TO: ALL HOLDERS OF REPAIR OF PNEUMATIC DUCTS OVERHAUL MANUAL, 36-10-03

REVISION NO. 58, DATED JUL 1/09

HIGHLIGHTS

DESCRIPTION OF CHANGE	TOPICS AFFECTED												
	D&O	D/Assy	Cleaning	Insp/Chk	Repair	Assy	F/C	Test	T/Shooting	S/Tools	Storage	IPL	L/Overhaul
Added duct 332A2326-45 with duct bends of a different material					X			X					

REPAIR OF PNEUMATIC DUCTS

36-10-03

BOEING P/N NO ASSIGNED PART NUMBER

AIRLINE P/N

THE FOLLOWING DIRECTIVES APPLY TO THIS SUBJECT:

BOEING SERVICE BULLETIN	BOEING TEMPORARY REVISION	OTHER DIRECTIVES	DATE DIRECTIVE INCORPORATED INTO TEXT
		PRR 33180-82	Dec 5/83
		PRR 33331	Dec 5/83
		PRR 33332	Dec 5/83
		PRR 33360	Dec 5/83
		PRR 33388	Dec 5/83
		PRR 33473	Dec 5/83
		PRR 33004-15	Jun 5/84
		PRR 33180-43	Jun 5/84
		PRR 33487	Jun 5/84
		PRR 33576	Sep 5/84
		PRR 33659	Sep 5/85
30-1029		PRR 33803	Sep 5/85
54-1014		PRR 33843	Sep 5/86
		PRR 33410-88	Jun 5/88
		PRR 34507	Dec 5/88
		PRR 34629	Dec 5/89
		PRR 34833	Jun 5/91
		PRR 34945	Mar 5/92
		PRR 38213	Nov 1/98
		PRR 38442	Jul 1/01
		PRR 32923	Jul 1/01
		PRR 34516	Jul 1/01
		PRR 34643	Jul 1/01
		PRR 38646	Jul 1/01
		PRR 38452	Nov 1/01
		PRR 38542	Jul 1/03
		PRR 38606	Jul 1/05
		737-SL-36-012	Jul 1/05
		PRR 38615	Nov 1/05
		PRR 38275-87R	Jul 1/06
		PRR 34357	Nov 1/07
		PRR 3800A-24	Jul 1/08

LIST OF EFFECTIVE PAGES

* Indicates pages revised, added or deleted in latest revision
F Indicates foldout pages - print one side only

	PAGE	DATE		PAGE	DATE		PAGE	DATE
	36-10-03			33	Jul 1/08			
	T-1	Jul 1/08		34	Jul 1/08			
	T-2	BLANK		35	Jul 1/08			
*	LEP-1	Jul 1/09		36	Jul 1/08			
	LEP-2	BLANK		37	Jul 1/08			
	T/C-1	Jul 1/00		38	Jul 1/08			
	T/C-2	BLANK		39	Jul 1/08			
	1	Jul 1/03		40	Jul 1/08			
	2	Mar 1/04		41	Mar 1/09			
	3	Mar 1/04		42	BLANK			
	4	Mar 1/04						
	5	Mar 1/04						
	6	Jul 1/04						
	7	Jul 1/04						
	8	Nov 1/04						
	9	Mar 1/04						
	10	Mar 1/07						
	10A	Mar 1/04						
	10B	Mar 1/04						
	11	Mar 1/04						
	12	Mar 1/07						
	13	Mar 1/04						
	14	Jun 10/70						
	15	Jun 10/70						
	16	Sep 1/97						
	16A	Jun 5/88						
	16B	Sep 5/91						
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	27	Jul 1/08						
	28	Jul 1/08						
	29	Jul 1/08						
	30	Jul 1/08						
	31	Jul 1/08						
	32	Jul 1/08						

TABLE OF CONTENTS

*[1] Special instructions are not necessary. Use standard industry practices and the instructions in SOPM 20-44-02 and 20-70-01.

REPAIR OF PNEUMATIC DUCTS

1. DESCRIPTION

A. This subject covers Boeing recommended procedures for repair of damaged thin-wall ducts in the pneumatic, air conditioning and anti-ice systems. Repair procedures are applicable to thin-wall ducts made of nickel base alloys, titanium and corrosion resistant steel (CRES). Examples shown cover failures more commonly encountered, but each repair must be treated as an individual case.

B. If a duct has been warped, ruptured, or bent by pressure, mechanical forces, temperature, or vibration, complete replacement of the damaged duct may be more desirable than repair. The full extent of the damage may not be detectable without destructive test of specimens.

C. When damage requires replacement of duct section, flange, support bracket, or bellows, the duct should be held in a suitable fixture to maintain alignment and dimensions.

D. Reference to the applicable engineering drawing is required to obtain specific replacement dimensions and welding requirements.

E. Flatness of ends of tubes to be butt welded, and mismatch due to out-of-roundness or diameter differences are critical. Tube ends should be flat within one-half of the maximum root gap. Sizing tools or special tools may be required to reduce mismatch to the specified tolerance on the applicable engineering drawing.

F. Adequate inert gas shielding is mandatory both on the work side and the backside of the weld. Gas auxiliary trailing shields and plugs to reduce internal volume for inert gas purging are difficult to use inside irregularly shaped ducts. Inert gas filled pressure chambers fitted with viewing windows and long gloves are recommended for properly welding difficult repairs, or, ends of the duct may be sealed, and inert gas supplied to the inside of the duct under a suitable pressure. The pressure must be high enough to properly purge the duct of air, but not so high as to blow the arc back. Pressures ranging from 5 to 15 psi are commonly used.

2. DISASSEMBLY

A. Remove all parts which are clamped or bolted to basic duct assembly.

NOTE: Do not remove parts that are riveted or welded to basic duct assembly.

3. CLEANING

A. Clean ducts by the procedures in SOPM 20-30-03 and these steps.

NOTE: For specification and vendor information on cleaners listed below, refer to SOPM 20-60-01.

(1) For nickel base alloy ducts, use alkaline cleaners such as Turco Vitro-Klene, Kelite Isoprep 177, Altrex and Oakite 61B or manual solvent cleaners such as acetone, butyl alcohol or toluene.

WARNING: DO NOT VAPOR DEGREASE OR USE METHYL ALCOHOL OR CHLORINATED MANUAL SOLVENTS ON TITANIUM PARTS WHICH WILL BE IN TEMPERATURES ABOVE 600°F IN SUBSEQUENT PROCESSING OR IN SERVICE.

(2) For titanium ducts that do not get protection from corrosion by hot BMS 3-11 hydraulic fluid, use manual solvent cleaners such as toluene, emulsion cleaner such as GMC 528-B, or akaline cleaners such as Turco Vitro-Klene, Kelite Isoprep-177, Altrex and Oaklite 61B.

(3) For titanium ducts that get protection from hot hydraulic fluid corrosion:

(a) Solvent clean the duct (SOPM 20-30-03) to remove oil and other unwanted foreign matter. Wipe dry.

(b) Remove hydraulic fluid and hydraulic fluid residue (light, glossy, brown film) with water-base alkaline cleaner.

(c) To remove thicker layers of hydraulic fluid residue, let an alkaline solvent be absorbed for 20-40 min. Then scrape this residue off with a small piece of wood.

NOTE: Do not use a power wire brush or abrasive blast to remove hydraulic fluid residue. Aluminized steel wool or Scotch Brite Type S abrasive fabric are acceptable abrasives.

(d) Stains after cleaning are permitted if all hydraulic fluid residue is removed and the surface is smooth.

(4) For ducts made of 321 or 347 CRES, use alkaline cleaners such as Turco Vitro-Klene, Kelite Isoprep-177, Altrex and Oakite 61B.

B. Remove all rust, protective coatings, and oxides as follows:

(1) On CRES ducts, dry abrasive clean the area to be repaired per SOPM 20-30-03. Remove protective coatings per SOPM 20-30-02.

(2) On nickel base alloy ducts, remove all oxide from the area to be repaired with Scotch-Brite Type S abrasive pads.

(3) On titanium ducts, remove all oxide from the area to be repaired per SOPM 20-30-03. Remove protective coatings per SOPM 20-30-02.

C. Wipe or rinse off all residue with an approved solvent per par. 3.A.

D. Treat duct areas to be welded as follows:

WARNING: BE CAREFUL IN WORK AND WEAR PROTECTIVE CLOTHING WHEN YOU USE THESE CHEMICAL AGENTS.

(1) On nickel base alloy ducts, to activate surfaces, wipe or swab areas with dilute solution of nitric hydrofluoric acid (2 volumes of water to 1 volume of acid) for 1 to 3 minutes. (Refer to BAC5758, Type 4).

(2) On CRES ducts, wipe or swab areas with inhibited hydrochloric acid. (Refer to BAC5625, Type 7).

(3) On titanium ducts, nitric-fluoride etch per SOPM 20-30-03.

(4) Rinse with cold water and dry completely with clean, filtered air or a clean, lint-free cloth.

(5) Keep the parts clean, dry, free from oil, grease, fingerprints and other surface contamination. Use only clean, oil-free gloves on them.

