

### SERVICE BULLETIN

<u>ENGINE - LP TURBINE ROTOR AND STATOR ASSEMBLY - INTRODUCE NEW TUBE ASSEMBLIES REQUIRED</u>
<u>FOR MODIFIED TURBINE EXHAUST CASE - CATEGORY CODE 8 - MOD.ENG-72-0063</u>

#### 1. Planning Information

#### A. Effectivity

(1) Aircraft: Airbus A320

(2) Engine: V2500-A1 Engines before Serial No.V0299

NOTE: This Service Bulletin must be incorporated at the same time as

Reference (1).

#### B. Reason

(1) Condition

The Turbine Exhaust Case Assembly was not the same part for V2500-A1 and V2500-A5 models.

(2) Background

A new Turbine Exhaust Case Assembly was developed for the V2500-A5 Engine Model.

(3) Objective

To make the V2500-A5 Turbine Exhaust Case available for use on V2500-A1 Engine models.

(4) Substantiation

Not considered necessary.

(5) Effects of Bulletin on Workshop Procedures:

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. <u>Description</u>

(1) The V2500-A5 Turbine Exhaust CAse Assembly is introduced for use on the V2500-A1 Engine.

#### D. Approval

The Part Number Changes and/or part modification 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 8.

Accomplish based upon experience with the prior configuration.

### F. Manpower

Estimated Manhours to incorporate the full intent of this Bulletin:

Venue Estimated Manhours

- (1) In Service .. .. .. .. .. .. Not applicable
- (2) At Overhaul .. .. .. .. .. Not applicable

Note: The parts affected by this Service Bulletin are accessible at overhaul.

#### G. Material - Price and Availability

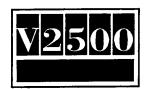
- (1) Modification Kit not required.
- (2) See "Material Information" section for prices and availability of future spares.

#### Tooling - Price and Availability

None.

#### I. Weight and Balance

- (1) Weight and Balance .. .. Plus 3.0 Llbs (1,36 kg.)
- (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.

#### <u>References</u>

(1) Internal Reference No.

91VA037

91VA037A

91VA037B

91VA037D

91VA037F

91VA037G

91VA037H

(2) Other References

V2500-ENG-72-0142 (Engine - LP Turbine Rotor and Stator Assembly - Introduce a New No.5 Bearing Carbon Seal Assembly.

V2500 Standard Practices Manual.

V2500 Engine Manual.

### L. Other Publications Affected

- (1) The V2500 Engine Illustrated Parts Catalog, Chapter/Section 71-52-45, Figure 1, Chapter/Section, 71-73-49 Figure 1, Chapter/Section 72-50-00, Figure 1, Chapter/Section 72-50-42, Figures 1 and 20, Chapter/Section 72-50-50, Figures 1, 20 and 99, Chapter/Section 72-50-51, Figures 1 and 20, Chapter/Section 72-50-52, Figure 1, Chapter/Section 72-50-53, Figures 1, 2, 20 and 21, Chapter/Section 72-58-01, Figures 1, and 20, Chapter/Section 73-22-51, Figures 1 and 20, Chapter/Section 77-21-15, Figures 1, 20 and 99 and Chapter/Section 79-21-49, Figure 16 to add new parts.
- (2) The V2500 Engine Manual, Chapter/Section 72-00-50, Removal-01 and Removal-04, to add the new configuration.
- (3) The V2500 Engine Manual, Chapter/Section 72-00-50, Installation-04, Installation-07 and Installation-10 to add the new configuration.



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- (4) The V2500 Engine Manual, Chapter/Section 72-50-00, Disassembly-01, to add the new configuration.
- (5) The V2500 Engine Manual, Chapter/Section 72-50-00, Assembly-02, to add the new configuration.
- (6) The V2500 Engine Manual, Chapter/Section 72-50-42, 72-50-50, 72-50-52, 72-50-53, 72-58-01, and 73-22-51 Cleaning to add the new parts.
- (7) The V2500 Engine Manual, Chapter/Section 72-50-42, 72-50-50, 72-50-52, 72-50-53, 72-58-01, and 73-22-51 Inspection to add the new parts.
- (8) The V2500 Engine Manual, Chapter Section Chapter/Section 72-50-42, 72-50-50, 72-50-52, 72-50-53, 72-58-01, and 73-22-51 Repair to add the new parts.



### 2. Accomplishment Instructions

- A. Rework Instructions
  - (1) There are no rework instructions necessary to accomplish this Service Bulletin.
- **B.** Assembly Instructions
  - NOTE: Lubricate all threads and abutment faces with CoMat 10-077 Approved Engine Oils, unless other lubricants are referred to in this procedure.

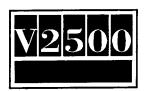
For standard torque data and procedures see Reference (2).

You can replace 4A8027, 4T8009, 4T8027 4T8009, 4T8049, 4P8032 and 4P8031 with 4A7100, 2A2256, 2A2224, 2A2255, MS9549-14, 2A2161 and 2A2163 respectively. 4T8036 and 4T8037 Spacers may be replaced with 2A1217 and 2A2919 as a set.

- (1) Install the No.5 Bearing Seal Spacers to the rear end of the turbine shaft by Figures 1 and 2 and as follows:
  - (a) Install the 2A2919 No. 5 Bearing Seal Spacer (1 off).
  - (b) Lightly coat the 2A1214 No. 5 Bearing Seal with CoMat 10-077 Engine Oil and a lint free cloth.
  - (c) Install the 2A1214 No. 5 Bearing Face Seal (1 off).
  - (d) Install the 2A1217 No. 5 Bearing Seal Spacer (1 off) to the rear end of the turbine shaft. See Figures 1 and 2.
- (2) Install the No.5 Bearing Inner Race by Figures 1 and 2 and as follows:
  - (a) Heat the inner race of the 2A2255 No.5 Roller Bearing (1 off) to approximately 212 deg F (100 deg C).

WARNING: USE GLOVES TO INSTALL THE HOT INNER RACE OF THE NO.5 BEARING.

- (b) Install the inner race of the No. 5 Bearing to the LP turbine shaft.
- (c) Install the 1F10034 Hydraulic Installation Pusher (1 off) on the rear end of the LP Turbine Shaft.
  - 1 Attach the reaction adapter (part of the hydraulic installation pusher to the rear thread of the LP Turbine.
- (d) Tighten the knurled nut on the hydraulic installation pusher.



- (e) Connect the IAE 1F10026 Hydraulic Pump to the the coupler of the pusher.
- (f) Operate the hydraulic pump to move the inner race of the No.5 bearing into the correct position.
- (g) Remove the hydraulic pump from the hydraulic installation pusher.
  - 1 Disconnect the hydraulic pump from the hydraulic installation pusher.
  - 2 Release the knurled nut and remove the hydraulic installation pusher.
- (3) Install the Guide Pogo Stick to the LP turbine by Figure 3 and as follows:
  - (a) Install the IAE 1F10074 Guide Pogo Stick (1 off) in to the inner diameter of the LP turbine shaft. Use an applicable webbing sling.
    - 1 Make sure that the centering diameter of the guide pogo stick is installed correctly to the LP turbine shaft.
    - 2 Turn the screw at the rear end of the pogo stick clockwise to safety the pogo stick to the LP turbine shaft.
- (4) Install the Removal/Installation Fixture to the Turbine Exhaust Case by Figure 3 and as follows:
  - (a) Attach hoist equipment to the upper supports of the IAE 1F10073 Removal/Installation Fixture (1 off).
  - (b) Install the Removal/Installation Fixture to the rear flange of the turbine exhaust case.
    - 1 Attach the fixture with the 13 screws and washers.
    - 2 Tighten the screws.
- (5) Install the 2A2620-01 Turbine Exhaust Case to the LP Turbine Case by Figures 3, 4 and 5 and as follows:
  - (a) Release the turbine exhaust case and lift it from the IAE 1F10178 Storage and Turn Adapter (1 off).
  - (b) Install the turbine exhaust case on to either the IAE 1F10074 Guide Pogo Stick (1 off), front end down.
  - (c) Move the turbine exhaust case down to the rear flange of the LP turbine case. Align the dowl pins.



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- (d) Turn the jackscrew (part of the IAE 1F10073 Removal/Installation Fixture clockwise to the stop position.
  - 1 Safety the jackscrew in the position with the IAE 1F10076 Locking Collar (1 off).
  - CAUTION: MAKE SURE THAT THE STAGE 6 AIR SEAL, THE NO.5 BEARING AND THE NO. 5 BEARING SEAL SPACERS ENGAGE CORRECTLY.
- (e) Turn the jackscrew counterclockwise until the flanges of the LP turbine case and the turbine exhaust case fit correctly.
- (f) Install the 16\* brackets and the 114 nuts and bolts which lock the the turbine exhaust case to the LP turbine case.
  - CAUTION: HOLD THE BOLTS IN THEIR POSITION WHEN YOU INSTALL THE NUTS ON TO THE BOLTS. DO NOT TURN THE BOLTS OR MAKE TO-AND-FRO MOVEMENTS. THE TURBINE EXHAUST CASE/LP TURBINE CASE AND/OR THE BOLTS CAN BE DAMAGED BY SCORES.
  - NOTE: \*6A4448 Clipping Bracket is moved from Flange FP bolt hole locations 48 and 49 to Flange FP bolt locations 49 and 50. See Figure 5.
- (g) Torque the nuts.
- (h) Remove the tools from the engine as follows:
  - 1 Remove the locking collar and remove the Removal/Installation Fixture.
  - 2 Remove the guide pogo stick and, if applicable, the sleeve.
- (6) Install the rear lock nut to the LP turbine shaft by Figures 6 and 7 and as follows:
  - (a) Install the rear lock nut to the LP Turbine shaft and tighten the nut with your hand.
  - (b) Attach the 1F10037 wrench support (1 off) to the inner rear flange of the turbine exhaust case.
  - (c) Install the IAE 1F10038 Torque Wrench (1 off) through the wrench support and engage the torque wrench with the rear locknut.
  - (d) Install the IAE 1F10039 Anti-torque Adapter (1 off) through the torque wrench. Lock the anti-torque adapter to the mechanical wrench with the IAE 1F10040 Anchor Wrench Plate (1 off).



- (e) Install the IAE 1F10016 Mechanical Wrench (1 off) to the torque wrench. Safety the anti-torque adapter to the mechanical wrench with the IAE 1F10040 Anchor Wrench Plate (1 off).
- (f) Operate the mechanical wrench and torque the rear lock nut to 3038 to 5294 lbfin (343 to 398 Nm).

NOTE: The full torque value includes the self-locking torque.

