SERVICE BULLETIN REVISION NOTICE

NACELLE - THRUST REVERSER RIGGING, PRESSURE RELIEF DOOR LATCHES – MODIFICATION OF

Turbojet Engine Service Bulletin No. V2500-NAC-78-0110 Revision No. 3 dated May 9, 2017

Revision History

Original Issue December 14, 1995

Revision 1 dated August 07, 1996

Revision 2 dated October 02, 1996

Revision 3 dated May 9, 2017

Reason for the Revision

The information contained in this Service Bulletin has been superseded by Service Bulletin V2500-NAC-78-0114 and V2500-NAC-78-0189. It is no longer necessary to do this Service Bulletin Original Issue, Revision 1, or Revision 2 of this Service Bulletin.

Effect of Revision on Prior Compliance

None.

This is a Complete Revision (Not Applicable to the SGML version)

The format of this Service Bulletin has not been changed from Revision 2. See Reason for the Revision above.

MODEL APPLICATION
V2525-D5, V2528-D5

BULLETIN ISSUE SEQUENCE
V2500 Series 78-0110

Page	Revision No.	Date
1 thru 18	3	May 9/17

A copy of this Revision Notice and any future revision notices must be filed as a permanent record with your copy of the subject bulletin.

NO TECHNICAL DATA SUBJECT TO THE EAR OR ITAR.

TRANSMITTAL

V2500 International Aero Engines

V2500 Propulsion System — Nacelle

SERVICE BULLETIN

NACELLE – THRUST REVERSER RIGGING, PRESSURE RELIEF DOOR LATCHES - MODIFICATION OF

MODEL APPLICATION

V2500-D5

BULLETIN INDEX LOCATOR

78-00-00

Compliance Category Code

5

Internal Reference No.

JG 95VN803

December 14, 1995

Revision 3 - May 9/17

V2500-NAC-78-0110

1. Planning Information

A. Effectivity

(1) Airplane: MD90

(2) Nacelle: V2500-D5 thrust reversers with serial numbers 0004001 through 0007001, 0009001, 0010001, and 021001 through 0056005.

B. Reason

(1) Condition

Inadvertent openings of the pressure relief door have occurred in service.

(2) Background

Pressure relief doors have opened in service due to excessive latch preload and unacceptable latch engagement.

(3) Objective

Reduce latch preload and increase latch engagement as required.

(4) Substantiation

Fit check has been successfully accomplished on production units.

(5) Impact of the Bulletin on Workshop Procedures:

Removal/Installation	Not Affected
Disassembly/Assembly	Not Affected
Cleaning	Not Affected
Inspection/Repair	Not Affected
Repair	Not Affected
Testing	Not Affected

(6) Supplemental Information

None.

C. Description

The change introduced by this Bulletin is as follows:

The rigging of the thrust reverser and pressure relief door latches will be checked and adjusted as required.

The pressure relief door latch cam will be trimmed. The pressure relief door latch release loads will be measured, and if necessary, the latches will be adjusted.

D. Approval

Incorporation of this Service bulletin must be accomplished only in conjunction with Douglas Aircraft Company Service Bulletin 78-006 which has received exclusive FAA approval for MD-90 Series aircraft.

E. Compliance

5

Accomplish when the Nacelle or system is disassembled sufficiently to afford access to the affected subassembly (i.e. accessories, components) and to all affected spare subassemblies.

F. Manpower

Estimated manhours to incorporate the intent of this bulletin on one thrust reverser:

VENUE		ESTIMATED MANHOURS
(1) In Service		Not Applicable
(2) At Overhaul		
(a) To Rework		33.0 M/Hrs
	TOTAL	33.0 M/Hrs (total span time - 11 Hrs x 3 men)

NOTE: After incorporation of this modification, a maximum of 33.0 manhours for labor will be reimbursed by Rohr, as a labor credit allowance per affected aircraft to obtain a labor credit allowance after procurement of noted material. Labor claims should reference this service bulletin number and aircraft fuselage number and be submitted to:

Rohr, Inc.
850 Lagoon Drive
Chula Vista, CA. 91910-2098

Attn: Airline Support Manager, Bldg. 107A
Warranty Department
(Ref. Service Bulletin V2500-NAC-78-0110)

G. Material Cost and Availability

None required.

H. Tooling Cost and Availability

IAE 1N20054-101 tool required.

I. Weight and Balance

(1) Weight change ..... None

(2) Moment arm ..... No effect

(3) Datum .....Engine Front Mount Centerline
.....(Powerplant Station PPS 100.00)

J. Electrical Load Data

Not affected.

