

# National Transportation Safety Board

Office of Research and Engineering

Washington, DC 20594



CEN23LA250

## **MATERIALS LABORATORY**

Factual Report 24-008

**April 12, 2024**

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## **A. ACCIDENT INFORMATION**

Location: Waunakee, WI  
Date: June 21, 2023  
Vehicle: Champion 7EC, N80461  
Investigator: Michael Hodges

## **B. COMPONENTS EXAMINED**

Manual fuel primer pump (Figure 1).

## **C. EXAMINATION PARTICIPANTS**

|             |                                                                             |
|-------------|-----------------------------------------------------------------------------|
| Group Chair | Joseph Panagiotou<br>National Transportation Safety Board<br>Washington, DC |
|-------------|-----------------------------------------------------------------------------|

## **D. DETAILS OF THE EXAMINATION**

A fuel primer pump (Kohler K-2406-2) was submitted for examination. This fuel primer pump was a manually operated piston type pump for priming the engine (Figure 1). The pump's piston had a cylindrical pin perpendicular to the piston's axis which was used to lock the piston in the fully inserted position when not in use (Figure 2). The locking pin was approximately 0.093" diameter. The locking pin would be kept captive by a retention lip on the pump housing end cap when the piston was fully inserted and turned either to the left or right. Examination of the end cap (Figures 3, 4) revealed that the retention lip on the end cap was worn away around most of its circumference leaving only a 0.143" long section of the retaining lip.

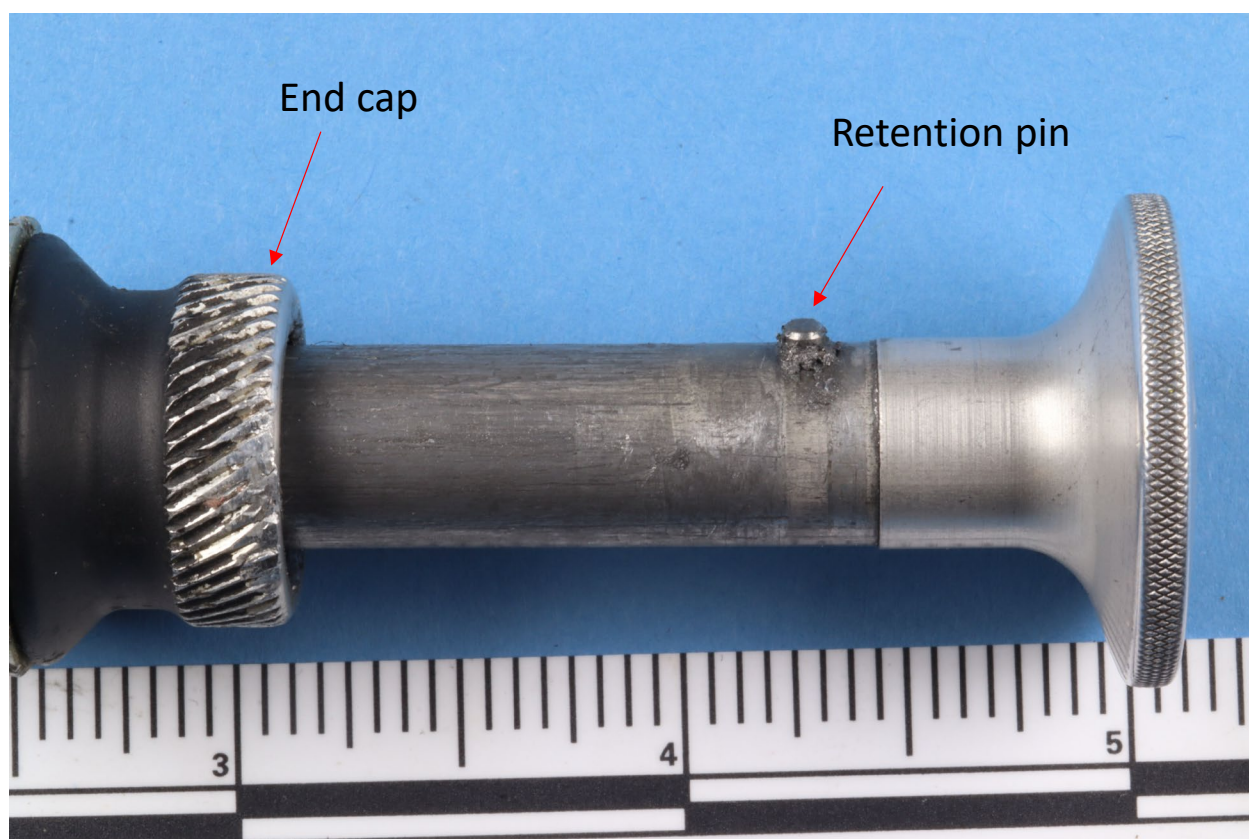
Wear of the end cap's retaining lip reduced the area of overlap between the retention pin and retention lip.

