



MiniSShot

ProtoSShot-M Mark II Rocket Motor

Thermal Label Mapping and Results
from Static Firing Nov.22nd 2008

Rev. 2008/11/29

Introduction

The document illustrates the mounting locations for the thermal measurement labels to be mounted on the ProtoSShot-M Mk.II rocket motor.

A table is provided for recording post-firing temperature readings.

Labels

Omega Irreversible Temperature Monitoring Labels

<i>Omega</i> P/N	Temperature Ratings							
TL-5-340	°F	340	350	360	370	380		YELLOW
	°C	171	177	182	188	193		
TL-5-450	°F	450	465	480	490	500		GOLD
	°C	232	241	249	254	260		
6MB-175/79	°F	175	200	225	250	275	300	RED
	°C	78	93	107	121	135	149	

Adhesive Backs for Easy Mounting for
Temperatures Above -40°C/°F

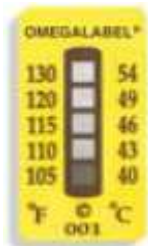
Indicator Turns Black When Exposed

Specifications (TL series)

Accuracy: Up to 99°C (210°F) is ±1°C (1.8°F)

From 100°C (212°F) to 154°C (309°F) is ±1.5°C (2.7°F)

From 160°C (320°F) to 280°C (536°) is ±1% and ±1°C (1.8°F)



Typical appearance of TL series label.



Typical appearance of MB series label.

