	TRACEABILITY PROCEDURE SUNDSTRAND UTC/AS D-5 PROGRAM	Effective Date 09-11-14		PB 94:00	
		Page 1 of 9		Rev AA	DCF # 473

1.0 PURPOSE

To establish a procedure for control, recording and retaining required traceability as required by customer flowdown requirements.

2.0 SCOPE

The requirements of this procedure apply to all Hamilton Sundstrand (HSC) D-5 purchase order / sales orders when defined upon Circor Aerospace, Inc. (CAI) sales orders and other processing documents.

3.0 RESPONSIBILITIES


3.1 Sales

3.1.1 Sales shall flow down the following requirements on Sales Order.

1. Submit example photo of marking to buyer prior to shipment. Buyer approval is required for shipment authorization
2. Customer source inspection (Unitek) required
3. Suppliers and Special processes must be performed by customer-approved suppliers listed in PB 94:00
4. Retain traceability all parts. Single lot traceability required – no mixed lots unless individual lot-to-serial number trace is maintained.
5. QA must review & approve all sub-tier POs – EXCEPT for COTS parts
6. Tabulated test reports required. Note on shipper that test data is enclosed.
7. Include on shipper / C of C: customer P/N & revision letter, cure dates & serial numbers
8. Form SLS1049 "Trident II D5 Supplier Final Inspection Checklist" must be completed for each shipment and kept on file with work order.
9. PB 108:00 applies
10. Age-sensitive material certifications with shipment
11. 30-year record retention (2020) – HSC to be notified prior to destruction
12. Material certifications with shipment
13. Verify current first article on file. Include part marking photo with any FAIR submittals, also record HS assigned supplier code in field 11, AS9102 Form 1.
14. Parts manufactured for D-5 Program have a Frozen process requirement. No change of suppliers is allowed without customer approval.
15. Sub-tier purchase orders must state that the articles are for Hamilton Sundstrand's "end use" "PB 94:00 applies"

3.1.2 Complete Form QA-F-55 (D5 Sales Order Checklist).

4.0 Suppliers & CIRCOR Aerospace, Inc (CAI)

	TRACEABILITY PROCEDURE SUNDSTRAND UTC/AS D-5 PROGRAM	Effective Date 09-11-14		PB 94:00	
		Page 2 of 9		Rev AA	DCF # 473

- 4.1 All Quality Records such as shop travelers, job instructions, inspection, test, raw material and process certifications and analysis reports, x-ray film and traceability data shall be retained until year 2020.
- 4.2 Supplier shall notify CAI six months prior to the scheduled destruction of these records.
- 4.3 CAI shall request disposition instructions from Hamilton Sundstrand six months prior the scheduled destruction of these records.
- 4.4 The 2020 retention date is based on the estimated completion date of the D5 program and may be revised at a later date due to revisions of the program. Additional examples of quality records to be maintained are described in Hamilton Sundstrand ASQR-01.

5.0 PRODUCTION CONTROL

- 5.1 Production Control will enter the requirements from the Sales Order into the JDE Item Master.

5.2 Assembly Order Routing will include:

- Frozen planning – No changes without HSC approval (per Appendix P)
- Kit Level Inspection will be performed by QA verifying all component parts issued are from a single lot using the D5 Kitted Work Order Checklist (Form QA-F-57)
- Test failure notification
- Test data sheets are to be reviewed and approved by QA.
- Final Inspection will be performed by QA verifying all component parts issued are from a single lot using the D5 Final Inspection Checklist (Form QA-F-58)


5.3 Supplier Control

- 5.3.1 Suppliers shown that perform manufacturing and special processes in accordance with drawing requirements shall be resurveyed wherever there is:

- a. A change of address/location
- b. Change of ownership
- c. Change of process/service supplied or
- d. At a three (3) year maximum interval, whichever comes first

- 5.3.2 Circor / Supplier shall perform a full FAI, or a partial FAI for affected characteristics, when any of the following events occurs:

- a) A change in the design affecting fit, form or function of the part.
- b) A change in manufacturing source(s), process(es), inspection method(s), location of manufacture, tooling or materials, that can potentially affect fit, form or function.
- c) A change in numerical control program or translation to another media that can potentially affect fit, form or function,
- d) A natural or man-made event, which may adversely affect the manufacturing process.
- e) A lapse in production for two years or as specified by the customer,

	TRACEABILITY PROCEDURE SUNDSTRAND UTC/AS D-5 PROGRAM	Effective Date 09-11-14		PB 94:00	
		Page 3 of 9		Rev AA	DCF # 473

5.4 Purchasing

5.4.1 Only those Suppliers shown in this procedure shall be utilized whenever the words "PB 94:00" are shown on any document, JDE, drawing, etc.

