

Product Improvement Bulletin

SGT-A35

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Aero Derivative Gas Turbines

IP Classification R00

Date: May 2025

PIB 02-0026-00

CASCON SGT-A35 GG OIL PUMP DESIGN IMPROVEMENTS TO ADDRESS PUMP SEIZURES

APPLICABILITY

This Product Improvement Bulletin (PIB) is applicable to all SGT-A35 Gas Turbine (GT) packages delivered since 2002 equipped with the Cascon SGT-A35 Gas Generator (GG) lube, hydraulic and scavenge oil pump.

REASON FOR ISSUE

Several SGT-A35 synthetic oil pumps manufactured by Cascon have recently been removed from service prematurely after experiencing a fracture of the shear-neck coupling due to seizure of the journal bearing between the pump shaft and bearing housings in either the GG lube circuit at the aft end of the pump or the GG rear bearing scavenge circuit at the drive end of the pump. Refer to [Figure 1](#).

Cascon and Siemens Energy have completed a Root Cause Analysis (RCA) that ultimately did not identify an explicit root cause. However, detailed investigation summarised in a Cascon design improvement report identifies design improvements that aim to extend the pump's operating life and improve its tolerance of transient operating conditions and part variation in manufacturing processes.

This PIB includes summaries of specific features of the pump that will be modified for pumps returned to Cascon for repair and overhaul as well as for new production pumps.

PLAN FOR INTRODUCTION OF PUMP IMPROVEMENT FEATURES

Pumps returned to Cascon for repair and overhaul

Siemens Energy recommends pumps be returned for repair and overhaul at 24,000 hours service as standard practice. Such pumps will be upgraded with the following changes:

- Garlock Glacier Bearings (GGB) DU sleeve bearings are replaced with DP31 sleeve bearing material specifically designed for improved lubrication. Refer to [Figure 2](#).
- bearings are inspected to reduced tolerances (i.e., narrow limited) to ensure increased minimum clearances between bearing and shaft.
- passageways are machined into pump housings to facilitate pressurised lubrication of bearings. Refer to [Figure 3](#) and [Figure 4](#).
- the drive-end thrust roller bearing is replaced by a ball bearing assembly. Refer to [Figure 5](#).
- the mechanical face seal cavity is modified to include a high point vent to eliminate the potential of trapping of air bubbles and improve continuous venting. Refer to [Figure 6](#).
- the mechanical face seal is replaced by one with an Antimony carbon primary seal ring with more wear resistant materials. Refer to [Figure 6](#).

Pumps returned for repair and overhaul will continue to be designated as Siemens Energy part number RRE004491 and Cascon will manage any configuration change in their production system as needed.

New production pumps placed on order

New production pumps placed on order after introduction of this PIB will feature the improvements defined above and also:

- pump housings will be machined from bar stock of the same material as the original sand castings to better control lead time and facilitate housing-to-housing alignment. Refer to [Figure 7](#).

The upgraded pump is a direct replacement (same fit and function) for original Siemens Energy part number RRE004491. There are no changes in interfaces and no additional parts are required during replacement.

Siemens Energy part numbers for this improved pump design are E1A2983860 for New Units and E1B101431894 for the aftermarket Mods & Upgrades and Parts groups. (Note: the E1A and E1B numbers are different only due to different versions (i.e. instances) of the product lifecycle management systems for these business units).

PRODUCT IMPROVEMENT PLANNING AND IMPLEMENTATION

YOUR BENEFIT

Improved pump reliability, operating life and tolerance of transient operating conditions and part variation in manufacturing processes.

