

**J.H. BUSCHER, INC.**  
**Standard Specification SS00A**  
**Order Processing**  
Revision D, 29 May 2015

Written By:	Date:	Approved By:	Date:
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**REVISION STATUS and CONTENTS**

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Revision D, 5/29/15, Description of Change: 1) Added Section 2, Documents, other section numbers advanced by one. 2) Section 5, Returns (was 4) extensively revised, see history file. 3) Document title was “Work Orders and Manufacturing Procedures” 4) Removed Lotus 123 spreadsheet file requirements in 3.1 and 4.2.

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## 1) GENERAL

### 1.1) Scope

This Specification covers Work Order format and Manufacturing Procedures for development, repair, manufacturing, maintenance and tooling programs. All work done at JHBI is covered under one of the four categories. Work done by outside vendors is not applicable, see JHBI Standard Specification SS00C, *Purchasing*. Work order numbers can be used for time recording, order tracking, labor estimation, etc.

### 1.2) Work Order Numbers

Work Order Numbers are the means by which Work Orders are tracked. A three digit number for the year, followed by a decimal point, then sequential number beginning with 1 pulled that year. The year 2000 begins with 100. Examples: 100-46 is the 46th WO issued in 2000, 101-812 is the 812th WO issued in 2001. Assignments and maintenance of the Work Order log are the responsibility of the Production Control Department. Special numbers may be assigned at the discretion of Production Control.

#### 1.2.1) Job Numbers

This number is distinct from the Work Order number, but may be used if the entire job is completed by the Work Order. Three alphanumeric characters are assigned in chronological order by the Production Control Department. Special numbers may be assigned at the discretion of Production Control.

### 1.3) Work Orders vs. Manufacturing Procedures vs. Router/Traveler

The Work Order is the directive to manufacture, the Manufacturing Procedure is the set of itemized instructions, and the Traveler is the record. The three are separate documents, but are included in the same sheet(s) of paper or electronic document: the Work Order *Sheet*. See Section 4 and Example 2.

## 2) DOCUMENTS

<i>Document</i>	<i>Title</i>	<i>Published By</i>
SS005	Revisions and Document Change Notices	J.H. Buscher, Inc.
SS01J	FAA Repair Station and Quality Control Manual	J.H. Buscher, Inc.
SS00K	Corrective Action Requests	J.H. Buscher, Inc.
SS00C	Purchasing	J.H. Buscher, Inc.

## 3) WORK ORDERS

The Work Order is the instrument by which requirements are transmitted to the shop. Every order for a component, subassembly, or end product manufactured or repaired internally must have a Work Order. The Work Order *Sheet* is as many as three documents in one: Work Order, Manufacturing Procedures and Router/Traveler. The sheet is to accompany the work as it makes its way through the facility. Example 2 is a WO Sheet for an internally manufactured component.

### 3.1) Control

Work Orders are issued and revised by the Production Control Department. The document is created from the blank spreadsheet file, WOBlank.xxx (extension depends on parent spreadsheet program). Engineering and Manufacturing are responsible for the referenced documents.

### 3.2) Work Order Format

All information needed to do the job must be on or referenced on the Work Order. Table 1 provides the minimum required information. Depending on the type of Work Order, additional information may be needed. See Table 2 for the additional entries required for a shipable end product.

<i>Entry</i>	<i>Description</i>
Work Order #	Work Order Number, as explained in Section 1.2 & 1.3
JHBI P/N	JHBI Part Number
Work Order Revision	Revision level of Work Order; see Sec. 6.1
Order Date	Date of Work Order Issuance or Revision
Due Date	Date when work is due for completion. If staggered delivery is desired, the dates should be tabulated in the Instructions section.
Drawing No.	For end product repair and manufacturing orders, this is the number and revision level of JHBI Installation Drawing. For internal manufacturing orders, this is the applicable drawing. For tooling, this is the tool drawing number; if multiple drawings or additional references are needed, these should all be listed.
Drawing Revision	Revision of PN manufactured under WO - distinct from the WO and MP revs.
Quantity	Number of pieces on Work Order.
By	Whomever issues Work Order.

