

	LMP TESTING LABORATORY TEST REPORT	
Airbus Helicopters - LMP - Aéroport International Marseille Provence - 13725 Marignane		
Affair/Order number	2020-0456 and 2020-0359	
Affair designation	Hydraulic pump drive bearing seizure	
Requested by	[REDACTED]	
Reference document	ISIR EC-1865	
Modification management *	Not applicable	

* To complete only if the test report is issued.

CONTEXT:

As part of ISIR EC-1865 concerning various cases of hydraulic pump bearing seizures, a request was made by the design office to the laboratory to carry out drilling tests of bearing regreasing lids.

The purpose of these tests is to determine if it is possible to decide, by observing the condition of the lids of a bearing, if it has been regreased or not.

The tests were carried out on 4 bearings (2 working bearings and 2 new bearings).

1. SYNTHESIS OF THE RESULTS:

- Observation of the bearings lids before drilling confirms the information provided by the supplier on the pre-drilling of the lids. Indeed, the lids are pre-drilled to facilitate the passage of the regreasing needle without damaging them too much.

- Observation of the condition of the lids before and after drilling shows a slight enlargement of them. As this difference is not significant enough, the laboratory concluded that it is not possible to decide on the regreasing of a bearing by observing the condition of the lids.

2. DECISION OF CONFORMITY:

Not applicable

3. OPINION AND TEST INTERPRETATION:

Not applicable

Distribution list:	[REDACTED]	
Operator(s) / Supervisor	Technical Unit Manager	Distribution date
[REDACTED]	[REDACTED]	09/03/21

When the report is available in different languages, the native language (if available) in which the report is written prevails.

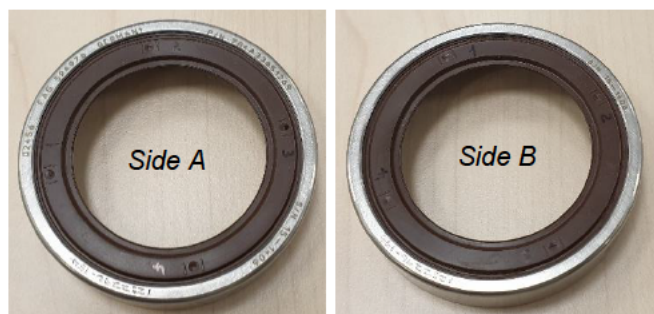
This test report and the results concern specimens submitted to tests only. The uncertainties of measurement are available on request.

4. LOCATION AND IDENTIFICATION OF OBJECT SUBMITTED TO TEST ITEMS:

The tests of lid drilling were carried out on 4 bearings :

- Two working bearings are first brought to the laboratory (they are disassembly and cleaned)
bearing 1 : bearing normally not regreased
bearing 2 : bearing normally regreased on one side (side B)
- Two new bearings (bearings 3 and 4) are then received

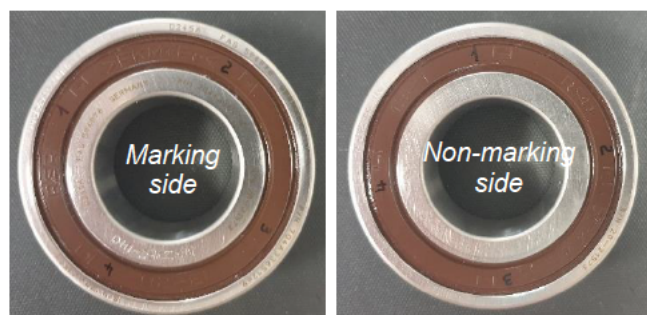
Bearing 1



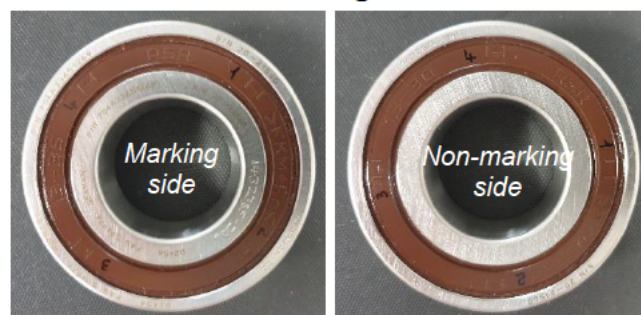
Bearing 2



Bearing 3



Bearing 4



5. TEST INFORMATION (if not already mentioned in test protocol enclosed (appendix):

The drilling of lids is done with a needle, found in the laboratory, with a diameter closest to the diameter of the needle used for regreasing (1,5 mm).