4. INSPECTION/CHECK

A. General

(1) If the duct has damage, use the procedure for damaged areas of par. B. below. If the duct is not damaged, use these steps.

(2) Visually examine by standard industry practices for metal deterioration.

(3) Reject titanium ducts if they have a dull black residue over bare metal surfaces (a sign of contamination by hydraulic fluid), or other signs of deterioration.

(4) Visually examine weld beads for signs of leakage.

(5) Penetrant examine (SOPM 20-20-02).

(6) Examine ducts with BMS 10-82 coating to make sure the coating is continuous. If necessary, this coating can be reapplied.

(7) Examine the sealing surfaces of ball joints to be sure there are no scratches which, when repaired, will cause the inner bearings to be out of round by more than 0.005 inch. Measure the roundness after the ball joint is welded to the duct. The sealing surfaces are those surfaces mating with the seal ring. See Fig. 15 for more details about ball joints.

B. Damaged Areas

(1) Use this procedure if the duct has damage. If not, then use the procedures of par. A. above.

(2) Look for dents, deep scratches or gouges in the duct wall. Treat the defects as a crack:

(a) if the scratches or gouges are more than 10 percent of the duct wall thickness, or

(b) if they are within 0.25 inch of a primary weld joint.

(3) These conditions are acceptable and repair of them is not necessary:

(a) Small surface marks and pits. But we recommend you repair corrosion pits based on their area or location.

(b) Smooth dents, if the bottom is rounded and without cuts, and if the dent is not deeper than 0.05 inch as measured from a straightedge put longitudinally along the duct. Make sure the inner surface of the bottom of the dent does not have cracks.

(c) Scratches and gouges, if their bottom is rounded and they are not deeper than 10 percent of the duct wall thickness.

(4) If the damage is more than these limits, the duct must be repaired or replaced.

C. Welds

(1) Penetrant examine (SOPM 20-20-02) all welded areas to be sure they are of high quality, are continuous, and without undercuts and flux.

(2) If possible, also radiographic examine the welded areas.

D. After hydrostatic test

(1) Examine all welded areas, the exterior of all pullout areas, and the heat affected zones.

(2) Penetrant examine (SOPM 20-20-02) all welded areas, the exterior of all pullout areas, and the heat affected zones.

5. REPAIR

A. General repair practices

(1) If a duct is badly damaged, it could be better to replace it than to try to repair it. Be sure to examine the duct for all possible defects before you start to repair the easily seen defects. See Inspection/Check for details.

(2) When you replace a section of the duct, a flange or bellows, be sure to hold the duct in a fixture to keep parts in alignment at the correct dimensions.

(3) Refer to the applicable engineering drawing for dimensions and welding details.

(4) When you butt-weld tubes, flatness of the ends and mismatch because of out of round or diameter differences are important. Use tools to decrease the mismatch to design limits.

(5) When you weld, be sure to use sufficient gas shielding on the work side and the back side of the weld. Use gas distribution shoes, evacuation chambers, and end plugs as necessary. Do not weld titanium in an air or oxygen atmosphere. Purge the duct interior and shield the exterior weld zone. Argon or helium gas is typically used as the shield gas at pressures from 5 to 15 psig.

(6) Do all weld repairs per BAC5975 Class A unless shown differently.

(7) Some ducts have brackets, placards and other attached parts of a different material than the duct itself. Refer to the engineering drawing for details if you remove and attach these parts.

(8) After the weld repair, give the duct a hydrostatic proof pressure test.

(9) Do not use abrasive cleaning methods that use grit, glass beads or jet blast materials to remove unwanted matter from the duct. You will remove signs of etched surfaces caused by hydraulic fluid contamination, and the subsequent penetrant check will not find the defects.

B. Special repair practices

(1) Smooth dents

(a) Remove smooth dents deeper than 5% of the outer diameter, more than 0.02 inch below the surface of curved sections, or more than 0.05 inch below the surface of straight sections. Wrinkles made when the duct was made can stay without repair.

(b) Repair dents deeper than 5% or with sharp creases as if they were cracks. Use the procedure for single line base metal cracks.

(c) To remove the dents, pull a smooth mandrel through the dented area. Or use a hydraulically or mechanically operated expansion device. Or apply hyrdraulic pressure within the limits of Fig. 17 and tap around the edge of the dent with a non-metallic hammer. Be careful not to use methods which cause local work-hardening.

(2) Scratches or gouges

(a) Shallow scratches or gouges up to 10% of the wall thickness can stay without repair.

(b) Repair deep scratches or gouges deeper than 10% of the wall thickness as if they were cracks. Use the procedure for single line base metal cracks.

(3) Weld defects

(a) Examples are weld undercuts, incomplete root penetration, weld cracks, weld porosity, and incomplete fusion welds. Not included are fatigue cracks in the base metal adjacent to the weld. Weld defects must be only in the weld filler metal cap. They must not be in the heat affected zone on each side of the weld cap.

(b) Cut and replace the weld section by the procedure for duct section replacement.

(c) Stop drill and direct fusion weld.

(4) Single line cracks not at pullout areas. Use one of these steps:

(a) Cut and replace the duct section.

(b) If the crack is less than 1.5 inches long or no longer than 1/4 of the duct outside diameter, stop drill and fusion weld a complete circumferential doubler sleeve over the defect.

(c) If the crack is less than 1.5 inches long or no longer than 1/4 of the duct outside diameter, stop drill and direct fusion weld without a doubler.

(5) Single line cracks at pullout areas. Use one of these steps (a), (b), (c), (d) or (e):

(a) Cut and replace the duct section.

(b) Cut and remove the cracked area and fusion weld a doubler sleeve with a pullout over the cutout area as follows

1) Cut and remove the cracked area and the pullout.

2) Make a doubler of tube or sheet stock of the same material as specified on the duct drawing or Fig. 17, but one gage thicker than the duct thickness.

3) Bend the doubler around a mandrel to get the same contour as the duct wall, and to be a good fit on the duct. Put the gap in the sleeve as far as possible from the defect and the duct wall seam. Make sure the doubler fits tightly on the duct. The maximum local gap permitted is 1/4 the thickness of the duct wall.

4) Weld a new pullout on the doubler (BAC5975 Class B).

5) Fusion weld the doubler all around (BAC5975 Class B). Use filler material as shown in Tables II, III or IV.

6) For non-titanium ducts, penetrant examine (SOPM 20-20-02).

7) For titanium ducts, use the duct assembly inspection procedure to classify this as a Type 1 repair.

(c) Stop drill and weld a circumferential doubler over the crack

1) Drill 3/16 inch stop holes at each end of the crack.

2) Make a doubler of tube or sheet stock of the same material as specified on the duct drawing or Fig. 17, but one gage thicker than the duct thickness.

3) Cut the doubler to give a minimum of a 1-inch edge margin out from the drilled stop holes on each side.

4) Bend the doubler around a mandrel to get the same contour as the duct wall, and to be a good fit on the duct. Put the gap in the sleeve as far as possible from the defect and the duct wall seam. Make sure the doubler fits tightly on the duct. The maximum local gap permitted is 1/4 the thickness of the duct wall.

5) Fusion weld the doubler all around (BAC5975 Class B). Use filler material as shown in Tables II, III or IV.

6) For non-titanium ducts, penetrant examine (SOPM 20-20-02).

7) For titanium ducts, use the duct assembly inspection procedure to classify this as a Type 1 repair.

(d) Stop drill the crack near the pullout and fusion weld a patch doubler around the pullout areas

1) Drill 3/16 inch stop holes at each end of the crack.

2) Make a doubler of tube or sheet stock of the same material as specified on the duct drawing or Fig. 17, but one gage thicker than the duct thickness.

3) Cut the doubler to give a minimum of a 1-inch edge margin out from the drilled stop holes on each side.

4) Bend the doubler around a mandrel to get the same contour as the duct wall, and to be a good fit on the duct. Put the gap in the sleeve as far as possible from the defect and the duct wall seam. Make sure the doubler fits tightly on the duct. The maximum local gap permitted is 1/4 the thickness of the duct wall.

5) Fusion weld the doubler all around (BAC5975 Class B). Use filler material as shown in Tables II, III or IV.

6) For non-titanium ducts, penetrant examine (SOPM 20-20-02).

7) For titanium ducts, use the duct assembly inspection procedure to classify this as a Type 1 repair.

(e) Stop drill and direct fusion weld the crack. For titanium ducts, this repair method is only a Type 2 repair.

(6) Multiple cracks or branch cracks and larger defects.

(a) Cut and replace the duct section.

(b) Stop drill the cracks and fusion weld a complete circumferential doubler over the damaged area, if the crack is less than 1.5 inches long or no longer than 1/4 of the duct outside diameter.

(7) Damaged flanges

(a) Blend out small defects such as nicks and scratches.

(b) Use the 6FT001-101 flange reforming tool to repair out-of-round flanges and small dents.

(c) Repair damaged sealing surfaces, deep scratches, bad deformation, sharp dents on the flange, or separation of titanium duct and flange because of crack propagation as follows (Fig. 12):

1) Cut and remove the remaining heat-affected zone portion from the titanium duct side.

2) Replace the old flange with a new flange and a new section of duct, or use a repair flange with a longer skirt.