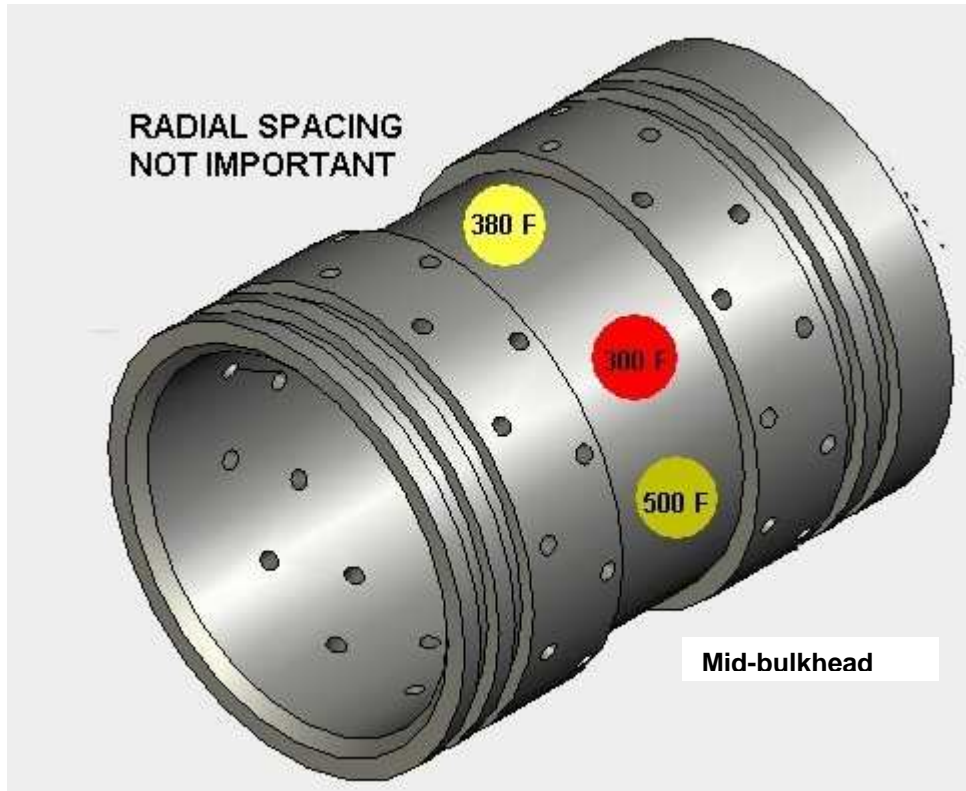


Figure 1 – Labels 300-1, 380-1, 500-1

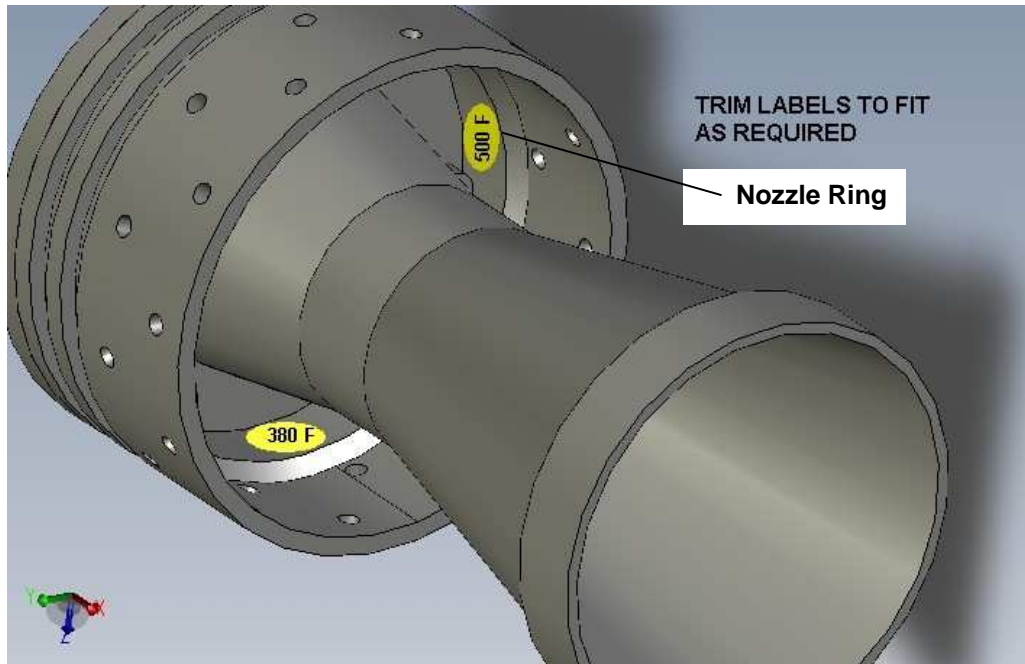


Figure 2 – Labels 380-2, 500-2

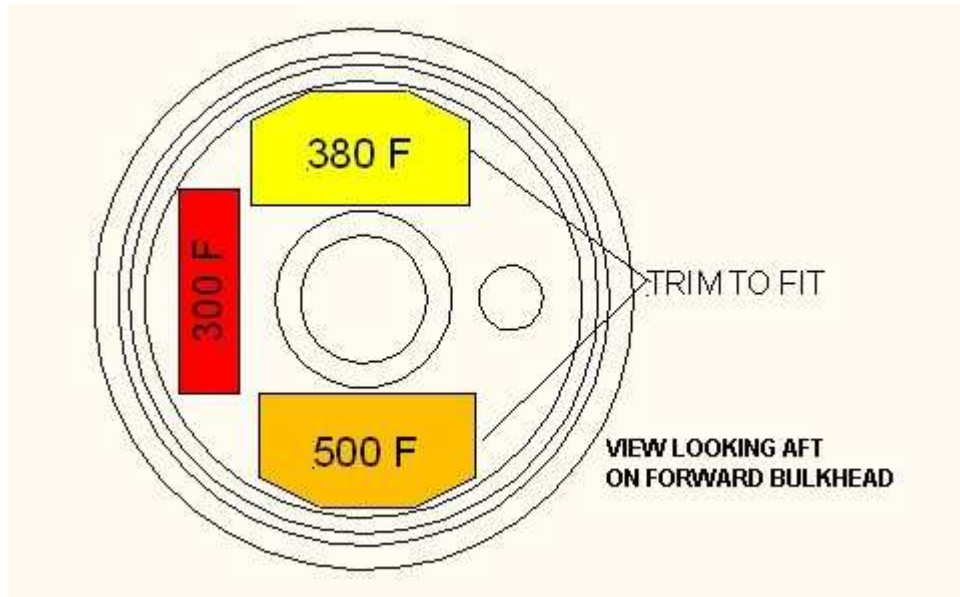