Test Performed	Optical observations with a binocular
Operative instruction	NA
Referenced Standard	NA
Equipment Id	STEMI N° 61310029/61270003 + STREAM ANALYSIS
Operator	
Test date	25/11/20 and 23-24/02/21
Test Parameters / Operating mode	Gx25
Test Condition	Ambient temperature

6. RESULTS:6.1 Bearing 1➤ **Side A**Legend :

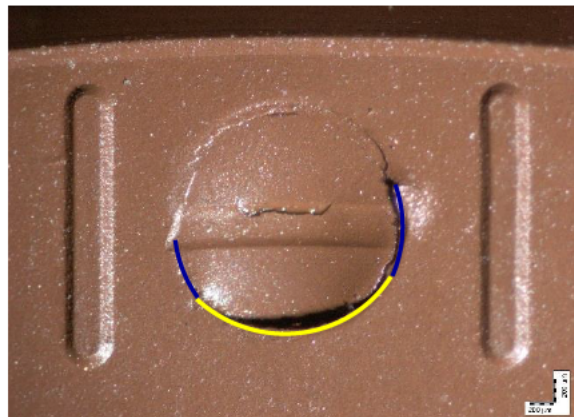
-  Widening of pre-drilling
-  No through scratch
-  Through scratch



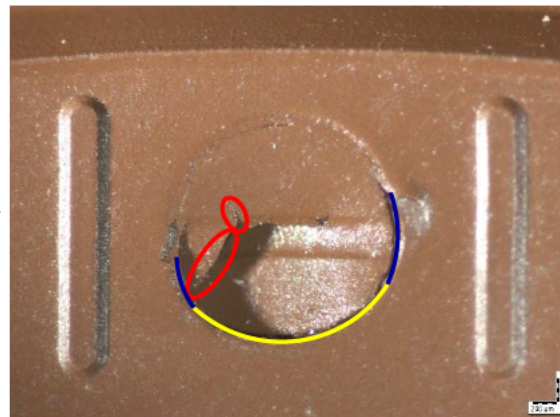
"Orientation" of the 4 lids - Before drilling



Lid n°1



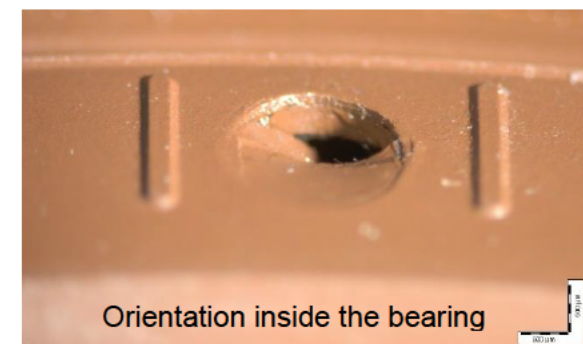
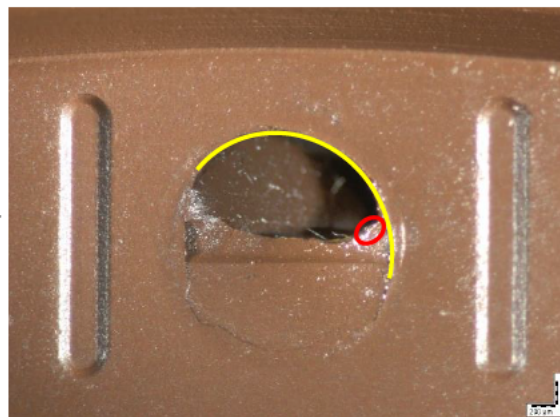
After
drilling



Lid n°3



After
drilling



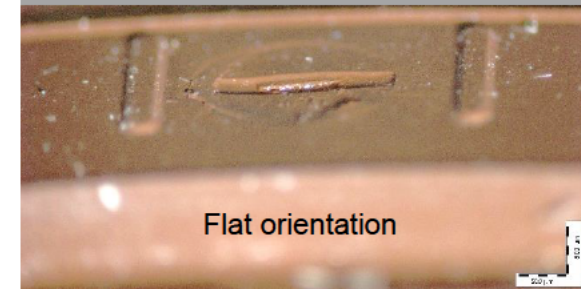
➤ Side B

Legend :

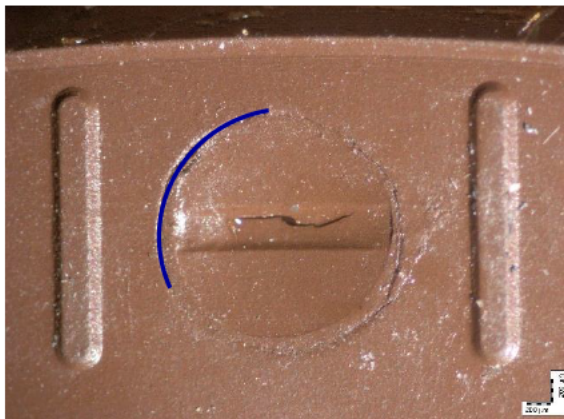
-  Widening of pre-drilling
-  No through scratch
-  Through scratch