5.4.2 Purchasing shall:

A) Route the Purchase Order (PO) to Quality Assurance (QA) for review and approval. A D5 Purchase Order Checklist (QA-F-56) shall be completed for each purchase order.

B) Add the following requirements to the Item Master by part number so requirement is printed on PO and Receiver every time. "PB 94:00 APPLIES".

5.4.3 A QA Signature block shall be on the PO to ensure POs are reviewed by QE prior to issuing to suppliers for D-5 requirements.

5.4.4 Single lot traceability is required for all components. All components shall be manufactured in the same manufacturing lot and from the same material Heat Lot.

5.4.5 Route all parts through Receiving Inspection.

5.4.6 Purchase orders referencing PB 94:00 must comply with CAI Terms and Conditions: Government Provisions Supplement to meet Department of Defense (DOD) procurements with a DX-A2 priority rating unless exempted by contractual agreement.

- Verify supplier is listed on attached form QA-F-54 (D5 Supplier and Processors)
- Verify sub-tier suppliers (as noted the QA-F-54) are listed on purchase order

6.0 QUALITY ASSURANCE

6.1 QA shall review all POs for components used on the D-5 Program prior to issue to suppliers.

6.2 All D-5 components are to be routed through Receiving Inspection and not go Dock-to-Stock or KanBan whether or not the supplier is certified.


6.3 The Inspector shall verify the following:

a) Approved sources were used per Form QA-F-54.

b) All items were processed in strict compliance of PB 43:00, Receiving Inspection – Component Parts.

c) All Certified Material Test Reports, Certificate of Conformances, Processing Certifications are on-hand, accurate, acceptable, legible and suitable for re-production.

d) FAIRs per AS9100 have been performed and have been submitted to the customer.

	TRACEABILITY PROCEDURE SUNDSTRAND UTC/AS D-5 PROGRAM	Effective Date 09-11-14		PB 94:00	
		Page 4 of 9		Rev AA	DCF # 473

- e) Single Lot Traceability.
- f) Any additional quality requirements specified in PB 108:00.

7.0 STOCK ROOM

- 7.1 Stock Room personnel shall be responsible for filling out Traceability Slips for all parts and processes.
- 7.2 Traceability Slip(s) shall be forwarded to the QA Office where traceability will be pulled then forwarded to Final Inspection (Station 10).

8.0 ENGINEERING

- 8.1 Drawing Control shall be in accordance with Engineering Bulletin (EB) 32:00 and it shall be the responsibility of the Director of Engineering, where changes are necessary, approval by Hamilton Sundstrand has been reviewed & documented prior to release of revised drawing or acceptance test procedure.
- 8.2 QA shall be notified of any change to approved processes in order to revise the Manufacturing and Inspection (M & I) Plans and any other affected documents as applicable. QA shall approve all changes to drawings, assembly procedures or test procedure.
- 8.3 The Director of Engineering shall be responsible for notifying Quality Assurance of any changes to detail parts or valve drawings.


9.0 STANDARD AND SPECIAL PROCESSES

- 9.1 CAI and suppliers shall only use the suppliers listed on the attached Form QA-F-54 to manufacture and process these parts. Requests for change of suppliers must be approved by Hamilton Sundstrand prior to their use.
- 9.2 Flow down on router requirement: All material/ processing certifications shall be included with shipment.
- 9.3 Any revisions to this Process Bulletin require HSC approval.

10.0 REFERENCES

10.1 Parent Documents

AS 9100:2004 Quality Systems-Aerospace- Model for Quality Assurance in Design, Development, Production, Installation and Servicing

	TRACEABILITY PROCEDURE SUNDSTRAND UTC/AS D-5 PROGRAM	Effective Date 09-11-14		PB 94:00	
		Page 5 of 9		Rev AA	DCF # 473


ISO 9001:2008	Quality Management Systems – Requirements
ASQR-01	Aerospace Quality Requirement Documents (UTC)
Appendix “P”	Supplemental Purchase Order Terms and Conditions for Trident II D5 Procurements
CM-01	Quality System Manual