3) Put the flange in position as shown.

4) Fusion weld the new flange to the duct (BAC5975 Class B).

5) For non-titanium ducts, penetrant examine (SOPM 20-20-02).

6) For titanium ducts, use the duct assembly inspection procedure to classify this as a Type 1 repair.

(8) Cracked boss attachments -- Replace the bad duct section.

(9) Support bracket holes without bushings

(a) Plug-weld the bad holes (BAC5975).

(b) Blend the welded areas smoothly to the original shape and dimensions of the brackets.

(c) Drill the holes to their original size and location.

(d) Penetrant examine (SOPM 20-20-02) the repair welds.

(e) Refinish as indicated.

(10) Duct section replacement

(a) Make a fixture to hold the duct, to help make sure the repaired duct will be a good fit in the airplane.

(b) Prepare to make a square butt-joint weld.

1) Clamp or bolt the duct to the fixture. Adjust the duct as necessary to remove all preload on the curved areas.

2) Cut out the bad section with manual or power cutting tools. Make sure each cut edge is flat within half of the permitted root gap (Fig. 4). Use aluminum oxide or carborundum abrasives to sand or grind.

3) Remove burrs, clean and treat the parts before you weld them.

(c) Make a replacement duct section. Clean it (SOPM 20-30-03). Align it with the remaining parts of the duct assembly, and clamp them together in the fixture.

(d) Make a final check of the fit of the parts. Then tack weld symmetrically along or around the joints.

(e) Make sure the tack welds blend smoothly with the base metal. If the tack welds will not be included in the fusion weld, you can grind the tack welds smooth.

(f) Fusion weld around the joint by the inert gas shielding methods (BAC5975 Class B). Use filler metal as shown in Tables II, III, and IV. Keep the root opening and mismatch within the limits of Fig. 4. If you weld thin-gage material, install an internal copper backup ring or an external chill ring to help keep the parts aligned and to make a heat sink.

(g) For non-titanium ducts, penetrant examine (SOPM 20-20-02).

(h) For titanium ducts, use the duct assembly inspection procedure to classify this as a Type 1 repair.

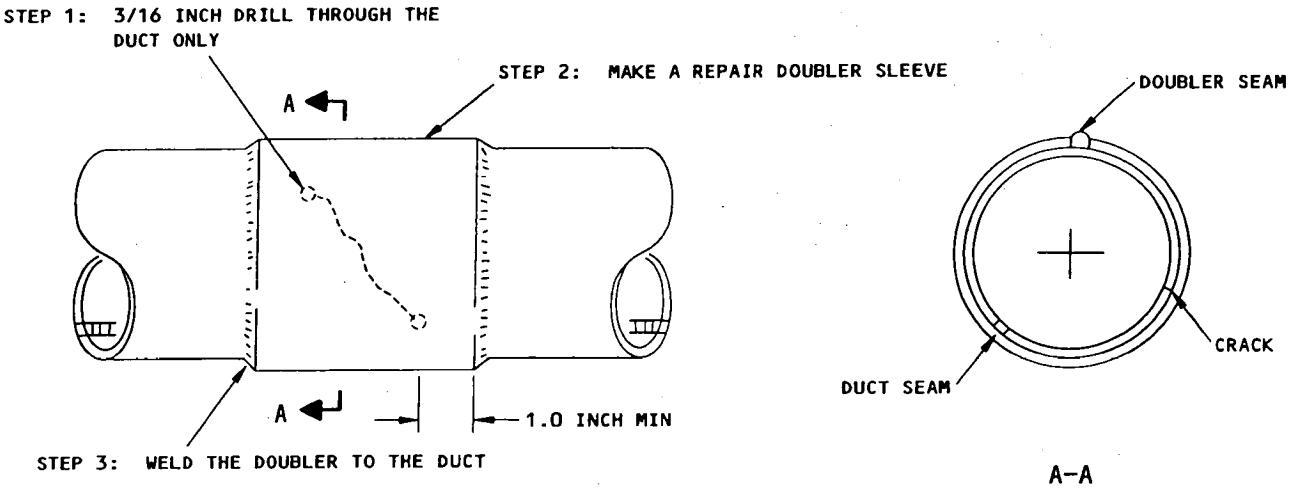
C. Repair Classification for Titanium Ducts

(1) Type 1 repairs make a permanent repair. These include a doubler welded over the damaged area, or complete removal and replacement of the damaged duct section. Also necessary is a duct assembly inspection and an end treatment. No further action is necessary.

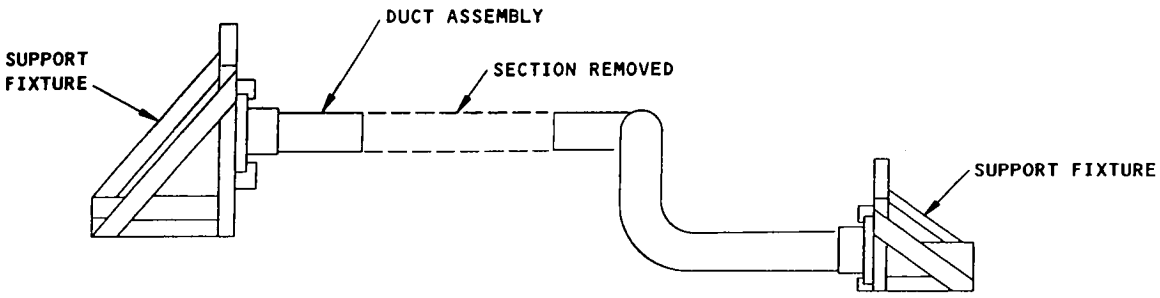
(2) Type 2 repairs are semi-permanent. These include stop drilling and welding the crack in the duct. Also necessary is a duct inspection and end treatment. We recommend that you convert these repairs to Type 1 repairs at the next available maintenance interval.

(3) Type 3 repairs are temporary repairs. We recommend you convert these to a Type 1 repair or replace the duct before 1000 flight cycles.

Figure 1 Deleted



Circumferential Doubler Sleeve Repair
Figure 2

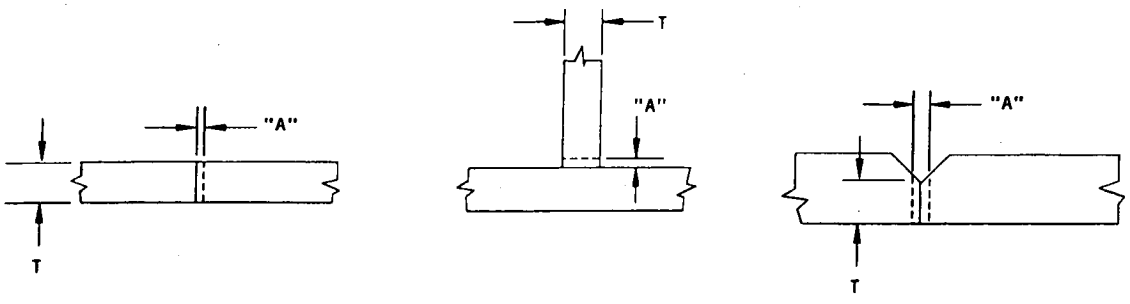


Support Fixture for Weld Repair
Figure 3

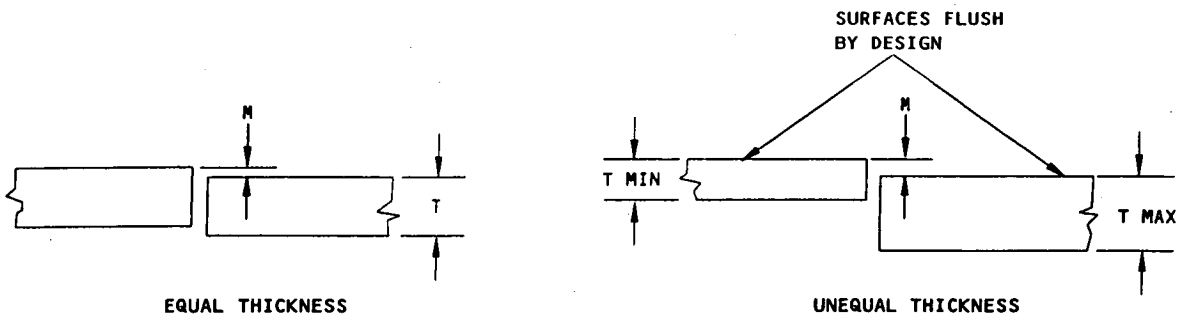
WELDING METHOD GAS METAL ARC WELDING - GMAW GAS TUNGSTEN ARC WELDING - GTAW PLASMA ARC WELDING - PAW THICKNESS 0.010 THRU 0.250 INCH	MAXIMUM ROOT OPENING (GAP) "A"	MAXIMUM MISMATCH "M"
MANUAL	1/2 T MIN OR 0.060 INCH WHICHEVER IS LESS	0.015 INCH PLUS 10% T MAX
MACHINE	1/4 T MIN OR 0.030 INCH WHICHEVER IS LESS	0.010 INCH PLUS 10% T MAX

T MIN = THICKNESS OF THINNER MEMBER OR ROOT FACE DIMENSION IN INCHES

T MAX = THICKNESS OF THICKER MEMBER



ROOT OPENING



JOINT MISMATCH

Welded Joint Gap and Mismatch
Figure 4

(6) Repair damaged ball joints.