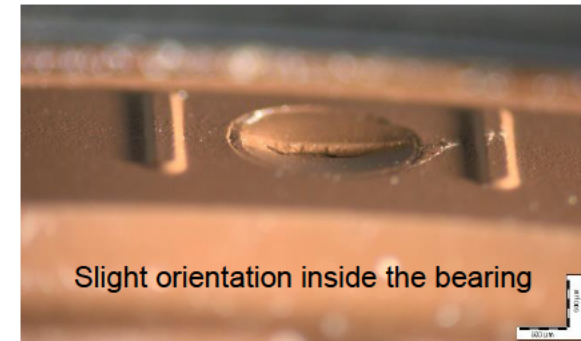
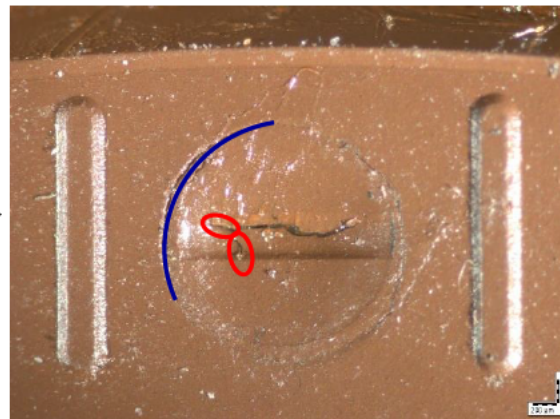
"Orientation" of the 4 lids - Before drilling



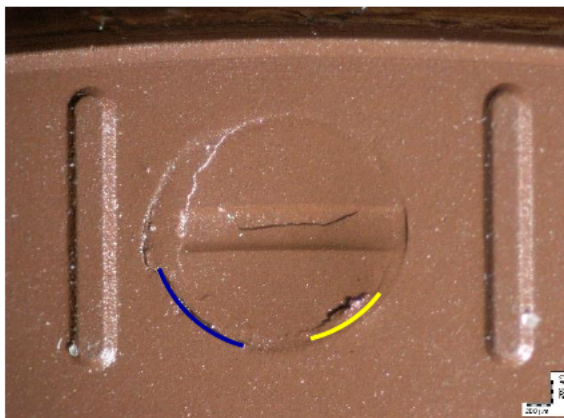
Lid n°1



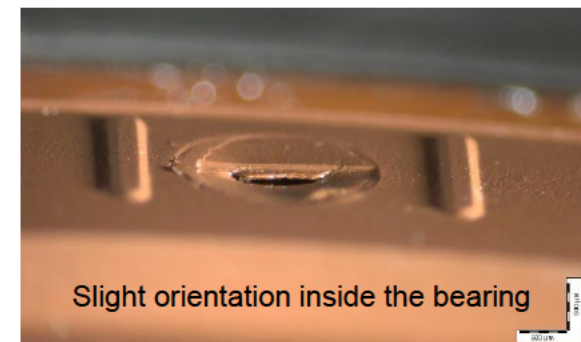
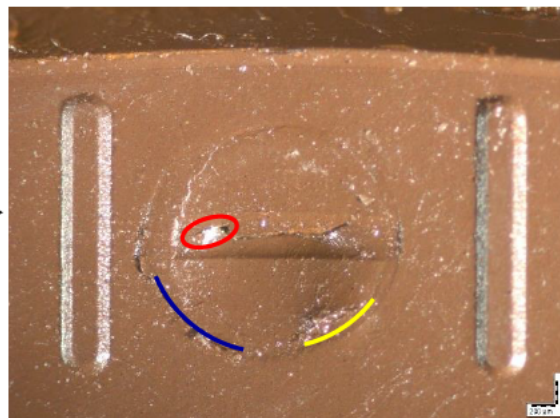
After
drilling



