Determining Set Capacity

It's important that you know the capacities of your rigging sets, and that the information is posted prominently. You'll also need to indicate whether this is the capacity including the batten (gross capacity) or the load capacity excluding the batten weight. This is important as simple battens can range from 3 to 7 lbs. per foot.

There are several ways to estimate the set capacity – or set capacities. You may have several different types of sets (scenery, lighting, orchestra shell ceilings, etc) with capacities. You'll need to evaluate each of these separately.

Check the Manufacturer's Drawings

The rigging manufacturer or rigging installer should have prepared project specific drawings for your theatre. A set of these drawings are usually provided to the theatre at the end the installation. These are valuable documents, as they should show all the details of your system, details of components, and set capacities.

Can't Find Them?

Check with the physical plant or maintenance folks at your theatre – they may have them. If not, contact the rigging manufacturer. If your system is more than 10 years old the manufacturer many not have retained drawings. The next step would be to contact the architect or theatre consultant who designed the stage to see if they still have drawings that show the rigging equipment.

Estimating Approximate Capacity from the Arbors

If none of these provide the necessary information, you can estimate the capacity of counterweight sets from the arbor size. First, you need to measure the total inside height of the arbor (the length of the arbor rods). You cannot fill the arbor to the top, and we take that into account in the following table.

Then you need to determine the counterweight size and material. For the past 15 years most counterweights have been made from steel, and are generally 4" or 6" wide. The table provides the arbor capacity for different arbor heights for both 4" and 6" wide steel weights. In a properly designed system the component strengths and set capacity will not be less than the arbor capacity. (Of course the set capacity is half the arbor capacity in double purchased systems).

Systems over 20 years old may have been supplied with cast iron counterweights, which are 10% lighter than steel counterweights. In this case, you'll need to reduce the set capacities by 10%, as they would have been designed to work with the lighter counterweights.

Figures taken from the following table are estimates, and are based only on arbor capacity. Your set capacity is also affected by the condition of all the load bearing components, such as head and loft blocks, wire rope, and the building structure.

More Information

You can also have a Licensed Engineer rate your system capacity. We can assist you to find an Engineer.

Your Rigging System should be inspected annually by a professional.

Approximate Load Capacities of Clancy Arbors (Using Steel Counterweights)				
	4" Wide Weights		6" Wide Weights	
Arbor Length	LB	KG	LB	KG
4 ft.	504	229	782	355
5 ft.	672	305	1,043	473
6 ft.	841	381	1,303	591
7 ft.	1,009	458	1,564	709
8 ft.	1,177	534	1,825	828
9 ft.	1,345	610	2,086	946
10 ft.	1,514	687	2,346	1,064
11 ft.	1,682	763	2,607	1,183
12 ft.	1,850	839	2,868	1,301
13 ft.	2,018	915	3,129	1,419

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