OIL - INCORPORATE A DEOILER IMPELLOR ASSEMBLY WITH LARGER OIL PASSAGE HOLES - 3 - MOD.ENG-79-0008

1. Planning Information

A. Effectivity

(1) Aircraft: Airbus A320

(2) Engine: V2500-A1 Engines before Serial No.V0072.

B. Reason

(1) Condition

Over pressurization of the No.5 Bearing Compartment can occur if the capacity of the Deoiler is exceeded in the event of a carbon seal leakage problem in the No.4 Bearing. To eliminate this problem the capacity of the Deoiler is to be increased.

(2) Background

Engine development testing has shown that this condition could occur.

(3) Objective

To prevent the over pressurization of the scavenge oil system.

(4) Substantiation

Testing of the revised standard has proven the required Deoiler capacity improvement.

(5) Effect of Bulletin on:

Removal/Installation	Not affected
Disassembly/Assembly	Not affected
Cleaning	Not affected
Inspection/Check	Not affected
Repair	Not affected
Testing	Not affected

(6) Supplemental Information:

None

C. Description

The deoiler impellor with increased oil passage holes is put in place of the old impellor.

D. Approval

The part number changes and/or part modifications described in Sections 2 and 3 of this Service Bulletin have been shown to comply with the applicable Federal Aviation Regulations and are FAA-APPROVED for the Engine Model listed.

E. Compliance

Category Code 3

Accomplish prior to revenue service

F. Manpower

Estimated Manhours to incorporate the full intent of this Bulletin:

Venue	Estimated Manhours
(1) In Service	TOTAL 2 hours, 41 minutes
(a) To gain access	
(i) Disconnect power supply	5 minutes
(ii) Open fan cowl	17 minutes
TOTAL	22 minutes
(b) To embody	
(i) Remove the effective impellor assembly	45 minutes
(ii) Install modified impellor assembly	54 minutes
TOTAL	1 hour 39 minutes
(c) Return engine to flyable status	
(i) Reconnect the power supply	5 minutes
(ii) Prime the engine oil system	8 minutes

(iii) Carry out leak check of the oil system .. .. 8 minutes

(iv) Close the fan cowls .. .. .. 19 minutes

TOTAL 40 minutes

(2) At overhaul Not applicable

Remarks: No additional time is required to maintain the new configuration.

G. Material Price and Availability

(1) Modification Kit not required. Parts supplied as single line items.

H. Tooling - Price and Availability

Tool No.	Qty	Description	Function	Avail.
IAE1F10069	1	Puller	Remove the rotating ring	(1)
IAE1F10070	1	Pusher	Install the rotating ring	(1)
IAE1F10209	1	Drift	Install the impellor	(1)
IAE1F10210	1	Wrench	Remove/Install the nut washer	(1)
IAE1F10211	1	Base	Remove/Install the impellor	(1)
IAE1F10219	1	Pusher	Torque the nut washer	(1)
IAE1F10220	1	Puller	Remove the lock washer	(1)
IAE1F10252	1	Puller	Remove the impeller	(1)
IAE1R18003	1	Wrench	Remove/Install the tubes	(1)

I. Weight and Balance

(1) Weight change None

(2) Moment arm No effect

(3) Datum Engine front mount Centreline (Powerplant Station (P.P.S.) 100)

J. Electrical Load Data

This Service Bulletin has no effect on the aircraft electrical load.

K. References

(1) Internal Reference No.

EC89VF004

(2) Other References

V2500 Aircraft Maintenance Manual, 79-23-51, Removal/Installation.

V2500 Aircraft Maintenance Manual, 71-13-00, Maintenance Practices.

V2500 Aircraft Maintenance Manual, 12-13-79, Servicing.

V2500 Aircraft Maintenance Manual, 80-13-41, Removal/Installation.

L. Other Publications Affected

None

2. Accomplishment Instructions

A. Prerequisite Instructions

WARNING: ALL ELECTRICAL POWER SUPPLY FROM THE ENGINE MUST BE DISCONNECTED.

(1) Disconnect power supply from the engine by opening all applicable circuit breakers.

(2) Open the fan cowl panels to gain access to the gearbox, refer to Aircraft Maintenance Manual, 71-13-00.

WARNING: DO NOT GET ENGINE OIL ON YOUR SKIN FOR A LONG TIME. THE OIL IS POISONOUS AND CAN GO THROUGH YOUR SKIN AND IN YOUR BODY.

NOTE: Position a container to catch the oil spill during the removal of the tubes and accessories.

(3) Remove the starter, refer to Aircraft Maintenance Manual, 80-13-41.

(4) Disconnect the 5A9088 tube. Ref Figure 1.

(a) Disconnect the tube from the 5A9087 tube. Use the wrench IAE1R18003 1 off.

(b) Remove the three AS21511 bolts which attach the tube and the 5W1215 bracket to the deoiler casing. Remove the bracket.

(c) Loosen the clip as required such that the tube can be pulled up sufficiently to clear the spigot.

(d) Remove and discard the MS9967-218 sealing ring.

(5) Remove the 5A8573 tube. Refer Figure 2.

(a) Disconnect the tube from the No.4 bearing oil pressure transducer and from the 5A9084 tube.

(b) Remove the tube.

(6) Disconnect the 5A9084 tube. Ref Figure 3.

(a) Disconnect the tube from the 5A9083 tube and from the No.4 bearing compartment scavenge valve. Use IAE1R18003 wrench 1 off.

(b) Loosen the clips as required such that the tube can be pulled forward sufficiently to permit the No.4 bearing compartment scavenge valve to disengage the spigot.

(7) Remove the No.4 bearing compartment scavenge valve, refer to Aircraft Maintenance Manual, 79-23-51.

(8) Disconnect the 4B7200 tube. Ref Figure 4.

(a) Remove the six 4W0165 bolts and MS9321-10 washers which safety the two ends of the tube. Remove the 5W8318 bracket.

(b) Loosen the two clips which safety the tube.

(c) Lift the tube from the connection on the top of the oil tank. Pull the tube at the deoiler end to disengage the spigot.

(d) Remove and discard the MS9386-218 packing from the pressurizing valve.

(9) Remove the deoiler casing. Refer Figure 5.

(a) Remove the seven 4W0002 nuts and MS9321-10 washers which attach the deoiler casing to the gearbox casing.

(b) Remove the deoiler casing from the gearbox casing. Remove and discard the two AS3209-165 and AS3209-135 packings.

(10) Remove the deoiler gearshaft. Ref Figure 6.

(a) Remove the 7T0475 rotating ring from the deoiler gearshaft and discard the AS3209-135 packing. Use IAE1F10069 puller 1 off.

(b) Remove the two TORX5704-12 screw which attach the deaerator housing to the gearbox casing.

(c) Remove the deaerator housing with the deoiler gearshaft from the gearbox casing.

(d) Remove and discard the AS3209-165 packing from the deaerator housing.

(11) Remove the 7T0391 lock washer and the 7T0343 segment from the nut washer. Ref Figure 7.

(a) Install the deoiler gear drive and impellor on IAE1F10211 base 1 off with the impellor to the top. Secure the gear crown to the base with the clamps.

(b) Install IAE1F10220 puller 1 off on the lock washer.

(c) Turn clockwise the lead screw of the puller until the lock washer is fully removed from the nut washer.

(d) Remove the puller with the lock washer from the gearshaft. Open the levers and remove the lock washer from the puller.

(e) Remove the segment from the lock washer.

(12) Remove the 7T0290 nut washer from the deoiler gear drive. Ref Figure 8.

(a) Align the lugs of IAE1F10210 wrench 1 off with the slots of the nut washer. Install the wrench on the nut washer.

(b) Turn the IAE1F10210 wrench counterclockwise until the nut washer is fully removed from the gearshaft. Use a square drive to operate the IAE1F10210 wrench.

