International Aero Engines

SERVICE BULLETIN

AIR - HPT/LPT ACC SYSTEM - INTRODUCTION OF ADDITIONAL ACC VALVE SUPPORTS AND NEW RING TYPE SLIDE HP TURBINE MANIFOLD JOINT - CATEGORY CODE 4 - MOD.ENG-75-0030

1. Planning Information

A. Effectivity

(1) Aircraft: Airbus A320

(2) Engine: V2500-A1 Engines serial numbers prior to V0257 Except V0034, V0055, V0065, and V0104

B. Reason

(1) Condition

Vibration has caused wear, fretting and cracking on some ACC system parts. This was observed on 2A0202 HP Turbine Manifold and 2A1412 ACC Spherical Joint.

(2) Background

New ACC air valve support parts were developed to reduce wear, cracking and fretting on ACC system parts. Development testing of the new parts showed reduced vibration of ACC system, smooth sliding of new joint and reduction of fretting on HP Turbine Manifold.

The new ACC air valve support system consists of two additional support linkages, improved valve rod support bracket and non-metal ring type slide joint on HP Turbine manifold. Service Bulletin No. V2500-ENG-75-0024 introduced them for Controlled Service Use to evaluate the effectiveness of the design in actual service use.

(3) Objective

(a) To reduce wear, fretting and cracking of ACC system parts resulting from vibration.

(b) To improve axial sliding smoothness of ACC air valve relative to HP Turbine Manifold.

(4) Substantiation

Many hours of test were completed by experimental engine testing and Controlled Service Use units.

(5) Effects of Bulletin on the following shop functions:

Removal/Installation	Affected (See supplemental information)
Disassembly/Assembly	Not Affected
Cleaning	Affected (See supplemental information)
Inspection/Check	Affected (See supplemental information)
Repair	Not affected
Testing	Not affected

(6) Supplemental Information

(a) The Removal and Installation of Post-Service Bulletin configuration requires instruction for removing and installing the newly added two support linkages and a ring type slide joint on HP Turbine Manifold.

(b) The new parts introduced by this Bulletin will require new Cleaning and Inspection.

C. Description

(1) The changes introduced by this Service Bulletin are as follows:

(a) 2A1412 Spherical Joint is superseded by a ring type slide joint which consists of 2A1534 or 2A1512 ACC Housing, 2A1530 ACC Seal, 2A1531 ACC Seal Retainer and 2A1514 Joint Heat Shield.

(b) Two support linkages are added between the HPT valve of HPT/LPT ACC Air Valve and the FM flange. These linkages consist of 5W2237 ACC HPT Valve Bracket, 5W2235 ACC HPT Valve Link, 5W2241 ACC HPT Valve Bracket, 5W2239 ACC HPT Valve Link and the aforementioned 2A1534 or 2A1512 ACC Housing.

D. Approval

The part number changes and/or part modifications described in Section 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 4.

Accomplish at the first visit of an engine to a maintenance base capable of compliance with the accomplishment instructions regardless of the planned maintenance action or the reason for engine removal.

F. Manpower

Estimated Manhours to incorporate the full intent of this Bulletin:

Venue		Estimated Manhours
(1) In service		TOTAL 2 hours 45 minutes
(a) To gain access		
(i)	Install warning notices	5 minutes
(ii)	Open the fan cowls ..	7 minutes
(iii)	Open the thrust reverser	9 minutes
	TOTAL	21 minutes
(b) To embody		
(i)	Remove the ACC air valve	8 minutes
(ii)	Install new parts to the ACC air valve ..	1 hour 17 minutes
(iii)	Install new parts to the engine	11 minutes
(iv)	Install the ACC air valve	23 minutes
	TOTAL	1 hour 59 minutes
(c) To return engine to flyable status		
(i)	Close the thrust reverser	12 minutes
(ii)	Close the fan cowls ..	8 minutes
(iii)	Remove the warning notices	5 minutes
	TOTAL	25 minutes
(2) At overhaul		
(a) To gain access		Not applicable (Parts are accessible at overhaul)
(b) To embody		

(i) Install new parts to the ACC air valve .. 1 hour 17 minutes

(ii) Install new parts to the engine .. .. 11 minutes

TOTAL 1 hour 28 minutes

G. Material - Price and Availability

(1) Modification Kit not required.

(2) See "Material Information" section for prices and availability of future spares.

H. Tooling - Price and Availability

Special tool is not required.

I. Weight and Balance

(1) Weight change .. .. .. None

(2) Moment arm .. .. No effect

(3) Datum .. .. Engine front mount centerline (Power Plant Section (PPS) 100)

J. Electrical Load Data

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

K. References

(1) Internal Reference No.

9OVJOO5D

(2) Other References

V25OO Engine Manual; 72-OO-4O, Removal and Installation

Airbus Industrie A32O Aircraft Maintenance Manual; 71-13-OO,

Maintenance Practices, 75-24-51 Removal/Installation and 78-32-OO,

Maintenance Practices

V2500 Service Bulletin No. V2500-ENG-75-0024

L. Other Publications Affected

(1) V2500 Engine Illustrated Parts Catalog, 72-40-00 and 75-24-51

(2) V2500 Powerplant Illustrated Parts Catalog, 72-40-00 and 75-24-51

(3) Airbus Industrie A320 Aircraft Maintenance Manual, 75-24-51 Removal/Installation

(4) V2500 Engine Manual;

72-00-40 Removal-01 and Installation-01,
72-40-00 Cleaning-03, Cleaning-04,
Inspection/Check-03 and Inspection/Check-04

(5) Component Maintenance Manual, 75-24-51 Cleaning and Inspection/Check

2. Accomplishment Instructions

A. Prerequisite Instructions

(1) Open the Fan Cowls by the approved procedure in Reference (2), Chapter/Section 71-13-00, Maintenance Practices.

(2) Open the Thrust Reverser Halves by the approved procedure in Reference (2), Chapter/Section 78-32-00, Maintenance Practices.

B. Assembly Instructions

WARNING: BE CAREFUL WHEN YOU WORK ON THE ENGINE COMPONENTS IMMEDIATELY AFTER THE ENGINE SHUTDOWN. THE ENGINE COMPONENTS CAN STAY HOT FOR UP TO ONE HOUR.

NOTE: Before removal of components mentioned in steps (2) and (3) from the aircraft/engine, steps (5).(b) and (6) may be accomplished using spare engine parts and/or spare parts. Pre-assembled components can be used at accomplishment of this Bulletin to an engine and removed components can be used for next engine as a same manner. The rotation may reduce the time necessary for accomplishment of this modification.

(1) Release the ACC Rear Duct from the LPT ACC Manifold.

(a) Release the Periseal Housing from the LPT ACC Manifold and move it onto the ACC Rear Duct by the approved procedure in Reference (2), Chapter/Section 75-24-49 Removal/Installation.

(2) Remove 5W2184, 5W2185, 5W2216, 5W2226, 5W2227, 5W2228 or 5W2229 HPT/LPT ACC Air Valve Assembly (75-24-51, 01-100) and superseded parts, refer to Figure 1.

(a) Disconnect 5W2060 Actuator Rod (75-24-51, 01-400) from the HPT/LPT ACC Air Valve.

(i) Remove MS24665-151 Cotter Pin (75-24-51, 01-110), MS9364-10 Nut (75-24-51, 01-115) and 5W2091 Bolt (75-24-51, 01-120). Discard the Cotter Pin.

(ii) Release the Actuator Rod from the HPT/LPT ACC Air Valve.

NOTE: Do not remove two Bushes (75-24-51, 01-190) from the Actuator Rod.

(b) Remove MS24665-151 Cotter Pin (75-24-51, 01-136) and AN310C4 Nut (75-24-51, 01-140) which retain rod of the HPT/LPT ACC Air Valve and 5W8232 or 5W2096 Stator Rod (75-24-51, 01-485) to 5W1634 Crank (75-24-51, 01-155). Discard the Cotter Pin.

