



## Reasons for Flex Coupler Failure

When Flex Couplings are returned on a warranty claim, the coupling is examined for signs of manufacturing defect and abuse. More times than not they show indications of abuse. There are five major causes for premature Flex Coupling failure:

1. Improper maintenance or adjustment: Due to bearing adjustment, stop adjustment, or worn shocks or air cylinders, the Wrap arms are restricted or inhibited in their movement. The Wrap coupling then has to make the adjustment and the coupling is repeatedly flexed too far, causing it to eventually fail. See the Wrap install guide for Wrap setup guidance, and call with additional questions.
  2. Wrap gets caught: Wraps can get caught on protrusions extending from the vehicle. Trailer hitches are notorious, but rear windshield wipers, spare tires brackets, bent bumpers, loose trim, body damage, roof racks, even spoilers can catch Wraps, particularly if they are not adjusted properly (see item 1). Some of these dangers cannot be totally avoided, especially in unattended express tunnels, but they can be minimized. When a Wrap gets caught, the conveyor and the Wrap equipment get into a tug of war for the vehicle. The Wrap Coupling is bent sharply and damaged while being turned by the hydraulic motor.
  3. Wrap height: This is rare, but it happens. Make sure that the Wrap frame is set high enough that the driver side Wrap core clears the higher conveyor rails by at least 2". If the Wrap is too low, it will constantly swing back and forth in a semi-circular pattern as it grabs the rails. The Flex coupling eventually wears out from the constant bending.
  4. Wrap torque: This is the most overlooked aspect affecting Flex Couplings and most common issue. At installation, the torque relief (hydraulic pressure relief) on ALL the hydraulic flow control valves on each circuit should be adjusted. If the torque is high, every time the brush turns
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on it will slam hard on the flex joint and fatigue the flex material. This pressure should be set just high enough so that the brushes never slow down at any point in their normal cycle on any vehicle, BUT no higher. This allows a Wrap or any other brush to stall when it is caught by something, greatly reducing the chance of damage to the vehicle or equipment. This parameter is very frequently not set properly at installation. Tommy Car Wash Systems offers a free operator training course to assist you with understanding the operation of the hydraulic system.