



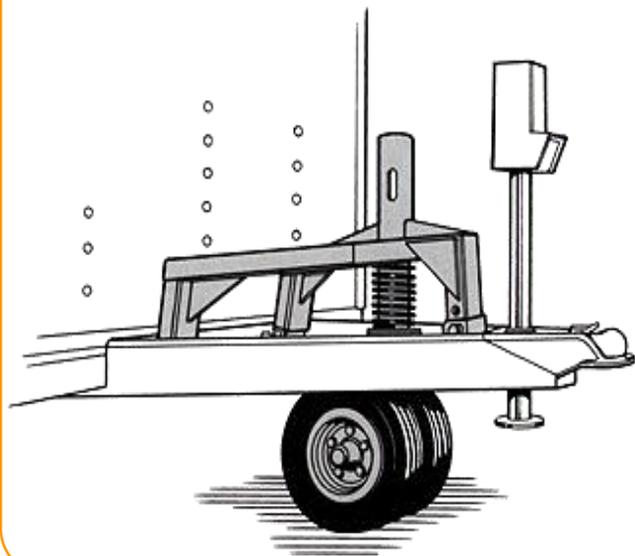
TUFF TOW

Trailer Towing Solution

*Nothing Beats The Power Of
Oxpower™ Towing*

Product Information

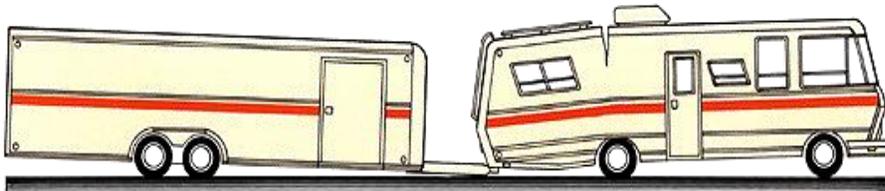
Installation Instructions



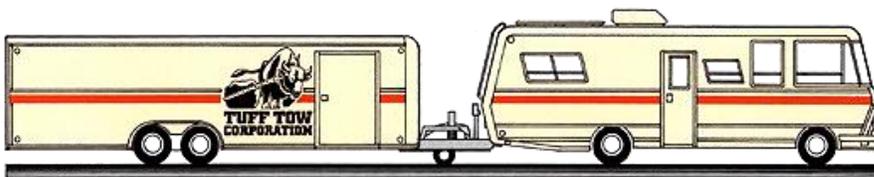
What could be wrong with the way I'm towing now?

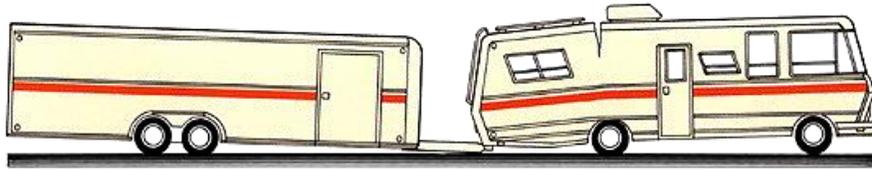
What we may not realize is that we are dramatically overloading the weight capacity of the rear tires of tow vehicles, dangerously so! Think about it. If the rear tires are overloaded, this means the front tires are under loaded. What do you think would happen if you had to stop in an emergency?

Been there, done that.
No thanks... Never again.



If you're one of the many who tow with a truck or motor home, you need to understand what's going on beneath you. A load of one thousand pounds, as applied to the ball hitch is equivalent to a load of nine thousand pounds applied to the weakest point of the motor home frame. This amplified load to the frame occurs during the bounce and rebound over bridges. If you have not had frame, chassis or body damage yet, you will. It's only a matter of time.





WARNINGS:

***THERE ARE DANGERS YOU MAY NOT UNDERSTAND
Excess tongue weights are dangerous,
take care and use caution!***

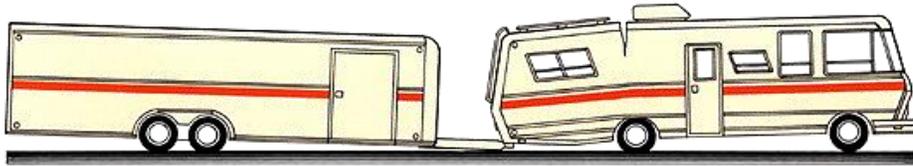
Most tow vehicles generally have no problem with pulling weight, but when it comes to tongue weight, that's another story. A light-weight trailer may be of help when it comes to reducing your overall pulling load, but it has nothing to do with helping to reduce the actual tongue weight. Once a trailer is fully loaded, the original empty construction weight is relatively insignificant, especially as it applies to the load on the tongue.



