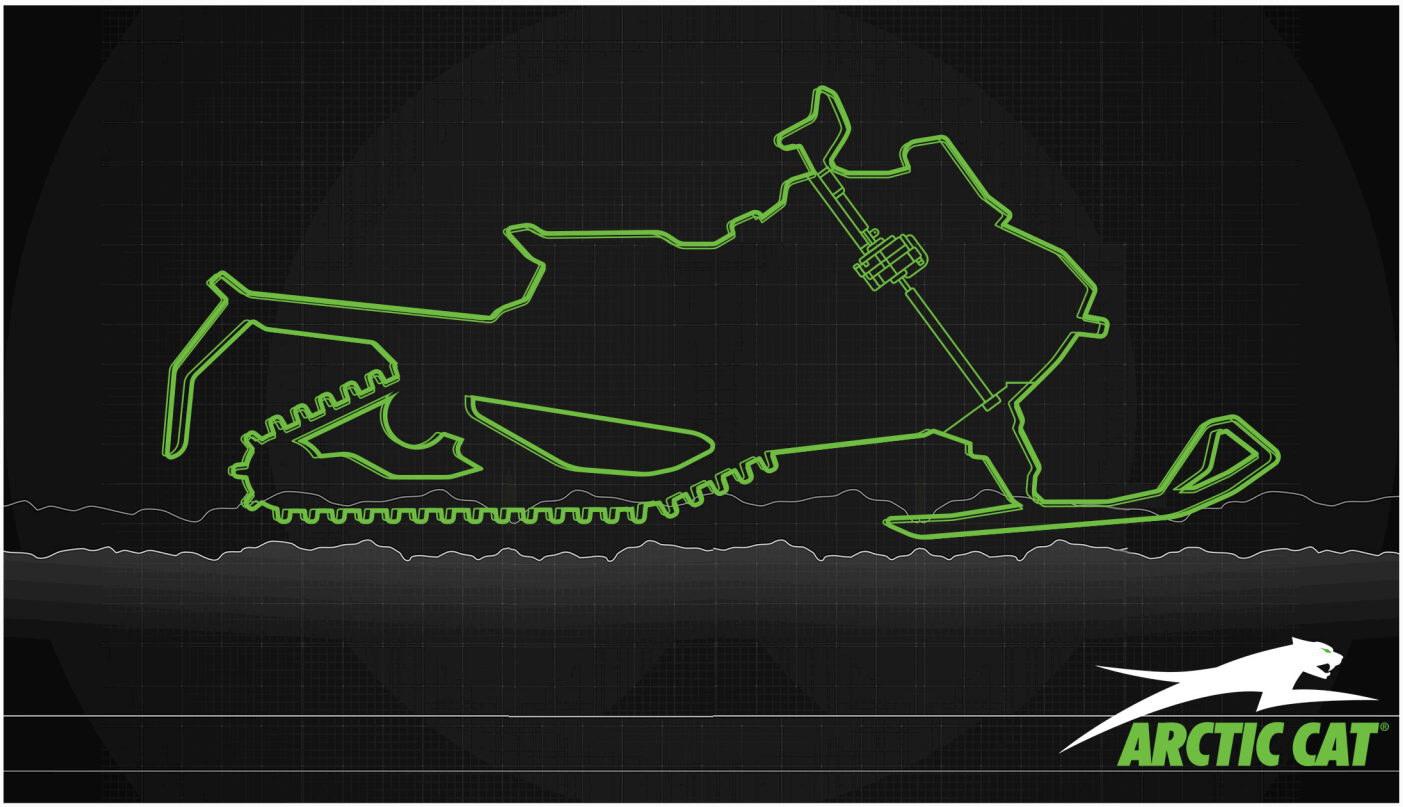


EXTEND YOUR RIDE TIME WITH ELECTRONIC POWER STEERING

The expansion of electronic power steering (EPS) by Arctic Cat to more two-stroke models is allowing more snowmobilers to ride longer and go farther with less fatigue. It's a true turning point for the snowmobile industry, as many riders learned last winter.

Representing a minority share of all snowmobiles, EPS has been in four-stroke-powered snowmobiles for several years. Arctic Cat has always been known as the disruptor of the snowmobile industry and in this latest application, Arctic Cat has exclusively created the ultimate two-stroke machines. This disruption is truly setting a new standard of expectation. Arctic Cat's EPS system not only reduces steering effort at the handlebar, but it also damps some negative feedback that would otherwise be transmitted back to the rider through the steering system. It also allowed engineers to significantly reduce the amount of handlebar movement needed to make a turn, requiring less input from the rider when maneuvering.



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RIDE. REPEAT. NO REST REQUIRED.

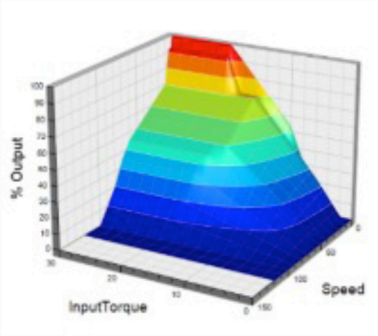
ELECTRONIC EPS POWER STEERING

HOW IT WORKS: PROPER MAPPING

Utilizing the predetermined space when the Catalyst was developed and Arctic Cat's unique laydown engine design, the EPS motor is mounted in front of the engine, in line with the traditional steering post. An input shaft coming from the handlebar feeds into the top of the EPS motor, while an output shaft exits the bottom and connects to the rest of the steering system, ultimately leading to the skis.

Inside the EPS motor, steering assistance is added to the output shaft through a gear reduction system. The amount of assistance is determined by an intricate calibration map that considers vehicle speed and the amount of torque being applied through the handlebar.