**TABLE 1 Required Work Order Information**

<i>Entry</i>	<i>Description</i>
Customer	Name of Customer
Customer P/N	Customer Part Number
Customer Order #	Customer Purchase Order Number (optional)
S/N(s)	Serial Number(s) of products to be shipped.
Assembly & Rev.	Drawing number and revision level of JHBI Assembly Drawing
ATP & Rev.	JHBI Acceptance Test Procedure and revision level
Procedure & Rev.	Applicable JHBI procedure (AP, MP, etc.) and revision level.
Cust. Dwg. & Rev.	Customer Drawing Number and Drawing revision level
Cust. Spec & Rev.	Customer Specification Numbers and Spec. revision levels

**TABLE 2 Additional Information Needed for End Product Work Orders**

A Work Order must list the *all information and documentation necessary to do the job*. Although the entries shown in Table 2 are typical, some of the information may not be applicable or needed. For example, there may not be a customer drawing or specification. If not, use JHBI documentation. See Example 1 for a typical Work Order for an end product. Example 2 is a Work Order *Sheet* (includes the Manufacturing Procedure) for a manufactured component.

### J.H. BUSCHER, INC.

<b>WORK ORDER 0XX</b>		<b>WO Rev:</b> A	<b>P/N:</b> A4XXX
<b>Description:</b> Metering Valve			<b>Customer:</b> ACME Aerospace
<b>Customer P/N:</b> 780092		<b>Order Date:</b> 6/21/01	<b>Due:</b> 9/10/01
<b>Customer Order #:</b> A67900 Rev B		<b>Quantity:</b> 600	<b>S/N(s):</b> 1201 -1800
<i>Document</i>	<i>Number</i>	<i>Rev</i>	<i>Include or note any other information needed to complete the job.</i>
Customer Drawing	780092	B	
Customer Spec	S 678902	A	
JHBI Drawing	N/A		
Assembly	AKXXX	C	
ATP	ATP AKXXX	B	
Procedure	MPA4XXX	C	

*Example 1, Sample Work Order for new order of end product; Manufacturing Procedure/traveler not shown .*

### J.H. BUSCHER, INC.

<b>Work Order Number</b>		<b>101.871</b>	<i>WO Rev</i> Rev ~	<b>DATE:</b>	08/16/01
PN	<b>FD0XX</b>	<b>GANGLE PLATE</b>		<b>DUE:</b>	08/23/01
Rev:	<b>A</b>	<b>QTY:</b> 72		<b>By:</b>	KR
<i>PN Rev Everything above this line is the Work Order, below is the Manufacturing Procedure</i>					
<b>MP</b>	<b>FD0CY</b>	<b>MP Rev:</b> A	<b>Date:</b>	6/12/98	
<b>Step</b>	<b>Station</b>	<b>Operation</b>	<b>Complete</b>	<b>Qty.</b>	<b>Notes</b>
1	Stock	Pull 6061 material, record lot number.			
2	Lathe	Turn Ø.216, Ø.250			
3	Lathe	Cutoff to .310 length			
4	Mill	Install .20 slots, 4 x.			
5	Inspection	Inspect per SS00V, initial and date			
6	Prod. Ctrl	Anodize per print, record PO, item #.			
7	Inspection	Inspect anodize, file cert.			
6	Prod Ctrl	Send to Stores			

↑  
*When filled in, last three columns constitute the Traveler*

*Example 2, Sample Work Order Sheet for a component – three documents in one.*

### **3.3) Work Order Sheet Format**

See Example 2. The MP immediately follows the WO. See Section 4 for the Manufacturing Procedure format. Note the required information for a part is considerably less than for an end product. Still, in both cases all the required information is present. Omit entries that are not applicable or enter N/A. The Work Order should be expanded if there are any special instructions or information that must be communicated to the shop.

### **3.4) Tooling**

The general format is the same as for internal manufactured parts (Table 1, Example 2). Tooling work orders are to be created by the requesting department along with Production Control, then forwarded directly to the Manufacturing Department. Include any other necessary information.

### **3.5) Revisions to Work Orders**

If any of the information in Table 1 changes, the Work Order Sheet should be recalled, changed, re-released, with the revision letter advanced and the date changed. No Document Change Notice is needed: see SS005, *Revisions and Document Change Notices*. The Production Control Department is to maintain old revisions, and to retrieve any obsolete Work Order Sheets.