Misconceptions:

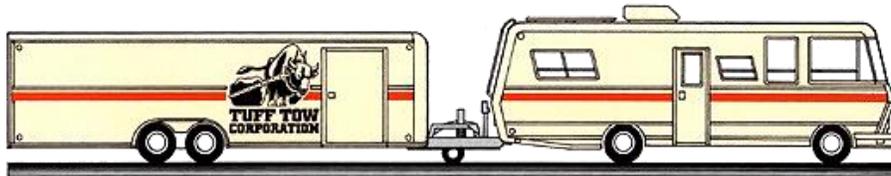
Air bags will reduce the load on the frame.

The use of air bags or air suspension in any form, will not reduce the actual tongue load. It would be the same as if you place air bags between your feet and your bathroom scale to make you weigh less.



Reinforcing the frame of the tow vehicle from the rear axle back so it will be able to withstand the load.

Actually, this makes the problem worse. By trying to strengthen the original frame, the load is now concentrated to a single point directly under the rear axle instead of being spread over its entire length. Now in place of the entire frame bending, the load concentration breaks the frame at its weakest point.



The frame on my vehicle is a heavy duty truck frame and it will never break.

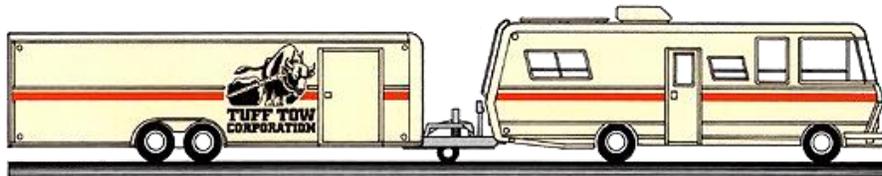
It's a simple matter of leverage. When a load is applied to one end of a lever, the trailer hitch, and the lever has a center point, a fulcrum or the rear axle, and the other end of the lever, the front wheels, must go up. If this is true, then that means the weight on your front wheels are lessened by the same amount applied to the rear wheels. This simply means that your stopping and steering power has been reduced substantially.

Facts:

The majority of tow vehicles in use today are totally adequate for pulling our loads, and the trailers we use are also constructed good enough.

The problem is US!

When fully loaded, the tongue weight of the majority of the trailers on the road today exceed a static weight of 2000 pounds. If a static load of 2000 pounds is put on a scale, the scale would read 2000 pounds. Now suppose you lift that 2000 pound weight to a height of three feet and then drop it onto that scale. The weight would FAR exceed 2000 pounds. That dropped, amplified load is exactly what the rear of your tow vehicle will see when bouncing down the road, not simply the static weight!



Solution:

TUFF TOW gets to the heart of the problem and fits into your trailer tongue. It is made up of a suspension and tire system that is in contact with the road surface at all times. Tuff Tow will easily handle static weights in excess of 2000 pounds. If at this point you have not talked with someone that tows with Tuff Tow, do so soon.

Do it before you have an incident of frame damage, or worse, and wish you had taken the time to ask someone about **TUFF TOW!**

Contact **TUFF TOW** to find a dealer near you.
www.TuffTow.com

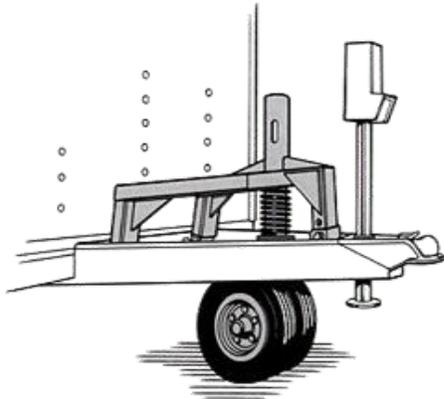
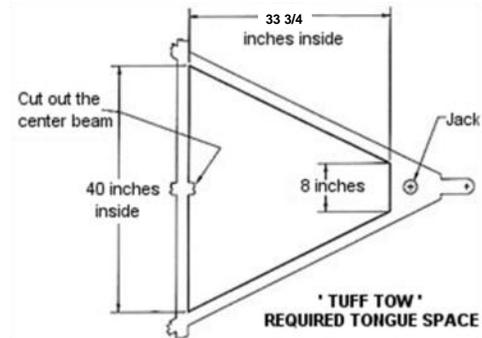
Frequently Asked Questions

How Does Tuff Tow Work?

