Technical Service Bulletin

Recommended Brake Fluid Replacement for Trailers

Tie Down Engineering recommends a preventative maintenance program that includes the brake fluid being changed every 12 months for marine trailers. The brake fluid should be changed at a minimum every two years for marine trailers and three years for utility trailers.

Brake fluid is one of the most neglected fluid in vehicles today, yet is vitally important for safe towing. Consequently, trailer owners should check the fluid in both the tow vehicle and the trailer on a regular basis. The brake fluid should be changed if it is contaminated. The issue is that old brake fluid may not be safe if moisture contamination is above a certain level.

Many experts have long recommended changing the brake fluid every year or two for preventative maintenance. Their rationale is based on the fact that glycol-based brake fluid (DOT 3 & 4) starts to absorb moisture from the moment it is put in the system. The fluid attracts moisture through microscopic pores in seals and exposure to the air. The problem is obviously worse in wet climates where humidity is high and with marine trailers constantly subjected to dunking in lakes, rivers or oceans.

Contaminated brake fluid and can cause corrosion and pitting in caliper pistons and bores, wheel cylinders, master cylinders, steel brake lines and reverse solenoids.

DOT 5 cannot be used in trailer brake systems unless specifically stated by the actuator and brake manufacturer. DOT 5 does not absorb water, however the silicone in the DOT 5 makes the seals swell and can bind up caliper pistons. DO NOT USE DOT 5 OR SILICONE BRAKE FLUIDS IN ANY TIE DOWN ENGINEERING BRAKE SYSTEM INCLUDING INDIVIDUAL ACTUATORS, DISC BRAKES, DRUM BRAKES OR SOLENOIDS.

Silicone has several other properties that make it less then desirable for trailer use. When forced thru small orifices under high pressure, like the solenoid valves in a disc brake system, it tends to foam, generating bubbles. Bubbles in brake fluid make for spongy brakes. Silicone also tends to become slightly compressible at temperatures near its boiling point, which makes it generally inappropriate for trailers used in mountain conditions. Tie Down Engineering brakes are designed for DOT3 or DOT 4 fluid ONLY. NEVER USE DOT 5.

Water can actually cause air to accumulate in your brake lines. Brake fluid is hygroscopic. It absorbs and retains water. The problem arises when the fluid has absorbed as much water as it possibly can and becomes saturated. Brake fluid is designed to have an extremely high boiling point; however, if you subject your tow vehicle and trailer to excessive braking, such as a trip through the mountains, you can easily cause the brake fluid to heat up to this temperature or beyond. When the brake fluid boils, especially when there is excessive water in the system, steam is a by-product. The braking system ultimately compresses this steam and turns it into water. The air separates from the water creating large pockets of air in your brake lines.

TIE DOWN ENGINEERING • 255 Villanova Drive SW • Atlanta, GA 30336
www.tiedown.com (404) 344-0000 Fax (404) 349-0401

072511,C1204