P.I.B. REVISION HISTORY

Rev. #	Rev. Date	Revision Change
0	06 May 2025	Initial Issue

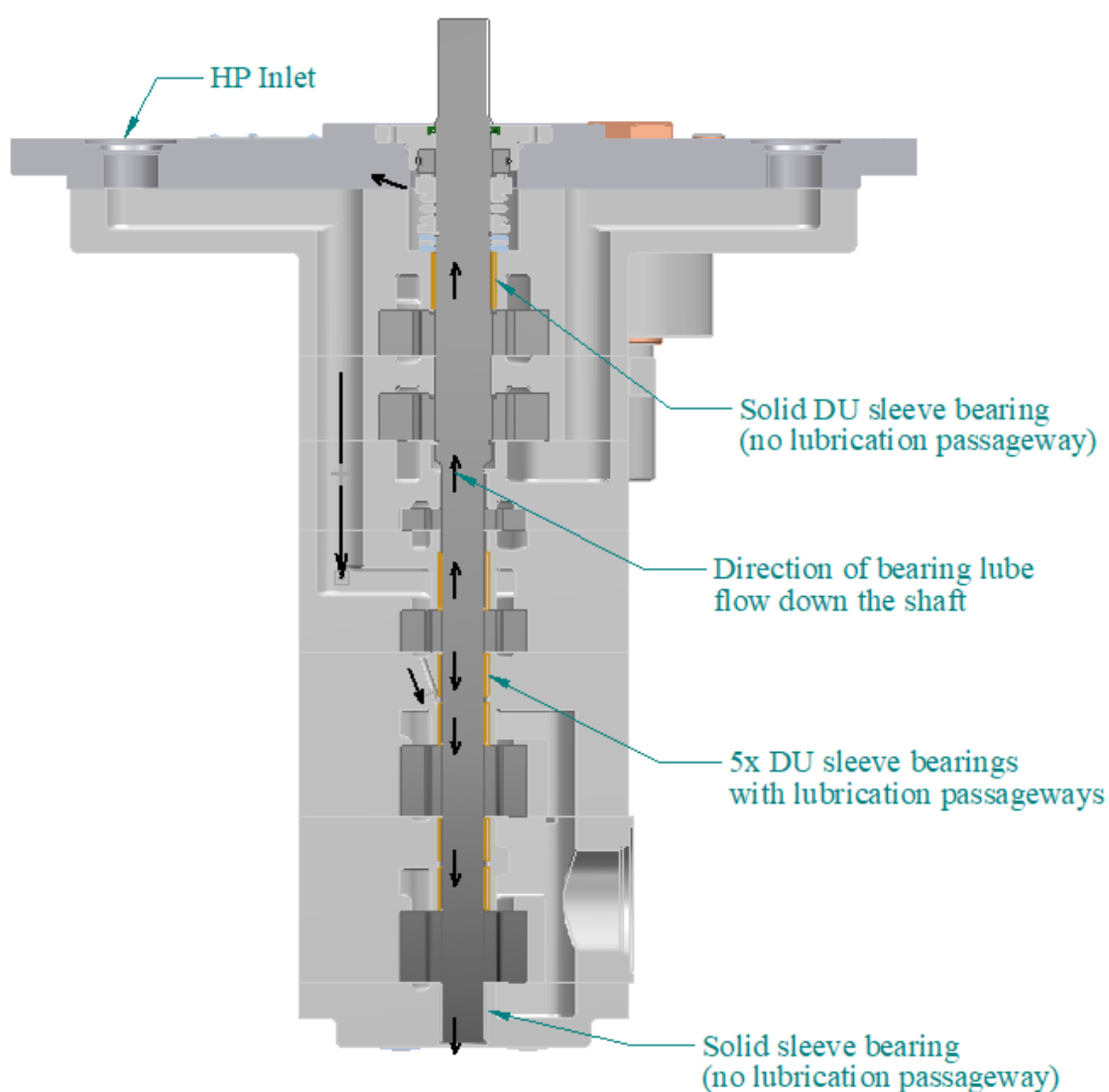
FIGURES



Figure 1 Representative damaged pump hardware.
Top: Inner and outer gerotor and housing showing wear on face of inner gerotor.
Middle: Wear on DU bearing.
Bottom: Wear of shaft adjacent to DU bearing.

