

S

## ENGINEERING CHANGE NOTICE

Page 1 of 2

1. ECN 657606

Proj.  
ECN

<b>2. ECN Category (mark one)</b> Supplemental <input type="checkbox"/> Direct Revision <input checked="" type="checkbox"/> Change ECN <input type="checkbox"/> Temporary <input type="checkbox"/> Standby <input type="checkbox"/> Supersedure <input type="checkbox"/> Cancel/Void <input type="checkbox"/>		<b>3. Originator's Name, Organization, MSIN, and Telephone No.</b> Elaine N. Diaz, 1AK00, T4-20, 373-0210		<b>4. USQ Required?</b> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<b>5. Date</b> 3/30/00	
		<b>6. Project Title/No./Work Order No.</b> Plutonium Finishing Plant		<b>7. Bldg./Sys./Fac. No.</b> PFP, System 25		<b>8. Approval Designator</b> Q	
		<b>9. Document Numbers Changed by this ECN (includes sheet no. and rev.)</b> HNF-5186 REV 1		<b>10. Related ECN No(s).</b> None		<b>11. Related PO No.</b> None	
<b>12a. Modification Work</b> <input type="checkbox"/> Yes (fill out Blk. 12b) <input checked="" type="checkbox"/> No (NA Blks. 12b, 12c, 12d)		<b>12b. Work Package No.</b> N/A		<b>12c. Modification Work Completed</b> N/A Design Authority/Cog. Engineer Signature & Date		<b>12d. Restored to Original Condition (Temp. or Standby ECNs only)</b> N/A Design Authority/Cog. Engineer Signature & Date	
<b>13a. Description of Change</b>  Direct revision to revision 1 of the PFP HVAC SYSTEM COMPONENT INDEX (HNF-5186). This document identifies the critical characteristics of Commercial Grade Items necessary to ensure the HVAC system operates properly. Revision 2 incorporates components for exhaust fans in 2736-ZB.				<b>13b. Design Baseline Document?</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			
<b>14a. Justification (mark one)</b> Criteria Change <input checked="" type="checkbox"/> Design Improvement <input type="checkbox"/> Environmental <input type="checkbox"/> Facility Deactivation <input type="checkbox"/> As-Found <input type="checkbox"/> Facilitate Const. <input type="checkbox"/> Const. Error/Omission <input type="checkbox"/> Design Error/Omission <input type="checkbox"/>		<b>14b. Justification Details</b> Update list to include additional items.					
<b>15. Distribution (include name, MSIN, and no. of copies)</b> See distribution sheet						<b>RELEASE STAMP</b> MAR 30 2000 DATE: STA: 4 HAFORD RELEASE ID: S	

# ENGINEERING CHANGE NOTICE

Page 2 of 2

1. ECN (use no. from pg. 1)

657606

## 16. Design Verification Required

☐ Yes

☒ No

## 17. Cost Impact

### ENGINEERING

Additional ☐ \$ N/A

Savings ☐ \$ N/A

### CONSTRUCTION

Additional ☐ \$ N/A

Savings ☐ \$ N/A

## 18. Schedule Impact (days)

Improvement ☐ N/A

Delay ☐ N/A

19. Change Impact Review: Indicate the related documents (other than the engineering documents identified on Side 1) that will be affected by the change described in Block 13. Enter the affected document number in Block 20.