- (g) Remove the tools from the engine as follows:
  - 1 Remove the anchor wrench plate and the mechanical wrench.
  - 2 Disengage the lock mechanism of the anti-torque adapter and remove the adapter.
  - 3 Remove the torque wrench.
  - 4 Remove the wrench support.
- (7) Safety the rear lock nut with the locking ring and the internal retaining ring.
- (8) Install the No. 5 Bearing Nozzle by Figures 8 and 9 as follows:
  - (a) Install new AS3209-107 Packings (3 off) and the 2A1212 No. 5 Bearing Packing Transfer Tube (1 off).
  - (b) Install a new AS3209-110 Packing (1 off) on to the bearing nozzle.
  - (c) Install the 2A1211 No. 5 Bearing Nozzle (1 off) in to the No. 5 Bearing Compartment.
  - (d) Attach the bearing nozzle with the MS9886-07 Bolts (2 off).
  - (e) Torque the bolts to 85 to 105 Lbfin (9,60 to 11,86 Nm).
  - (f) Install the MS9581-10 Washers (2 off) and the MS9452-05 Bolts (2 off) to attach the transfer tube to the bearing nozzle.
  - (g) Torque the bolts to 85 to 105 Lbfin (9,60 to 11,86 Nm).
- (9) Install the Exhaust Gas Thermocouple (EGT) Probes by Figure 10 and as follows:
  - (a) Install the 2A2256 Metal Seal Rings (2 off) in an EGT Thermocouple from the 2A2159 Thermocouple Option (4 off).
  - (b) Make sure that the spaces, one in each piston ring, are 180 degrees apart.

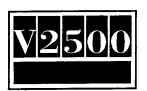


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- (c) Install the first probe in the Turbine Exhaust Case at one of the locations C.
- (d) Install the MS9575-04 Bolts (2 off) through the flange of the probe and in to the holes in the turbine exhaust case.
  - (f) Torque the bolts to 36 to 45 Lbfin (4 to 5 Nm).
  - (g) Do the procedure again to install the other three EGT probes.
  - (h) Safety the bolts with CoMat O2-126 Lockwire at three locations B.
  - 1 Make sure the Lockwire goes over the Thermocouple. See Figure 10.
  - NOTE: You must safety the Thermocouple at location C, Figure 10, after you install the No. 4 Bearing Weep Tube Assembly by the procedure in step (12).
- (10) Install the Pressure Control Tube Assemblies by Figure 11 and as follows:
  - NOTE: Procedures that follow are accomplished after the LP Turbine module is installed on the engine.
  - (a) Install the 2A2358-01 Right Pressure Control Tube Assembly (1 off) as follows:
    - 1 Put the 2A2256 Metal Seal Rings (2 off) in position on the right Pressure Control Tube Assembly.
    - a Make sure that the spaces, one in each seal ring, are 180 degrees apart.
    - 2 Put the tube assembly in position on the turbine exhaust case assembly.
    - a With the tube in position, push the adapter in to the hole in the turbine exhaust case, until the adapter flange touches the exhaust case surface.
    - b Make sure that the seal rings go in to the engine.
    - c Install the MS9575-04 Bolts (2 off) in to the holes at the flange connection.
    - d Torque the bolts to 85 to 105 Lbfin (10 to 12 Nm).
    - e Connect the tube nut to the connector at the 6 o,clock location (right side) on the turbine exhaust case assembly.
    - f Torque the nut to 230 to 248 Lbfin (26 to 28 Nm).



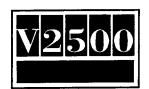
- g Safety the bolts and the tube nut with CoMat O2-126 Lockwire.
- (b) Install the 2A2361-01 Left Pressure Control Tube Assembly (1 off) as follows:
  - 1 Put the 2A2256 Metal Seal Rings (2 off) in position on the left Pressure Control Tube Adapter.
  - a Make sure that the spaces, one in each seal ring, are 180 degrees apart.
  - 2 Put the tube assembly in position on the turbine exhaust case assembly.
  - a With the tube in position, push the adapter in to the hole in the turbine exhaust case, until the adapter flange touches the exhaust case surface.
  - b Make sure that the seal rings go in to the engine.
  - c Install the MS9575-04 Bolts (2 off) in to the holes at the flange connection.
  - d Torque the bolts to 85 to 105 Lbfin (10 to 12 Nm).
  - e Connect the tube nut to the connector at the 6 o'clock location (right side) on the turbine exhaust case assembly.
  - f Torque the nut to 230 to 248 Lbfin (26 to 28 Nm).
  - g Safety the bolts and the tube nut with CoMat O2-126 Lockwire.
- (11) Install the 6A5013 No. 5 Bearing Oil Tube Assembly by the procedure given in Reference (1), Chapter/Section 72-00-50, Installation-07 (for V2500-A5 Engines).
- (12) Install the 6A5023 No. 4 Bearing Weep Line tube Assembly (1 off) by the procedure given in Reference (3), Chapter/Section 72-00-50, Installation-07 (for V2500-A1 Engines) except as follows:
  - (a) Install the LK69353 Spacer (1 off) at clip position 6054 when you install the loop clamps, nut and bolt. See Figure 12.
  - (b) Install the 5W1109 Loop Clamp (1 off), the 4W0104 Bolt (1 off), the K8831 Washer (1 off), and the AS20624 Nut (1 off) at clip position 6062. See Figure 13.
    - 1 Torque the bolt to 36 to 40 Lbfin (4 to 4.5 Nm).
  - (c) Safety the Thermocouple at location C, Figure 10, as shown.

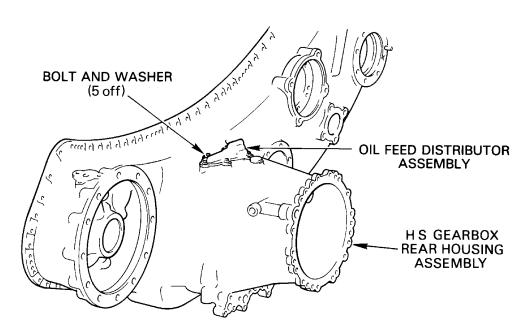


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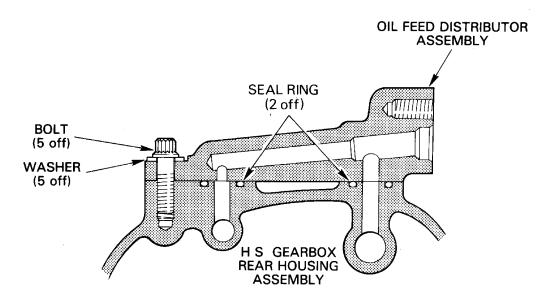
1 Make sure you safety the bolts which hold the Thermocouple to the No. 4 Bearing Weep Line Tube Nut.

(13) Install the EGT Harness by the procedure given in Reference (3), Chapter/Section 72-00-50, Installation-07 (for V2500-A5 Engines).





PART VIEW ON REAR HOUSING ASSEMBLY REAR FACE

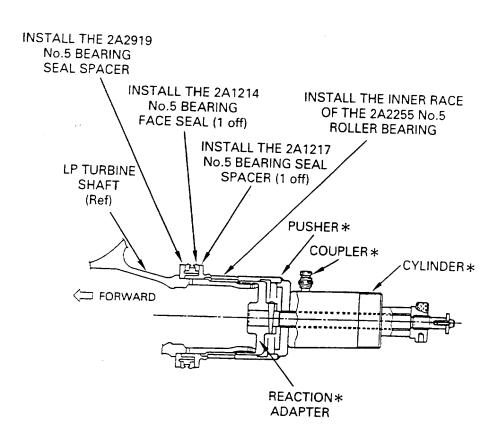


SECTIONAL VIEW THROUGH FITTED OIL FEED DISTRIBUTOR ASSEMBLY

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Location of the No. 5 Bearing and the No. 5 Bearing Seal Spacers Fig.1

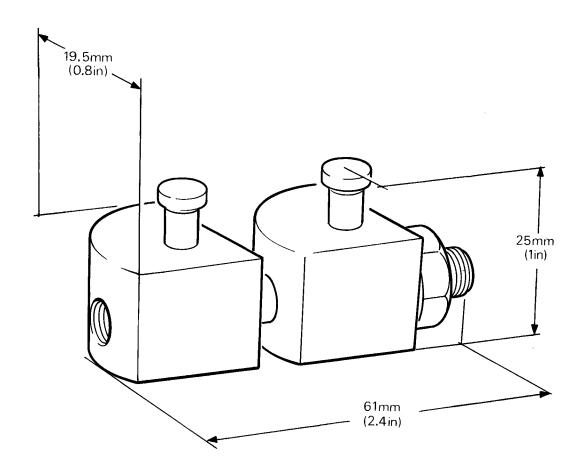




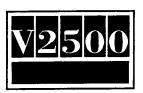
\* TOOL DETAILS ARE PART OF THE HYDRAULIC INSTALLATION PUSHER

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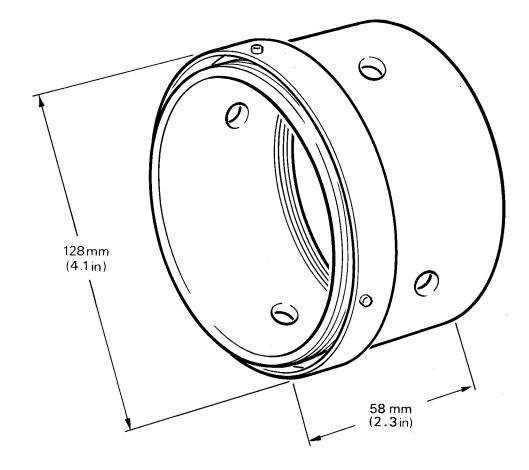
Installation of the No. 5 Bearing Inner Race and Seal Spacers Fig.2



Installation of the Turbine Exhaust Case Tools Fig.  $\bf 3$ 

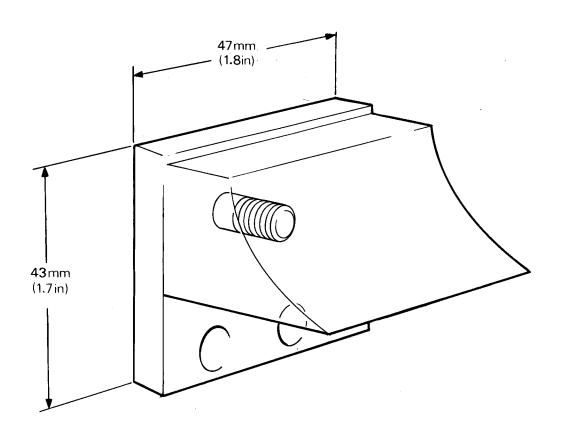


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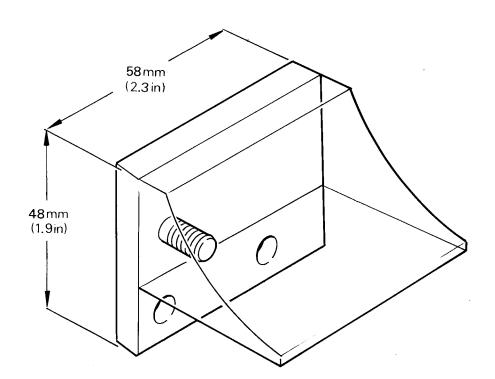
Location of Turbine Exhaust Case Assembly Fig.4



Installation of the Bolts and Brackets at the Front Flange of the Turbine Exhaust Case FIG.5 (Sheet 1)

