P U B L I C A T I O N T R A N S M I T T A L

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DATER Jun.15/01

V2500-A5/D5 SERIES PROPULSION SYSTEMS SERVICE BULLETIN

This document transmits Revision 1 to Service Bulletin EV2500-73-0124

Document History

Service Bulletin Revision Status		Supplement Revision Status
Initial Issue	Oct.17/97	

Bulletin Revision 1

Remove	Incorporate	Reason for change
All pages of the Service Bulletin	Pages 1 to 11 of the Service Bulletin	To change illustrations and revise to latest format

V2500-ENG-73-0124

LIST OF EFFECTIVE PAGES

The effective pages to this Service Bulletin following incorporation of Revision 1 are as follows:

	Page	Revision Number	Revision Date
	Bulletin		
R	1	1	Jun.15/01
R	2	1	Jun.15/01
R	3	1	Jun.15/01
R	4	1	Jun.15/01
R	5	1	Jun.15/01
R	6	1	Jun.15/01
R	7	1	Jun.15/01
R	8	1	Jun.15/01
R	9	1	Jun.15/01
R	10	1	Jun.15/01
R	11	1	Jun.15/01

ENGINE - WOODWARD GOVERNOR COMPANY (WGC) FUEL METERING UNIT - SHUT-OFF VALVE AND OVERSPEED VALVE SERVO VALVE - ONE-TIME INSPECTION - NON-MODIFICATION SERVICE BULLETIN

1. Planning Information

A. Effectivity

(1) Airbus A319

(a) V2522-A5, V2524-A5 Engines fitted with a WGC FMU (SB 73-0097)

(2) Airbus A320

(a) V2527-A5, V2527E-A5 Engines fitted with a WGC FMU (SB 73-0097)

(3) Airbus A321

(a) V2530-A5, V2533-A5 Engines fitted with a WGC FMU (SB 73-0097)

(4) Boeing Long Beach Division MD-90

(a) V2525-D5, V2528-D5 Engines fitted with a WGC FMU (SB 73-0108)

(5) ATA Location

73-00-00

B. Concurrent Requirements

R None.

C. Reason

(1) Problem and Evidence

A low insulation resistance reading in an FMU caused an FMU single channel failure. An investigation of the failure found trapped leadwires of the HP Shut-Off Valve servo valve due to mis-assembly.

The Overspeed Valve servo valve is assembled in the same way and can have the same fault.

The low insulation resistance can result in a current leak between electrical connector pin and case ground.

(2) Background

See problem and evidence

(3) Objective

Incorporation of this Service Bulletin is designed to maintain unit reliability.

(4) Substantiation

The inspections outlined in this Service Bulletin have been shown, by engineering assessment at WGC and IAE, to identify the fault.

(5) Effect of Bulletin on Workshop Procedures:

(a) Record/Installation

Not affected

(b) Disassembly/Assembly

Not affected

(c) Cleaning

Not affected

(d) Inspection/Check

Not affected

(e) Repair

Not affected

(f) Testing

Not affected

(6) Supplemental Information

None

D. Description

(1) This Service Bulletin outlines the procedure for the X-Ray inspection of the FMU. Proper X-Ray inspection will determine if it is necessary to return the unit to WGC for further inspection or exchange.

(2) This Service Bulletin is intended to prevent the possibility of current leakage between the electrical connector and case ground.

(3) Fuel Metering Units incorporating this Non-Modification Service Bulletin will be identified by yellow paint marking on the Servo Valve Cover Plate (See Figure 4).

E. Compliance

Category Code 4

Accomplish when the sub-aseembly (i.e. modules, accessories, components, build groups) is disassembled sufficiently to afford access to the affected parts.

WGC will coordinate the accomplishment of this Non-Modification Service Bulletin, including acquiring the use of X-Ray facilities or equipment and X-Ray technicians. WGC personnel will fully support this inspection and determine acceptance/rejection of each FMU to be inspected.

Any questions regarding the accomplishment of this Non-Modification Service Bulletin should be directed to Rick Rehfeldt (U.S. Phone 815-624-1317) or Don Jones (U.S. Phone 815-639-6211).