(c) Remove the wrench. Remove the nut washer from the gearshaft.

(13) Remove the old impellor 4B7051 from the deoiler gear drive. Ref Figure 9.

(a) Install IAE1F10252 puller 1 off on the flange of the impellor. Make sure that the jaws of the half rings are correctly engaged in to the groove of the impellor flange.

(b) Install the sliding sleeve around the half rings and tighten the shoulder screw.

(c) Turn clockwise the lead screw of the puller until the impellor is fully removed from the gearshaft.

(d) Remove the puller with the impellor from the gearshaft. Remove the puller from the impellor.

(e) Remove the gearshaft from the base.

B. Assembly Instructions

(1) Install the new 4B7257 impellor on the deoiler gear drive Ref Figure 10.

(a) Install the deoiler gear on IAE1F10199 base 1 off with the roller bearing to the bottom.

WARNING: DO NOT TOUCH THE HOT PARTS WITHOUT PROTECTIVE GLOVES.

(b) Put the impellor in to an oven and increase the temperature to 250 deg F (121 deg C).

(c) Align the two grooves on the ID of the impellor with the guide pin on the deoiler gear. Install the impellor on the deoiler gear with the fin to the bottom.

(d) Put IAE1F10209 drift 1 off on the impellor with the guide pusher of the drift in to the ID of the deoiler gear.

(e) Push the drift until the flange of the impellor touch the inner race of the ball bearing. Use the arbor press or equivalent.

(f) Remove the drift from the deoiler gear.

(g) Install the 7T0290 nut washer on the deoiler drive gear to hold the impellor in position. Tighten the nut washer by hand

(h) Remove the deoiler drive gear and impellor from the base.

(2) Tighten the 7T0290 nut washer on the deoiler gear drive. Ref Figure 8.

(a) Install the deoiler drive gear and impellor on IAE1F10211 base 1 off with the impellor to the top. Secure the gear crown to the base with the clamps.

(b) Align the lugs of IAE1F10210 wrench 1 off with the slots of the nut washer. Install the wrench on the nut washer.

(c) Turn the wrench clockwise and torque to 700 to 800 lbfin (80 to 100 Nm). Use a square dirve to operate the IAE1F10210 wrench.

(d) Remove the wrench from the deoiler gear.

(3) Install the 7T0391 lock washer and 7T0343 segment on the nut washer. Ref Figure 11.

(a) Install the slide of IAE1F10219 pusher 1 off on the nut washer.

(b) Put the segment in to the groove of the lock washer.

(c) Put the lock washer and the segment in to the ID of the slide with the segment to the top.

(d) Put the pusher on the lock washer. Push the IAE1F10219 pusher until the lock washer and the segment are fully installed in to the slots of the nut washer.

(e) Remove the pusher and the slide from the nut washer.

(f) Release the clamps of the base. Remove the deoiler gear drive and impellor from the base.

(4) Remove the two 4W0002 nuts and MS9321-10 washers. Remove the 4P0084 crank cover from the external gearbox. Remove and discard the AS3209-122 packing. Ref Figure 12.

(5) Install the deoiler gear and impellor on the gearbox. Ref Figure 6.

(a) Install the AS3209-165 packing on the deaerator housing.

CAUTION: MAKE SURE NOT TO DAMAGE THE ROLLER BEARING DURING THE INSTALLATION OF THE DEOILER GEAR AND IMPELLOR ASSEMBLY.

(b) Put the gearshaft in to the gearbox casing with the impellor pointed to the front of the gearbox.

(c) Align the holes on the deaerator housing flange with the studs on the gearbox casing.

(d) Put the rear roller bearing in to the outer race already installed in the gearbox casing.

(e) Turn the starter idler gear (Figure 12) with a standard wrench to easy the engagement of the deoiler gear with the adjacent IDG gear drive.

(f) Install the two TORX5704-12 screw. Torque to 85 to 95 lbfin (9,604 to 10,734 Nm).

(6) Install the 7T0475 rotating ring on the gearshaft. Ref Figure 6.

(a) Install the new AS3209-135 packing on the rotating ring.

(b) Put the rotating ring on the guide bush of IAE1F10070 pusher (1 off) with the large contact face against the slide pusher.

(c) Push the rotating ring in position with the IAE1F10070 pusher. Remove the pusher.

(7) Install the deoiler casing. Ref Figure 5.

(a) Install the new AS3209-165 and AS3209-135 packings on the deoiler casing.

(b) Install the deoiler casing over the deoiler gear and impellor. Align the filter with the seat on the gearbox casing and the holes on the deoiler casing flange with the studs.

(c) Install the seven MS9321-10 washers and 4W0002 nuts. Torque to 85 to 95 lbfin (9,604 to 10,734 Nm).

(8) Connect the 4B7200 tube. Ref Figure 4.

(a) Install the new MS9386-218 packing on the pressurizing valve. Make sure that the valve is correctly installed on the oil tank.

(b) Install the new AS3209-115 packing on the tube at the deoiler end.

(c) Align the two ends of the tube with the deoiler casing and the oil tank.

(d) Install the three MS9321-10 washers and 4W0165 bolts that attach the tube to the deoiler.

(e) Together with the 5W8318 bracket, install the three MS9321-10 washers and 4W0165 bolts that attach the tube to the oil tank.

(f) Torque the six bolts which safety the tube ends to 85 to 95 lbfin (9,604 to 10,734 Nm).

(g) Torque the bolts which safety the clips to 85 to 95 lbfin (9,604 to 10,734 Nm).

(9) Install the No.4 bearing compartment scavenge valve, refer to Aircraft Maintenance Manual, 79-23-51.

(10) Connect the 5A9084 tube. Ref Figure 3.

(a) Connect the tube ends with the 5A9083 tube and the No.4 bearing compartment scavenge valve.

(b) Torque the two tube nuts to 566 to 611 lbfin (64 to 69 Nm) with IAE1R18003 wrench (1 off).

(c) Safety the tube nuts with V02-126 lockwire.

(d) Torque the bolts of the clips to 36 to 45 lbfin (4 to 5 Nm).

(11) Connect the 5A8573 tube. Ref Figure 2.

(a) Install the tube and connect to the No.4 bearing oil pressure transducer and to the 5A9084 tube.

(b) Torque the tube nuts to 159 to 177 lbfin (18 to 20 Nm).

(c) Safety the tube nuts with V02-126 lockwire.

(12) Connect the 5A9088 tube. Ref Figure 1.

(a) Install the new MS9967-218 packing on the tube at the deoiler end.

(b) Connect the tube ends with the 5A9087 tube and the deoiler.

(c) Together with the 5W1215 bracket install the three AS21511 bolts that attach the tube the the deoiler. Torque the bolts to 85 to 105 lbfin (11 to 12 Nm).

(d) Torque the tube nut to 566 to 611 lbfin (64 to 69 Nm) with IAE1R18002 wrench 1 off. Safety the tube nut with V02-126 lockwire.

(e) Torque the bolts of the clips to 36 to 45 lbfin (4 to 5 Nm).

(13) Install the starter, refer to Aircraft Maintenance Manual, 80-13-41.

(14) Install the 4P0084 crank cover. Ref Figure 12.

(a) Install the new AS3209-122 packing on the crank cover.

(b) Install the crank cover on the gearbox and safety with the two MS9321-10 washers and 4W0002 nuts.

(c) Torque the nuts to 85 to 95 lbfin (9,604 to 10,734 Nm).

(15) Reconnect the power supply.

