International Aero Engines

SERVICE BULLETIN

Jan.28/00

Subject: Transmittal of Revision 1 to Service Bulletin V2500-ENG-79-0076.

Service Bulletin Revision History:

Event	Date
Basic Issue	Feb.5/99.
Revision 1	Jan.28/00.

Reason for Revision:

(1) To clarify Concurrent Requirements 1.B

Effect on Past Compliance:

None.

List of Effective Pages:

Page No.	Revision No.	Effective Date
1 and 2	Revision 1	Jan.28/00
3 to 8	Initial Issue	Feb.5/99

International Aero Engines

SERVICE BULLETIN

OIL - FUEL COOLED OIL COOLER - INTRODUCTION OF AN FCOC WITH REVISED TOP MOUNT ASSEMBLY

MODEL APPLICATION

V2500-A1
V2522-A5
V2524-A5
V2527-A5
V2527E-A5
V2530-A5
V2533-A5

BULLETIN INDEX LOCATOR

79-21-00

Compliance Category Code

7

Internal Reference No.

EC98VI008

Feb. 5/99
Revision 1 Jan.28/00

V2500-ENG-79-0076

OIL - FUEL COOLED OIL COOLER - INTRODUCTION OF AN FCOC WITH REVISED TOP MOUNT ASSEMBLY

1. Planning Information

A. Effectivity

(1) Aircraft:

(a) Airbus A319.

(b) Airbus A320.

(c) Airbus A321.

(2) Engines:

(a) V2500-A1 Engines prior to serial No. V0362.

(b) V2522-A5 Engines prior to serial No. V10550.

(c) V2524-A5 Engines prior to serial No. V10550.

(d) V2527-A5 Engines prior to serial No. V10550.

(e) V2527E-A5 Engines prior to serial No. V10550.

(f) V2530-A5 Engines prior to serial No. V10550.

(g) V2533-A5 Engines prior to serial No. V10550.

B. Concurrent Requirements

R This Service Bulletin must be installed concurrently with IAE V2500 Service Bulletin ENG 79-0075.
R (Refer to 1. L.).

C. Reason

(1) Problem

Frettage of the top mount retaining pin of the Fuel Cooled Oil Cooler (FCOC) can occur.

The problem is a result of vibration which causes movement between the FCOC bushes, the spherical bearing and the retaining pin.

(2) Evidence

The problem has been found on units in service.

(3) Substantiation

A satisfactory engineering analysis and a successful cycles endurance test on V2500 development engine 804/18 have been done on the changes introduced by this Service Bulletin.

(4) Objective

The purpose of this Service Bulletin is to maintain unit reliability.

(5) Effect of Bulletin on:

(a) Operation

Not affected.

(b) Maintenance

Not affected.

(c) Overhaul

Affected.

(d) Repair Schemes

Not affected

(e) Interchangeability

Affected (Refer to 2. C.).

(f) Fits and Clearances

Not affected

D. Description

(1) This Service Bulletin contains the installation of an FCOC that has the Sumitomo modification 79-2506 (A5) or 79-2507 (A1) embodied.

(2) The Sumitomo supplied FCOC has been revised, the changes introduced are as follows:

(a) The two-bush arrangement in the top mount assembly is replaced by a three-bush arrangement. This is to make it easier to install a close tolerance bolt and nut which has replaced the retainer pin. (Refer to 1. B.).

(3) Existing FCOC's can be reworked. (Refer to vendor Service Bulletins at 1. L. (3)).

(4) Units that have this modification embodied will be identified by a new type number. (Refer to 2. B.).

E. Compliance

Category Code 7.

Accomplish when there are no superseded parts remaining.

F. Approval

The part number changes and/or part modification are given in Section 2 and 3 of this Service Bulletin. They comply with the applicable Federal Aviation Regulations and are FAA-APPROVED for the engine model listed.

G. Manpower

Estimate of man-hours necessary to embody this Service Bulletin in full:

(1) In Service Not applicable.

(2) At Overhaul No additional time is necessary to embody this Service Bulletin.

NOTE: It is possible to get access to the parts affected by this Service Bulletin at overhaul.

H. Material - Price and Availability

(1) A modification kit is not necessary.

(2) Refer to 2. Material Information for the prices and availability of future spares.

I. Tooling - Price and Availability

Special tools are necessary, refer to the vendor Service Bulletins at 1. L. (3).

J. Weight and Balance

(1) Weight Change

None

(2) Moment Arm

No affect

(3) Datum

Engine front mount centreline (Power Plant Station (PPS) - 100).

K. Electrical Load Data

The aircraft electrical load is not affected by this Service Bulletin.

L. References

(1) A1/A5 Engine Manual (EM), Chapter/Section 72-00-32, Removal/Installation.

(2) A319/A320/A321 Aircraft Maintenance Manual (AMM), Chapter/Section 79-21-43, Removal/Installation.

(3) Sumitomo Precision Products Service Bulletins:

79-2506 OIL - FUEL COOLED OIL COOLER - INTRODUCTION OF NEW BUSHING (A5).

79-2507 OIL - FUEL COOLED OIL COOLER - INTRODUCTION OF NEW BUSHING (A1).

(4) IAE V2500 Service Bulletin:

ENG 79-0075 OIL - FUEL COOLED OIL COOLER - INTRODUCTION OF REVISED FCOC UPPER MOUNT.

M. Other Publications Affected

(1) Illustrated Parts Catalogue (IPC), Chapter/Section 79-21-43.

(2) A1/A5 Engine Manual (EM), Chapter/Section 72-00-32, Removal/Installation.

(3) A319/A320/A321 Aircraft Maintenance Manual (AMM), Chapter/Section 79-21-43, Removal/Installation.

(3) A319/A320/A321 Aircraft Maintenance Manual (AMM), Chapter/Section 79-21-43,

(3) A319/A320/A321 Component Maintenance Manual (CMM), - Miscellaneous Mechanical - Chapter/Section 79-21-43, Cleaning and Inspection/Check.

2. Material Information

A. Kits necessary for this Service Bulletin:

None.

B. Units affected by this Service Bulletin:

NEW PART No. (ATA No.)	QTY	EST'D UNIT PRICE ($)	PART TITLE	OLD PART No. (IPC No.)	INSTR DISP
A1 Models					
55025001-1 (79-21-43)	1		Cooler, Oil Fuel Cooled (V0ABG4)	0F25-101 (01-100)	(A)(S1)(1D)
A5 Models					
55022001-1 (79-21-43)	1		Cooler, Oil Fuel Cooled (V0ABG4)	0F32-001 (01-100)	(A)(S1)(1D)

NOTE: The unit prices, if shown, are an estimate and they are given for the purpose of planning only. For actual prices, refer to IAE Price Catalog or contact IAE's spare parts sales department.

C. Instruction Disposition Codes:

(1) (A) New standard of unit will be available from January 1999.

(2) (S1) Old and new parts are not interchangeable.

(3) (1D) Old unit can be reworked and re-identified to the new part number.

3. Accomplishment Instructions

A. Rework Instructions

Refer to the vendor Service Bulletin at 1. L (3).

B. Assembly Instructions

(1) For the correct removal/installation procedure refer to:

(a) A1/A5 Engine Manual (EM), Chapter/Section 72-00-32, Removal/Installation.

or

(b) A319/A320/A321 Aircraft Maintenance Manual (AMM), Chapter/Section 79-21-43, Removal/Installation.

C. Recording Instructions

(1) A record of accomplishment is necessary. (Refer to the vendor Service Bulletin at 1. L. (3)).

SUMITOMO PRECISION
PRODUCTS CO., LTD.

