

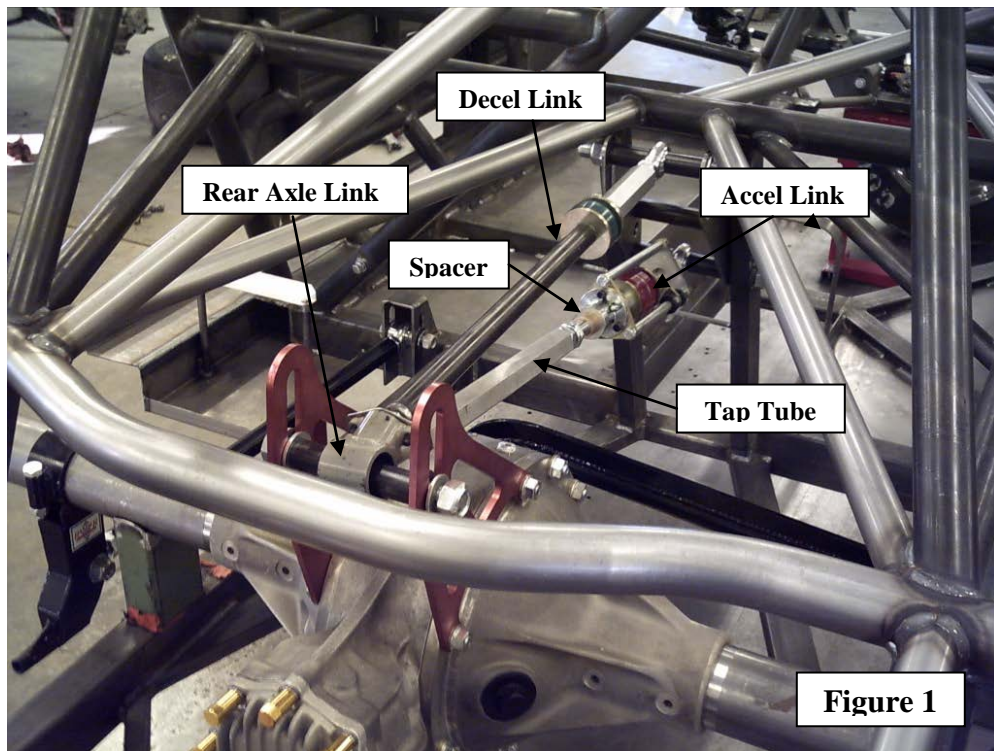


Tech Sheet: #4600 Accel Decel System

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Right Foot's Accel/Decel System (AC/DC System) utilizes a unique design that isolates deceleration and braking forces and acceleration forces through the use of two separate link rods. The **Accel (lower) Link** rod is loaded (pulling force applied) while the car is accelerating. The **Decel (upper) Link** rod is loaded (pushing force applied) while the car is braking and decelerating. The operating angles of the link rods are individually adjustable. This permits you to tune the forward traction and corner exit characteristics separately from the corner entry and deceleration and braking characteristics. The AC/DC System improves performance on all types of race tracks from flat to high banked configurations. This system has provided the winning edge to racers across the country.



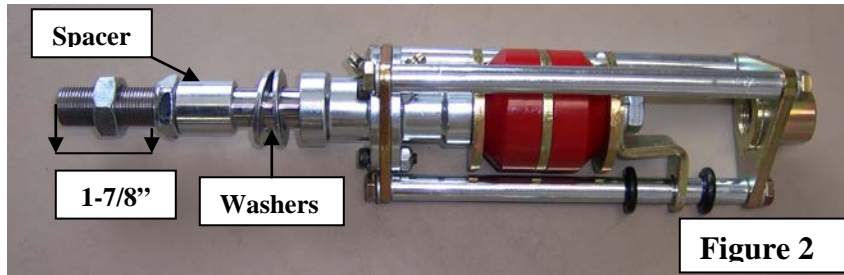
The AC/DC System is easily installed in place of the top link on new and existing chassis. To install the system proceed as follows

