks with front PTOs for increased maneuverability.
- Longer wheelbase chassis for improved weight distribution to meet legal axle limits.
- Requires shorter hydraulic hose length, which lessens wear and tear.
- Eliminates extended front end frames and bumpers or modified radiators associated with front PTOs.
- Eliminates possibility of front end damage to the pump, reducing downtime.
- Does not affect cooling capability, which means less downtime and better cooling
- Allows for use of a larger variety of pumps for more application flexibility and optimized performance.
- Comprehensive electronic features that cover a wide array of applications

PTO CONFIGURATIONS

A front PTO must be engineered to pass below the radiator, not through it, to avoid potential core leaks and allow easy service. A typical front PTO mixer rides on a 242-inch wheelbase and carries a payload of up to 38,000 lbs. (17.252 kg)

On the rear PTO, front frame extensions are eliminated, allowing a longer wheelbase. Compared to a truck with the same overall engines as an affront PTO mixer, a truck with a rear PTO can carry a payload of up to 40,000 lbs. (18.160 kg).