F. Approval

The Technical Data in this Non-Modification Service Bulletin obey the applicable Federal Aviation Regulations and are FAA-APPROVED for the Engine Models listed.

G. Manpower

Estimated manhours to incorporate the full intent of this bulletin:

(1) FMU Removal/Refitment

3.0 hours

(2) X-Ray inspection (Real Time)

0.3 hours (WGC Personnel)

(3) X-Ray inspection (Standard)

0.5 hours (WGC Personnel)

(4) Total: 3.8 hours

H. Material - Price and Availability

Not applicable

I. Tooling - Price and Availability

WGC will procure suitable X-Ray equipment and X-Ray technicians at each location. In the event that X-Ray equipment is not readily available. WGC will supply portable X-Ray equipment. WGC will co-ordinate all details.

J. Weight and Balance

Not applicable

K. Electrical Load Data

Not applicable

L. References

(1) Internal Reference No. 97VR805

(2) Component Maintenance Manual ATA 73-28-06

(3) Aircraft Maintenance Manual 73-22-52-000-010 (AIRBUS)

(4) Aircraft Maintenance Manual 73-21-52 (BOEING-DOUGLAS MD-90)

M. Other Publications Affected

Not applicable

2. Material Information

None

3. Accomplishment Instructions

A. Standard X-Ray Equipment

(1) Remove the FMU from the engine. Refer to A5 AMM procedure 73-22-52-000-010 and D5 AMM procedure 73-21-52.

(2) Refer to CMM 73-28-06, Disassembly section, paragraphs 0.5.1.1 and 0.5.1.2. and remove the electrical cover, trapezoidal seal, screws and washers.

(3) Refer to Figure 1 for a general cross section of the servo valve and the area of interference.

(4) Put the FMU in the X-Ray machine. Refer to Figure 2 to see the parts to X-Ray. Approximate X-Ray settings are 80kV, 8 microamperes for 1 minute, 43 inches (109 cm) from the target, focal spot size of 2 mm. X-Ray four views of each servo valve (1886-372 and 1886-374).

(5) Inspect the X-Rays for acceptance or rejection of the FMU. See Figure 3 for examples.

(a) Rejection Criteria:

Reject the FMU if it is found that two leadwires from either servo valve are crossed on top of each other over a screw head and pinched. If the X-Rays do not give the right results, reject the FMU and return it to Woodward for more inspection using real-time X-Ray. Refer to Figure 3 Sheet 1.

A rejected FMU will be exchanged for a known serviceable FMU and returned to WGC for rework.

(b) Acceptance Criteria:

Any number of wires over the screw heads, if no wires are crossed and on top of each other when they are over a screw head. Refer to Figure 3 Sheet 2.

(6) Assemble the FMU. Refer to CMM 73-28-06, Testing/Fault Isolation section, paragraph 0-6-4.

(7) Recording Instructions

Mark the FMU Servo Valve Cover Plate with Yellow paint (CoMat 07-149) in accordance with details shown in Figure 4.

(8) Install the FMU. Refer to A5 AMM procedure 73-22-52-000-010 and D5 AMM procedure 73-21-52.

B. Real Time X-Ray Equipment

(1) Remove the FMU from the engine. Refer to the A5 AMM procedure 73-22-52-000-010 and D5 AMM procedure 73-21-52.

(2) Refer to CMM 73-28-06 Disassembly section, paragraphs 0.5.1.1 and 0.5.1.2. and remove the electrical cover, trapezoidal seal, screws and washers.

(3) Refer to Figure 1 for a general cross section of the servo valve and the area of interference.

(4) Put the FMU in the real time X-Ray machine so that the X-Ray view of the servo valves is similar to the view using standard X-Ray equipment (See Figure 2). Approximate real-time X-Ray settings are 58kV, 0.858 microamperes, 8 inches (20 cm) from target. Locate the servo valves with the X-Ray, then rotate the table in order to view all screw heads under the cover of each of the two servo valves in question (Pt Nos 1886-372 and 1886-374)

NOTE: The settings above are for reference only and may be modified as necessary.