Lid n°3



After
drilling

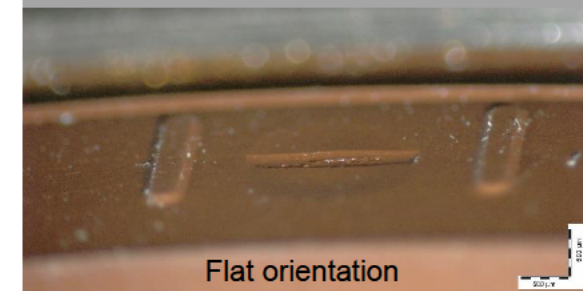


6.2 Bearing 2➤ **Side A**Legend :

-  Widening of pre-drilling
-  No through scratch
-  Through scratch



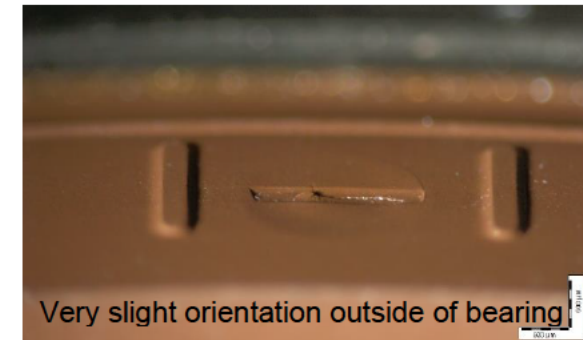
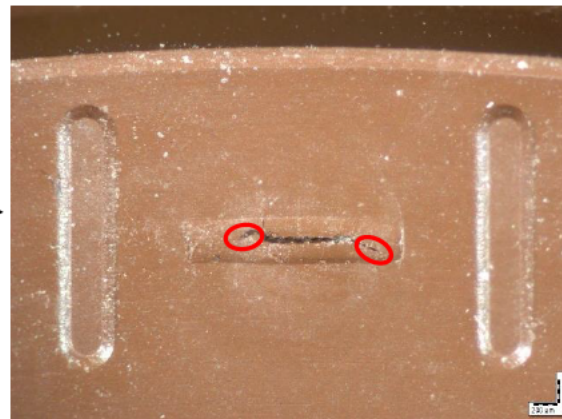
"Orientation" of the 4 lids - Before drilling



Lid n°3



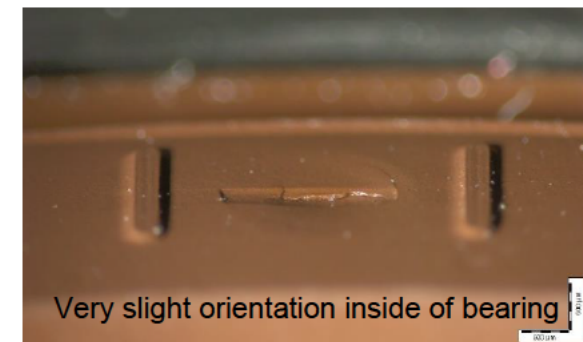
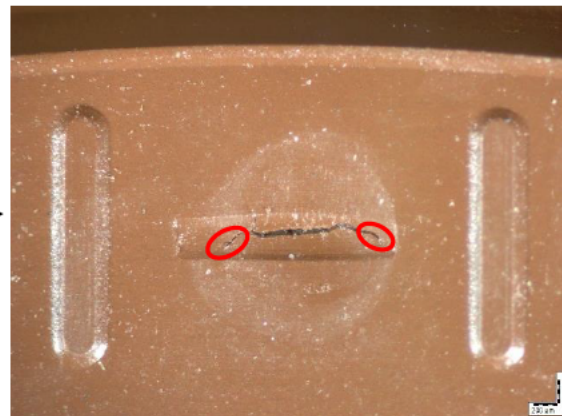
After
drilling



Lid n°4



After
drilling



➤ Side B

Legend :

-  Widening of pre-drilling
-  No through scratch
-  Through scratch



"Orientation" of the 4 lids - Before drilling

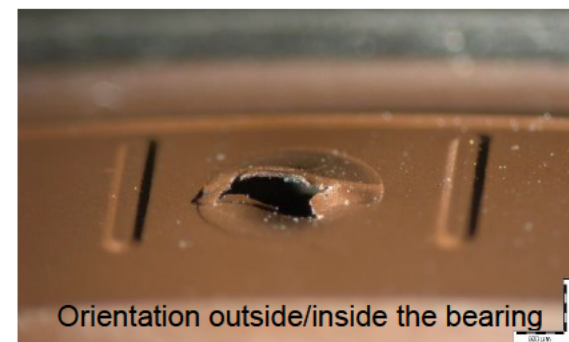
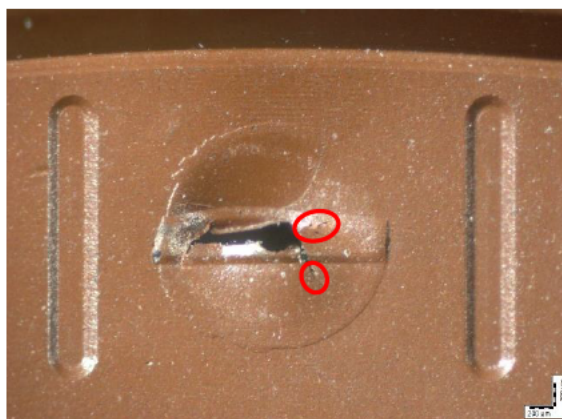


