



Date: Feb.12/99

Subject: Transmittal of Revision 1 To Service Bulletin Number  
V25000-ENG-72-0344

Service Bulletin Revision History:

| <u>Event</u> | <u>Date</u> |
|--------------|-------------|
| Basic Issue  | Dec.18/98   |
| Revision 1   | Feb.12/99   |

Reason For Issuance Of Revision:

(1) To update the compliance category and make add information to the required actions.

Effect on Prior Compliance:

None.

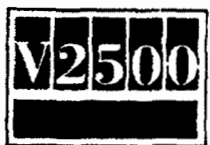
List of Effective Pages:

|                   |             |                  |
|-------------------|-------------|------------------|
| <u>Bulletin</u>   | <u>Rev.</u> | <u>Effective</u> |
| <u>Page No.</u>   | <u>No.</u>  | <u>Date</u>      |
| 1 to 9            | 1           | Feb.12/99        |
| <u>Appendix 1</u> | <u>Rev.</u> | <u>Effective</u> |
| <u>Page No.</u>   | <u>No.</u>  | <u>Date</u>      |
| 1 to 5            | Basic       | Dec.18/98        |

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Transmittal

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# International Aero Engines SERVICE BULLETIN

ENGINE - HIGH PRESSURE TURBINE - INSPECT CERTAIN STAGE 1 AND 2 HIGH PRESSURE  
TURBINE (HPT) HUBS

## MODEL APPLICATION

V2500-A1

## BULLETIN INDEX LOCATOR

72-40-00

## Compliance Category Code

4, 6

## Internal Reference No.

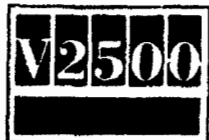
98VC095, 98VC095A

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## SERVICE BULLETIN

ENGINE - HIGH PRESSURE TURBINE - INSPECT CERTAIN STAGE 1 AND 2 HIGH PRESSURE TURBINE (HPT) HUBS

### 1. Planning Information

#### A. Effectivity

- (1) Aircraft: Airbus A320
- (2) Engine: V2500-A1 Engines Before Serial No. V0362

**NOTE:** You must start to inspect the applicable hubs on January 1, 1999, and inspect repetitively thereafter until all applicable hubs are retired from service.

#### B. Reason

IAE has identified a group of High Pressure Turbine (HPT) Hubs (defined herein) in which there is a small risk that sub-surface anomalies may have been introduced during the manufacturing forging process. The presence of such sub-surface anomalies could affect the integrity of these parts prior to achieving their full certified lives. One such anomaly has resulted in a V2500 Stage 1 Turbine Hub fracture. In order to minimize the risk of further occurrences, all suspect hubs must undergo a special inspection at each HPT module exposure until the parts are retired from service.

#### C. Compliance

Category 4 - For first time inspection of Certain Stage 1 And 2 High Pressure Turbine (HPT) Hubs

Accomplish at the first visit of an engine or module subsequent to the release of Service Bulletin V2500-ENG-72-0344, Revision 1, to a maintenance base capable of compliance with the accomplishment instructions regardless of the planned maintenance action or the reason for engine removal.

Category 6 - For second time and subsequent inspections of Certain Stage 1 And 2 High Pressure Turbine (HPT) Hubs

Accomplish when the subassembly (i.e. modules, accessories, components, build groups) is disassembled sufficiently to afford access to the affected part and to all affected spare parts.

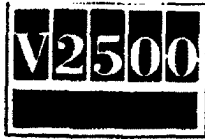
#### D. Approval

The 'compliance' statement and the procedures described in paragraph F 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. References

- (1) The V2500 Engine Manual (E-V2500-11A).

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### F. Action.

- (1) Do an ultrasonic inspection, by the procedures given in NDIP-971 and NDIP-982, of the Stage 1 and 2 High Pressure Turbine Hubs specified in Tables 1 through 4. See Figures 1 and 2. Only one source is capable of performing the necessary inspection procedure at this time.

**NOTE:** You must start to inspect the applicable hubs on January 1, 1999, and inspect repetitively thereafter until all applicable hubs are retired from service.

**NOTE:** Retired hubs must also be inspected prior to disposal.

**NOTE:** All V2500-A1 Turbine Hubs should be physically checked for their serial number, as appropriate.

**NOTE:** It is recommended that applicable shelf stock be inspected at the first opportunity.

- (2) Stage 1 and 2 Hubs removed for inspection must be sent to the address that follows:

---

**Pratt & Whitney (Rotors and Shafts)**  
**Attn.: Russell Dinkins**  
**8801 Macon Road**  
**Columbus GA, USA 31908**  
**Ref: V2500 Service Bulletin - V2500-ENG-72-0344**

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**NOTE:** Be sure to include an exact return address.

- (3) Instructions are provided in attachment 1, which give the recommended method of packing hubs for shipment. Use of these instructions will minimize the risk of part damage during shipment.
- (4) Warranty Information is as follows:

This inspection is available free of charge to all operators between January 1999 and December 2006 or until the last hub is retired from service, which ever occurs first.

Operators can submit a properly executed warranty claim to cover actual shipping charges between the overhaul shop and inspection facility for individual hubs. The warranty claim must include the Serial Number of the affected hub and engine and specify IAE tracking number S426UI. Attachment of the record of accomplishment form fulfills this requirement.