Tuff Tow is an assembly which mounts up into the tongue area of the trailer. It consists of a pair of wheels, spring suspended on a spindle which turns as the vehicle turns. It is vibration dampened by a pair of heavy duty steering stabilizers and will support weights in excess of two thousand pounds!

How do I know if it will fit my trailer?

Your trailer tongue must be forty (40) inches wide at the trailer front surface between the frame rails, and have thirty-three and 3/4 (33 3/4) inches clearance from the front face or main front cross member to the "jack" cross member.



Are there two wheels or just one?

There are two wheels. It looks very much like the front landing gear on an airplane.

Are both the wheels in contact with the ground at all the time?

Both wheels are in contact with the surface of the road at all times.

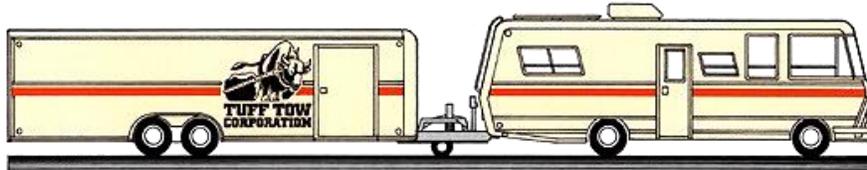
How much weight will the unit support?

Two thousand pounds. As an example, if your trailer tongue has a weight of twenty-three hundred pounds, Tuff Tow has adjustments so that 2000 pounds can be applied to its wheels and the remaining three hundred is applied to the hitch.



How do you adjust for the correct weight?

First get Tuff Tow completely installed per the installation instructions. Then with the trailer fully loaded, raise the jack off the ground and measure the height from the road surface to the centerline of the hitch receiver on the trailer. Now, you measure the height from the road surface to the centerline of the ball on your tow vehicle. Your goal is to have the trailer one and a half inches lower than the ball on the tow vehicle. This results in approximately three hundred pounds on the back of your vehicle and the remainder on Tuff Tow's wheels.



Do I still have to use my equalizers?

They are no longer of "functional use". If you wish to keep them on, you can, but minimize the tension. Check with local law enforcement to find out if they are required by law.

Will I notice a difference in how my rig will tow?

There is no comparison. There is an enormous change in the overall ride and comfort. The bouncing and rebounding over bumps and dips disappears, along with trailer sway. The most important factors are safety of hauling, no matter what you pull with, because your front tires are now safely on the ground. And the economy of knowing you are no longer damaging your tow vehicle; truck or motor home.

How does the back-up pin work?

When backing up, you are required to install the pin into the spindle post. This will keep the tires from turning but they will still rotate. Because the tires require a pair of steering dampers, which prevent tire shake much like grocery cart wheels, the spindle assembly is not allowed to turn directionally. Some degree of scuffing will be noticed but it is minimal and will not cause any undue tire wear; use of the spindle retractor will prevent the scuffing of the tires. The overall problem with pulling any type of heavy weight, is what you encounter while going forward. The inconvenience of the pin is no worse than what we used to have to do to the old trailers with the surge brakes, stop and put a pin in before backing up.

Spindle Retractor

The latest enhancement to TUFF TOW

The Spindle Retractor handle is placed in the spindle tower portion of the main-frame and lifts the spindle and tire assembly off the ground to aid in placing the backup pin.

We are pleased to announce this enhancement. We appreciate the overwhelming feedback from our long time customers. The enthusiasm for this enhancement proves this is a key addition to our product.

If you own a TUFF TOW™
Call your Tuff Tow dealer
to order a retro fit kit.



Never leave the back-up pin or the spindle retractor in the TUFF TOW™ while driving forward.

Always take CAUTION to make sure that the tires are properly inflated to 100 psi, securely tightened in place and bearings lubricated before use.