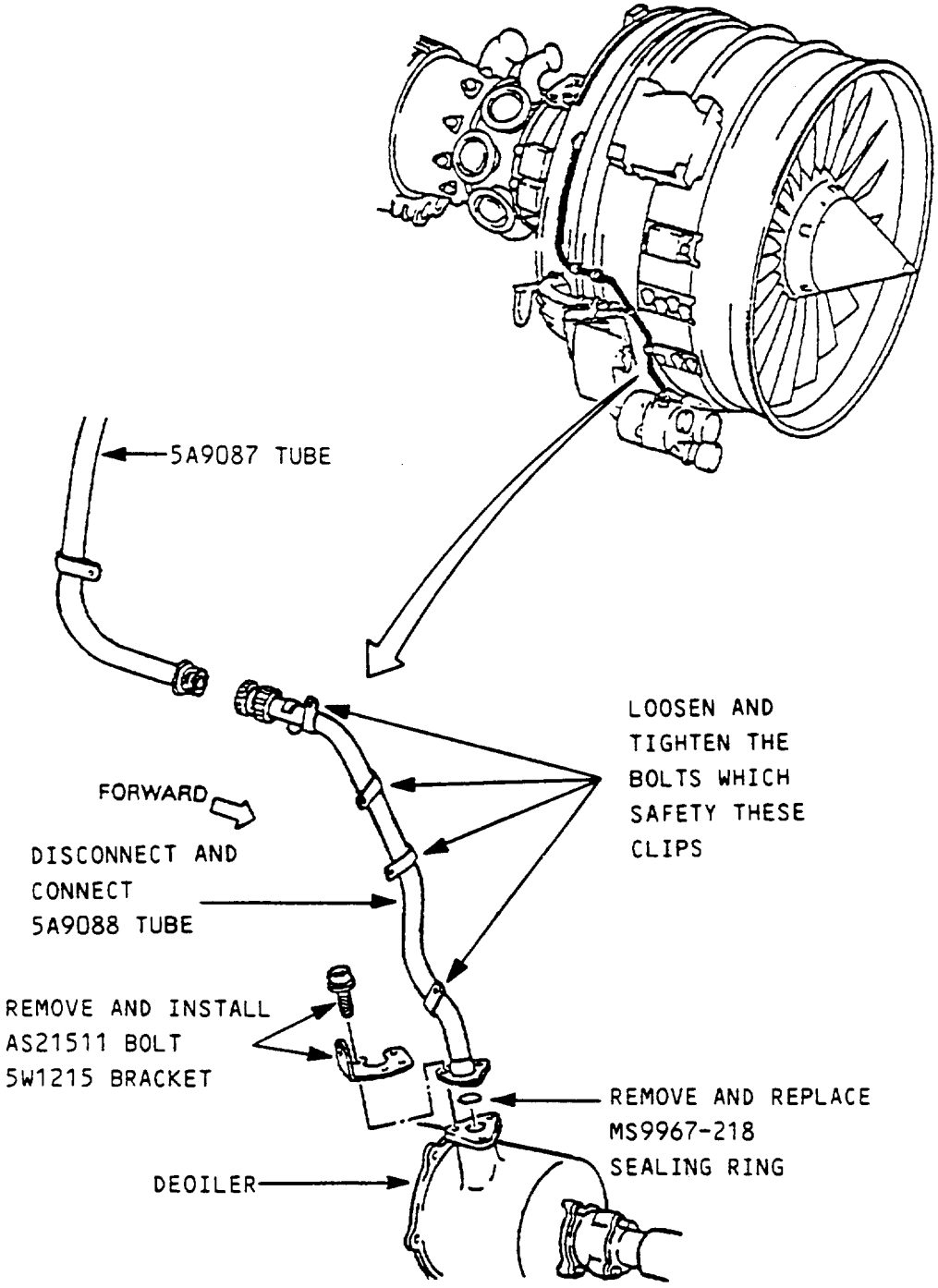
(16) Prime the engine oil system, refer to Aircraft Maintenance Manual, 12-13-79.

(17) Close the fan cowl panels, refer to Aircraft Maintenance Manual, 71-13-00.

(18) Do a leak check of the engine oil system after the first ground run.

C. Recording Instructions

(1) A record of accomplishment is necessary.



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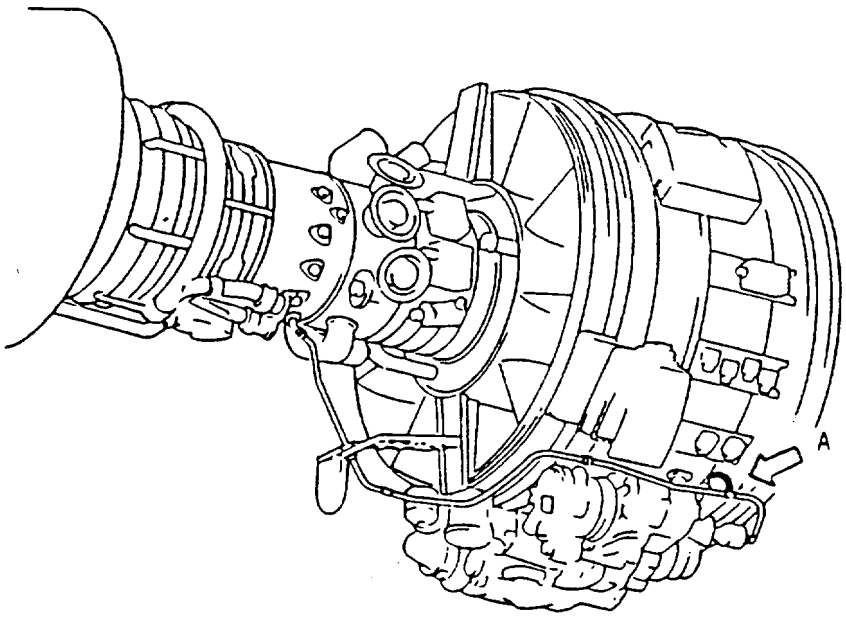
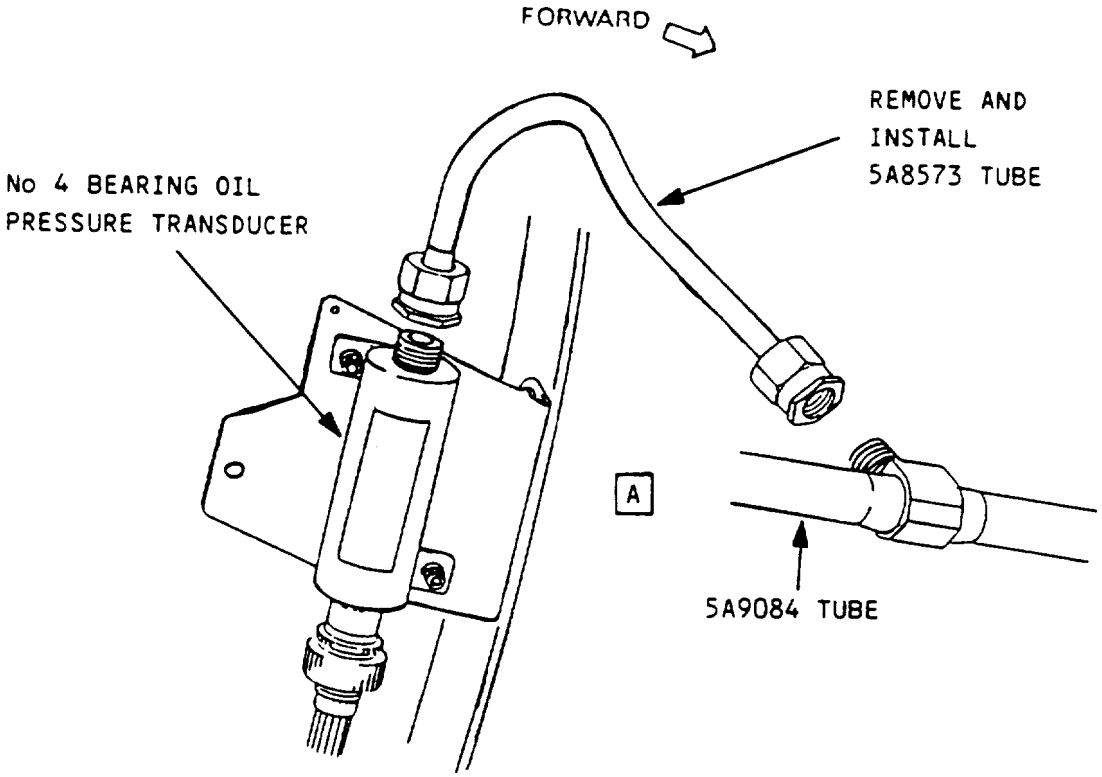
Scavenge oil tube
Fig.1