(5) View monitor for acceptance or rejection. See Figure 3 for examples.

(a) Rejection Criteria:

Reject the FMU if it is determined that two leadwires from either servo valve are crossed on top of each other over a screw head and pinched. If the X-Rays do not give the right results reject the FMU, and return it to Woodward for additional inspection using real-time X-Ray. Refer to Figure 3 Sheet 1.

Rejected FMU will be exchanged for a known serviceable FMU and returned to WGC for rework.

(b) Acceptance Criteria:

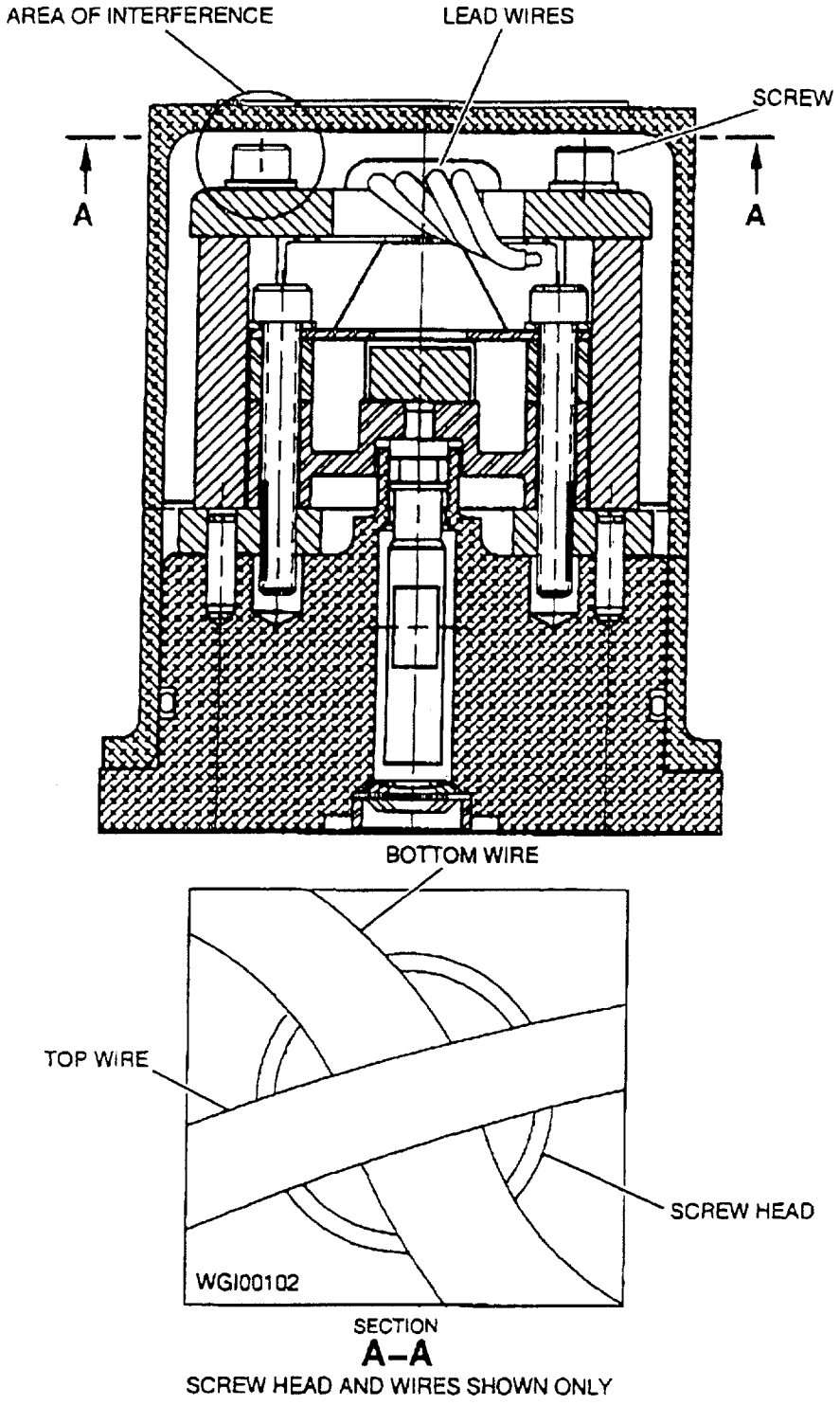
Any number of wires over the screw heads, if no wires are crossed and on top of each other when they are over a screw head. Refer to Figure 3 Sheet 2.