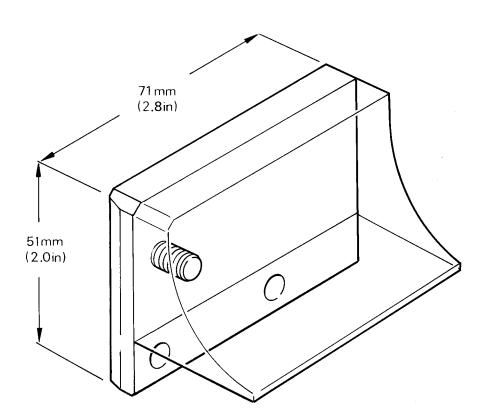


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Turbine Exhaust Case (Sheet 2) Installation of the Bolts and Brackets at the Front Flange of the Turbine Exhaust Case
Fig.5 (Sheet 2)

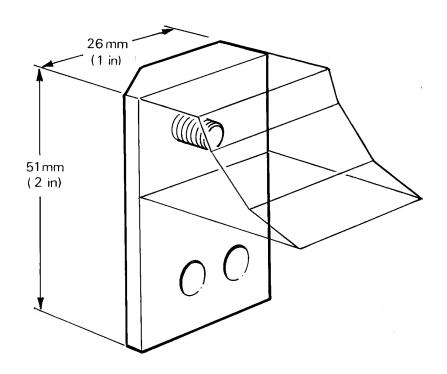


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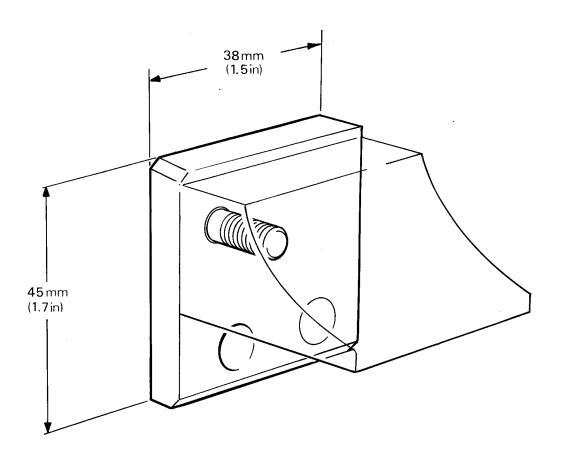
Installation of the Bolts and Brackets at the Front Flange of the Turbine Exhaust Case Fig.5 (Sheet 3)



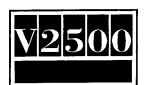
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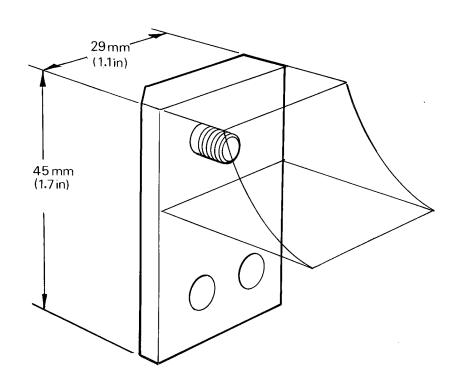
Installation of the Bolts and Brackets at the Front Flange of the Turbine Exhaust case Fig.5 (Sheet 4)



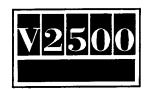
Location of the Locknut Fig.6

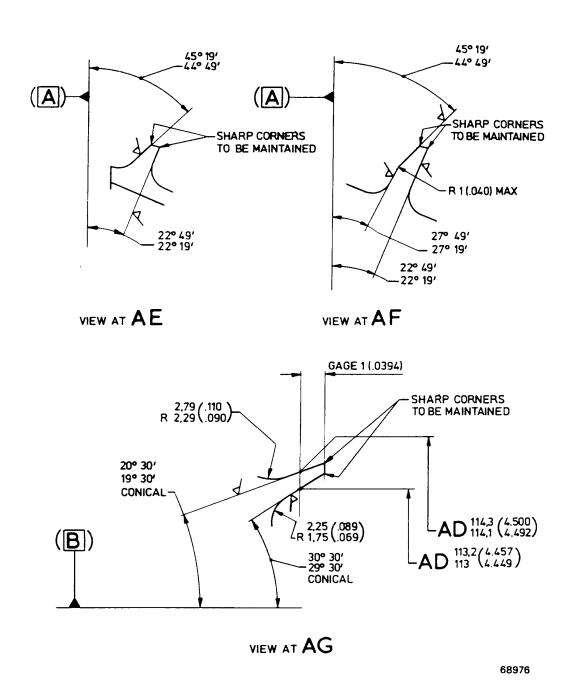


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Installation of the Locknut Fig.7

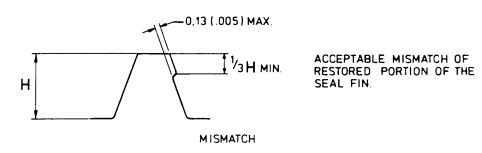


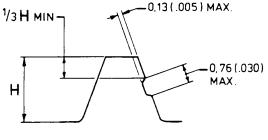


Location of the No. 5 Bearing Nozzle Fig.8



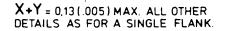
#### ACCEPTANCE STANDARDS. SEAL FINS.

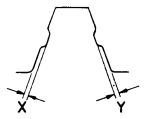




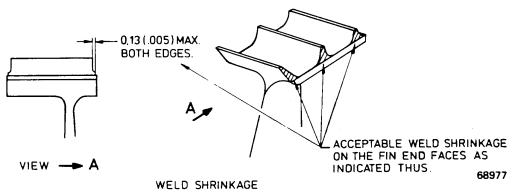
ACCEPTABLE WELD SHRINKAGE ON FIN FLANKS. NOTE: NOT MORE THAN ONE SCAR PER FLANK MAY BE ACCEPTED.

WELD SHRINKAGE ON A SINGLE FLANK.



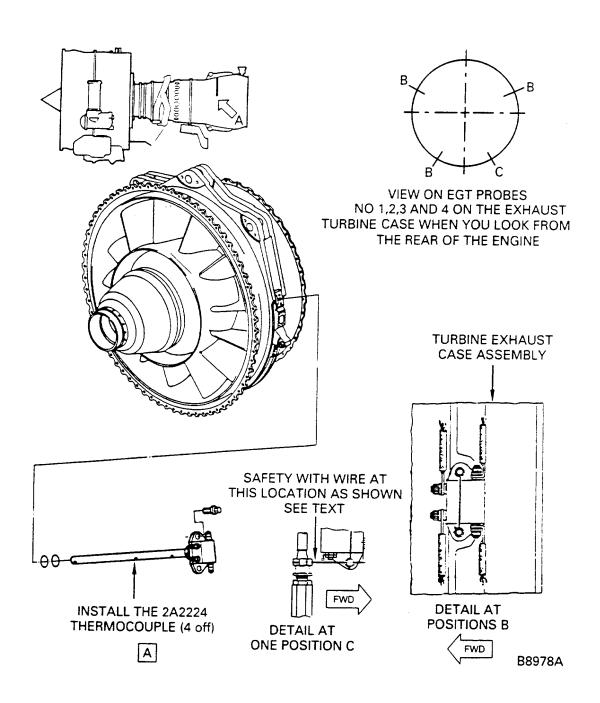


WELD SHRINKAGE ON BOTH FLANKS OR WELD SHRINKAGE AND MISMATCH ON OPPOSING FLANKS.

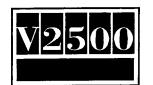


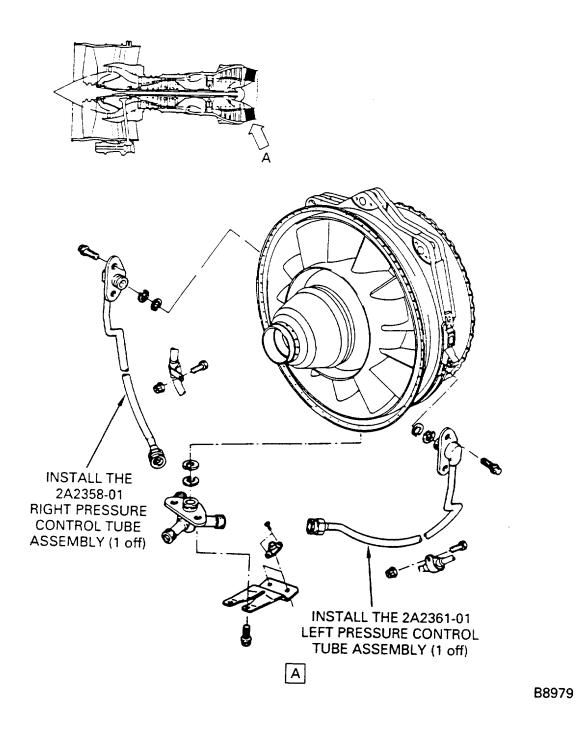
Installation of the No. 5 Bearing Nozzle Fig.9





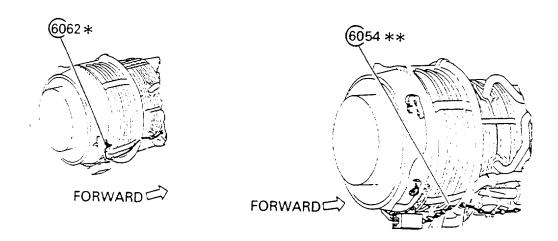
Installation of EGT Thermocouples Fig.10

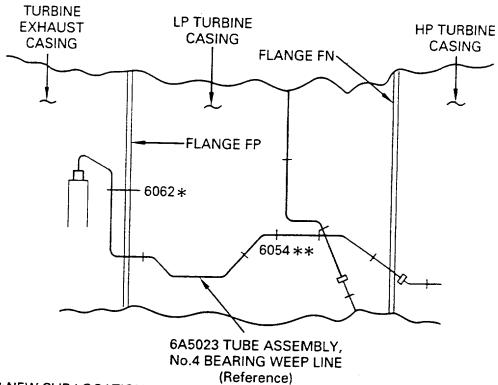




Installation Right and Left Hand Pressure Control Manifolds Fig.11







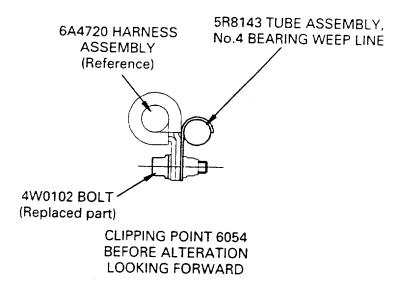
\*NEW CLIP LOCATION

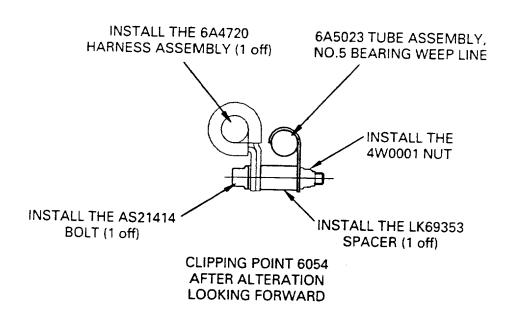
\*\*CLIP CONFIGURATION
ALTERED AT THIS LOCATION

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Schematic View of Oil Tubes Showing Clipping Point Arrangement After Alteration Fig.12 (Sheet 1)

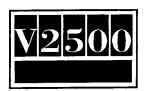


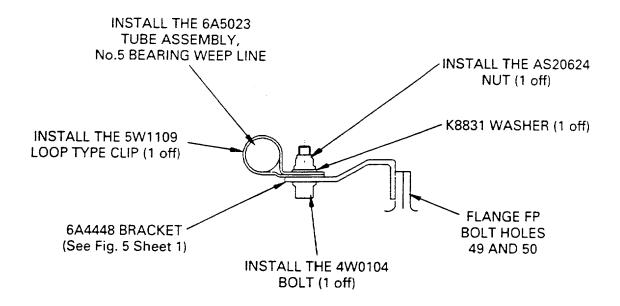




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Schematic View of Oil Tubes Showing Clipping Point Arrangement After Alteration Fig.12 (Sheet 2)

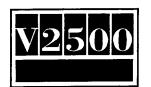




CLIPPING POINT 6062 ADDITIONAL

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Schematic View of Oil Tubes Showing Clipping Point Arrangement After Alteration Fig.12 (Sheet 3)



### 3. <u>Material Information</u>

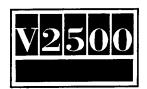
Applicability: For each V2500 Engine to incorporate this Bulletin.