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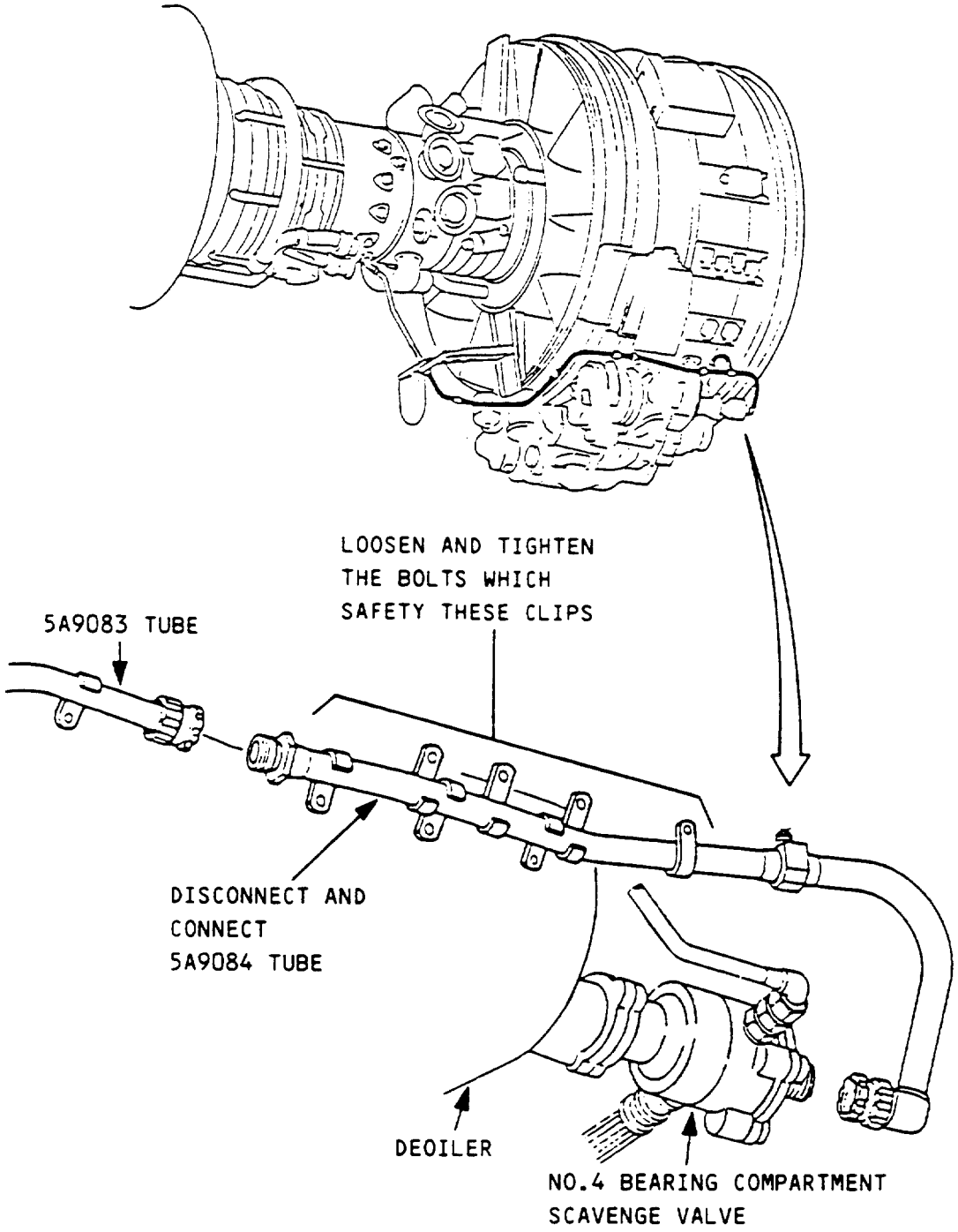
Scavenge oil tube
Fig.2



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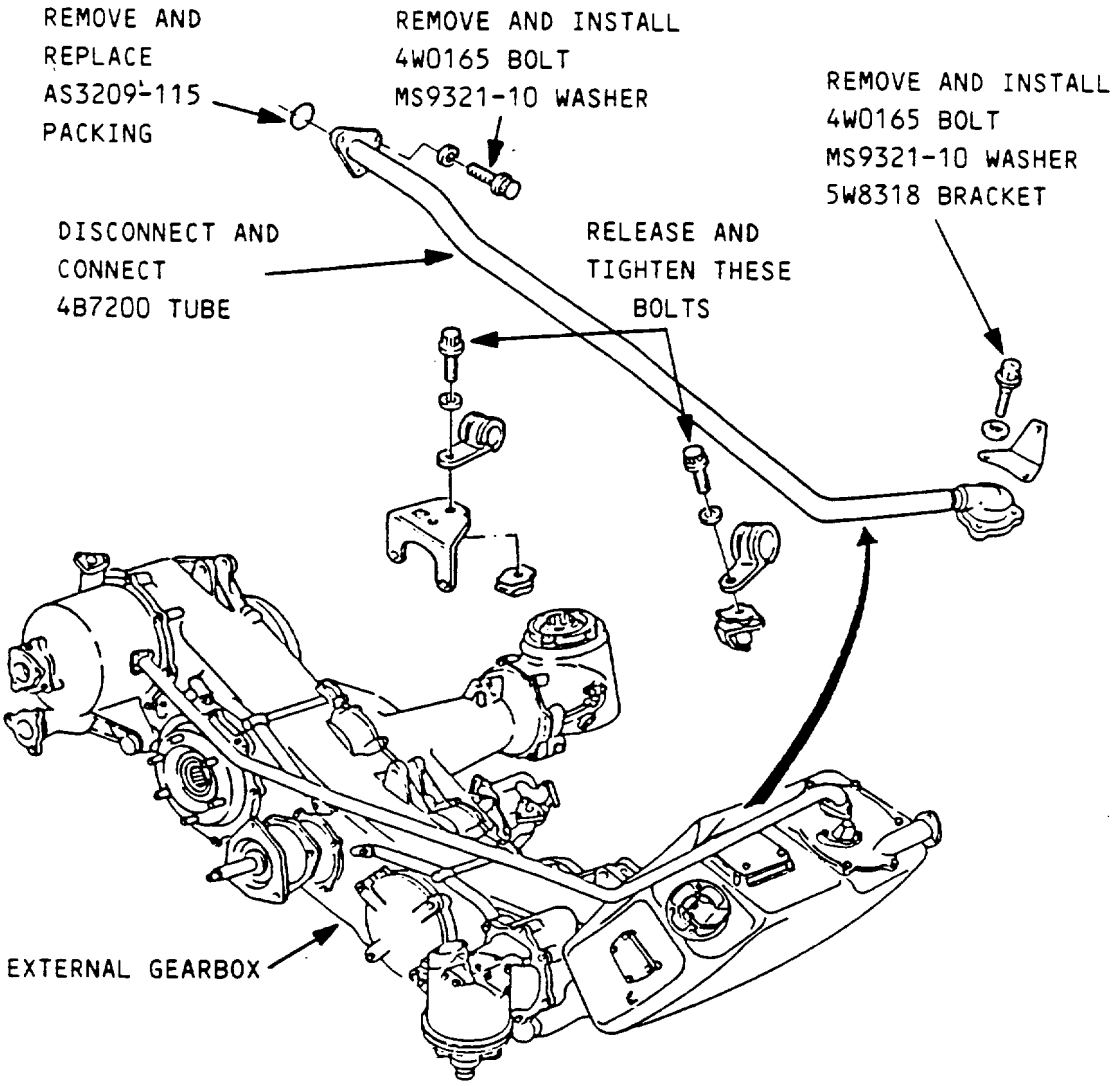
Scavenge oil tube
Fig.3



