

A/C Type : A330				
SRI Number 311870				
<input checked="" type="checkbox"/> System	<input type="checkbox"/> Powerplant	<input type="checkbox"/> Cabin	<input type="checkbox"/> Structure	
<input checked="" type="checkbox"/> ALD	<input type="checkbox"/> ALP	<input type="checkbox"/> ALC	<input type="checkbox"/> SDR	<input type="checkbox"/> LD
<input type="checkbox"/> Accidental	<input type="checkbox"/> Environment	<input type="checkbox"/> Fatigue	<input type="checkbox"/> ALM	<input type="checkbox"/> EXT Repair
<input type="checkbox"/> ALCA	<input type="checkbox"/> OPS			
Prepared by : Arsha Dwiparizka		Sign:		
Date : July 15, 2025				
ATA : 29 and 32				
Event Month (YYMM) : 2406				
<b>PROBLEM STATEMENT</b> In May 2024, Hydraulic Leaks become driver and triggered the Alert Level Delay. The drivers are EDP, flexible hose PN 201042198 on the MLG Pitch Trimmer, and flexible hose PN F0003160004500B FIN 5261GG.				
<b>PROBLEM DESCRIPTION</b> There are three events regarding hydraulic leaks happened in May 2024, PK-GPY leak from MLG pitch trim hose area on 8 May, PK-GHG high consumption of hydraulic fluid due to leakage on Green EDP#1, PK-GPW found leak on MLG bay.				
<b>PROBLEM ANALYSIS</b>  Existing MP Task: 3200001000 REPLACEMENTS OF MAIN LANDING GEAR PITCH TRIMMER SUPPLY FLEXIBLE HOSE PN 201042197 & 201042198  Engineering Publication: EO 10000241098/000/00 ONE TIME REPLACEMENT OF FLEXIBLE HOSE 5260GG & 5261GG EO 10000241098/001/00 REPETITIVE REPLACEMENT OF FLEXIBLE HOSE 5260GG & 5261GG  Manufacturer / Vendor Publication: <ul style="list-style-type: none"> <li>TFU 29.11.00.016- Hydraulic Engine Driven Pump (EDP): Outlet Rosan fitting seepage with Eaton PN 3022053-000/-001 (PV3-300-EA2/-EA2A) / Rolls-Royce Engine / Green EDPs</li> <li>TFU 29.10.00.054 - EDP PN 3022053-001 manufacturing issue</li> <li>TFU 32.00.00157 – Preventive Replacement of Flexible Hoses on Landing Gears</li> </ul> Shop Findings (if applicable):				
PN	DESCRIPTION	SN	SHOP FINDING	
3022053-001	PUMP, ENG DRIVEN (ETOPS)	G0810009	Loose outlet fitting, leak from shaft seal area	
3022053-001	PUMP, ENG DRIVEN (ETOPS)	G1140517	shaft seal leak, leak at adapter block and valve block mating surface	
3022053-001	PUMP, ENG DRIVEN (ETOPS)	G0910567	Worn out shaft sealing element	
3022053-001	PUMP, ENG DRIVEN (ETOPS)	G1511089	Worn driveshaft, heavy corroded on coupling shaft, impeller out of range for fit	

3022053-001	PUMP, ENG DRIVEN (ETOPS)	G0930275	Found outlet fitting leak, blocking piston failed to block flow
3022053-001	PUMP, ENG DRIVEN (ETOPS)	G1540547	Shaft Seal Leak, leak at housing and mounting flange, outlet fitting leak

### Analysis

#### Engine Driven Pump (PK-GHG Case)

There are several Part Numbers of Engine Driven Pump on A330 GIA Fleet, which divided into below diagram,

