



## Shellcast Foundries Inc.

### **TYPICAL INVESTMENT CASTING TOLERANCES**

#### *Most Economical Minimum Standards*

#### *Recommended Drawing Notes*

1. Material: Aluminum alloy A356-T6 per AMS 4218 **or** A357-T6 per AMS 4219
2. Typical mechanical properties: A356-T6 and A357-T6  
Properties to be obtained using separately cast test bars per ASTM B 577.
3. Standard radiographic inspection should be specified as Class 4, Grade D in accordance with AMS 2175. Grade C & B are available depending on casting design.
4. Interpret dimensioning and tolerances per ANSI Y14.5  
-All casting dimensions to be basic. Tolerance 

	.050	A	B	C
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up to 6". Apply an additional .010 per inch to a maximum 

	.120	A	B	C
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unless otherwise specified.
5. CAD file takes precedence over the drawing for inspection purposes.  
-IGES format or STEP format is acceptable  
-For rapid prototypes, STL format is acceptable.
6. Surface finish to be  $\sqrt{\text{Ra}}$  or better.
7. Unless otherwise specified:
  - a) Fillet radii: .090 min.
  - b) Corner radii: .060 max.
  - c) Angular tolerance:  $\pm 1$  degree
  - d) Draft angle: Optional 1 degree max.
  - e) Cast hole tolerance:  $\pm .005$  up to .500" dia. ,  $\pm .010$  up to 1" dia. and  $\pm .010$  for each additional inch, max.  $\pm .030$
8. Machining stock .060 minimum, if required.
9. Typical wall thickness .060  $\pm$ .015 minimum.
10. Weld repair permissible in accordance with AWS D17.1
11. Parting line mismatch, burrs, and flash shall not exceed .010. Gate witness shall not exceed .020
12. Casting identification per MIL STD 130M  
Cast markings to be either depressed letters or raised letters on depressed pad  
Foundry logo allowable in determined location.