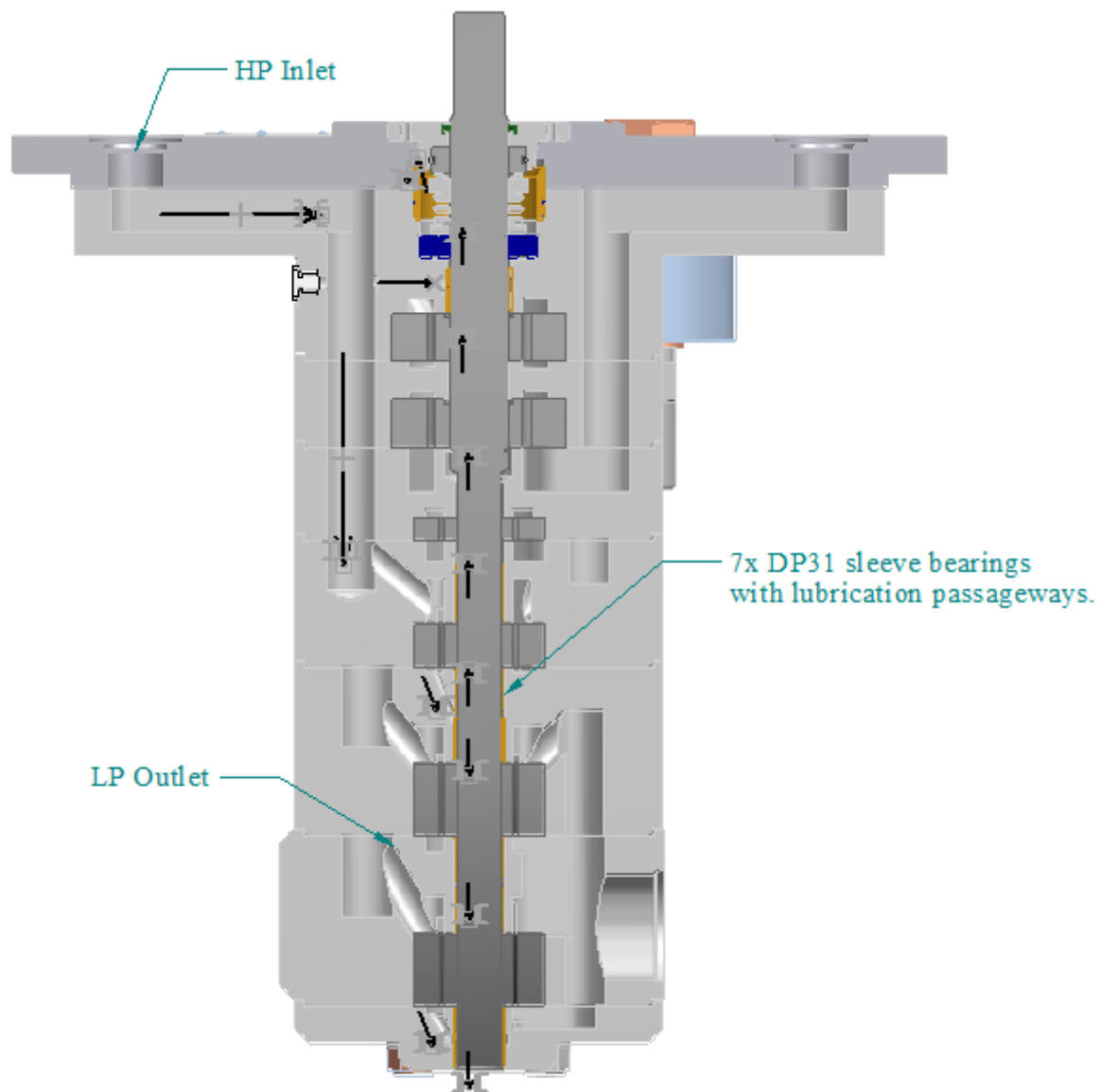


Figure 2 Photograph of DP31 bearing following Cascon's HALT Testing (Highly Accelerated Life Test).



Siemens PN RRE004491

Figure 3 Internal lube system of original pump design.



Siemens PN E1A2983860/ E1B101431894

Figure 4 Internal lube system of improved pump design.

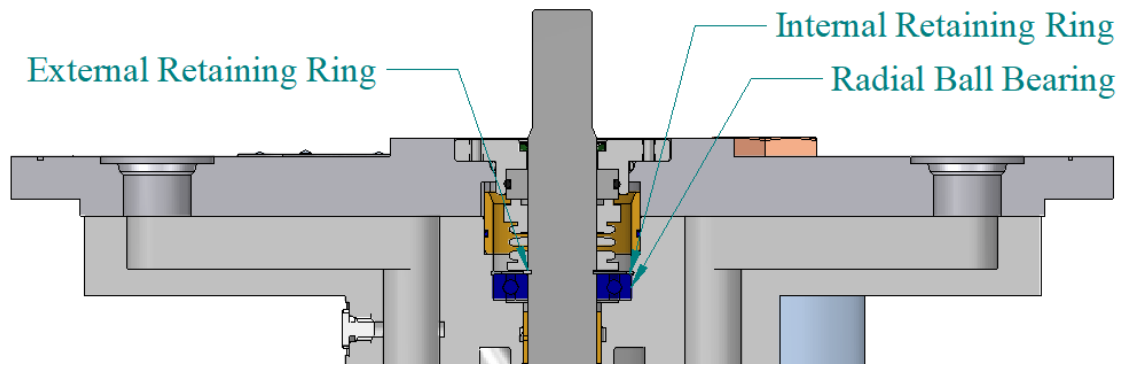


Figure 5 Drive-end thrust ball bearing in new pump design replaces roller bearing in original pump design.