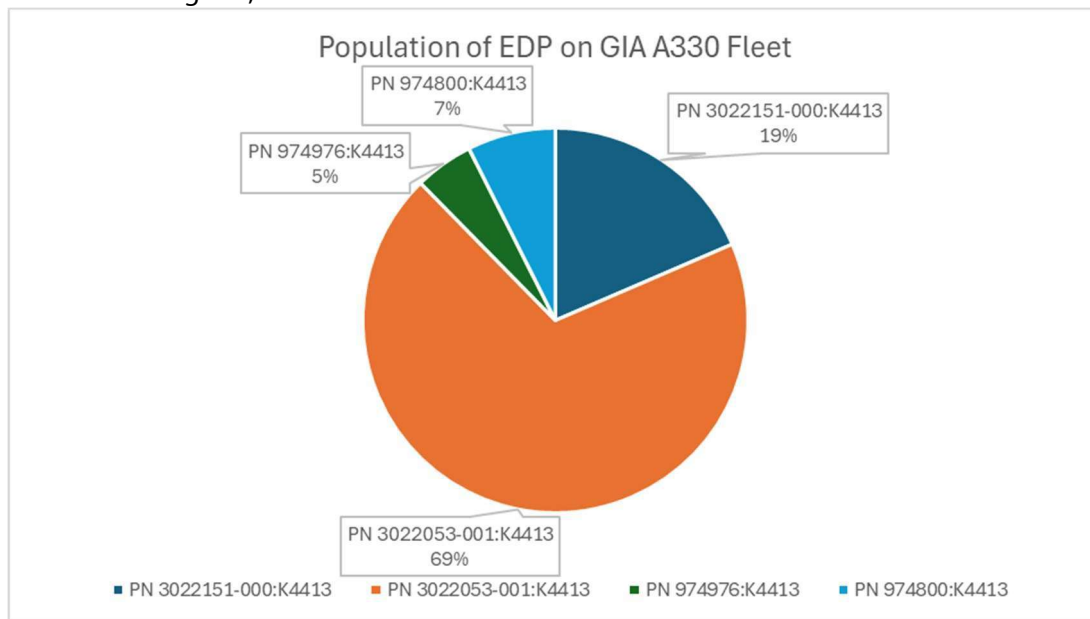


Figure 1. Population of EDP on A330 GIA Fleet

The reliability and unscheduled removal of this most installed PNs which PN 3022053-001 can be seen on below figure,