SDD/DD	<input type="checkbox"/>	Seismic/Stress Analysis	<input type="checkbox"/>	Tank Calibration Manual	<input type="checkbox"/>
Functional Design Criteria	<input type="checkbox"/>	Stress/Design Report	<input type="checkbox"/>	Health Physics Procedure	<input type="checkbox"/>
Operating Specification	<input type="checkbox"/>	Interface Control Drawing	<input type="checkbox"/>	Spares Multiple Unit Listing	<input type="checkbox"/>
Criticality Specification	<input type="checkbox"/>	Calibration Procedure	<input type="checkbox"/>	Test Procedures/Specification	<input type="checkbox"/>
Conceptual Design Report	<input type="checkbox"/>	Installation Procedure	<input type="checkbox"/>	Component Index	<input type="checkbox"/>
Equipment Spec.	<input type="checkbox"/>	Maintenance Procedure	<input type="checkbox"/>	ASME Coded Item	<input type="checkbox"/>
Const. Spec.	<input type="checkbox"/>	Engineering Procedure	<input type="checkbox"/>	Human Factor Consideration	<input type="checkbox"/>
Procurement Spec.	<input type="checkbox"/>	Operating Instruction	<input type="checkbox"/>	Computer Software	<input type="checkbox"/>
Vendor Information	<input type="checkbox"/>	Operating Procedure	<input type="checkbox"/>	Electric Circuit Schedule	<input type="checkbox"/>
OM Manual	<input type="checkbox"/>	Operational Safety Requirement	<input type="checkbox"/>	ICRS Procedure	<input type="checkbox"/>
FSAR/SAR	<input type="checkbox"/>	IEFD Drawing	<input type="checkbox"/>	Process Control Manual/Plan	<input type="checkbox"/>
Safety Equipment List	<input type="checkbox"/>	Cell Arrangement Drawing	<input type="checkbox"/>	Process Flow Chart	<input type="checkbox"/>
Radiation Work Permit	<input type="checkbox"/>	Essential Material Specification	<input type="checkbox"/>	Purchase Requisition	<input type="checkbox"/>
Environmental Impact Statement	<input type="checkbox"/>	Fac. Proc. Samp. Schedule	<input type="checkbox"/>	Tickler File	<input type="checkbox"/>
Environmental Report	<input type="checkbox"/>	Inspection Plan	<input type="checkbox"/>	None	<input checked="" type="checkbox"/>
Environmental Permit	<input type="checkbox"/>	Inventory Adjustment Request	<input type="checkbox"/>		<input type="checkbox"/>

20. Other Affected Documents: (NOTE: Documents listed below will not be revised by this ECN.) Signatures below indicate that the signing organization has been notified of other affected documents listed below.

Document Number/Revision

Document Number/Revision

Document Number/Revision

None

## 21. Approvals

Signature	Date	Signature	Date
Design Authority <u>J.D. Dick</u>	<u>3/30/00</u>	Design Agent	
Cog. Eng. <u>J.D. Dick</u>	<u>3/30/00</u>	PE	
Cog. Mgr. <u>R.A. Burk</u>	<u>3/30/00</u>	QA	
QA <u>D.R. Groth</u>	<u>3-30-00</u>	Safety	
Safety		Design	
Environ.		Environ.	
Other		Other	

### DEPARTMENT OF ENERGY

Signature or a Control Number that tracks the Approval Signature

### ADDITIONAL

# PFP HVAC SYSTEM COMPONENT INDEX

Prepared for the U.S. Department of Energy  
Assistant Secretary for Environmental Management

Project Hanford Management Contractor for the  
U.S. Department of Energy under Contract DE-AC06-96RL13200

**Fluor Hanford**  
P.O. Box 1000  
Richland, Washington

**Copyright License**

By acceptance of this article, the publisher and/or recipient acknowledges the U.S. Government's right to retain a nonexclusive, royalty-free license in and to any copyright covering this paper.

HNF-5186

Revision 2

ECN 657606

Total Pages: 8

# PFP HVAC SYSTEM COMPONENT INDEX

Date Published

March 2000

Prepared for the U.S. Department of Energy  
Assistant Secretary for Environmental Management

Project Hanford Management Contractor for the  
U.S. Department of Energy under Contract DE-AC06-96RL13200


**Fluor Hanford**

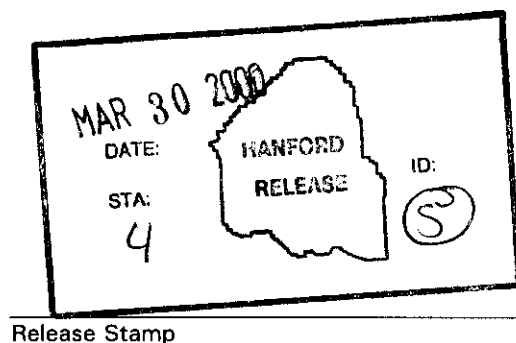
P.O. Box 1000

Richland, Washington

## Copyright License

By acceptance of this article, the publisher and/or recipient acknowledges the U.S. Government's right to retain a nonexclusive, royalty-free license in and to any copyright covering this paper.