### A. <u>Kits associated with this Bulletin:</u>

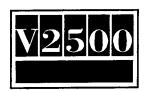
None.

### B. Parts affected by this Bulletin:

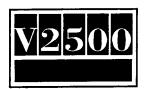
New Part No. (ATA No.)	Qty.	Est'd Unit Price (\$)	Keyword	Old Part No. (IPC No.)	Instructions Disposition
AS21414 (71-52-45)	1	-	.Bolt, Machine, Double Hex	4W0102 (01-238)	(S1) (F) (B)
LK69353	1	_	Spacer	-	(S3) (B)
(71-52-45)	•		: opacei	(01-243)	(33) (D)
6A5023	1	_	.Tube Assembly No. 4	5R8143	(S2) (C)
(71-73-49)	•		Bearing Weep Line	(01-500)	(B)
5W1109	1	_	.Clip, Loop Type	-	(B)
(71-73-49)				(01-550)	
4W0104	1	_	.Bolt, Machine Double	_	(B)
(71-73-49)			Hex	(01-551)	
k8831	1	-	.Washer	-	(B)
(71-73-49)				(01-552)	
AS20624	1	_	.Nut, Self Locking	-	(B)
(71-73-49)			Double Hex	(01-555)	
6A4448	1	-	.Bracket, Clipping	-	(B)
(72-50-00)				(01-103)	
2A2134	1	-	.Bearing, No. 5	4T8009	(S4) (A)
(72-50-42)				(01-100)	(B)
2A2136	Ref.	-	.Bearing, No. 5	4T8001	(S4) (A)
(72-50-42)			_	(01–100)	
2A2255	Ref.	-	.Bearing, No. 5	4T8005	(S4) (A)
(72-50-42)				(01–100)	4
-	1	-	.Seal, Carbon Assy.	4T8035	(A)
(72-50-42)	_		No. 5 Bearing	(01–140)	(-0)
2A1217	1	-	Spacer	4T8036	(S2) (A)
(72-50-42)	4			(01-142)	(B)
2A2919	1	-	Spacer	4T8037	(S2) (A)
(72-50-42)	4		Camban Ontion	(01-144)	(B)
- (72-50-42)	1	_	Carbon, Option	4T8051	(A)
(72-30-42)	Dof	_	Consisting Of:	(01-146) 4T8034	(S4) (A)
- (72-50-42)	Ref.	_	Carbon	(01-146)	(34) (A)
(12-30-42)	Ref.	_	or Seal, Face, No. 5	2A1214	(S4) (A)
- (72-50-42)	vei.	-	Bearing	(01-146)	(34) (A)
2A1217	1	_	.Spacer, No. 5 Bearing		(S2) (B)
(72-50-42)	'		Seal	(20-120)	(32) (0)
(12 )0 72)			Jeac	(20 120)	



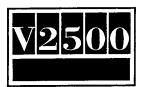
2A1214	1	-	.Seal, Face, No. 5	_	(\$4)	(B)
(72-50-42)			Bearing	(20-140)		
2A1218	1	_	.Spacer, No. 5	_	(S2)	(B)
(72-50-42)			Bearing Seal	(20-160)		
2A4700	1	_	Case, Assy. Turbine	4A8026	(S1)	(A)
(72-50-50)	•		Exhaust	(01-001)	(H)	(A)
	1					(4)
MS9549-14	1	-	.Seal	4T8049	(\$4)	(A)
(72-50-50)				(01–330)	(B)	
AS27467	1	_	.Union, No. 4 Bearing	AS27467	(C)	
(72-50-50)				(01-350)		
-	4	-	.Plug	4P8048	(C)	
(72-50-50)				(01-352)		
MS9886-11	4	_	Bolt	_	(\$4)	(B)
(72-50-50)				(20-100)		
2A2192	2	_	.Stop, Pin, Cowl Load	_	(S4)	(B)
(72-50-50)			Share	(20-120)		
2A2191	4	_	.Pin, Boss, Cowl Load	_	(\$4)	(B)
(72-50-50)	7		Share	(20-140)	(34)	(6)
2A2190	2			(20-140)	(\$4)	(D)
	2	-	Boss Assy, Cowl Load	(20.4(0)	(34)	(6)
(72-50-50)	,		Share	(20–160)	(0/)	<b>(=)</b>
MS21209F4-15	6	_	Insert, Screw Thread	_	(\$4)	(E)
(72-50-50)				(20–170)		
739951	2	-	Nut Option	-	(\$4)	(B)
(72-50-50)			Consisting Of:	(20-180)		
701887	Ref.	-	Nut, S/L Clinch	-		
(72-50-50)				(20-180)		
739963	Ref.	_	Nut, S/L Clinch	-		
(72-50-50)			•	(20-180)		
739964	Ref.	_	Nut, S/L Clinch	_		
(72-50-50)				(20-180)		
789519	Ref.	_	Nut, S/L Clinch	-		
(72-50-50)	KC1.		TIMAC, O/L CEINON	(20-180)		
MS9549-14	1	_	.Washer, Flat	_	(\$4)	(P)
	1		.washer, reac	(20.770)	(34)	(6)
(72-50-50)	4			(20–330)	(02)	(5)
AS27467	1	_	Union, No. 4 Bearing	-	(S2)	(B)
(72-50-50)			Oil Weepline	(20-350)		
4W2627	A/R	-	.Wire, Locking	<b>-</b>	(S2)	(B) (L)
(72-50-50)				(99-010)		
-	1	-	.Filter, Oil	4P8034	(C)	
(72-50-51)				(01-100)		
	2	_	.Ring, Sealing	AS43013-109	(C)	
(72-50-51)			Toroidal	(01-120)		
_	1	_	.Tube, Oil Transfer	4P8078	(C)	
(72-50-51)	-			(01-140)		
_	1	_	.Jet, Assy, Oil	4A8009	(C)	
(72-50-51)	•		1000, 100, 010	(01–160)	,	
	1	_	Insert, Screw Thread		(C)	
- (72_50_51)	1		insert, strew inredu		(,,	
(72-50-51)	1		lat Assy Oil	(01–170)	(6)	
- (72 FO F4)	1	_	Jet, Assy, Oil	4B8042	(C)	
(72-50-51)	2		D 1: M 1: D 1:	(01–180)	(00)	(5)
MS9452-05	2	-	.Bolt, Machine Double	-	(S2)	(R)



(72-50-51)			Hex Ext.	(20-010)		
MS9581-10	2	-	.Washer, Key, Crescent	-	(S2) (	(B)
(72-50-51)				(20-020)		
2A1212	1	_	.Tube, Transfer,	_	(S2) (	(B)
(72-50-51)			Packing, No. 5	(20-030)		
			Bearing			
AS3209-107	1	_	.Packing	_	(S2) (	B)
(72-50-51)	•		11 acking	(20-040)	(32)	
	2		Dalt Machine Dauble	(20-040)	(62) (	'D\
MS9886-07	2	_	Bolt, Machine Double	(20, 0(0)	(S2) (	(D)
(72-50-51)	_		Hex Ext.	(20-060)	4-65	
2A1211	1	_	.Nozzle, No. 5 Bearing	<b>-</b>	(S2) (	(B)
(72-50-51)				(20-070)		
AS3209-110	1	-	.Packing	-	(S2) (	(B)
(72-50-51)				(20-080)		
_	1	_	.Deaerator, Upper	4P8097	(C)	
(72-50-52)			,	(01-100)		
_	1	_	.Deaerator, Lower	4P8098	(C)	
(72-50-52)	•		ibeactator, Loner	(01–120)	(0)	
(12 )0 )2)	1	_	.Retainer No. 5	4P8075	(C)	
(72 50 52)	'	_	. Retainer No. 5		(0)	
(72-50-52)	•			(01–140)	(0)	
-	8	-	.Bolt, Machine Double	4W0163	(C)	
(72-50-52)			Hex	(01–160)		
MS9886-08	6	-	.Bolt Machine Double	-	(S2) (	(B)
(72-50-52)			Hex Ext	(20-010)		
2A1264	2	-	.Strainer Element,	_	(S2) (	(B)
(72-50-52)			No. 5 Bearings	(20-020)		
2A1213	1	_	.Plate, Retaining,	_	(S2) (	(B)
(72-50-52)			No. 5 Bearing	(02-040)		
2A2255	1	_	.Bearing, Roller,	_	(\$4) (	B)
(72-50-52)	•		No. 5	(20-060)	(0.7)	
2A4700	1	_	Case, Assembly,	4A8025	(\$4) (	' A )
(72-50-53)	•		Turbine Exhaust			
(72-50-55)	4			(01-001)	(H)	
- (70 50 57)	1	_	.Flange Outer Oil	4P8088	(\$4) (	. ( )
(72-50-53)			Feed Tube	(01–150)		
-	1	-	.Tube, Assembly,	4B8046	(\$4) (	(C)
(72-50-53)			Oil Feed	(01-170)		
4W0002	2	-	.Nut, Self Locking	4W0002	(C)	
(72-50-53)			Double Hex	(01-190)		
4W0165	2	-	.Bolt Machine	4W0165	(C)	
(72-50-53)			Double Hex	(01-200)		
_	1	_	.Nut, Self Locking	4W0002	(C)	
(72-50-53)	-		Double Hex	(01-220)		
-	1	_	.Bolt, Machine Double	4W0165	(C)	
(72-50-53)	•		Hex	(01-230)	(0)	
(12-30-33)	1				(0)	
(72 EC EZ)	1	_	.Bracket, Outer Tube	4P8044	(C)	
(72-50-53)	-		Flange Side	(01–250)	(2)	
-	3	-	.Bolt, Machine Double	(4W0165)	(C)	
(72-50-53)	_		Hex	(01–270)	_	
-	2	-	.Nut, Self Locking	4W0002	(C)	
(72-50-53)			Double Hex	(01–290)		