(a) Scratches on ball joints can be repaired only by deburring to get a 16-microinch finish. Then give the repaired joints a pressure test (par. 7.A.).

(b) Replace the ball joint if the pressure test leakage rate is more than the limits. Do not try to grind or remove material to get a satisfactory pressure test or ball joint roundness as indicated in Fig. 15.

(7) Rework optional ball joint wear rings 69-26229-1, 69-26230-1.

(a) These ball joint wear rings come with Everlube 811 solid film lubricant (V11770) (SOPM 20-50-08). As an alternative, you can change to the better silver plated configuration as follows:

1) Remove the solid film lubricant per SOPM 20-30-02.

2) Silver plate (F-1.901), 0.0007-0.0010-inch thick all over. Material is nodular cast iron, Class 4 (Type SP-80) per AMS 5316 or MIL-I-11466 or ASTM A-536.

3) Change the part numbers as follows:

a) 69-26229-1 to 69-26229-2

b) 69-26230-1 to 69-26230-2

(8) Refer to Tables II, III and IV for the applicable filler material to fusion weld nickel base alloys, CRES, and titanium alloy.

B. Refinish -- See Fig. 17

NOTE: Refer to SOPM 20-30-02 for stripping of protective finishes. Refer to SOPM 20-41-01 for explanation of F and SRF finish codes.

C. Replacement

(1) If the base metal damage is more than the repair limits, cut out the bad section and weld in a replacement section. See Fig. 11 for repair restrictions on high pressure manifold duct, 65-22441-21.

(2) Flanges that cannot be repaired must be replaced. Weld a new flange with or without an adapter and on weld fixture 50115-2 or equivalent.

(a) Find the applicable replacement flange size and alignment to the duct (Fig. 12).

(b) If a new flange with stub adapter is available, weld the stub adapter with a lap joint as shown in Fig. 13.

(c) If only a new flange is available and if the duct wall is serviceable on the duct side of the resistance weld,

1) Cut through both the flange skirt and the duct wall and remove the flange end as shown in Fig. 14.

2) Put the replacement flange in position and fusion weld it.

NOTE: Drawing 56080 from Aeroquip Corporation (V00624 or V3X016) gives data about their flanges and stub adaptors.

(3) Boss attachments that cannot be repaired must be replaced with a new section. We recommend you use an attachment boss section replacement of one gage heavier material.

(4) Ball joints that cannot be repaired must be replaced. Find the applicable replacement ball joint size and alignment to the duct (Fig. 15). Make sure the ball joint to duct roundness is within the tolerance shown.

NOTE: Do not try to grind or machine to get this specified ball joint roundness to the duct.

(5) Ferrule and body coupling parts that cannot be repaired must be replaced. Put the couplings on the duct as shown in Fig. 16. Before you weld, make sure the diametrical clearance of the coupling to the duct is as shown.

(6) Refer to Tables II, III and IV for applicable filler material to fusion weld nickel base alloy, CRES, and titanium alloy.

D. Materials

(1) Refer to Fig. 17 for duct materials.

(2) Coatings

(a) BMS 10-82 (SOPM 20-44-01)

(b) Type 24 (SOPM 20-44-01)

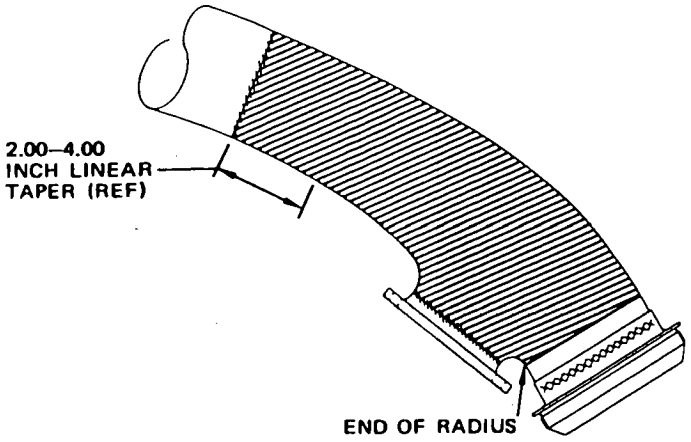
(c) Type 47 (SOPM 20-44-01)

(d) BMS 14-4, Type 1 (SOPM 20-60-02)

(3) Tapes, protective (SOPM 20-60-04)

(a) Sheldahl G103300 or 146494-001

(b) Scotch Y9184S



CROSS-HATCHED AREA NOT REPAIRABLE. REPLACE COMPLETE DUCT IF CROSS-HATCHED AREA IS DAMAGED. REPAIR REMAINING AREAS OF DUCT BY REPLACING DEFECTIVE SECTION ONLY. FOR DUCT SECTION REPLACEMENT, USE ONLY OVERLAP MELT-DOWN OR SQUARE GROOVE BUTT-JOINT WELD.

HIGH PRESSURE MANIFOLD DUCT ASSEMBLY, P/N 65-22441-21

Individual Duct Repair
Figure 11

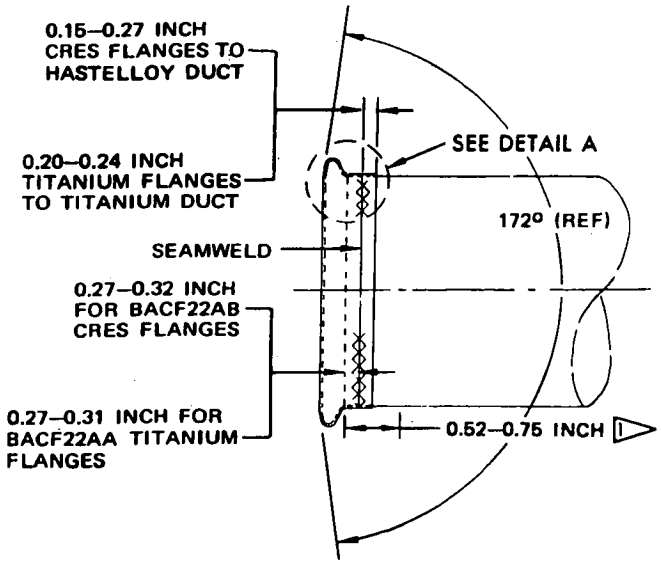
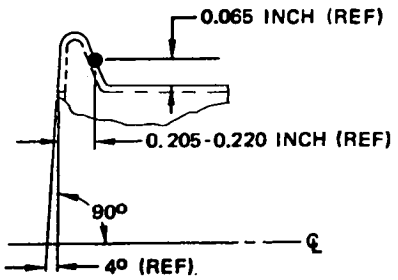


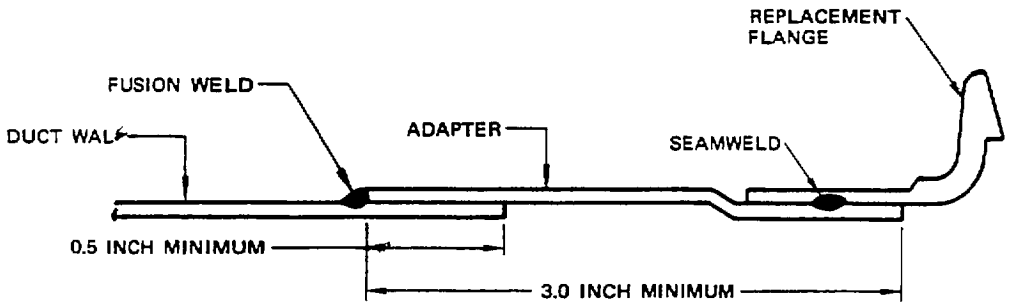
TABLE I			
NOMINAL DUCT OD	SIZE TO		FLANGE FLATNESS MAX TIR
	MIN DIA	MAX DIA	
6.00	5.995	6.015	.005
5.50	5.495	5.515	.005
5.00	4.995	5.015	.005
4.50	4.495	4.515	.005
4.00	3.995	4.015	.005
3.50	3.495	3.515	.005
3.00	3.995	3.015	.005
2.75	3.745	3.765	.005
2.50	2.495	2.515	.005
2.25	2.245	2.265	.005
2.00	1.995	2.015	.005
1.75	1.745	1.765	.005
1.50	1.495	1.515	.005
1.25	1.245	1.265	.005
1.00	.995	1.015	.005