Orientation outside the bearing

Lid n°2

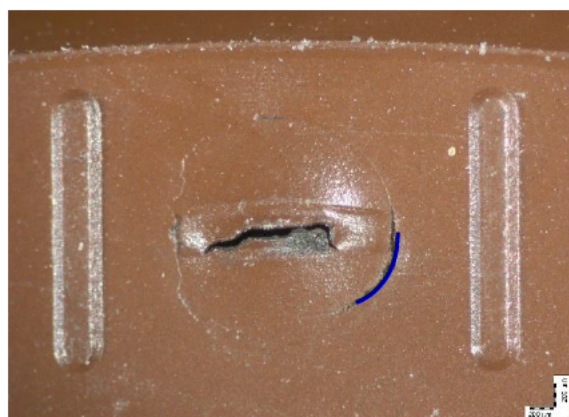


After
drilling

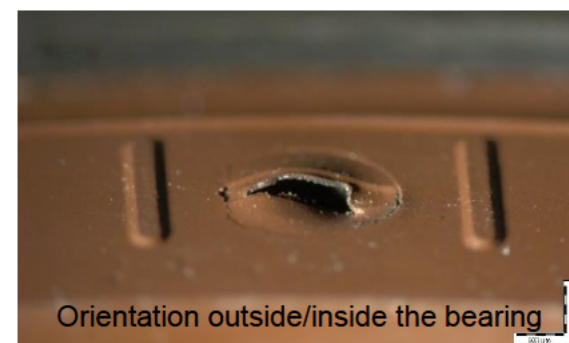
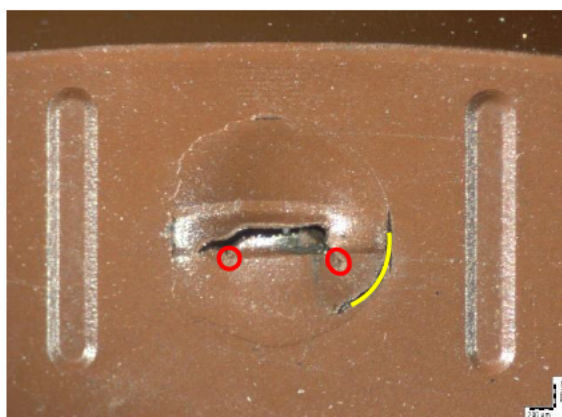


