YE SERVICE NEWS

Subject	Judgement for replacement of plunger of Fuel oil injection pump		No. : YEN-CM-22861-3 Date: 2019/03/19
Engine Model	6EY17W, 6EY18(A)L(W) 6EY22(A)(L)(W) 6,8EY26(L)(W), 6,8EY33(L)W	Use	Marine Main&Aux
		Engine No.	-

Users of EY series engines often inquire us about the cavitation erosion that appeared on the lead part of plunger.
The sign of cavitation erosion will appear at an early stage of operation usually, but cavitation erosion that appeared after 4000~5000 hours operation gives no influence on the engine performance.

This service news shows how to judge if the plunger can be used continuously or not.

[What is Cavitation?]
The physical phenomenon where bubbles in a fluid flow appear and disappear in a short time because of the differential pressure.
When cavitation occurs, the phenomenon shown in the photos in Reference 1 and 2 occurs.

[Area of Cavitation erosion]

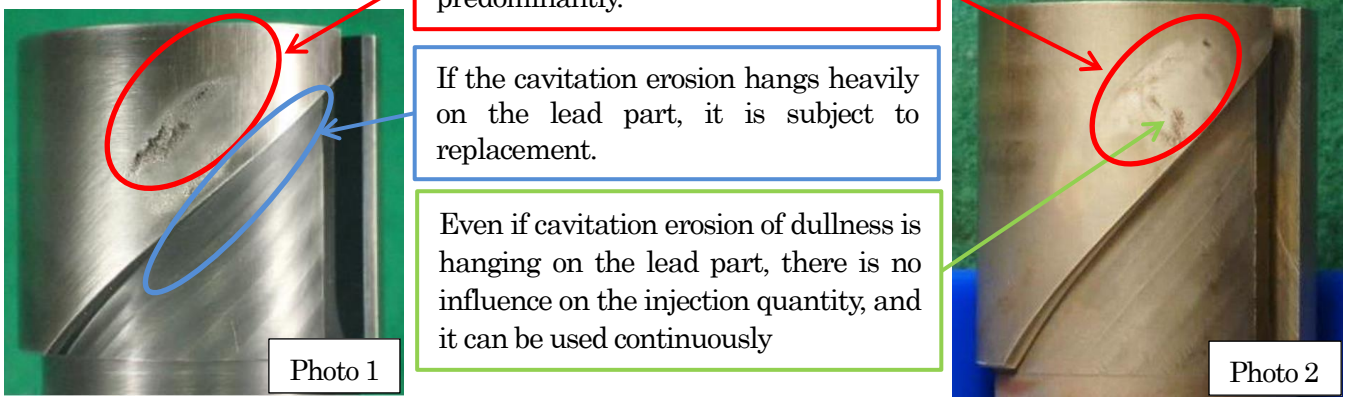

Photo 1 and 2 show the cases of actual cavitation erosion.
As you will find in the photos, cavitation erosion in most cases appears, structurally, in parallel along the upper lead part.

[Continuous Use of Plunger]
We surveyed plungers having cavitation erosion. As a result, we found that the light or somber cavitation erosion (Photo2) over the lead part, gives almost no influence on the injection performance and on the engine starting and operation performance. Accordingly, the plunger can be used continuously.
However, if P-max or exhaust temperature is fluctuated or engine performance is changed, we recommend to replace the plunger to new one at that timing.

YANMAR ENGINEERING CO.,LTD
Market Service Division

Approved	Checked	Prepared

Yanmar recommended Inspection Interval	
EY17	Every 2～3 years or 8000～10000 hrs operation
EY18	Every year or 4000～5000 hrs operation
EY22	Every year or 4000～5000 hrs operation
EY26	Every year or 4000～5000 hrs operation
EY33	Every year or 4000～5000 hrs operation

[Replacement Standard]

*Advance of Fuel oil Injection Pump Rack position

The wear of plunger will cause deterioration of engine startability and when the rack position advanced by more than 2.0mm, over that in the shop test record at the identical load, we recommend to replace the plunger to new one.

However, the rack scale will increase even if the performance deterioration of the turbocharger or the contamination of the air cooler regardless of the wear of the plunger. Therefore, in the situation where the turbocharger and air cooler can not be maintained, please judge plunger condition considering turbo charger, intercooler condition.