K. Reference — Chapter/Section

IAE V2500 Standard Practices/Processes Manual SPP-V2500-1IA	70-09-00 70-42-05
MD-90 Aircraft Maintenance Manual	78-32-00
Overhaul Processes and Consumable Index (PCI-V2500-1IA)	

L. Other Publications Affected

MD90-V2500 Engine Illustrated Parts Catalog S-V2500-3IA	78-32-09 78-32-10

2. Accomplishment Instructions

A. Prerequisite Instructions

None.

B. Rework or Modification Instructions

(1) Measure the thrust reverser split line gap. The gap should be 0.010-0.160 inch (0.254-4.064 mm). Measure the pressure relief latch engagement. The engagement of both latches should be a minimum of 0.10 inch (2.54mm). Refer to Figure 1. If one or both measurements (thrust reverser split line gap or pressure relief door latch engagement) are not acceptable, perform the following thrust reverser rigging procedure.

(a) Open the thrust reverser lower half. Refer to the MD-90 Aircraft Maintenance Manual, Chapter 78-32-00, page block 201.

(b) Turn the adjustable end of the two 290-0069 compression struts one half turn clockwise.

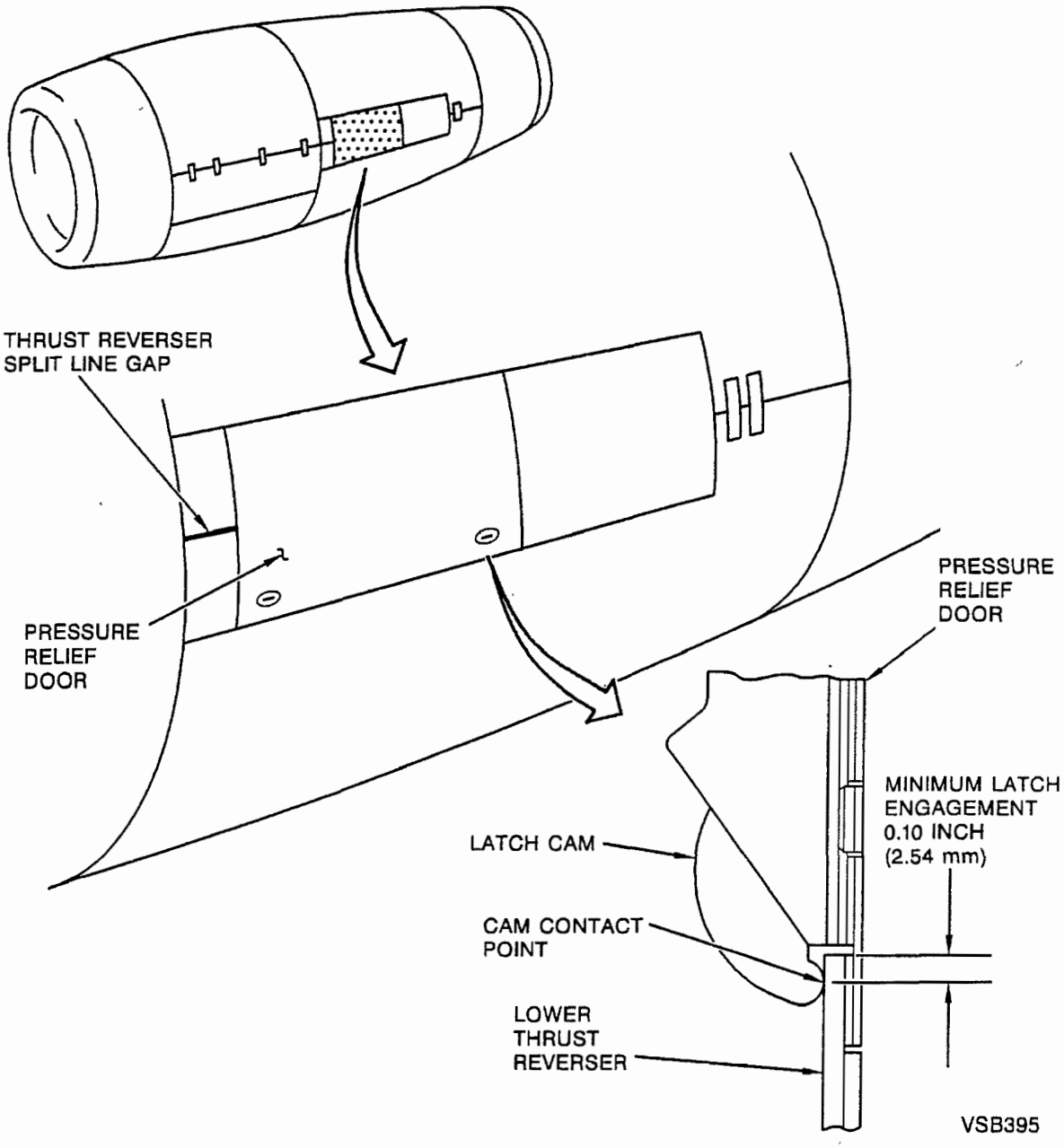
(c) Remove all latch housing shims.

