

VRE Plummer Block Housing Units in Fans

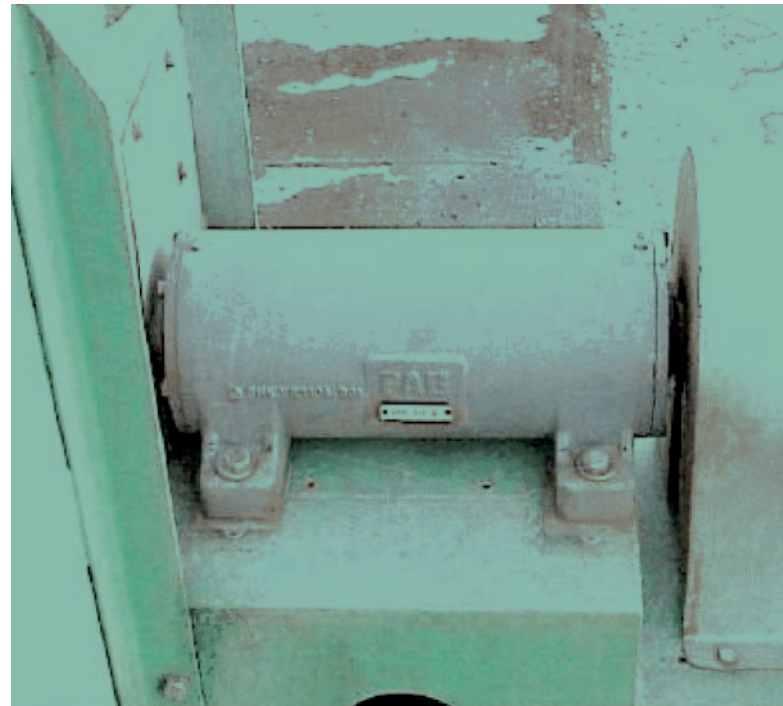


Examples of Application Engineering

WL 22 504 EA



Bearing arrangement with two plummer block housings



Bearing arrangement with an VRE plummer block housing unit

Plummer block housing units for radial-fan

Photos: Carter Holt Harvey, Whakatane

Carter Holt Harvey Pulp and Paper is a leading supplier of kraft linerboard to the Asia-Pacific region and a preferred supplier of radiata and hardwood pulp to the growing Asia-Pacific Market. CHH employs approximately 10 000 people across New Zealand, Australia and Asia.

The CHH Pulp and Paper Limited Kinleith Mill produces approximately 330 000 tons of paper grades annually and 265 000 tons of predominantly bleached kraft market pulp. Tasman Mill produces approximately 275 000 tons of specialty market pulp annually. The former fans at CHH Pulp and Paper are critical to production quality.

Due to the high speed and light loading, reliability problems were experienced and bearing life was only 6–8 weeks with spherical roller bearings. To overcome production down-time, scheduled changes were introduced at considerable costs and operational risk. There are 5 of these critical fans affected.

Technical Data

Fan-Type	Radial-Fan
Drive	Belt-Drive
Revolutions	3 000 rpm
Load	lightly loaded
Temperature	40 °C
Environment	outdoor
Placement	under roof

Arrangement

The former arrangement was with two separate plummer block housings and spherical roller bearings. This arrangement only reaches a life time of 6–8 weeks with grease lubrication.

Due to the high speed of 3 000 rpm and the light loading, the non-locating bearing runs in slippage hazard.

FAG recommended changing to FAG plummer block housing units **VRE312-D**.

A new lubrication program with **FAG Arcanol Multitop** was implemented.

The new units cost approximately 2,5 times the original bearings plus housing assemblies but are better suited to the operational conditions.

The bearing life has extended to more than two years.

For this reason CHH Pulp & Paper changed three additional fans with plummer block housing units.

Tolerances

Shaft tolerance **k6** / Housing tolerance **J6**

Lubrication

The bearings in the FAG plummer block units VRE312D are filled with grease of consistency class 2 FAG Arcanol Multitop. There is a lubricating nipple at each bearing location.

Overlubrication is prevented by the grease valves located inside the housing beside the bearings.

Sealing

The seals of the plummer block housing units VRE3 prevent the penetration of contaminants as well as the escape of the lubricant. Friction losses are low.

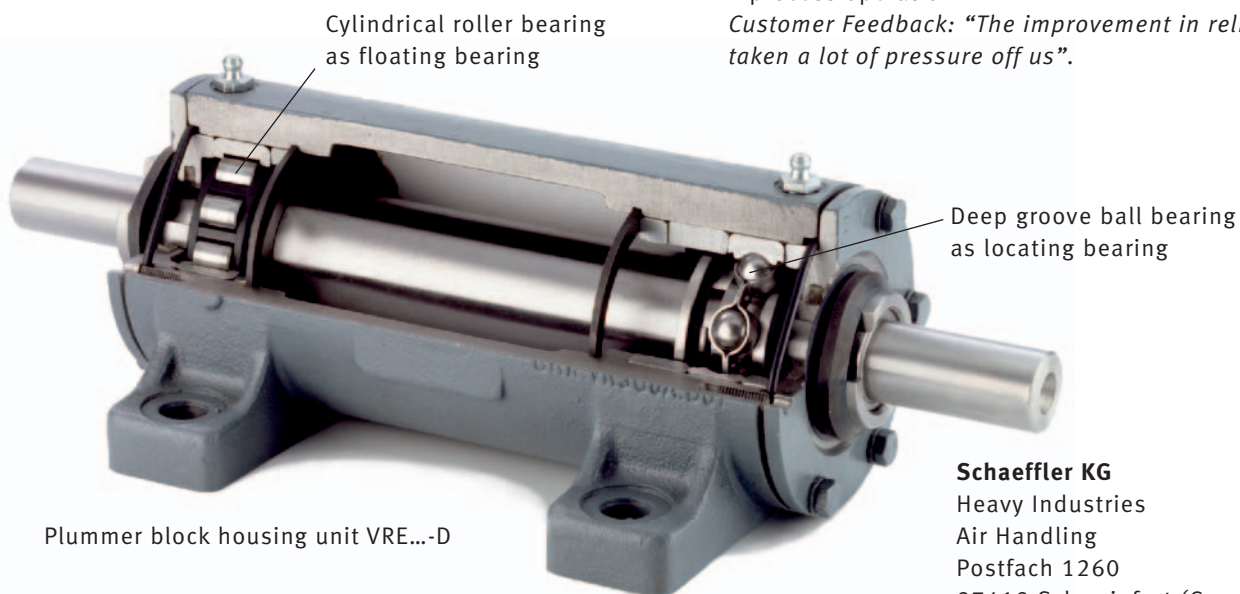
The sealing system consists of felt rings in the grooves of both covers as well as two externally applied V-rings made of NBR.

Benefits for customer

The changes have some advantages:

- Hard savings on replacements bearings (\$18 000 p.a.)
- Hard savings on labour costs to change bearings (\$12 000 p.a.)
- Savings through reduction in relubrication requirements
- Improvements in product quality through correct process operation

Customer Feedback: "The improvement in reliability has taken a lot of pressure off us".



Plummer block housing unit VRE...-D

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