SERVICE BULLETIN

CIRCULATE PROMPTLY

OIL-FUEL COOLED OIL COOLER-
INTRODUCTION OF NEW BUSHING

Revision	Date	Pages Affected
1	Feb/26/01	1,3,4,9,10,11,12

1. Planning Information

A. Effectivity

Fuel Cooled Oil Cooler (FCOC) SPP Part Number	Serial Number of First production introduction
55022001-1	30001

Note: This Service Bulletin is applicable to A320 aircrafts that have IAE V2500 Engine.

B. Reason

In order to improve mounting lug design to enable mounting to withstand vibration during engine operation.

C. Description

To change from 0F32-001 to 55022001-1, the FCOC is disassembled. The Header is modified and the Bushings are replaced with modified ones.

D. Compliance

This Service Bulletin is recommended.
Do the procedures in this Service Bulletin when the FCOC is disassembled for other maintenance.

E. Approval

This Service Bulletin 79-2506 has been technically approved by IAE.

F. Manpower

Approximately 4.5 man-hours are necessary to do these Service Bulletin Procedures when you do component maintenance (or overhaul). The estimate does not include any time for a test. This time is divided as shown below:

Disassembly	:1.0 hour
Bushing Insert	:2.5 hours
Assembly	:1.0 hour
Total	:4.5 hours

G. Material-Cost and Availability

The parts that are necessary to do these Service Bulletin Procedures are in section 3, Material Information.

H. Tooling

The Tooling that are necessary to do these Service Bulletin Procedure are

H302917-1 or equivalent
H302917-2 or equivalent
H302917-3 or equivalent
H302918 or equivalent

I. Weight and Balance

Weight change Plus 0.009 LBS (0.004KG)

J. Electrical Load Data

None

K. Reference

Component Maintenance Manual (CMM) 79-21-43
IAE V2500 Service Bulletin V2500-ENG-79-0076

L. Other Publication Affected

CMM 79-21-43

2. Accomplishment Instruction

A. To change Fuel Cooled Oil Cooler P/N OF32-001 to P/N 55022001-1, use this procedure to modify the Header and replace the Bushings with modified ones, which changes the P/N of Header Assy P/N OF25-004 to 55022004-1.

(1) Remove the Header Assy from the Unit.

Use the procedure in the DISASSEMBLY of the CMM to do this.

(2) Extract the Bushings from the Header Assy. Use the procedure shown below:

(a) Prepare a small hydraulic press. A press with maximum force of 300 to 500 kg is suitable.

(b) Set the Header Assy on the Tool H302918 (or equivalent) as shown on figure 1 so that the Tool H302918 (or equivalent) supports the casting lug surface of the Header Assy.

(c) Insert the Tool H302917-1 (or equivalent) into one (1) of the Bushings, OF25-034 with smaller diameter down on the figure 1.

(d) Contact the mandrel of the press with top of the Tool H302917-1 (or equivalent).

(e) Gradually add press force until the bushing is completely extracted.

(f) Turn over the Header Assy and repeat (b) through (e) to extract the other Bushing.

(g) Discard the extracted two (2) Bushings.

(3) To modify the Header from P/N OF25-114 to 55022014-3, do these steps:

(a) Measure the dimension shown on figure 2.
The dimension shall be 11 ± 0.1mm.

NOTE: As the area to be measured is processed by NC machine, the dimension is likely to meet the specified figure in most cases.

(b) If the dimension is larger than the specified figure, adjust the dimension by machine.

(c) Touch up the reworked area with alodine No.1200S.

(d) If the dimension is smaller than the specified figure, purchase a modified Header (Assy).

(4) To install the modified Bushings, use the procedure shown below:

(a) Prime one of the two Bushings, OF32-150, with TT-P-1757.

NOTE: Do not prime all the new Bushings at once.

(b) Set up the Header, primed Bushing and the Tools as shown on figure 3.

(c) Insert the Tool H302917-1 (or equivalent) into the primed bushing with smaller diameter portion down on the figure 3.

(d) Contact the mandrel of the press with top of the Bar Tool H302917-1 (or equivalent).

(e) Gradually add press force until the clearance between the bushing flange and the casting surface decreases to approximately one (1) mm.

(f) Prime the Bushing OF32-151, with TT-P-1757.

(g) Set up the Header, the primed Bushing and the Tools as shown on figure 4.

(h) Insert the Tool H302917-3 (or equivalent) into the primed Bushing and the Tool H302917-2 (or equivalent) into the Tool H302917-3 (or equivalent).

(i) Contact the mandrel of the press with top of the Tool H302917-2 (or equivalent).

(j) Gradually add press force until the bushing flange contacts with the casting surface.

(k) Prime the other Bushing of OF32-150 with TT-P-1757.

(l) Set up the Header, the Bushing and the Tools as shown on figure 5.

(m) Insert the Tool H302917-3 (or equivalent) into the primed Bushing and the Tool H302917-2 (or equivalent) into the Tool H302917-3 (or equivalent).

(n) Contact the mandrel of the press with top of the Tool H302917-2 (or equivalent).

(o) Gradually add press force until the bushing flange touch the casting surface.

(5) To assemble the unit, use the procedure shown below:

(a) Replace O-rings (P/N MS9321-11) with new ones.

(b) Assemble the unit in accordance with the CMM 79-21-43.

(6) Perform proof pressure test and proof leak check in accordance with the CMM 79-21-43.

B. Re-identification

When this Service Bulletin is done, the Sumitomo Products Co., LTD.(SPP) part number should be marked on the unit. Identify changed units by marking 55022001-1 on a new identification plate, part number 55022011-3. Copy all other data from the old identification plate to the new identification plate.

NOTE: Make sure the unit serial number is marked on the new identification plate.

3. Material Information

A. Material-Price and Availability

(1) Refer to Table 1

B. Industry Support Information

(1) None

C. Material Necessary for Each Component

(1) Material to be purchased

(a) The parts that are necessary to do this Service Bulletin are shown in Table 1.

(b) Any parts that usually are discarded when you disassemble the FCOC are not in Table 1.

(c) In Table 1, "MSQ" is the "Minimum Sales Quantity". The parts that have an entry in this area of Table 1 are supplied only in this quantity, or a multiple of this quantity.

(d) In Table 1, "Keyword" is the name of the part.

(e) In Table 1, "Instruction Codes" tell you what to do with the parts.
A short list under Table 1 tells you about the instruction codes that are used in Table 1.

(f) The prices that are shown are estimates for one part in US dollars. When you buy the parts, the prices may fluctuate. If more date is necessary, ask your account representative.

Table 1

New P/N	QTY	MSQ	Estimated Unit Price (US $)	Key Word	PN Before This SB	Instruction Code
55022004-1	1	1	998.20	Header Assy	0F25-004	A,B,E
55022014-3	1	1		Header	0F25-114	A,B,D,E
0F32-150	2	1	32.75	Bushing		D,E
0F32-151	1	1	32.75	Bushing		D,E
	2			Bushing	0F25-034	B,C

Instruction Code A. The Service Bulletin change adds the "New PN" to the FCOC.

Instruction Code B. The Service Bulletin change removes the "PN before the SB" from the FCOC.Discard the part.

Instruction Code C. The PN does not have the same fit as the "New PN"

Instruction Code D. These parts make up the Header Assy. They can be purchased as an assembly, part number 55022004-1, to decrease the labor necessary to do this service bulletin if the Header can not be modified.

Instruction Code E. If necessary, you can purchase the New PN to do the changes in this Service Bulletin.

