

# Standard Car Truck Company

## BARBER SPLIT WEDGE

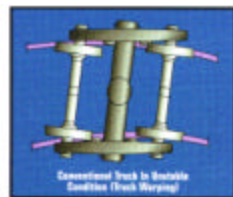
The Split Wedge was designed to improve the performance of the conventional 3-piece, variable damped freight car truck. Standard Car Truck Company has been an integral part in the growing success of this product. As the original manufacturer of the Split Wedge, we continue to develop and enhance this product through extensive testing and analysis.

### KEEP IT SIMPLE



The goal of Split Wedge is simple. Truck shear stiffness is necessary for optimum freight car truck performance. This is a measure of the frictional resistance a 3-piece truck has to warping. In simpler terms, keep the truck square.

The drawings below show the difference between squared and warped trucks:



When trucks and wheels are kept square and in close alignment with the rail, rolling resistance is minimized to the lowest possible level. The optimum design goal is to increase the moment before a truck warps. Several undesirable performance conditions occur from the dynamics of a rolling truck that has little shear stiffness.

Each condition has a dramatic effect on the premature wear and cycle life of a truck and its components. Barber's Split Wedge is designed to minimize those conditions.

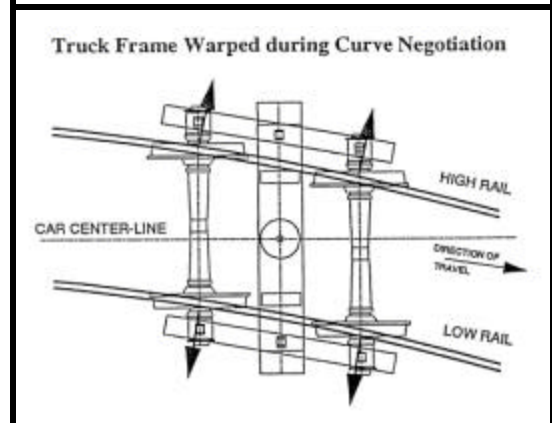
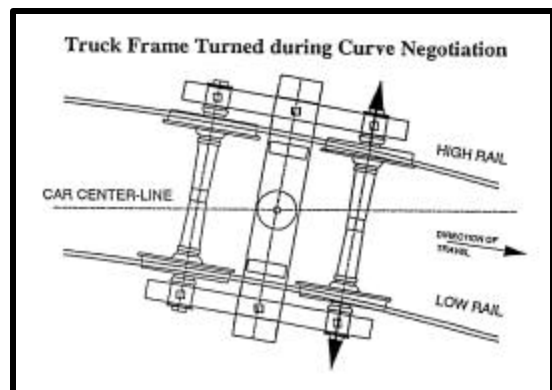
### DEFINITIONS

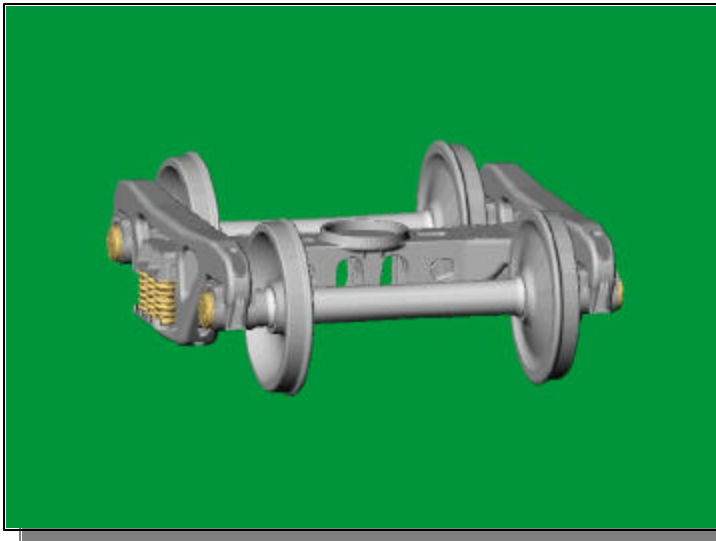
*Warp Moment*, a common benchmark in the rail industry, measures truck shear stiffness, or its resistance to warping.

*Truck hunting* or *weaving* is a rapid oscillation occurring in which the wheel flanges zoom alternately between contact with one railhead to the opposite one. The result is truck instability occurring at high speeds.

Excessive lateral movement of the trucks from the centerline of the car causes *rock-and-roll*.