Orientation outside/inside the bearing

Lid n°4



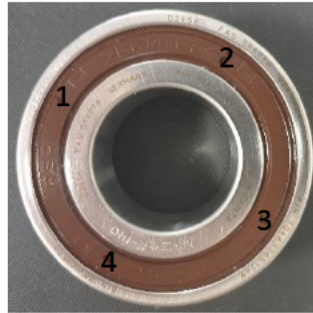
After
drilling



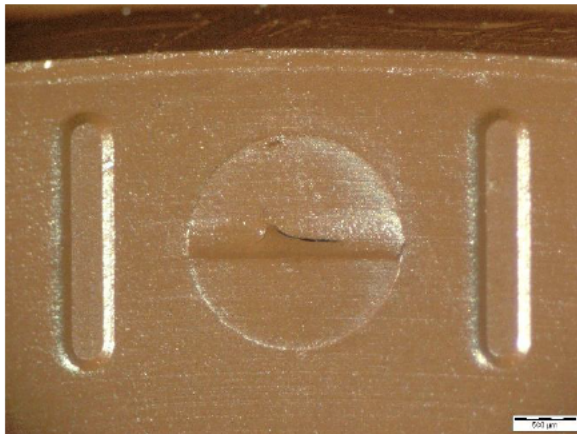
Orientation outside/inside the bearing

6.3 Bearing 3➤ **Marking side**Legend :

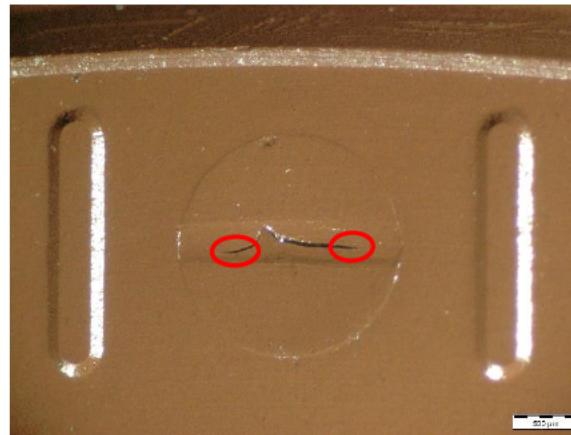
 Widening of pre-drilling



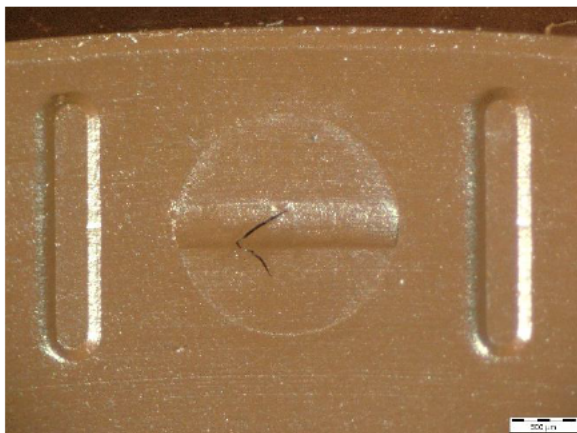
Lid n°2



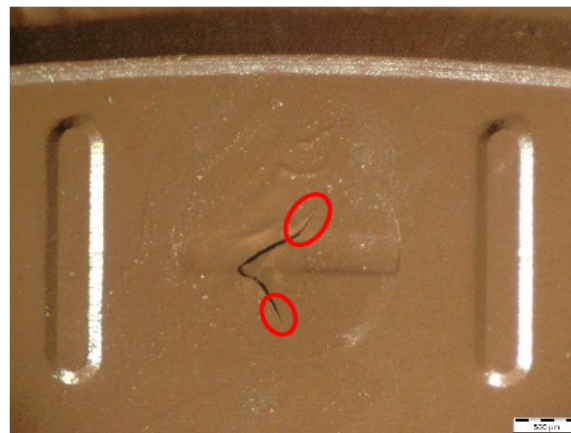
After
drilling →



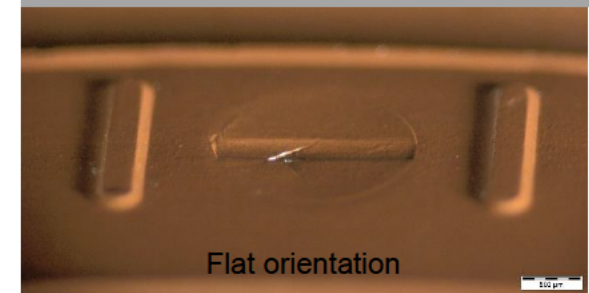
Lid n°4



After
drilling →

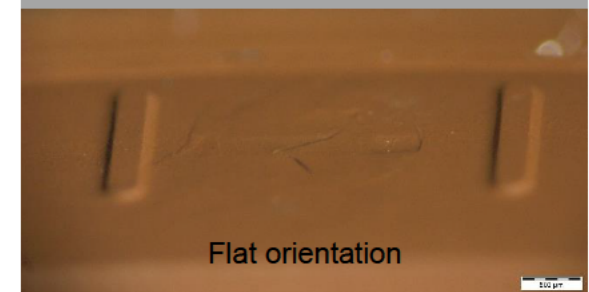


"Orientation" of the 4 lids - Before drilling



Flat orientation

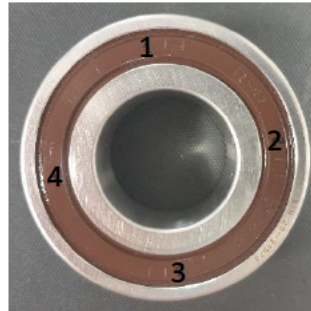
"Orientation" of the 4 lids - After drilling



Flat orientation

➤ **Non-marking side**Legend :