NOTE: Do not release the rod of HPT/LPT ACC Air Valve and the Stator Rod from the Crank at this time.

CAUTION: HOLD THE WEIGHT OF THE HPT/LPT ACC AIR VALVE TO PREVENT DAMAGE OF ACC SYSTEM PARTS WHILE YOU REMOVE IT.

(c) Remove two 4W0002 Nuts (75-24-47, 01-320) and 4W0166 Bolts (75-24-47, 01-325) which retain the LPT valve rear flange of the HPT/LPT ACC Air Valve to 5W8456 or 5W2098 ACC Valve Bracket (75-24-47, 01-500) on FM flange.

(d) Release the Stator Rod and the rod of HPT/LPT ACC Valve from the Crank.

CAUTION: BE CAREFUL WITH PARTS POSITIONED AROUND THE HPT/LPT ACC AIR VALVE TO PREVENT DAMAGE WHILE YOU DRAW OUT THE VALVE.

(e) Carefully draw out the HPT/LPT ACC Air Valve with 2A1428 ACC Rear Duct (75-24-47, 01-300) and 2A1412 ACC Spherical Joint (75-24-51, 01-275) from the HP Turbine Cooling Manifold and the LP Turbine Cooling Manifold.

(3) Remove ACC system parts from the HPT/LPT ACC Air Valve, refer to Figure 2.

NOTE: Following steps (c) to (e) and (6),(a) to (6),(c) are required only when you replace the HPT/LPT ACC Air Valve concurrently with this bulletin.

(a) Remove 2A1412 ACC Spherical Joint (75-24-51, 01-275) from the HPT/LPT ACC Air Valve.

(i) Remove six 4W0164 Bolts (75-24-47, 01-290) and the ACC Spherical Joint.

(b) Remove 5W2059 Bush (75-24-51, 01-210) from the rod of HPT/LPT ACC Air Valve.

(c) Remove 2A1428 ACC Rear Duct (75-24-47, 01-300) from the HPT/LPT ACC Air Valve.

(i) Remove four 4W0002 Nuts (75-24-47, 01-310) and 4W0165 Bolts (75-24-47, 01-315).

(ii) Remove the Periseal Housing from the ACC Rear Duct if necessary.

(d) Remove 2A1481 Heat Shield (75-24-47, 01-190) from the HPT/LPT ACC Air Valve.

(i) Remove two 4W0001 Nuts (75-24-47, 01-110), two 4W0102 Bolts (75-24-47, 01-115), 5W1644 Clamp (75-24-47, 01-120) and 5W1635 Clamp (75-24-47, 01-125) which retain the Heat Shield to the rod of HPT/LPT ACC Air valve.

(ii) Remove four 4W0001 Nuts (75-24-47, 01-200) and 4W0102 Bolts (75-24-27, 01-210) which retain the Heat Shield to the ACC front Duct.

(e) Remove 2A0788 ACC Front Duct (75-24-47, 01-100) from the HPT/LPT ACC Air Valve.

(i) Remove 12 4W0002 Nuts (75-24-47, 01-135) and 4W0165 Bolts (75-24-47, 01-140).

(4) Remove superseded bracket from the FK flange, refer to Figure 1.

(a) Remove 5W2141 Rod Bracket (72-40-00, 01-790) and 5W1634 Crank (75-24-51, 01-155) from the FK flange.

(i) Remove two 4W0003 Nuts (72-40-00, 01-030) and 4W0649 Bolts (72-40-00, 01-050).

(5) Install new bracket to the FM flange, refer to Figure 3.

(a) Remove four 4W0003 Nuts (72-40-00, 05-040) and 4W0471 Bolts (72-40-00, 05-020) from the positions on FM flange where 5W2237 ACC HPT Valve Bracket and 5W2241 ACC HPT Valve Bracket are to be installed.

(b) Install two 5W2059 Bushes (75-24-51, 02-130) to 5W2241 ACC HPT Valve Bracket (72-40-00, 05-550), refer to Figure 6.

(i) Do a fit check of two 5W2059 Bushes (75-24-51, 02-130) and NAS6704DU12 Bolt (75-24-51, 02-120).

CAUTION: DO NOT REAM THE BORES OF THE BUSHES TO MORE THAN THE SPECIFIED INNER DIAMETER. TOO MUCH CLEARANCE MAY CAUSE WEAR OF ACC SYSTEM PARTS.

(ii) Ream the bores of the Bushes to maximum 0.25in. (6.35 mm) in inner diameter by hand reaming to remove cause of binding if necessary. Use CoMat 10-001 Cutting oil for reaming and CoMat 01-002 Inhibited and stabilized trichloroethane for cleaning after reaming.

(iii) Install the bushes to 5W2241 ACC HPT Valve Bracket (72-40-00, 05-550).

NOTE: Chill the Bushes if it is difficult to install them to the ACC HPT Valve Bracket.

NOTE: Temporally use 5W2239 ACC HPT Valve Link when you install the Bushes to the ACC HPT Valve Bracket to set the position of Bushes. The Bushes should be in touch with the bearing ball of the ACC HPT Valve Link.

(c) Install 5W2241 ACC HPT Valve Bracket (72-40-00, 05-550) to the FM flange.

(i) Lubricate thread of two 4W0471 Bolts (72-40-00, 05-020) with CoMat 10-077 Approved engine oils.

(ii) Install 5W2241 ACC HPT Valve Bracket (72-40-00, 05-550) to the FM flange with the Bolts and two 4W0003 Nuts (72-40-00, 05-040).

(iii) Torque the Nuts to 180 to 200 lbfin (20,34 to 22,59 Nm).

CAUTION: DO NOT EXCEED SHOWN TORQUE TIGHTENING VALUE WHEN YOU ALIGN THE SLOT OF AN310C4 NUT TO THE BOLT PIN HOLE. EXCEEDED TORQUE COULD LOSE MOVEMENT FROM MOBILE PARTS. IF YOU COULD NOT FIND ALIGNED POSITION WITHIN SHOWN TORQUE TIGHTENING VALUE, TURN THE NUT TO LOOSENING DIRECTION UNTIL NEXT ALIGNED POSITION.

(6) Prepare 5W2184, 5W2185, 5W2216, 5W2216, 5W2226, 5W2227, 5W2228, 5W2229 HPT/LPT ACC Air Valve (75-24-51, 01-100) for installation, refer to Figure 4 and 5.

NOTE: Following steps (a) to (c) are required only when you replace the HPT/LPT ACC Air Valve concurrently with this Bulletin.

(a) Install 2A0788 ACC Front Duct (75-24-47, 01-100) to the HPT/LPT ACC Air Valve, refer to Figure 5.

(i) Lubricate threads of 12 4W0165 Bolts (75-24-47, 01-140) with CoMat 10-077 Approved engine oils.

(ii) Install the ACC Front Duct to the front side flanges of HPT/LPT ACC Air valve with the Bolts and 12 4W0002 Nuts (75-24-47, 01-135).

(iii) Torque the Nuts to 85 to 105 lbfin (10,0 to 12,0 Nm).

(b) Install 2A1481 Heat Shield (75-24-47, 01-190) to the HPT/LPT ACC Air Valve, refer to Figure 5.

(i) Lubricate threads of four 4W0102 Bolts (75-24-47, 01-210) with CoMat 10-077 Approved engine oils.

(ii) Install the Heat Shield to the ACC Front Duct with the bolts and four 4W0001 Nuts, (75-24-47, 01-200).

(iii) Torque the Nuts to 36 to 45 lbfin (4,0 to 5,0 Nm).

