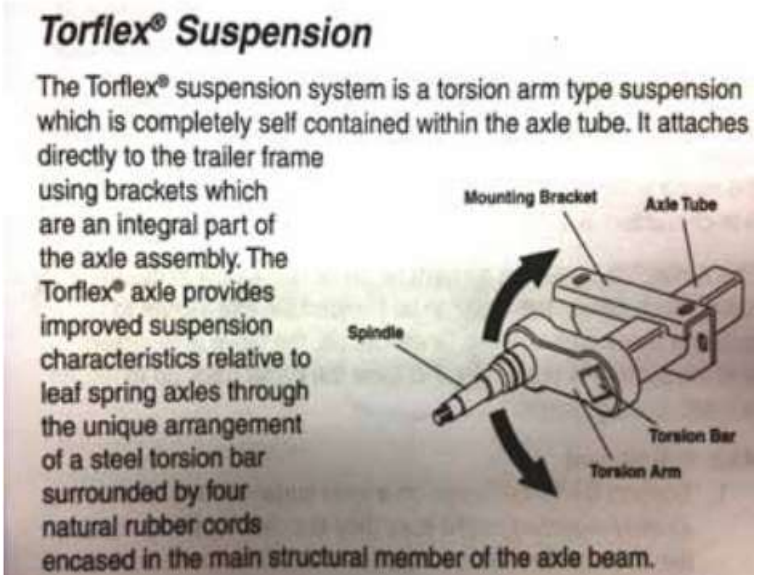
Torflex Suspension

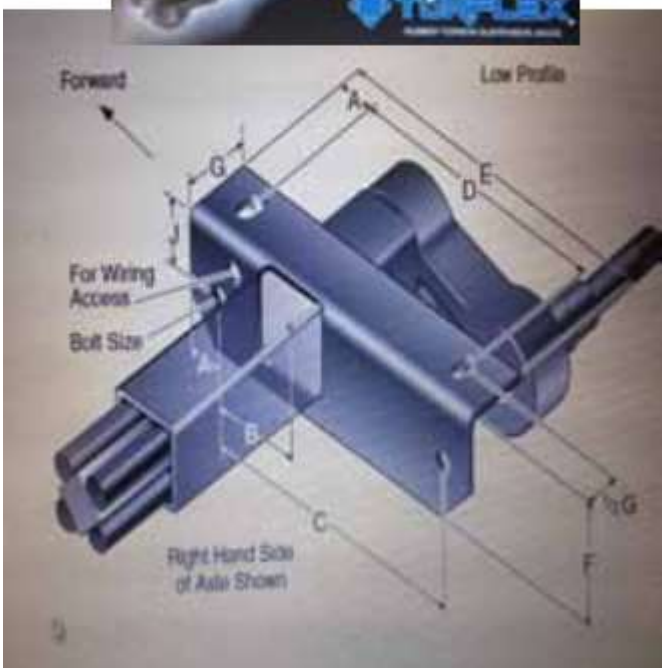
This month I wanted to cover a topic that I have received various questions about recently: rubber torsion axles and how they work. Also are they better than axles with leaf springs?

Airstream has used both types of these axles over the years, but made the switch to rubber torsion axles around 1962. Henschen Axle (Dura-Torque) was the provider of this type of axle and the switch to Dexter (Torflex) axles was made around the end of 2005.

The following info will give you a quick look at rubber torsion axles.

Cross section of axle tube and rubber spring rods





Construction

Rubber torsion axles in most cases start out as square stock tubes, just like any other axle. On a normal axle, the wheel would just slide onto a spindle and a bearing on the end of the tube - with this configuration (rubber torsion), the wheel slides onto a stubby spindle protruding from one end of a lever arm, aka the torsion arm; the other end of this short arm rides on a bearing of its own on the end of the axle tube. This allows the lever arm - and subsequently, the wheel - to rotate around the tube. This basic setup is also known as a trailing-arm suspension.

A trailing arm suspension will almost invariably give a softer and higher-quality ride than any solid axle, owing primarily to the fact that movement at one wheel doesn't have to affect the other. This is an important consideration if you do a lot of towing over dirt, grass with hidden potholes and in inclement conditions, since the independent suspension will keep your trailer stable and planted on the road.

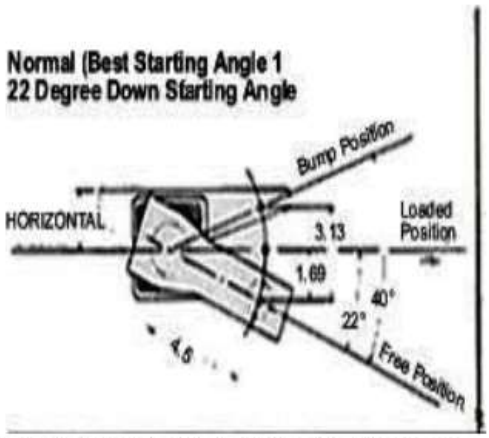
Rubber torsion trailer axles are more compact than other types of trailer axles, so they save space, weight and are lower to ground. Common leaf spring axles are generally larger, heavier and put chassis farther off of the ground.

Softer ride

The rubber elastomer springs (cushion and support is provided by four approximately 12″ long round rubber rods of ap- proximately 1/2″ diameter inserted between the flat side of the suspension arm and the corners of the square axle tube) used in torsion axles help smooth out the ride and absorb a lot of the bumps. Torsion axles are also quieter than leaf spring axles, which tend to squeak every time the spring bounces.

Flat tire- If you have a double axle trailer, you can pull short distances at low speed without a wheel on one axle.

Airstream axles have a 22 degree down start angle.



Portions of above from Dexter Axle and EHow.com