

Turbo Cranks from Advanced Racing Technologies

Steve Miller, owner of Advanced Racing Technologies in Saginaw, Michigan, doesn't really know for sure why this works. He even admits that he would like someone to tell him exactly what is happening. But after doing it to thirty engines and seeing an 8% average increase, he believes there's something here.

Steve and his father Art own and operate Advanced Racing Technologies, a speed shop that specializes in snowmobiles, jet skis, motorcycles and quad runners. Art Miller put his racing talents to the test by building and competing in multiple, nation-wide hydro-plane boat races starting in 1959 and taking it to the world championship level winning 2nd place in 1962. Also holding several years of state championship titles, he was featured on ABC Wide World of Sports.



From there, Art began working on snowmobile engines and was known as one of the best in the area. Over the years, his son, Steve, now owner of Advanced Racing Technologies, has worked with his father to refine various porting techniques and develop new ideas to continue to produce the fastest racing engines possible. The total years of combined experience exceeds 65 years.

Turbo Cranks are one of their latest ideas. They drill a series of holes at a compound angle around the outer diameter of the crankshaft. The larger the crank the larger the holes. The theory is the holes act like a fan, boosting the transfer of mixture up into the cylinders. According to Steve, this achieves a pumping action that creates more vacuum, pulling more mixture into the crankcase and therefore, packs more mixture into the combustion chamber. Increases of up to 200 RPMs have been reported from many of the thirty engines modified so far. All they know for sure is it makes a difference.

Prior to exchanging crankshafts, one of the fastest sleds in their locale was a modified Polaris XCR 700 that produced an impressive baseline of 192 horsepower. After exchanging with a turboed crank, the engine dynoed at 209 horsepower at 9600 RPM; an increase of 17 horsepower. Gains were realized throughout the whole powerband.

Jetting changes for the turbo cranks have been consistent, whether it was a single cylinder dirt bike motor or a triple cylinder Indy engine. Up 2 sizes on the pilot jets and down 1 size on the main jets.