



Pulley Information

Side plates and Beckets

Side plates form the overall body of the pulley, and together with the axle are primarily responsible for its strength. Beckets are installed in multi-sheave pulleys to provide a lower tie-in point. Most pulleys have side plates that rotate independently around the axle to make rigging easier. This allows the pulley to be rigged onto a rope midstrand, rather than only at the ends.

Side plates come in all shapes, sizes and colors depending on pulley function, but there are essentially only two choices of material: Anodized Aluminum or Stainless Steel. Anodized aluminum (AA) is lightweight and durable, but not as strong. Stainless steel (SS) is very strong and resistant to the elements, but heavy.



Sheaves

The sheave (the wheel of the pulley) affects pulley performance in two ways: rope capacity and efficiency. Sheave width is the major factor in how large a rope a pulley can handle—wider sheaves handle larger ropes. Sheave diameter, along with bearing efficiency, determines the overall efficiency of the piece. Generally

speaking, larger sheave diameters produce greater pulley efficiencies.

Steel (SS): Strong, but heavy. Excellent for use with steel cable.

Aluminum (AA): Lightweight, but soft.

Glass Filled Celcon (GFC): self-lubricating, no bushing or bearing is needed. Weaker and softer than the other sheaves.

Nylon: Lightweight, self-lubricating, stronger than GFC.

Bushings and Bearings

The Bushing or Bearing is the load bearing member between the sheave and axle. A Bushing spreads the load over a larger area of axle, sliding the load around the pulley. This results in greater transfer and very little wear and extremely long life. However, the greater area in contact results in increased friction, decreasing efficiency. Bearings decrease the amount of surface area in contact with the axle, which creates a more efficient transfer. By rolling the load around the axle, load on the transfer point is increased, which results in faster wear, shortening the life of the pulley.



Axles

In contact with all the other parts of the pulley, the axle is a primary determinant of the overall strength. Our special corrosion resistant nuts round out the package, ensuring a lifetime of resistance to the elements.

Steel: High strength, but heavy.

Aluminum: Lighter, but not as strong.

Hardened and Ground (HG): Longest lifetime of any axle.

Zinc Plated Steel (ZPS): A less expensive option.