(2) Material Supplied by the Operator

(a) None

SERVICE BULLETIN

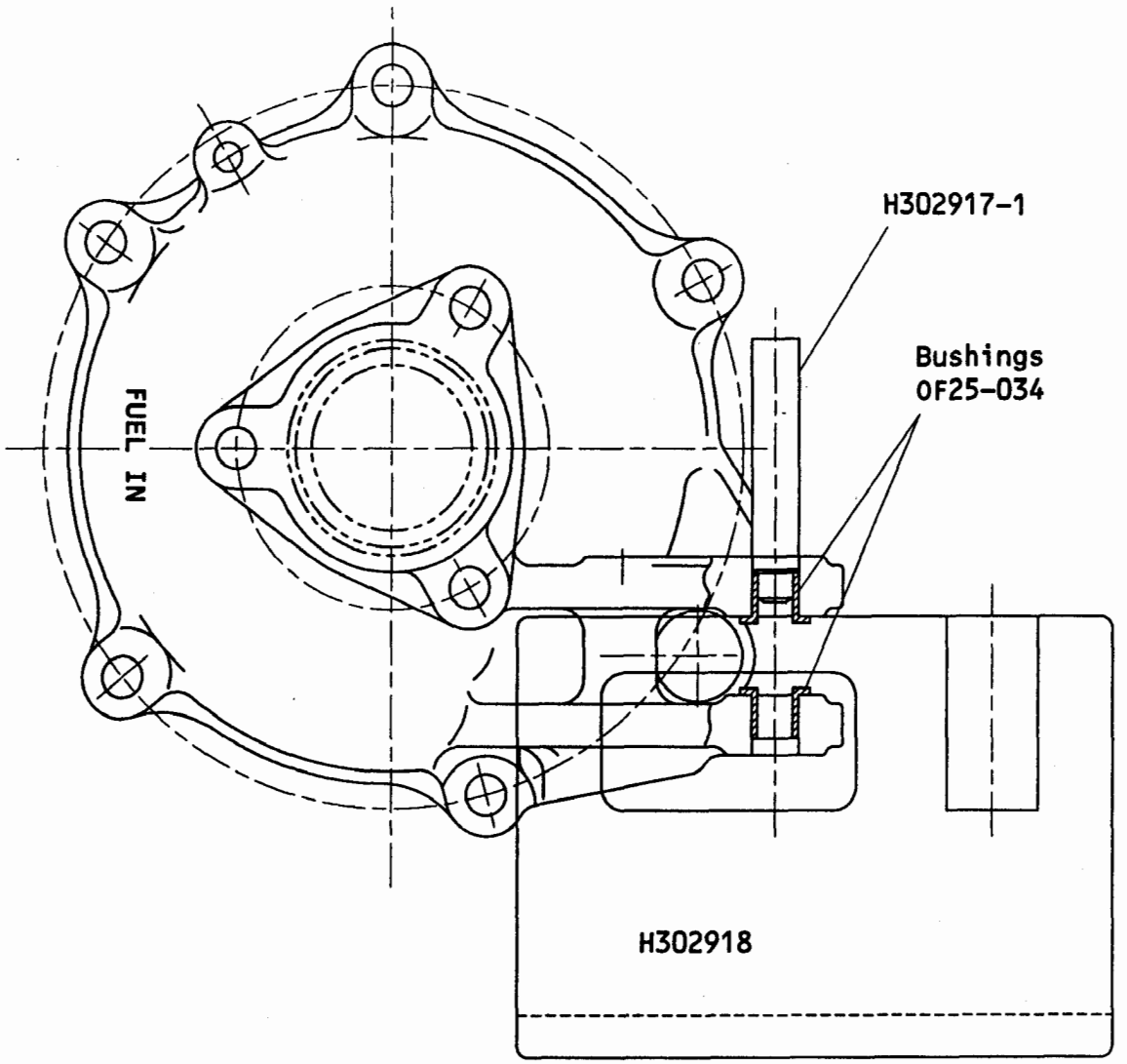
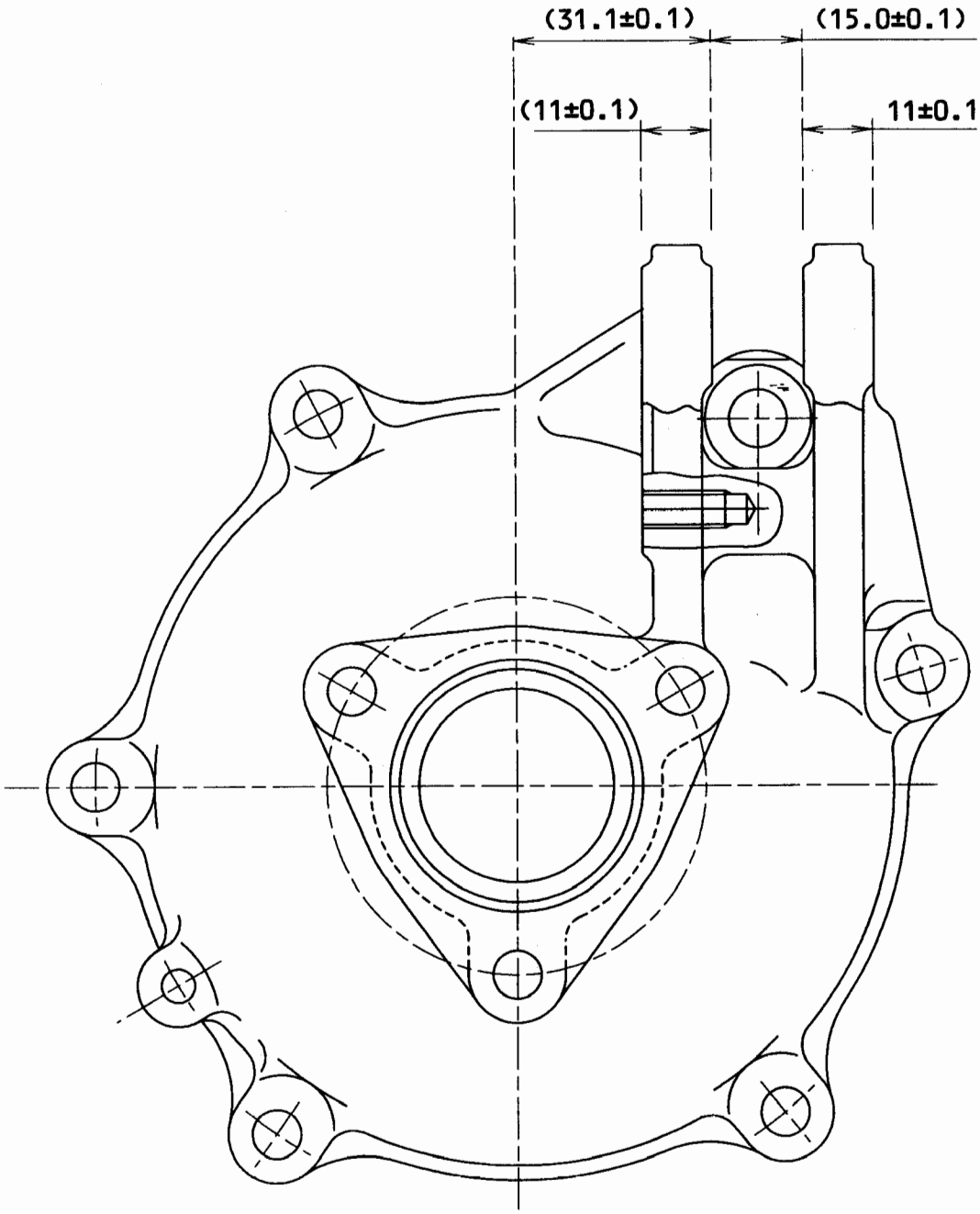


Figure 1 Set-Up Extracting-Bushing (0F25-034)



(Unit:mm)

Figure 2 Dimension to be measured on Header (OF25-114)