Figure 3 – Labels 300-2, 380-3, 500-3

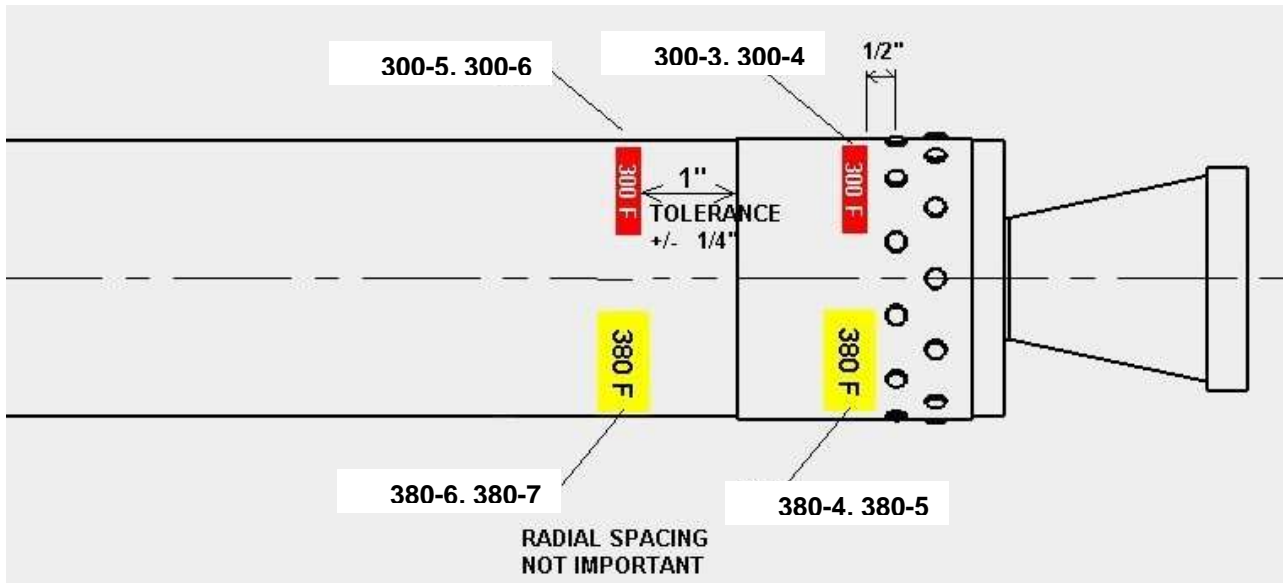


Figure 4

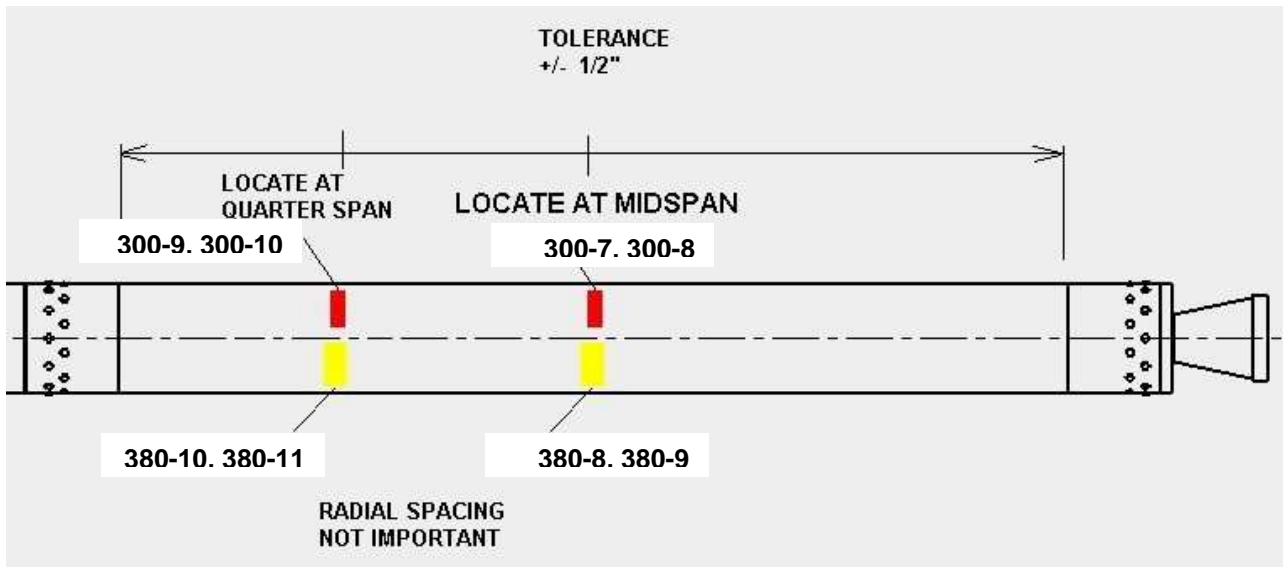


Figure 5

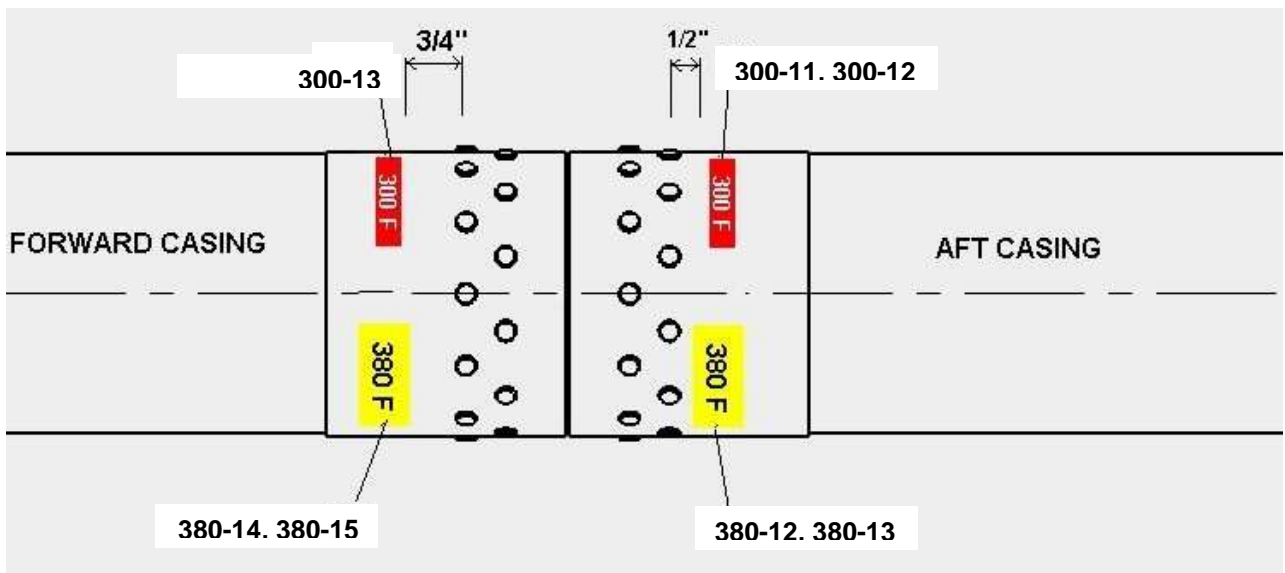


Figure 6

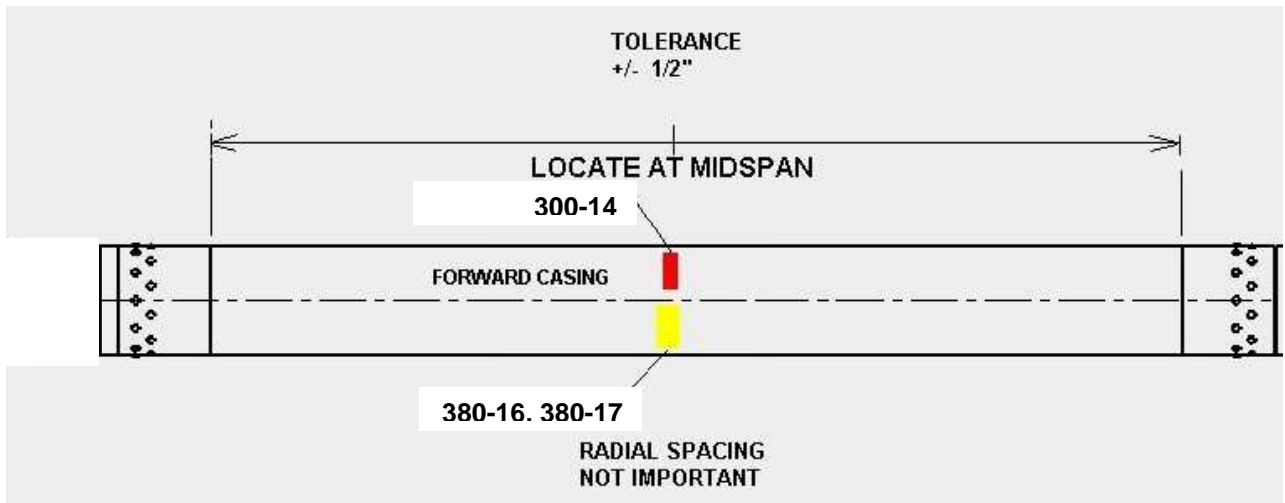