### G. Record of accomplishment.

- (1) A record of accomplishment is necessary. The form is provided on page 6 of this Service Bulletin.
- (2) Record the hub part number, serial number, total time and cycles, and inspection information on the record of accomplishment information form.



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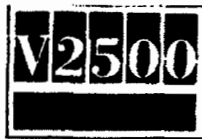
- (3) Keep a copy of the record of accomplishment information form with the engine records and send a copy to:

V2500 Technical Services  
Hot Section  
FAX # (860) 565-0161

| Part S/N | Part S/N | Part S/N | Part S/N | Part S/N | Part S/N |
|----------|----------|----------|----------|----------|----------|
| P100066  | P100108  | P100230  | P100254  | P100330  | P100354  |
| P100067  | P100109  | P100231  | P100255  | P100331  | P100355  |
| P100068  | P100110  | P100232  | P100256  | P100332  | P100356  |
| P100069  | P100112  | P100233  | P100257  | P100333  | P100357  |
| P100070  | P100113  | P100234  | P100258  | P100334  | P100358  |
| P100071  | P100114  | P100235  | P100259  | P100336  | P100359  |
| P100072  | P100115  | P100236  | P100261  | P100337  | P100361  |
| P100073  | P100116  | P100237  | P100262  | P100338  | P100362  |
| P100074  | P100117  | P100238  | P100263  | P100339  | P100363  |
| P100077  | P100119  | P100239  | P100264  | P100340  | P100364  |
| P100078  | P100120  | P100241  | P100265  | P100341  | P100365  |
| P100079  | P100121  | P100242  | P100266  | P100342  | P100366  |
| P100080  | P100122  | P100243  | P100267  | P100343  | P100367  |
| P100081  | P100123  | P100244  | P100268  | P100344  | P100368  |
| P100082  | P100124  | P100245  | P100270  | P100345  | P85295   |
| P100083  | P100125  | P100246  | P100272  | P100346  | P85296   |
| P100084  | P100126  | P100247  | P100273  | P100347  | P85297   |
| P100085  | P100128  | P100248  | P100274  | P100348  | P85298   |
| P100087  | P100224  | P100249  | P100275  | P100349  | P85299   |
| P100088  | P100225  | P100250  | P100276  | P100350  | P85300   |
| P100089  | P100227  | P100251  | P100277  | P100351  | P85301   |
| P100090  | P100228  | P100252  | P100278  | P100352  | P85304   |
| P100107  | P100229  | P100253  | P100329  | P100353  |          |

Stage 1 Hub Detail 2A1101  
Table 1

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## **SERVICE BULLETIN**

| Part S/N                             | Part S/N | Part S/N | Part S/N | Part S/N | Part S/N |
|--------------------------------------|----------|----------|----------|----------|----------|
| P100419                              | P100424  | P100428  | P100433  | P100437  | P100613  |
| P100420                              | P100425  | P100429  | P100434  | P100438  | P100618  |
| P100421                              | P100426  | P100430  | P100435  | P100439  | P100621  |
| P100422                              | P100427  | P100431  | P100436  | P100612  | P100635  |
| P100423                              |          |          |          |          |          |
| Stage 1 Hub Detail 2A1801<br>Table 2 |          |          |          |          |          |

| Part S/N                             | Part S/N | Part S/N | Part S/N | Part S/N | Part S/N |
|--------------------------------------|----------|----------|----------|----------|----------|
| P100051                              | P100100  | P100216  | P100294  | P100316  | P100382  |
| P100052                              | P100101  | P100217  | P100295  | P100317  | P100383  |
| P100053                              | P100102  | P100218  | P100296  | P100318  | P100392  |
| P100054                              | P100103  | P100219  | P100297  | P100319  | P100393  |
| P100055                              | P100105  | P100220  | P100298  | P100320  | P100394  |
| P100056                              | P100199  | P100221  | P100299  | P100321  | P100416  |
| P100057                              | P100201  | P100222  | P100300  | P100322  | P100417  |
| P100058                              | P100202  | P100223  | P100301  | P100323  | P54907   |
| P100059                              | P100203  | P100279  | P100302  | P100324  | P54908   |
| P100060                              | P100204  | P100280  | P100303  | P100325  | P93925   |
| P100061                              | P100205  | P100282  | P100304  | P100326  | P97000   |
| P100062                              | P100206  | P100283  | P100305  | P100328  | P97002   |
| P100063                              | P100207  | P100284  | P100306  | P100369  | P97003   |
| P100064                              | P100208  | P100285  | P100307  | P100370  | P97007   |
| P100065                              | P100209  | P100286  | P100308  | P100373  | P97008   |
| P100091                              | P100210  | P100288  | P100309  | P100374  | P97009   |
| P100095                              | P100211  | P100289  | P100310  | P100376  | R14721   |
| P100096                              | P100212  | P100290  | P100311  | P100377  | R14722   |
| P100097                              | P100213  | P100291  | P100313  | P100379  | R14723   |
| P100098                              | P100214  | P100292  | P100314  | P100380  |          |
| P100099                              | P100215  | P100293  | P100315  | P100381  |          |
| Stage 2 Hub Detail 2A0902<br>Table 3 |          |          |          |          |          |

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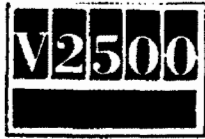
**V2500-ENG-72-0344**