(i)Install two 5W2059 Bushes (75-24-51, 02-160) to 2A1534 or 2A1512 ACC Housing (75-24-51, 01-275). Put 5W2239 ACC HPT Valve Link (75-24-51, 02-100) to a position, the bearing ball of ACC HPT Valve Link lies between the Bushes. Make sure the Bushes in touch with faces of the bearing ball.

(ii) Install NAS6704DU12 Bolts (75-24-51, 02-150) and AN310C4 Nut (75-24-51, 02-145).

(iii) Torque the Nut to 32.5 to 42.5 lbfin (3,67 to 4,80 Nm) and align the slot of Nut with the pin hole of Bolt.

(iv) Safety the Nut with new MS24665-151 Cotter Pin (75-24-51, 02-140).

(f) Install 5W2235 ACC HPT Valve Link (75-24-51, 02-250) to 2A1534 or 2A1512 ACC Housing (75-24-51, 01-275), refer to Figure 4.

(i) Install two 5W2059 Bushes (75-24-51, 02-310) to 5W2235 ACC HPT Valve Link (75-24-51, 02-250).

NOTE: Chill the Bushes if it is difficult to install them to the ACC HPT Valve Link.

NOTE: Temporally use 5W2237 ACC HPT Valve Bracket (75-40-00, 05-570) when you install the Bushes to the ACC HPT Valve Link to set position of the Bushes. The Bushes should be in touch with bearing ball of the ACC HPT Valve Bracket.

(ii) Install two 5W2059 Bushes (75-24-51, 02-380) to 2A1534 or 2A1512 ACC Housing (75-24-51, 01-275). Put 5W2235 ACC HPT Valve Link (75-24-51, 02-250) to a position, the bearing ball of ACC HPT Valve Link lies between the Bushes. Make sure the Bushes in touch with faces of the bearing ball.

(iii) Install NAS6704DU12 Bolts (75-24-51, 02-300) and AN310C4 Nut (75-24-51,02-290).

(iv) Torque the Nut to 32.5 to 42.5 lbfin (3,67 to 4,8 Nm) and align the slot of the Nut with the pin hole of the Bolt.

(v) Safety the Nut with new MS24665-151 Cotter Pin (75-24-51, 02-290).

(g) Install 5W2237 ACC HPT Valve Bracket (72-40-00, 05-570) to 5W2235 ACC HPT Valve Link (75-24-51, 02-250), refer to figure 4.

(i) Put 5W2235 ACC HPT Valve Link (75-24-51, 02-250) to a position, the bearing ball of 5W2237 ACC HPT Valve Bracket (72-40-00, 05-570) lies between the Bushes. Make sure the Bushes in touch with faces of the bearing ball.

(ii) Install NAS6704DU12 Bolt (75-24-51, 02-270) and AN310C4 Nut (75-24-51, 02-265).

(iii) Torque the Nut to 32.5 to 42.5 lbfin (3,67 to 4,80 Nm) and align the slot of the bolt.

(iv) Safety the Nut with new MS24655-151 Cotter Pin (75-24-51, 02-260).

(h) Install assembly of 2A1534 OR 2A1512 ACC Housing (75-24-51, 01-275), 2A1531 ACC Seal Retainer (75-24-51, 01-370), 2A1530 ACC Seal (75-24-51, 01-350), 2A1514 Joint Heat Shield (75-24-51, 01-360), 5W2235 ACC HPT Valve Link (75-24-51, 02-250), 5W2239 ACC HPT Valve Link (75-24-51, 02-100) and 5W2237 ACC HPT Valve Bracket (72-40-00, 05-570) to the HPT/LPT ACC Air Valve, refer to Figure 5.

(i) Lubricate threads of five 4W0162 Bolts (75-24-51, 01-290) with CoMat 10-039 Lubricant (Engine oil).

(ii) Install the assembly of ACC Housing, ACC Seal Retainer, ACC Seal, Joint Heat Shield, and ACC HPT Valve Links to the HPT valve rear flange of HPT/LPT ACC Air Valve with the Bolts.

(iii) Torque the Bolts to 85 to 105 lbfin (10,0 to 12,0 Nm).

(i) Install two 5W2059 Bushes (75-24-51, 01-210) to the rod of HPT/LPT ACC air Valve.

CAUTION: HOLD THE HPT/LPT ACC AIR VALVE WHILE YOU INSTALL IT. THE VALVE WEIGHT COULD CAUSE DAMAGE OF ACC SYSTEM PARTS.

CAUTION: BE CAREFUL WITH PARTS POSITIONED AROUND THE HPT/LPT ACC AIR VALVE TO PREVENT DAMAGE WHILE YOU INSTALL THE VALVE.

CAUTION: DO NOT EXCEED SHOWN TORQUE TIGHTENING VALUE WHEN YOU ALIGN THE SLOT OF AN310C4 NUT AND MS9364-10 NUT TO THE BOLT PIN HOLE. EXCEEDED TORQUE COULD LOSE MOVEMENT FROM MOBILE PARTS. IF YOU COULD NOT FIND ALIGNED POSITION WITHIN SHOWN TORQUE TIGHTENING VALUE, TURN THE NUT TO LOOSENING DIRECTION UNTIL NEXT ALIGNED POSITION.

(6) Install the HPT/LPT ACC Air Valve to the engine, refer to Figure 6.

(a) Extract the valve rod until HPT valve vane becomes full open position.

CAUTION: LOOK THE POSITION OF ACC SEAL FROM FRONT SIDE THROUGH THE VALVE BODY TO PREVENT DAMAGE OF THE SEAL WHILE YOU INSERT THE HPT/LPT ACC AIR VALVE TO THE HP TURBINE COOLING MANIFOLD.

CAUTION: BE CAREFUL WITH THE POSITIONS OF SEALS, ACC SEAL AND LPT MANIFOLD PERISEAL, TO PREVENT DAMAGE.

(i) Lubricate threads of five 4W0162 Bolts (75-24-51, 01-290) with CoMat 10-077 Approved engine oils.

(ii) Install the assembly of ACC Housing, ACC Seal Retainer, ACC Seal, Joint Heat Shield, and ACC HPT Valve Links to the HPT valve rear flange of HPT/LPT ACC Air Valve with the Bolts.

(iii) Torque the Bolts to 85 to 105 lbfin (10,0 to 12,0 Nm).

(i) Install two 5W2059 Bushes (75-24-51, 01-210) to the rod of HPT/LPT ACC Air Valve.

(i) Do a fit check of two 5W2059 Bushes (75-24-51, 01-210) and NAS6704DU14 Bolt (75-24-51, 01-155).

CAUTION: DO NOT REAM THE BORES OF THE BUSHES TO MORE THAN THE SPECIFIED INNER DIAMETER. TOO MUCH CLEARANCE MAY CAUSE WEAR OF ACC SYSTEM PARTS.

(ii) Ream the bores of the Bushes to maximum 0.25in. (6,35 mm) in inner diameter by hand reaming to remove cause of binding if necessary. Use CoMat 10-001 Cutting oil for reaming and CoMat 01-002 Inhibited and stabilized trichloroethane for cleaning after reaming.

(iii) Install the Bushes to the rod of HPT/LPT ACC Air Valve.

CAUTION: HOLD THE WEIGHT OF THE HPT/LPT ACC AIR VALVE TO PREVENT DAMAGE OF ACC SYSTEM PARTS WHILE YOU REMOVE IT.

CAUTION: BE CAREFUL WITH PARTS POSITIONED AROUND THE HPT/LPT ACC AIR VALVE TO PREVENT DAMAGE WHILE YOU INSTALL THE VALVE.

CAUTION: DO NOT EXCEED SHOWN TORQUE TIGHTENING VALUE WHEN YOU ALIGN THE SLOT OF AN310C4 NUT AND MS9364-10 NUT TO THE BOLT PIN HOLE. EXCEEDED TORQUE COULD LOSE MOVEMENT FROM MOBILE PARTS. IF YOU COULD NOT FIND ALIGNED POSITION WITHIN SHOWN TORQUE TIGHTENING VALUE, TURN THE NUT TO LOOSENING DIRECTION UNTIL NEXT ALIGNED POSITION.