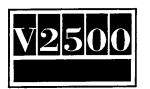
Nex	- (72 50 57)	2	-	Bolt, Machine Double	4W0165	
(72-50-53)       (01-320)         4W0001       1       -       .Nut Option       4W0001       (C)         (72-50-53)       -       1       -       .Bolt, Machine Double       4W0102       (C)         (72-50-53)       -       1       -       .Clamp       4P8115       (S4)       (C)         (72-50-53)       -       1       -       .Blanket Assembly, 478046       (C)       (C)         (72-50-53)       -       1       -       .Blanket Assembly, 478047       (C)       (C)         (72-50-53)       -       1       -       .Blanket Assembly, 478047       (C)       (C)         (72-50-53)       -       1       -       .Blanket Assembly, 478047       (C)       (C)         (72-50-53)       -       1       -       .Seal, Metallic       AS42713       (C)         (72-50-53)       -       1       -       .Inde Assembly, 488035       (S4)       (C)         (72-50-53)       -       1       -       .Tube Assembly, 0il       488047       (C)       (C)         (72-50-53)       -       1       -       .Nut, Self Locking       40002       (C)         (72-50-53)       -       2 <td>(72-50-53)</td> <td></td> <td></td> <td>Hex</td> <td>(01-300)</td> <td></td>	(72-50-53)			Hex	(01-300)	
4W0001         1         -         .Nut Option         4W0001         (C)           (72-50-53)         -         .Bolt, Machine Double         4W0102         (C)           (72-50-53)         -         .Clamp         4P8115         (S4) (C)           (72-50-53)         -         .Clamp         4P8115         (S4) (C)           (72-50-53)         -         .Blanket Assembly, 478046         (C)           (72-50-53)         -         .Blanket Assembly, 478047         (C)           (72-50-53)         -         .Blanket Assembly, 478047         (C)           (72-50-53)         -         .Blanket Assembly, 488035         (S4) (C)           (72-50-53)         -         .Dlub Assembly, 488035         (S4) (C)           (72-50-53)         -         .Dlub Assembly, 0il 488047         (C)           (72-50-53)         -         .Dub Assembly, 0il 48804         (C)           (72-50-53)         -         .Dub Assembly, 0il 48804         (C)           (7	-	1	-	.Bracket		(S4) (C)
(72-50-53) - 1 - Bolt, Machine Double (13-36) - 1 - Bolt, Machine Double (13-350) - 1 - Clamp (13-350) - 1 - Clamp (13-350) - 1 - Blanket Assembly, 478115 (S4) (C) (72-50-53)						
- 1Bolt, Machine Double 4W0102 (C) 1Clamp 4P8115 (S4) (C) (72-50-53)		1	-	.Nut Option		(C)
Company	(72-50-53)					
- 1Clamp	-	1	_	.Bolt, Machine Double	4W0102	(C)
(72-50-53)       -       1       -       .Blanket Assembly, 4T8046       (C)         (72-50-53)       -       1       -       .Blanket Assembly, 4T8047       (C)         (72-50-53)       -       1       -       .Blanket Assembly, 4T8047       (C)         (72-50-53)       -       1       -       .Seal, Metallic       AS42713       (C)         (72-50-53)       -       1       -       .Tube Assembly, 4B8035       (S4) (C)         (72-50-53)       -       0il Scavenge, Outer (01-480)       (C)         (72-50-53)       -       1       -       .Tube Assembly, 0il 4B8047       (C)         (72-50-53)       -       1       -       .Tube Assembly, 0il 4B8047       (C)         (72-50-53)       -       1       -       .Tube Assembly, 0il 4B8047       (C)         (72-50-53)       -       1       -       .Nut, Self Locking 4W0002       (C)         (72-50-53)       -       1       -       .Nut, Self Locking 4W0002       (C)         (72-50-53)       -       2       -       .Nut, Self Locking 4W002       (C)         (72-50-53)       -       2       -       .Bolt, Machine, Double 4W1245       (S4) (C)	(72-50-53)			Hex	(01-350)	
(72-50-53)       -       1       -       .Blanket Assembly, 4T8046 (C)       (C)         (72-50-53)       -       1       -       .Blanket Assembly, 4T8047 (C)       (C)         (72-50-53)       -       1       -       .Blanket Assembly, 4T8047 (C)       (C)         (72-50-53)       -       1       -       .Seal, Metallic AS42713 (C)       (C)         (72-50-53)       -       1       -       .Tube Assembly, 4B8035 (C)       (C)         (72-50-53)       -       1       -       .Tube Assembly, 01 (MB8047 (C)       (C)         (72-50-53)       -       1       -       .Tube Assembly, 01 (MB8047 (C)       (C)         (72-50-53)       -       1       -       .Tube Assembly, 01 (MB8047 (C)       (C)         (72-50-53)       -       1       -       .Tube Assembly, 01 (MB8047 (C)       (C)         (72-50-53)       -       1       -       .Nut Self Locking (MB8047 (C)       (C)         (72-50-53)       -       1       -       .Nut Self Locking (MB8047 (C)       (C)         (72-50-53)       -       2       -       .Nut Self Locking (MB8047 (C)       (C)         (72-50-53)       -       2       -       .Bolt, Machine, Dou	_	1	_	.Clamp	4P8115	(S4) (C)
- 1	(72-50-53)			·	(01-370)	
Thermal Lower	_	1	_	.Blanket Assembly.	4T8046	(C)
- 1Blanket Assembly, 4T8047 (C) (T2-50-53)	(72-50-53)					
(72-50-53)       Thermal Upper       (01-382)         -       .Seal, Metallic       AS42713       (C)         (72-50-53)       .Tube Assembly, 488035       (S4) (C)         (72-50-53)       .Tube Assembly, 0it 488047       (C)         -       1       -       .Tube Assembly, 0it 488047       (C)         (72-50-53)       .Scavenge, Inner       (01-500)       (C)         -       1       -       .Nut, Self Locking 480002       (C)         (72-50-53)       .Double Hex       (01-540)       (C)         -       1       -       .Nut, Self Locking 480002       (C)         (72-50-53)       .Double Hex       (01-540)       (C)         (72-50-53)       .Double Hex       (01-550)       (C)         (72-50-53)       .Double Hex       (01-550)       (C)         (72-50-53)       .Double Hex       (01-560)       (C)         (72-50-53)       .Double Hex       (01-570)       (C)         (72-50-53)       .Double Hex       (01-570)       (C)         (72-50-53)       .Double Hex       (01-590)       (C)         (72-50-53)       .Double Hex       (01-600)       (C)         (72-50-53)       .Double Hex	_	1	_			(C)
- 1Seal, Metallic AS42713 (C) (72-50-53)	(72-50-53)	•				(0)
(72-50-53)       1       -       .Tube Assembly, 488035       (S4) (C)         (72-50-53)       0il Scavenge, Outer (01-480)       (C)         -       1       -       .Tube Assembly, 0il 488047       (C)         (72-50-53)       Scavenge, Inner (01-500)       (C)         -       1       -       .Tube Assembly, 0il 488034       (C)         (72-50-53)       Scavenge Intermediate (01-520)       (C)         (72-50-53)       Double Hex (01-540)       (C)         -       1       -       .Bolt Machine, Double 4W002       (C)         (72-50-53)       Double Hex (01-540)       (C)         -       1       -       .Bolt Machine, Double 4W0165       (C)         (72-50-53)       Double Hex (01-560)       (C)       (C)         (72-50-53)       Bolt, Machine, Single 4W1245       (S4) (C)       (C)         (72-50-53)       Bracket, Outer Tube 4P8045       (S4) (C)       (C)         (72-50-53)       Bolt, Machine, Double 4W0165       (C)       (C)         (72-50-53)       Bolt, Machine, Double 4W0165       (C)       (C)         (72-50-53)       Colamp 4W0001       (C)       (C)         (72-50-53)       Colamp 4W0002       (C) <tr< td=""><td>-</td><td>1</td><td>_</td><td></td><td></td><td>(C)</td></tr<>	-	1	_			(C)
- 1Tube Assembly, 488035 (S4) (C) (72-50-53)	- (72_50_57)	•		. Seat, Metattic		(0)
(72-50-53)       0il Scavenge, Outer       (01-480)         -       1       -       Tube Assembly, Oil 488047       (C)         (72-50-53)       1       -       Scavenge, Inner       (O1-500)         -       1       -       Scavenge, Inner       (O1-500)         (72-50-53)       Scavenge Intermediate       (O1-520)         -       1       -       Nut, Self Locking 4W0002       (C)         (72-50-53)       Hex       (O1-540)       (C)         -       1       -       Bolt Machine, Double 4W0165       (C)         (72-50-53)       Lex       (O1-550)       (C)         -       2       -       Nut, Self-Locking 4W0002       (C)         (72-50-53)       Lex       (O1-560)       (C)         (72-50-53)       Hex       (O1-570)       (C)         (72-50-53)       Beacket, Outer Tube 4P8045       (S4) (C)         (72-50-53)       Hex       (O1-600)       (C)         (72-50-53)       Hex       (O1-600)       (C)         (72-50-53)       Hex       (O1-600)       (C)         (72-50-53)       Clamp       (O1-610)       (C)         (72-50-53)       Clamp       (O1-620) </td <td>(72-30-33)</td> <td>4</td> <td></td> <td>Tule a Assault La</td> <td></td> <td>(0/) (0)</td>	(72-30-33)	4		Tule a Assault La		(0/) (0)
- 1Tube Assembly, Oil 4B8047 (C) (72-50-53)	- (70 FO F7)	1	-			(54) (6)
(72-50-53)       Scavenge, Inner       (01-500)         -       1       Tube Assembly, 0il 488034       (C)         (72-50-53)       Scavenge Intermediate (01-520)       (C)         -       1       Nut, Self Locking 4W0002       (C)         (72-50-53)       Bolt Machine, Double 4W0165       (C)         (72-50-53)       Double Hex (01-560)       (C)         -       2       Nut, Self-Locking 4W0002       (C)         (72-50-53)       Double Hex (01-560)       (C)         -       2       Bolt, Machine, Single 4W1245       (S4) (C)         (72-50-53)       Hex (01-570)       (S4) (C)         (72-50-53)       Bolt, Machine, Double 4W0165       (C)         (72-50-53)       Hex (01-600)       (C)         -       1       Bolt, Machine, Double 4W0102       (S3) (C)         (72-50-53)       Hex (01-600)       (C)         -       1       Bolt, Machine Double 4W0102       (S3) (C)         (72-50-53)       Hex (01-650)       (C)         -       1       Bolt Machine 4W0102       (C)         (72-50-53)       Double Hex (01-660)       (C)         -       1       Bolt Machine 4W0165       (C)         (72-50-	(72-50-53)	_				
- 1Tube Assembly, 0il 4B8034 (C)  (72-50-53)	<b>-</b>	1	_			(C)
(72-50-53)       Scavenge Intermediate (01-520)         -       1       -       Nut, Self Locking 4W0002 (C)         (72-50-53)       Double Hex (01-540)       (C)         -       1       -       Bolt Machine, Double 4W0165 (C)         (72-50-53)       Hex (01-550)       (C)         -       2       -       Nut, Self-Locking 4W0002 (C)         (72-50-53)       Double Hex (01-560)       (C)         -       2       -       Bolt, Machine, Single 4W1245 (S4) (C)         (72-50-53)       Hex (01-570)       (C)         -       3       -       Bolt, Machine, Double 4W0165 (C)         (72-50-53)       Hex (01-600)       (C)         -       1       -       Bolt, Machine Double 4W0102 (S3) (C)         (72-50-53)       Hex (01-620)       (C)         -       1       -       Bolt, Machine Double 4W0102 (S3) (C)         (72-50-53)       Hex (01-650)       (C)         -       1       -       Nut Self Locking 4W0002 (C)         (72-50-53)       Double Hex (01-660)       (C)         (72-50-53)       Double Hex (01-670)       (C)         (72-50-53)       Bolt Machine 4W0165 (S1) (C)	(72-50-53)					
- 1Nut, Self Locking 4W0002 (C) (72-50-53)	-	1	-			(C)
Double Hex	(72-50-53)			Scavenge Intermediate	(01-520)	
- 1 - Bolt Machine, Double 4W0165 (C) (72-50-53)	-	1	-	.Nut, Self Locking	4W0002	(C)
(72-50-53)       Hex       (01-550)         -       2       Nut, Self-Locking       4W0002       (C)         (72-50-53)       Double Hex       (01-560)       (S4) (C)         (72-50-53)       Hex       (01-570)       (S4) (C)         (72-50-53)       Beracket, Outer Tube       4P8045       (S4) (C)         (72-50-53)       Bolt, Machine, Double       4W0165       (C)         (72-50-53)       Hex       (01-600)       (C)         (72-50-53)       Outer Tube       4W0001       (C)         (72-50-53)       Hex       (01-610)       (C)         (72-50-53)       Hex       (01-620)       (S3) (C)         (72-50-53)       Hex       (01-650)       (C)         (72-50-53)       Ouble Hex       (01-660)       (C)         (72-50-53)       Double Hex       (01-660)       (C)         (72-50-53)       Double Hex       (01-660)       (C)         (72-50-53)       Double Hex       (01-670)       (C)         (72-50-53)       Bolt Machine       4W0165       (S1) (C)         (72-50-53)       Bolt Machine       4W0165       (S1) (C)         (72-50-53)       Bolt Machine       4W0165       (S1)	(72-50-53)			Double Hex	(01-540)	
(72-50-53)       Hex       (01-550)         -       2       Nut, Self-Locking       4W0002       (C)         (72-50-53)       Double Hex       (01-560)       (S4) (C)         (72-50-53)       Hex       (01-570)       (S4) (C)         (72-50-53)       Beracket, Outer Tube       4P8045       (S4) (C)         (72-50-53)       Bolt, Machine, Double       4W0165       (C)         (72-50-53)       Hex       (01-600)       (C)         (72-50-53)       Outer Tube       4W0001       (C)         (72-50-53)       Hex       (01-610)       (C)         (72-50-53)       Hex       (01-620)       (S3) (C)         (72-50-53)       Hex       (01-650)       (C)         (72-50-53)       Ouble Hex       (01-660)       (C)         (72-50-53)       Double Hex       (01-660)       (C)         (72-50-53)       Double Hex       (01-660)       (C)         (72-50-53)       Double Hex       (01-670)       (C)         (72-50-53)       Bolt Machine       4W0165       (S1) (C)         (72-50-53)       Bolt Machine       4W0165       (S1) (C)         (72-50-53)       Bolt Machine       4W0165       (S1)	_	1	_	Bolt Machine, Double	4W0165	(C)
- 2Nut, Self-Locking 4W0002 (C) (72-50-53)	(72-50-53)				(01-550)	
(72-50-53)       Double Hex       (01-560)         -       2       Bolt, Machine, Single 4W1245       (S4) (C)         (72-50-53)       Hex       (01-570)         -       1       Bracket, Outer Tube 4P8045       (S4) (C)         (72-50-53)       (01-590)       (C)         -       3       Bolt, Machine, Double 4W0165       (C)         (72-50-53)       Hex       (01-600)         -       1       Bolt, Machine Double 4W0102       (S3) (C)         (72-50-53)       Hex       (01-620)         -       1       Clamp       4P8111       (S4) (C)         (72-50-53)       Ouble Hex       (01-650)       (C)         (72-50-53)       Double Hex       (01-660)       (C)         (72-50-53)       Double Hex       (01-660)       (C)         (72-50-53)       Bolt Machine       4W0165       (S1) (C)         (72-50-53)       Double Hex       (01-670)       (C)         (72-50-53)       Bolt Machine       4W0165       (C)         (72-50-53)       Bolt Machine       4W0165       (C)	_	2	_	.Nut. Self-Locking		(C)
- 2Bolt, Machine, Single 4W1245 (S4) (C)  (72-50-53)	(72-50-53)					
(72-50-53)       Hex       (01-570)         -       1       -       Bracket, Outer Tube       4P8045       (S4) (C)         (72-50-53)       (01-590)       (01-590)       (C)         -       3       -       Bolt, Machine, Double       4W0165       (C)         (72-50-53)       (01-600)       (C)       (C)         -       1       -       Bolt, Machine Double       4W0102       (S3) (C)         (72-50-53)       Hex       (01-620)       (C)         -       1       -       Clamp       4P8111       (S4) (C)         (72-50-53)       (01-650)       (C)       (C)         (72-50-53)       Double Hex       (01-660)       (C)         (72-50-53)       Bolt Machine       4W0165       (S1) (C)         (72-50-53)       Bolt Machine       4W0165       (S1) (C)         (72-50-53)       Bolt Machine       4W0165       (S1) (C)         (72-50-53)       Bolt Machine       4W0165       (C)	_	2	_			(S4) (C)
- 1 - Bracket, Outer Tube 4P8045 (S4) (C)  (72-50-53)	(72-50-53)	_				(01)
(72-50-53)       (01-590)         -       3       -       Bolt, Machine, Double 4W0165       (C)         (72-50-53)       Hex       (01-600)       (C)         (72-50-53)       (01-610)       (C)         -       1       -       Bolt, Machine Double 4W0102       (S3) (C)         (72-50-53)       Hex       (01-620)         -       1       -       Clamp       4P8111       (S4) (C)         (72-50-53)       Ouble Hex       (01-660)       (C)         (72-50-53)       Double Hex       (01-660)       (S1) (C)         (72-50-53)       Bolt Machine       4W0165       (S1) (C)         (72-50-53)       Bouble Hex       (01-670)       (C)         (72-50-53)       Blanket, Assembly, 4T8044       (C)	-	1	_			(s/ <sub>1</sub> ) (c)
- 3 - Bolt, Machine, Double 4W0165 (C)  (72-50-53)	(72_50_57)	•		.bracket, outer lube		(34) (0)
(72-50-53)       Hex       (01-600)         -       1       -       .Nut Option       4W0001       (C)         (72-50-53)       (01-610)       (C)       (C)       (C)         -       1       -       .Bolt, Machine Double 4W0102       (S3) (C)         (72-50-53)       Hex       (01-620)       (C)         (72-50-53)       (01-650)       (C)         (72-50-53)       Nut Self Locking 4W0002       (C)         (72-50-53)       Double Hex       (01-660)         (72-50-53)       Bolt Machine 4W0165       (S1) (C)         (72-50-53)       Double Hex       (01-670)         1       Blanket, Assembly, 4T8044       (C)	(12-)0-)3)	7		Dolt Machine Double		(C)
- 1Nut Option	(72 50 57)	3	_			(0)
(72-50-53)       (01-610)         -       1       -       Bolt, Machine Double 4W0102 (S3) (C)         (72-50-53)       Hex (01-620)       (S4) (C)         (72-50-53)       (01-650)       (C)         -       2       -       Nut Self Locking 4W0002 (C)         (72-50-53)       Double Hex (01-660)       (S1) (C)         (72-50-53)       Bolt Machine 4W0165 (S1) (C)         (72-50-53)       Double Hex (01-670)       (C)         (72-50-53)       Blanket, Assembly, 4T8044 (C)	(72-50-55)	4				(0)
- 1Bolt, Machine Double 4W0102 (S3) (C)  (72-50-53)	- (70 50 57)	1	_	.Nut Option		(()
(72-50-53)       Hex       (01-620)         -       1       -       .Clamp       4P8111       (S4) (C)         (72-50-53)       (01-650)       (C)       (C)         (72-50-53)       Double Hex       (01-660)       (S1) (C)         (72-50-53)       Double Hex       (01-670)       (C)         (72-50-53)       Blanket, Assembly, 4T8044       (C)	(72-50-53)	_				
- 1Clamp 4P8111 (S4) (C) (72-50-53)	<b>-</b>	1	_			(S3) (C)
(72-50-53)       (01-650)         -       2       -       .Nut Self Locking       4W0002       (C)         (72-50-53)       Double Hex       (01-660)       (S1) (C)         (72-50-53)       Double Hex       (01-670)         1       Blanket, Assembly, 4T8044       (C)	(72-50-53)					
- 2 - Nut Self Locking 4W0002 (C) (72-50-53) Double Hex (01-660) 2 - Bolt Machine 4W0165 (S1) (C) (72-50-53) Double Hex (01-670) 1 - Blanket, Assembly, 4T8044 (C)	-	1	-	.Clamp		(S4) (C)
(72-50-53)       Double Hex       (01-660)         2       -       Bolt Machine       4W0165       (S1) (C)         (72-50-53)       Double Hex       (01-670)       (C)         1       -       Blanket, Assembly, 4T8044       (C)	(72-50-53)				(01-650)	
2 - Bolt Machine 4W0165 (S1) (C) (72-50-53) Double Hex (01-670) 1 - Blanket, Assembly, 4T8044 (C)	-	2	_	.Nut Self Locking	4W0002	(C)
(72-50-53) Double Hex (01-670) 1 - Blanket, Assembly, 4T8044 (C)	(72-50-53)			Double Hex	(01-660)	
(72-50-53) Double Hex (01-670) 1 - Blanket, Assembly, 4T8044 (C)		2	-	.Bolt Machine	4W0165	(S1) (C)
1Blanket, Assembly, 4T8O44 (C)	(72-50-53)			Double Hex	(01-670)	
, , ,		1	_			(C)
	(72-50-53)					