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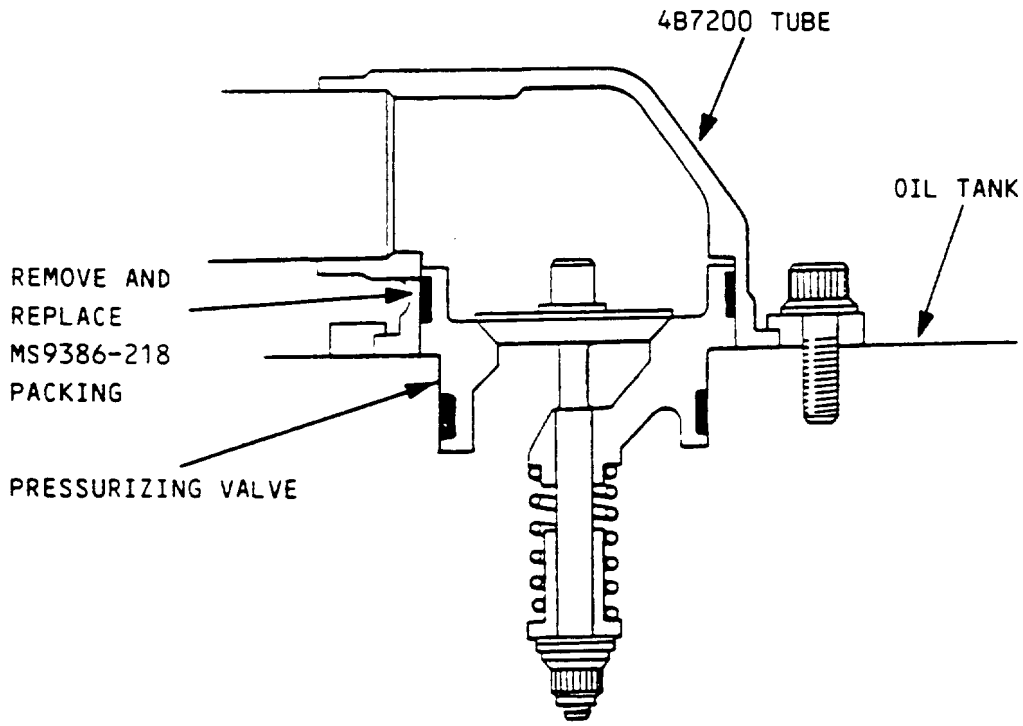
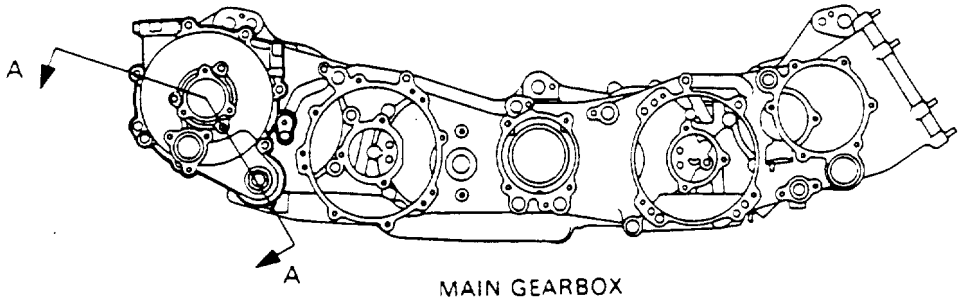
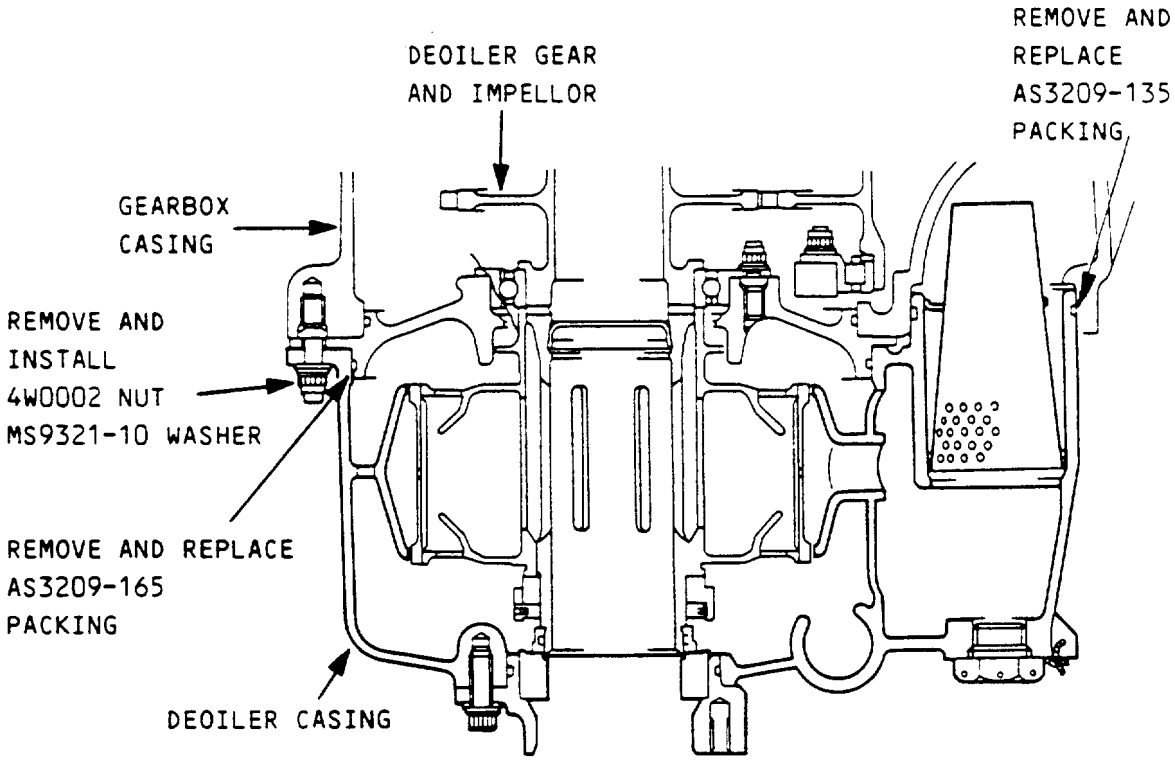
Scavenge oil tube and pressurizing valve
Fig.4 (Sheet 1 of 2)



Scavenge oil tube and pressurizing valve
Fig.4 (Sheet 2 of 2)



