

LOCTITE*Adhesives for more
reliable assemblies***APPLICATION CASE HISTORY****No. 162**

Loctite® Anaerobics Designed Into Arctic Cat Snowmobiles For Superior Performance

**Situation:**

Arctic Cat, Inc., of Thief River Falls, MN has been designing, manufacturing, and marketing snowmobiles since 1983, and is considered to be a leader in the industry. Loctite Corporation has been a partner in design with Arctic Cat since the beginning for their line of snowmobiles and personal watercraft. When they began to design their 1999 line of snowmobiles they naturally called Loctite in to be a part of the team.

The new line was to be a high-tech, state-of-the-art design. Several exclusive features include: AWS™ double-wishbone suspension; batteryless EFI for superior all-temperature, any-altitude performance of fuel injection without the added maintenance or weight of a battery; roller cam driver clutch for improved acceleration; FasTrack® Long-Travel Rear Suspension System with Extra Travel Tunnel (ETT™) for 13.5" of travel while keeping a low center of gravity; and Torque Sensing Link™ to provide increased traction and control during acceleration; as well as hydraulic disc brakes.

Solution:

As part of the design team, Loctite brought extensive experience to the table and was able to recommend the right products for each application, such as Loctite® 242® Removable Threadlocker, Loctite® 290 Wicking Grade Threadlocker, Loctite® RC™ 609 and RC™ 620, Black Max® 380 and Super Lube®. From the drive clutch to brake caliper bolts to the starter assembly, Loctite products are used throughout the snowmobile to protect against vibration loosening and temperature extremes.

According to Jeff Poole, Arctic Cat Manufacturing Engineer, "Loctite has been partnering with Arctic Cat for years. We consider them the best adhesives supplier available because of their extensive product line and technical support. The past experience Loctite has had with our products, coupled with their expertise, help make our designs that much more successful."

Results:

Arctic Cat does extensive field testing of their snowmobiles that includes test driving the first vehicle off every production line. The field tests include a 100-mile dirt run where temperatures may exceed 100° above zero, as well as a snow run in Canada, Alaska or northern Minnesota (depending upon time of year), where temperatures may reach 50° below zero.

"We have strict standards for vibration and temperature testing," says Poole. "Loctite products help keep Arctic Cat Snowmobiles together regardless of the conditions."

*(Continued on reverse)***Loctite Americas**

U.S.A.
Loctite Corporation
1001 Trout Brook Crossing
Rocky Hill, Connecticut 06067
860-571-5100
Telefax: 860-571-5465

CANADA
Loctite Canada Inc.
2225 Meadowpine Blvd.
Mississauga, Ontario L5N 7P2
800-263-5043 (within Canada)
905-814-6511
Telefax: 905-814-5391

MEXICO
Loctite Company de México, S.A. de C.V.
Calzada de la Viga s/n, Fracc. Los Laureles
Loc. Tulpetlac, C.P. 55090
Ecatepec de Morelos, Edo. de México.
01-800-8499-412
Telefax: 011-525-787-9404

Loctite® Applications On Arctic Cat Snowmobiles

Loctite® RC™ 609 Retaining Compound

- Loctite® RC™ 609 is used to retain the A-arm bolts; secure nuts and bolts on the sprocket; secure the steering linkage; lock the spindle bolts; secure tie rods to the spindles; lock driven clutch bearings in place; secure the dropcase cover vent plate; lock the starter assembly in place; secure the brake disc key; and lock the ring gear onto the driven clutch.

Loctite RC 609 is a low viscosity, rapid curing retaining compound. It augments the strength of press fitted assemblies and can be used on slip fits up to .005" diametral clearance. Loctite 609 fixtures in 10 minutes on unprimed steel at room temperature. It provides a shear strength of 3,000 psi at full cure and withstands a temperature range of -65° to +300° F.

Loctite® RC™ 620 Retaining Compound

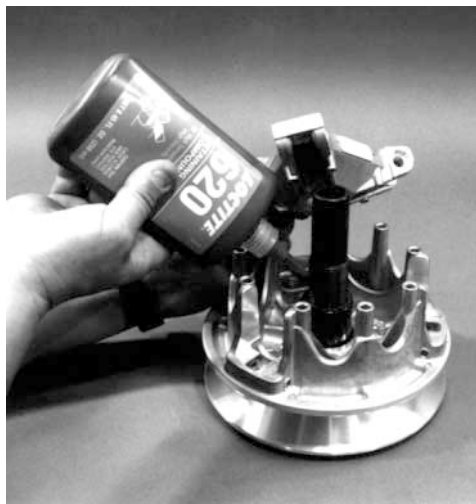
- Loctite® RC™ 620 is used to join the spider to the jam nut.

Loctite RC 620 is a high temperature, high viscosity retaining compound. RC 620 fixtures in 30 minutes at room temperature and provides a shear strength of 3000 psi on steel. It withstands a temperature range of -65° to + 450° F.

Loctite® 242® Removable Threadlocker

- Loctite® 242® is used to secure the motor mount bolts; lock the brake caliper bolts; secure the chain tensioner bolt; bond the top shaft bearing mount; lock the collar set screw; retain the ski alignment tie rod; secure the adjustable tie rod; bond the snubber and motor plate; hold the driven clutch bolt; secure the starter bearing press; lock the reverse gear assembly in place; secure the front skid shock press; lock the rear arm lock collar; secure the rear wheels; bond the front spring mount; secure the motor mounts; lock the hood hinge bolt; secure the wind plates on the driven clutch; and secure the dropcase plugs.

Loctite 242 is a medium-strength, general purpose anaerobic. Ideal for all nut and bolt applications, especially for 1/4" or larger fasteners. Loctite 242 allows for easy removal with hand tools, and withstands a temperature range of -65° to + 300° F.



Arctic Cat depends on Loctite products for many different applications on their entire line of high-performance snowmobiles. Above, Loctite® 242® Removable Threadlocker is used to secure the outer rear idler wheel bolt to the skid frame. Left, Loctite® RC™ 620 Retaining Compound is used to join the spider to the jam nut.

Loctite® 290 Wicking Grade Threadlocker

- Loctite® 290 is used to mount the front arms in position and secure the rear wheel adjuster.

Loctite 290 penetrates by capillary action and is formulated especially for pre-assembled fasteners and is also used to seal welds. It fixtures in just 3 minutes and at full cure withstands a temperature range of -65° to + 300° F.

Loctite® 380 Black Max® Instant Adhesive

- Black Max® 380 is used to bond the carb magnets to steel.

Black Max is a one-part, elastomer-modified adhesive. It bonds metal, rubber, and plastics, providing excellent peel, impact and tensile shear strength.

Permatex® Super Lube® Multi-Purpose Synthetic Grease with Teflon®

- Super Lube® is used to protect the engine brake out plug.

Super Lube lasts four times longer than petroleum based lubricants. It withstands temperatures from -45° to + 450° F.