Modification to Modern Hydraulic Disk Brake Assembly to Improve Sliding Pin Function

This modification was discovered while trying to remove a seized caliper pin on a 2008 F-250.

This pin, Ford Part #HB1, (See Picture #1) was seized into the caliper mounting bracket, Ford Part #2B292, See Picture #1) and was not able to be removed. The caliper mounting bracket housing the bores for the sliding pins were drilled and tapped to allow high pressure hydraulic fluid to be introduced to "force" the seized pin out (See Picture #2). This would allow the mounting bracket to be reused. 10,000psi of hydraulic pressure would not remove this seized pin, therefore, a new caliper mounting bracket (Ford Part #2B292), and new sliding pin (Ford Part #HB1) had to be ordered at a total cost of $115.00.

The hole that was drilled and tapped in communication with the pin bore for removal of the pin (See Drawing #4), although intended for a removal purpose, was also an excellent method of allowing periodic injection of lubrication to the pin/bore. With the ability to inject lubrication routinely, the pin is not allowed to become frozen by dirt and outside debris. Lubrication can be injected through the wheel without dismounting (See Picture #3). Currently the only method to maintain the pin lubrication is to fully disassemble wheel and caliper assembly to allow access to remove, clean and lubricate the pin. Although a simple solution, this has not been implemented in new, or replacement parts.

When the caliper sliding pins becomes seized (one or both), the brake assembly is not allowed to float (center) when pressure is applied by the pistons. This causes only the piston side pad to contact the rotor. Uneven pressure is then applied to the rotor/bearing assembly causing poor braking performance and rapid wear to one pad and rotor face. This condition is not easily discovered as the piston side pad is normally the inner, while the outer (that is visibly inspect-able) appears to be in new condition, the opposite is worn severely.

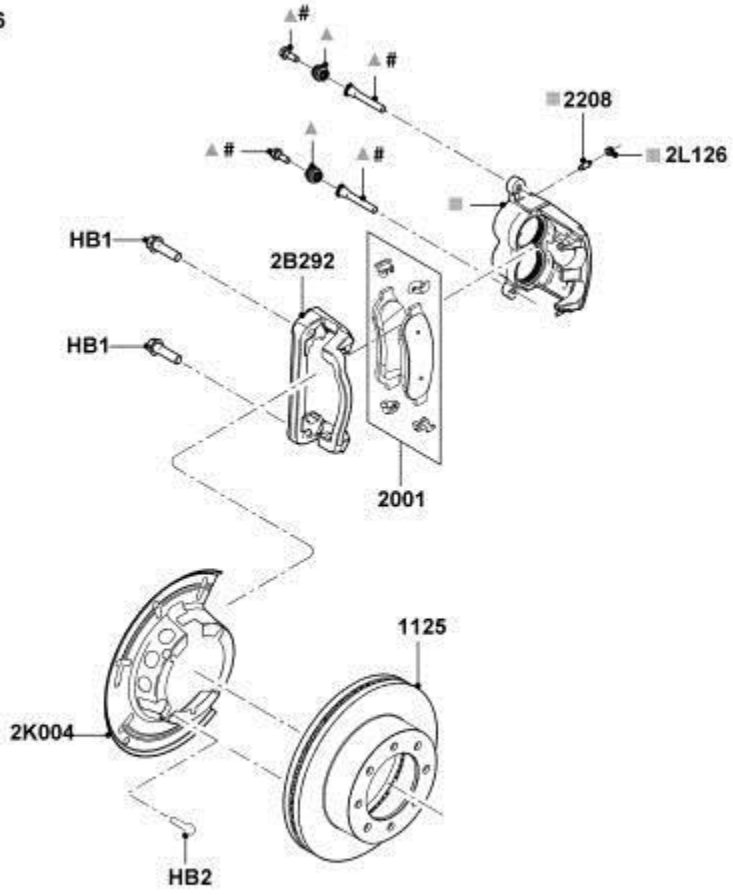
Routine injection of lubrication to the sliding pins will greatly reduce seized caliper sliding pins, increasing pad, rotor and caliper life. Not to mention a safer and more reliable brake assembly.

Picture #1 (Ford Assembly Call Out)

■ = 2B120

= 2C150

= 2386



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Picture #2

Caliper Mount Bracket with modification completed and grease zerks installed.

Picture #3

Injection zerks are easily assessable from outside without dismounting wheels. (2008 F-250)

Picture #4

Drawing of lubrication passages in communication with pin/bores.