1. Block your car at loaded ride height with the rear shocks disconnected from the rear end. Position the rear end so the pinion is at its' normal operating angle. It may also be helpful to remove the drive shaft to have additional room to work in.
2. Remove your cars existing top link and measure the rod end center-to-center length of the link. Write this measurement down.
3. A length of $\frac{3}{4}$ "-16 threaded tap tube with a R.H thread on one end and a L.H thread on the other end is required to connect the rear axle link to the **Accel Link**. Tap tube is not provided with the AC/DC System. Using the table below cut the tap tube to the correct length. As an example; if your top link measured 26.5" use a tap tube 8" long.

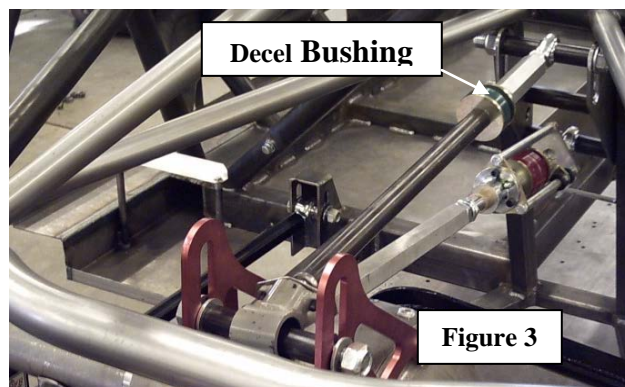
Tap Tube Table

22.5" – use a 4" tube	25.5" – use a 7" tube	28.5" – use a 10" tube
23.5" – use a 5" tube	26.5" – use a 8" tube	29.5" – use a 11" tube
24.5" – use a 6" tube	27.5" – use a 9" tube	30.5" – use a 12" tube

4. Connect the tap tube to the rear axle link and the **Accel Link** as shown in the Figure 1. When adjusting the length of the tap tube on the **Accel Link** position the shaft of the Accel controller so no shaft is showing between the travel indicator and the red poly bushing and back-up washers. When set up properly the spacer and washers are free to move back and forth on the **Accel Link Shaft** as shown in Figure 2. The $\frac{3}{4}$ " nylock nut on the shaft of the **Accel Link** should not be adjusted. The correct measurement from the end of the shaft to the face of the nylock nut is 1-7/8".



5. Mounting brackets for the AC/DC System must be purchased separately. Brackets are available for Hamke, Howe, Lefthander, Port City and RanderCar chassis. Please contact us if you need brackets for another brand of chassis. Typically the AC/DC System mounting bracket(s) should be attached to the outside of your cars' existing top link bracket(s). This will allow you to re-use the existing spacers. Note: On Port City and Lefthander chassis you will have to drill additional 5/16" mounting holes to attach the new brackets. When drilling is required the mounting brackets will have pilot holes to use as drill guides. 5/16" Gr 5 or Gr 8 fasteners are adequate for attaching the Port City and Lefthander brackets.
6. Remove a rod end from your car's existing top link and install into the **Accel Link**. Bolt the **Accel Link** to the front chassis mount and the **Rear Axle Link** to the mounting brackets on your car's rear end.
7. Loosely attach the rod end of the **Decel Link** into the front mount. Measure the distance from the center of the rod end to the face of the nut on the ball stud on the rear axle. Cut the 1" OD silver tube to length to fit in the measured dimension.
8. Install the **Decel Link** into the car as shown in Figure 3. When the **Decel Link** is installed correctly there should not be any free-play between the poly bushing and the washers in the **Decel Link**. Adjust the free-play by tightening or loosening the $\frac{3}{4}$ " nylock nut on the **Decel Link Shaft**.