(d) Put a 0.120 inch (3.048 mm) thick shim at all latch housing locations.

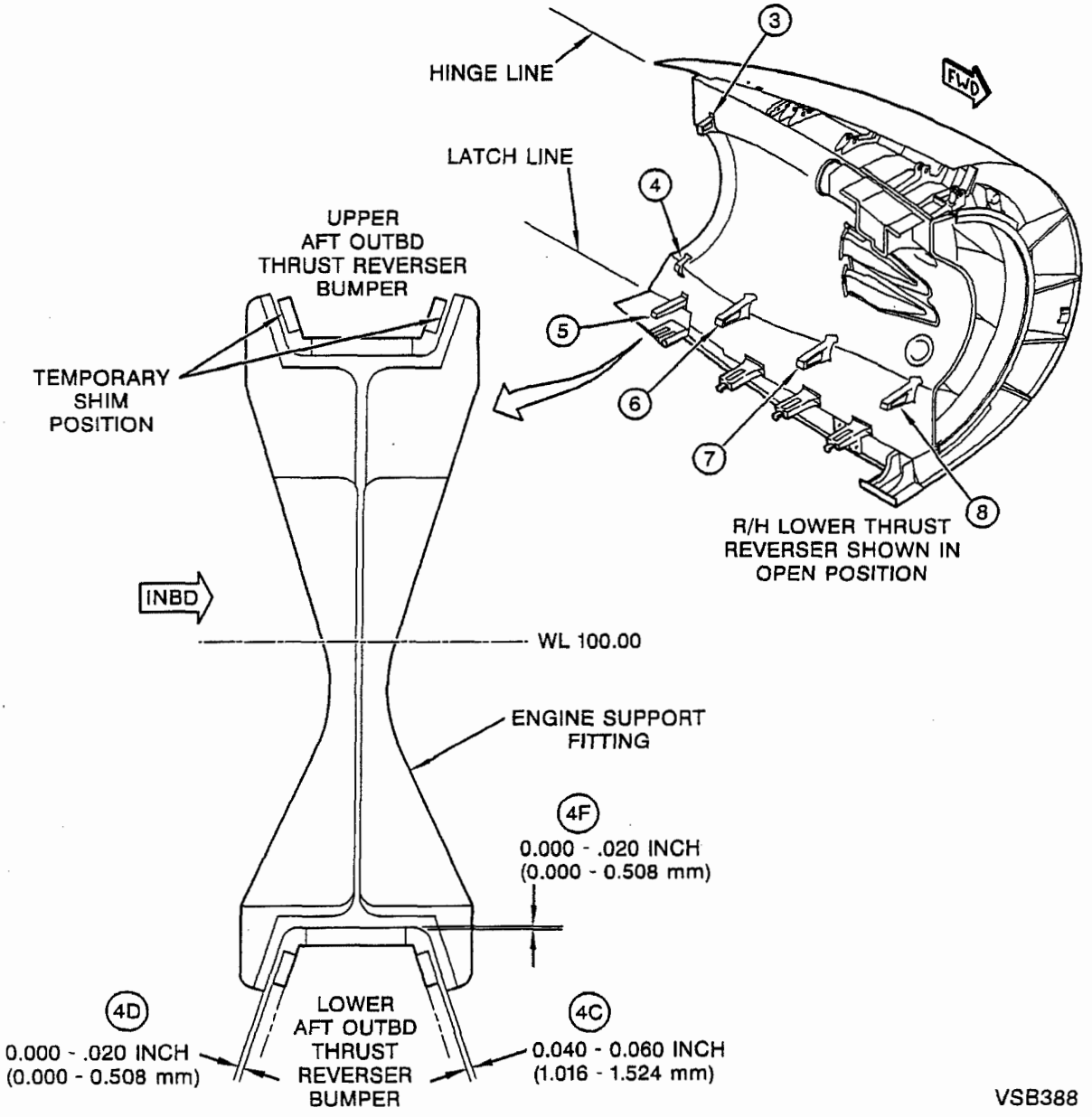
(e) Remove shims from lower aft bumpers at positions 3, 4C, 4D, and 4F and upper bumpers at positions 5, 6, 7, and 8.