(7) Install the HPT/LPT ACC Air Valve to the engine, refer to Figure 6.

(a) Install the Periseal Housing onto the ACC Rear Duct if you removed it in Para. B.(3).(c).(ii).

(b) Extract the valve rod until HPT valve vane becomes full open position.

CAUTION: LOOK THE POSITION OF ACC SEAL FROM FRONT SIDE THROUGH THE VALVE BODY TO PREVENT DAMAGE OF THE SEAL WHILE YOU INSERT THE HPT/LPT ACC AIR VALVE TO THE HP TURBINE COOLING MANIFOLD.

CAUTION: BE CAREFUL WITH THE POSITIONING OF SEALS, ACC SEAL AND LPT MANIFOLD PERISEAL, TO PREVENT DAMAGE.

(c) Insert the HPT/LPT ACC Air Valve to the HP Turbine Cooling Manifold and LP Turbine Cooling Manifold. Move the position of the ACC Seal to connect the valve to the manifold if it is necessary.

(d) Install the LPT valve rear flange of HPT/LPT ACC Air valve to 5W8456 or 5W2098 ACC Valve Bracket (75-24-47, 01-500) installed to the FM flange.

(i) Lubricate threads of two 4W0166 bolts (75-24-47, 01-325) with CoMat 10-077 Approved engine oils.

(ii) Install the LPT valve rear flange of HPT/LPT ACC Air Valve to 5W8456 or 5W2098 ACC Valve Bracket (75-24-47, 01-500) installed to the FM flange with the bolts and two 4W0002 Nuts (75-24-47, 01-320).

(iii) torque the Nuts to 180 to 200 lbfin (20,34 to 22,59 Nm).

(e) Install 5W2237 ACC HPT Valve Bracket (72-40-00, 05-570) to the FM flange, refer to figure 6.

(i) lubricate threads of two 4W0471 Bolts (72-40-00, 05-020 with CoMat 10-077 Approved engine oils.

(ii) Install 5W2237 ACC HPT Valve Bracket (72-40-00, 05-570) to the FM flange with the Bolts and two 4W0003 Nuts (72-40-00, 05-040).

(iii) Torque the Nuts to 180 to 200 lbfin (20,34 to 22,59 Nm).

(f) Install 5W2239 ACC HPT Valve Link (75-24-51, 02-100) installed to the HPT/LPT ACC Air Valve to 5W2241 ACC HPT Bracket (72-40-00, 05-550) installed to the FM flange.

NOTE: Make sure that two 5W2059 Bushes (75-24-51, 02-130) have beforehand been installed to 5W2241 ACC HPT Valve Bracket (72-40-00, 05-550).

(i) Put 5W2239 ACC HPT Valve Link (75-24-51, 02-100) to a position, the bearing balls of ACC HPT Valve Link lies between the Bushes. Make sure the Bushes in touch with faces of bearing ball.

(ii) Install NAS6704DU12 Bolt (75-24-51, 02-120) and AN310C4 Nut (75-24-51, 02-115).

(iii) Torque the Nut to 32.5 lbfin (3,67 to 4,80 Nm) and align the slot of the Nut with the pin hole of the Bolt.

NOTE: Installed ACC HPT Valve Link must not interfere with adjacent external parts (Most close part is 5A9060 P4.9 Air Tube (73-22-49, 01-500).

(iv) Safety the Nut with new MS24665-151 Cotter Pin (75-24-51, 02-110).

(g) Install 5W2242 ACC Valve Rod Bracket (72-40-00, 01-790) to the FK flange.

(i) Lubricate threads of two 4W0649 Bolts (75-24-00, 01-050) with CoMat 10-077 Approved engine oils.

(ii) Install 5W2242 ACC Valve Rod Bracket (75-40-00, 01-790) to the FK flange with the Bolts and two 4W0003 Nuts (72-40-00, 01-030).

NOTE: Put the rod of HPT/LPT ACC Air Valve through the ACC Valve Rod Bracket when you install the bracket to the FK flange.

(iii) Torque the Nuts to 180 to 200 lbfin (20,34 to 22,59 Nm).

(h) Connect 5W2060 Actuator Rod (75-24-51, 01-400) to the HPT/LPT ACC Air Valve.

(i) Retract the valve rod to a position, the Actuator Rod can be connected.

(ii) Connect 5W2060 Actuator rod (75-24-51, 01-400) to the valve rod of HPT/LPT ACC Air Valve with 5W2091 Bolt (75-24-51, 01-120) and MS9364-10 Nut (75-24-51, 01-115).

(iii) Torque the Nut to 22.5 to 30 lbfin (2,55 to 3,38 Nm) and align the slot of the Nut with the pin hole of the Bolt.

iv) Safety the Nut with new MS24665-151 Cotter Pin (75-24-51, 01-110).

(i) Install the rod of HPT/LPT ACC air Valve and 5W8232 or 5W2096 Stator Rod (75-24-51, 01-485) to the 5W2242 ACC Valve Rod Bracket (72-40-00, 01-790) installed to the FK flange.

(i) Install the rod of HPT/LPT ACC Air Valve and 5W8232 or 5W2096 Stator Rod (75-24-51, 01-485) to the 5W2242 ACC valve Rod bracket (72-40-00, 01-790) with NAS6704DU14 Bolt (75-24-51, 01-155) and AN310C4 Nut (75-24-51, 01-140).

(ii) Torque the Nut to 32.5 to 42.5 lbfin (3,67 to 4,80 Nm) and align the slot of the Nut with the pin hole of the Bolt.

(iii) Safety the Nut with new MS24665-151 Cotter Pin (75-24-51, 01-136).

(j) Connect the Periseal Housing on the ACC Rear Duct to the LPT ACC Manifold.

(i) Move the Periseal Housing from the ACC Rear Duct to the LPT ACC Manifold and safety it by the approved procedure in Reference (2), Chapter/Section 75-24-49 Removal/Installation.

