NEWS LETTER
May 1 2008
GMB bulletin No.028

Initial Leakage in the Mechanical seal of Water Pump

We have been receiving some claims concerning leakage of water pumps from our customers, specifically at the initial fitting stage. But, as a result of investigation, we usually find no leakage in the returned pumps, meaning they are normal in most cases. So, we would like to explain the mechanism which causes the small seepage or leakage at this stage.

First, please see the drawing 'Structure of water pump' below that will make it clearer to you. We can divide the mechanical seal of a water pump into a rotating part and a non-rotating part. We describe the contact point of these two parts as a sliding surface.

The rotating part is made of ceramics, and the non-rotating part is made of carbon. The ceramic part rotates so fast against the carbon part that frictional heat is generated. We choose ceramics and carbon as they can withstand high temperatures. We design the sliding surface so as to utilize the coolant as a lubricant to prevent heat damage. A small amount of coolant will evaporate at the sliding surface.

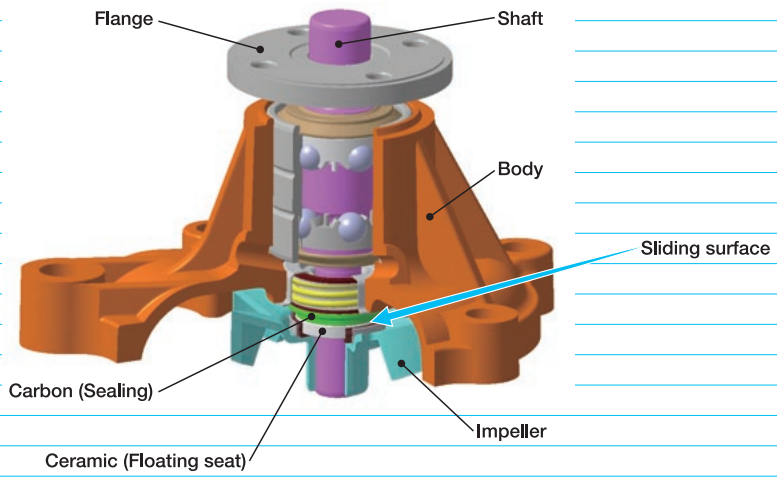
The vaporized steam will exhaust through the drain hole, but we cannot see it. Due to the temperature change outside the vapor will condense to liquid leaving a tiny residue. This evaporation and condensation of the coolant is the reason there is a drain hole in water pumps.

Water pumps have always had this condition which has led to the recent design of evaporation chambers. This phenomenon is most often seen at the initial usage, immediately after fitting the new pump.

This is due to the sliding surfaces generating a lot of friction before they settle together and benefit from the lubricating properties of the coolant mix which then creates a stable and consistent seal.

So, we can say this small 'leak' is just a part of the bedding-in process for the seal. We hope this explanation will be useful for all our customers to remove these claims and save costs for us all.

The structure of a water pump



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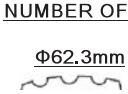
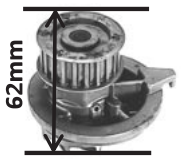
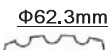
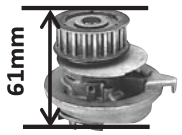
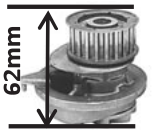
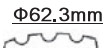
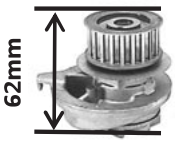
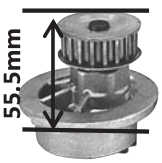
We added the measurments in these similar pumps.

PART NO.	APPLICATION GUIDE		
GWO-09A 1334012/15/99 90285034 90285418 90106450	82- 79-84 84-	ASCONA C 1.6 diesel FWD KADETT D 1.6 diesel KADETT E 1.6 diesel	NUMBER OF TOOTH (21) Φ62.3mm  
GWO-10A 1334008 90220568	87-	ASCONA,KADETT, ASTRA,BELMONT, CARLTON,CAVALIER 1600cc N,SH eng. 1800cc SE,NV eng. 2000cc E,NE,SEH eng.	NUMBER OF TOOTH (21) Φ62.3mm  
GWO-11A 1334014 90284913	87-	ASTRA,ASTRAMAX, ASCONA,KADETT, BELMONT,CAVALIER	NUMBER OF TOOTH (21) Φ62.3mm  
GWO-12A 1334017 90281612	88-	KADETT,VECTRA 16V 2000cc E,GSI,XE eng.	NUMBER OF TOOTH (21) Φ62.3mm  
GWO-13A 1334098 90144227	83-	CROSA 1200cc KADETT 1200cc ASTRA 1200cc NOVA 1200cc	NUMBER OF TOOTH (19) Φ56.234mm  
GWO-16A R1160030 QCP3084	X14XE 1400 X16XE 1600 X16XEL 1600 94.09-	ASTRA Ⅳ 1.4i 16v ASTRA Ⅴ 1.6i 16v TIGRA VECTRA ZAFIRA	NUMBER OF TOOTH (23) Φ57.197mm