10.2 Related Documents

CP 6-1	Purchasing
EB 32:00	Use, Preparation & Distribution of the Engineering Change Order
PB 43:00	Receiving Inspection
PB 108:00	Procedure for Additional Inspection Requirements for D5 Program – Sundstrand (ref. PQA-300)


10.3 Referenced Forms

SLS1049	Trident II D5 Supplier Final Inspection Checklist (HSC Form)
AS9102	First Article Inspection
QA-F-54	D5 Suppliers and Processors (attached)
QA-F-55	D5 Sales Order Checklist
QA-F-56	D5 Purchase Order Checklist
QA-F-57	D5 Kitted Work Order Checklist
QA-F-58	D5 Final Inspection Checklist

	TRACEABILITY PROCEDURE SUNDSTRAND UTC/AS D-5 PROGRAM	Effective Date 09-11-14		PB 94:00	
		Page 6 of 9		Rev AA	DCF # 473


SUPPLIERS AND PROCESSORS

CIRCOR P/N	Cust. P/N	Name	Process	RV99-38 (5636992)	RV57-13 (5636930)	RV57-14 (5636997)	Supplier
34694	5641897	Pin Poppet	Machining				Schneiders Mfg
			Passivate QQ-P-35 Type II / MIL-S-5002				Tiodize
			Heat Treat MIL-H-6875 RC 56/60 Cold Stablize				Continental Heat Treat
34626	5641902	Jam Screw	Machining				Stello Ind.
			Passivate QQ-P-35 Type II / MIL-S-5002				All Metals
34639	5641894	Body	Machining				Garrett / Johnson Precision
			Sulphuric Anodize MIL-8625 Type II CL 2				Hixson
34640	5641903	Adjusting Screw	Machining				Stello Ind.
			Passivate QQ-P-35 Type II / MIL-S-5002				Hixson
34692	5641895	Spring	Manufacturing				Hoosier
			Passivate QQ-P-35 Type II / MIL-S-5002				Imageering Finishing Tech
			Heat Treat MIL-H-6875 Cond CH900				Hoosier
34651	5641889	Shim	Manufacturing				Serra Mfg
**	Alternate	Source	Passivate QQ-P-35 Type II / MIL-S-5002 Passivate QQ-P-35 Type II / MIL-S-5002				All Metals BG Detection Services
34647	5641887	Body	Machining				Rozak / Metri-Tech
			Sulphuric Anodize MIL-A-8625 Type II Cl 1, water seal				Hixson
34648	5641888	Retainer	Machining				Circor / Garrett
			Sulphuric Anodize MIL-A-8625 Type II Cl 1				Hixson
34689	5641891	Shoulder Screw	Machining				Garrett / Southland
			Passivate QQ-P-35 Type II / MIL-S-5002				Embee / RGF
34690	5641892	Poppet	Machining				San-Lor / PEM
			Sulphuric Anodize MIL-A-8625 Type II Cl 1, water seal				Tech Metals / Danco
34691	5641893	Spring	Manufacturing				Hoosier
			Passivate QQ-P-35 Type II / MIL-S-5002				Imageering Finishing Tech
			Heat Treat MIL-H-6875 Cond CH900				Hoosier
34705	5641904	O-Ring	Manufacturing				Parker
37370-1	5665138	Vespel Insert	Machining				
34808	5641886	Body	Machining				Garrett / Johnson Precision

	TRACEABILITY PROCEDURE SUNDSTRAND UTC/AS D-5 PROGRAM	Effective Date 09-11-14		PB 94:00	
		Page 7 of 9		Rev AA	DCF # 473


			Sulphuric Anodize MIL-A-8625 Type II Cl 1		Tech Metals / Hixson
34693	5641896	Spring Equalizer	Machining		Garrett
			Chromic Anodize MIL-A-8625 Type 1		All Metals
34695	5641898	Seat	Machining		Johnson Precision
			Heat Treat MIL-H-6875 RC 56/58 Cold Stabilize		Continental Heat Treat
**	Alternate	Source	Passivate QQ-P-35 Type II / MIL-S-5002 Passivate QQ-P-35 Type II / MIL-S-5002		All Metals Embee
34696	5641899	Spring	Manufacturing		Hoosier
			Passivate QQ-P-35 Type II / MIL-S-5002		Imageering Finishing Tech
			Heat Treat MIL-H-6875 Condition CH900		Hoosier
34697	5641900	Poppet	Machining		KP Eng / /Metri Tech
			Heat Treat MIL-H-6875 RC 54/58 Cold Stabilize		Bodycote
			Passivate QQ-P-35 Type II / MIL-S-5002		Danco
34698	5641901	Seat	Machining		Johnson Precision
			Heat Treat MIL-H-6875 RC 56/60 Cold Stabilize		Continental Heat Treat
			Passivate QQ-P-35 Type II / MIL-S-5002		All Metals
37370-2	5665138	Vespel Insert	Machining		

* For any coatings or cleaning, the use of other Nadcap processors requires CIRCOR approval prior to implementation, and if approved a FAI must be performed in accordance with AS9102.