SERVICE BULLETIN

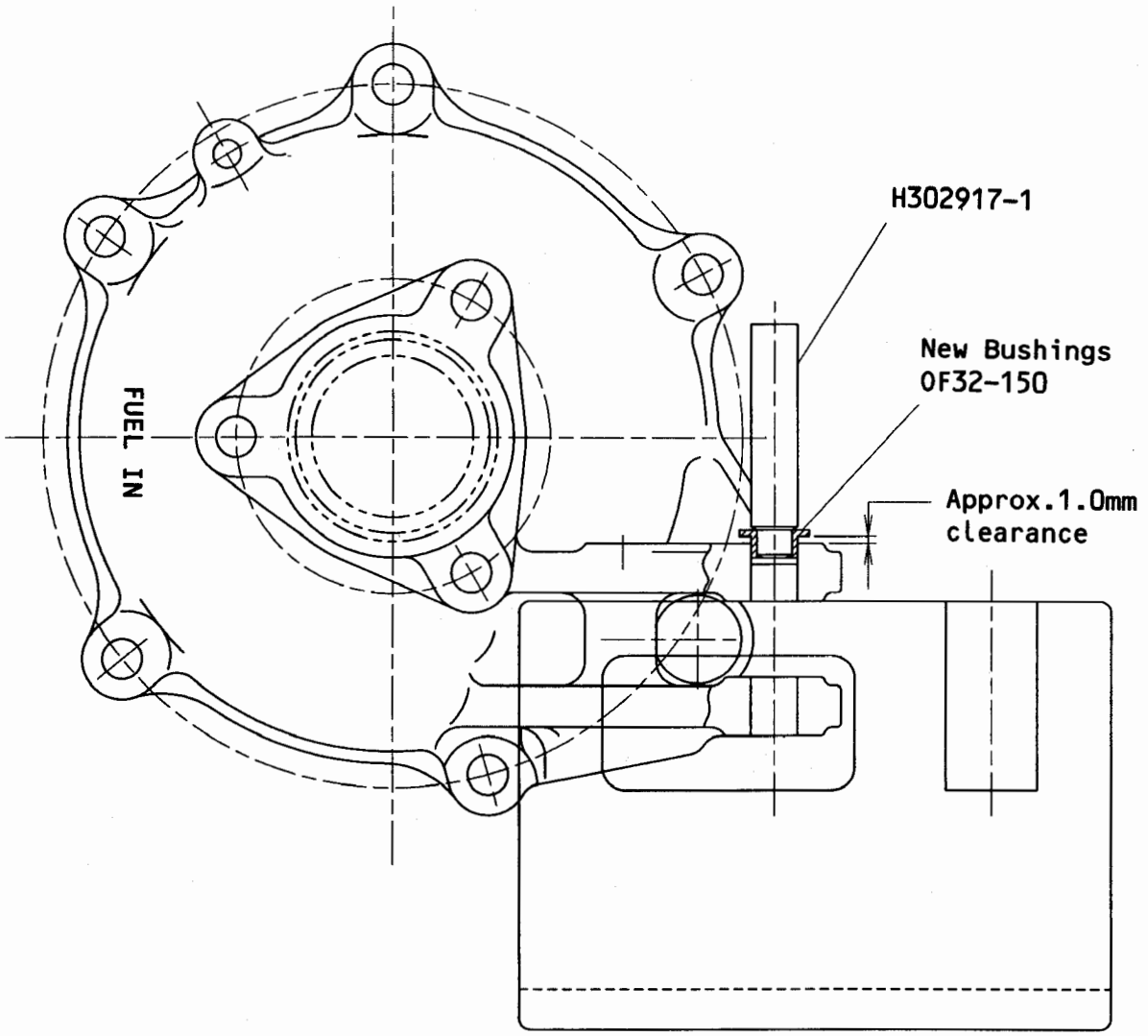


Figure 3 Set-Up Inserting Bushing (0F32-150)

SERVICE BULLETIN

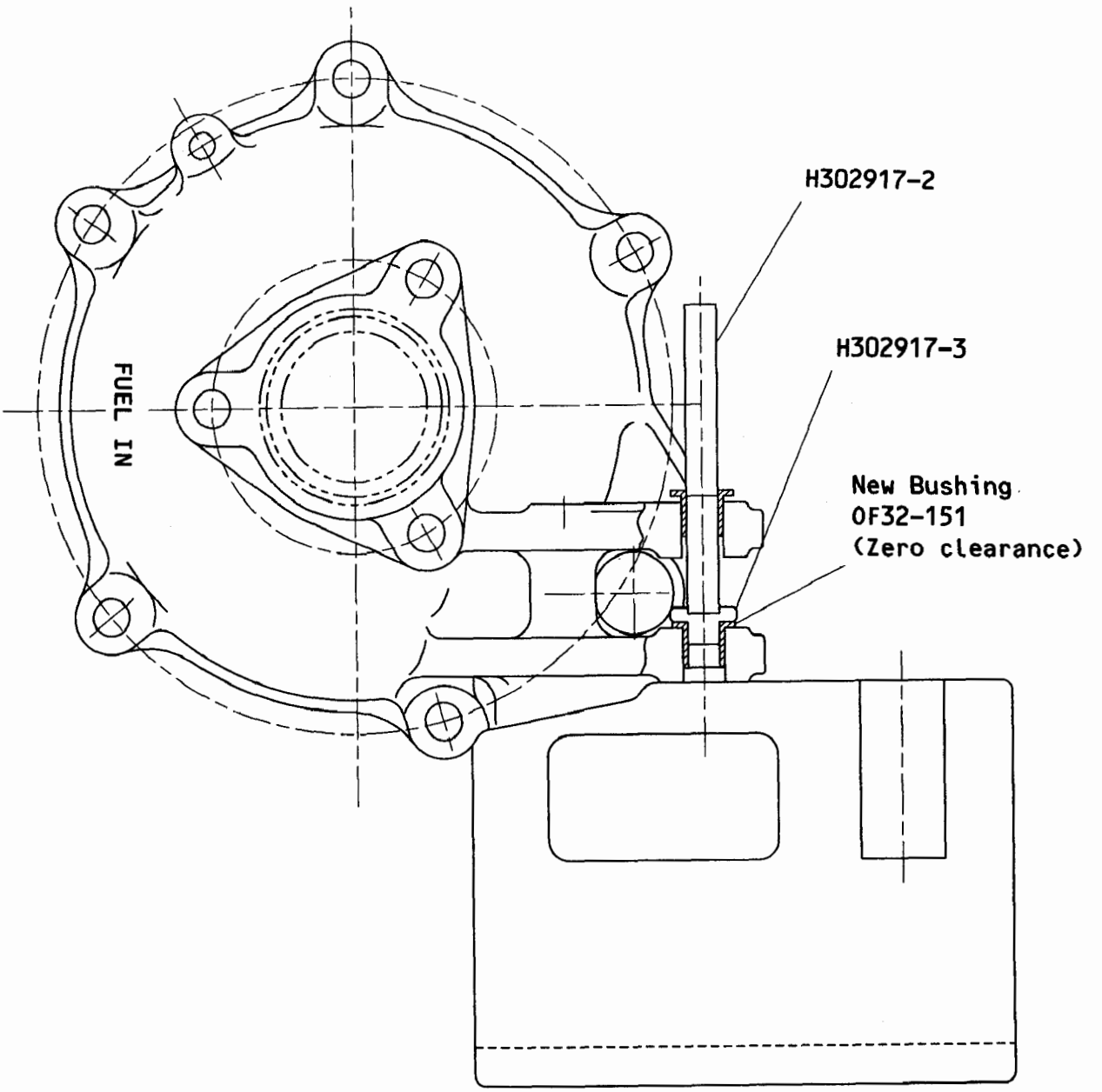


Figure 4 Set-Up Inserting Bushing (0F32-151)