# International Aero Engines SERVICE BULLETIN

| Part S/N                             | Part S/N | Part S/N | Part S/N | Part S/N   | Part S/N |
|--------------------------------------|----------|----------|----------|------------|----------|
| P100499                              | P100518  | P100533  | P100669  | P312AA0008 | T46567   |
| P100511                              | P100522  | P100664  | P100670  | P312AA0025 |          |
| P100516                              | P100532  | P100665  | P100671  | T46566     |          |
| Stage 2 Hub Detail 2A1202<br>Table 4 |          |          |          |            |          |

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## SERVICE BULLETIN

### RECORD OF ACCOMPLISHMENT – INFORMATION FORM

V2500–ENG–72–0344

**INFORMATION REQUIRED:**

HUB PN & SN \_\_\_\_\_

TOTAL TIME/CYCLES \_\_\_\_\_

DATE INSPECTED \_\_\_\_\_

INSPECTION RESULTS \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

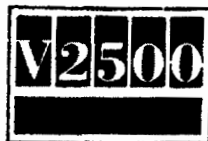
**PROVIDE RECORD OF ACCOMPLISHMENT FORMS TO;**

V2500 TECHNICAL SERVICES

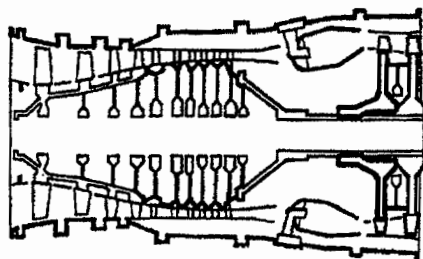
HOT SECTION

FAX # (860) 565–0161

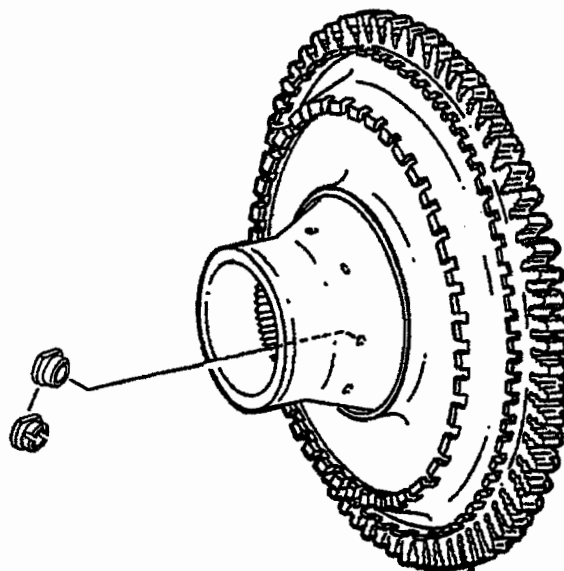
E8104



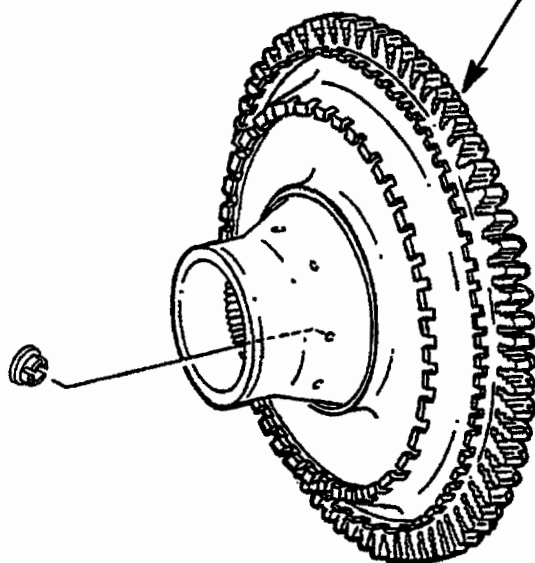
# International Aero Engines SERVICE BULLETIN