(f) Apply clay to bumpers with limited or no access.

(g) Close and latch the thrust reverser. Check and adjust all latch closing forces to 45-55 in-lbs (5.084-6.214 Nm). Refer to MD-90 Aircraft Maintenance Manual, Chapter 78-32-00, page block 501.



THRUST REVERSER SPLIT LINE GAP AND PRESSURE RELIEF DOOR MEASUREMENT
FIGURE 1



THRUST REVERSER RIGGING ADJUSTMENT
FIGURE 2

(h) Measure the thrust reverser split line gap. The gap should be 0.010-0.160 inch (0.254-4.064 mm). If the split line gap is not 0.010-0.160 inch (0.254-4.064 mm) add or subtract from the 0.120 inch (3.048 mm) shim already installed to obtain an acceptable split line gap then do steps (e) through (h) again.

(i) Open the lower C-duct. Refer to MD-90 Aircraft Maintenance Manual, Chapter 78-32-00, page block 201.

(j) Measure gaps between bumpers (thickness of clay) at positions 3, 4, 5, 6, 7, and 8. Refer to Figure 2.

(k) Add shims to bumpers as required to attain gap of 0.000-0.020 in. (0.000-0.508 mm) at position 3, 0.010-0.050 in. (0.245-1.27 mm) at positions 5, 6, 7, and 8, and gap shown in Figure 2 at position 4.

(l) Close and latch the thrust reverser. Check and adjust all latch closing forces to 45-55 in-lbs (5.084-6.214 Nm). Refer to MD-90 Aircraft Maintenance Manual, Chapter 78-32-00, page block 501.

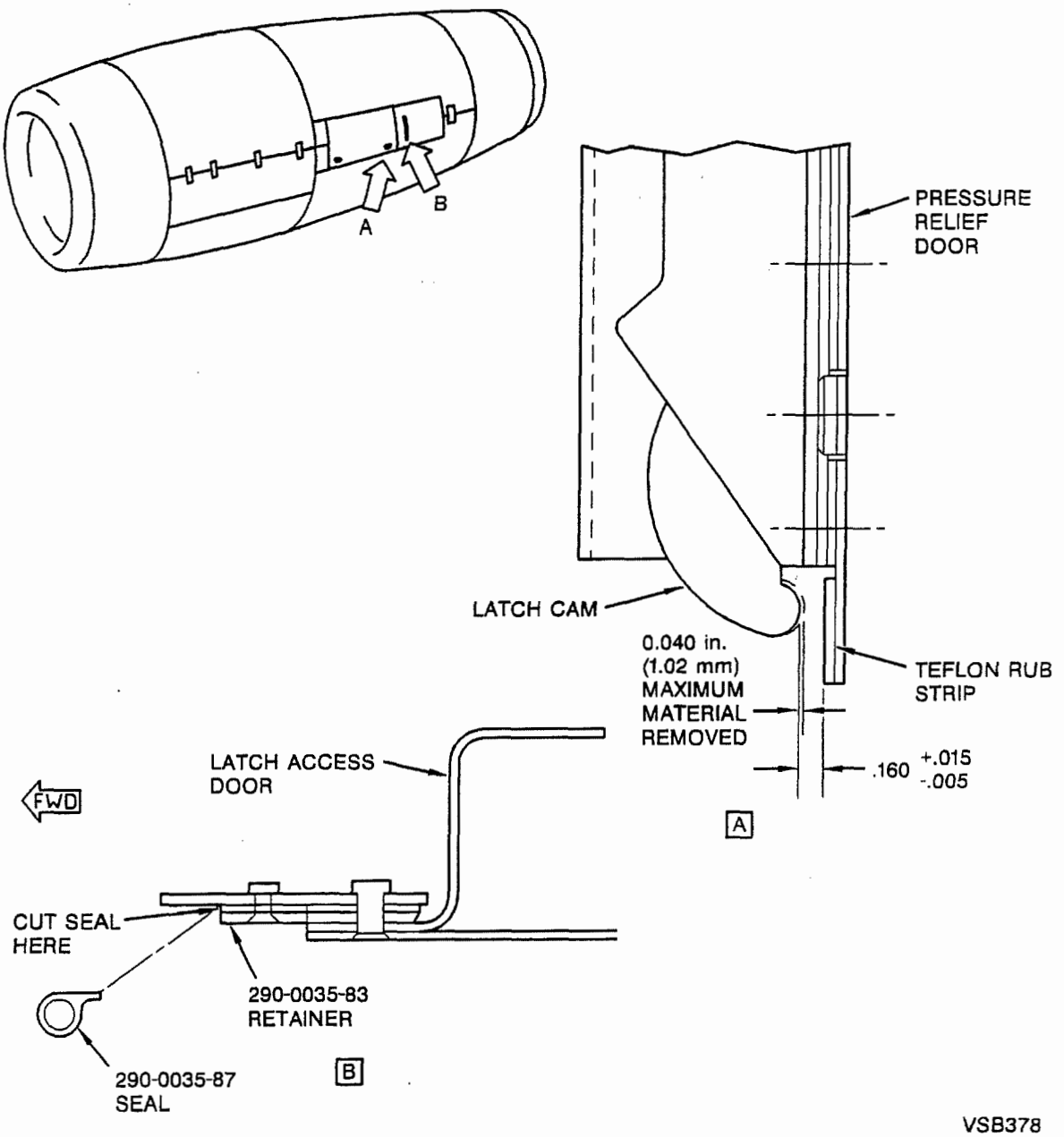
(m) Make sure that the engagement of the pressure relief door latches are a minimum of 0.10 inch (2.54 mm). Refer to Figure 1. If the minimum latch engagement is less than 0.10 inch (2.54 mm), contact your IAE customer support representative.