SERVICE BULLETIN

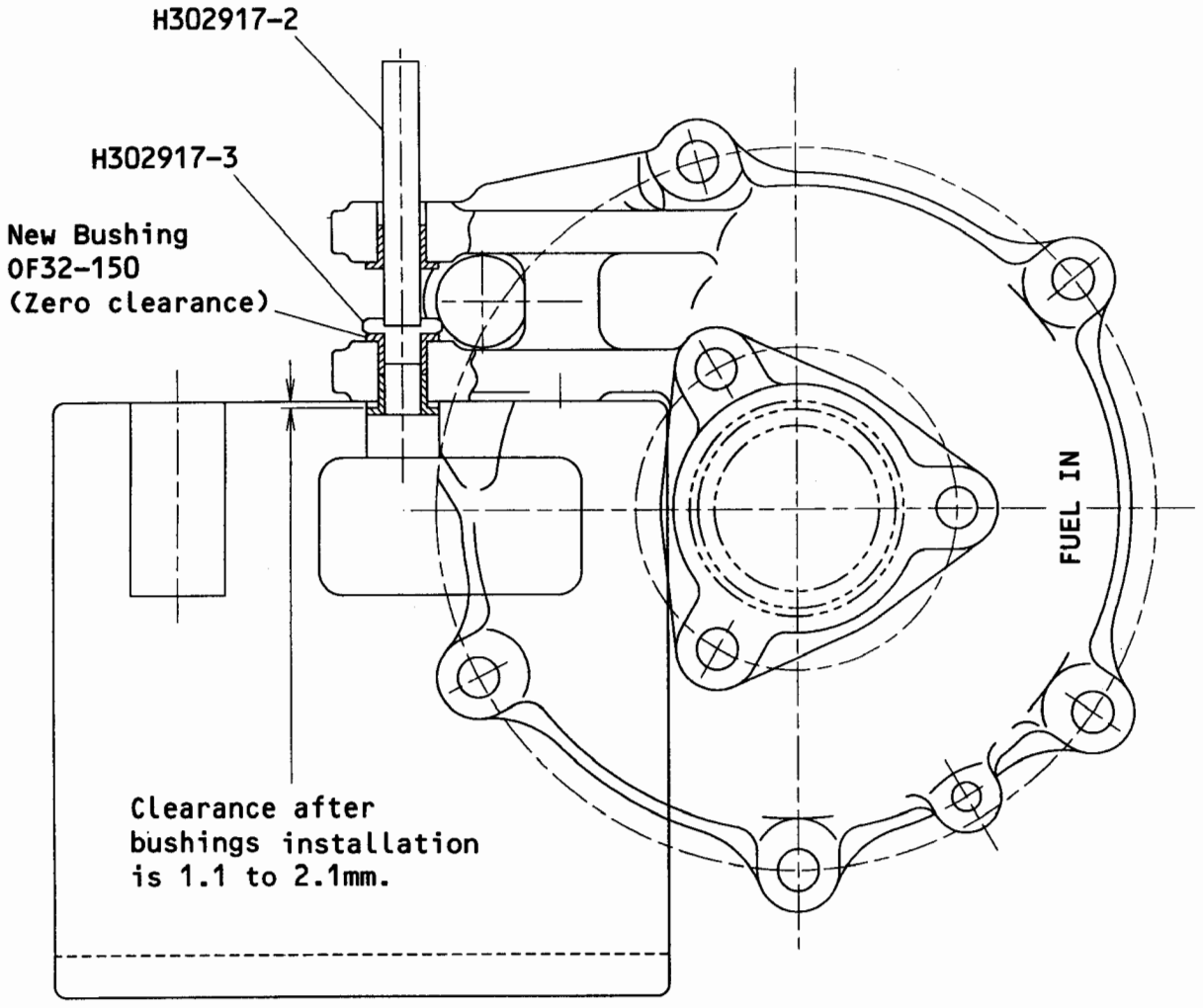


Figure 5 Set-Up Inserting Bushing (0F32-150)

SUMITOMO PRECISION PRODUCTS CO., LTD.

SERVICE BULLETIN

CIRCULATE PROMPTLY

OIL-FUEL COOLED OIL COOLER-INTRODUCTION OF NEW BUSHING

Revision	Date	Pages Affected
1	Feb/26/01	1,3,4,9,10,11,12

1. Planning Information

A. Effectivity

Fuel Cooled Oil Cooler (FCOC) SPP Part Number	Serial Number of First production introduction
55025001-1	40001

Note: This Service Bulletin is applicable to A320 aircrafts that have IAE V2500 Engine.

B. Reason

In order to improve mounting lug design to enable mounting to withstand vibration during engine operation.

C. Description

To change from 0F25-101 to 55025001-1, the FCOC is disassembled. The Header is modified and the Bushings are replaced with modified ones.

D. Compliance

This Service Bulletin is recommended.
Do the procedures in this Service Bulletin when the FCOC is disassembled for other maintenance.

E. Approval

This Service Bulletin 79-2507 has been technically approved by IAE.

F. Manpower

Approximately 4.5 man-hours are necessary to do these Service Bulletin Procedures when you do component maintenance (or overhaul). The estimate does not include any time for a test. This time is divided as shown below:

Disassembly	:1.0 hour
Bushing Insert	:2.5 hours
Assembly	:1.0 hour
Total	:4.5 hours

G. Material-Cost and Availability

The parts that are necessary to do these Service Bulletin Procedures are in section 3, Material Information.

H. Tooling

The Tooling that are necessary to do these Service Bulletin Procedure are

H302917-1 or equivalent
H302917-2 or equivalent
H302917-3 or equivalent
H302918 or equivalent

I. Weight and Balance

Weight change Plus 0.009 LBS (0.004KG)

J. Electrical Load Data

None

K. Reference

Component Maintenance Manual (CMM) 79-21-43
IAE V2500 Service Bulletin V2500-ENG-79-0076

L. Other Publication Affected

CMM 79-21-43

2. Accomplishment Instruction

A. To change Fuel Cooled Oil Cooler P/N OF25-101 to P/N 55025001-1, use this procedure to modify the Header and replace the Bushings with modified ones, which changes the P/N of Header Assy P/N OF25-004 to 55022004-1.

(1) Remove the Header Assy from the Unit.

Use the procedure in the DISASSEMBLY of the CMM to do this.

(2) Extract the Bushings from the Header Assy. Use the procedure shown below:

(a) Prepare a small hydraulic press. A press with maximum force of 300 to 500 kg is suitable.

(b) Set the Header Assy on the Tool H302918 (or equivalent) as shown on figure 1 so that the Tool H302918 (or equivalent) supports the casting lug surface of the Header Assy.

(c) Insert the Tool H302917-1 (or equivalent) into one (1) of the Bushings, OF25-034 with smaller diameter down on the figure 1.

(d) Contact the mandrel of the press with top of the Tool H302917-1 (or equivalent).

(e) Gradually add press force until the bushing is completely extracted.

(f) Turn over the Header Assy and repeat (b) through (e) to extract the other Bushing.

(g) Discard the extracted two (2) Bushings.

(3) To modify the Header from P/N OF25-114 to 55022014-3, do these steps:

(a) Measure the dimension shown on figure 2.
The dimension shall be 11 ± 0.1mm.

NOTE: As the area to be measured is processed by NC machine, the dimension is likely to meet the specified figure in most cases.

(b) If the dimension is larger than the specified figure, adjust the dimension by machine.

(c) Touch up the reworked area with alodine No.1200S.

(d) If the dimension is smaller than the specified figure, purchase a modified Header (Assy).

(4) To install the modified Bushings, use the procedure shown below:

(a) Prime one of the two Bushings, 0F32-150, with TT-P-1757.

NOTE: Do not prime all the new Bushings at once.

(b) Set up the Header, primed Bushing and the Tools as shown on figure 3.

(c) Insert the Tool H302917-1 (or equivalent) into the primed bushing with smaller diameter portion down on the figure 3.

(d) Contact the mandrel of the press with top of the Bar Tool H302917-1 (or equivalent).