MODULE 40

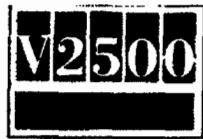


INSPECT THE STAGE 1 HIGH PRESSURE  
TURBINE DISKS

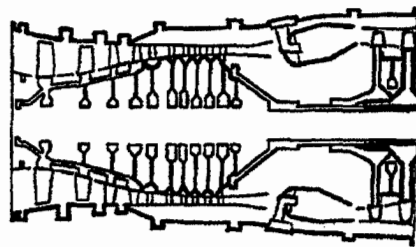


E8097

Location of the Stage 1 High Pressure Turbine (HPT) Hub  
Figure 1

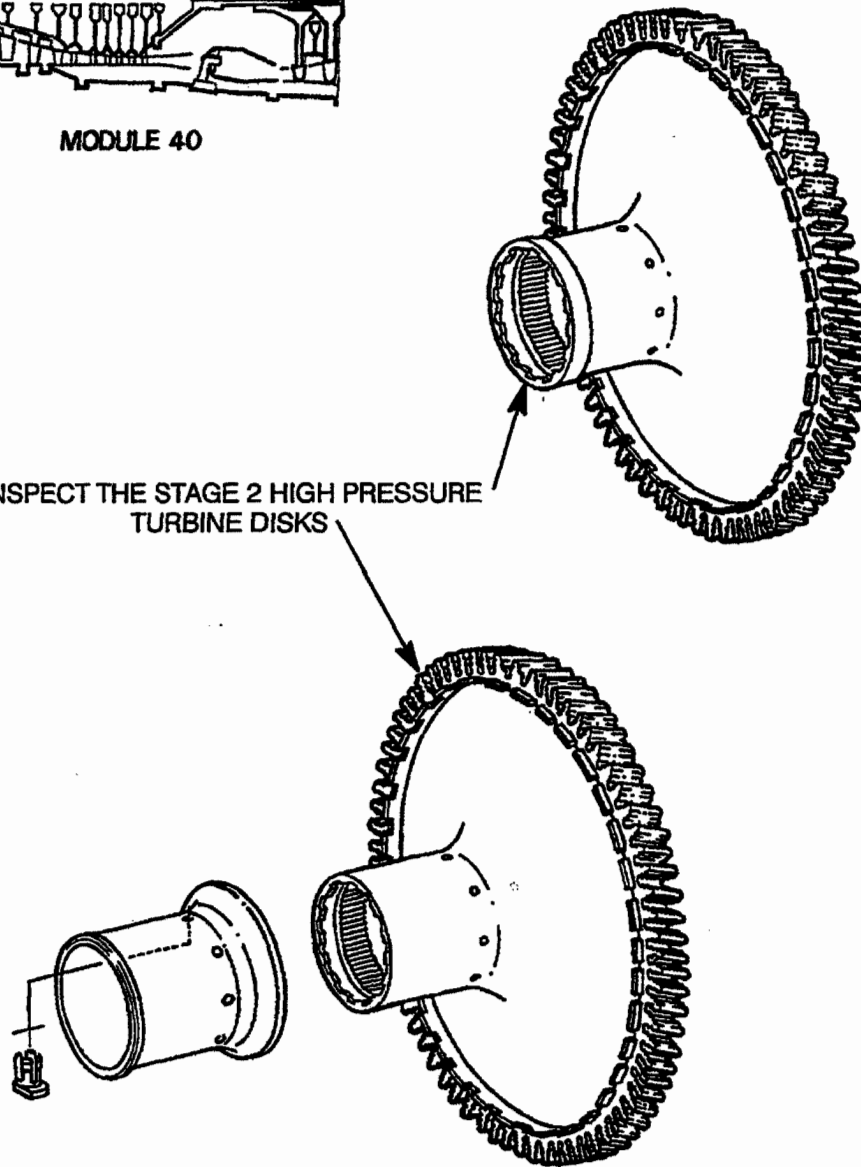


# International Aero Engines SERVICE BULLETIN



MODULE 40

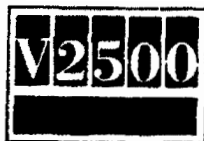
INSPECT THE STAGE 2 HIGH PRESSURE  
TURBINE DISKS



E8098

Location of the Stage 2 High Pressure Turbine (HPT) Hub  
Figure 2





# International Aero Engines

## SERVICE BULLETIN

### APPENDIX 1

1. The information which follows is the preferred packaging procedure:

|                                                                                                             |  |  |                                                  |               |            |            |           |     |     |
|-------------------------------------------------------------------------------------------------------------|--|--|--------------------------------------------------|---------------|------------|------------|-----------|-----|-----|
| PRESERVATION: IAW MIL-P-116                                                                                 |  |  | PACKING (AS SPECIFIED BELOW & BILL OF MATERIALS) |               |            |            |           |     |     |
| LEVEL A METHOD III                                                                                          |  |  | LEVEL                                            | SPEC          | STYLE      | TYPE       | CL        | VAR | GR  |
| LEVEL B SAME AS LEVEL A                                                                                     |  |  | A                                                |               |            |            |           |     |     |
| LEVEL C SAME AS LEVEL A                                                                                     |  |  | B                                                |               |            |            |           |     |     |
| CLEANING: IAW MIL-P-116                                                                                     |  |  | C                                                | PPP-B-636 RSC |            | CF         | DOM       | DW  | 500 |
| DRYING: IAW MIL-P-116                                                                                       |  |  |                                                  |               | LEVEL A    | LEVEL B    | LEVEL C   |     |     |
| PRESERVATIVE: NONE                                                                                          |  |  | GROSS WT LBS                                     |               | N/A        | N/A        | 124.99    |     |     |
| MARKING: IAW MIL-STD-129                                                                                    |  |  | GROSS CU FT                                      |               | N/A        | N/A        | 3.42      |     |     |
| SPECIAL MARKING:                                                                                            |  |  | DESIGN FRAG                                      |               | N/A        | N/A        | N/A       |     |     |
| A) TPO NO. P61860                                                                                           |  |  |                                                  |               | LENGTH     | WIDTH      | DEPTH     |     |     |
| B) SPI NO. N/A                                                                                              |  |  | CNTR ID                                          |               | 24 in.     | 24 in.     | 8 1/2 in. |     |     |
| C) MARK OR STENCIL CNTR:                                                                                    |  |  | CNTR OD                                          |               | 24 1/2 in. | 24 1/2 in. | 9 1/2 in. |     |     |
|                                                                                                             |  |  | ITEM DIM                                         |               | 20 1/2 in. | 20 1/2 in. | 7 1/2 in. |     |     |
| "REUSABLE CONTAINER AND DUNNAGE<br>DO NOT DESTROY"                                                          |  |  | ITEM WT LBS                                      | 103.88        | (DISK)     |            |           |     |     |
| CLOSURE: IAW APPLICABLE CNTR SPEC.                                                                          |  |  |                                                  |               |            |            |           |     |     |
| TOLERANCES UNLESS OTHERWISE SPECIFIED<br>FRACTIONS +/- 1/16 ANGLES +/- 5°                                   |  |  |                                                  |               |            |            |           |     |     |
| ▶ MARK IDENT PER SPEC PWA310, CLASS 31                                                                      |  |  |                                                  |               |            |            |           |     |     |
| NOTES/ASSEMBLY INSTRUCTIONS                                                                                 |  |  |                                                  |               |            |            |           |     |     |
| 1—FIBERBOARD PER SPEC PPP-F-320, TYPE CF, CLASS DOMESTIC,<br>VARIETY DW, GRADE 275 MIN., FLUTES "BC".       |  |  |                                                  |               |            |            |           |     |     |
| 2—PLYWOOD PER SPEC NN-P-530, GROUB B, EXTERIOR TYPE, GRADE B-C MIN.                                         |  |  |                                                  |               |            |            |           |     |     |
| 3—FIBERBOARD PER SPEC PPP-F-320, TYPE CF, CLASS DOMESTIC,<br>VARIETY SW, GRADE 275 MIN., FLUTES "B" OR "C". |  |  |                                                  |               |            |            |           |     |     |
| 4—SUPPLEMENTARY FABRICATION AND MARKING SPEC P61673 APPLIES.                                                |  |  |                                                  |               |            |            |           |     |     |
| 5—WOOD PER SPEC MIL-STD-731, GROUB I OR II, CLASS 2.                                                        |  |  |                                                  |               |            |            |           |     |     |