MAIN GEARBOX
FRONT VIEW



SECTION A-A

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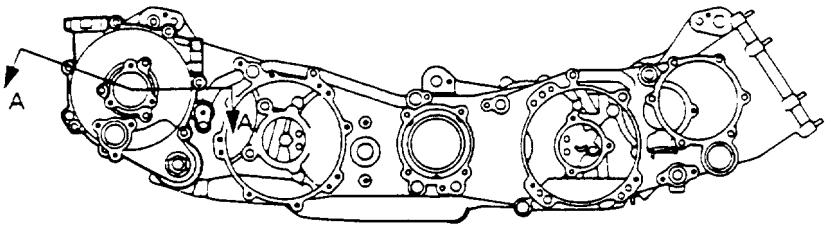
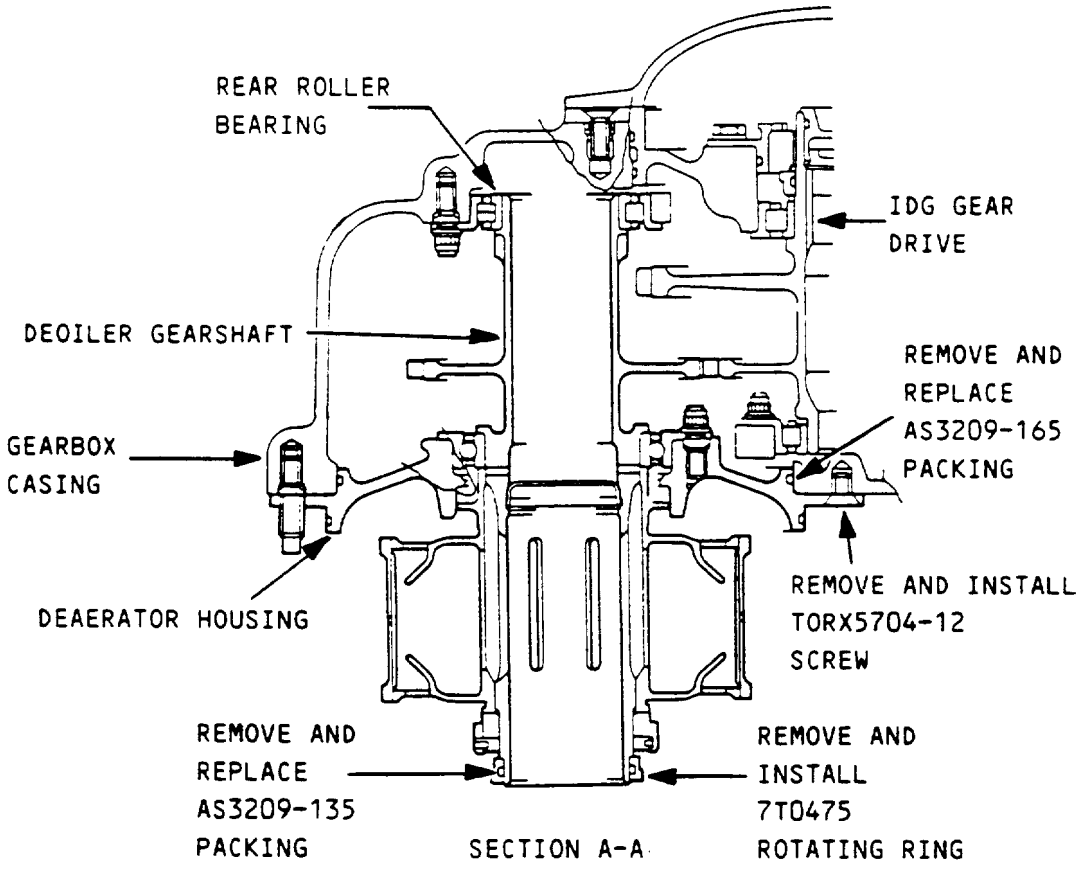
Removal/Installation of the deoiler casing
Fig.5



MAIN GEARBOX
FRONT VIEW



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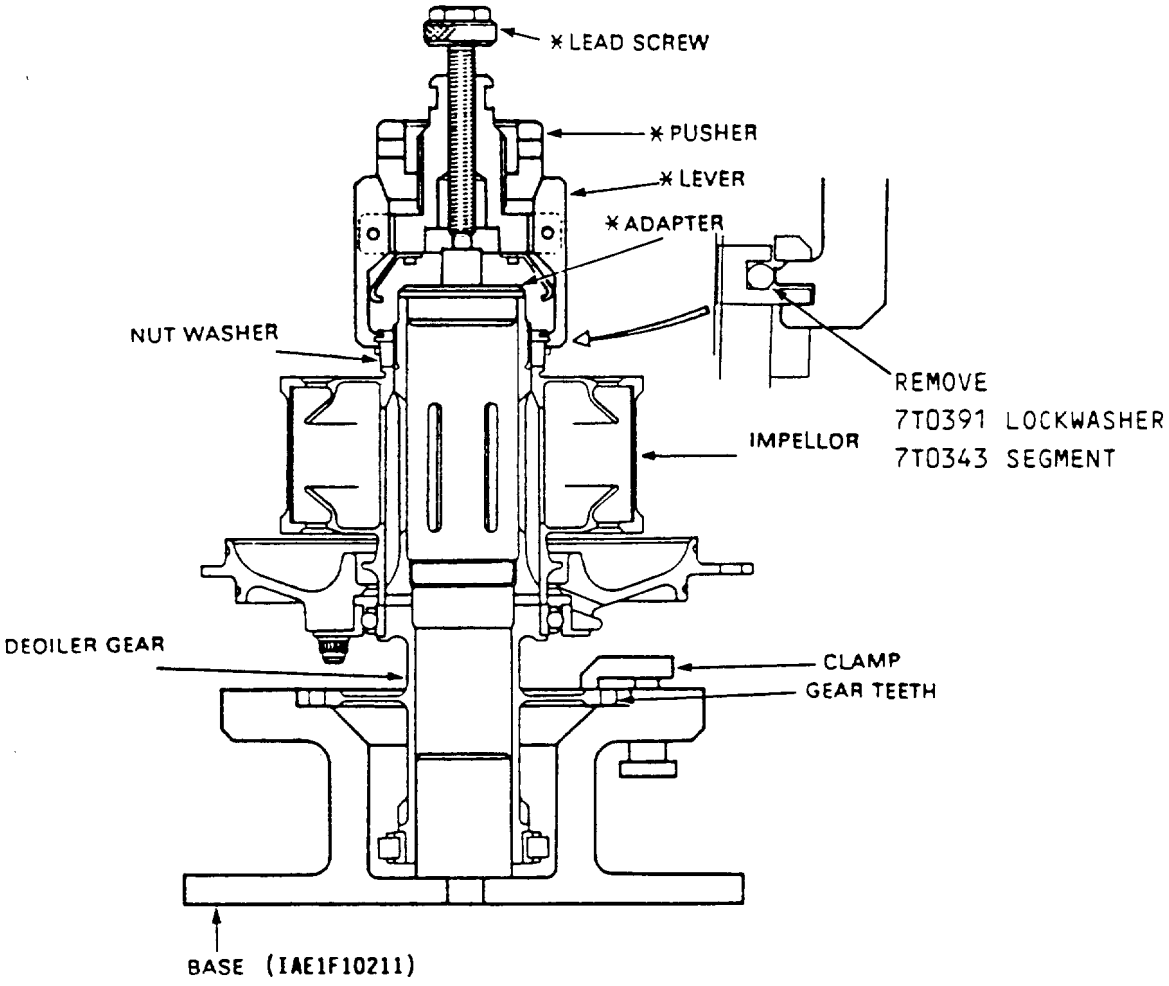
Removal/Installation of the deoiler gearshaft
Fig.6



* Part of the puller
(IAE1F10220)