(e) Gradually add press force until the clearance between the bushing flange and the casting surface decreases to approximately one (1) mm.

(f) Prime the Bushing 0F32-151, with TT-P-1757.

(g) Set up the Header, the primed Bushing and the Tools as shown on figure 4.

(h) Insert the Tool H302917-3 (or equivalent) into the primed Bushing and the Tool H302917-2 (or equivalent) into the Tool H302917-3 (or equivalent).

(i) Contact the mandrel of the press with top of the Tool H302917-2 (or equivalent).

(j) Gradually add press force until the bushing flange contacts with the casting surface.

(k) Prime the other Bushing of 0F32-150 with TT-P-1757.

(l) Set up the Header, the Bushing and the Tools as shown on figure 5.

(m) Insert the Tool H302917-3 (or equivalent) into the primed Bushing and the Tool H302917-2 (or equivalent) into the Tool H302917-3 (or equivalent).

(n) Contact the mandrel of the press with top of the Tool H302917-2 (or equivalent).

(o) Gradually add press force until the bushing flange touch the casting surface.

(5) To assemble the unit, use the procedure shown below:

(a) Replace O-rings (P/N MS9321-11) with new ones.

(b) Assemble the unit in accordance with the CMM 79-21-43.

(6) Perform proof pressure test and proof leak check in accordance with the CMM 79-21-43.

B. Re-identification

When this Service Bulletin is done, the Sumitomo Products Co., LTD.(SPP) part number should be marked on the unit. Identify changed units by marking 55025001-1 on a new identification plate, part number 55025011-3. Copy all other data from the old identification plate to the new identification plate.

NOTE: Make sure the unit serial number is marked on the new identification plate.

3. Material Information

A. Material-Price and Availability

(1) Refer to Table 1

B. Industry Support Information

(1) None

C. Material Necessary for Each Component

(1) Material to be purchased

(a) The parts that are necessary to do this Service Bulletin are shown in Table 1.

(b) Any parts that usually are discarded when you disassemble the FCOC are not in Table 1.

(c) In Table 1, "MSQ" is the "Minimum Sales Quantity". The parts that have an entry in this area of Table 1 are supplied only in this quantity, or a multiple of this quantity.

(d) In Table 1, "Keyword" is the name of the part.

(e) In Table 1, "Instruction Codes" tell you what to do with the parts.
A short list under Table 1 tells you about the instruction codes that are used in Table 1.

(f) The prices that are shown are estimates for one part in US dollars. When you buy the parts, the prices may fluctuate. If more date is necessary, ask your account representative.

Table 1

New P/N	QTY	MSQ	Estimated Unit Price (US $)	Key Word	PN Before This SB	Instruction Code
55022004-1	1	1	998.20	Header Assy	0F25-004	A,B,E
55022014-3	1	1		Header	0F25-114	A,B,D,E
0F32-150	2	1	32.75	Bushing		D,E
0F32-151	1	1	32.75	Bushing		D,E
	2			Bushing	0F25-034	B,C

Instruction Code A.	The Service Bulletin change adds the "New PN" to the FCOC.
Instruction Code B.	The Service Bulletin change removes the "PN before the SB" from the FCOC.Discard the part.
Instruction Code C.	The PN does not have the same fit as the "New PN"
Instruction Code D.	These parts make up the Header Assy. They can be purchased as an assembly, part number 55022004-1, to decrease the labor necessary to do this service bulletin if the Header can not be modified.
Instruction Code E.	If necessary, you can purchase the New PN to do the changes in this Service Bulletin.

(2) Material Supplied by the Operator

(a) None

SERVICE BULLETIN

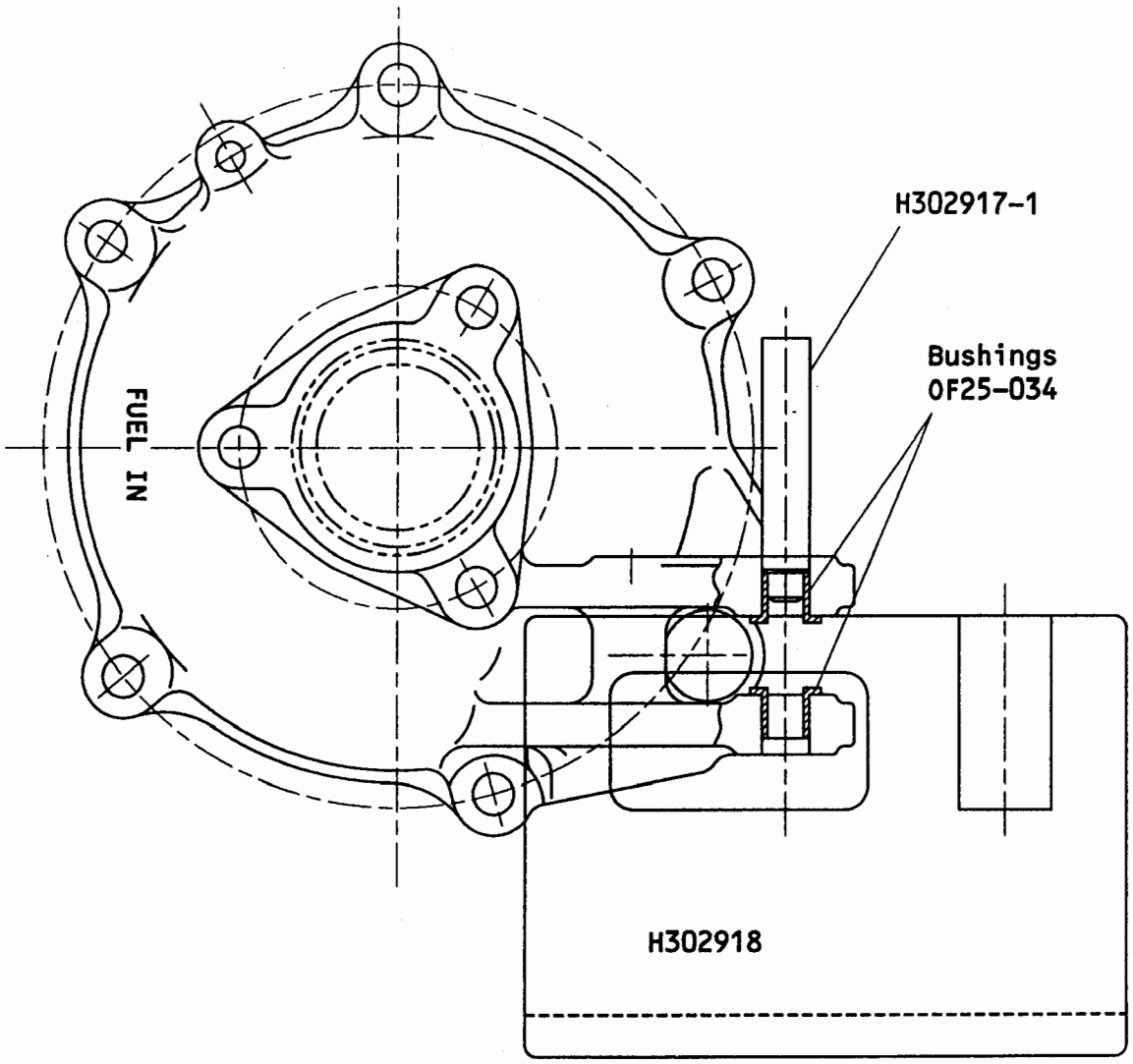
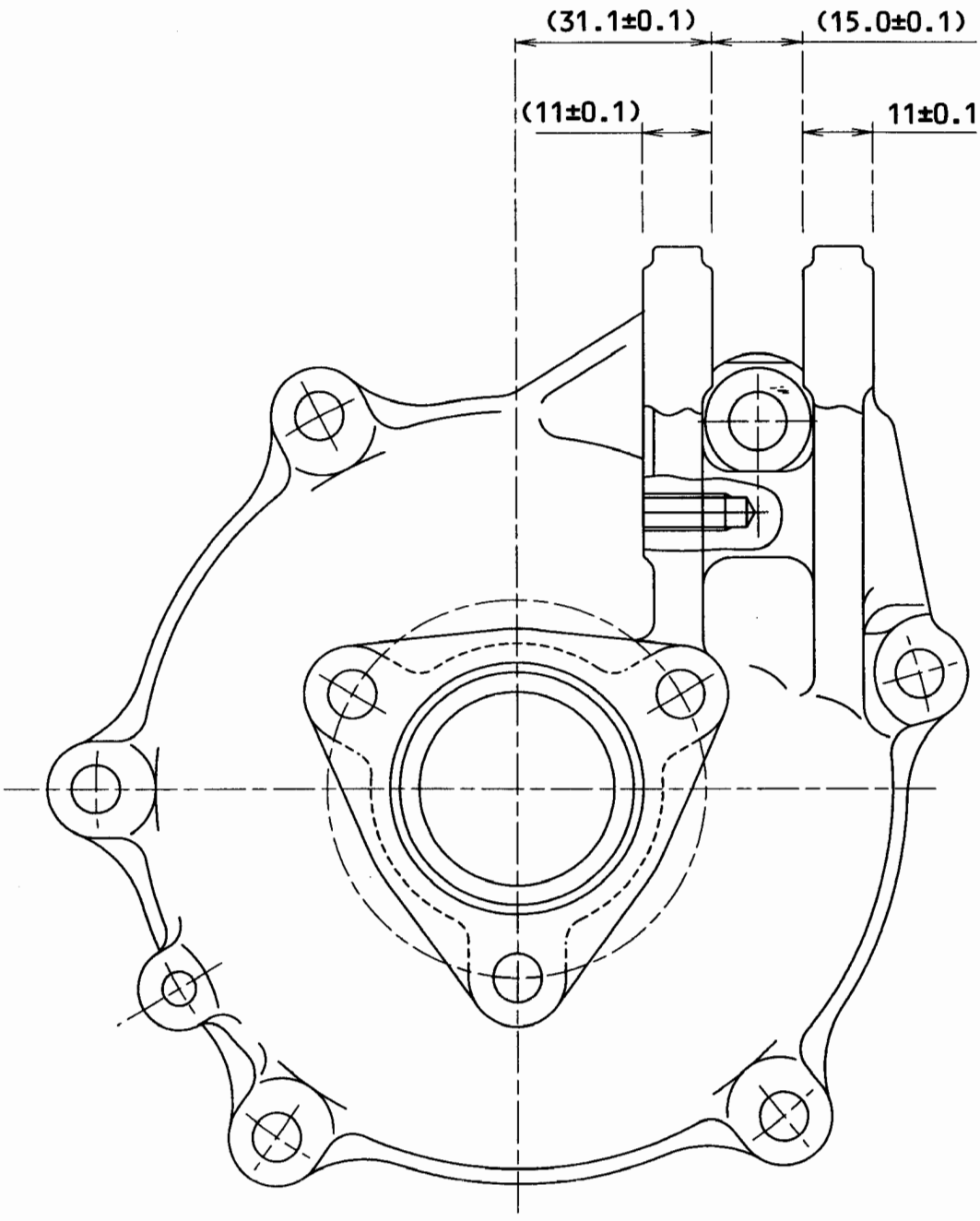