### Component Reliability Dashboard

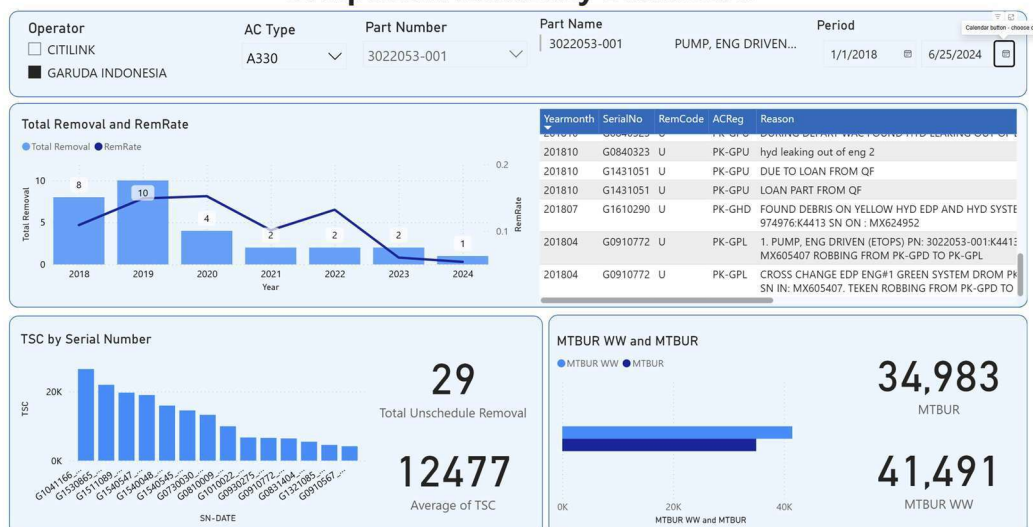


Figure 2. Reliability and Unscheduled Removal of PN 3022053-001

From the figure above, the GA MTBUR is still below the worldwide MTBUR. The shop report shows that the problem is from internal leaks and the outlet fitting however, not all the SVR has been acquired. This problem has been addressed by introducing the new PN 3022151-000 refer to AIRBUS TFU 29.11.00.016- "Hydraulic Engine Driven Pump (EDP): Outlet Rosan fitting seepage with Eaton PN 3022053-000/-001 (PV3-300-EA2/-EA2A) / Rolls-Royce Engine / Green EDPs". To have better decision and effective preventive action, the rest of SVR's still being monitored.

#### Flexible Hose

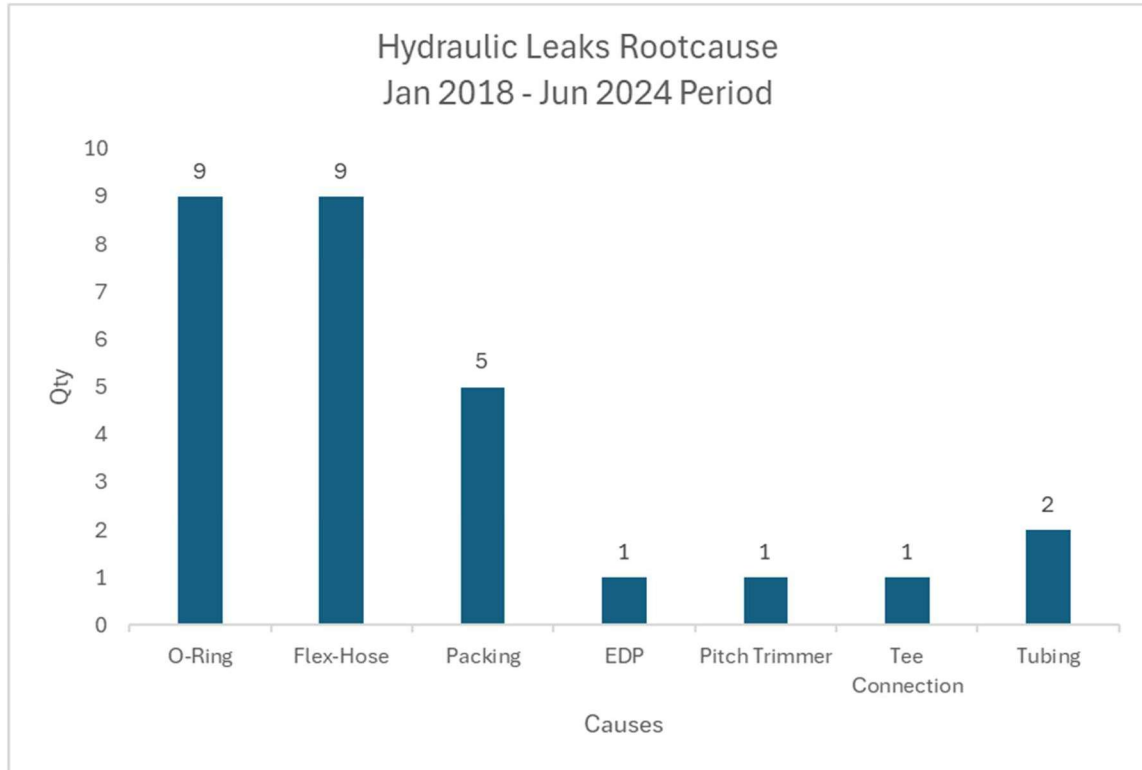


Figure 3. Hydraulic Leaks Rootcause

The figure above shows the rootcause of hydraulic leakages are mostly due to degraded o-ring and failure of flexible hose.