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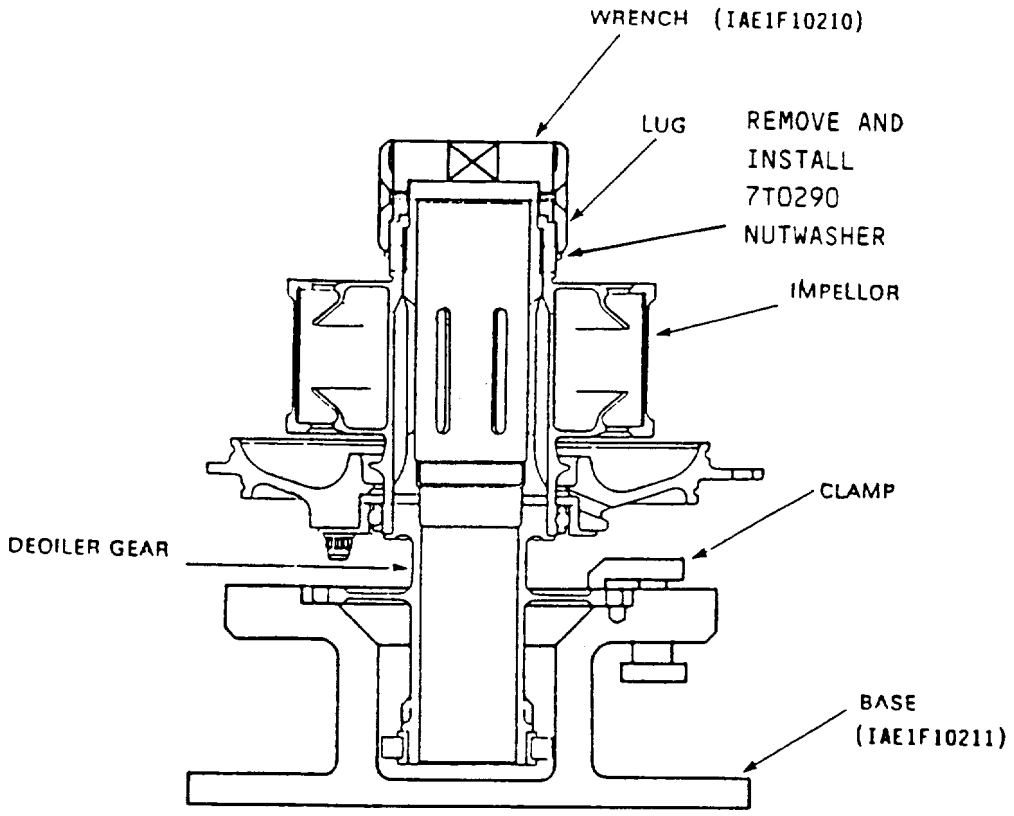
Removal of the lock washer
Fig.7



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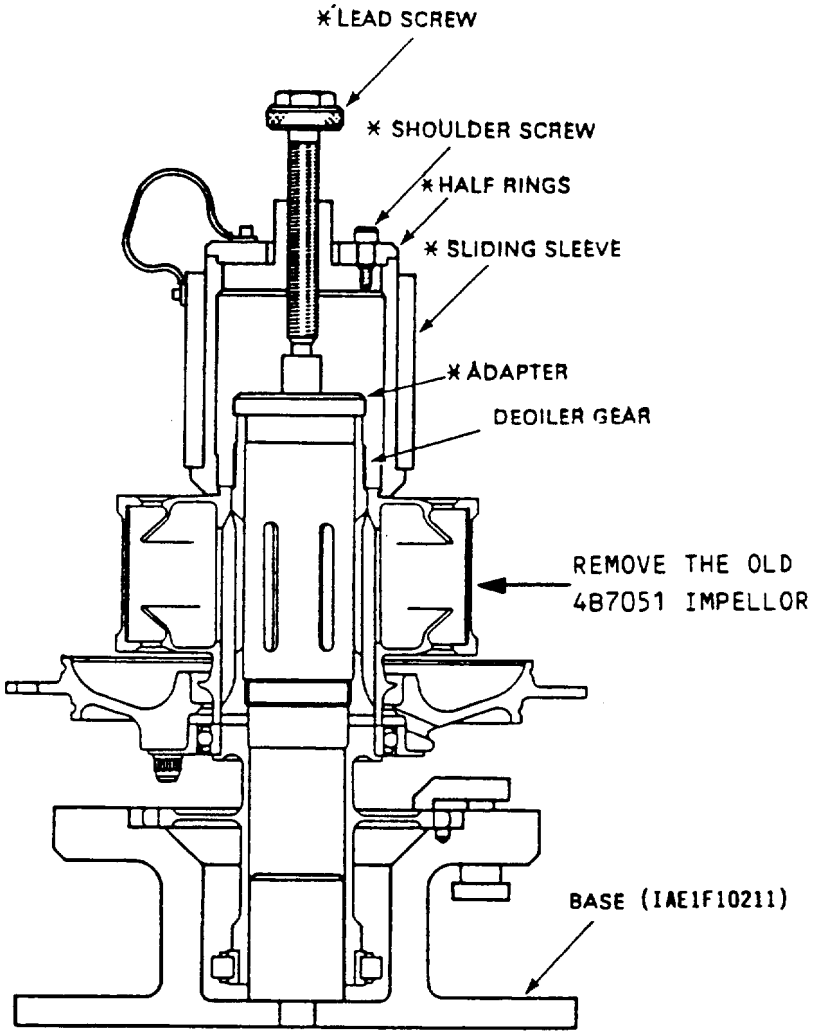
Removal/Installation of the nut washer
Fig.8



* Part of the puller
(IAE1F10252)

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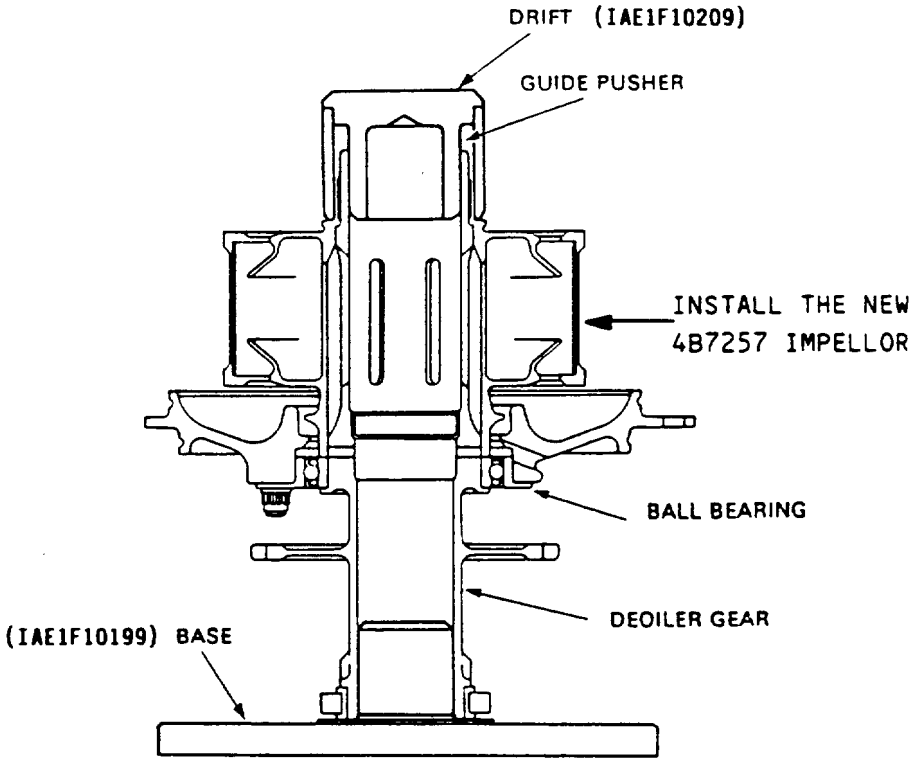
Removal of the impellor
Fig.9



