

	Cast	Wrought	
Initial Cost	✓		Since cast parts avoid most fabrication techniques, the price per pound of a fixture could be lower.
Pattern Cost		✓	A pattern must be made for each different cast part design. This is fine for production runs with thousands of parts but not very economical for one or two parts at a time.
Weight		✓	Cast parts are invariably thicker and heavier than the equivalent fabrication. This simply increases the dead weight that goes through each heat treat cycle. With radiant tubes and muffles, thicker cast walls increase fuel costs for the same volume of work heat treated. Wrought alloys are available down to nearly foil thicknesses. Thinner sections often permit weight reductions of 50% or more.
Availability & Delivery		✓	Wrought heat resisting alloys are immediately available from stock in numerous product forms. Fabrications are quickly procured to minimize expensive downtime. When equipment is out of service, fabrications can be delivered in a couple of days to get back on-line. This is rarely true of castings.
Shapes	✓		Certain shapes can be cast that are not commonly available hot rolled, or that cannot be fabricated economically from available wrought product forms.
Soundness		✓	Wrought materials are normally free of the internal and external defects such as shrink and porosity that are common problems in castings.
Composition	✓		Some alloys are available only as castings, because they lack sufficient ductility to be worked into wrought forms. This is particularly true of the very high chromium alloys.
Repairability		✓	To repair any stainless steel or nickel alloy, the material must have retained some amount of ductility. While cast parts can fail from corrosion, the most common failure is brittle cracking making them very difficult to weld repair. Many cast alloys quickly become very brittle in service. They are unable to withstand rough handling when cold and weld repair is very difficult.
Creep Strength	✓		Similar compositions are inherently stronger at high temperatures in the cast forms over wrought grades. This is because of the microstructure, as well as the higher carbon contents that are typical in a casting.
Thermal Fatigue		✓	Thinner sections reduce the amount of internal thermal stresses within the material. This allows for inherently greater ductility in wrought materials that promote better resistance to thermal cycling and thermal shock.
Surface Finish		✓	The smooth surface of a wrought alloy helps avoid focal points for accelerated corrosion by molten salts or carbon deposits.