(2) Open the thrust reverser pressure relief door.

(3) Modify the pressure relief door latches.

(a) Measure and record the distance between the latch cam and the teflon rub strip. Refer to Figure 3.

(b) If the distance is less than the dimension shown, hand grind the latch cam with non-metallic abrasive to achieve the dimension shown in Figure 3. Keep the original radius.



PRESSURE RELIEF DOOR ADJUSTMENT
FIGURE 3

(c) Remove metal chips or other unwanted material with a dry air supply.

WARNING: 1,1,1 TRICHLOROETHANE VAPORS ARE HARMFUL. USE IN A WELL-VENTILATED AREA. AVOID PROLONGED BREATHING OF VAPOR AND PROLONGED OR REPEATED CONTACT WITH SKIN. OVEREXPOSURE MAY CAUSE HEADACHE, DIZZINESS OR DROWSINESS. VAPOR IS HEAVIER THAN AIR AND MAY REPLACE OXYGEN IN A CONFINED AREA. SMOKING AND ARC WELDING SHOULD BE AVOIDED WHEN USING THIS SOLVENT; VAPORS OF DECOMPOSITION MAY CAUSE SERIOUS BODILY HARM. PROTECTIVE GLOVES SHOULD BE WORN DURING USE. MAY CAUSE DERMATITIS BY REMOVING SKIN OILS. PRIOR TO USE OF THIS PRODUCT, CAREFULLY READ THE APPLICABLE 'MATERIAL SAFETY DATA SHEET' AND FOLLOW ALL LISTED SAFETY AND HEALTH PRECAUTIONS.

(d) Clean the latch cam with a lint free cloth (CoMat 02-099) and trichloroethane (CoMat 01-001). Wipe the surface dry before solvent becomes dry.

(4) Close and latch the thrust reverser pressure relief door.