(6) Assemble the FMU. Refer to the CMM 73-28-06, Testing/Fault Isolation, Paragraph 0-6-4.

(7) Recording Instructions

Mark the FMU Servo Valve Cover Plate with Yellow paint (CoMat 07-149) in accordance with details shown in Figure 4.

(8) Install the FMU. Refer to A5 AMM procedure 73-22-52-000-010 or D5 AMM Procedure 73-21-52.



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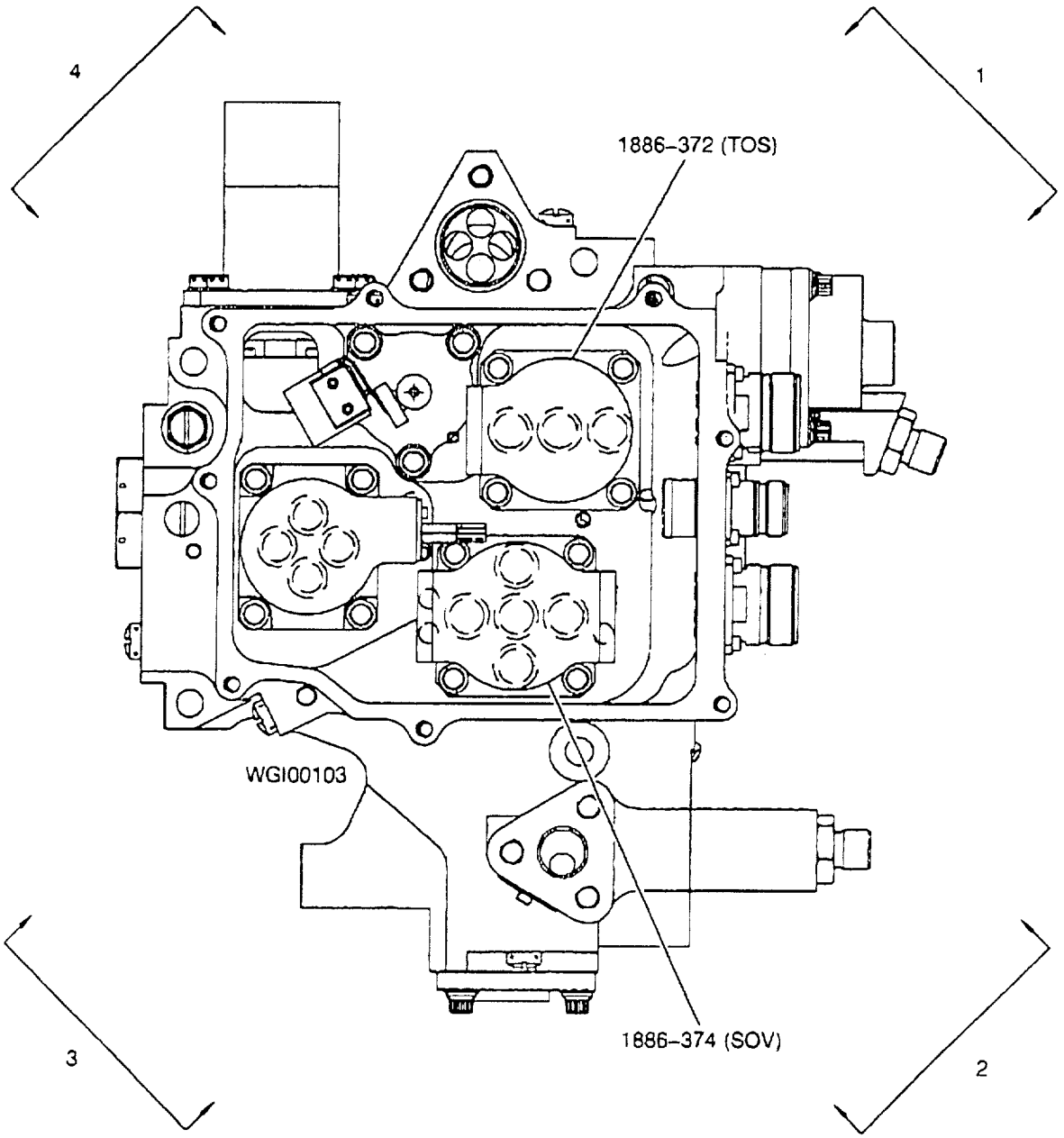
Cross-section of servovalve
Fig 1