Submitted by:

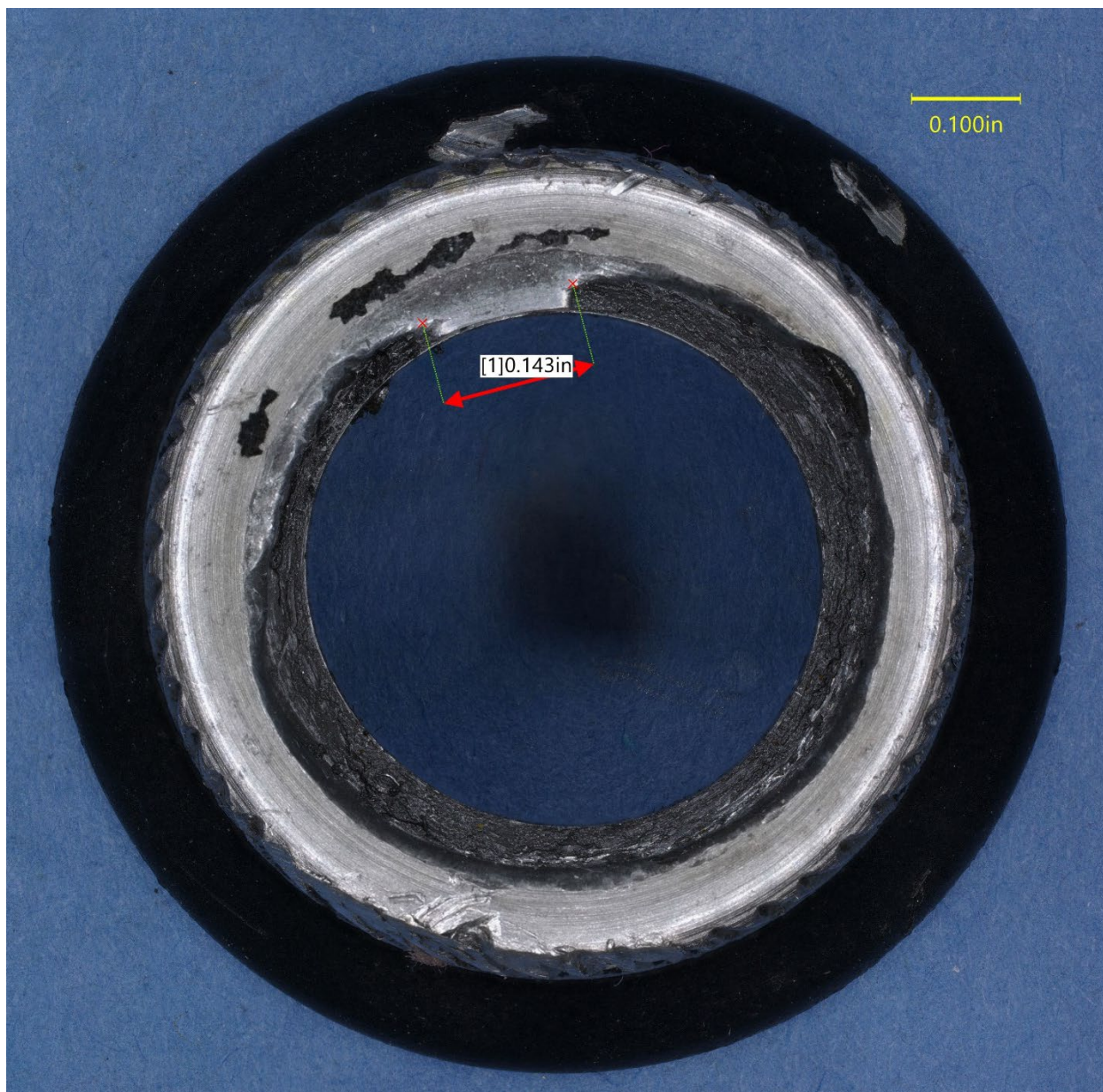
Joseph Panagiotou  
Engineer



**Figure 1.** Fuel primer pump as received.



**Figure 2.** Piston with retention pin and pump housing end cap (piston in extended position).



**Figure 3.** End cap exhibiting worn retention lip. Only a small portion 0.143" wide remained.



**Figure 4.** End cap exhibiting worn retention lip.