International Aero Engines

SERVICE BULLETIN

ENGINE - INSPECT THE OIL SCAVENGE PUMP DRIVE AND DRIVEN GEARS - CATEGORY CODE 3 - MOD.ENG-72-0129

1. Planning Information

A. Effectivity

(1) Aircraft: Airbus A320

(2) Engines: Only those V2500-A1 Engines listed below:

V0120, V0235, V0238, V0239, V0240, V0241, V0243, V0244, V0246, V0248, V0251, V0259, V0261, V0262, V0266, V0267, V0270, V0271, V0272, V0273, V0279, V0289, V0290, V0291, V0292, V0295, V0296, V0298, V0299, V0300, V0301, V0302, V0304, V0305, V0307, V0308, V0309, V0310, V0312, V0313, V0314, V0315, V0316, V0317, V0318, V0320, V0321, V0322, V0323, V0324, V0325.

B. Reason

Incorrect oil scavenge pump installation could damage pump drive and driven gears.

This condition was observed during engine pass-off testing and at the airframer.

C. Compliance

Category Code 3.

The engines listed above have been delivered as spare engines and/or have not been installed on aircraft. Accomplish prior to engine installation on all engines listed above.

D. Approval

The requirement specified in Paragraph G. of this Service Bulletin have been shown to comply with the applicable Federal Aviation Regulations and are FAA-APPROVED for the engine models listed.

E. Tooling - Price and Availability

IAE 1F10304 Clamping fixture	1 off
IAE 1F10305 Support stud	3 off

F. References

(1) Internal Reference No.

EC93VF810

EC93VF810A

(2) Other References

A320/V2500 Maintenance Manual

G. Actions

(1) Open the fan cowls by the approved procedure in Reference (1), Chapter/Section 71-13-00, Maintenance procedure, as necessary.

(2) Drain the oil system by the approved procedure in Reference (1), Chapter/Section 12-13-79, Servicing, as necessary.

CAUTION: USE A TOOL WITH A BLUNT EDGE (FOR EXAMPLE A SMOOTH PUTTY KNIFE) TO SEPARATE THE PUMP FROM THE GEARBOX FLANGE. YOU MUST MAKE SURE THAT YOU DO NOT DAMAGE THE SEALING SURFACES OF THE PUMP PILOTING DIAMETERS.

(3) Remove the oil scavenge pump per the approved procedure in Reference (1), Chapter/Section 79-22-41, Removal/Installation.

(4) Inspect the oil scavenge pump driven gear as follows:

(a) Using a 10X magnifying glass inspect the driven gear for cracks.

Cracks are not permitted.

(b) Gear tip of tooth and tooth area at location 1 and 3. Refer to Figure 1 The maximum permitted number of nicks is 3 per tooth, 0.04in. (1,02 mm) long, not extended more than 0.02in. 0,51 mm) on to the face surface. The minimum distance between the nicks must be equal to or more than the length of the longest nick. Nicks can be blended to a maximum depth of 0.01in. (0,25 mm).

(c) Gear tooth face surface at location 2. Refer to Figure 1. The maximum permitted damaged area of each tooth is 10 percent of the face surface. Damages can be blended to a maximum depth of 0.0014in. (0,035 mm).

(d) Oil scavenge pump driven gear wobble (two alternate methods)

(i) Install IAE 1F10305 support studs 3 off to IAE 1F10304 clamping fixture 1 off and position it on a faceplate
(ii) Install the oil scavenge pump on the clamping fixture; put the pump driven gear side down. Refer to Figure 2

(iii) Using a dial gage, position the tip gage on the driven gear face. Refer to Figure 2. Set to zero the dial indicator.

(iv) Rotate the pump and check for gear wobble. The maximum permitted wobble is 0.01in. (0,25 mm).

(v) As an altrnate method, you can also check the gear wobble positioning:

- The pump on the faceplate and parallel bars, with the gear side down.
- Put the tip gage on the driven gear face.
- Move the dial gage along the gear face and check the wobble at different positions.

(e) If the pump driven gear is not within the limits specified in (a), (b), (c), (d) replace the oil scavenge pump.

(f) If the pump driven gear is within the limits, mark the following symbol on the oil scavenge pump cover close to the pump data plate. Use a pencil and ink.

(5) Inspect the oil scavenge pump drive gear (in the gearbox) as follows:

(a) Using a 10X magnifying glass and a torch inspect the drive gear for cracks. Cracks are not permitted.