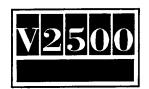
-	1	-	.Blanket, Assembly,	4T8045	(C)
(72-50-53)			Thermal Lower	(01-682)	
-	1	-	.Bracket	4P8114	(S4) (C)
(72-50-53)				(01-690)	
AS42714	1	-	.Seal, Metallic, Oil	AS42714	(C)
(72-50-53)			Scavenge	(01-700)	
_	13	_	.Nut, Self Locking	AS27857	(S3) (C)
(72-50-53)			Shank	(02-120)	
_	7	_	.Bushing	4P8009	(C)
(72-50-53)			<b>G</b>	(02-140)	
_	15	_	.Rivet	AS16489	(C)
(72-50-53)				(02-160)	
_	1	_	.Housing, Carbon	4P8036	(C)
(72-50-53)	•		Seal	(02-180)	
-	1	_	.Blanket, Thermal	4T8022	(C)
(72-50-53)	•		ibeankery mermae	(02-200)	(0)
-	8	_	.Insert, Screw Thread	AGS3732	(C)
(72-50-53)	U		. Insert, screw in ead	(02-220)	(6)
-	21	_	.Insert, Screw Thread	AGS3732	(C)
	۷ ۱		. Tilser C, Screw Till ead	(02-240)	(6)
	1	_	Coop Appembly	4B8068	(CZ) (A)
2A4700	ı	_	.Case Assembly,		(S3) (A)
(72-50-53)	,		Turbine	(02-300)	(H)
2A2163	4	-	Bushing	4P8109	(S3) (A)
(72-50-53)	,			(02-480)	(B)
2A2161	6	-	Bushing	4P8032	(A) (B)
(72-50-53)				(02-490)	4. <b></b> .
2A2231-01	1	-	.Tube, No.5 Bearing	<b>-</b>	(S3) (B)
(72-50-53)			Pressure, Assembly	(20-010)	
4w0001	1	-	.Nut, Option	-	(S3) (E)
(72-50-53)				(20-015)	
MS122905	1	-	.Clamp and Loop	-	(S3) (B)
(72-50-53)			Type Support	(20-016)	
4W0103	1	-	.Bolt	-	(S3) (E)
(72-50-53)				(20-017)	
2A2232	1	-	.Bracket, Loop Clamp	-	(S3) (B)
(72-50-53)				(20-020)	
4W0002	2	-	.Nut, Self Locking	_	(S3) (E)
(72-50-53)			Double Hex	(20-030)	
4W0165	2	_	.Bolt, Machine	_	(S3) (B)
(72-50-53)			Double Hex	(20-040)	
MS9378-06	1	-	Collar, Swivel, O	_	(S3) (B)
(72-50-53)			Ring	(20-084)	
MS9879-06	1	_	Sleeve, Swivel, O	_	(S3) (B)
(72-50-53)			Ring	(20-086)	
AS3268-044	2	_	Sleeve, Half,	_	(S3) (B)
(72-50-53)	_		Reinforcing Tube	(20-088)	
2A2241	1	_	Shield Set Option	-	(S3) (B)
(72-50-53)	•		1105ta 56t 5pt 1611	(20-130)	(33) (3)
ST1003-06	1	_	.Wire, Thrust	-	(S3) (B)
(72-50-53)	•		in it cy i i ii u a c	(20-170)	(05) (0)
ST2121-06	1	_	Nut, Tube Coupling	-	(S3) (B)
312121-00	1	_	wat, lube coupting	_	(3) (6)