Figure 1 Set-Up Extracting-Bushing (0F25-034)

SERVICE BULLETIN



(Unit:mm)

Figure 2 Dimension to be measured on Header (0F25-114)

SERVICE BULLETIN

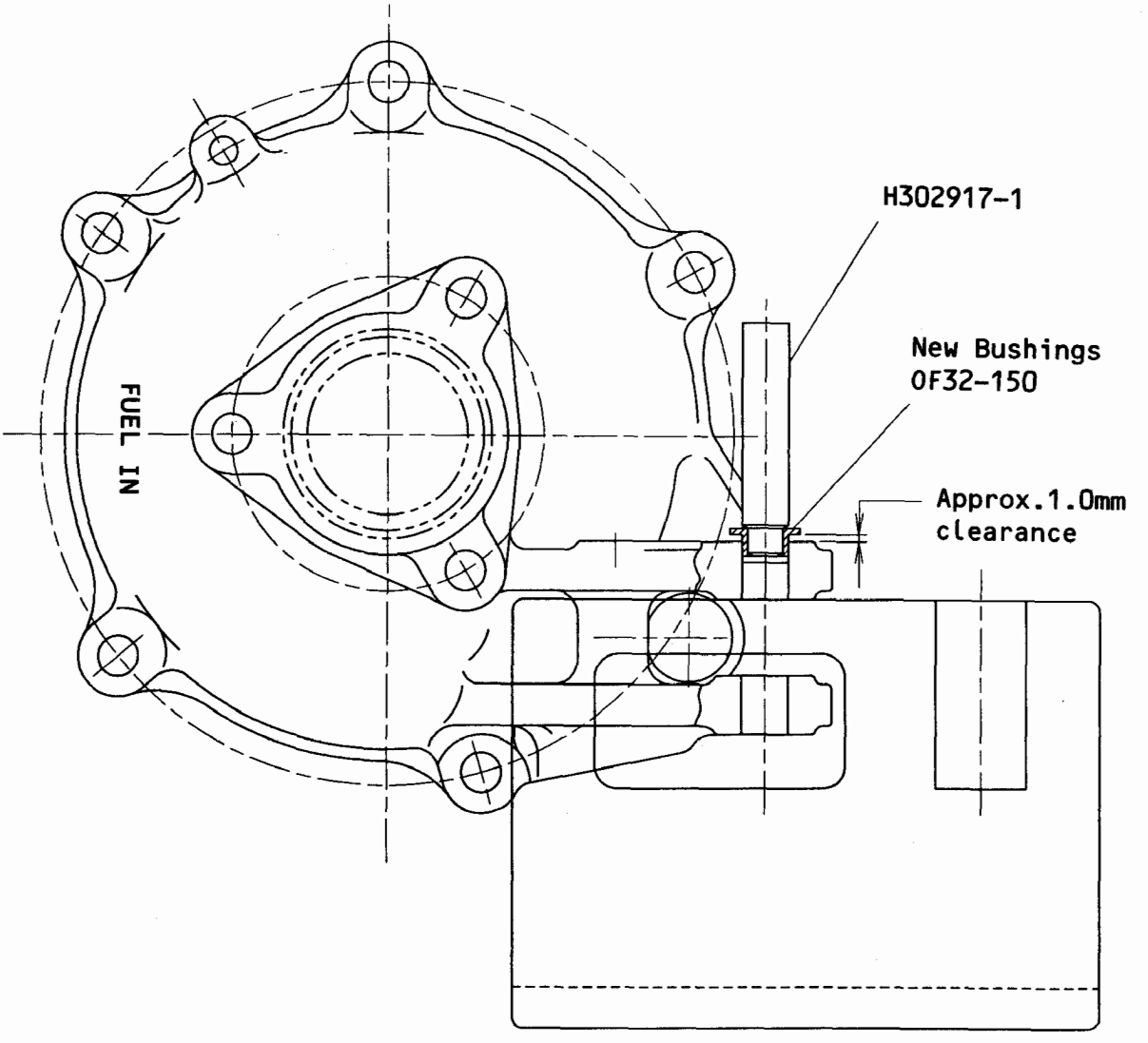


Figure 3 Set-Up Inserting Bushing (0F32-150)