(b) Gear tip of tooth and tooth area at location 1 and 3. Refer to Figure 3. The maximum permitted number of nicks is 3 per tooth, 0.04in. (1,02 mm) long, not extended more than 0.02in. 0,51 mm) on to the face surface. The minimum distance between the nicks must be equal to or more than the length of the longest nick. Nicks can be blended to a maximum depth of 0.01in. (0,25 mm).

(c) Gear tooth face surface at location 2. Refer to Figure 3. The maximum permitted damaged area of each tooth is 10 percent of the face surface. Damages can be blended to a maximum depth of 0.0014in. (0,035 mm).

(d) If the pump drive gear is not within the limits specified in (a), (b), (c) replace the gearbox module.

(6) Check the gearbox magnetic chip detectors, the master MCD, the scavenge pump strainer and the gearbox/scavenge pump cavity for contamination.

WARNING: BE CAREFUL DURING THE INSTALLATION OF THE OIL SCAVENGE PUMP. IT WEIGHS 12,22 LB (5,54 KG)

(7) Reinstall the oil scavenge pump.

(a) Align the oil scavenge pump and gearbox drives.

(i) Install the oil scavenge pump without the packings. Make sure that the pump driven gear engages correctly with the oil scavenge pump drive gear in the gearbox.

NOTE: Turn the gearbox gear train with the wrench. This helps to engage the pump driven gear with the pump drive gear in the gearbox.

(ii) Turn the wrench down the vertical position. Do not remove the wrench.

NOTE: The position of the wrench will show if engine/ gearbox train rotation occurred after removal of the pump in following step.

CAUTION: DO NOT TURN THE ENGINE/GEARBOX GEAR TRAIN/ SCAVENGE PUMP DRIVE GEAR, AFTER PUMP REMOVAL, TO AVOID DAMAGE TO THE PUMP/GEARBOX DURING REINSTALLATION OF THE PUMP.

(iii) Remove the oil scavenge pump

NOTE: If any rotation occurs repeat the above reinstallation steps.

(b) Install the oil scavenge pump by the approved procedure in Reference (1), Chapter/Section 79-22-41, Installation procedures. Follow the instructions up to SUBTASK 79-22-41-420-400, step D. (6), than continue as follows:

CAUTION: DO NOT DRAW DOWN THE PUMP INTO POSITION WITH THE NUTS.

(i) Make sure that the driven gear of the pump engages correctly with the oil scavenge pump drive gear in the gearbox, and than push the pump by hand into position. Check to make sure there is no gap between the flanges.

(ii) If full seating of the pump by hand is not possible, continue with the following procedure:

- Install two washers (40) and two nuts (39) in 3 and 9 o'clock positions. Check to make sure that the tube (36) is correctly engaged in to its seat on the gearbox.

- Torque the nuts between 15 to 17 lbfin (0,17 to 0,19 mdaN).

- Turn slowly the gearbox train the wrench to ensure the engagement of the driven gear on the pump with the drive gear in the gearbox.

NOTE: A light "click" could be heard if the two gears were not properly engaged.

(iii) Install two washers (40) and two nuts (39), as necessary, and torque the four nuts between 85 to 95 lbfin (0,96 to 1,07 mdaN) Ref (1).