Figure 7

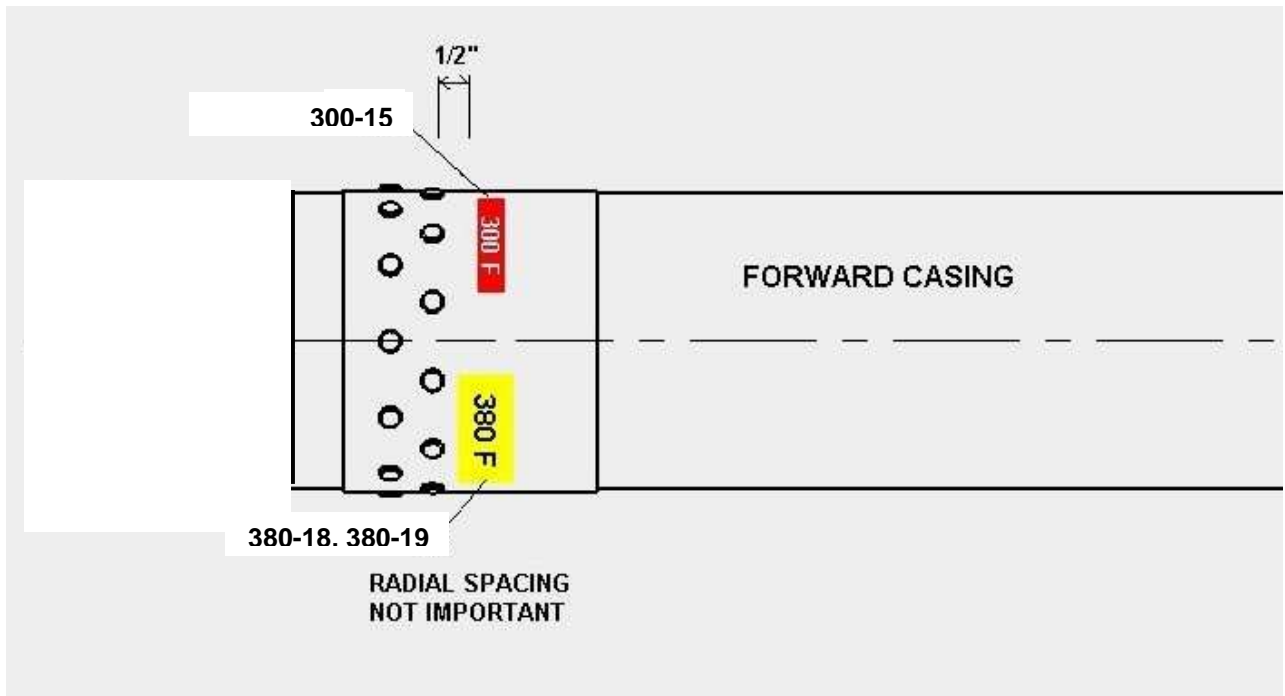
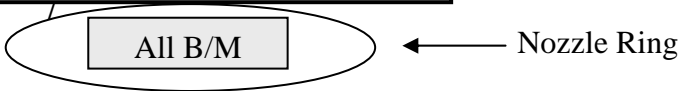
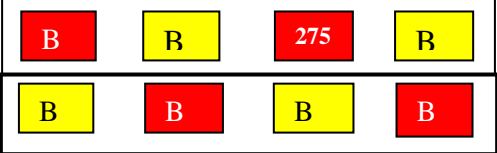
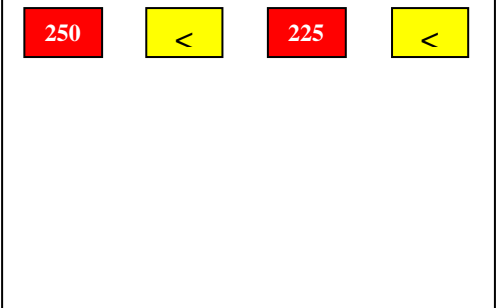
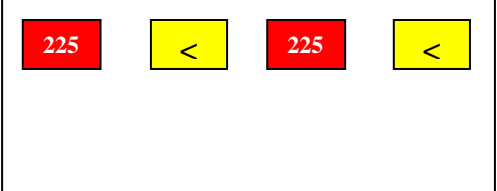