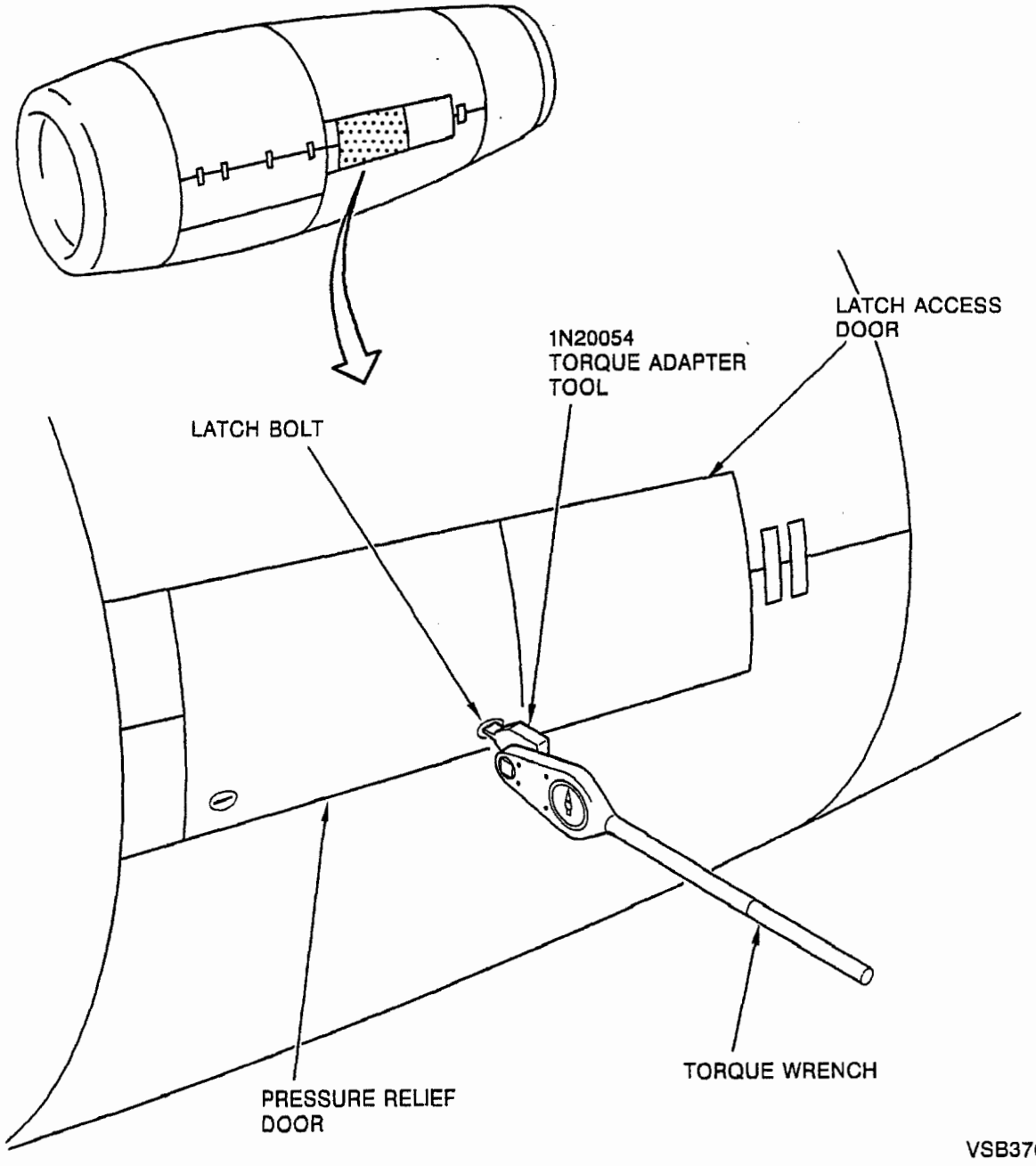
(5) Determine the average closed door, latch release load as follows:

(a) Install the IAE 1N20054 torque adapter on the torque wrench.

(b) Put the torque adapter into the slot of the latch bolt. The torque adapter must rest evenly on the latch bolt. Refer to Figure 4.

(c) Apply force to the torque wrench until the latch releases. Make sure you apply the force at 90 degrees to the torque wrench handle. Record the torque wrench reading.

(d) Use the reading from the torque wrench and the



MEASUREMENT LENGTH
FIGURE 4

following formula to calculate the latch release load:

$$LRL = \frac{\text{Torque Reading} \times (L + 1.250)}{0.561 \times L} + 16.0$$

Where: LRL = Latch Release Load

L = Distance from the centerline of the torque wrench drive to the center of the operators hand. Refer to Figure 5.

(e) Repeat steps (5)(a) through (5)(d) above for a total of four times for each latch.

(f) Add the four calculated latch release loads together and divide the sum by four; this value is the average closed door, latch release load.