9. Set the **Accel Link** at 8° to 10° downward angle (to the front). Set the **Decel Link** at 2° to 6° upward angle (to the front). Our recommended operating angles are a starting point. The optimum operating angles for your car can only be determined thru testing. Cross weight, left side weight, rear weight and etc. are all factors which affect the optimum operating angles needed by your car. In testing you may find your driver is comfortable with an operating angle beyond our base recommendations, such as an 11° **Decel** angle or a 12° **Accel** angle.
11. Install any parts that were removed and tighten all fasteners.
12. After reconnecting the shocks to the car check the pinion angle of the rear end. If needed reset the pinion angle to the chassis builders recommended operating angle. If your chassis builder does not have a recommended pinion angle 3° is a good starting point. The pinion angle is adjusted by using the tap tube to lengthen or shorten the **Accel Link**. Recheck the **Decel Link** adjustment whenever the **Accel Link** adjustment is changed.
13. Recheck the rear ride heights after adjusting the pinion angle. Pinion angle adjustment may cause the ride heights to change.
14. After installing the AC/DC System, with the car in a static mode, it may appear the system is binding up the suspension. Once the car is on the track the suspension will free up. As the car accelerates and the pinion tries to rotate upward the rear end will exert a pulling force on the **Accel Link** and compress the **Accel Bushings**. As the car decelerates and the pinion tries to rotate downward the **Decel Link Bushing** will be compressed. As the **Bushings** are compressed and decompressed the car will free up. If you push down on the back bumper and the car goes down freely you have something installed wrong. Go back through the installation procedure.
15. The system has a travel indicator. Typical travel is ¾" on acceleration and 3/8" on deceleration. Travel can be adjusted by changing the durometer, or hardness, of the poly bushings (as discussed below).
16. The system can be adjusted to meet car or track conditions.
 - * Increasing the downward angle of the **Accel Link** will tighten the car on acceleration. Raising the link will loosen the car on acceleration.
 - * Increasing the upward angle of the **Decel Link** will tighten the car going into the corner. Lowering the link will loosen the car.
 - * On banked tracks, increasing the angle between the **Accel Link** and the **Decel Link** will load the tires in the middle of the corner helping to steer the car thru the middle of the corner.
 - * Right Foot Performance has a large selection of poly bushings available which can be changed to fine tune the system. Bushings normally are Yellow – soft, Blue – medium, Red – hard and Tan – very hard. For example, a car with a low HP engine or small tires may want to run blue bushings in the **Accel Link**. It is possible to mix bushing hardnesses in the **Accel Link**. The Tan – very hard bushing is typically only used in high HP late models and road race cars.
 - * If the track is rough and the system seems to be upsetting the car try running softer bushings.
 - * Under braking the **Decel Link** pushes the tires into the ground and tries to lift the chassis. Some drivers misinterpret the chassis lift as the car being loose when it actually is not.
 - * As discussed above the **Decel Link** will load the rear tires under braking. Because of this you can usually run more rear brake bias in a car.
 - * We recommend you adjust your bar angles first and then fine tune the system (if needed) by changing the poly bushings.
 - * Always recheck the rear ride heights after adjusting the angle of the **Accel Link**.

17. On most cars it is difficult to make “at the track” adjustments of the system components. To make adjustments in the pits do the following:
- * With the driver in the car position the car so it is on level ground with a tire blocked so the car can't roll.
 - * Place a piece of tape on the center edge of one of the rear fenders. Draw a line or mark on the tape.
 - * Measure from the mark on the tape to the ground as shown in Figure 4. Write the measurement down.
 - * Position a jack under the axle tube or trailing arm mount. Raise the car and remove the rear tire.
 - * Lower the car on the jack so the distance from the mark on the fender to the ground equals your previous measurement.
 - * Place a jack stand or blocking under the car to make it safe to work under.
 - * The car is now at loaded ride height and the **Accel/ Decel System** can be adjusted.
 - * After making adjustments install the tire, remove any jack stands or blocking, lower the car and you're ready to race.



18. The **Accel/Decel System** can be raced when using spring or biscuit bars in the right rear and left rear bumps stops.

Feel free to call Right Foot Performance Products with questions at (920) 832-2322 or email us at rightfootpp@sbcglobal.net.

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