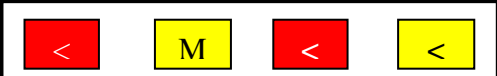
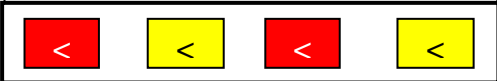
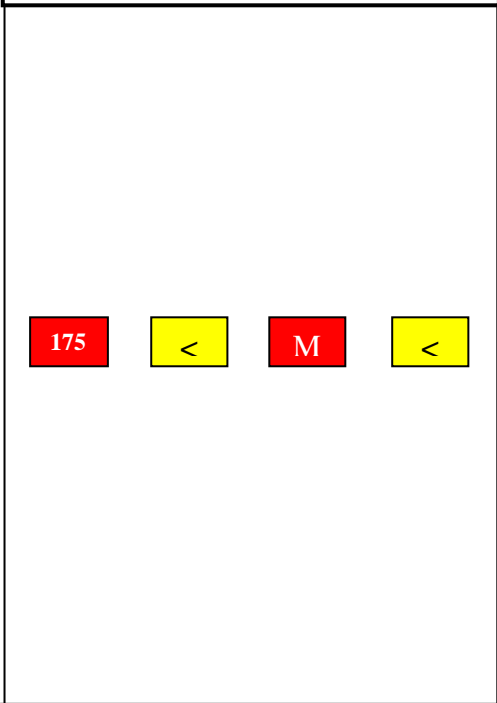
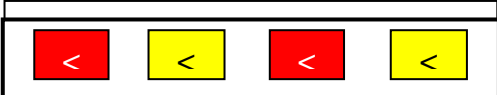
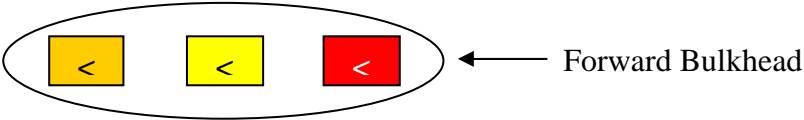


