

The following information is to help you make a selection of axles and running gear from our wide range of possible choices; or call your branch and have one of our salespeople assist you in choosing the right products.

## How to Select Axles and Running Gear

### 1. How to Determine the Gross Vehicle Weight (GVW)

When building a trailer, the total Gross Vehicle Weight (GVW) must be determined in order to select the right axle or axles for the application. GVW includes the weight of the empty trailer and the weight of the intended cargo. (Example: 2,000 lb. empty trailer weight + 8,000 lbs. cargo = GVW of 10,000 lbs.)



### 2. How Many Axles?

After determining the GVW, the number and capacity of the axles must be selected. For example, if you want 10,000 lb. GVW and want tandem axles, the minimum required capacity is 6,000 lbs. per axle.

### 3. Brakes?

First, determine if you want brakes on each axle. Most states require by law that at least one axle has brakes. Some states require that all axles have brakes. To determine how many brakes are necessary in a state, contact the local Department of Motor Vehicles. Second, determine what type of brake you prefer: Electric, Hydraulic Single-Serve, Hydraulic Free-Backing, Hydraulic Duo-Serve, Hydraulic Disc or Air "S" Cam Brakes.

### 4. Which Type of Spindles Are Going To Be Required?

*Straight spindles* are used mostly when the bed is over the tires or when low ground clearance is not required. Examples are flat beds, pull-type utility trailers, etc.

*Drop spindles* are used when the lowest possible ground clearance is desired. Examples are Livestock and Horse Trailers, Car Haulers, Enclosed Cargo Van Trailers, etc.

### 5. What Are the Spring Centers?

Spring Centers are the CL (centerline) measurement of the Spring Mounting Pads on the axle. Spring centers are usually matched to the approximate frame width of the trailer.

### 6. Which Bolt Pattern?

The Bolt Pattern of the axles can vary depending on the capacity of the axle. The Bolt Pattern also determines what type tire and wheel can be used. If there is a specific tire and wheel you would like to use, please relay that information so we can help you to determine the proper bolt pattern and axle.

### 7. What is the Length of the Axle?

The next step is to determine the length of the axle. Of the several ways and industry terms to describe this procedure, the most popular term is "Hub Face," which is the measurement from the base of the wheel stud to the base of the wheel stud on the opposite end of the axle. Another term frequently used is "Track". Track is the center of the tire to the center of the opposite tire. This measurement varies depending on what type of wheel is used, because each type of wheel (White Spoke, O.E.M., Custom) could have a different offset, changing the tire center.

### 8. Which Type of Springs?

There are two basic types of springs to choose from: **Double Eye** or **Slipper Springs**. **Double Eye Springs** are used with the shackle-type suspensions. **Slipper Springs** are the heavy duty springs used with slipper-type suspensions. Complete sets of springs and u-bolt kits can be ordered with axles.

### 9. Which Hanger Kit?

There are several Hanger Kits to choose from - single, tandem or triple for both double eye and slipper springs. Hanger Kits consist of Spring Hangers that attach to the frame, Equalizers (tandem or triple Hanger Kits), Shackle Straps (if double eye springs) and all the necessary hardware.

## How To Order Tubular Axle Assemblies

Our part numbers for axles are assigned in accordance to the capacity, bolt pattern, type of brakes (if any) and type of spindle used. When ordering axles, the following information should be helpful to you.

**EX: 20545I-ST-EZ 2,000 lb., 5 on 4 1/2" Idler Straight with E-Z Lube**

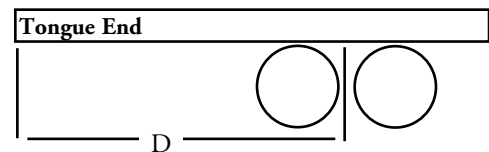
**20 / 545 / I / ST / EZ**

- 20:** The first group of digits represent the capacity (20 = 2,000 lb. capacity).  
**545:** The next group represents the number of studs and the bolt pattern of the studs (545 = 5 on 4 1/2", 655 = 6 on 5 1/2", 865 = 8 on 6 1/2", etc.).  
**I:** This tells you which type of brakes are used, if any:  
(I = Idler, E = Electric, H = Hydraulic, HFB = Hydraulic Free-Backing, DS = Disc, A = Air).  
**ST:** This tells you which type of spindles are used (ST = Straight, 4D = 4" Drop).  
**EZ:** Any other options: (EZ = E-Z Lube Spindle, SPR = Springs Mounted)



## How to Determine Correct Axle Position

1. Weigh the trailer (under wheels) "Wheel Weight".
2. Obtain "Tongue Weight" (actual).
3. Measure distance from tongue to axle, or to center between Dual Axle Set (D).
4. Determine Total Weight:  
Total Weight = Tongue Weight + Wheel Weight.



