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BULLETIN CATEGORY: Technical

SUBJECT: Gabriel® Product Benchmark – Chrome Plating

Gabriel has a heritage of being a leading supplier of quality aftermarket ride control products that meet the requirements of the professional technician and end-consumer exceeding industry standards for long-lasting performance. Our research shows that the Gabriel brand is well received with a solid reputation for quality in the marketplace.

We conducted benchmarking studies comparing Gabriel to leading competitors' shocks and struts for identical applications. Our results support what is experienced in the marketplace. Gabriel products are manufactured to be the most durable in the business.

Damper life is often determined by the robustness of the sealing system. A key element of the sealing system is proper piston rod finish. Once a piston rod corrodes it rapidly wears the seal causing the shock to leak. Our piston rod surface is coated with best-in-class chrome for the utmost in corrosion resistance and polished to ensure proper seal lubrication. Every product Gabriel manufactures incorporates a chrome plated piston rod – our largest competitor cannot claim this and utilizes raw steel rods on most of their shocks across their good-better-best lineup.

Chroming the piston rod increases product shelf life. Moisture in the storage environment will cause unprotected steel surfaces to corrode over time. It also prevents "lot rot" which results when a vehicle is parked for an extended period of time; especially in humid climates. An un-chromed rod must be cycled over the entire operating range (stroke) in order to keep it lubricated and prevent corrosion. Chroming the piston rod provides a more consistent wear surface with the optimum amount of lubrication at the contact surface to produce longer product life. The end result – increased customer satisfaction.

Chrome plated rods increase product shelf life. Moisture in most storage environments will cause unprotected steel surfaces to corrode over time. Figure 1 shows a competitive shock rod that oxidized in the box on a retailer's shelf.

Chrome plated rods prevent "Lot Rot" which results when a vehicle is parked for an extended period of time. The damper must be cycled if

the piston rod is to remain lubricated thereby preventing corrosion. Premature seal failure will result causing the damper to leak (see Figure 2).



FIGURE 1



FIGURE 2

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Shock manufacturers have attempted to reduce corrosion with a nitrocarburized piston rod material, a low-cost alternative to chrome. A leading competitor in the marketplace uses this process when the shock assembly is not equipped with a dust tube. While this does improve initial corrosion resistance, it is not as durable as chrome plating and does not offer a sufficiently lubricated surface to keep the seal properly lubricated which reduces seal life. Gabriel believes that this cost-driven compromise of longevity is unacceptable for the customer.

The Gabriel engineering team in Farmington Hills, MI subjected parts to the salt spray for 96 hours as defined by ASTM B117 which is the industry standard when developing shocks for new vehicles. After only 25 hours of testing the competitor's raw steel rod was completely oxidized (Figure 3, right). The nitrocarburized piston rod (Figure 3, middle) was already beginning to oxidize. The Gabriel chrome plated rod (Figure 3, left) exhibited no signs of rust on the rod surface.

After 96 hours of oxidation the Gabriel chrome plated rod (Figure 4, left) retained its smooth chrome finish guaranteeing a long service life. The nitrocarburized piston rod (Figure 4, middle) is oxidized and would no longer function.

Gabriel products are manufactured to the highest standards and specifications providing consistent performance and long life. Recommend the ride control supplier you can trust to your customers, recommend Gabriel.



FIGURE 3



FIGURE 4

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