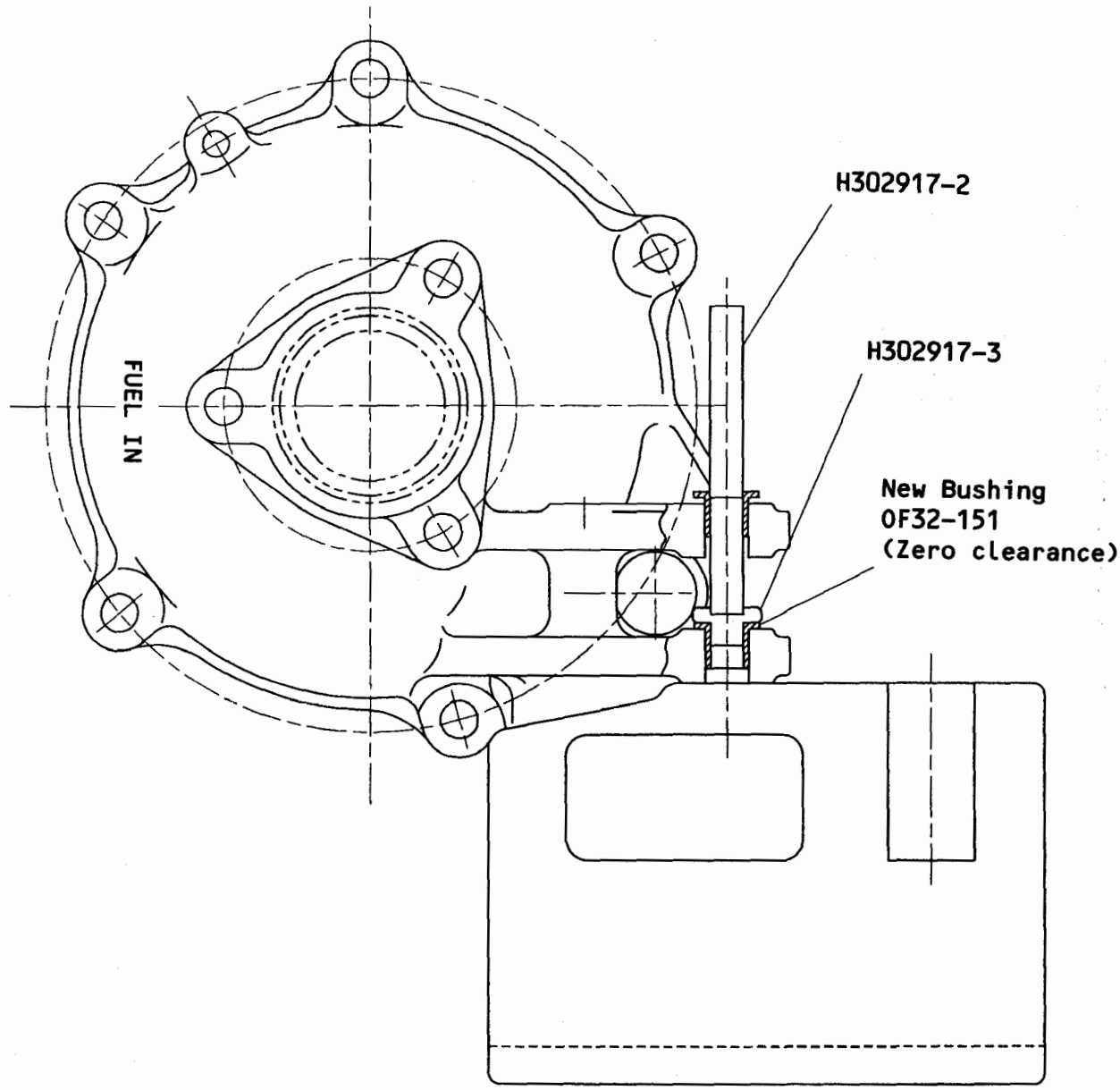


Figure 4 Set-Up Inserting Bushing (0F32-151)

SERVICE BULLETIN

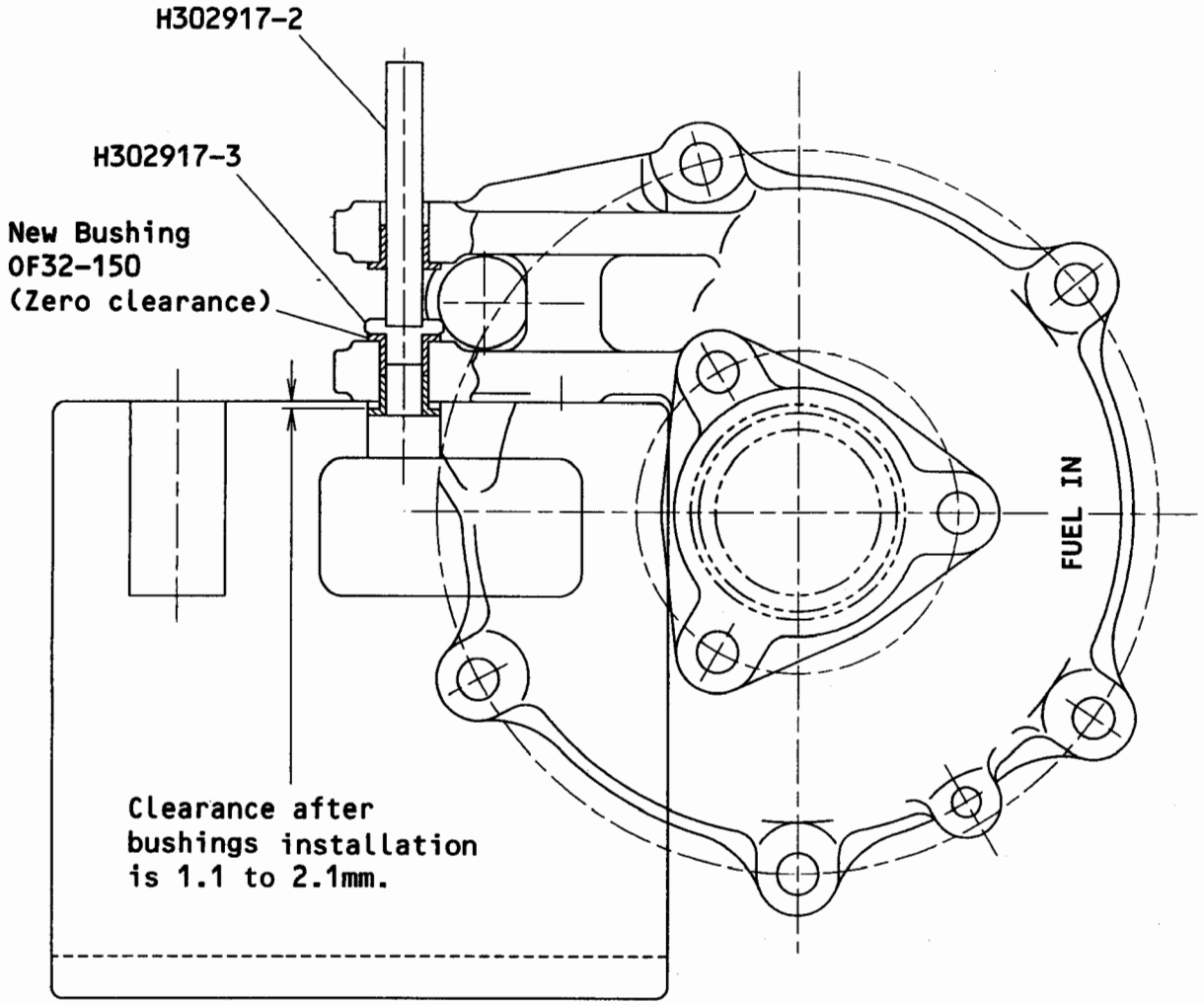


Figure 5 Set-Up Inserting Bushing (0F32-150)