### **3.6) Travelers**

The Traveler is the part of the Work Order Sheet that records the activity. As seen in Example 2, this is the *completed* right three columns of the Manufacturing Procedure – to be filled in manually by whomever completes the itemized tasks in the left three columns. The MP will have the blank columns if a traveler record is called for.

#### **3.6.1) Column 1, Complete**

Date, and if required by the MP, initials or ID of person(s) performing the operation. If several operations were done on a particular day, a ditto mark, arrow or line is sufficient in this column provided it is traceable to a completed entry.

#### **3.6.2) Column 2, Quantity**

How many of the component successfully underwent the operation.

#### **3.6.3) Column 3, Notes**

Any additional information required by the MP. This includes required entries for outside processing POs, notes on quantity fallout or raw material lot numbers. As described in Section 3, the box for this column is highlighted when an entry is required. If additional space is needed, use the bottom or back of the WO sheet. If the order quantity shown in the order is reduced due to fallout, parts shortage, etc., the shop is to note the date, quantity and reason for adjustment in the Notes column. See Section 3.7 for processing split lots.

#### **3.6.4) Additional Traveler Information**

In general, any additional information – including MP directed inspection data – to be recorded on the traveler is recorded on the bottom or back of the WO sheet. Fit or process sheets are to be stored with the WO sheet at the completion of the order.

##### **3.6.4.1) Ship Dates and Serial Numbers**

See Examples 1 and 3. For end products only, the Production Control Department is to enter date(s) of shipment and SNs.

### **3.7) Split and Adjusted Lots**

It is recognized that the original lot quantity can change, due to production concerns or fallout. If less than the called-for quantity of any work order is processed, record the date(s) as described in Section 3.6. If necessary, make additional copies of the WO Sheet/traveler (copy of the original, without the traveler info). A new WO number is not needed unless processing is interrupted due to part shortage or manufacturing problem. See 3.7.1. In general, any record is sufficient provided there are dates, quantities and traceability.

#### **3.7.1) Process Interruption**

When the original lot size is compromised, the shop is to forward a **copy** of the Work Order Sheet, along with the hardware, to the Production Control Department. The remainder of the original lot - minus the fallout quantity - is to be processed normally, provided the fallout is documented as detailed in Sec. 3.6.3.

For the wayward parts, Production Control is to make a disposition. The lot can be:

- a. Split into its own lot, with its own number.
- b. Put on hold until parts shortages are resolved, at which point it can be split as noted in a) or caught up with the parent lot.
- c. Reworked and caught up with the original lot.
- d. Scrapped and salvageable parts returned to stock.

## **4) MANUFACTURING PROCEDURES**

In general, any information needed to complete the job must be on, or referenced by, the Manufacturing Procedure.

### **4.1) Responsibility**

Preparation of the Manufacturing Procedure is to be done by the Engineering, Assembly, Test or Manufacturing Departments as applicable. After the order is complete, the Manufacturing Procedure/Traveler record is to be filed by the Production Control Department.

### **4.2) Format**

The Manufacturing Procedure is an itemized list of all operations needed for completion of the task. There are 6 columns: Step, Location, Task, and blank columns for Complete, Quantity and Notes (See Section 3.6). See Example 3. The first three columns constitute the Manufacturing Procedure, the last three, when filled in, will constitute the traveler. MPs exist in spreadsheet format, and are appended to a Work Order by Production Control. The baseline Manufacturing Procedure is in spreadsheet format, file MPBlank.xxx (File extension depends on parent spreadsheet program). The document title is: MP followed by the PN, then the extension. e.g. MPFDXXX.123 for PN FDXXX if using Lotus 123 format.

#### **4.2.1) Sheets**

There are 2 sheets in the spreadsheet file: the first is the MP itself, as seen in Example 3. The second is the revision sheet – see Paragraph 4.3.