(6) If the average closed door, latch release load is more than 329-369 pounds, no further action is required. If the average closed door, latch release load is less than 329 pounds, adjust the latch access door as follow:

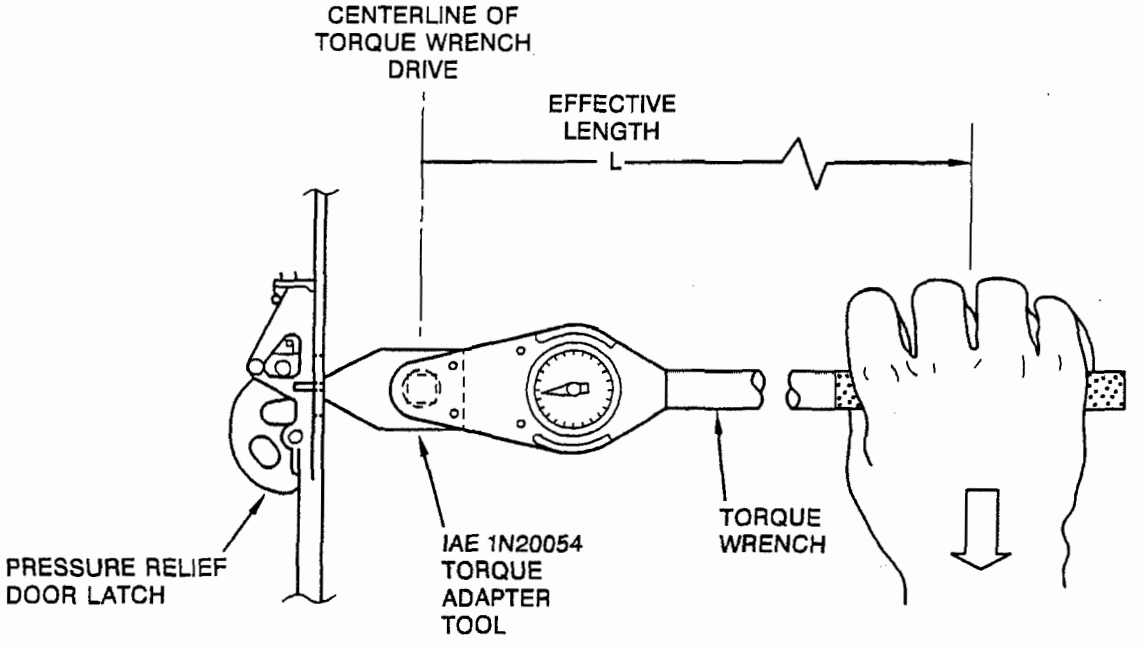
(a) Cut and remove the lockwire from the latch release mechanism adjusting screw. Refer to Figure 6.

(b) Tighten the adjusting screw as necessary.

(c) Repeat step (5) above to find the average open door, latch release load after adjustment.

(d) If necessary, repeat steps (6)(b) and (6)(c) above.