 3/30/00  
Release Approval Date



**TRADEMARK DISCLAIMER**

Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise, does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof or its contractors or subcontractors.

This report has been reproduced from the best available copy.

Printed in the United States of America

Total Pages: 8

## RECORD OF REVISION

(1) Document Number

HNF-5186 Rev 2

Page 1

(2) Title
-----------

## PFP HVAC SYSTEM COMPONENT INDEX

## Change Control Record

[illegible]

## **1.0 PURPOSE**

This document lists safety class (SC) and safety significant (SS) components for the Heating Ventilation Air Conditioning (HVAC) and specifies the critical characteristics for Commercial Grade Items (CGI), as required by HNF-PRO-268 and HNF-PRO-1819. These are the minimum specifications that the equipment must meet in order to properly perform its safety function. There may be several manufacturers or models that meet the critical characteristics for any one item.

## **2.0 BACKGROUND**

The Plutonium Finishing Plant (PFP) HVAC System includes sub-systems 25A through 25K. Specific system boundaries and justifications are contained in HNF-SD-CP-SDD-005, "Definition and Means of Maintaining the Ventilation System Confinement Portion of the PFP Safety Envelope." The procurement requirements associated with the system necessitates procurement of some system equipment as Commercial Grade Items in accordance with HNF-PRO-268, "Control of Purchased Items and Services."

## **3.0 SCOPE**

The following list contains all engineering and maintenance documentation associated with each component including critical characteristics that describes the minimum specifications for standard industry equipment. The critical characteristics are verified through a combination of receipt inspections and installation testing.

The critical characteristic list assumes the new part is either the same manufacturer or part number or a replacement part specified by the vendor. Further information for the listed equipment is available from the appropriate Vendor Information (VI) files.

## **4.0 CRITICAL CHARACTERISTIC LISTING**

### **Fabrication Materials:**

In the interest of providing a concise document, materials used to fabricate assemblies specified in this list shall be designated as safety significant (SS) and shall be commercial grade items for in-house dedication meeting critical characteristics as follows:

- a. All stainless steel/carbon steel flat stock shall be ASTM designated, as evidenced by markings or documentation, and of specified thickness/gauge within standard manufacturer's tolerances.
- b. All stainless steel/carbon steel bar stock shall be ASTM designated, as evidenced by markings or documentation, and of specified cross sectional dimension within standard manufacturer's tolerances.
- c. All gasket material shall be type and spec designated, as evidenced by markings or documentation, shall meet the specified thickness within standard manufacturer's tolerances, and shall meet the durometer hardness as specified.

d. All stainless steel/carbon steel fasteners (i.e. bolts, nuts, washers, etc.) shall be ASTM or ASME (if so designated), size and thread specified. QA clause B73, "Control of Graded Fasteners," shall be imposed for procurements of high strength graded fasteners (i.e. Grade 5, 8, and ASTM 325 fasteners). Clause B73 does not apply to SAE Grades 1, 2, or 4.

e. All gasket material shall be ASTM designated, as evidenced by markings or documentation, and of thickness and durometer hardness test requirements specified.

## HEPA filter Certification:

All High Efficiency Particle Arrestor (HEPA) filters procured for PFP must meet Hanford's quality procurement clauses B01 and B04 (or the supplier shall be currently on the FA Evaluated Suppliers' List, already evaluated to B01 and B04) to ensure suppliers' quality programs have been evaluated and are current. Vendors must provide documentation certifying the efficiency test of each filter shipped. This step is verified via quality procurement clause B52, "Inspection and Test Documentation".