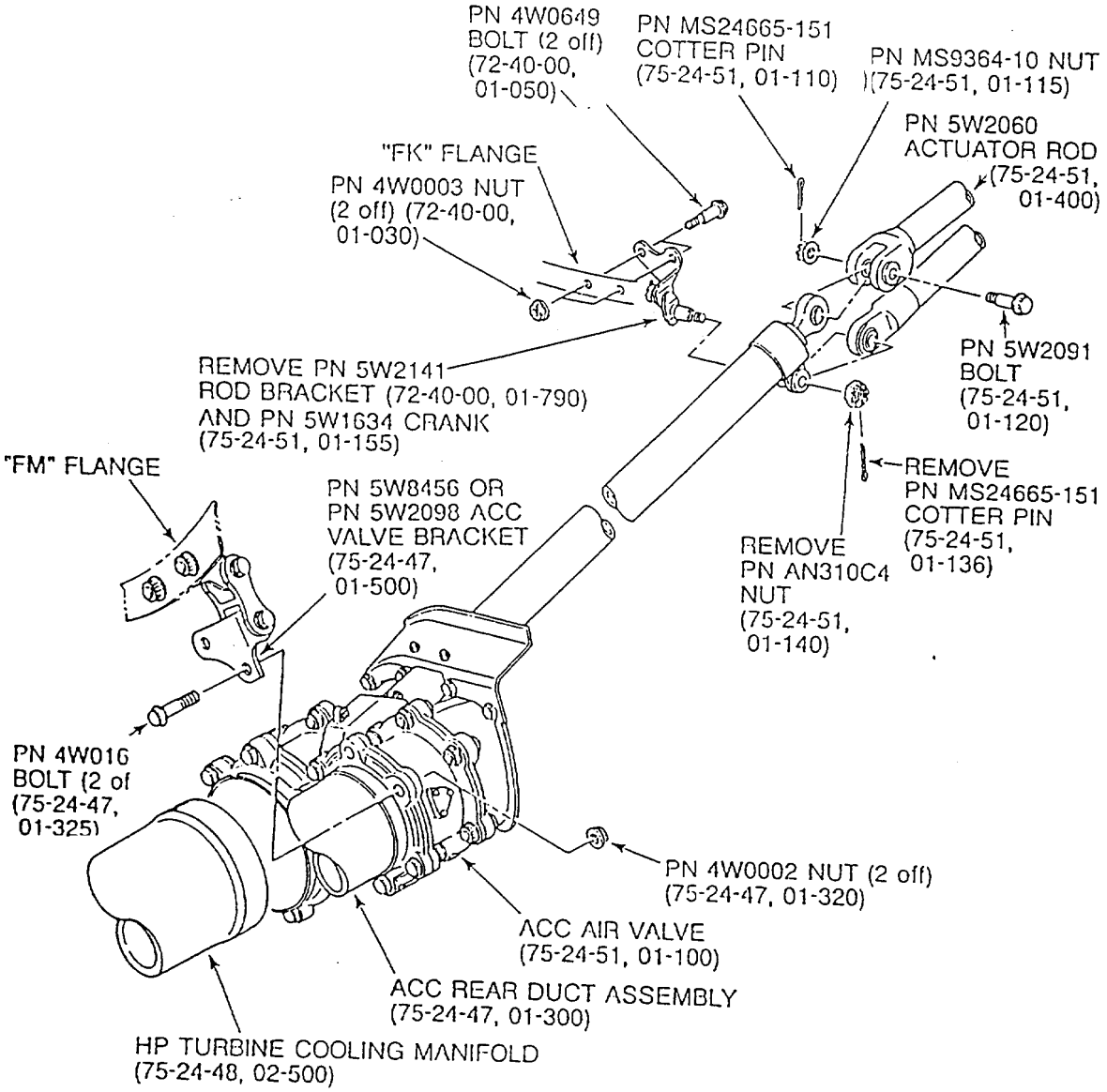
C. Post Prerequisite Instructions

(1) Close the Thrust reverser Halves by the appoved procedure in Reference (2), Chapter/Section 71-32-00, Maintenance Practices.

(2) Close the Fan Cowls by the approved procedure in Reference (2), Chapter/Section 71-13-00, Maintenance Practices.

D. Recording Instructions

(1) A record of accomplishment is necessary.



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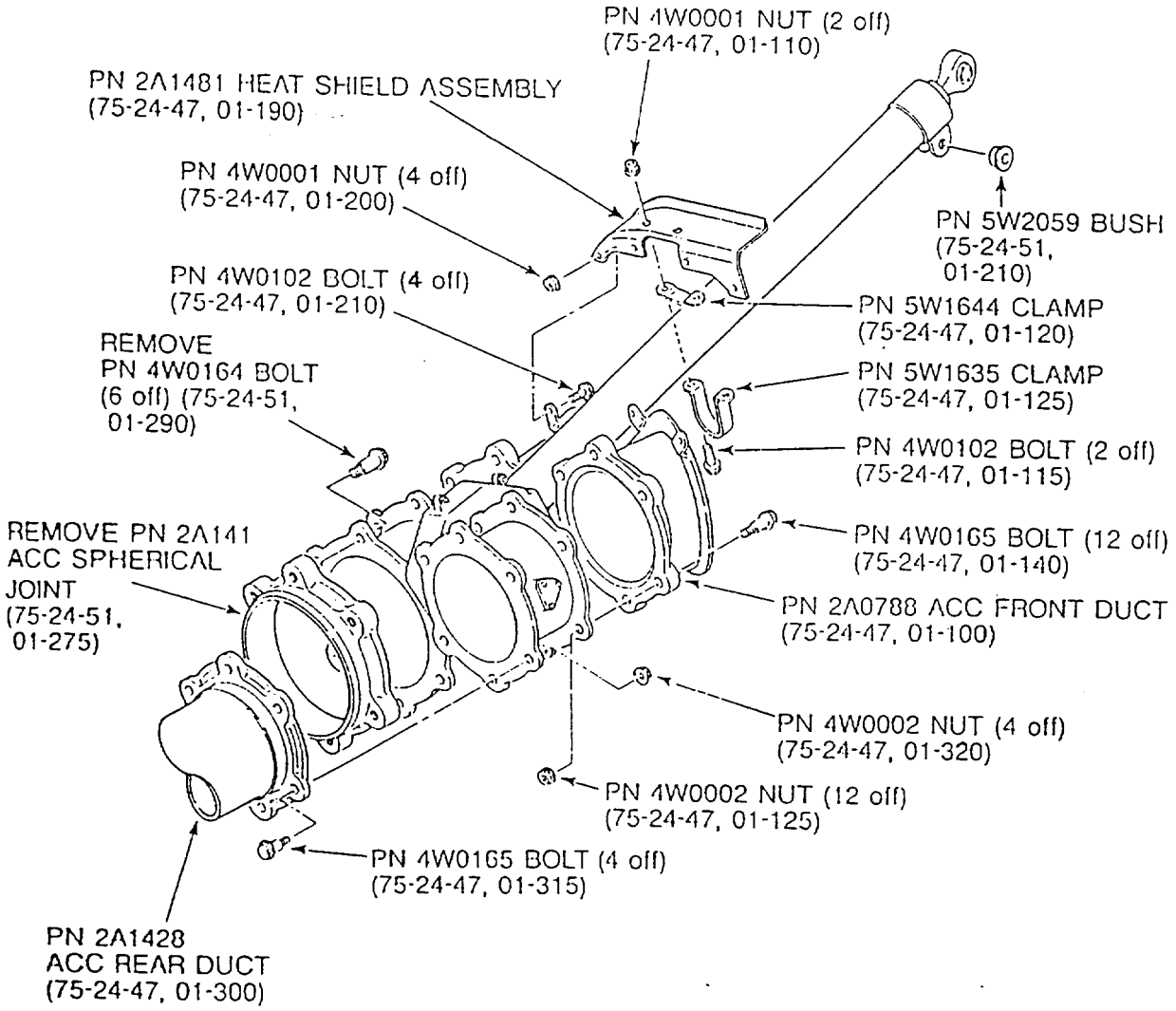
Removal of HPT/LPT ACC Air Valve
Fig.1