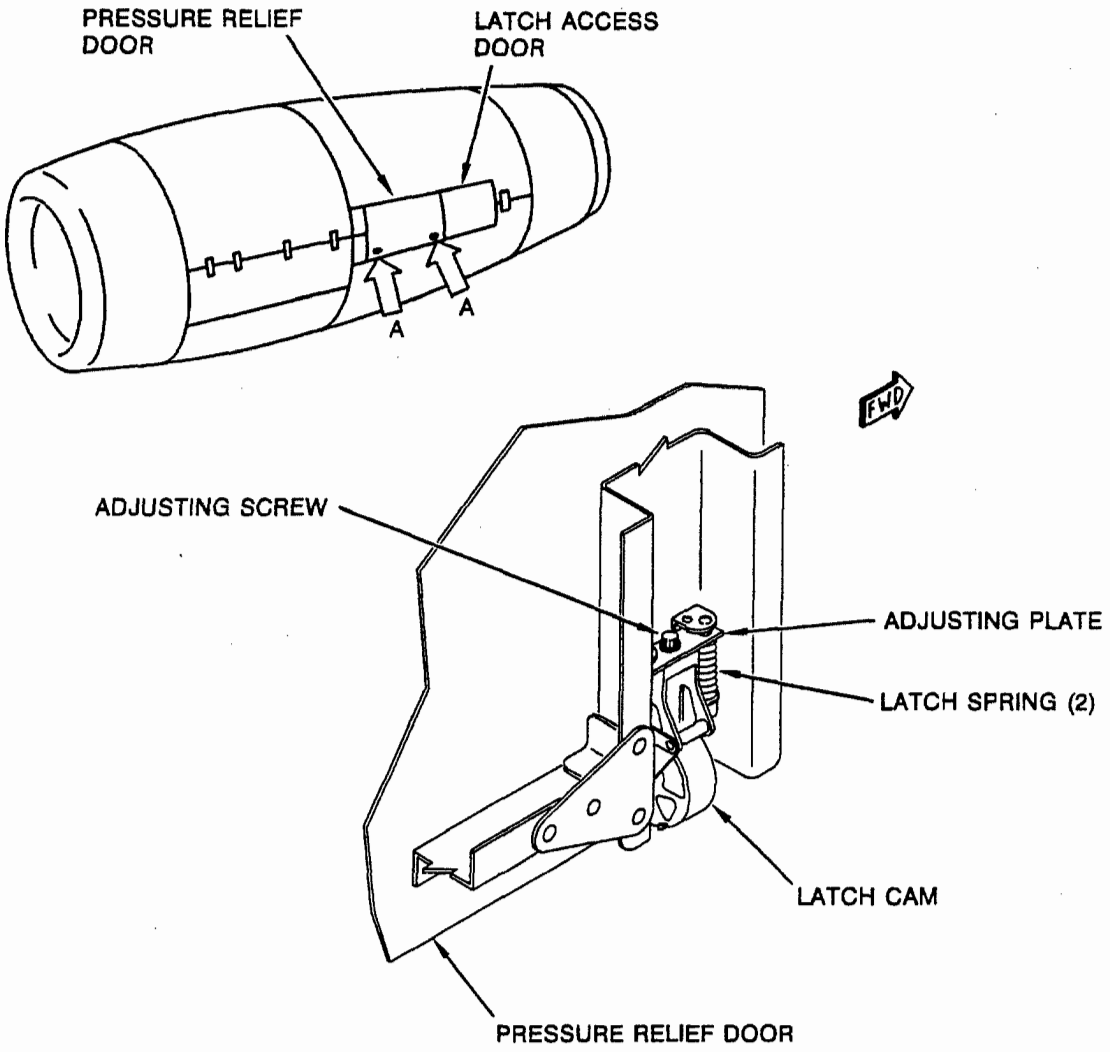
(e) Safetywire the adjusting screw to the latch release mechanism with 0.032 inch (0.813 mm) diameter lockwire (CoMat 02-147). Refer to IAE V2500 Standard Practices/Processes Manual, Chapter 70-42-05.



USAGE: TO ENSURE PRESSURE RELIEF DOOR LATCHES ARE NOT SEIZED AND WILL RELEASE AT RATED LOADS - USE 1/2" DRIVE TORQUE WRENCH.

VSB375

LATCH RELEASE LOAD MEASUREMENT
FIGURE 5



LATCH RELEASE MECHANISM ADJUSTMENT
FIGURE 6

(7) Identify the 290-0032-501 pressure relief door assembly as the 290-0012-1C pressure relief door assembly, and the 290-0032-502 pressure relief door assembly as the 290-0012-2C pressure relief door assembly with ink (CoMat 06-073) and a rubber stamp. Refer to the IAE V2500 Standard Practices/Processes Manual, Chapter 70-09-00.

C. Post Requisite Instructions

Not applicable.

D. Recording Instructions

(1) A record of accomplishment is necessary. Write in applicable records and metal stamp, vibroetch, or electroetch on thrust reverser data plate that Service Bulletin V2500-NAC-78-0110 has been done. Refer to IAE V2500 Standard Practices/Processes Manual, Chapter 70-09-00.

3. Material Information

Applicability: For each V2500-D5 Nacelle to incorporate this Bulletin.

A. Kits associated with this Bulletin:

None.

B. Parts affected by this Bulletin:

NEW PART NO (ATA NO)	QTY	EST'D UNIT PRICE	KEYWORD	OLD PART NO (IPC NO)	INSTR/ DISPOS
290-0012-1C (78-32-09)	1		Door Assy (LH)	290-0032-501 (01-010)	(1R)
290-0012-2C (78-32-09)	1		Door Assy (RH)	290-0032-502 (01-012)	(1R)
290-0012-3C (78-32-10)	1		Door Assy (LH)	290-0038-507 (01-010)	(1R)
290-0012-4C (78-32-10)	1		Door Assy (RH)	290-0038-508 (01-012)	(1R)

C. Instructions/Disposition Code Statements:

(1R) Rework old part to new configuration.

(S1) Old part number may be used as a replacement only where old part was installed. New part number is acceptable replacement for the old or new part number.

D. Material Required to Incorporate This Bulletin

CoMat 01-0001	Trichloroethane
CoMat 02-099	Lint Free Cloth
CoMat 02-147	Lockwire
CoMat 06-073	Black Ink

NOTE: To identify the consumable materials, refer to the Overhaul Processes and Consumable Index PCI-V2500-1IA.