MP	A4XXX	MP Rev:	~	Date:	07/20/00
Step	Station	Operation	Complete	Qty.	Notes
1	Stock	Allocate all top level parts from PLA4XXX			
2	BENCH	Lap flexure, flapper, armature and housing per A4XXX fit sheet. Record fit dimensions and unit assembly number on fit sheet.			
3		NOTE: DURING ALL ASSEMBLY OPERATIONS KEEP COMPONENTS IN COVERED CLEAN CONTAINER.			
3	BENCH	Clean and Inspect all parts under 10 X min magnification.			
4	BENCH	Set up poles and nozzles to meet flow curve of A4XXX.			
5	OVEN	BAKE @ 300° F, 60 MIN.			
6	BENCH	Verify performance of Step 4, adjust as necessary.			
7	Air Test Stand	Perform Acceptance test per ATP A4XXX.			
28	Inspection	Inspect per SS00V and SS013 AQL 4.0 for overall ht, ht to conn. flange, record data below. 100% check connector orientation & SN marking. Initial and date			
29	Prod Ctrl	Package for shipping. Install a protective cap over connector.			

**Example 3, Manufacturing Procedure**

The Manufacturing Procedure will be as many pages as necessary. One Procedure is used for all operations of the product - final assembly, test, inspection (including directives for data to be recorded), outside processes, and shipping. A manufacturing procedure may also have a tool list.

**4.3) Revisions to Manufacturing Procedures**

Revisions to Manufacturing Procedures are handled through a Document Change Notice – see SS005, *Revisions and Document Change Notices*. As with Parts Lists, the revision sheet is the second sheet of with the Manufacturing Procedure file.

## 5) RETURNS

Products returned by a customer require entry in the repair database, evaluation and – depending on circumstances or customer directive – might need retest, repair or upgrade. Figure 1 shows a return processing flow chart.

### 5.1) Return Database

Upon receipt of component(s) from the customer, all products are to be logged into the repair database by the Production Control Department. The database file is named RETURNS.dbf. Any computer program capable of writing to a database file may be used. The following entries are required:

- a. JHBI WORK ORDER & WO REVISION *Sequential number assigned by Production Control. See Paragraph 5.5 for information on Work Order Revisions.*
- b. JHBI PART NUMBER & DESCRIPTION
- c. DATE RECEIVED
- d. CUSTOMER *Note that customer and received-from are not necessarily the same. Add explanatory notes as needed.*
- e. CUSTOMER PART NUMBER
- f. QUANTITY
- g. CUSTOMER REPAIR WORK ORDER *If applicable, not all customers provide one*
- h. SERIAL NUMBER(S) *If available*
- i. FAA *a Y/N entry. Is product to be repaired in accordance with FAA Repair Station Procedures? Customer and Sales Department will advise applicability. See Paragraph 5.4.*

### 5.2) The Return Work Order and Return Report

The Return Work Order and Return Report are two components of the same document. One Work Order is assigned for each Part Number returned on a customer order. If a customer returns more than one product on the same order, e.g. two of one product, three of another, then separate work orders is to be given to each Part Number. A *Return Work Order* is generated by the Production Control Department to direct repair activity. The *Return Report* is the inspection and record of the repair, if any is performed.

#### 5.2.1) Repair Directive

A repair directive may be included in the Repair Work Order as originally submitted, or may require a post-evaluation customer decision. If the directive is not present before evaluation, the report is to be submitted to the Sales Department after evaluation, but before repair. See Figure 1.

#### 5.2.2) Return Work Order Entries

The entries of 4.1 are the only ones required to be entered upon receipt and are used to generate the Return Work Order. Additional information will be provided as needed: reference any JHBI, customer or third-party documentation required to effect the repair and establish acceptance criteria.



### 5.2.3) Return Report Entries

The following entries are to be completed at time of evaluation – and later – repair, during the Return Report by whomever evaluates and repairs the product:

- a. EVALUATION *Physical and performance evaluation. Any test data, notes or observations received from the customer are to be included or referenced. Include any notes or “similar-to” observations.*
- b. DATE of EVALUATION *Not necessarily same as date of repair or date of return.*
- c. ADJUDICATION *Who – in the opinion of repair person – is responsible? Leave blank for warranty repairs*
- d. ARE OTHER SNs AFFECTED? *Is any disorder isolated to the product under evaluation, or do similar components require preemptive scrutiny or repair?*
- e. CORRECTIVE ACTION REQUEST NECESSARY? *Y/N response, and CAR number if required. Corrective Action Requests are covered by JHBI Standard Specification SS00K, Corrective Action Requests.*
- f. REPAIR DESCRIPTION *If any. If parts are replaced, identify here.*
- g. DATE REPAIRED
- h. REPAIRED BY *Name or initials of whomever performed repair.*