(72-50-53)				(20-172)	
2A2168-01	1	-	.Tube, Pressure No. 5	_	(S3) (B)
(72-50-53)			Bearing Assy.	(20-176)	
4W0002	2	-	.Nut, Self Locking	-	(S3) (E)
(72-50-53)			Double Hex	(20-180)	
4W0165	2	-	.Bolt, Machine, Double	_	(S3) (B)
(72-50-53)			Hex	(20-190)	
2A2177	1	-	<pre>.Bracket, Loop Clamp</pre>		(S3) (B)
(72-50-53)				(20-200)	
4W0001	1	-	.Nut Option	_	(S3) (E)
(72-50-53)				(20-210)	
4W2621	2	-	.Washer	-	(S3) (E)
(72-50-53)				(20-215)	
4W0106	1	-	.Bolt, Machine, Double	-	(S3) (B)
(72-50-53)			Hex	(20-220)	
2A2207	1	-	Spacer	-	(S3) (B)
(72-50-53)				(20-254)	
2A2235	1	_	Sleeve	-	(S3) (B)
(72-50-53)				(20-256)	
MS9198-06	1	-	Nut, Tube, Coupling	-	(S3) (B)
(72-50-53)				(20-258)	
MS9483-06	1	-	Ferrule Tube Fitting	_	(S3) (B)
(72-50-53)				(20-260)	
2A2173	1	_	Ferrule	_	(S3) (B)
(72-50-53)				(20-274)	
2A2175	1	_	.Nipple	_	(S3) (B)
(72-50-53)				(20-290)	
AS3209-014	1	-	<pre>.Packing, Preformed</pre>	_	(S3) (B)
(72-50-53)				(20-300)	
2A2210	1	-	.Elbow, Tube, No. 5	-	(S3) (B)
(72-50-53)			Scavenge	(20-320)	
4W0002	1	-	.Nut Self Locking	-	(S3) (E)
(72-50-53)			Double Hex	(20-330)	
4W0165	1	_	.Bolt Machine Double	-	(S3) (B)
(72-50-53)			Hex	(20-340)	
2A2212	1	-	.Bracket, Elbow, Tube	_	(S3) (B)
(72-50-53)				(20-350)	
4W0002	2	-	.Nut, Self Locking	_	(S3) (E)
(72-50-53)			Double Hex	(20-360)	
4W0165	2	-	Bolt, Machine Double	_	(S3) (B)
(72-50-53)			Hex	(20-370)	
2A2242	1	-	.Shield, Set Option	-	(S3) (B)
(72-50-53)				(20-390)	
ST1003-07	1	-	.Wire Thrust	_	(S3) (B)
(72-50-53)				(20-432)	
493975	1	-	.Nut, Tube, Coupling	_	(S3) (B)
(72-50-53)				(20-433)	
2A2169-01	1	-	.Tube, Scavenge, No. 5	-	(S3) (B)
(72-50-53)			Assembly	(20-435)	
4W0002	2	-	.Nut Self Locking	-	(S3) (E)
(72-50-53)			Double Hex	(20-440)	



4W0165	2	_	.Bolt Machine Double	-	(S3)	(B)
(72-50-53)			Hex	(20-450)		
2A2176	1	_	.Bracket, Loop Clamp	-	(S3)	(B)
(72-50-53)				(20-460)		
4W0001	1	_	.Nut Option	_	(S3)	(E)
(72-50-53)			·	(20-470)		
4W2621	2	_	.Washer	_	(S3)	(E)
(72-50-53)	_			(20-475)		
4W0106	1	_	.Bolt, Machine, Double	_	(S3)	(B)
(72-50-53)	•		Hex	(20-480)	(00)	(5)
5004855-01	1	_	Spacer No. 4 Bearing	-	(S3)	(B)
(72-50-53)	'		Tube	(20-524)	(33)	(6)
2A2468	1	_		(20-324)	(S3)	(D)
	ı	_	Sleeve, No. 5 Bearing	(20 52()	(22)	(6)
(72-50-53)	4		Heatshield	(20-526)	(07)	(5)
MS9198-07	1	_	Nut, Tube, Coupling	(20, 520)	(S3)	(B)
(72-50-53)	_			(20-528)		4
MS9483-07	1	_	Ferrule, Brazing,	_	(S3)	(B)
(72-50-53			Tube Fitting	(20-530)		
2A2209	1	-	Ferrule	-	(S3)	(B)
(72-50-53)				(20-544)		
50P186	1	-	.Adapter, Straight,	-	(S3)	(B)
(72-50-53)			Tube to Boss	(20-560)		
AS3209-015	1	_	.Packing, Preformed	-	(S3)	(B)
(72-50-53)				(20-570)		
MS9885-06	1	_	.Bolt, Machine, Double	_	(S2)	(B)
(72-50-53)			Hex	(21-010)		
2A1365	1	_	.Housing No. 5 Bearing	_	(S2)	(B)
(72-50-53)	•		Seal	(21-020)	(02)	(5)
2A1354	1	_	.Shield No. 5 Bearing	-	(S2)	(B)
(72-50-53)	•		Tomreca No. 3 Bearing	(21-040)	(OL)	(6)
2A2107	2	_	.Shield Option	-	(S2)	(B)
(72-50-53)	L		. Sirrecta Option	(21-060)	(32)	(6)
2A1768-01	Ref.	_	Chield Commont	-	(S2)	(C)
	Rei.	_	.Shield Segment,	(21 042)	(32)	(6)
(72-50-53)			Assembly, Heat No. 5	(21–062)		
2147/2 04	- ·		Bearing		(00)	(0)
2A1769-01	Ref.	_	.Shield Segment,	-	(S2)	(G)
(72-50-53)			Assembly, Heat No. 5	(21-072)		
			Bearing			
(72-50-53)				(21–100)		
2A2103	1	-	.Shield Option	-	(S2)	
2A1766-01	Ref.	_	.Shield, Assembly,	-	(S2)	(G)
(72-50-53)			Heat No. 5 Bearing,	(21–102)		
2A2104-01	Ref.	-	.Shield, Assembly,	-	(S2)	(G)
(72-50-53)			Heat No. 5 Bearing	(21–116)		
2A2165	7	_	.Tube, Intermediate,	-	(S2)	(B)
(72-50-53)			Strut	(21-200)		
2A2620-01	1	_	.Case, Assembly,	_	(S2)	(B)
(72-50-53)			Turbine Exhaust	(21-300)		
AN123619	6	_	Rivet C/S High Temp	_	(S2)	(B)
(72-50-53)	-			(21-390)		
568035	3	_	Nut Option	_	(S2)	(B)
20002			Iac operon		(JL)	.5,