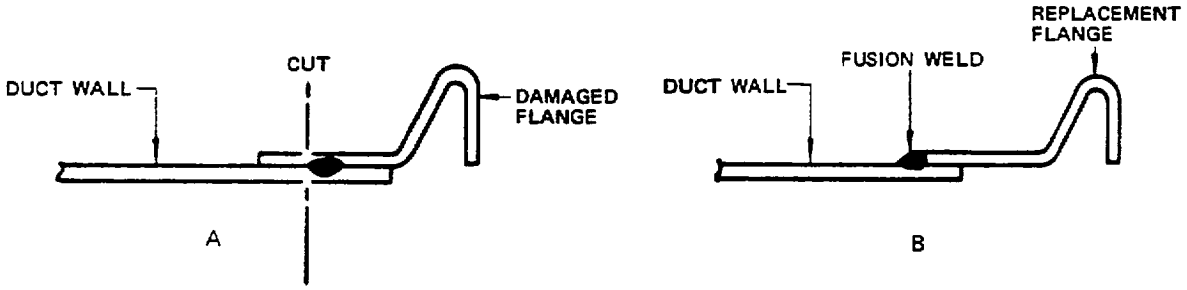
DETAIL A

1 SIZE DUCT TO DIAMETER SPECIFIED IN TABLE I. WHEN APPLICABLE, GRIND WELD BEAD FLUSH FOR THIS DISTANCE

Replacement Flange Alignment
Figure 12



Flange Replacement with Stud Adapter
Figure 13



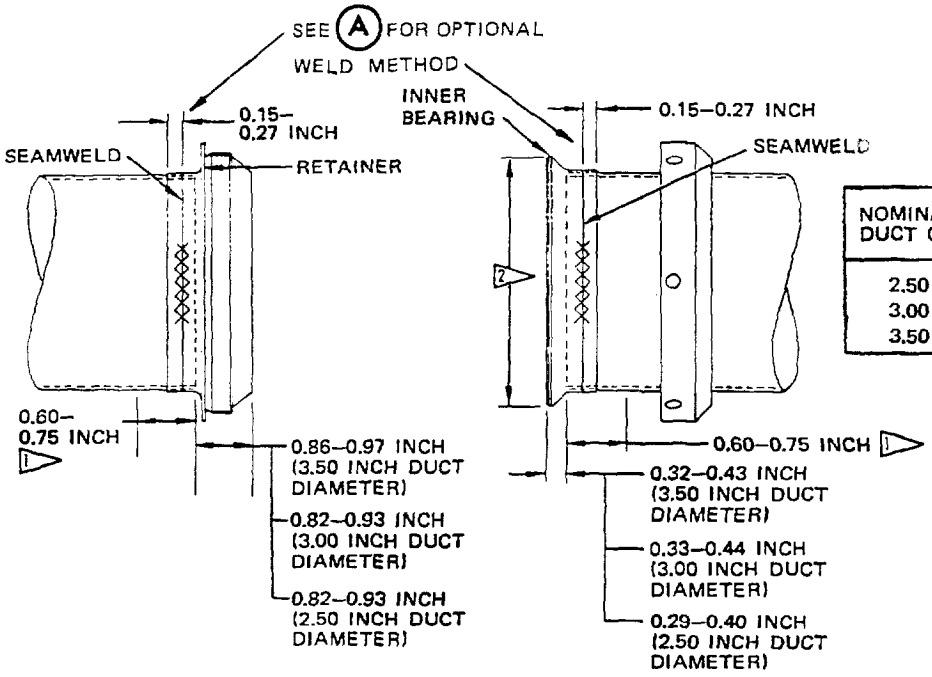
Replacement of Damaged Flange
Figure 14

Table II - Filler Metal Selection for Corrosion Resistant Steel (CRES)				
	321,347,304L	316L	21 Cr-6Ni-9Mn	15-5PH, 17-4PH
MATERIAL COMBINATION	FILLER MATERIAL	FILLER MATERIAL	FILLER MATERIAL	FILLER MATERIAL
321,347,304L	AWS A5.9 CLASS ER 347 OR ER 349 OR AMS 5680	---	---	---
316L	AWS A5.9 CLASS ER 347 OR AMS 5680	AWS A5.9 CLASS ER 316L	---	---
21Cr-6Ni-9Mn	AWS A5.9 CLASS ER 219	---	AWS A5.9 CLASS ER 219	
15-5PH 17-4PH	---	---	---	AMS 5825 OR AWS A5.9 CLASS ER 630
19-9DL	AWS A5.9 ER 347 CLASS 7A	---	---	---

Table III - Filler Metal Selection for Nickel Base Alloys			
	Nickel alloy 625	Nickel alloy 718	AISI 680 Hastelloy "X"
MATERIAL COMBINATION	FILLER MATERIAL	FILLER MATERIAL	FILLER MATERIAL
Nickel alloy 625	AMS 5837 OR AWS A5.14 CLASS ER Ni Cr Mo-3	---	---
Nickel alloy 718	AMS 5837 OR AWS A5.14 CLASS ER Ni Cr Mo-3	AMS 5832	---
AISI 680 Hastelloy "X"	---	---	AMS 5786 OR AWS A5.14 CLASS ER Ni Cr Mo-3 Hastelloy "W"
19-9DL	---	---	Hastelloy "W"

Table IV - Filler Metal Selection For Titanium Alloys

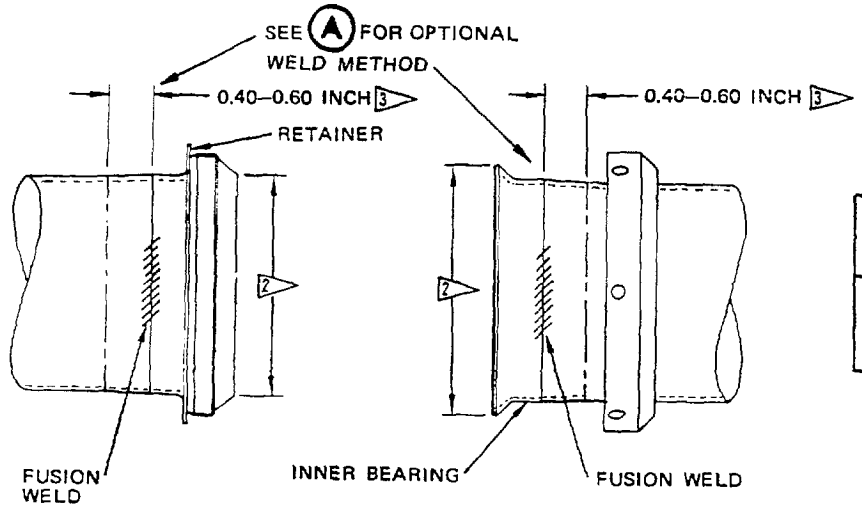
MATERIAL COMBINATION	Commercially Pure	5Al - 2.5Sn	6Al - 4V
	FILLER MATERIAL	FILLER MATERIAL	FILLER MATERIAL
Commercially Pure	AWS A5.16 ER Ti-2 OR AMS 4951	---	---
5Al - 2.5Sn	---	AWS A5.16 CLASS ER Ti-5Al - 2.5Sn OR AMS 4953	---
6Al - 4V	---	---	AWS A5.16 CLASS ER Ti-6Al - 4V OR AMS 4956



NOMINAL DUCT OD	SIZE DUCT TO	
	MIN DIA	MAX DIA
2.50	2.495	2.515
3.00	2.995	3.015
3.50	3.495	3.515

TABLE I

SEAMWELDED BALL JOINTS



NOMINAL DUCT ID	SIZE DUCT TO	
	MIN ID	MAX ID
2.460	2.500	2.525
2.960	3.000	3.025
3.460	3.500	3.525

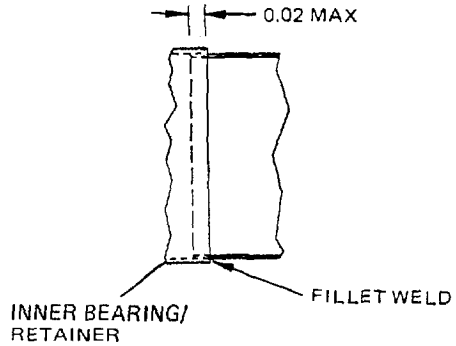
TABLE II

FUSION WELDED BALL JOINTS

1 SIZE DUCT TO DIAMETER SPECIFIED IN TABLE I FOR SELECTIVE ASSEMBLY WITH RETAINER OR INNER BEARING. WHEN APPLICABLE GRIND WELD BEAD FLUSH FOR THIS DISTANCE.

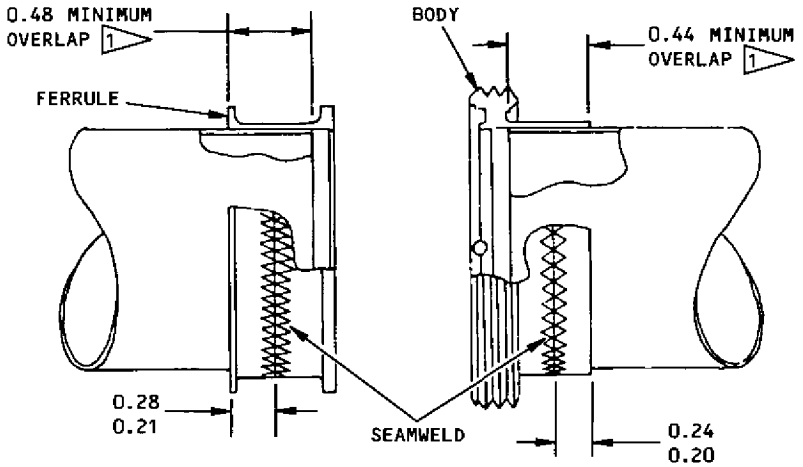
2 DIAMETER SHALL BE ROUND WITHIN ± 0.005 INCH AFTER WELDING.