The measurements are made in Newton meters – a standard system for measuring the rotational force of torque. The specific calibration map used by Arctic Cat is proprietary, however the following examples illustrate how the system works.



- At low speeds, 20 to 30 Newton meters of torque are put into the handlebar by the rider, the EPS motor adds 70 percent of its maximum assistance and helps turn the skis.
- At mid speeds, it is adding 55 percent assistance.
- At full speed, no steering assistance is applied.

Why is this important? Experienced snowmobilers know it takes considerably more effort to turn the handlebars at low speeds than it does at higher trail speeds. Additional assistance is most beneficial in those situations. However, at higher speeds, too much assistance would make the steering feel disconnected from the trail, thus providing a poor riding experience for the rider. Proper calibration of steering assistance is therefore essential to maintaining natural steering feel.

Aside from Arctic Cat's unique mechanical placement of the EPS motor, the EPS mapping is what truly makes this system magic. Like clutching and suspension settings, EPS settings will also continue to evolve. Engineers continue to identify opportunities to further enhance the rider experience.

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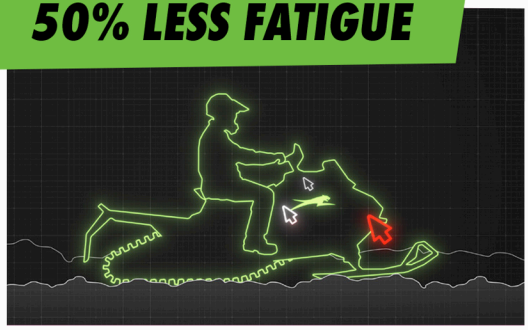
ELECTRONIC EPS POWER STEERING

HOW IT WORKS: NEGATING FEEDBACK

Technically, the EPS motor does not measure torque input coming up from the skis when determining assistance levels. However, the EPS system does effectively damp some bottom-up feedback.

Because the EPS motor separates the steering shaft into two sections, some of the negative feedback that would normally travel through a solid steering shaft and into the handlebar is absorbed by the system. To be clear, an EPS-equipped snowmobile still feels very natural and connected to the trail, but impacts at the ski that would normally try to twist the handlebar within the driver's hands are significantly reduced, resulting in a more controlled and confidence-inspiring ride.

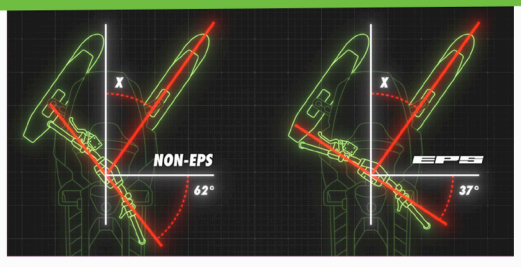
50% LESS FATIGUE



HOW IT WORKS: LESS BAR MOVEMENT

In a conventional steering system, one way to increase the leverage and maintain acceptable steering effort is to increase the amount of handlebar travel required to turn the skis. This concept can be seen in non-EPS Arctic Cat models built on the Catalyst chassis, which already offer impressively light steering effort compared to most competitive models.

40% LESS BAR MOVEMENT



With EPS assisting the system, engineers have reduced the amount of handlebar movement required to achieve the same steering angle at the skis.

Specifically, a non-EPS ZR requires the handlebar to turn 62 degrees from center to reach full lock. On an EPS-equipped version of the same machine, full lock is achieved at just 37 degrees of handlebar movement while producing the same steering angle at the skis. As a result, the handlebars are not only easier to turn, but riders also move them approximately 40% less. Together, these benefits contribute to more effortless experiences.

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ELECTRONIC EPS POWER STEERING

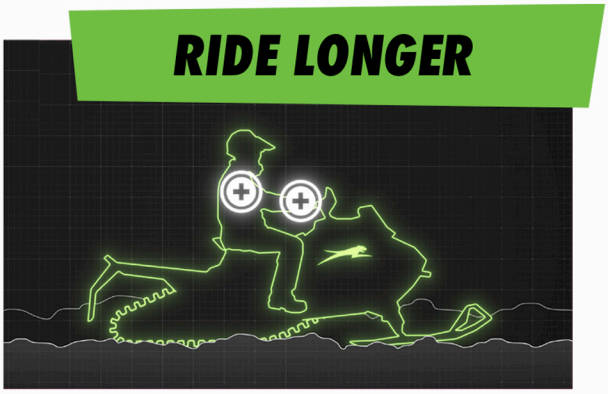
AN ADDITIONAL BENEFIT

All these advantages of the EPS system create another benefit: Riders can take advantage of a more aggressive ski and carbide combination without the typical increase in steering effort.

As a result, deeper-keel C&A Pro XPT skis are used on Arctic Cat's El Tigré, White Tiger and ZR R-XC models to deliver sharper handling without the traditional penalty of heavier steering. That makes these the ultimate performing trail machines.

PULLING IT ALL TOGETHER

The light steering, more compact handlebar movement, reduced negative feedback, and ability to run more aggressive skis combine to create a better riding experience for riders of all skill levels. Reduced fatigue makes riders feel better through the day and fresher for the next day's ride. That sets the stage to not only extend your weekend trip but add years of riding to your life. Like any paradigm shift, Arctic Cat's EPS system is changing naysayers to advocates one demo at a time.



MORE MODELS WITH EPS

The two-stroke EPS system is standard equipment on 2027 El Tigré, White Tiger, and select Catalyst Bearcat, ZR and ZR Sno Pro models. For riders who prefer a four-stroke machine and want most of the same benefits, the 2027 Pantera 9000 and Thundercat models continue to utilize Arctic Cat's EPS system.

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