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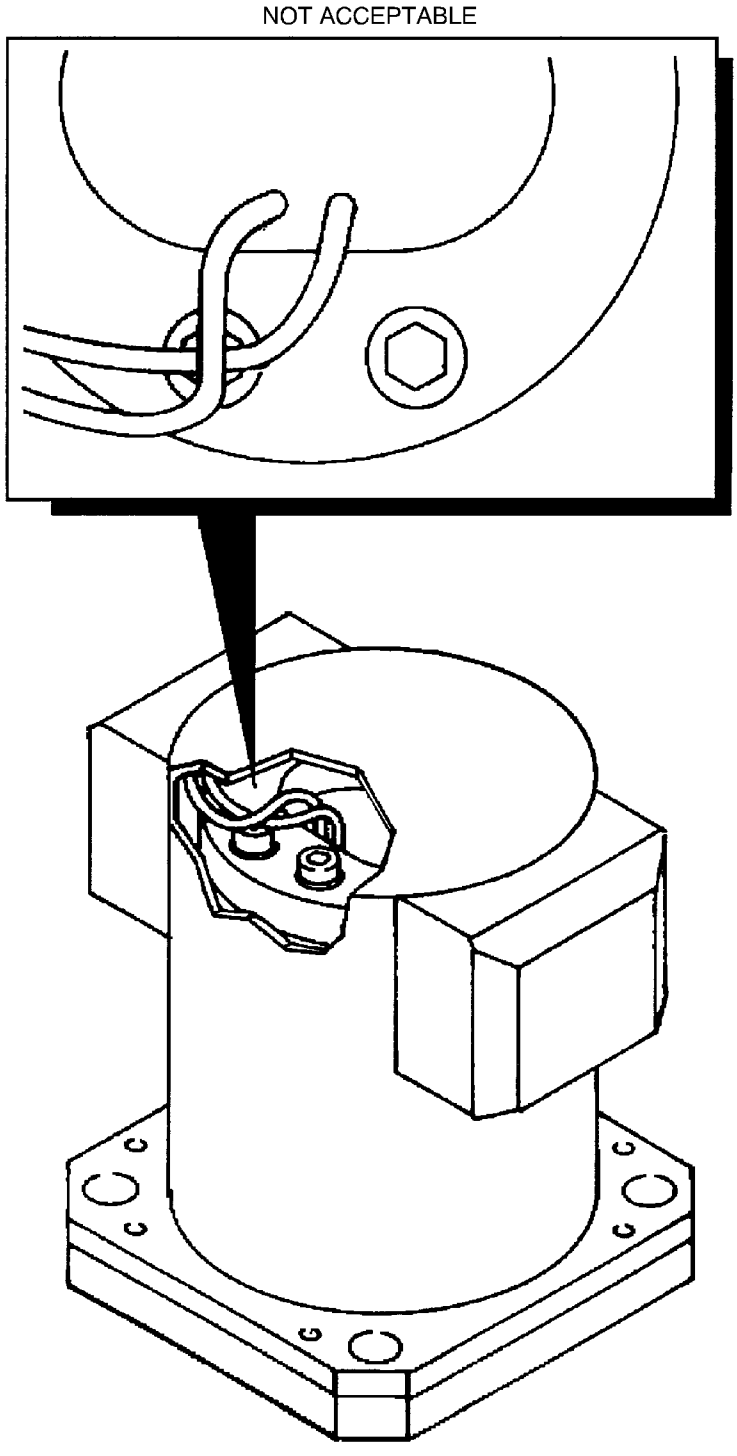
View of recommended angles for X-Ray
Fig 2