### IF TONGUE WEIGHT IS GREATER THAN 10% OF TOTAL WEIGHT

If tongue weight is greater than 10% of Total Weight, decrease distance "D" by "X" where

$$X = \frac{(\text{Tongue Weight} - 10\% \text{ Total})}{\text{Total Weight}} \text{ Times } D$$

#### Example #1 - Tongue greater than 10% of Total Weight

Tongue Weight = 1025#  
Wheel Weight = 7200#  
D = 264"  
Total Weight = 8225#  
% Tongue Weight =  $\frac{1025}{8225} = 0.1246$  or 12 1/2%  
"X" =  $\frac{1025 - 822.5}{8225} \text{ Times } 264 = 6.499"$

Move the Axle(s) toward the Tongue of the trailer approximately 6 1/2"

$$\text{New } D = D - 6 \frac{1}{2} = 264 - 6 \frac{1}{2} = 257.5"$$

### IF TONGUE WEIGHT IS LESS THAN 10% OF TOTAL WEIGHT

If tongue weight is less than 10% of Total Weight, increase distance "D" by "X" where

$$X = \frac{(10\% \text{ Total} - \text{Tongue Weight})}{\text{Total Weight}} \text{ Times } D$$

#### Example #2 - Tongue less than 10% of Total Weight

Tongue Weight = 300#  
Wheel Weight = 8200#  
D = 264"  
Total Weight = 8500#  
% Tongue Weight =  $\frac{300}{8500} = 0.035$  or 3 1/2%  
"X" =  $\frac{850 - 300}{8500} \text{ Times } 264 = 17"$

Move the Axle(s) toward the Rear of the trailer approximately 17"

$$\text{New } D = D + 17" = 264 + 17 = 281"$$

## The Protective Wiring Connector!

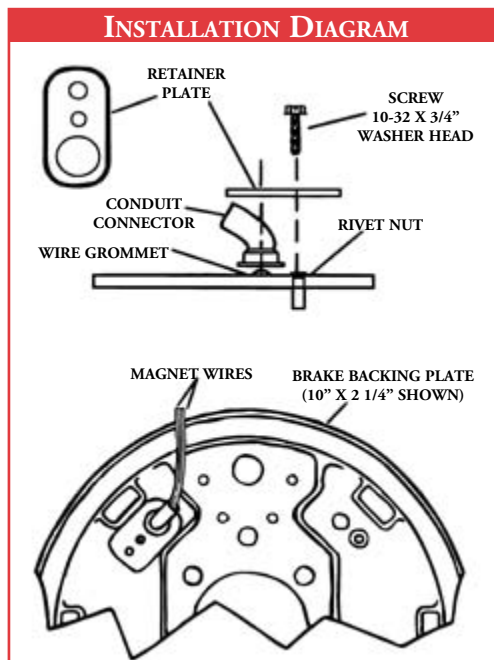


The *primary cause of electric brake failure* is a loose or corroded connection in the brake wiring. The weakest point of the wiring connection is located under the trailer, at the axle, where the magnet wires exit the brake. Over time, the outer covering of the wires will become brittle and crack/break, exposing the wires, allowing the wires to short circuit against the trailer frame, axle, or against each other.

*What is a protective wiring connector?* It is an adjustable connector that attaches directly to the brake backing plate and allows you to attach most types of 1/2" I.D. conduit or loom to protect against rocks, dirt, snow, brush, etc.

This protective wiring connector may be ordered as a kit to retrofit existing axles (part # PWC1012), or may be pre-installed at the factory on new Dexter Axle assemblies for a minimal charge.

(Note: Axles ordered with the PWC option factory installed will not have the internal brake wiring inside the axle tube.)  
Protective Wiring Connector fits only Dexter Electric Brakes.



## ABS by DEXTER AXLE

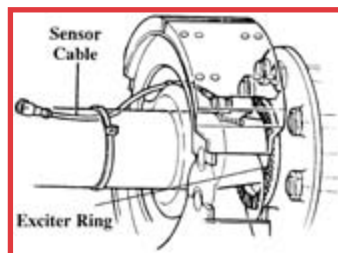
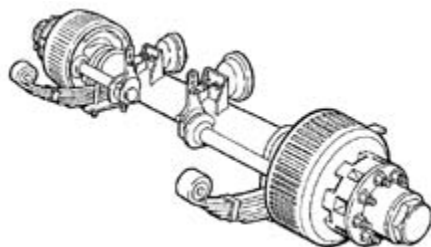
**8,000 lb thru 25,000 lb Axles can be supplied ABS equipped, with sensors and exciter rings pre-installed.**

### Regulation

All trailers with air brakes, manufactured after March 1, 1998, must have ABS in order to comply with FMVSS 571.121. This standard also applies to air-over-hydraulic brake systems.

### Required Equipment

An ABS system consists of wheel sensors that send electric impulses to an Electronic Control Unit (ECU) which pulses the service brakes in the event of wheel lockup. The minimum ABS configuration for a tandem axle trailer is a 2S/1M. This indicates two wheel sensors will be connected to and monitored by the ECU, and one modulator valve will control the service brakes. 4S/2M ABS configuration is also available from Redneck.



See pages A-17 thru A-23 and A-38 thru A-40 for axles, and L-12 for ABS control kits