|          |      |      |              |                 |                   |      |
|----------|------|------|--------------|-----------------|-------------------|------|
| P61860-5 | 5    | 1&AR | INSERT       | 23 1/2 X 23 1/2 |                   | 3    |
| P61860-4 | 4    | 1    | SUPPORT      |                 |                   | 1&2  |
| P19193   | 3    | 1    | BARRIER      | 36X36           | L-P-378           |      |
| P61860-2 | 2    | 1    | SUPPORT      |                 |                   | 2&5  |
| P61860-1 | 1    | 1    | BOX          | 24X24X8 1/2     | SEE PACKING LEVEL |      |
| PART NO  | ITEM | QTY  | NOMENCLATURE | SIZE            | MATERIAL SPEC     | NOTE |

E8100

Information For Preferred Packaging Procedure Stage 1 High Pressure Turbine Hubs  
Figure 1 (Sheet 1)

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Appendix 1

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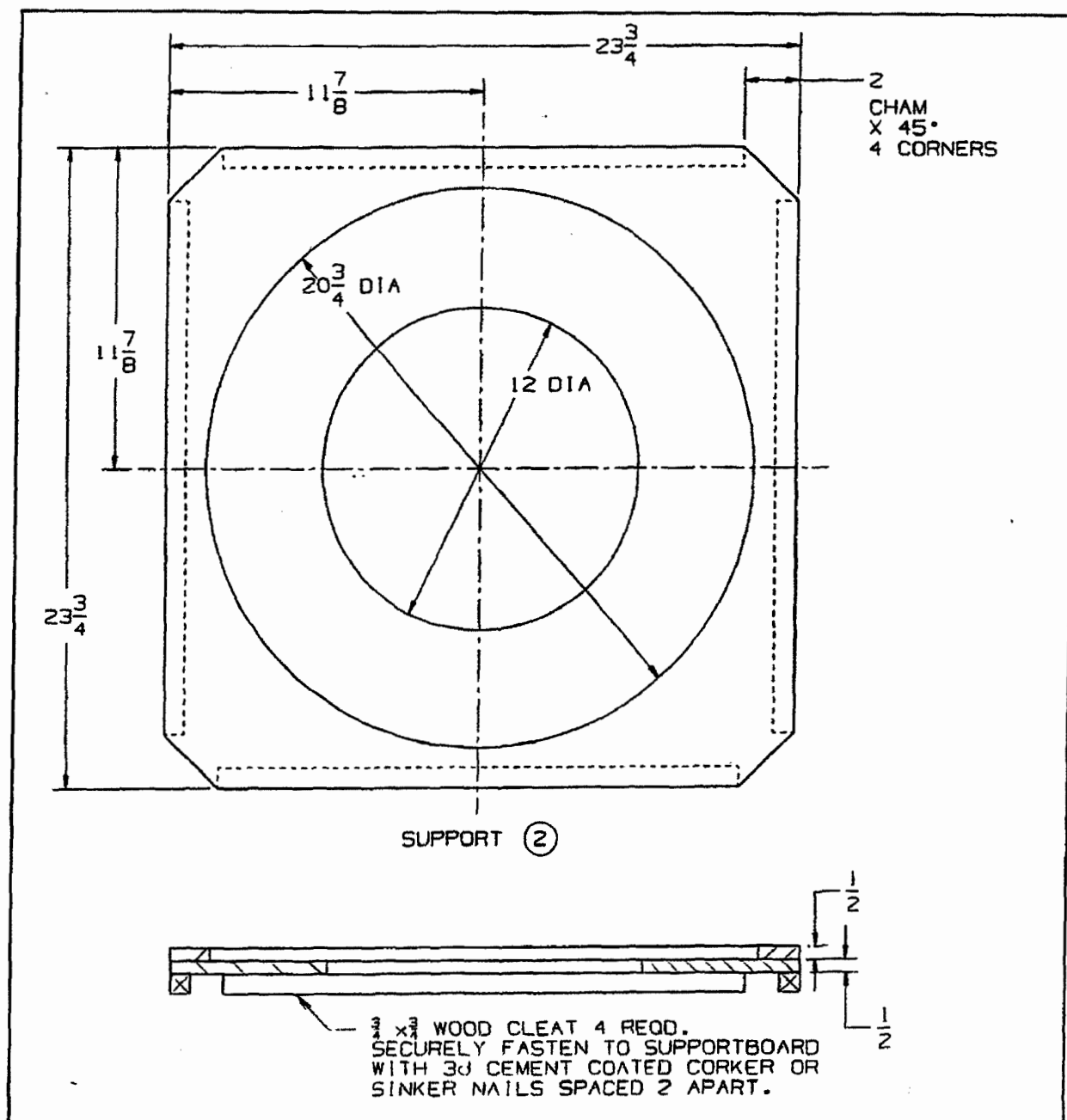
Dec. 18/98