### 5.3) Format

The Return Work Order and Report formats are optional provided all the required information is present. This record is independent of FAA form 8130-3: see Section 5.4. The Return Report is essentially a free-form traveler. A sample is shown in Example 4. If a repair directive is not included with the Work Order, the Return Report is to be forwarded to the Sales Department – who, based on evaluation results and customer consultation is to decide responsibility, then return the Report to the shop with repair instructions. See the Disposition Entry. At the time of shipment, Return Reports are to be filed by the Quality Department.

### 5.4) FAA Repair Station Activity

Any repair that needs the procedures and approval required of an FAA Repair Station must be designated on the Return Work Order. This advises the shop to have the sign-offs, authorized personnel, correct processes and proper forms. Refer to JHBI Standard Specification SS01J, *FAA Repair Station and Quality Control Manual* for procedures. FAA Form 8130-3 may be required – if so, information can be generated from information entered as described in 5.1 and 5.2.3.

### 5.5) Repair Work Order Revision

If any of the information entered in 5.1 changes before the product is processed, the Production Control Department will recall the current Work Order, reissue it with a revision letter advancement, make a history file of the superseded order and update the release date. No Document Change Notice is necessary. See JHBI Standard Specification SS005, Revisions and Document Change Notices.

### 5.6) Shipping Repairs

Repairs are shipped the same as new product, except that a brief description of the repair is to be provided on the packing list or Certificate of Conformance (if required). This information may be taken from the repair description of 5.2.3 f. For FAA Repairs where a form 8130-3 is included, this step may be omitted.

## J.H. BUSCHER, INC.

### RETURN REPORT

<b>WO:</b> 0ZY Revision ~	<b>PN:</b> A4XXX	<b>Description:</b> Metering Valve
<b>Customer:</b> ACME Aerospace		<b>Cust PN:</b> 780092 Rev B
<b>Return Date:</b> 2/22/15	<b>Due:</b> 3/22/15	<b>Cust. Return #:</b> FRACA 1234567
<b>Quantity:</b> 2	<b>S/N(s):</b> 1201, 1452	

**Instructions:**

	<i>Number</i>	<i>Rev</i>
ATP	ATP A4XXX	A
ACME Spec	PSC12345	B

After evaluation, wait until customer approval before repair.

*Repair Directive not present, needs evaluation.*

**PHYSICAL AND FUNCTIONAL EVALUATION:**

Customer reports SN 1201 has leaky bosporous, SN 1452 has splinge pin protrusion.

Evaluation confirms bosporous leak on 1201. 1452 splinge has been damaged by improper installation – see 0ZY\_15Feb30\_SN1452\_01.jpg

*All SNs should be covered, add sheets or reference other documentation if needed.*

DATE: 2/30/15

IN YOUR OPINION WHO IS RESPONSIBLE? **JHBI/CUSTOMER/UNDECIDED** JHBI SN 1201: JHBI, SN 1452: Customer

ARE OTHER S/Ns AFFECTED? No

CORRECTIVE ACTION REQUEST NECESSARY? **Y/N** CAR NUMBER:

REPORT BY: Kelvin Rankine DATE: 2/31/15

DISPOSITION: Return to ATP specs per JS: 2/31/15 *Directive from Sales Department, after customer consultation*