Figure 8

Table for recording post-firing temperatures

Figure	Label no.	Temperature (°F)	Notes
1	300-1	< 175	[1]
	380-1	< 340	[1]
	500-1	< 450	[1]
2	380-2	-	[2]
	500-2	-	[2]
3	300-2	< 175	[1]
	380-3	< 340	[1]
	500-3	< 450	[1]
4	300-3	-	[2]
	300-4	-	[2]
	300-5	275	
	300-6	-	[2]
	380-4	-	[2]
	380-5	-	[2]
	380-6	-	[2]
	380-7	-	[2]
5	300-7	250	
	300-8	225	
	300-9	225	
	300-10	225	
	380-8	< 340	[1]
	380-9	< 340	[1]
	380-10	< 340	[1]
	380-11	< 340	[1]
6	300-11	< 175	[1]
	300-12	< 175	[1]
	300-13	< 175	[1]
	380-12	< 340	[1]
	380-13	< 340	[1]
	380-14	-	[3]
	380-15	< 340	[1]
7	300-14	175	
	380-16	< 340	[1]
	380-17	< 340	[1]
8	300-15	< 175	[1]
	380-18	< 340	[1]
	380-19	< 340	[1]
Notes			
	[1] No change, therefore temperature less than label minimum.		
	[2] Label burnt (post-firing) or missing.		
	[3] Label missing.		



- 175°- 300°F
- 340°- 380°F
- 450°- 500°F
- M Label missing
- B Label burned or damaged
- < Less than minimum temp

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