Not subject to the EAR per 15 C.F.R. Chapter 1, Part 734.3(b)(3).



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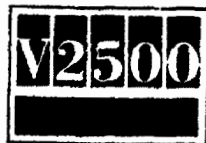


E8102

Information For Preferred Packaging Procedure Stage 1 High Pressure Turbine Hubs  
Figure 1 (Sheet 2)

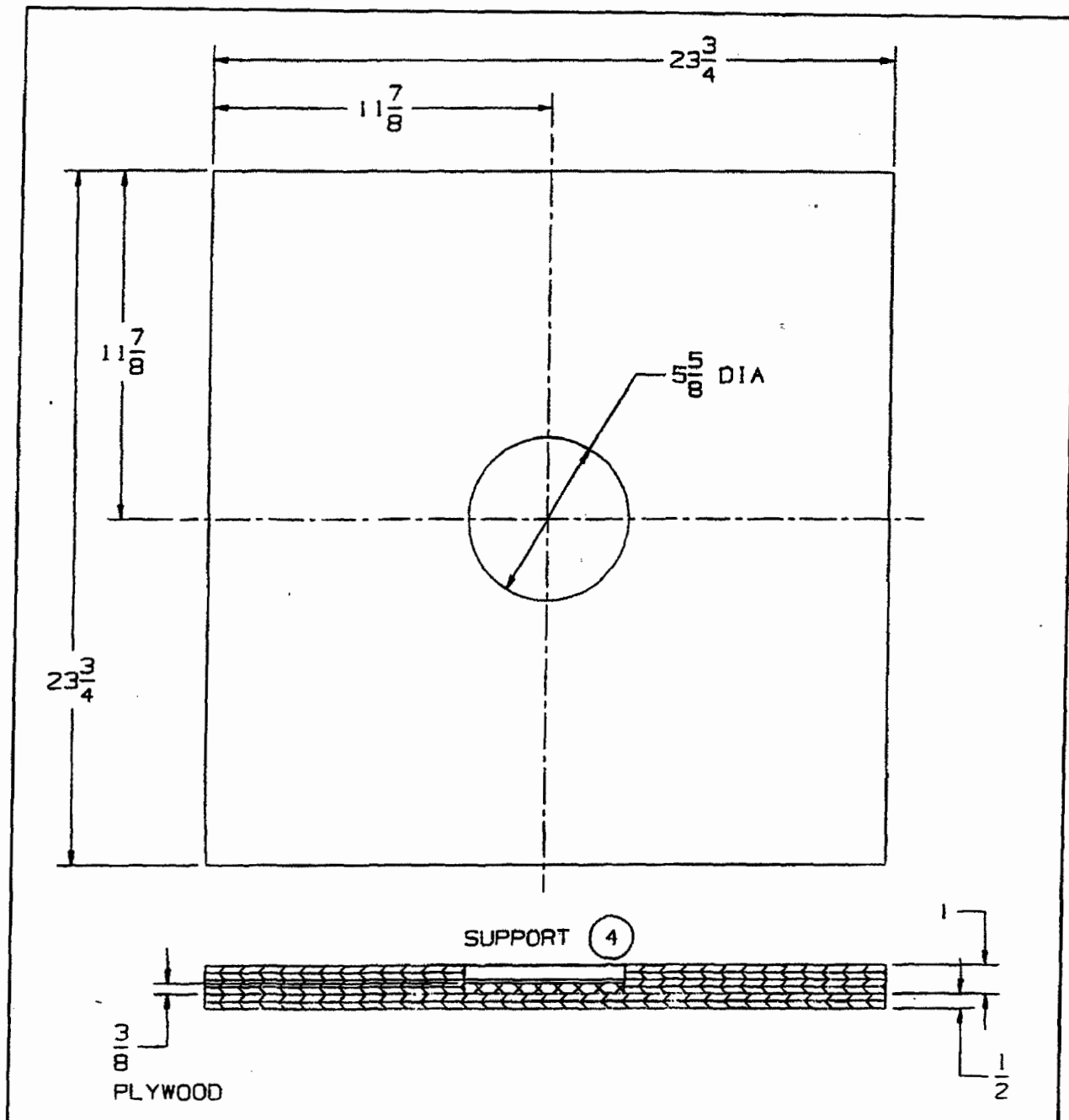
V2500-ENG-72-0344

Appendix 1



# International Aero Engines SERVICE BULLETIN

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E8103

Information For Preferred Packaging Procedure Stage 1 High Pressure Turbine Hubs  
Figure 1 (Sheet 3)

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Not subject to the EAR per 15 C.F.R. Chapter 1, Part 734.3(b)(3).

