



**Trega Corporation**  
**625 Valley Road**  
**Hamburg, PA 19526**

**Permanent Mold Aluminum Castings**  
**CNC Machining**  
**Aluminum Welding**

**800-3563254**  
**610-562-5558 F**  
**www.tregacorp.com**

**Permanent Mold Specifications (Reference Only)**

Benefits	Limitations	Typical Quantities	Typical Part Size	Surface Finish	Draft Required	Metal Options	Typical Tolerances	Minimum Draft Required	Typical Tooling Cost
Good surface finish; close dimensional tolerances; uniform mechanical properties	Tooling more expensive than sand casting process; higher quantities normally desired	Min >50 Max 5,000 and more pcs	<100lbs	100-250 RMS	Yes	Aluminum, Zinc, ZA	±.015" to 1" then add ±.002/in thereafter	2° - 4°	Medium Cost

**Sand Casting Specifications (Reference Only)**

Benefits	Limitations	Typical Quantities	Typical Part Size	Surface Finish	Draft Required	Metal Options	Typical Tolerances	Minimum Draft Required	Typical Tooling Cost
Good part price; flexible design; lower tooling costs	Less precision than other processes; rougher surface finish	All	1 oz to Several Tons	200-250 RMS	Yes	All Metals	±.020 up to 10" then add ±.001/in thereafter	.5° - 3°	Low to Medium Cost

**Die Casting Specifications (Reference Only)**

Benefits	Limitations	Typical Quantities	Typical Part Size	Surface Finish	Draft Required	Metal Options	Typical Tolerances	Minimum Draft Required	Typical Tooling Cost
Close tolerance, complex shaped parts; cost effective for higher quantities; good repeatability; good surface finish	Generally ideal for castings less than 25 lbs; high tooling costs; issues of porosity	>2000 pcs	<40 lbs	63 RMS	Yes	Aluminum, Mag, Zinc, ZA	±.002"/in	1° - 3°	High Cost



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**Investment Casting Specifications (Reference Only)**

Benefits	Limitations	Typical Quantities	Typical Part Size	Surface Finish	Draft Required	Metal Options	Typical Tolerances	Minimum Draft Required	Typical Tooling Cost
Excellent surface finish; near net shape/net shape capability; complex coring possible	Multi-step operations increase costs; need for a pattern for each part which adds to costs	<2000	<25 lbs but larger sized parts are possible	63-125 RMS	No	All metals	±.005" up to 1" then add ±.005/in thereafter	No Draft Required	High Cost

**V-Process Specifications (Reference Only)**

Benefits	Limitations	Typical Quantities	Typical Part Size	Surface Finish	Draft Required	Metal Options	Typical Tolerances	Minimum Draft Required	Typical Tooling Cost
Good dimensional accuracy' excellent surface finish; limited gas holes	Special pattern equipment required; generally a low to medium volume process	>All	<150 lbs	125-150 RMS	Yes	Aluminum	±.020" to 6" then add ±.002/in thereafter	No Draft Required	Medium Cost

**Plaster Mold Specifications (Reference Only)**

Benefits	Limitations	Typical Quantities	Typical Part Size	Surface Finish	Draft Required	Metal Options	Typical Tolerances	Minimum Draft Required	Typical Tooling Cost
Good surface finish; complex shaped parts; close dimensional accuracy; prototype for die castings	Not competitive with sand castings or permanent mold on higher volumes because of unit costs; limited to non-ferrous materials	<2000 pcs	<100 lbs	63-125 RMS	No	Aluminum, Zinc, ZA	±.010 to 8" then add ±.001/in thereafter	.5° - 2°	Medium Cost

**Metal Injection Molding Specifications**

Benefits	Limitations	Typical Quantities	Typical Part Size	Surface Finish	Draft Required	Metal Options	Typical Tolerances	Minimum Draft Required	Typical Tooling Cost
Close tolerance, complex shaped parts; high quantity process; excellent surface finish; good repeatability; properties similar to wrought material	Smaller parts are desired due to powder costs; generally need larger quantities to compensate for higher tooling costs	>5000 pcs	<1 lb	32 RMS	No	All Ferrous Metals	±.003/in	No Draft Required	High Cost