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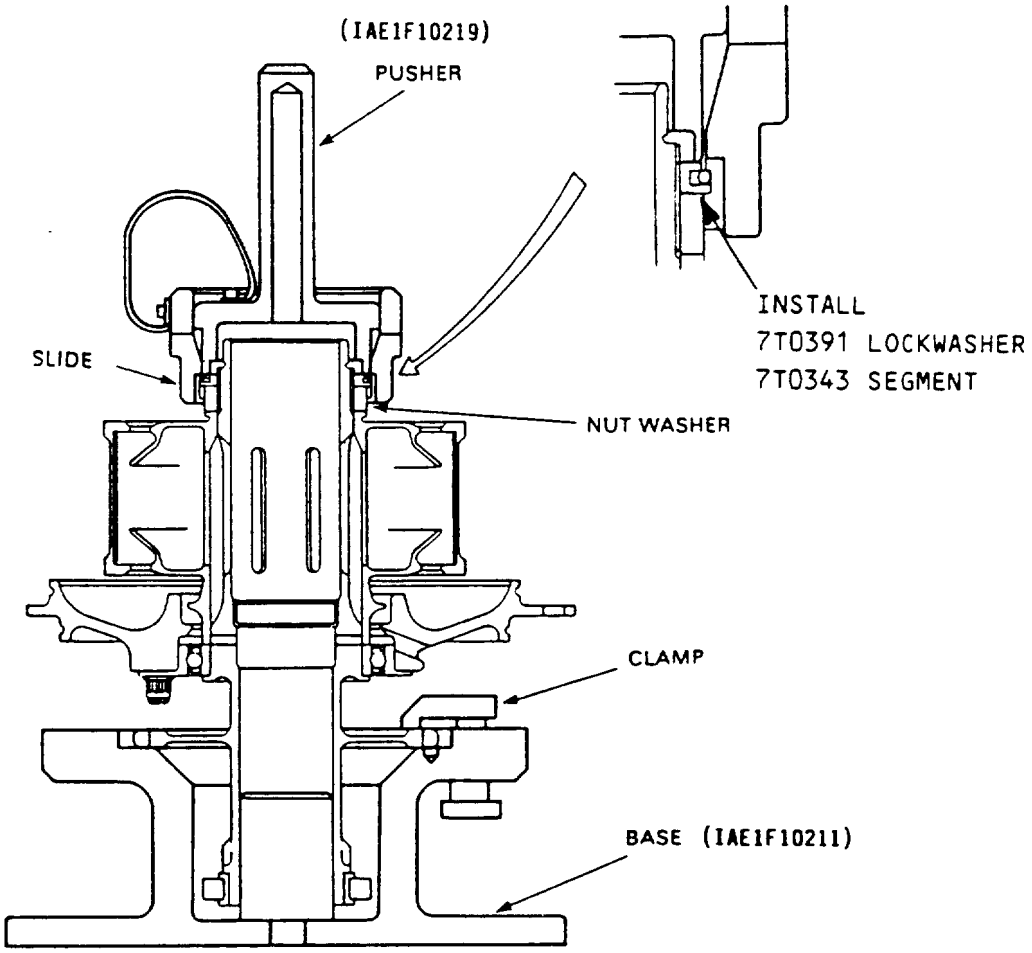
Installation of the impellor
Fig.10



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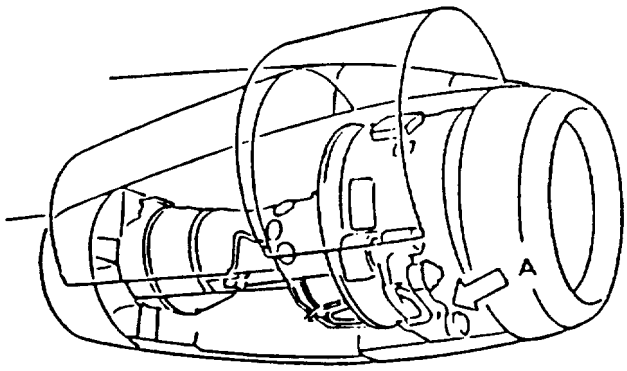
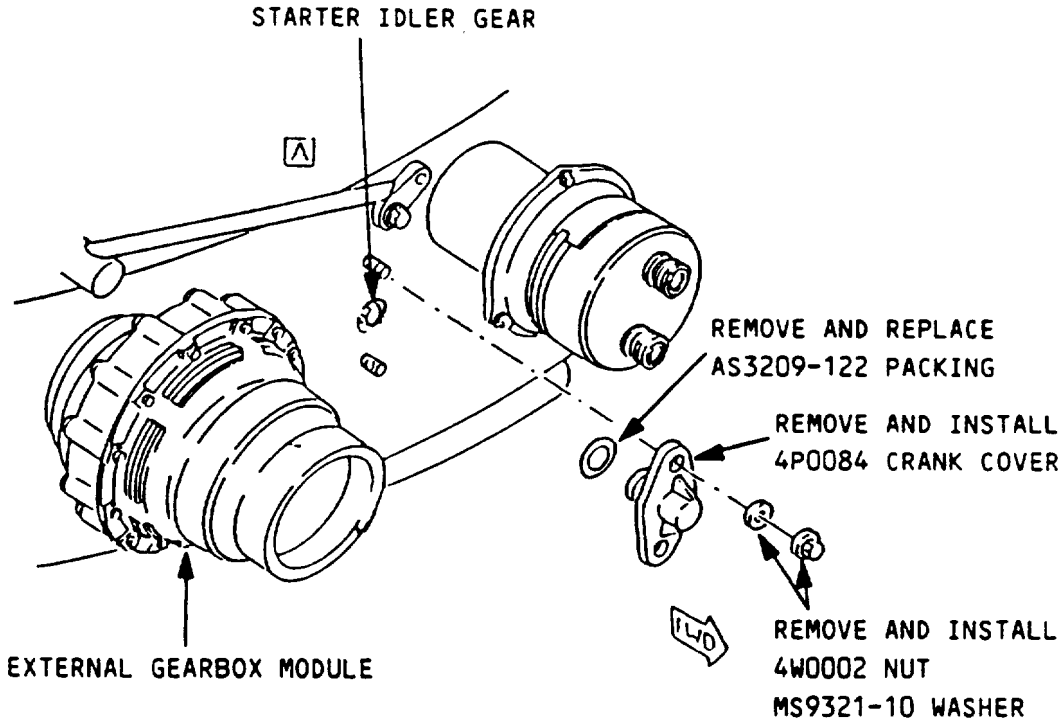
Installation of the lock washer
Fig.11





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Removal/Installation of the crank cover
Fig.12

3. Material Information

New Part No. (ATA No.)	Qty	Est'd Unit Price ($)	Keyword	Old Part No. (IPC No.)	Instructions Disposition
Applicability: For each V2500 Engine to incorporate this Bulletin.					
A. Kits associated with this Bulletin:					
None					
B. Parts affected by this Bulletin:					
4B7257 (72-60-29)	1	-	Impellor, Assy	4B7051 (01-190)	(S1)(1D) (A)(B)
- (72-60-10)	2	-	Packing	AS3209-165 (01-470) (01-500)	(C)
- (72-60-29)	1	-	Packing	AS3209-135 (01-090)	(C)
- (72-60-10)	1		Packing	AS3209-135 (01-473)	(C)
- (79-11-51)	1		Packing	MS9386-218 (01-060)	(C)
- (79-22-48)	1		Packing	AS3209-115 (04-130)	(C)
- (79-22-49)	1		Ring	MS9967-218 (10-516)	(C)
- (72-60-21)	1		Packing	AS3209-122 (01-280)	(C)
- (79-23-51)	1		Ring	AS43013-221 (01-130)	(C)

C. Instruction/Disposition Code Statements:

(S1) Old and new Parts are directly interchangeable.
(1D) Return old part to IAE for rework and reidentification.
(A) New part currently available for sale.
(B) Old part is no longer available.
(C) These expendable parts are required for assembly of the new configuration.

NOTE: The estimated 1991 Unit Price shown are provided for planning purpose only and do not constitute a firm quotation. Consult the IAE Price Catalog or contact IAE's Spare Parts Sales Department for information concerning firm prices.