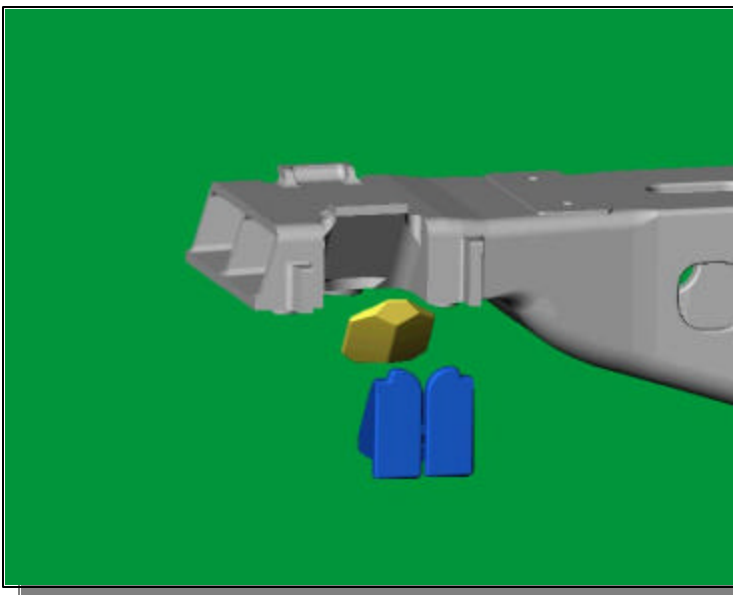
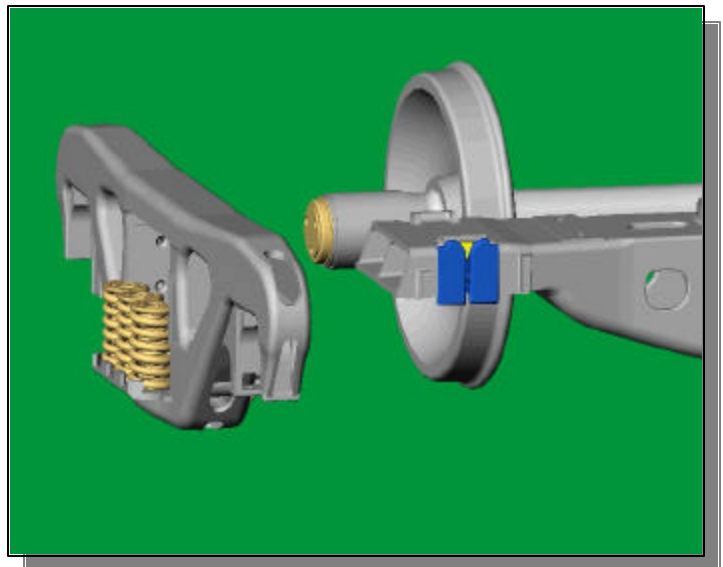
*Angle of attack* refers to the degree of alignment between the flange of the wheel and the rail, especially on curved track. The stiffer the truck is (higher warp moment), the lower the angle of attack and lower rolling resistance going into and coming out of curved track.





The Barber Split Wedge is designed to provide superior high-speed stability and damping. They are available for the S-2-B, S-2-C, S-2-D and S-2-HD trucks. The Barber Split Wedge delivers this kind of performance through a combination of design and materials optimization.

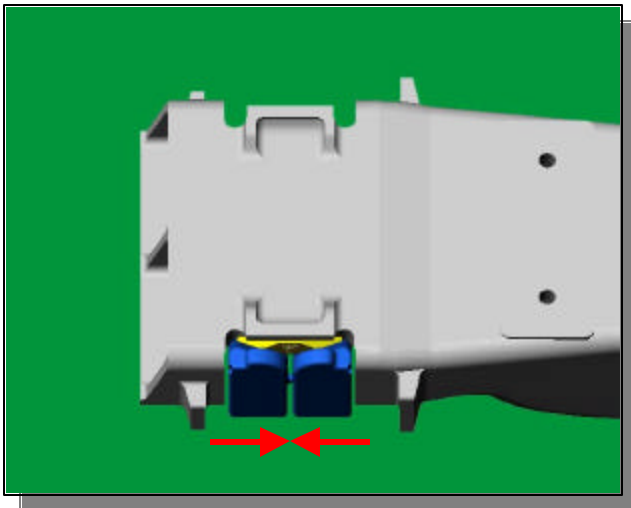
The photo (right) illustrates how the Barber Split Wedge is positioned in the pocket. Combined with our side springs and wear plates, it offers the best possible combination of economical suspension damping components.



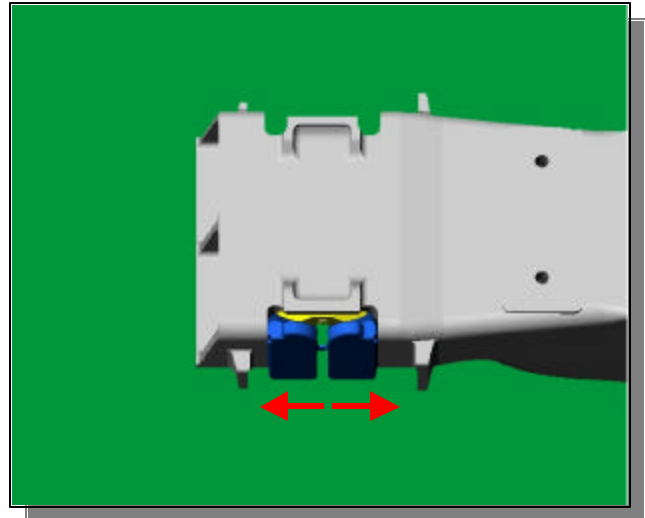
The Barber Split Wedge is composed of a pair of mirror image, multiple angled wedge halves set against a split-angle wedge insert. The wedges, made of ductile iron combine specifically with our carbon steel wear plates to provide the highest durability for excellent ride quality and extended asset life. The pocket insert material was selected for its welding compatibility with Grade B and C castings and its high durability when combined with friction iron.

## HOW IT WORKS

The multiple angles of the wedge halves bear against the pocket insert to force the wedge halves toward the side walls of the pocket and against the column of the side frame. The dual wedging action of the Split Wedge greatly increases the truck's warp friction moment while maintaining optimum damping characteristics. Since an increased warp friction moment means increased inter-axle shear stiffness, truck stability performance is greatly improved. This, in turn, means less vibration, resulting in less wear to all truck components.



**PRE-LOADED POSITION**  
(Uncompressed)



**LOADED POSITION**  
(Lateral compression)

Contact your Standard Car Truck Company sales representative for more information about the proven benefits of the Barber Split Wedge. Use only original Barber parts for the highest quality in truck component performance.