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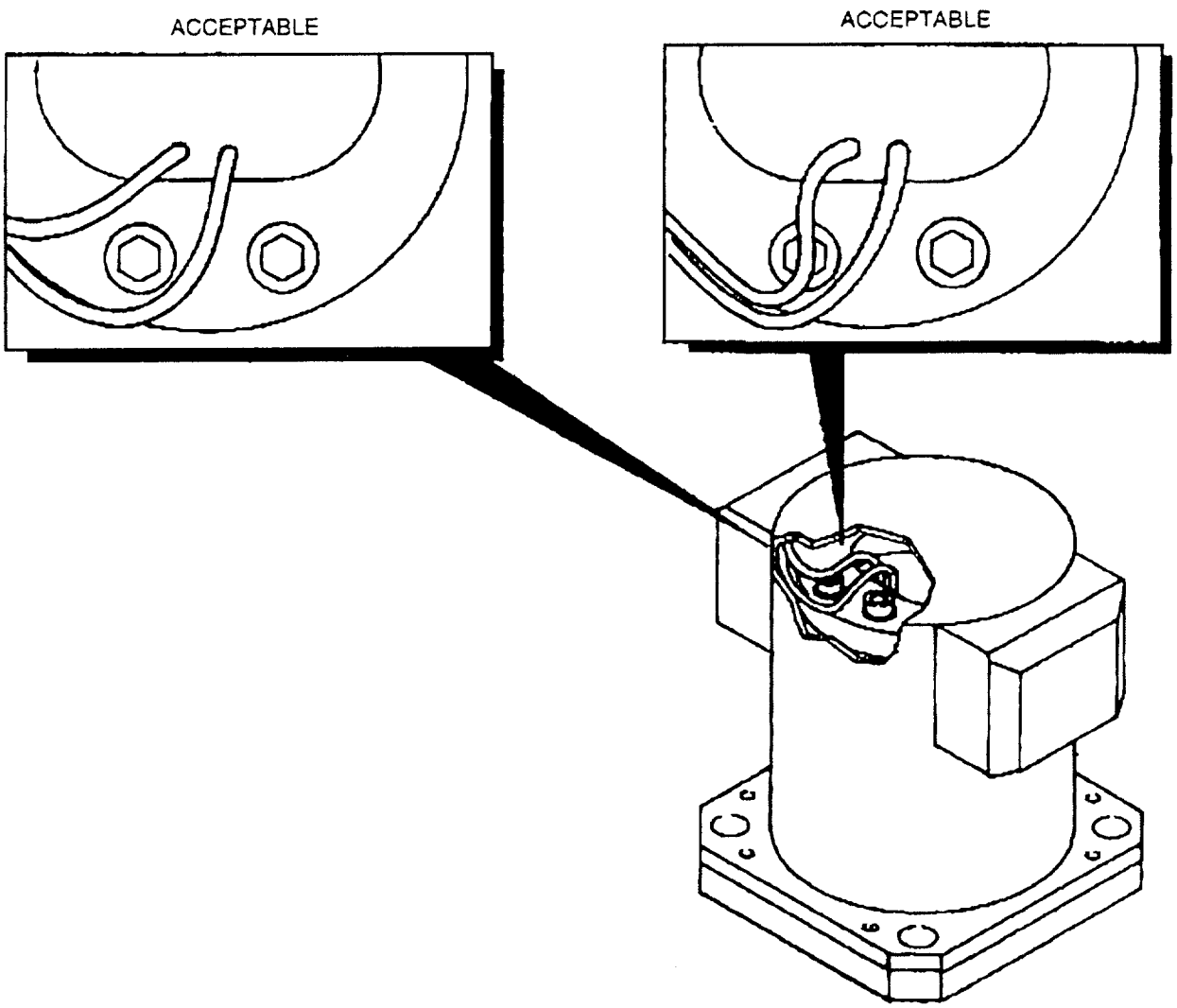
Inspection of servovalve X-Rays
Fig 3 sheet 1