## Critical Components:

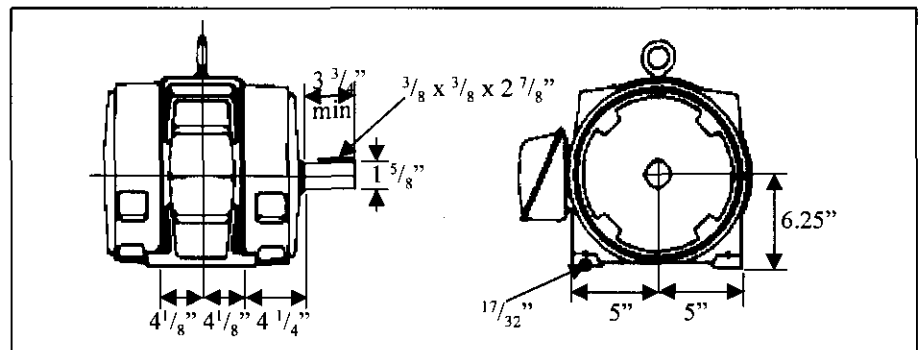
*(critical characteristics must be confirmed either via markings or documentation, or by measurement)*

### 1. Motor, Electric

For RF-1 and RF-2, Building 2736ZB

#### Critical Characteristics:

- HP = 15
- Full load AMP =  $19.4 \pm 2$
- Voltage =  $460 \pm 20$
- Phase = 3
- RPM = 1725 (4 pole )
- NEMA code = G
- Frequency = 60 Hz
- Frame = 254T
- Duty = Continuous
- Enclosure = Drip Proof
- Insulation = B

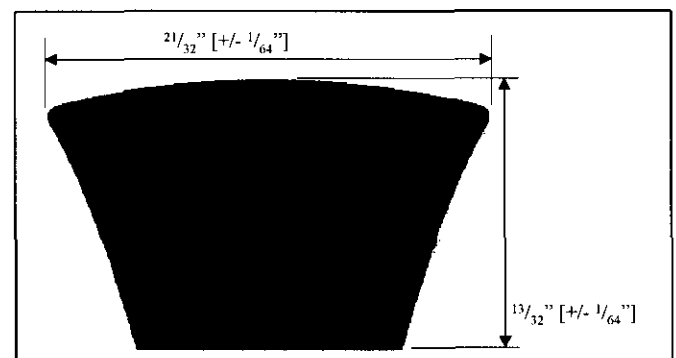


### 2. Belt

For Bldg. 232 Exhaust Fans 1 & 2

#### Critical Characteristics:

- Size = B47
- Outside Circumference = 50 inches  $[\pm \frac{1}{8}'']$
- Pitch Length (inner circumference of belt)  
=  $48.8'' [\pm \frac{1}{8}'']$



