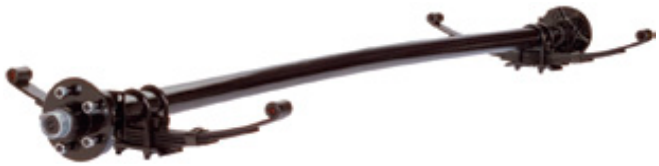
How to Select Axles and Running Gear



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, you must then determine the % of that weight to be on the axles (GAW). The number and capacity of the axles must be selected. For example, if you have 10,000 lb. GAW and want tandem axles, the minimum required capacity is 5,000 lbs. per axle.

3. Brakes?

First, determine if you want brakes. Most states require by law that trailers of specific capacity requires brakes. To determine brake requirements in a state, contact the local Department of Motor Vehicles.
Second, determine what type of brake you prefer: Electric, Hydraulic Uni-Servo, Hydraulic Free-Backing, Hydraulic Duo-Servo, 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?

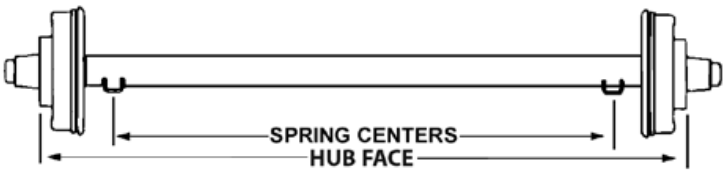
Spring Centers are the CL (centerline) measurement of the Spring Mounting Pads on the axle. Spring centers are usually matched to the approximate frame width of the trailer.

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 each specific wheel offset value.



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 slippertype 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 mounting hardware, are offered in various Attaching Parts Kits.

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 ½" 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 (440 = 4 on 4", 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)