(72-50-53)			Consisting of:	(21-400)		
566599	Ref.	-	Nut S/L Plate, 2 Lug	-		
(72-50-53)			FLTG or	(21-400)		
566802	Ref.	-	Nut S/L Plate, 2 Lug	-		
(72-50-53)			FLTG or	(21-400)		
647424	Ref.	-	Nut S/L Plate, 2 Lug	-		
(72-50-53)			FLTG	(21-400)		
739951	13	_	Nut Option	-	(S2)	(B)
(72-50-53)			Consisting of:	(21-410)		
701887	Ref.	_	Nut S/L Clinch	-		
(72-50-53)			or	(21-410)		
739963	Ref.	-	Nut S/L Clinch	-		
(72-50-53)			or	(21-410)		
739964	Ref.	-	Nut S/L Clinch	-		
(72-50-53)			or	(21-410)		
789519	Ref.	-	Nut S/L Clinch	-		
(72-50-53)				(21-410)		
ST1219-054	32	_	Rivet, Solid	-	(S2)	(B)
(72-50-53)			,	(21-420)		
2A1209-14	1	-	Fairing, Turbine	-	(S2)	(B)
(72-50-53)			Exhaust Case	(21-430)		
2A2161	6	_	Bushing Sleeve	_	(\$4)	(B)
(72-50-53)			•	(21-440)		
2A2163	4	_	Bushing Sleeve	_	(\$4)	(B)
(72-50-53)			•	(21-450)		
MS21209F4-15	19	_	Insert Screw Thread	_	(S2)	(E)
(72-50-53)				(21-480)		
MS21209F4-10	2	_	Insert Screw Thread	_	(S2)	(E)
(72-50-53)				(21-490)		
_	1	_	.Blanket Thermal Rear	4T8030	(\$4)	(C)
(72-58-01)				(01-100)		
_	1	_	.Cover, Assembly	4B8050	(C)	
(72-58-01)			,	(01-120)		
_	12	_	.Bolt Machine Double	4W0170	(C)	
(72-58-01)			Hex	(01-140)		
_	1	_	.Packing Preformed	AS3209-167	(C)	
(72-58-01)			ŭ	(01-160)		
2A1355	1	_	.Shield, No. 5	_	(\$4)	(B)
(72-58-01)			Bearing	(20-080)		
2A2098	1	_	.Shield, Option	_	(\$4)	(B)
(72-58-01)			January Special	(20-100)		
2A1353-01	Ref.	_	Shield, Heat No. 5	_	(S2)	(C)
(72-58-01)			Bearing, Assembly	(20-102)		
2A2099-01	Ref.	_	Shield, Heat No. 5	_	(S2)	(G)
(72-58-01)			Bearing Assembly	(20-110)		
2A1219	1	_	.Cover, No. 5 Bearing	_	(S2)	(B)
(72-58-01)	•			(02-120)	,	
MS9886-07	13	_	.Bolt, Machine Double	-	(S2)	(B)
(72-58-01)			Hex. Extension	(20-140)	,	
AS3209-166	1	_	.Packing Preformed	_	(S2)	(C)
(72-58-01)	-			(20-160)		. • .
) 01/						



(MS9452-05)	2	_	.Bolt, Machine Hex	-	(S2)	(B)
(72-58-02)				(01-010)		
MS9581-10	2	_	.Washer, Key Crescent	_	(S2)	(E)
(72-58-02)				(01-020)		
2A1212	1	_	.Tube, Transfer,	_	(S2)	(B)
(72-58-02)	•		No. 5 Bearing	(01-030)	(02)	(5)
AS3209-107	3	_	.Packing, Preformed	-	(S2)	(B)
(72-58-02)	5		iracking, rreformed	(01-040)	(32)	(6)
-	1		Manifold Dight Hand	4B8069	(\$4)	(C)
	ı	_	.Manifold, Right Hand		(34)	(()
(73-22-51)	_		Pressure Control	01-050)	(0)	
	2	-	.Bolt, Wire Lock,	AS43706	(C)	
(73-22-51)			Double Hex	(01-060)		
2A2256	2	_	.Ring, Piston	4T8007	(S1)	(A)
(73-22-51)				(01-070)	(B)	
-	1	_	.Nut, Option	4W0001	(C)	
(73-22-51)				(01-080)		
4W1185	1	_	.Bolt, HE	4W1185	(\$4)	(C)
(73-22-51)			•	(01-090)		
_	1	_	.Clamp	MS21106-5	(S3)	(C)
(73-22-51)	•		10 camp	(01–100)	(00)	(0)
-	1	_	.Manifold, LH Pressure	4B8070	(\$4)	(()
(73-22-51)	1		Control	(01-180)	(34)	(0)
(13-22-31)	2				(6)	
- (77 00 54)	2	_	.Bolt Wire Lock Double	AS43706	(C)	
(73-22-51)	_		Hex	(01–190)		
2A2256	2	-	.Ring, Piston	4T8007	(S1)	(A)
(73-22-51)				(01-200)	(B)	
-	1	_	.Nut, Option	4W0001	(C)	
(73-22-51)				(01-210)		
_	1	_	.Bolt, HE	4W1185	(\$4)	(C)
(73-22-51)				(01-220)		
_	1	_	.Clamp	MS21106-5	(S3)	(C)
(73-22-51)			·	(01-230)		
_	1	_	.Adaptor, Pipes	4P8105	(S4)	(0)
(73-22-51)	-			(01–310)		
-	2	_	.Bolt, Wire Lock	AS43706	(C)	
(73-22-51)	L		Double Hex	(01-320)	(0)	
	2	_		4T8007	(01)	(A)
2A2256	۷	_	.Ring, Piston			(A)
(73-22-51)				(01–330)	(B)	
4W2627	A/R	_	.Wire, Locking	-	(1)	
(73-22-51)				(01–350)		
2A2358-01	1	_	.Tube, Pressure Control	-	(S2)	(B)
(73-22-51)			.Right Assembly	(20-050)		
MS9575-04	2	-	.Bolt, Machine Double	-	(S2)	(B)
(73-22-51)			.Hex, Extension	(20-060)		
2A2256	2	_	.Seal, Ring, Metal	-	(\$4)	(B)
(73-22-51)				(20-070)		
MS122903	1	_	.Clamp and Loop Type	_	(S2)	(B)
(73-22-51)	-		Support	(20-075)	/	
4w0001	1	_	.Nut, Option	,	(S2)	(F)
(73-22-51)	•		inac, operon	(20-080)	(JL)	( )
	1	_	Pol+ UE	_	(S2)	(D)
4W1185	1	<del>-</del>	.Bolt, HE	_	(32)	(D)



(73-22-51)				(20-090)	
AS3268-082	2	-	Sleeve, Half	_	(S2) (B)
(73-22-51)			Reinforcing	(20-123)	
2A2361-01	1	-	.Tube, Pressure Control,	_	(S2) (B)
(73-22-51)			Left Assembly	(20-180)	
MS9575-04	2	-	.Bolt Machine Double	MS9895-04	(S2) (A)
(73-22-51)			Hex Extension	(20-190)	(B)
2A2256	2	_	.Seal, Ring, Metal	_	(S4) (B)
(73-22-51)			,	(20-200)	
MS122903	1	_	.Clamp and Loop Type	_	(S2) (B)
(73-22-51)			Support	(20-205)	
4W0001	1	_	.Nut, Option	_	(S2) (E)
(73-22-51)				(20-210)	
4W1185	1	_	.Bolt, HE	_	(S2) (B)
(73-22-51)	•			(20-220)	,
AS3268-082	2	_	Sleeve, Half	_	(S2) (B)
(73-22-51)	-		Reinforcing	(20-253)	(02) (0)
2A2362	1	_	.Connector Tube	-	(S2) (B)
(73-22-51)	•		Pressure Control	(20-310)	(02) (0)
MS9575-04	2	_	.Bolt Machine Double	MS9895-04	(S2) (A)
(73-22-51)	L		Hex Extension	(20–320)	(B)
2A1803-01	1	_	.Bracket, Loop Clamp,	-	(S2) (B)
(73-22-51)	1		Assembly	(20-323)	(32) (6)
4W0038	2	_		(20-323)	(S2) (B)
	۷	_	.Nut, Self Locking	_ (20-325)	(32) (6)
(73-22-51)	/.	_	Plate	(20-32))	(c2) (p)
AN123468	4	_	.Rivet	_ (20-326)	(S2) (B)
(73-22-51)	2		Cool Ding Motol	(20-320)	(C/) (D)
2A2256	2	_	.Seal Ring, Metal	(20.770)	(S4) (B)
(73-22-51)	,		Thermoequals Ontion	(20-330)	(0/) (4)
2A2159	4	_	.Thermocouple Option	4T8050	(S4) (A)
(77-21-15)	D - 4		Th	(01–100)	(B)
2A2160	Ref.	-	.Thermocouple, EGT	4T8027	
(77–21–15)	ъ (		TI 1 50T	(01–100)	
2A2224	Ref.	-	.Thermocouple, EGT	4T8048	
(77–21–15)	•		5 1 11 11	(01–100)	(0)
- (77 04 45)	8	-	.Bolt, Wire Lock,	AS43706	(C)
(77-21-15)	•		Double Hex	(01–120)	(04) (1)
2A2256	8	-	.Ring, Piston	4T8007	(S1) (A)
(77–21–15)				(01–140)	(B)
2A2224	4	-	.Thermocouple Option	-	(S2) (B)
(77-21-15)	_			20-100)	4.00
MS9575-04	8	-	.Bolt, Machine, Double	MS9895-04	(S2) (A)
(77–21–15)	_		Hex Extension	(20–120)	(B)
2A2256	8	-	.Seal Ring, Metal	_	(S4) (B)
(77–21–15)	_			(20-140)	
4W2627	A/R	-	.Wire, Locking	_	(S2) (J)
(77–21–15)				(99–510)	
6A5013	1	-	.Tube Assembly, No. 5	5R8142	(S5) (B)
(79-21-49)			Bearing Oil Feed	(16-100)	(K)
-	3	-	.Nut, Self Locking	4W0002	(S1) (C)
(79-21-49)			Double Hex	(16-110)	



4w0001	2	_	.Nut Option	_	(S4) (E)
(79-21-49)				(16-111)	
4w0107	2	_	.Bolt, Machine, Double	_	(S4) (E)
(79-21-49)			Hex	(16-112)	
4W0168	3	_	.Bolt, Machine, Double	_	(S4) (E)
(79-21-49)			Hex	(16-114)	
1A8420	1	_	.Strainer Element, No.		(S4) (B)
(79-21-49)			5 Bearing	(16-115)	
-	1	-	.Seal, Metallic, Oil	AS42704	(S4) (C)
(79-21-49)			Feed Pipe	(16-116)	
AS3209-012	1	-	.Packing, Preformed	-	(S4) (B)
(79-21-49)				(16-117)	
-	1	-	.Seal, Metallic, Oil	AS42714	(S4) (C)
(79-22-49)			Scavenge	(01-116)	
AS42714	1	_	.Seal, Metallic, Oil	_	(S4) (B)
(79-22-49)			Scavenge	(01-117)	

#### C. Consumables Required to Incorporate This Service Bulletin

CoMat 02-126 Lockwire

CoMat 10-077 Approved Engine Oils

#### D. Instruction/Disposition Code Statements:

- (S1) Old Parts and New Parts coded (S1) are not interchangeable, however, the new part can be installed in place of the Old part, but not vice versa.
- (S2) New parts coded (S2) must replace Old Parts Coded (S2) as a COMPLETE SET per engine.
- (S3) Old and New parts coded (S3) are not interchangeable.
- (S4) Old and New parts coded (S4) are freely interchangeable, both physically and functionally.
- (S5) Old Parts and New Parts coded (S5) are not interchangeable, however, a complete item number, group, or set of the new parts can be installed in place of a set of replaced parts, but not vice versa.
- (A) Old part will no longer be available.
- (B) New part is currently available.
- (C) Old part will continue to be available for this application.
- (E) New part will be supplied for greater units.
- (F) Old part will continue to be available for other applications.
- (G) New part will not be supplied.
- (H) New part will be supplied on a quotation basis only.
- (J) Refer to the Consumable Material List.
- (K) Old part will continue to be available until stock is exhausted.
- (L) The 4W2627 option consists of AS44725-2 and AS3214-02 Locking Wire.

NOTE: The estimated 1994 unit prices shown are provided for planning purposes 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.