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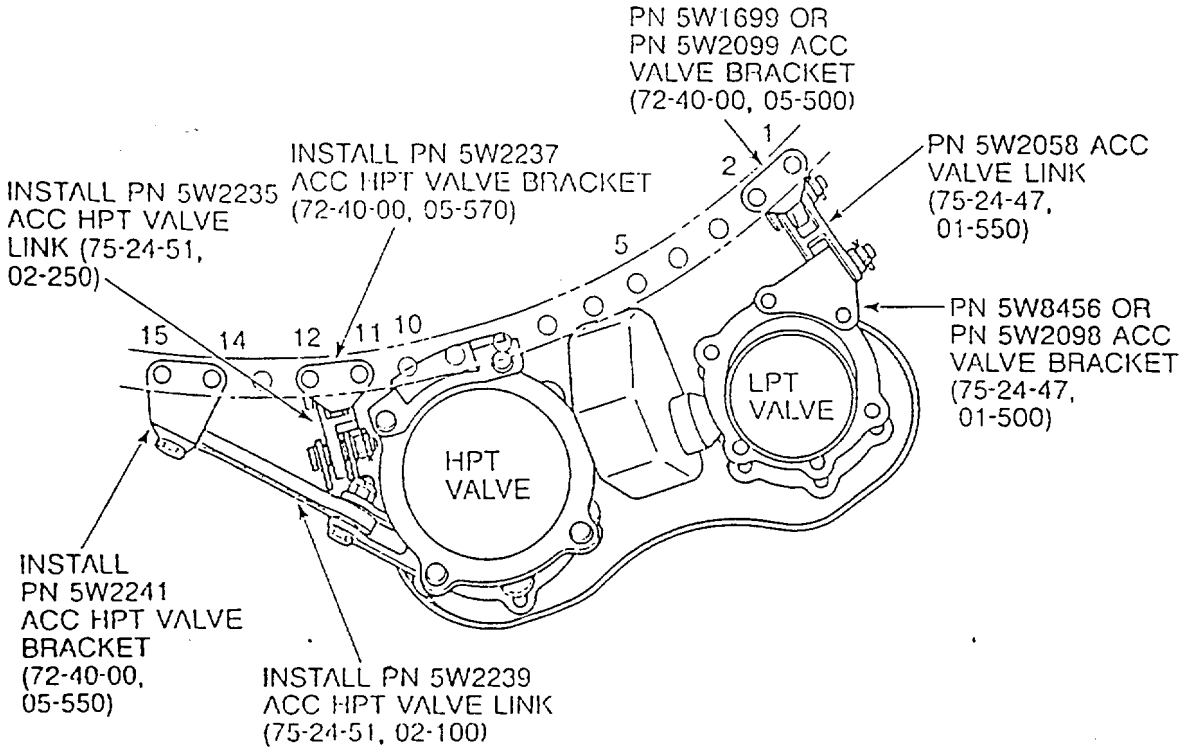
Removal of ACC system parts from HPT/LPT ACC Air Valve
Fig.2