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# International Aero Engines

## SERVICE BULLETIN

|                                                                                                         |  |  |                                                              |               |                |                |                |            |           |
|---------------------------------------------------------------------------------------------------------|--|--|--------------------------------------------------------------|---------------|----------------|----------------|----------------|------------|-----------|
| <b>PRESERVATION:</b> IAW MIL-P-116                                                                      |  |  | <b>PACKING (AS SPECIFIED BELOW &amp; BILL OF MATERIALS):</b> |               |                |                |                |            |           |
| <b>LEVEL A METHOD:</b> <u>I</u>                                                                         |  |  | <b>LEVEL</b>                                                 | <b>SPEC</b>   | <b>STYLE</b>   | <b>TYPE</b>    | <b>CL</b>      | <b>VAR</b> | <b>GR</b> |
| <b>LEVEL B SAME AS LEVEL A</b>                                                                          |  |  | A                                                            |               |                | N/A            |                |            |           |
| <b>LEVEL C SAME AS LEVEL A</b>                                                                          |  |  | B                                                            |               |                | N/A            |                |            |           |
|                                                                                                         |  |  | C                                                            | PPP-B-836 RSC |                | CF             | DOM            | SW         | 350       |
| <b>CLEANING:</b> IAW MIL-P-116                                                                          |  |  |                                                              |               | <b>LEVEL A</b> | <b>LEVEL B</b> | <b>LEVEL C</b> |            |           |
| <b>DRYING:</b> IAW MIL-P-116                                                                            |  |  | <b>GROSS WT LBS</b>                                          |               | N/A            | N/A            | 108.4          |            |           |
| <b>PRESERVATIVE:</b> MIL-P-3420                                                                         |  |  | <b>GROSS CU FT</b>                                           |               | N/A            | N/A            | 3.14           |            |           |
| <b>MARKING:</b> IAW MIL-STD-129                                                                         |  |  | <b>DESIGN FRAG</b>                                           |               | N/A            | N/A            | N/A            |            |           |
| <b>SPECIAL MARKING:</b>                                                                                 |  |  |                                                              |               | <b>LENGTH</b>  | <b>WIDTH</b>   | <b>DEPTH</b>   |            |           |
| A) TPO NO. <u>P61865</u>                                                                                |  |  | <b>CNTR ID</b>                                               |               | 22 in.         | 22 in.         | 10             |            |           |
| B) SPI NO. <u>N/A</u>                                                                                   |  |  | <b>CNTR OD</b>                                               |               | 22.4 in.       | 22.4 in.       | 10.8 in.       |            |           |
| C) MARK OR STENCIL CNTR:                                                                                |  |  | <b>ITEM DIM</b>                                              |               | 19.6 in.       | 19.6 in.       | 8.18 in.       |            |           |
| <b>*REUSABLE CONTAINER AND DUNNAGE DO NOT DESTROY*</b>                                                  |  |  | <b>ITEM WT LBS</b> <u>82</u>                                 |               | (DISK)         |                |                |            |           |
| <b>CLOSURE:</b> IAW APPLICABLE CNTR SPEC.                                                               |  |  |                                                              |               |                |                |                |            |           |
| <b>TOLERANCES UNLESS OTHERWISE SPECIFIED</b>                                                            |  |  |                                                              |               |                |                |                |            |           |
| FRACTIONS +/- 1/16 ANGLES +/- 5°                                                                        |  |  |                                                              |               |                |                |                |            |           |
| ▶ MARK IDENT PER SPEC PWA310, CLASS 31                                                                  |  |  |                                                              |               |                |                |                |            |           |
| <b>NOTES/ASSEMBLY INSTRUCTIONS</b>                                                                      |  |  |                                                              |               |                |                |                |            |           |
| 1- MATL: PLYWOOD PER SPEC NN-P-530, GROUP B, EXTERIOR TYPE GRADE B-C MIN.                               |  |  |                                                              |               |                |                |                |            |           |
| 2- MATL: FIBERBOARD PER SPEC PPP-F-320, TYPE CF CLASS DOM. VARIETY DW, GRADE 275 MIN., FLUTES "BC"      |  |  |                                                              |               |                |                |                |            |           |
| 3- MATL: CLEATS, WOOD PER SPEC MIL-STD-731, GROUP I OR II, CLASS 2                                      |  |  |                                                              |               |                |                |                |            |           |
| 4- MATL: FIBERBOARD PER SPEC PPP-F-320, TYPE CF CLASS DOM. VARIETY SW, GRADE 275 MIN., FLUTE "B" OR "C" |  |  |                                                              |               |                |                |                |            |           |
| 5- SUPPLEMENTARY FABRICATION AND MARKING SPEC P61673 APPLIES                                            |  |  |                                                              |               |                |                |                |            |           |

