

	Document title		Page 1 of 4
	<b>Quality Assurance Procedure to Verify the Alignment of the Assembly Jig</b>		
	ATLAS project document no. ATL-IT-QP-0030	Date last modified. 18 May 2001	Approval status Full Production

## 1 Scope

### 1.1 Scope

This procedure establishes requirements for inspection of the module assembly jig alignment prior to module assembly.

### 1.2 Applicability

#### 1.2.1 Applicability

This procedure applies to the set-up of all module assembly jigs by the Indiana and Duke Production Facility.

#### 1.2.2 Relation to Other ATLAS Project Requirements

The inspection procedure described by this specification is in addition to other tests and inspections required for module assembly. Module assembly may begin only after acceptable results from this inspection.

## 2 Applicable Documents

### 2.1 Document List

The following documents of the issue in effect on the effective date of this specification form a part of this specification to the extent specified herein.

#### 2.1.1 ATL-IT-EY-0004 ATLAS U.S. Environmental, Health, and Safety Plan

### 2.2 Amendments and Revisions

Whenever this procedure is amended or revised subsequent to its effective date, the Revised Version will be placed in the Engineering Data Management System, the Production DataBase displays, and released to the technicians. The QA Engineer and the affected Production Engineers will

coordinate release to the technicians.  
Requirements

## 3 Requirements

### 3.1 Background

The alignment of all module components depends on the alignment of the module assembly jig. The module shell is held in place during assembly by the end plates of the assembly jig. The assembly jig holds the support ears of the divider assemblies in alignment. The divider assemblies and the high voltage plates at the ends hold the straws in alignment.


Before module assembly can begin, the assembly jig alignment must be confirmed. There is a three-step procedure done with the module on a verified table. First, the technician will confirm the positions of all the plates of the frame using calibrated guide bars. Second, the technician will confirm the jig length acceptability by comparison to a calibrated Invar rod that is the same length as the required module length. Third, the perpendicularity of the outside plates will be confirmed with a precise L square.

Appendix A provides a checklist to be used by Technicians performing this procedure.

## 4 Preparation for Delivery

### 4.1.1 Storage, Packing , and Shipping Requirements

There are no storage, packing, and shipping requirements applicable to this procedure.

	Document title		Page 2 of 4
	<b>Quality Assurance Procedure to Verify the Alignment of the Assembly Jig</b>		
	ATLAS project document no. ATL-IT-QP-0030	Date last modified. 18 May 2001	Approval status Full Production

## 5 Environment, Health, and Safety (EH&S)

### 5.1.1 EH&S Invoked

No special EH&S hazards are associated with the conduct of this test.

## 6 References

- 6.1 Shat101c.dwg, Module 1  
Assembly Jig Subassembly
- 6.2 Shat201c.dwg, Module 2  
Assembly Jig Subassembly
- 6.3 Shat301.dwg, Module 3  
Assembly Jig Subassembly

	Document title		Page 3 of 4
	<b>Quality Assurance Procedure to Verify the Alignment of the Assembly Jig</b>		
	ATLAS project document no. ATL-IT-QP-0030	Date last modified. 18 May 2001	Approval status Full Production

## Appendix A

### **Table Name:** ***tblChecklistVerifyAssemblyJigAlignment***

#### **Step      Check List Steps**

1 Scan the "Quality Assurance Procedure to Verify the Alignment of the Assembly Jig" Product ID Barcode.

2 Scan the Assembly Jig Product ID barcode for the assembly jig being aligned. The assembly jig name should appear on the screen.

3 Place the assembly jig on an optical alignment or granite table. The assembly support rods on one side of the assembly jig must rest uniformly on a set of precision machined vee blocks sitting on the table. Enter "Done"

4 Obtain a set of three guide bars from storage and enter "Done"

5 Place the slots of a guide bar over the divider plates on top of the assembly jig and center between the rods. Adjust the divider plate positions until all divider plates fully engage each guide bar slot. Enter guide bar barcode.

6 Place the slots of the second guide bar over divider plates on the front of the assembly jig just above the bottom rod. Adjust divider plate positions until all divider plates fully engage each guide bar slot. Enter guide bar barcode.

7 Place the slots of the third guide bar over divider plates on the back of the assembly jig about 1" above the bottom rod. Adjust divider plate positions until all divider plates fully engage each guide bar slot. Enter guide bar barcode.

8 Recheck all three sides for alignment by placing the guide bar slots over the divider plate. If the guide bars do not slide freely onto all three sides of

the assembly jig, enter "Repeat"; otherwise enter "Done".

9 Fully tighten all assembly jig fasteners to maintain the jig alignment. Enter "Done".

10 Obtain the Invar measuring bar and scan the invar bar barcode.

11 Using the invar bar as a go/no-go gage check the length of the cutting jig assembly near each of the four assembly jig rods. Enter "Done".

12 Check the vertical perpendicularity on the front support plate using the L-square aligned to the surface of the table. The plate should match the square to an accuracy of 0.2 mm over 15 cm. Enter "Done".

13 Check the vertical perpendicularity on the back support plate using the L-square aligned to the surface of the table. The plate should match the square to an accuracy of 0.2 mm over 15 cm. Enter "Done".

14 If unable to align the assembly jig successfully, contact the production supervisor. When the assembly jig passes inspection, enter "Accept"

15 Remove the assembly jig from the table and place it onto the module assembly cart. Enter "Done".

16 Enter "Save" to save the data and exit the form. Enter "Cancel" to exit the form without saving this screen.

	Document title		Page 4 of 4
	<b>Quality Assurance Procedure to Verify the Alignment of the Assembly Jig</b>		
ATLAS project document no. ATL-IT-QP-0030	Date last modified. 18 May 2001	Approval status Full Production	

Barcode



Procedure Part Number



Quality Assurance Procedure to Verify  
Assembly Jig Alignment Product ID

Approvals			
Name	Signature	Revision	Date
J.Callahan		B	
D.Rust		B	
C. Wang		B	