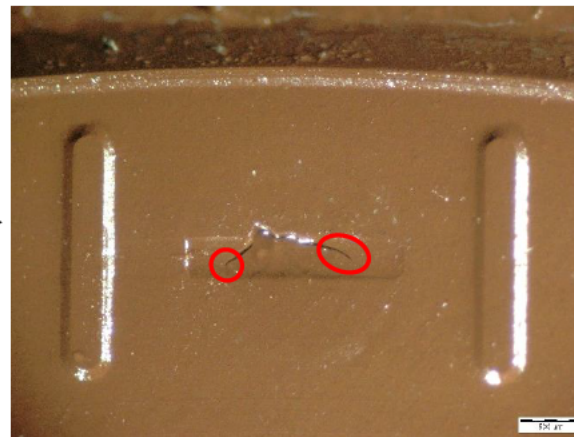
 Widening of pre-drilling



Lid n°1



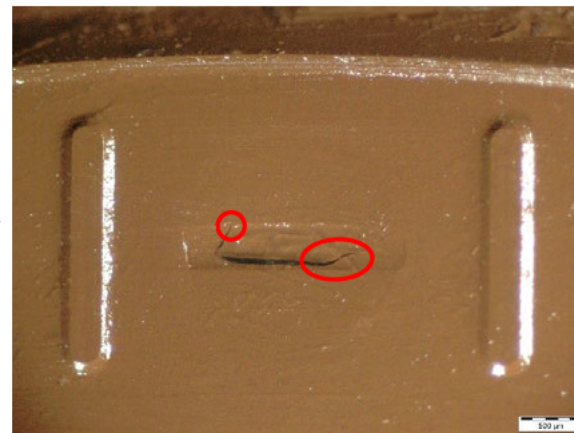
After
drilling →



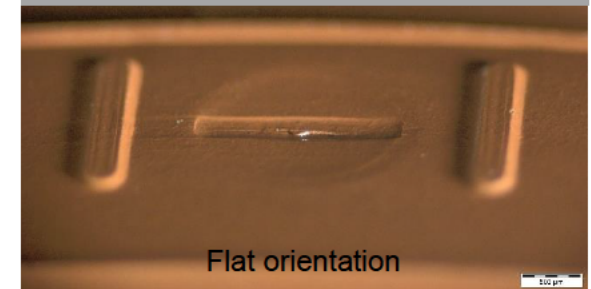
Lid n°4



After
drilling →

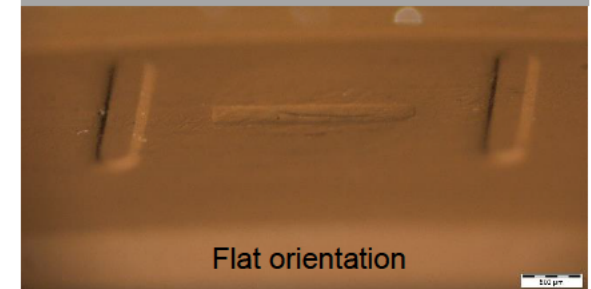


“Orientation” of the 4 lids - Before drilling



Flat orientation

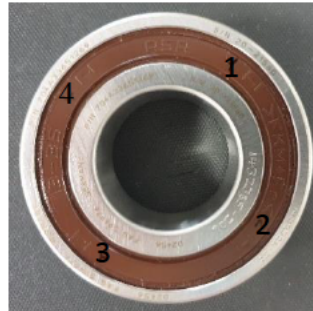
“Orientation” of the 4 lids - After drilling