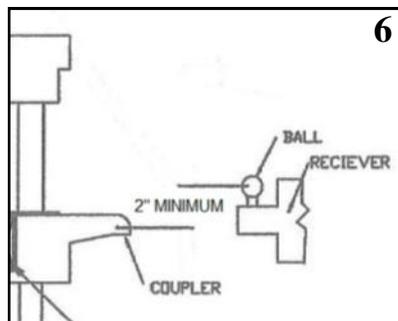
Insure the spindle and spindle tower are perpendicular to the ground to allow the spindle to free float inside the tower and not bind while towing.

Grease spindle every one thousand miles. We recommend Lucas Oil Red N Tacky Grease or Amsoil Synthetic Polymetric Grease NLGI #2.

Trouble Shooting Checklist

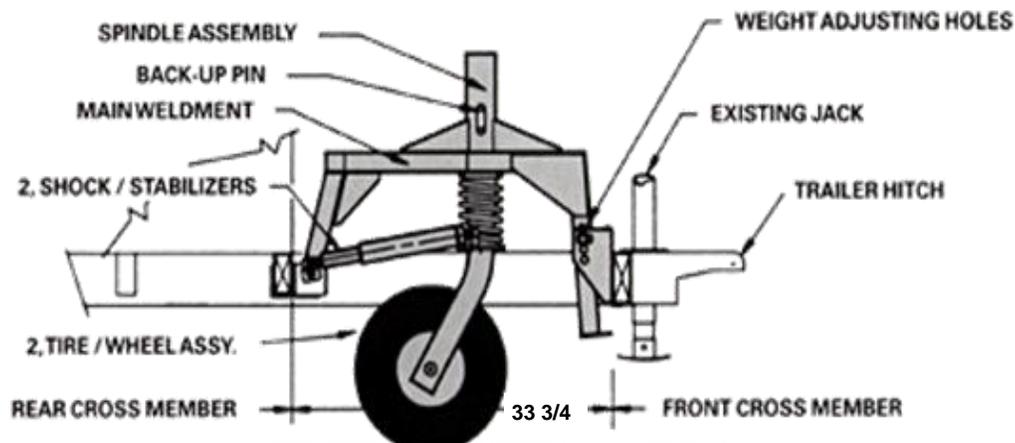


1. Park trailer on level surface and block trailer tires.
2. Detach tow vehicle and retract tongue jack.
3. Check if Tuff Tow™ is level front to back (fig 1) and side to side (fig 2). Ensure that the spindle is perpendicular to the ground.
4. Check spring for coil bind. Spring should measure 8-9 inches. (See fig 3)
5. Adjustments can be made by raising or lowering unit in the front and rear mounting brackets (see fig 4). Ensure after adjustments that the unit is still level.
6. The unit should appear level. See spindle tower and side of building in fig 5. They are parallel. The spindle should move freely inside spindle tower; perpendicular to the ground.
7. Ball on tow vehicle should be 2—2 1/2 inches above coupler on trailer (fig 6). Adjust receiver on tow vehicle up or down, do not adjust trailer up or down. When switching to a different tow vehicle, check receiver ball height.
8. Questions? Call 218-454-8833 for exceptional customer service or email pictures of you unit and your contact information to info@tufftow.com.



Installation Instructions

1. Raise front of trailer high enough to slide the entire Tuff Tow assembly under tongue. **WARNING!** Block wheels and place safety blocks beneath trailer tongue before proceeding. Insure that the ENTIRE trailer is level, not just the tongue. Follow steps in Fig. 1 for trailer prep.
2. Attach the rear saddle brackets, (item 3 on the parts list on page 11) as indicated on the drawing on page 10. **The parallel requirement for the top of the main Tuff Tow frame and the trailer frame is very important.** This may require the position of the trailer cross members to be relocated with regards to height. It is important to note that the nine inch long piece of plastic pipe is for set-up only and must be replaced with the coil spring supplied before highway use.
3. Now, position the entire Tuff Tow frame assembly, including spindle, tires and plastic pipe set-up spacer in place under your trailer tongue. Make sure the rear saddle brackets (item 3) have been installed correctly with shock pins in the lower set of holes. Lower the trailer around the Tuff Tow assembly, making sure that both the entire trailer and the top horizontal frame of the Tuff Tow are absolutely level with wheels firmly on the ground.
4. Once the Tuff Tow is centered and leveled within the trailer tongue, weld the three brackets securely in place, all around the bracket.
5. It is an absolute necessity that the overall criteria noted in the attached drawing be met. The measurements outlined in Fig 1 will insure the optimum performance of Tuff Tow. Under absolutely no conditions should the system be set-up with the coil spring collapsed, coil bound or not completely level.
6. Once all welding is complete, put in place the coil spring.