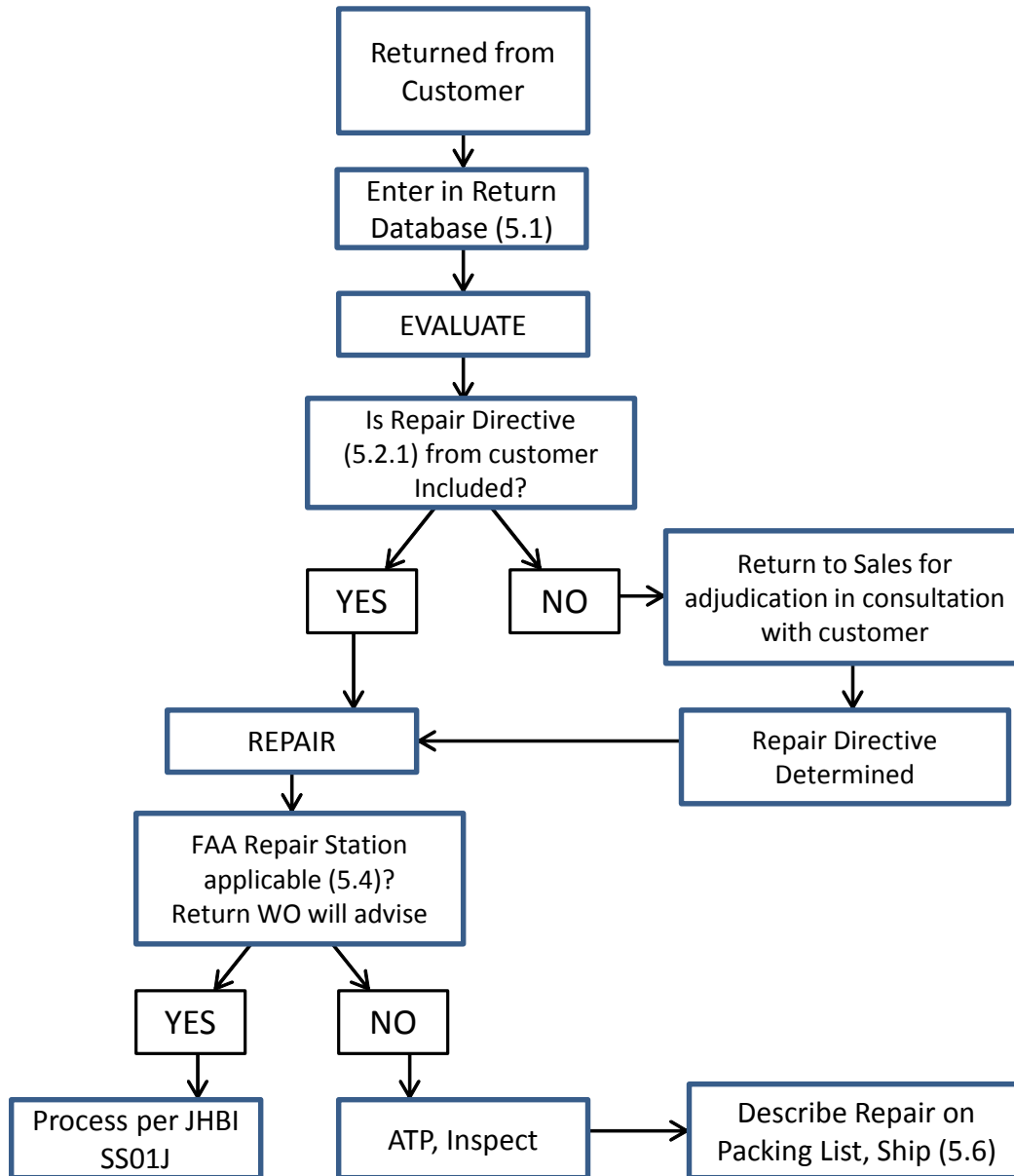
**REPAIR DESCRIPTION:**

Retingled bosporous on SN 1201, replaced and reset splinge drive pin on 1452. New splinge pin PN MMXXX from lot 1521.

*Brief description of repair, including any parts replaced. If the effort is split up, and some components lag split up the Work Order as described in 3.7.1*

DATE: 3/1/15

***Example 4, Repair Work Order Sheet, including Return Report.***



**FIGURE 1**  
Return Processing Flow Chart

## **6) DOCUMENT DISTRIBUTION AND RETENTION**

### **6.1) Distribution**

The Production Control Department is responsible for providing all the needed documents with the Work Order, although document information may be provided by the Sales and Engineering Departments. Preparation and maintenance of the Manufacturing Procedures is the responsibility of the cognizant department.

### **6.2) Retention**

Completed Work Orders and Return Reports/Work Orders, along with all accompanying documents, are retained by Production Control for five years minimum.

### **6.3) Electronic Media**

The entire Work Order or Repair Work Order document may be issued and processed entirely electronically – without paper copies – if all departments involved agree. Initials or sign-off may be done electronically. A completed electronic copy of the document is to retained as described in Paragraph 6.2.