3 SIZE DUCT TO DIAMETER SPECIFIED IN TABLE II WHEN FUSION WELDING IS USED.



(A) FILLET WELDED BALL JOINTS

Replacement Ball Joint Alignment
Figure 15



1 DIAMETRICAL CLEARANCE BEFORE WELDING 0.015 MAXIMUM

ALL DIMENSIONS ARE IN INCHES

Ferrule and Body Duct Coupling Replacement
Figure 16

6. ASSEMBLY

A. Reinstall parts that were clamped or bolted to duct assemblies. For duct assemblies 332A2390-3, -12, -48, install the insulation blankets on the duct, then install the straps through the insulation belt loops. Tighten the straps with an MS90387-3 tool at a setting of 5 pounds. Or send the assembly parts to Exotic Metal Forming Company (V06689) for this task.

B. Clamp or join partial duct assemblies to make a complete unit, as it was removed from airplane. Make all connections hand-tight, with the relative position of the partial duct assemblies as near as possible to their actual position in the airplane. Attach a note to tell the installers to make final adjustments and tighten to final torques when the duct is installed on the airplane.

7. TESTING

A. Do a hydrostatic pressure test (BAC5001-2) on deburred duct assembly ball joints. Hydrostatic pressure must not be more than 220 psig. Joint leakage must not be more than 1 pound per minute.

WARNING: BEFORE YOU APPLY PRESSURE, BE SURE ALL CONNECTIONS ARE TIGHT, TO MAKE SURE THE DUCT ASSEMBLY STAYS TOGETHER WHEN PRESSURIZED.

B. After the welds are examined for quality and approved, do a hydrostatic pressure test (BAC5001-2) on all ducts by the following steps and to the pressures in Fig. 17. There must be no sign of leakage, cracks or change in overall duct length. A 0.2% set in duct diameter is permitted.

(1) Put caps on the duct ends and the pullout openings. Then install the duct on the test bench. A typical test bench setup is shown in Fig. 16A. Be sure to use a gage with a pressure range that can measure the hydrostatic pressures given in Fig. 17.

(2) With the drain valve open, turn on the tap water and run the water (approximately 50 psig, but not more than the specified test pressure if below 50 psig) through the duct. At the same time, move the duct around while the water flows through it, until all of the air is removed from the duct. Install a shield around the duct, close the drain valve, and turn off the tap water. This will pressurize the duct to the tap water pressure.

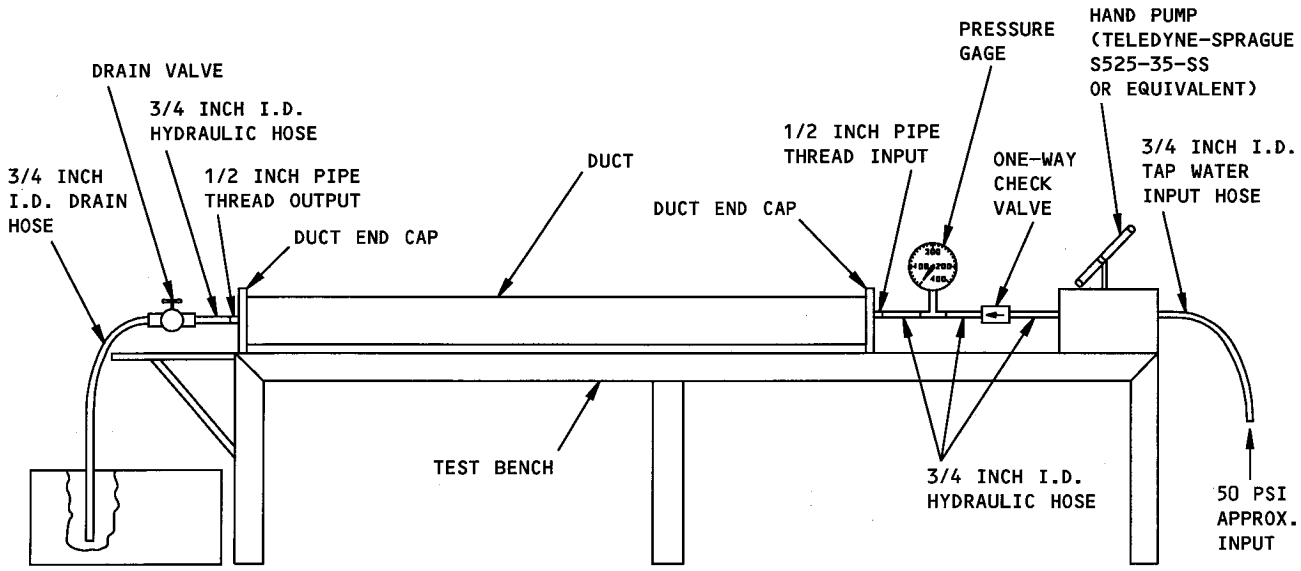
WARNING: BE SURE ALL OF THE AIR IS REMOVED BEFORE YOU PRESSURIZE THE DUCT. ANY AIR REMAINING IN THE DUCT COULD CAUSE DUCT DAMAGE AND POSSIBLE INJURY TO PERSONNEL IF THE DUCT COMES APART DURING THE TEST.

(3) Slowly pressurize the duct, in 50 psig increments if necessary, to the pressure given in Fig. 17 at room temperature. A good method to pressurize the duct is to use a hand pump as shown in Fig. 16A.

(4) Hold the duct at test pressure for 15 seconds.

(5) When the test is completed, slowly open the drain valve to release the pressure from the duct. Drain the duct and remove the end caps.

(6) Penetrant examine (SOPM 20-20-02) the external longitudinal duct welds around the pullouts, and the internal and external weld beads adjacent to the flanges, to be sure the welds are good.



Typical Pneumatic Duct Hydrostatic Proof
Pressure Test Bench Setup
Figure 16A

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8. SPECIAL TOOLS, FIXTURES, AND EQUIPMENT

NOTE: Equivalent substitutes can be used.

A. Flange Coupling Reform Tool -- Adams-Bird 6FT001-101, V0TDH1

B. Pneumatic System Ball Joint Wrench Set -- Boeing F72999-1

C. Flange Welding Fixture -- Aeroquip 50115-2 (used to replace J-13 flanges), V00624 or V3X016

D. Tool for Plastic and Metal Tiedown Straps -- MS90387-3

VENDORS

V0TDH1	INNOVATIVE SUPPORT EQUIPMENT ENGINEERING, INC., 745 POTSGROVE PLACE, TRACY, CALIFORNIA 95377-9023
V00624	AEROQUIP CORP., AEROSPACE GROUP, 300 S. EAST AVE., JACKSON, MICHIGAN 49203-1972
V06689	EXOTIC METALS FORMING COMPANY LLC, 5411 SOUTH 226TH ST., KENT, WASHINGTON 98032-4842
V11770	E/M COATING SERVICES, 6940 FARMDALE AVE., NORTH HOLLYWOOD, CALIFORNIA 91605-6210
V3X016	AEROQUIP CORP., AEROSPACE DIV., LOS ANGELES PLANT, 11214 EXPOSITION BLVD., LOS ANGELES, CALIFORNIA 90064-3117

Part Number	Nomenclature	FINISH *[7]	MATL.	PRESS. *[6]
212A1110	PACK BAY PNEUMATIC MANIFOLD AIR SUPPLY	(Reference)		
212A1111-1	Duct Assy	*[22]	*[17]	240
-8	Duct Assy	*[22]	*[17]	240
-11	Duct Assy	*[22]	*[17]	240
-12	Duct Assy	*[22]	*[17]	240
-15	Duct Assy	*[22]	*[34]	240
212A1112-1	Duct Assy	*[22]	*[17]	240
212A1113-1	Duct Assy	*[22]	*[17]	240
-7	Duct Assy	*[22]	*[17]	240
212A1114-1	Duct Assy	*[22]	*[35]	240
-5	Duct Assy	*[22]	*[35]	240
212A1130	PACK BAY AIR SUPPLY DUCT INSTL	(Reference)		
212A1131-1	Duct Assy	*[36]	*[35]	240
-2	Duct Assy	*[36]	*[35]	240
-9	Duct Assy	*[36]	*[35]	240
-10	Duct Assy	*[36]	*[35]	240
-14	Duct Assy	*[36]	*[35]	240
-16	Duct Assy	*[36]	*[35]	240
212A1210	INBD WING TE AIR SUPPLY DUCT INSTL	(Reference)		
212A1211-1	Duct Assy	*[36]	*[34]	240
-2	Duct Assy	*[36]	*[34]	240
-8	Duct Assy	*[36]	*[34]	240
-9	Duct Assy	*[36]	*[34]	240
212A1212-1	Duct Assy	*[36]	*[34]	240
-3	Duct Assy	*[36]	*[34]	240
212A1213-1	Duct Assy	*[36]	*[34]	240
-2	Duct Assy	*[36]	*[34]	240
-8	Duct Assy	*[36]	*[34]	240
-9	Duct Assy	*[36]	*[34]	240
212A1910	SECTION 49 WING TO BODY AIR SUPPLY	(Reference)		
212A1911-1	Duct Assy	*[22]	*[35]	240
-2	Duct Assy	*[22]	*[35]	240
-9	Duct Assy	*[22]	*[35]	240
-10	Duct Assy	*[22]	*[35]	240
-14	Duct Assy	*[22]	*[35]	240
-15	Duct Assy	*[22]	*[35]	240
212A1912-1	Duct Assy	*[8]	*[35]	240
-3	Duct Assy	*[8]	*[35]	240
-4	Duct Assy	*[8]	*[35]	240
212A2410	APU AIR SUPPLY DUCT INSTL	(Reference)		
212A2412-1	Duct Assy	*[8]	*[14]	240-250
-2	Duct Assy	*[8]	*[34]	240-250
-3	Duct Assy	*[8]	*[14]	240-250
-14	Duct Assy	*[8]	*[14]	240-250
-16	Duct Assy	*[8]	*[34]	240-250

