

## Test Lab Work Request Form

Date Submitted: 10 March, 2000

Tracking #: TLW 0010V

Project #: 241095

Engineer: J.R.SNEDEKER

### Test Objective:

#### TLW0010V - Chamber cast:

Use the .30-06-chamber drawing LB-153 for reference.

### Test Description:

#### Method:

- Make chamber cast using standard procedure (*See Below*)
- Use the 30" optical comparator
- Measure the following dimensions:
- .4708/.4728
- .4425/.4440
- 34° 30" Angle
- .3404/.3424
- .3095/.3105

#### Data Required:

- Rifle serial numbers
- Record dimensions requested above.

Note that Cerrosafe™ has some unique features that make it suitable for making chamber casts. During the first 30 minutes of cooling Cerrosafe™ shrinks making removal from a rifle chamber easier. After about an hour the cast is exactly the size of the chamber in which it was cast.

**Be sure to be use all caution when making chamber casts. Although the material melts at a relatively low temperature, the temperature is still hot enough to cause severe burns if spilled on bare flesh. Use protective gloves, clothing and safety glasses with side-shields.**

#### Chamber cast procedure:

- Use Cerrosafe™ chamber casting alloy. As long as it is keep clean, the material can be reused multiple times.
- Clean chamber of the rifle thoroughly and apply a very thin film of oil or graphite.
- Plug the bore of the rifle immediately ahead of the throat with a small rag – but

ET07074

not so tightly it cannot be driven out.

- Melt the Cerrosafe™ in a clean iron ladle. It will melt between 158° and 190°F.
- The source of heat should be removed as soon as the alloy is completely melted, at which time it is ready to pour.
- If practical, pour the molten Cerrosafe™ through a small tube into the bottom of the cast, gradually removing the tube as the chamber fills. A funnel with a heat resistant tube securely attached should work.
- If the barrel is cold, warm it to room temperature or slightly above room temperature before making the cast.
- Make note of the time of the pour.
- The solidified casting should be removed from the chamber before or when it cools to room temperature (about 30 minutes.) If allowed to remain in the chamber for over an hour, it will grip the chamber walls and will be difficult to remove.
- After approximately 30 minutes of cooling time remove the cast from the chamber using a rod or dowel inserted from the muzzle end of the barrel.
- At one hour past the time of pour, the casting will be exactly the size of the chamber. (At the end of 200 hours (a little over a week) it will have expanded approximately .0025% (1/4<sup>th</sup> of 1%)

**Resource Usage:**

**Manpower Requirements -**

**Facility Requirements -**

**Test Results Required:**

**Formal Report:**                      **Data Only: X**

**REQUESTED Completion Date:**

**Required Materials/Parts/Equipment (include quantities):**

**Test Parts Availability Date:**

**Start Date:** 14 Sept 2000

**Completion Date:** 14 Sept 2000

**Report Date:**

**Test Assigned To**

*H. Cassen*

ET07075

22-141 50 SHEETS  
22-142 100 SHEETS  
22-144 200 SHEETS



# Chamber Cast Dimensions - TLW0010V

|  |                              |                        |                   |                         |                         |      |
|--|------------------------------|------------------------|-------------------|-------------------------|-------------------------|------|
|  | .4708<br>.4728<br>B1 - .4694 | .4425<br>.4440<br>.443 | 34° 30"<br>34.09° | .3404<br>.3424<br>.3435 | .3095<br>.3105<br>.3086 | 1074 |
|  | B2 - .4692                   | .4440                  | 34.67°            | .3441                   | .3103                   | 1046 |
|  | B3 - .4704                   | .4434                  | 34.40°            | .3446                   | .3085                   | 1070 |
|  | B4 - .4709                   | .4442                  | 34.33°            | .3441                   | .3101                   | 1078 |
|  | B5 - .4695                   | .4430                  | 34.26°            | .3424                   | .3096                   | 1040 |
|  | B6 - .4704                   | .4432                  | 34.50°            | .3436                   | .3096                   | 1028 |
|  | B7 - .4668                   | .4432                  | 34.59°            | .3436                   | .3099                   | 1033 |
|  | B8 - .4707                   | .4448                  | 34.59°            | .3444                   | .3100                   | 1083 |
|  | B9 - .4701                   | .4448                  | 34.58°            | .3445                   | .3099                   | 1063 |
|  | B10 - .4704                  | .4447                  | 34.53°            | .3447                   | .3108                   | 1069 |

83

ET07076