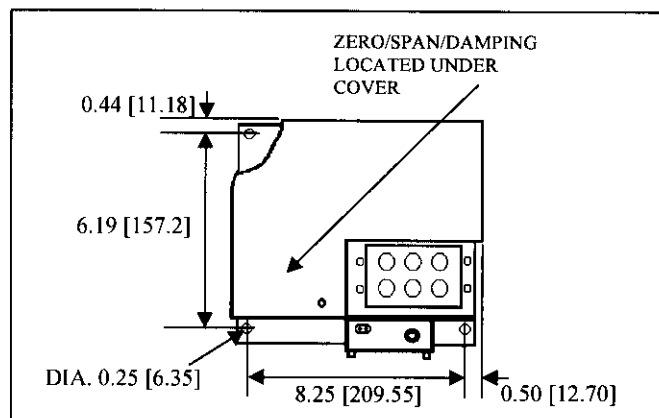


### 3. Transmitter

For differential pressure transmitter PX-2, Building 2736ZB

#### Critical Characteristics:

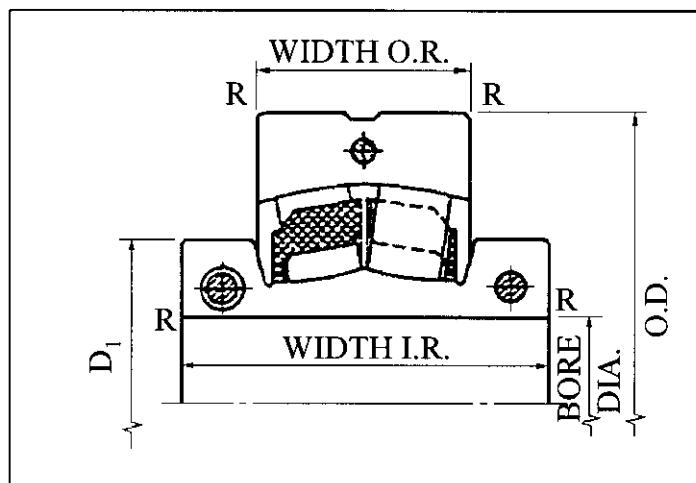
- Part # DPT 2200-0.5"-3
- Manufacturer = Brandt Instruments, Inc.
- Range 0.00 to 0.50" w.g.
- Output = 3-15 psig, linear with DP
- Continuous purge through high & low legs
- Inst. Air requirement = 20 psig
- Process connections = ¼ NPTF
- Accuracy =  $\pm 0.5\%$



### 4. Bearing

#### Critical Characteristics:

- Model # = Dodge #043972
- Configuration = Split Spherical Pillow Block Assembly
- Bearing Dimensions:
  - Bore =  $4 \frac{7}{16}$ " [ $+0.000/-0.004$ ]
  - Outer Diameter =  $9.055 [\pm 0.001]$ "
  - Width of Inner Ring =  $4.094 [\pm 0.001]$ "
  - Width of Outer Ring =  $2.519 [\pm 0.001]$ "
  - $D_1 = 5.984 [\pm 0.001]$ "      $R = 0.12$ "

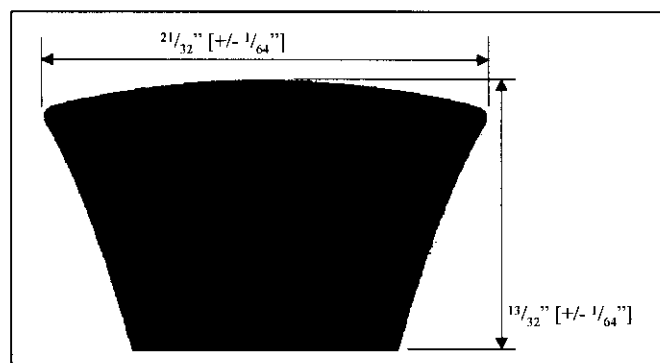


### 5. Belt

For Exhaust Fans 1 & 2, Bldg. 2736-ZB

#### Critical Characteristics:

- Size = B60
- Outside Circumference = 63 inches [ $\pm \frac{1}{8}$ "]
- Pitch Length (inner circumference of belt) =  $61.8" [\pm \frac{1}{8}]$

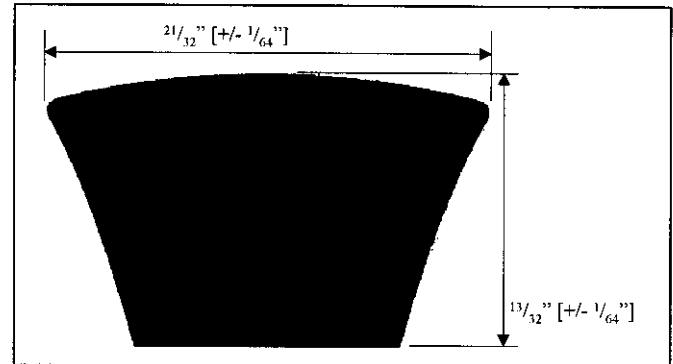


## 6. Belt

For Exhaust Fans EF-21-241-Z, Bldg. 241

Critical Characteristics:

- Size = B46
- Outside Circumference = 49 inches  $[\pm 1/8"]$
- Pitch Length (inner circumference of belt)  
= 47.8"  $[\pm 1/8"]$