Duct Material, Finish and Test Data
Figure 17 (Sheet 1)

Part Number	Nomenclature	FINISH *[7]	MATL.	PRESS. *[6]
212A2610	APU AIR SUPPLY DUCT INSTL	(Reference)		
212A2621-1	Duct Assy *[37]	*[8]	*[14]	*[32]
-2	Duct Assy	*[8]	*[34]	*[32]
-3	Duct Assy	*[8]	*[34]	*[32]
-4	Duct Assy	*[8]	*[34]	*[32]
-5	Duct Assy	*[8]	*[34]	*[32]
-6	Duct Assy	*[8]	*[34]	*[32]
-7	Duct Assy	*[8]	*[34]	*[32]
-8	Duct Assy *[37]	*[33]	*[34]	*[32]
-29	Duct Assy	*[8]	*[34]	*[32]
-31	Duct Assy	*[8]	*[14]	*[32]
-32	Duct Assy *[37]	*[33]	*[34]	240-250
-33	Duct Assy	*[8]	*[14]	*[32]
-36	Duct Assy	*[8]	*[34]	*[32]
-37	Duct Assy	*[8]	*[34]	*[32]
-46	Duct Assy	*[8]	*[34]	*[40]
-47	Duct Assy	*[8]	*[38]	*[40]
-50	Duct Assy	*[8]	*[34]	*[40]
-51	Duct Assy	*[8]	*[34]	*[40]
-52	Duct Assy	*[8]	*[34]	*[40]
-53	Duct Assy	*[8]	*[34]	*[40]
-66	Duct Assy	*[8]	*[14]	*[40]
-67	Duct Assy	*[8]	*[34]	*[40]
-68	Duct Assy	*[8]	*[34]	*[40]
-69	Duct Assy	*[8]	*[34]	*[40]
212A2810	APU AIR SUPPLY DUCT INSTL	(Reference)		
212A2811-1	Duct Assy	*[22]	*[34]	240-250
-2	Duct Assy	*[22]	*[34]	240-250
-7	Duct Assy	F-17.14	*[34]	240-250
-8	Duct Assy	F-17.14	*[34]	240-250
212A5001	NITROGEN GENERATION SYSTEM	(Reference)		
212A5102-1	Duct Assy	*[22]	*[17]	240
213A1002	AIR CONDITIONING PACK DUCT INSTL	(Reference)	---	---
213A1201-1	Duct Assy	*[22]	*[34]	240
-3	Duct Assy	*[22]	*[34]	240
-8	Duct Assy	*[22]	*[34]	240
-11	Duct Assy	*[22]	*[34]	240
-15	Duct Assy	*[22]	*[34]	240
-19	Duct Assy	*[22]	*[34]	240
-22	Duct Assy	*[22]	*[34]	240
-23	Duct Assy	*[22]	*[34]	240
-24	Duct Assy	*[22]	*[34]	240
-25	Duct Assy	*[22]	*[34]	240
-27	Duct Assy	*[22]	*[34]	240
-30	Duct Assy	*[22]	*[34]	240
-31	Duct Assy	*[22]	*[34]	240
-36	Duct Assy	*[22]	*[34]	240
-37	Duct Assy	*[8]	*[34]	240
-43	Duct Assy	*[8]	*[34]	240

Duct Material, Finish and Test Data
Figure 17 (Sheet 2)

Part Number	Nomenclature	FINISH *[7]	MATL.	PRESS. *[6]
213A1201-48	Duct Assy	*[8]	*[34]	240
-49	Duct Assy	*[8]	*[34]	240
-51	Duct Assy	*[8]	*[34]	240
-60	Duct Assy	*[8]	*[34]	240
-61	Duct Assy	*[8]	*[34]	240
-64	Duct Assy	*[8]	*[34]	240
-70	Duct Assy	*[8]	*[34]	240
-76	Duct Assy	*[8]	*[34]	240
-80	Duct Assy	*[8]	*[34]	240
-83	Duct Assy	*[8]	*[34]	240
-102	Duct Assy	*[8]	*[34]	240
-103	Duct Assy	*[22]	*[34]	240
-104	Duct Assy	*[22]	*[34]	240
-105	Duct Assy	*[22]	*[34]	240
-106	Duct Assy	*[22]	*[34]	240
-107	Duct Assy	*[22]	*[34]	240
-108	Duct Assy	*[22]	*[34]	240
-109	Duct Assy	*[8]	*[34]	240
-110	Duct Assy	*[8]	*[34]	240
-111	Duct Assy	*[8]	*[34]	240
-112	Duct Assy	*[8]	*[34]	240
-113	Duct Assy	*[22]	*[34]	240
-114	Duct Assy	*[8]	*[34]	240
-115	Duct Assy	*[8]	*[34]	240
-139	Duct Assy	*[22]	*[34]	240
-140	Duct Assy	*[8]	*[34]	240
-141	Duct Assy	*[8]	*[34]	240
-154	Duct Assy	*[22]	*[34]	240
-159	Duct Assy	*[8]	*[34]	240
-160	Duct Assy	*[22]	*[34]	240
213A1211-1	Duct Assy	*[8]	*[34]	240
-2	Duct Assy	*[8]	*[34]	240
-19	Duct Assy	F-17.14	*[34]	240
-23	Duct Assy	F-17.14	*[34]	240
-24	Duct Assy	F-17.14	*[34]	240
-29	Duct Assy	*[8]	*[34]	240
-33	Duct Assy	F-17.14	*[34]	240
-37	Duct Assy	*[8]	*[34]	240
-41	Duct Assy	*[8]	*[34]	240
-42	Duct Assy	*[8]	*[34]	240
-45	Duct Assy	*[8]	*[34]	240
-61	Duct Assy	*[8]	*[34]	100
-63	Duct Assy	*[8]	*[34]	240
-64	Duct Assy	*[8]	*[34]	240
-65	Duct Assy	*[8]	*[34]	220
-69	Duct Assy	*[22]	*[34]	240

Duct Material, Finish and Test Data
Figure 17 (Sheet 3)

Part Number	Nomenclature	FINISH *[7]	MATL.	PRESS. *[6]
213A1211-70	Duct Assy	*[22]	*[34]	240
-71	Duct Assy	*[22]	*[34]	240
-73	Duct Assy	*[22]	*[34]	240
-74	Duct Assy	*[22]	*[34]	240
-75	Duct Assy	*[22]	*[34]	240
-76	Duct Assy	*[22]	*[34]	240
-77	Duct Assy	*[8]	*[34]	240
-78	Duct Assy	*[8]	*[34]	240
-79	Duct Assy	*[8]	*[34]	240
-80	Duct Assy	*[8]	*[34]	240
-81	Duct Assy	*[22]	*[34]	240
-82	Duct Assy	*[22]	*[34]	240
-83	Duct Assy	*[22]	*[34]	240
-84	Duct Assy	*[22]	*[34]	240
-85	Duct Assy	*[8]	*[34]	240
-86	Duct Assy	*[8]	*[34]	240
-87	Duct Assy	*[8]	*[34]	240
-88	Duct Assy	*[8]	*[34]	240
-89	Duct Assy	*[8]	*[34]	240
-90	Duct Assy	*[8] or *[22]	*[34]	240
-91	Duct Assy	*[8]	*[34]	240
-92	Duct Assy	*[22]	*[34]	240
-139	Duct Assy	*[22]	*[34]	240
213A1212-2	Duct Assy	*[22]	*[34]	240
-4	Duct Assy	*[22]	*[34]	240
-8	Duct Assy	*[22]	*[34]	240
65C33060-1	Duct Assy	*[8]	*[4]	220
213A1005	AIR CONDITIONING PACK DUCT INSTL	(Reference)	*[34]	240
213A1501-( )	Duct Assy, Trim Air	*[16]	*[4]	240
214A3001	AIR DISTRIBUTION MIX BAY SYSTEM INSTL	(Reference)		
214A3111-( )	Duct Assy	*[8]	*[4]	240
218A1620	TAI SLATS 2 AND 7 SUPPLY	(Reference)		
218A1621-( )	Duct Assy	*[8]	*[34]	*[5]
218A1622-( )	Duct Assy	*[8]	*[34]	*[5]
218A1623-( )	Duct Assy	*[8]	*[34]	*[5]
218A1624-( )	Duct Assy	*[8]	*[34]	*[5]
218A1625-( )	Duct Assy	*[8]	*[34]	*[5]
218A1626-( )	Duct Assy	*[8]	*[34]	*[5]
218A1627-( )	Duct Assy	*[8]	*[34]	*[5]
218A1414-( )	Tee Duct Assembly	*[8]	*[34]	*[5]
218A1640	TAI SLATS 3 AND 6 SUPPLY	(Reference)		
218A1641-( )	Duct Assy	*[8]	*[34]	*[5]
218A1642-( )	Duct Assy	*[8]	*[34]	*[5]
218A1643-( )	Duct Assy	*[8]	*[34]	*[5]
218A1644-( )	Duct Assy	*[8]	*[34]	*[5]
218A1645-( )	Duct Assy	*[8]	*[34]	*[5]
218A1646-( )	Duct Assy	*[8]	*[34]	*[5]
218A1647-( )	Duct Assy	*[8]	*[34]	*[5]

