

# X-Tracker: the high performance hub for racing cars



Photo: Walt Thurn



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- Increased hub and wheel camber stiffness
- Improved steering accuracy and dynamic vehicle behavior
- Higher cornering capability
- Reduced calliper piston knock-back and braking times
- Dramatically increased durability



# X-tracker hub unit for racing applications

## Technical features

X-Tracker hub is an high performance hub unit designed by SKF to improve the performance, cornering and stability characteristics that race and super cars demand. The X-Tracker is a performance-engineered hub unit consisting of a double row angular contact ball bearing arrangement in which the outboard row has a larger diameter and contains more balls than the inboard row.

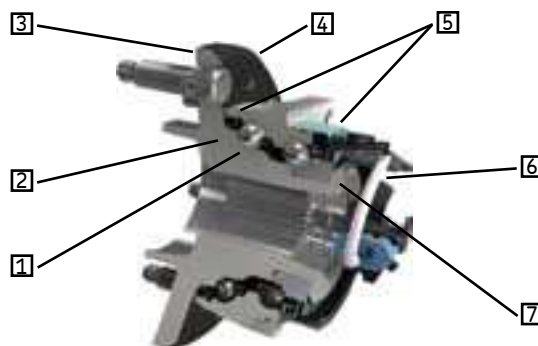
This asymmetrical arrangement is the core of the X-Tracker design.

This unique design increases the bearing load carrying capacity and operational life, while significantly increasing camber stiffness compared to traditional symmetrical hub units. Increased camber stiffness reduces the brake rotor tilt during vehicle cornering. This reduces brake caliper piston knock-back, allowing the driver to brake later, and reducing lap times on the track. The small inner ring is retained with orbital

forming which means the bearing will stay in preload under heavier loading, providing a longer service life.

SKF has performance hub designs for the 5th and 6th generation of Corvettes hubs that are available from several SKF Speciality Distributors service for the Corvette Enthusiast Market.

- 1 Non-symmetrical rows with more balls at a higher diameter on outboard side
- 2 Higher load carrying capacity and hub flange strength
- 3 Low flange lateral runout for truer running of rotors
- 4 Black oxide coating for improved corrosion resistance
- 5 Efficient sealing
- 6 Integrated speed sensor
- 7 Bearing is self retained by orbital forming



### A World Class Racer's experience with the X-Tracker Hubs



Danny Kellermeyer – former Chevrolet Field Engineer is the 2010 SCCA Great Lakes Division Driver of the Year and a Multi Class Champion driver for DJ Race Enterprise with over 45,000 race miles, all in Corvettes. He started preparing and racing the first of the C5 generation Corvettes, which competed in many classes including the World Challenge events.

*"With racing accelerated durability cycles. I experienced troubles related to durability of wheel bearing components. The loss of preload, piston knock-back and irregular pad wear were issues I had to endure to race these Corvettes.*

*After a relatively short time running under race conditions the bearings would become loose, a looseness that you could feel when you jacked up the car and rocked the wheel/tire. This led to frequent bearing swaps and changes.*

*Over the years GM and others tried to address the issue of bearing life, knock-back, and taper pad wear by creating a bearing with higher preload. This bearing was maybe 10% better but still did not meet the needs of racers and track day enthusiasts. Thanks to the introduction of SKF bearings with asymmetric design we have dramatically improved bearing durability, increased corner stiffness, reduced caliper piston knock-back, increased our brake pad life and stopped the bearing looseness. Below are the stats on the first vehicle we tested, which has accrued the highest mileage."*

#### X-Tracker Asymmetric Bearings

- Race car: #37 C5 1999 World Challenge Corvette
- Races entered: 76 races
- Accrued miles: 4,453 racing miles
- Present condition: Excellent. No appreciable loss of preload. Pedal has remained solid; wear has been normal with little taper
- Durability as compared to previous bearings; 593% improvement
- Previous bearings would be replaced after approximately 750 miles

Danny Kellermeyer

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