

INSPECTION REPORT

Date - October 5th 2011
Input - On-site accident investigation
Reference - RGA2400215 (Euromekanik AB)
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Approved by - Libor Mikulka – Plant Manager
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Product identification

Model number
CT1000SS

Quantity
7

Serial numbers
B9086; B5722; B6460; C0191; C0217; C0266; C0233

Inspection description

Nozzle B9086 reported for causing on-site accident. Exhaust valve remained stuck in open position after filling process finished, causing excessive spill of gas followed by intensive noise. This noise caused injury of person operating the nozzle.

This nozzle will be completely disassembled and inspected. Main goal is to identify the cause of malfunction of the exhaust valve shut-off mechanism.

Inspection results

Visual inspection did not reveal any sign of external damage to the nozzle. This immediately eliminated possibility of previous drive-away accident which could have lead to damage of internal components. Front sleeve was not damaged. Nozzle accepted NO-GO jaws gauge.

After removing the jaws, exhaust valve housing was visually inspected. Signs of wear were obvious. Exhaust valve was stuck in the housing.

Exhaust valve housing was removed and internal parts were inspected. Seal tensioner was not damaged. Springs under the Seal tensioner were in place and also without damage.

This eliminated possibility of valve operating system malfunction. Main focus was set on exhaust valve housing and exhaust valve itself.

Exhaust valve stuck in the housing



Seal tensioner



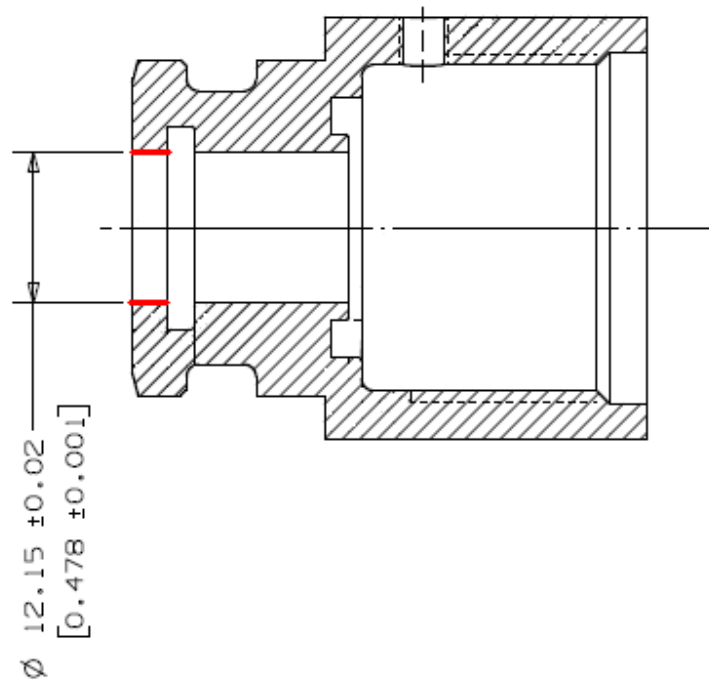
Springs



Removed seal tensioner and springs with no sign of damage



Measurements of exhaust valve housing showed that the inside diameter of the valve hole was undersized by 0.23mm (measured 11.90mm).

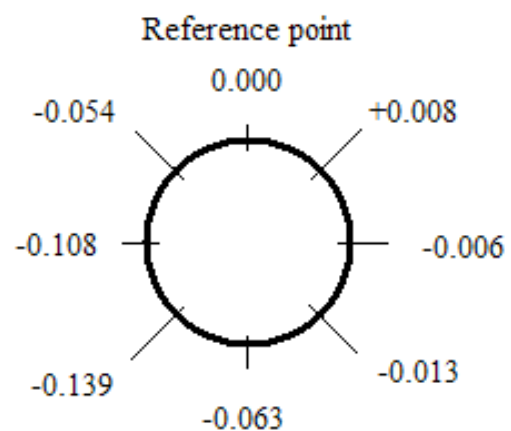


We found an artificial groove on the housing surface. This groove was created by interference between housing and receptacles during filling processes. The depth of the groove was not consistent as shown on below image.

Valve housing with signs of wear



Measurements of differences in depth of groove

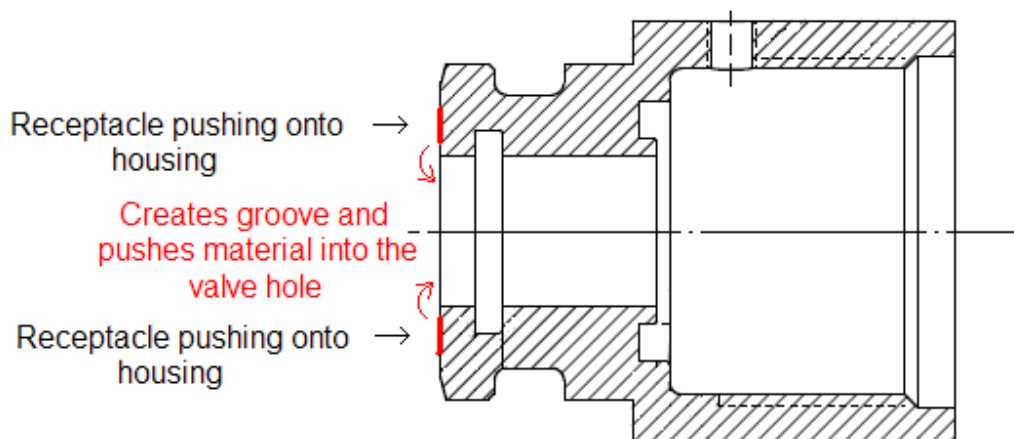


Measurements of the exhaust valve did not reveal any damage or non-conformity. Valve was found as being OK.

Jaws were tested using Go-NoGo gauge. Nozzle accepted the NoGo gauge which means they were worn.

Conclusions

Exhaust valve housing was undersized on the very top, causing it to squeeze the valve into the point of completely blocking it. This undersized condition was caused by car receptacles pushing onto exhaust valve housings.



Receptacle shall not push onto housing so rapidly and so intensively. Difference within the depth of groove was caused by the receptacle pushing mainly from on side, which indicates lack of tension between receptacle and jaws. Possible cause of this condition is that jaws were worn and connection between receptacle and nozzle was not secure.



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OPW Recommendations

Routine maintenance mentioned in Installation instructions delivered with every nozzle must be followed. OPW shall update them to make the jaws inspection clear and implemented as a part of every routine check. Routine check should be done at least once a month.

Main points to the routine checks from Installation instructions are:

- Inspect the jaws and clean any dirt, grease, or oil from stainless steel exhaust valve
- A Go/NoGo gauge for the jaws can be purchased from OPW
- Repeatedly depress the exhaust valve to ensure smooth operation. In the event that valve remains depressed, do not attempt to dislodge it. Call the local service representative immediately.

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