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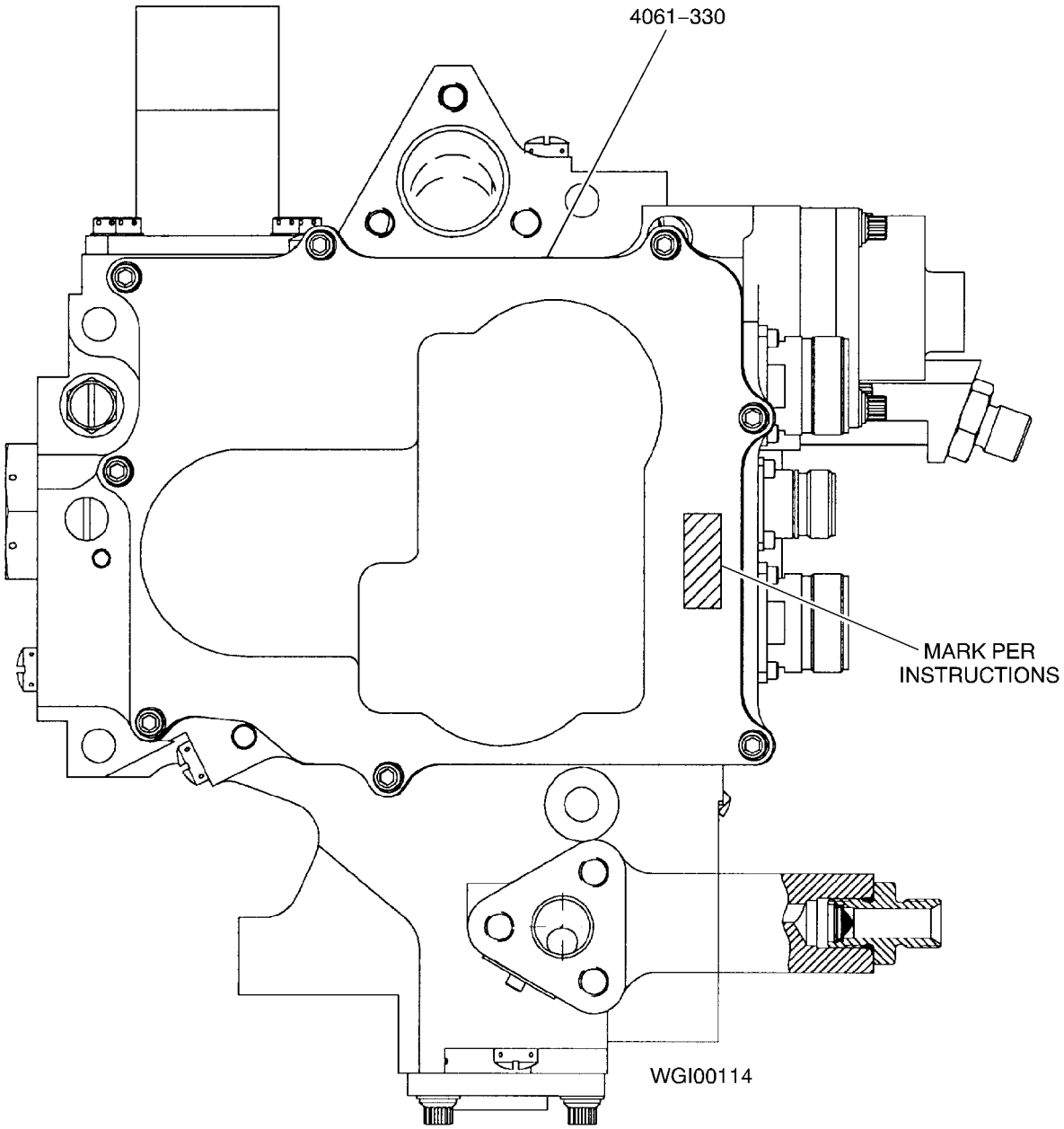
Inspection of servovalve X-Rays
Fig 3 sheet 2



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Marking instructions
Fig 4