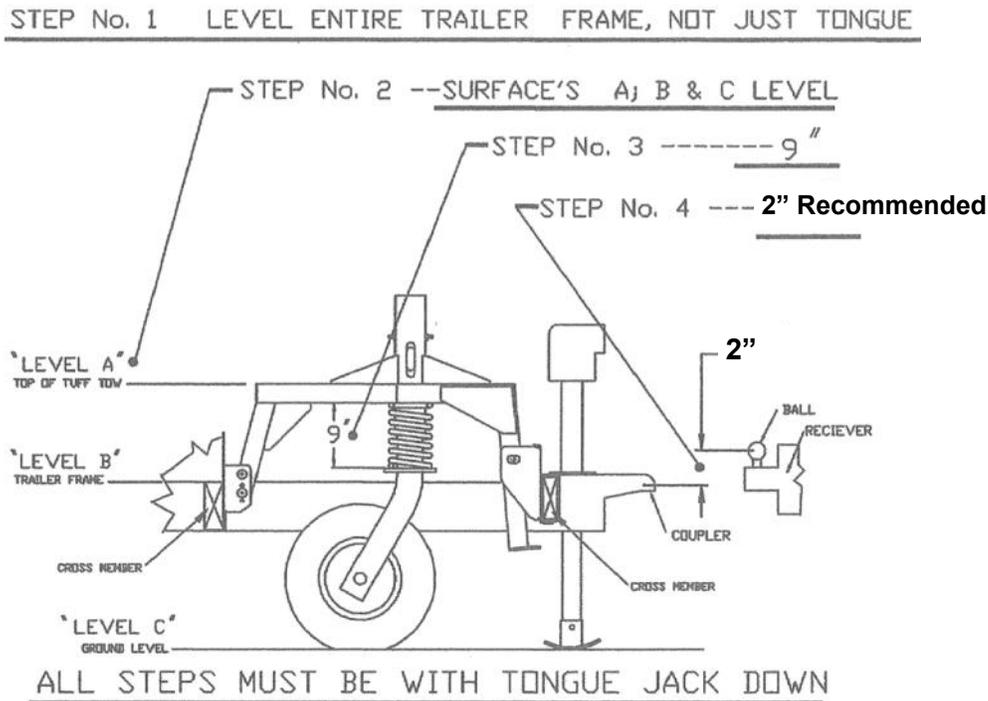


Multiple U.S. Patents

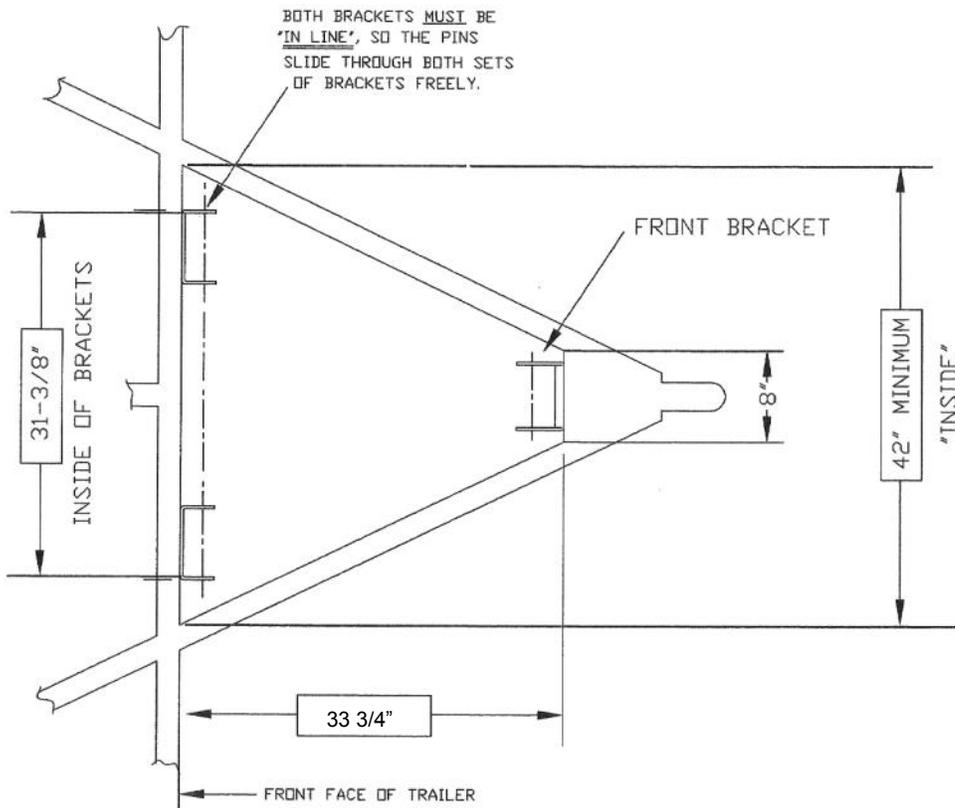
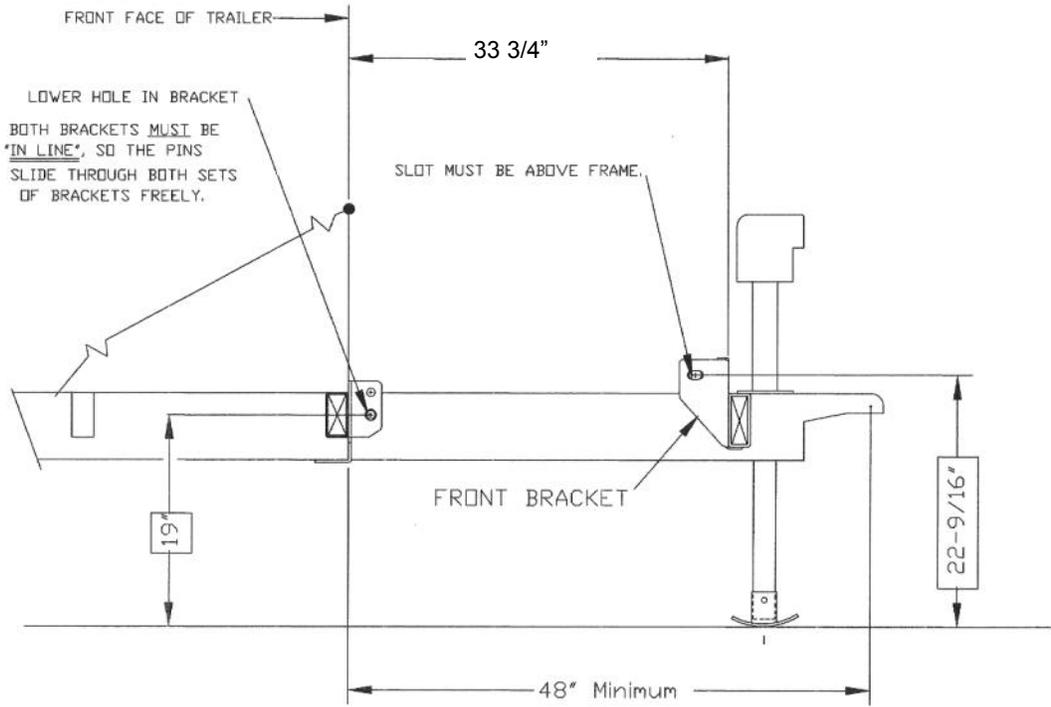
7. Mount both stabilizers into the clevis mounts, item 5, at hole "A" and on the TOP surface of the spindle arm at hole "B" as indicated on page 11.
8. Take CAUTION to make sure that the tires are properly inflated, securely tightened in place and bearings lubricated before use.
9. Caution must be used when backing up! It is mandatory that the back-up pin (item TT-11) is put into slot "D" shown, during ANY back-up movements.
10. Once Tuff Tow completely installed per the installation instructions, with the trailer fully loaded, raise the jack off the ground and measure the height from the road surface to the centerline of the hitch receiver on the trailer. Next measure the height from the road surface to the centerline of the ball on tow vehicle. The goal is to have the trailer two inches lower than the ball on the tow vehicle while maintaining the trailer being level along with Tuff Tow. We recommend this measurement to be 2 inches, some variance allows 1 1/2" minimum and up to 3 inches. This results in approximately three hundred pounds on the back of your vehicle and the remainder on the Tuff Tow wheels.
11. At this point, look to see that the spindle tower is perpendicular to the level ground. This allow the spindle to freely move within the spindle tower without binding. Use the adjustment holes where the mainframe attaches to the brackets on the trailer to insure the mainframe is level and the spindle tower is perpendicular to the level ground.