Flat orientation

6.4 Bearing 4➤ **Marking side**Legend :

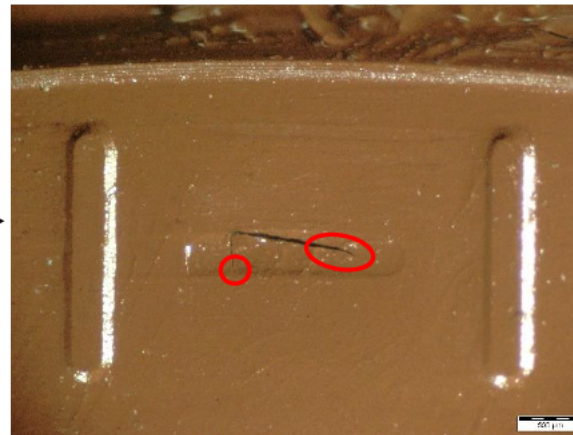
 Widening of pre-drilling



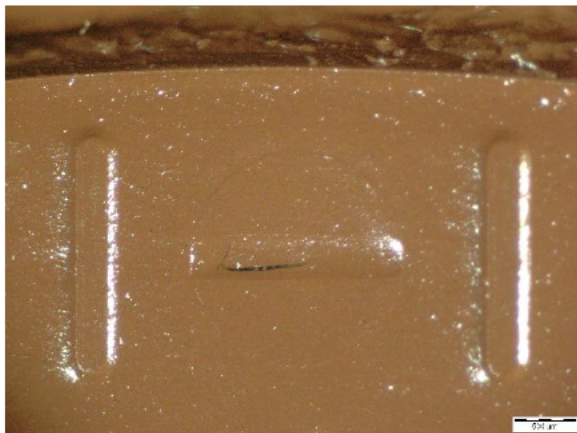
Lid n°2



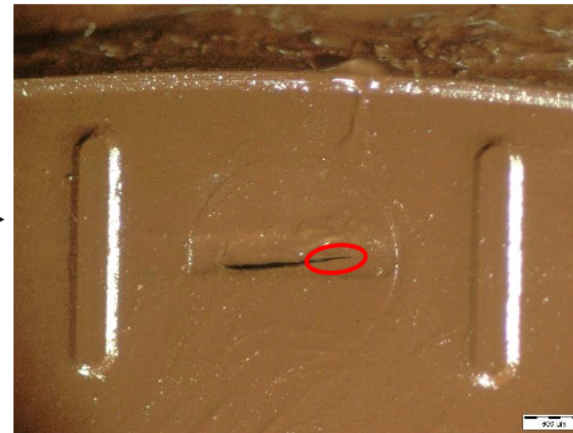
After
drilling →



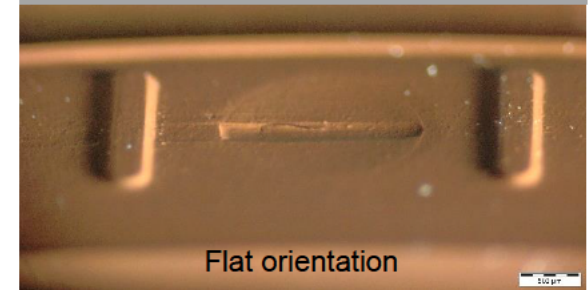
Lid n°3



After
drilling →

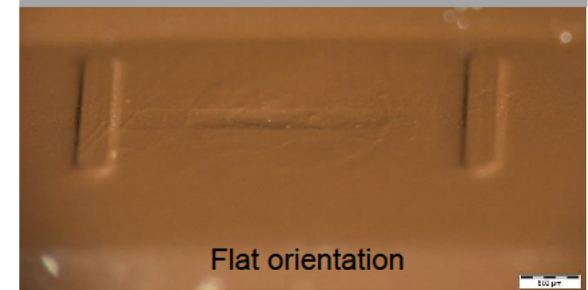


"Orientation" of the 4 lids - Before drilling



Flat orientation

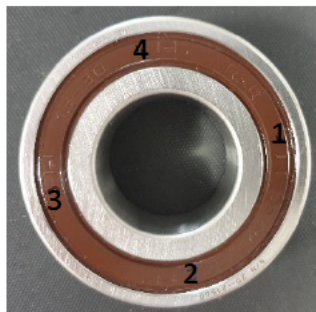
"Orientation" of the 4 lids - After drilling



Flat orientation

➤ **Non-marking side**Legend :

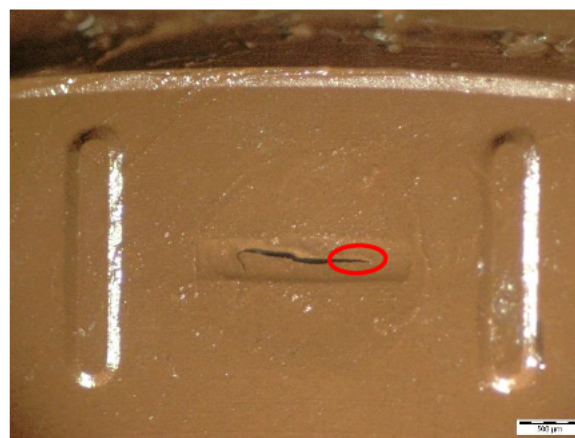
 Widening of pre-drilling



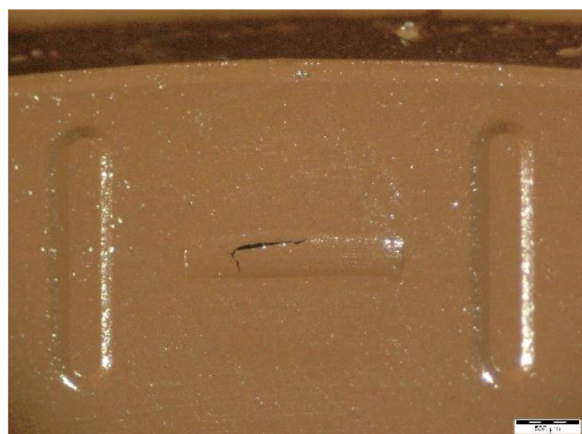
Lid n°1



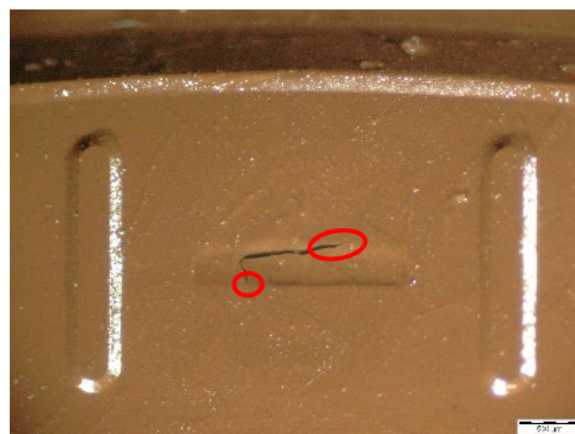
After
→
drilling



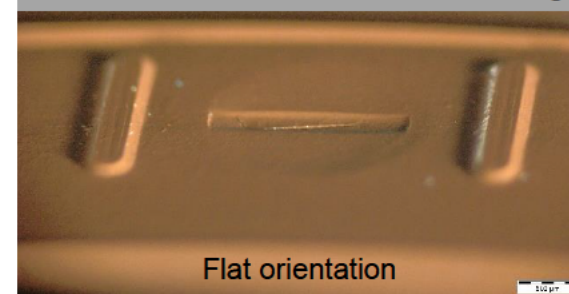
Lid n°2



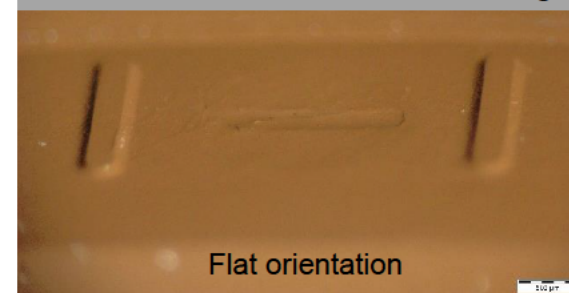
After
→
drilling



"Orientation" of the 4 lids - Before drilling



"Orientation" of the 4 lids - After drilling



7. APPENDIXES:

Not applicable

END OF TEST REPORT