(iv) Rotate the gearbox train with the wrench to make sure proper rotation

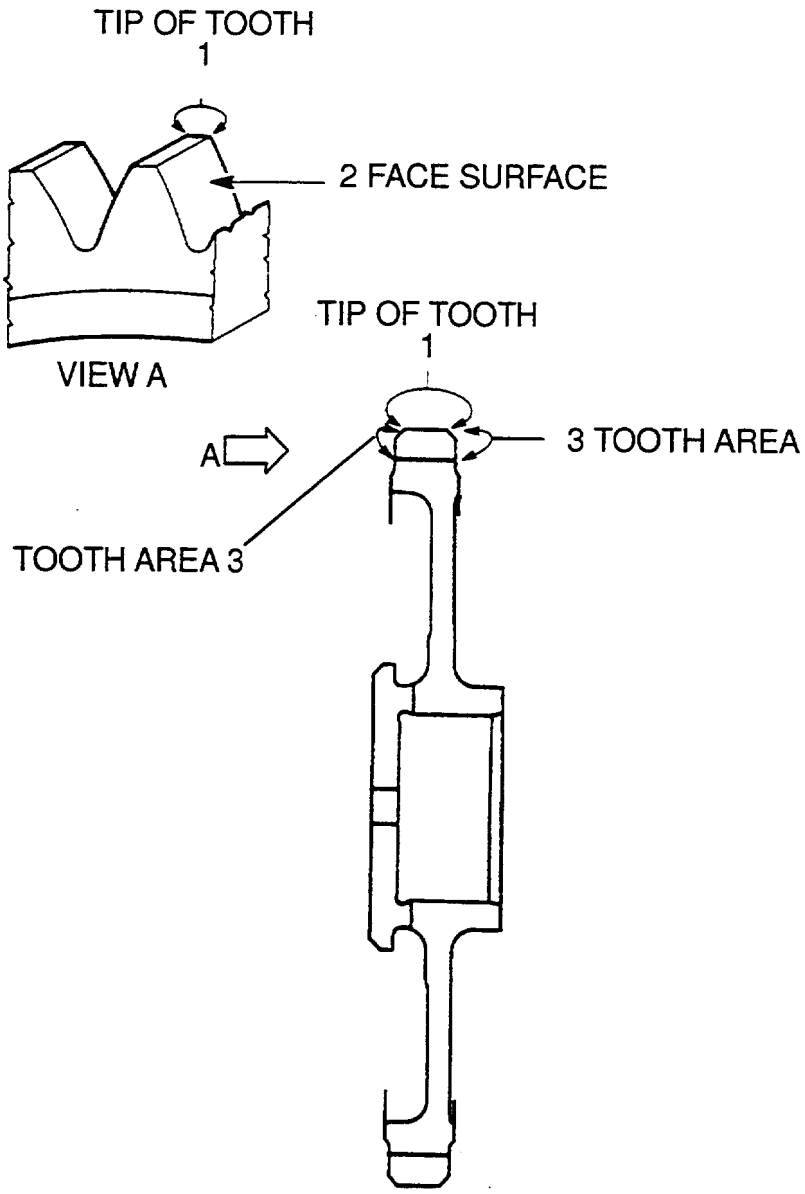
(c) Continue to follow instructions in reference (1), Chapter/ Section 79-22-41, Subtask 79-22-41-430-400 up to Subtask 79-22-41-410-404.

(8) Fill the oil system per the approved procedures in Reference (1), Chapter/Section 12-13-79, Servicing, as necessary.

(9) Close th fan cowls per the approved procedure in Reference (1), Chapter/Section 71-13-00, Maintenance practices, as necessary.

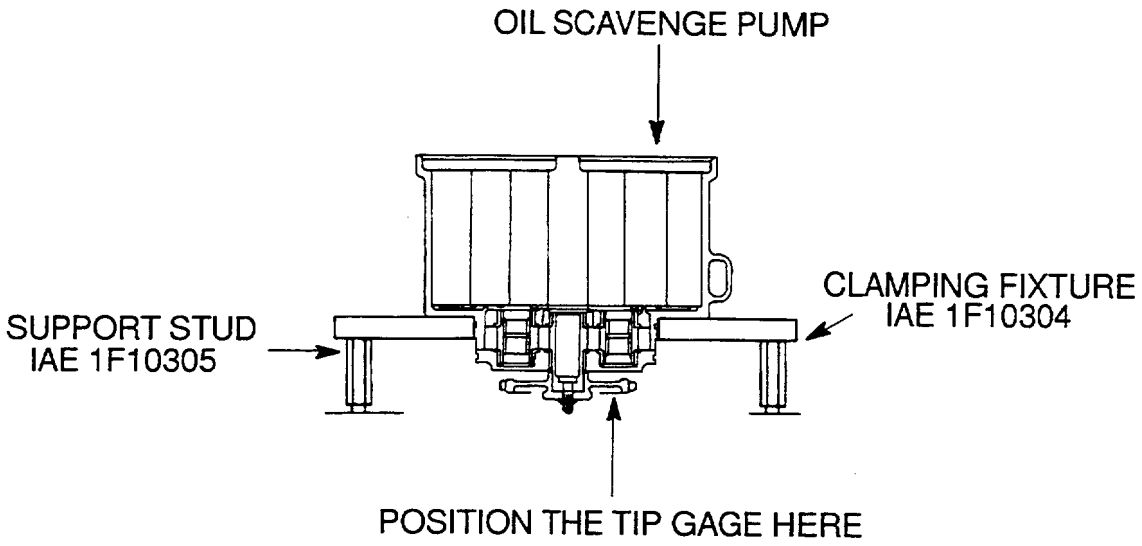
(10) Do a leak check per the approved procedures in Reference (1), TASK 71-00-00-710-017, as necessary.