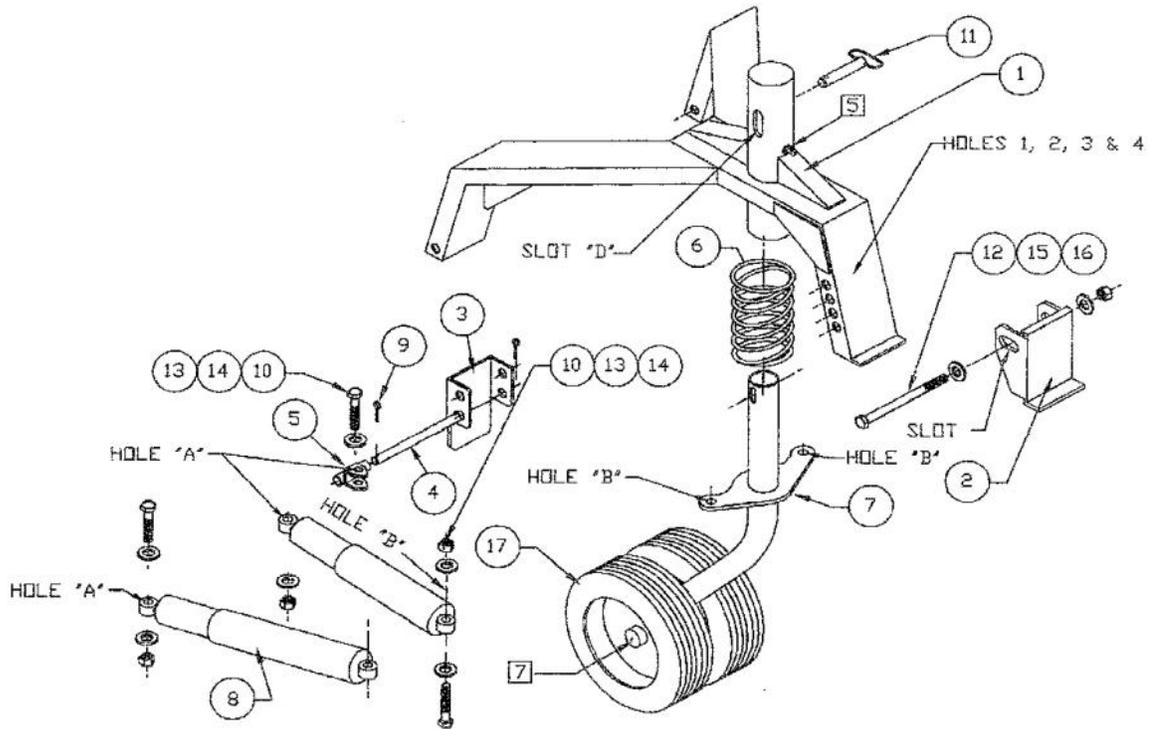
IMPORTANT!
GREASE SPINDLE EVERY ONE THOUSAND MILES
INSURE YOUR TIRES ARE INFLATED TO 100 PSI

Fig. 1



Bracket Set-Up





Item	Description	Item	Description
TT-01	Main Weldment	9*	Locking Pivot Clip
TT-02	Weight Adjust Bracket	10*	Bolt, 3 inches long
TT-03	Saddle Brackets	TT-11	Back Up Pin (also included in TT-19)
TT-20	Mounting Bracket Set (TT02 & TT-03)	12*	Bolt, 7 inches long
4*	Rear Pivot Pins	13*	Flat Washers (fits item 10)
5*	Rear Shock Mount Clevis	14*	Nut, Hex Head (fits item 10)
TT-06	Coil Spring	15*	Flat Washers (fits item 12)
TT-07	Axle/Spindle Assembly (TT-21, TT-A2 & TT-17)	16*	Nut, Hex Head (Fits item 12)
TT-21	Axle & Spindle Only	TT-17	Tire and Wheel
TT-A2	Hub Assembly	*TT-19	*Bolt & Pin Refresh Kit
TT-08	Steering Stabilizer	TT-23	Spindle Retractor

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 INSURE YOUR TIRES ARE INFLATED TO 100 PSI

*Contact your local dealer or Tuff Tow for replacement parts



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