	TRACEABILITY PROCEDURE SUNDSTRAND UTC/AS D-5 PROGRAM		Effective Date 09-11-14	PB 94:00	
			Page 8 of 9	Rev AA	DCF # 473

REVISION LOG

REV LTR	PAGE (S)	DESCRIPTION	ECO #	DATE	BY	APPR
N/C		Initial Release	N/A	07-30-85	BW	RLB
A	All	General Revision	9-0858	08-14-65	VM	SW
B	All	General Revision	9-0864	09-13-85	VM	SW
C	All	General Revision	9-0865	10-03-85	BW	RLB
D	All	General Revision	9-1020	05-06-87	BW	RLB
E	N/A	N/A	N/A	N/A	N/A	N/A
F	All	General Revision	9-1047	08-10-87	BW	RLS
G	All	General Revision	9-1085	12-21-87	VM	RLB
H	All	General Revision	9-1128	05-18-88	BW	RLS
J	All	General Revision	9-1160	08-25-88	SW	RLS
K	All	General Revision	9-1308	03-15-90	MH	RL8
L	All	General Revision	9-1334	07-20-90	MH	RLB
M	All	General Revision	9-1358	10-15-90	MH	RLS
N	All	General Revision	9-1439	08-22-91	SFS	MH
P	2,3 & 4	Para. 9.1, removed Mechanized Enterprises, change of address for Circle Seal Controls, Furon and Whritenour. Para. 9.2, removed Western Gasket Para. 9.3, removed Precision Coil and JNL Spring was Excell Spring Para. 9.4, removed Corona Centerless Grinding and KC Precision. Changed address for DOW Precision. Para. 10.1, removed RGF Enterprises Para. 10.2, change of address for Circle Seal Controls and removed Pacific Magnetic Para. 10.3, change of address for Alumathern and Continental Removed Burbank NT, Lindberg NT and Pacific Steel Treating	01196	05-17-94	JG	MH
Q	3	Added San Lor Industries	03249	06-05-96	BJ	MH
R	3	Para 9.1 Omitted list and replaced with statement Machining, Stamping, — Circle Seal Approved supplier list. Omitted Paragraphs 9.2, 9.3, 9.4	05709	7-16-98	MP	MH

 <p style="text-align: center;">TRACEABILITY PROCEDURE SUNDSTRAND UTC/AS D-5 PROGRAM</p>	Effective Date	PB 94:00	
	09-11-14	Page 9 of 9	Rev AA

T	All	Complete Revision	23190	08/07/07	SR	JG
U	All	Complete format changes. Company name change from "Circle Seal Controls, Inc." to "CIRCOR Aerospace, Inc." Deleted ECO #. Replaced some suppliers for all three valves. Added x-ray requirement to RV 57-13 and RV57-14 valves		04/10/09	SR	JG
V	1 3 3-4 5	Added "as required by customer flowdown..." 8.1 Corrected EB number from 4:00 to 32:00. Tables Added anodize back to R34647, no impact Corrected processors used back to rev T data – no impact. Procedural error, no changes in routers. 11.0 Added References	N/A	1-18-10	DB	JG*
W	All	Complete re-write	N/A	9-22-10	DB	JG*
X	6-7	Corrected Supplier and Processors Table All instances was Hossier is Hoosier P/N 34651 was Aircraft Plating (out of bus.) is All Metals P/N 34689 was Tech Metals is Embee / RGF	N/A	10-29-10	DB	
Y	6	Added BG Detection Services as an alternate processor for Sierra Mfg for Shim P/N – 34651	63	7-27-12	KS	SM
AA	7	Added Embee as an alternate processor for Johnson Precision Mfg for Ship P/N – 34695, Reference Lockheed VRIC No.:604359 for Approval. Updated header and added DCF Number Moved revision history to end of document		9-11-14	KH	