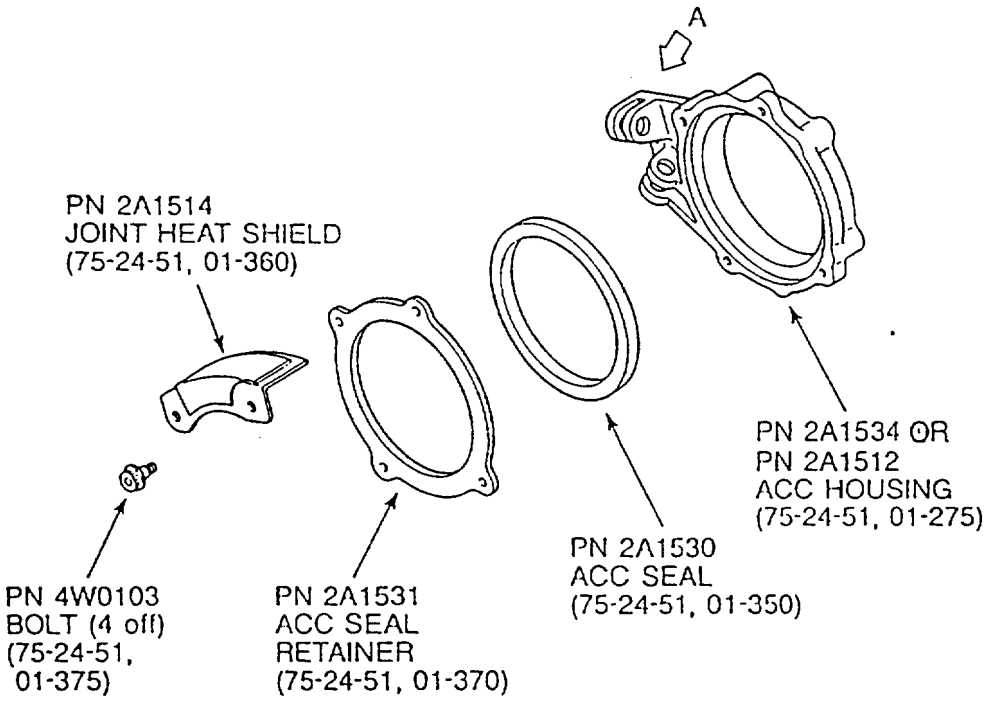


"FM" FLANGE VIEW FROM REAR OF THE ENGINE
(After Modification)
ALL BRACKETS ARE INSTALLED TO FRONT SIDE
OF THE FLANGE

ded0001209

Installation location of new brackets
Fig.3

FOR THE ASSEMBLY OF LINKS AND BRACKET
REFER TO THE SHEET 2



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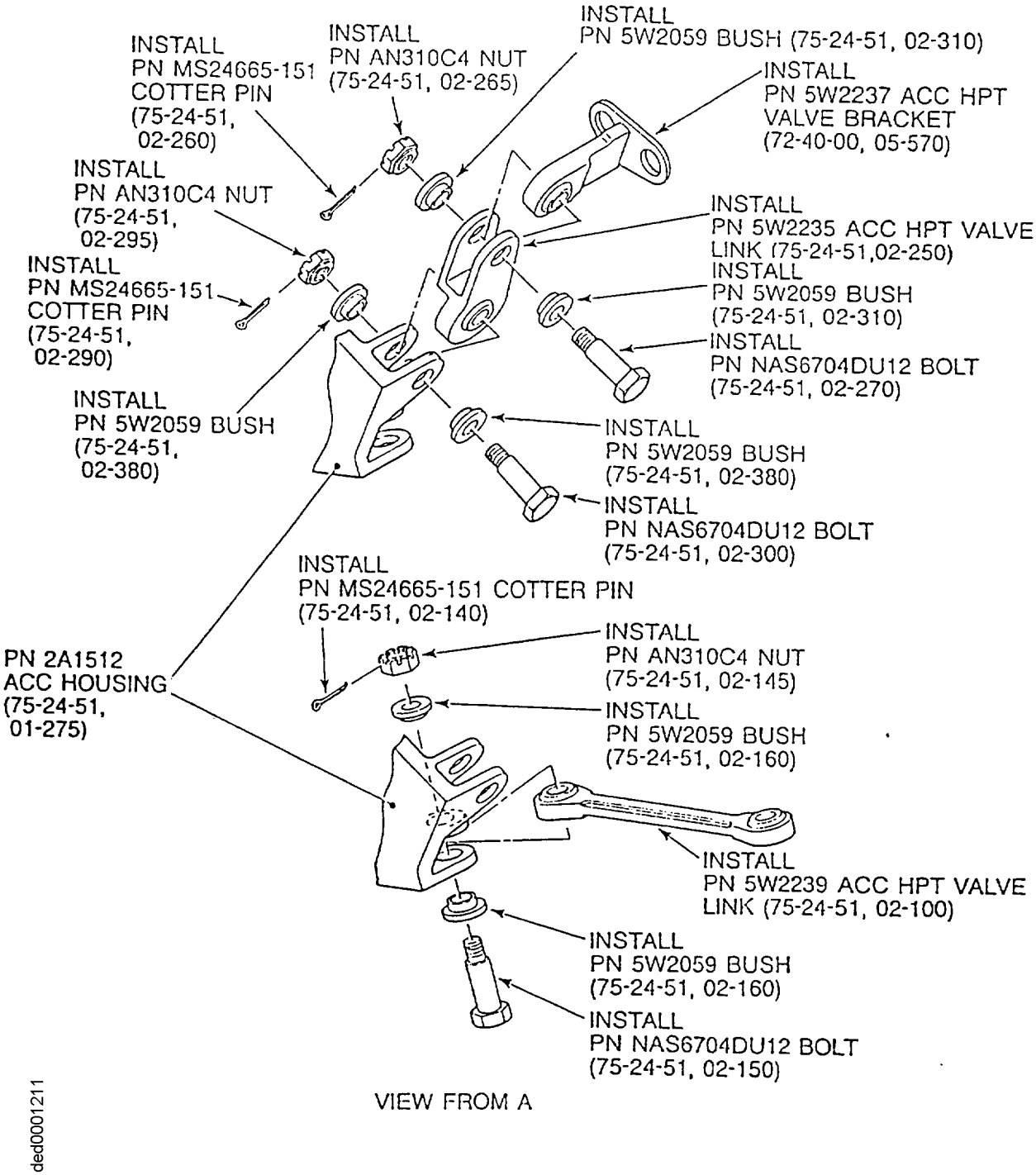
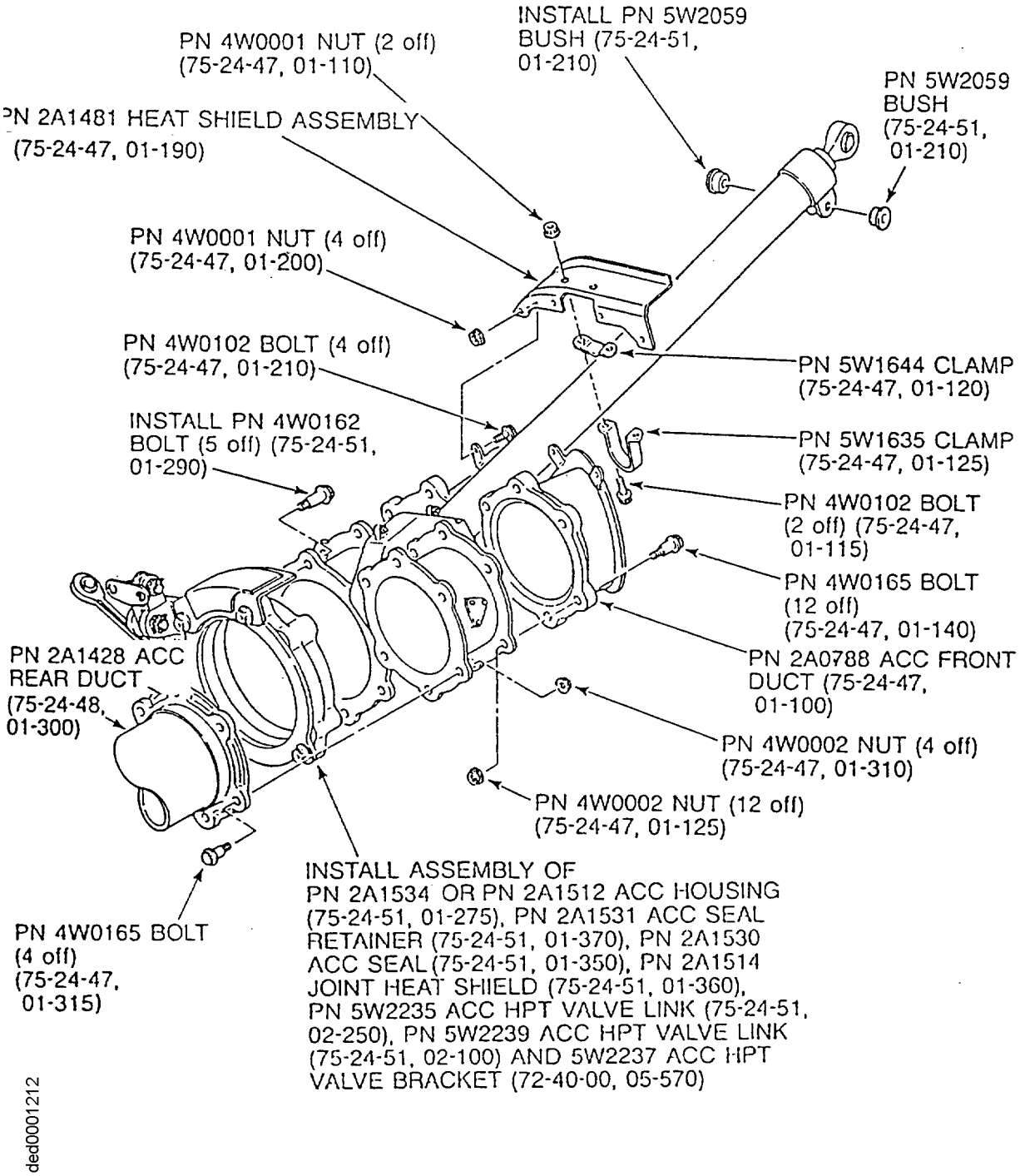
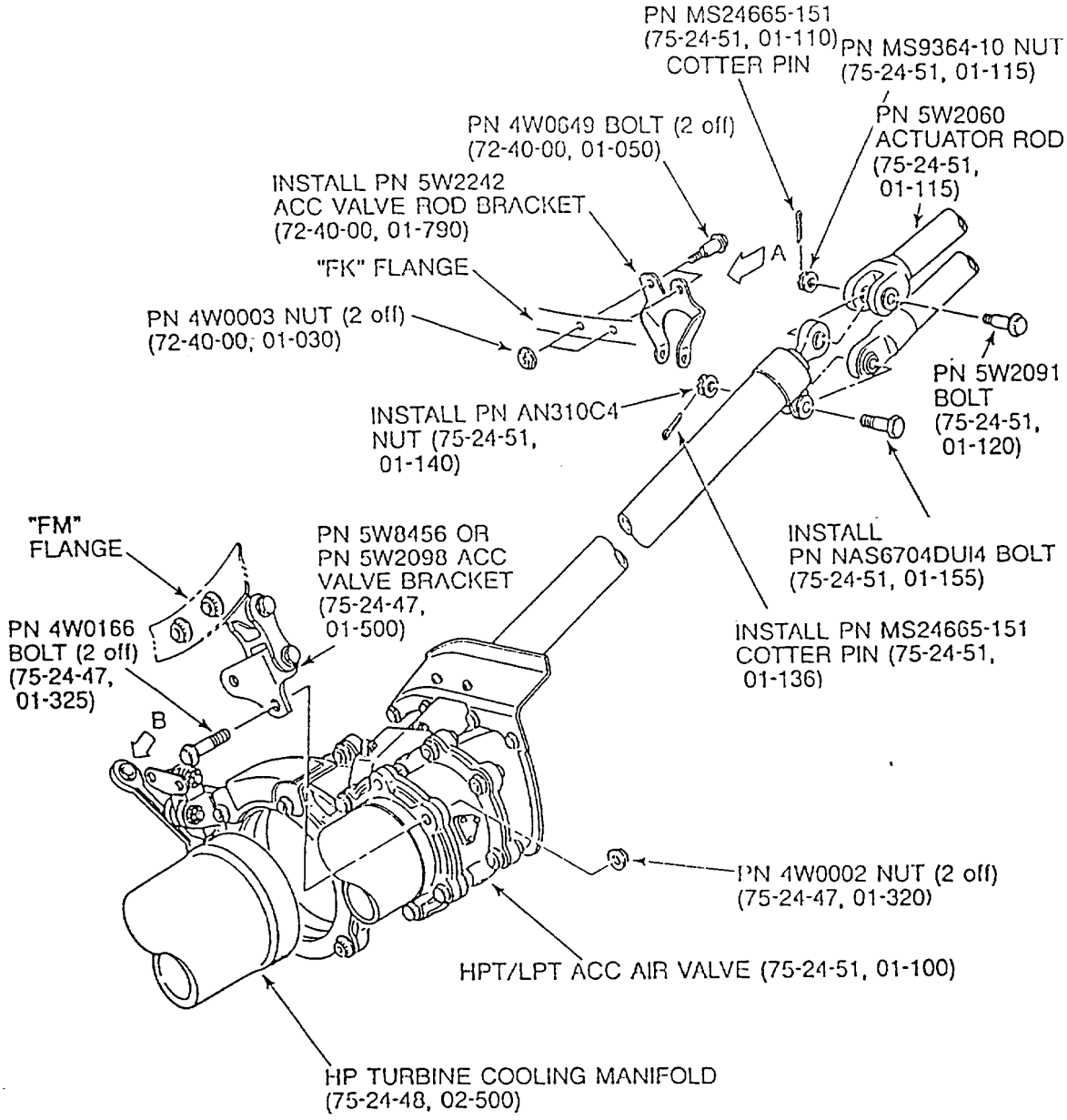
Assembly of new HPT manifold joint and support parts
Fig.4 (Sheet 1 of 2)