PK-GPY experienced delay on 8 May 2024 due to leakage on main landing gear hydraulic hose area. The rectification was carried out by replacing the flexible hose PN 201042198. The preventive recommendation has been addressed by AIB on TFU 32.00.00157 "Preventive Replacement of Flexible Hoses on Landing Gears". The TFU recommends performing the replacement of flexible hose PN 201042197 and 201042198 within interval 6 years. Refer to TFU, the rootcause of this leakage due to environmental condition, hydraulic fluids, cleaning agent, anti-icing/de-icing agent and foreign object damage in MLG Area.

From AIRBUS recommendation, the replacement should be performed within interval of 6 years. However, due to this case, the interval has been de-escalated to 4 years and incorporated with MP 3200001000 REPLACEMENTS OF MAIN LANDING GEAR PITCH TRIMMER SUPPLY FLEXIBLE HOSE PN 201042197 & 201042198

PK-GPW experienced delay on 31 May 2024 due to hydraulic leak on MLG bay and rectified by replacing the flexible hose PN F0003160004500B (FIN 5261GG). Due to this issue, GIA has issued Engineering Order 10000241098/000/00 to perform One time Replacement of this MLG Normal Brake Flexible hose FIN 5260GG & 5261GG for all A330 Fleet followed with the repetitive replacement with EO 10000241098/001/00.

**Conclusion**

The EDP PN 3022053-001 has an issue on the outlet port fitting and this issue has been captured and addressed by AIRBUS as mentioned in TFU 29.11.00.016- "Hydraulic Engine Driven Pump (EDP): Outlet Rosan fitting seepage with Eaton PN 3022053-000/-001 (PV3-300-EA2/-EA2A) / Rolls-Royce Engine / Green EDPs". This modification of EDP planned to be embodied to GIA Fleet while still concerning of Cost and Benefit due to this modification not included as retrofit monitored program. The flexible hose issue has been covered by MP 3200001000 for the preventive replacement of flexible hose PN 201042197 & 201042198 on the pitch trimmer. Additionally, the preventive replacement on FIN 5260GG and 561GG also has been developed by issuing EO 10000241098/001/00.

**ROOT CAUSE**

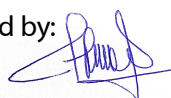
- ☐ Specific Tail Number / Modification Status
- ☐ Specific Line Station
- ☐ Maintenance Practice / Performance
- ☐ Maintenance Personnel Skill
- ☐ Maintenance Program
- ☒ System / Component Design Defect
- ☐ Material and Spares
- ☐ Maintenance Procedures
- ☐ Maintenance Work Card / Sheets
- ☐ Material and Process Specification
- ☐ Operation Procedure
- ☐ Excessive Failure Rate
- ☐ Excessive NFF
- ☐ Tool and Equipment
- ☐ Modification
- ☒ Other

**Description of Root Cause:**

The EDP known that have issues on the outlet rosan fitting refer to AIRBUS TFU 29.11.00.016. The modification will be carried out while still evaluate the shop visit report due on this date of this document, not all of shop reports are available. Flexible hose is one of the components that most contribute as leak drivers in A330 Fleet Worldwide this is due to flexible hoses imposed a high level of stress caused by pressure fluctuation pulsation because of movement. AIRBUS recommends performing regular inspection and replacement to prevent any loss of hydraulic system during operations.

**ACTION & FOLLOW UP**

Propose the modification of EDP and maintain the repetitive replacement of flexible hose to be performed in time. Issue Engineering Information regarding Hydraulic Standard Practices.

Solution Desc.	Resp. Unit	Start Date	Finish Date
Propose the modification of EDP	TEA-1	6 May 2024	31 Dec 2025
Maintain the preventive replacement of flexible hoses	TFP	25 June 2024	Continue
Issue EI 10000278713/000/00 Hydraulic Standard Practices	TEA-1	16 July 2025	31 August 2025
GMF Manager TEA Reviewed by:	GMF FTM Evaluated by:	GIA Approved by:  Digitally signed by Nur Metasari / 533864	