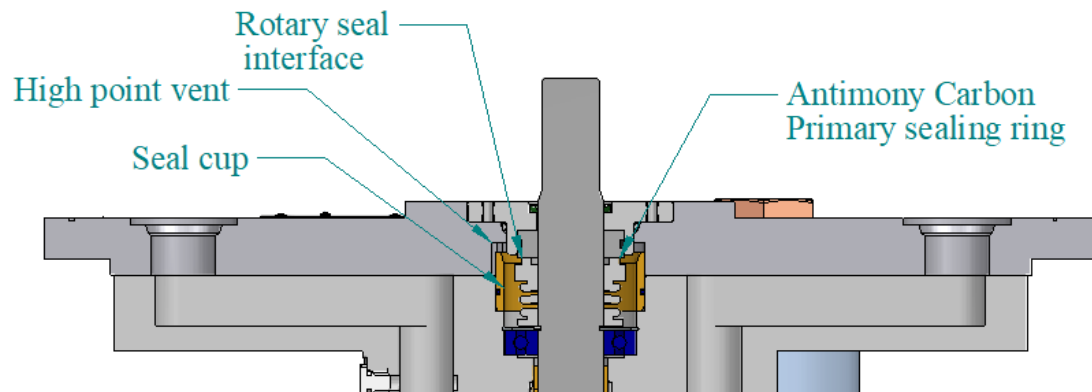
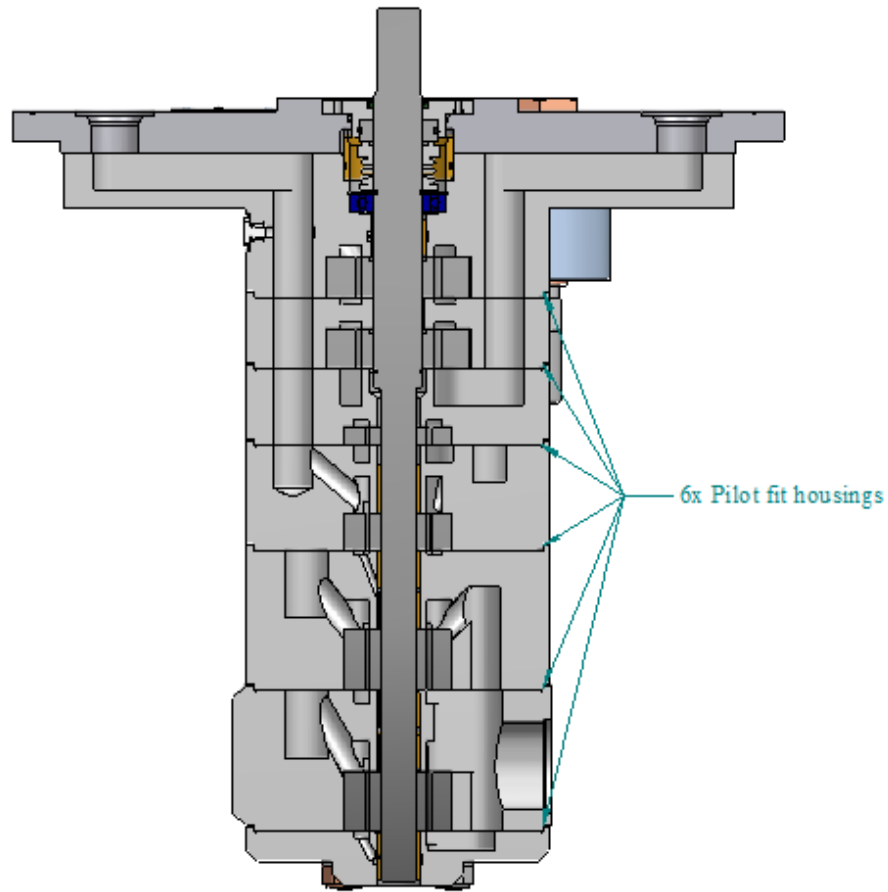


Figure 6 Seal cavity with seal cup for improved venting and Antimony carbon primary seal ring introduced in new pump design.



Siemens PN E1A2983860/ E1B101431894

Figure 7 Pilot fit housings in new pump design for improved housing-to-housing alignment. Pilot and shaft bores for each pump housing will be machined during the same operation using a dual-spindle lathe to provide significantly improved control of bore size and position compared to original pump design with dowel pin alignment.

COMMUNICATION

If you should have any questions or require further information to make the necessary arrangements in respect of your installation then please contact your designated Siemens Energy Project Manager (PM) or Customer Support Manager (CSM), your regional Siemens Energy Representative or your Siemens Energy Regional Office.

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