(11) A Record of accomplishment is necessary.



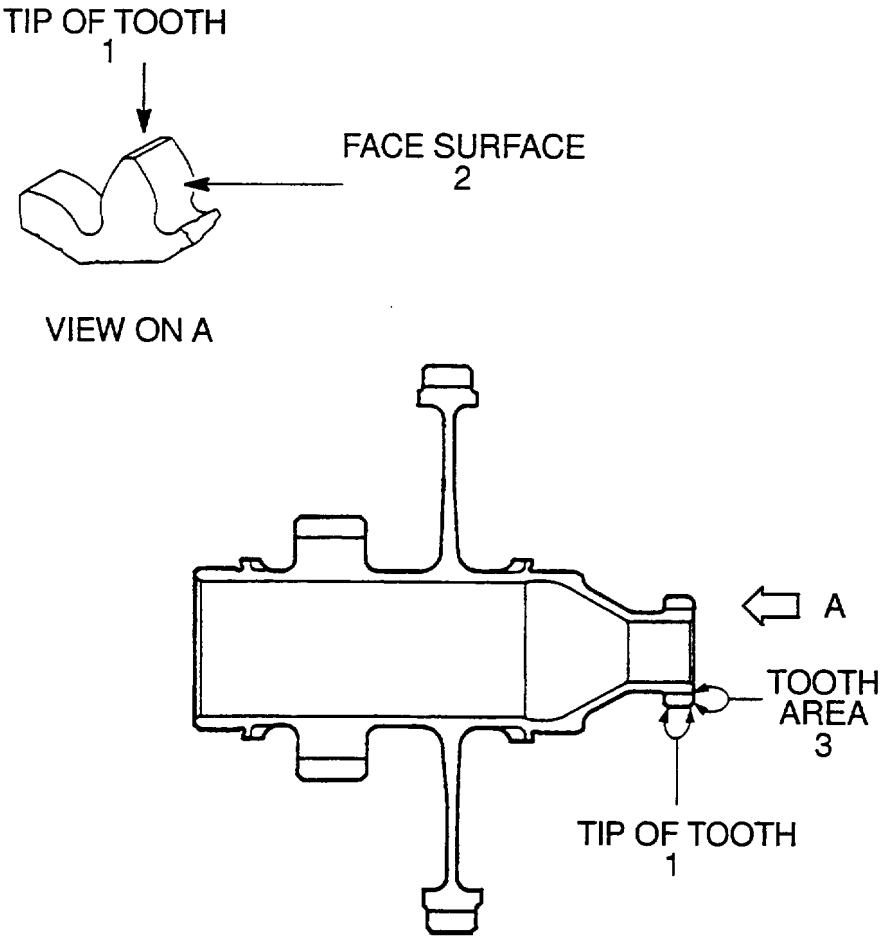
ded0000686

Locations on the Oil Scavenge Pump Driven Gear
Fig.1



ded0000687

Check the Driven Gear Wobble
Fig.2



ded0000688

Locations on the Oil Scavenge Pump Drive Gear
Fig.3

Part Number	Nomenclature	Qty	Chapter/Fig-Item
AS3209-122	Packing	1	72-60-21-01-280
AS3209-217	Packing	2	79-22-48-03-130
MS9966-10	Sealing Ring	1	79-22-49-02-516
AS43013	Sealing Ring	1	79-22-49-07-096
MS6667-218	Sealing Ring	1	79-22-49-07-516
AS3209-157	Packing	2	79-22-41-01-034
AS3209-120	Packing	2	79-22-41-01-850
4P0042	Packing	1	79-22-48-02-100
AS3209-115	Packing	1	79-22-48-02-150
AS3209-120	Packing	1	79-22-48-02-220
AS3209-226	Packing	1	79-11-41-01-760
AS3208-08	Packing	1	72-60-21-01-100
AS3208-08	Packing	1	79-22-43-01-100
4P0125	Packing	1	79-22-48-01-100
AS3209-217	Packing	1	79-22-48-01-160
44066	Packing	6	79-22-45-01-030