Assembly of new HPT manifold joint and support parts
Fig.4 (Sheet 2 of 2)



Installation of ACC system parts to HPT/LPT ACC Air Valve
Fig.5



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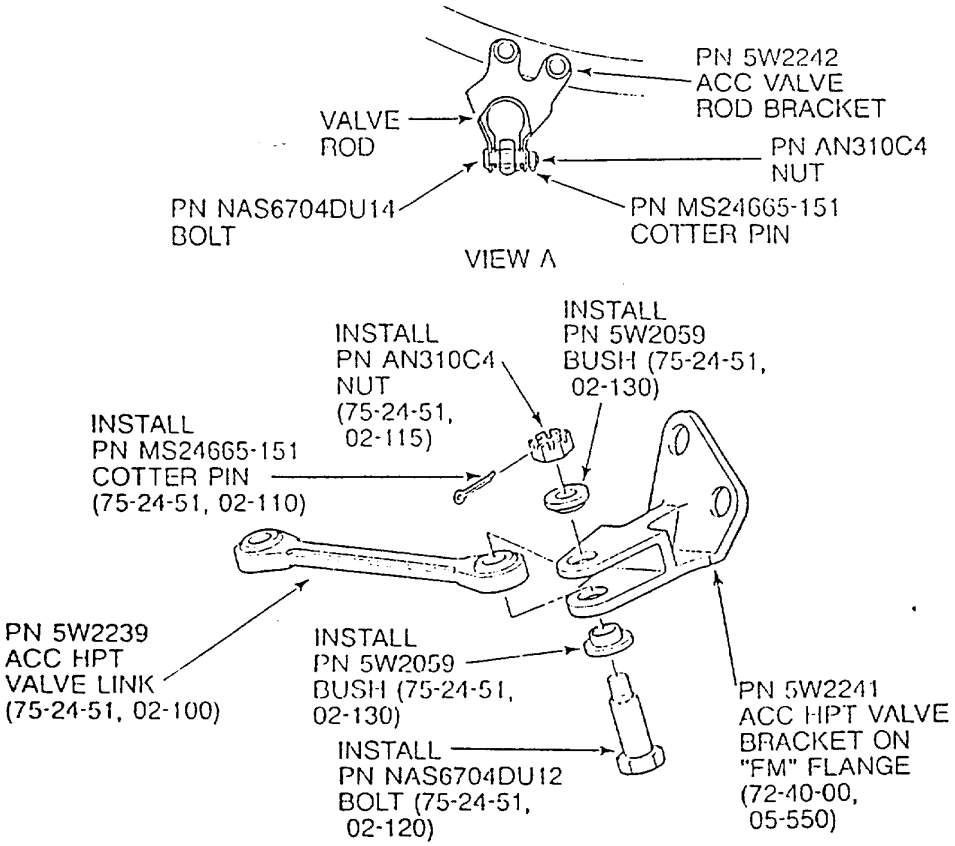
Installation of HPT/LPT ACC Air Valve
Fig.6 (Sheet 1 of 2)



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Installation of HPT/LPT ACC Air Valve
Fig.6 (Sheet 2 of 2)

3. Material Information

Applicability: For each V2500 Engine to incorporate this Bulletin.

A. Kits associated with the Bulletin

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
5W2242 (72-40-00)	1		.Bracket, Rod Valve ACC	5W2141 (01-790)	(S1)(A)(B)
5W2241 (72-40-00)	1		.Bracket, Valve HPT ACC	(05-550)	(S1)(A)
5W2237 (72-40-00)	1		.Bracket, A/O Valve HPT ACC	(05-570)	(S1)(A)
(75-24-51)	1		.Pin, Cotter	MS24665-151 (01-145)	(S1)(1D)
(75-24-51)	1		.Nut, Castellated	AN310C4 (01-150)	(S1)(1D)
NAS6704DU14 (75-24-51)	1		.Bolt, Reamer	5W1634 (01-155)	(S1)(A)(B)
(75-24-51)	1		.Bush	5W2087 (01-200)	(S1)(1D)
5W2059 (75-24-51)	2	18.30	.Bush	5W2059 (01-210)	(S1)(C)
2A1512 or 2A1534 (75-24-51)	1		.Housing, A/O ACC	2A1412 (01-275)	(S1)(A)(B)
4W0162 (75-24-51)	5	9.98	.Bolt	4W0164 (01-290)	(S1)(D)(1D)
2A1530 (75-24-51)	1		.Seal, ACC	(01-350)	(S1)(A)

2A1514	1		.Shield, Heat A/O Joint		(S1)(A)
(75-24-51)				(01-360)	
2A1531	1		.Retainer, seal ACC		(S1)(A)
(75-24-51)				(01-370)	
4W0103	4	10.60	.Bolt		(S1)(D)
(75-24-51)				(01-375)	
5W2239	1		.Link, A/O Valve HPT ACC		(S1)(A)
(75-24-51)				(02-100)	
MS24665-151		.19	.Pin, Cotter		(S1)(D)
(75-24-51)				(02-110)	
AN310C4	1	.63	.Nut, Castellated		(S1)(D)
(75-24-51)				(02-115)	
NAS6704DU12	1	8.32	.Bolt, Reamer		(S1)(D)
(75-24-51)				(02-120)	
5W2059	2	18.30	.Bush		(S1)(D)
(75-24-51)				(02-130)	
MS24665-151	1	.19	.Pin, Cotter		(S1)(D)
(75-24-51)				(02-140)	
AN310C4	1	.63	.Nut, Castellated		(S1)(D)
(75-24-51)				(02-145)	
NAS6704DU12	1	8.32	.Bolt, Reamer		(S1)(D)
(75-24-51)				(02-150)	
5W2059	2	18.30	.Bush		(S1)(D)
(75-24-51)				(02-160)	
5W2235	1		.Link, A/O Valve HPT ACC		(S1)(A)
(75-24-51)				(02-250)	
MS24665-151	1	.19	.Pin, Cotter		(S1)(D)
(75-24-51)				(02-260)	
AN310C4	1	.63	.Nut, Castellated		(S1)(D)
(75-24-51)				(02-265)	
NAS6704DU12	1	8.32	.Bolt, Reamer		(S1)(D)
(75-24-51)				(02-270)	
MS24665-151	1	.19	.Pin, Cotter		(S1)(D)
(75-24-51)				(02-290)	

AN310C4	1	.63	.Nut, Castellated	(S1)(D)
(75-24-51)			(02-295)	
NAS6704DU12	1	8.32	.Bolt, Reamer	(S1)(D)
(75-24-51)			(02-300)	
5W2059	2	18.30	.Bush	(S1)(D)
(75-24-51)			(02-310)	
5W2059	2	18.30	.Bush	(S1)(D)
(75-24-51)			(02-380)	

C. Instruction/Disposition Code statements

(A) New part will be available for sale as spare from November 1992.
(B) Old parts will no longer be available for sale.
(C) Quantity of Part No. increased.
(D) New part is currently available for sale.
(S1) New parts must be fitted as a COMPLETE SET per engine. Mixing of old and new parts is not permissible.
(1D) Old part can be use for other application.

D. Expendable Parts required to incorporate this Bulletin

MS24665-151	6	.19	.Pin, Cotter

NOTE: The quantity includes additional four Cotter pins introduced by this Bulletin.

E. Consumables required to incorporate this Bulletin

CoMat 01-002	Trichloroethane, Inhibited and stabilized
CoMat 10-001	Cutting oil
CoMat 10-077	Approved engine oils

NOTE: The estimated 1992 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 Sales Department for information concerning firm prices.