|          |      |     |              |               |                     |      |
|----------|------|-----|--------------|---------------|---------------------|------|
| P61865-5 | 5    | 1   | INSERT       | 19-3/4X19-3/4 |                     | 4    |
| P61865-4 | 4    | 1   | SUPPORT      |               |                     | 1,2  |
| P47730   | 3    | A/R | INHIBITOR    | 36X36         | MIL-P-3420          |      |
| P61865-2 | 2    | 1   | SUPPORT      |               |                     | 1,3  |
| P61865-1 | 1    | 1   | BOX          | 22X22X10      | SEE PACKING LEVEL C |      |
| PART NO  | ITEM | QTY | NOMENCLATURE | SIZE          | MATERIAL SPEC       | NOTE |

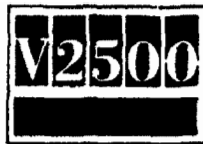
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Information For Preferred Packaging Procedure Stage 2 High Pressure Turbine Hubs  
Figure 2 (Sheet 1)

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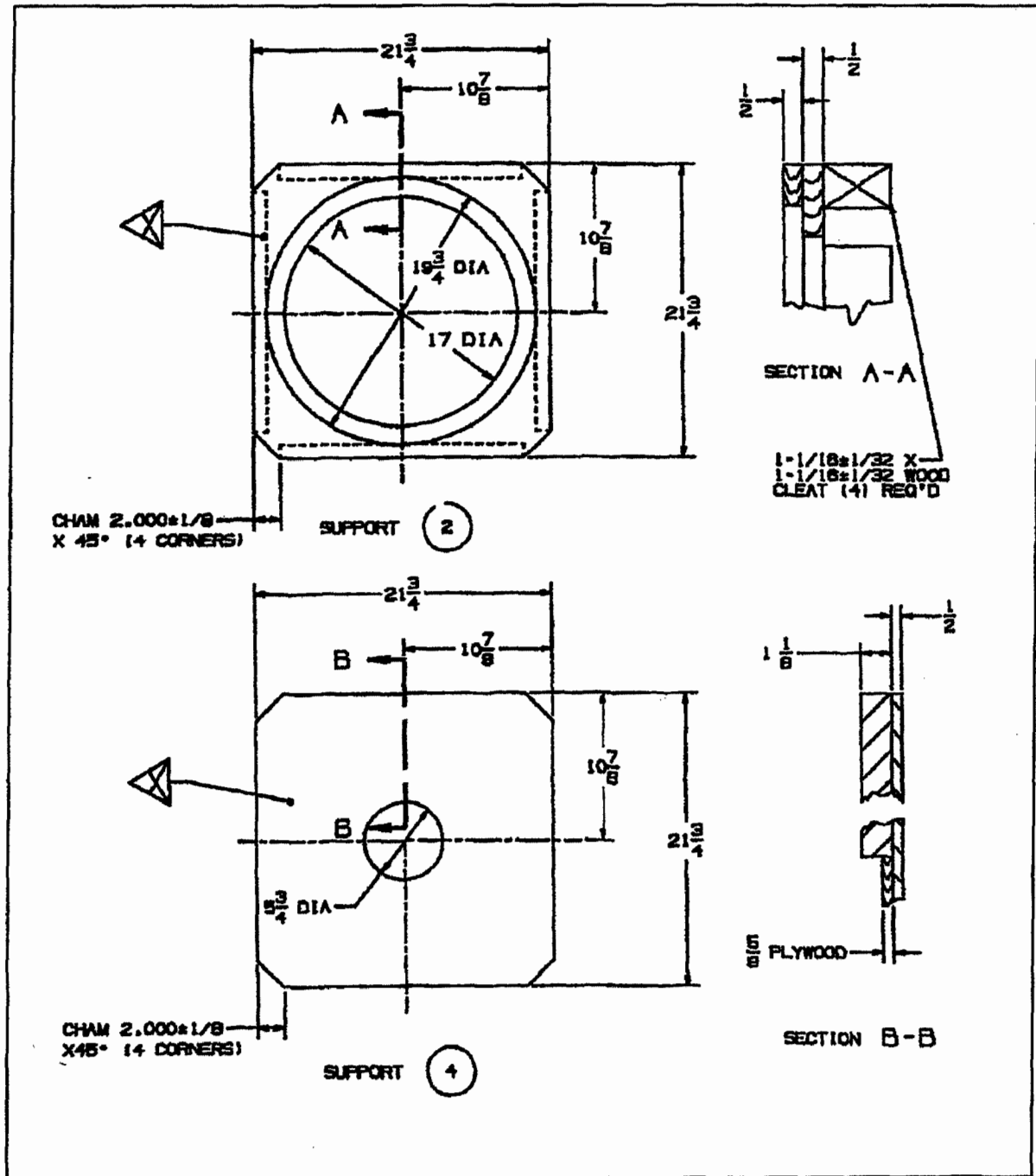
Appendix 1

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# International Aero Engines SERVICE BULLETIN

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Information For Preferred Packaging Procedure Stage 2 High Pressure Turbine Hubs  
Figure 2 (Sheet 2)

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Appendix 1