CUSTOM SHEAVE COST DRIVERS

Three cost elements determine 80% or more of custom sheave costs:

1. Size (OD and Width)
2. Quantity
3. Material

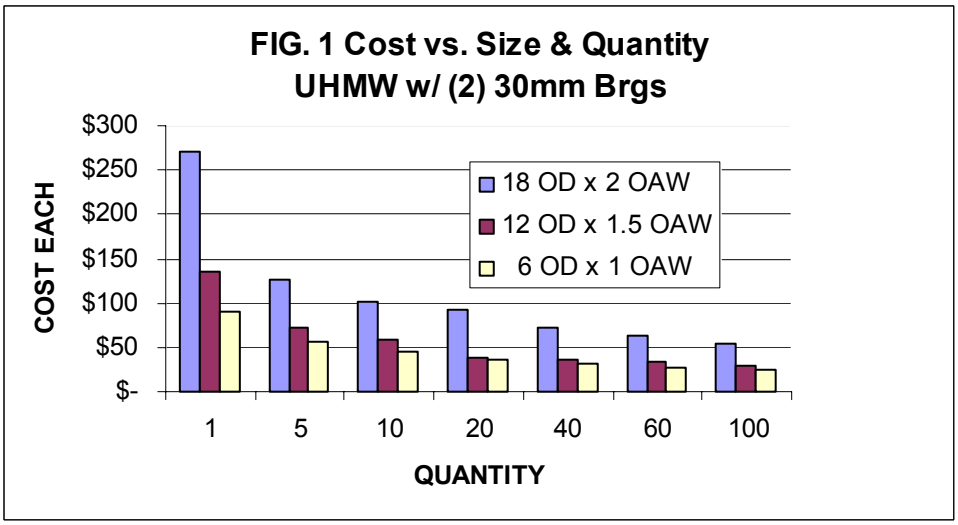
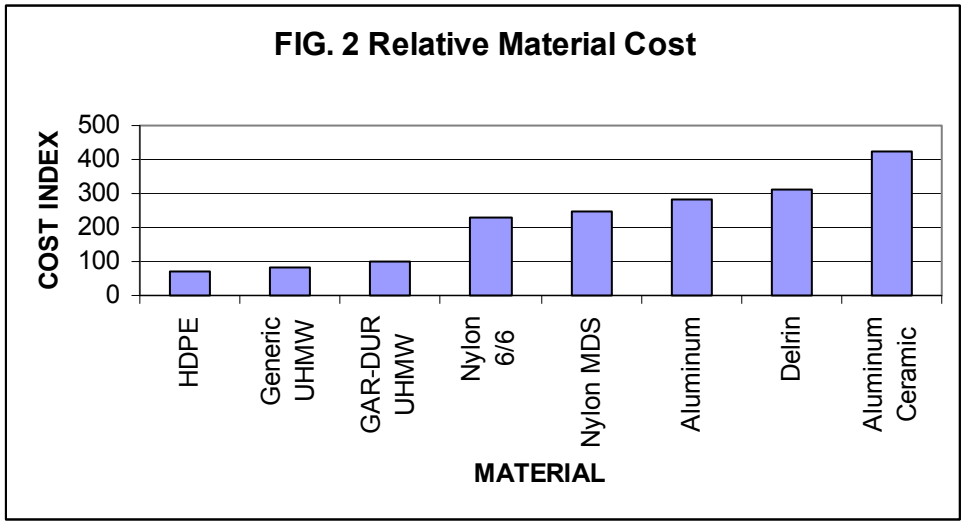


Figure 1 shows the impact of size and quantity. This chart shows the changes in size to size and at different volume levels. The greatest quantity savings come from spreading the engineering, programming, tooling and set-up costs across more units. Volume savings from material, including bearings, is small to non-existent. Our material costs are based on our total volume with selected vendors.

Size and quantity are actually related to a small degree. The price spread between one and a hundred of a 6 inch OD sheave is a factor of 3. However, for an 18 inch OD sheave the factor jumps to 5. Larger sheaves require larger turning centers, more setup time and more expensive fixtures.

Custom sheaves over 18” OD step up considerably in price. A look at our stock sheave prices illustrates this quite well. A 20 inch sheave costs $30 or 22% more than a 16 inch, but the next 4 inch increase – 20 to 24 inch – costs $100 or 60% more. The increases in custom sheave prices would be at least as dramatic.

Figure 2 shows the relative cost differences of common sheave materials. This comparison is based on a volume cost, not a per pound cost. While this shows only the material costs, a buyer must be aware that aluminum will incur higher machining costs as well.



Although the relative cost of Gar-Dur is shown to be slightly higher than generic UHMW, that most often is not the case due to material yield. Gar-Dur comes in boards of a variety of widths and thicknesses, and is always nominally oversize. Therefore, a 6 inch OD x 1" thick Gar-Dur sheave can be made from 1 x 6 board stock.

However, HDPE and generic UHMW are only available in 2 x 2, 2 x 4 or 4 x 8 sheets and thickness runs ±10%. We can cut only (9) 6 x 6 pieces from a 2 x 2 sheet because of cutting losses. Further, we would have to buy 1-1/4 inch thick material to be assured of thick enough sheet to finish up a 1 inch wide sheave. Therefore the higher grade Gar-Dur UHMW is often a more economical choice in spite of an apparent higher unit cost.