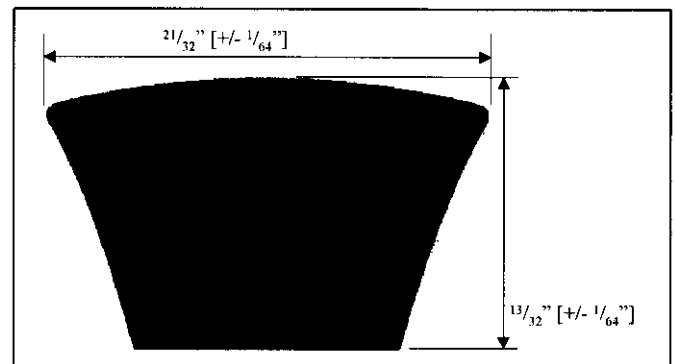


## 7. Belt

For Exhaust Fans EF-1-1 & EF-1-2,  
Bldg. 2736-ZA

Critical Characteristics:

- Size = B64
- Outside Circumference = 67 inches  $[\pm 1/8"]$
- Pitch Length (inner circumference of belt)  
= 65.8"  $[\pm 1/8"]$

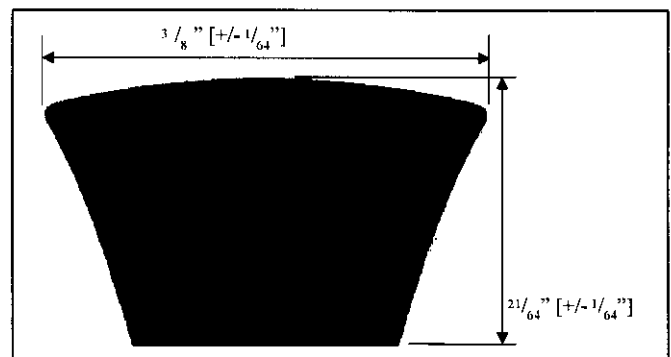


## 8. Belt

For Exhaust Fan EF-22-25D, Bldg. 241-Z

Critical Characteristics:

- Size = 3V-800
- Outside Circumference = 80 inches  $[\pm 1/8"]$   
(no pitch length available for this belt)



## 9. Transmitter

For differential pressure transmitter DPT-2 Building 232-Z

Critical Characteristics:

- Model # 264
- Manufacturer = SETRA
- Range 0.00 to 1.0" w.g.
- Output = 0-5 VDC
- Process connections = Barbed brass pressure fitting for ¼ push on tubing
- Accuracy =  $\leq \pm 1.0\%$  Full Scale
- Repeatability  $< 0.3\%$  Full Scale

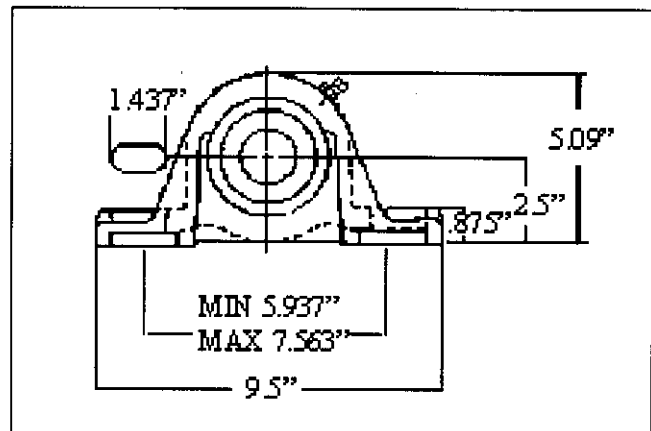
## 10. Bearing

(Ball Pillow Block Assembly)

For Exhaust Fans 1 & 2  
and Return Fans 1 & 2 in 2736-ZB

Critical Characteristics:

- Model # MPD-31
- Manufacturer = SealMaster
- Bore =  $1 \frac{15}{16}$ "
- Dimensions to match diagram:



## 11. Damper Connecting Link

For "DM-E-1-25A" actuator in duct level 234-5Z

Critical Characteristics:

- Ball Joint Rod End
  - McMaster-Carr #99 catalog #6072K34 ½-20 Female THD w/ Stud
  - McMaster-Carr #99 catalog #6072K14 ½-20 Male THD w/ Stud

[illegible]