Duct Material, Finish and Test Data
Figure 17 (Sheet 4)

Part Number	Nomenclature	FINISH *[7]	MATL.	PRESS. *[6]
218A1660	TAI SLATS 4 AND 5 SUPPLY	(Reference)		
218A1661-( )	Duct Assy	*[8]	*[34]	*[5]
218A1662-( )	Duct Assy	*[8]	*[34]	*[5]
218A1663-( )	Duct Assy	*[8]	*[34]	*[5]
218A1664-( )	Duct Assy	*[8]	*[34]	*[5]
218A1665-( )	Duct Assy	*[8]	*[34]	*[5]
218A1680	WING TAI TELESCOPING UNIT	(Reference)	---	---
218A1681-( )	Tee Duct Assembly	*[27]	*[17]	*[5]
312A1032	STRUT DUCT INSTALLATION	(Reference)	---	---
312A1300-5	Aft Strut Duct Assy	*[8]	*[17]	180
-8	Aft Strut Duct Assy	*[8]	*[17]	180
312A1301-1	Aft Starter Duct Assy	*[8]	*[17]	180
-4	Aft Starter Duct Assy	*[8]	*[17]	180
-6	Aft Starter Duct Assy	*[8]	*[17]	180
-8	Aft Starter Duct Assy	*[8]	*[17]	180
312A1302-8	"Y" Duct Assy	*[8]	*[17]	180
312A1307-1	Fwd Starter Duct Assy	*[8]	*[17]	180
-5	Fwd Starter Duct Assy	*[8]	*[17]	180
-6	Fwd Starter Duct Assy	*[8]	*[17]	180
316A1010	NO. 1 STRUT TO WING INTERFACE	(Reference)	---	---
316A1308-6	Deleted			
-11	"Y" Duct Assy, No. 1 Wing Interface	*[8]	*[17]	180
316A1310-4	Deleted			
-9	TAI Duct Assy, No. 1 Wing Interface	*[8]	*[17]	250
316A1020	NO. 2 STRUT TO WING INTERFACE	(Reference)	---	---
316A1309-5	"Y" Duct Assy, No. 2 Wing Interface	*[8]	*[17]	180
316A1311-5	TAI Duct Assy, No. 2 Wing Interface	*[8]	*[17]	180
316A1312-8	ECS Duct Assy, No. 2 Wing System	*[8]	*[17]	180
316A2100	NO. 1 STRUT TO WING INTERFACE	(Reference)		
316A2170-1	Wing TAI Duct Assy	*[8]	*[17]	230
-3	ECS Duct Assy	*[8]	*[17]	230
316A2200	NO. 2 STRUT TO WING INTERFACE	(Reference)		
316A2270-1	Wing TAI Duct Assy	*[8]	*[17]	230
-5	ECS Duct Assy	*[8]	*[17]	230
332A1031	STARTER SYSTEM INSTALLATION	(Reference)	---	---
332A1301-1	Duct Assy	*[8]	*[17]	180
332A1032	5TH-STAGE DUCT INSTALLATION	(Reference)	---	---
332A1303-12	5th-Stage Upper Duct Assy	*[8]	*[17]	523
-14	5th-Stage Upper Duct Assy	*[8]	*[17]	*[5]
-15	5th-Stage Upper Duct Assy	*[8]	*[17]	523
-16	5th-Stage Upper Duct Assy	*[8]	*[17]	523
332A1303-8	Deleted			
332A1304-12	5th-Stage Duct Assy	*[8]	*[17]	523
332A1304-16	Deleted			

Duct Material, Finish and Test Data
Figure 17 (Sheet 5)

Part Number	Nomenclature	FINISH *[7]	MATL.	PRESS. *[6]
332A1304-21	5th-Stage No. 1 Duct Assy	*[8]	*[17]	310
-23	5th-Stage No. 1 Duct Assy	*[8]	*[17]	317
-24	5th-Stage No. 1 Duct Assy	*[8]	*[17]	317
332A1320-1	5th-Stage Pneumatic System Duct Assy	*[8]	*[17]	523
332A1033	9TH-STAGE DUCT INSTALLATION	(Reference)	---	---
332A1305-9	Duct No. 1 Assy	*[8]	*[17]	838
332A1306-1	Duct No. 2 Assy	*[8]	*[17]	838
322A1306-21	Duct No. 2 Assy	*[8]	*[17]	*[5]
332A1307-12	Duct No. 3 Assy	*[8]	*[17]	838 *[29]
-17	Duct No. 3 Assy	*[8]	*[17]	*[5]
332A1307-7	Deleted			
332A1308-7	Manifold Assy	*[8]	*[17]	838
-13	Manifold Assy	*[8]	*[17]	*[5]
332A1308-14	Manifold Assy	*[8]	*[17]	*[5]
332A1311-20	Duct No. 4 Assy	*[8]	*[17]	523
-30	Duct No. 4 Assy	*[8]	*[17]	523
332A1317-1	9th-Stage Pneumatic System Duct Assy	*[8]	*[17]	838
332A1317-2	9th-Stage Pneumatic System Duct Assy	*[8]	*[17]	*[5]
332A1327-5	Duct Assy	*[8]	*[17]	523
332A1327-11	Duct Assy	*[8]	*[17]	550
332A1330-1	Duct Assy	*[8]	*[17]	838 *[29]
332A1035	NOSE COWL TAI INSTALLATION	(Reference)	---	---
332A1035-5	Deleted			
332A1312-9	Lower TAI Duct Assy	*[8]	*[17]	523
-16	Lower TAI Duct Assy	*[8]	*[17]	*[5]
332A1313-1	Bifurcation Duct Assy	*[8]	*[17]	523
332A1314-1	Deleted			
332A1314-14	Upper Duct Assy	*[8]	*[17]	523
-19	Upper Duct Assy	*[8]	*[17]	523
332A1315-1	Deleted			
332A1315-5	Mid Duct Assy	*[8]	*[17]	433
332A1316-1	Deleted			
332A1316-5	Forward Duct Assy	*[8]	*[17]	145
-7	Forward Duct Assy	*[8]	*[17]	145
-9	Forward Duct Assy	*[8]	*[17]	145
332A2300	PNEUMATIC INSTL, ENGINE	(Reference)	---	---
332A2310-1	Engine Start System Upper Duct Assy	*[8]	*[17]	238
-4	Engine Start System Upper Duct Assy	*[8]	*[17]	238
332A2313-1	Engine Start System Lower Duct Assy	*[8]	*[17]	238
332A2321-10	ECS-EBU Duct Assy	*[8]	*[17]	375
332A2322-36	Duct Assy	*[8]	*[17]	376
-47	Duct Assy	*[8]	*[17]	376
-54	Duct Assy	*[8]	*[17]	376
332A2323-10	ECS-EBU Duct Assy	*[8]	*[17]	376 *[41]
-14	ECS-EBU Duct Assy	*[8]	*[17]	424
332A2326-30	Precooler Inconnect Duct Assy	*[8]	*[17]	103
-45	Precooler Inconnect Duct Assy	*[8]	*[17]	103

Duct Material, Finish and Test Data
Figure 17 (Sheet 6)

Part Number	Nomenclature	FINISH *[7]	MATL.	PRESS. *[6]
332A2390-3	CTAI Duct Assy	*[8]	*[17]	376
-12	CTAI Duct Assy	*[8]	*[17]	376
-43	CTAI Duct Assy	*[8]	*[17]	376
-45	CTAI Duct Assy	*[8]	*[17]	400
-48	CTAI Duct Assy	*[8]	*[17]	376
65-46851	POWER PLANT AIR CONDITIONING	(Reference)	---	---
65-22441-21	High Pressure Supply Manifold Assy	*[8]	*[1]	540
-24	High Pressure Supply Manifold Assy	*[8]	*[1]	540
-28	High Pressure Supply Manifold Assy	*[8]	*[1]	540
-31	High Pressure Supply Manifold Assy	*[8]	*[1]	540
-34	High Pressure Supply Manifold Assy	*[8]	*[1]	540
-39	High Pressure Supply Manifold Assy	*[8]	*[1]	540
65-53864-800	High Pressure Supply Duct Assy	*[8]	*[1]	540
65-53865-1	Eighth-Stage Supply Duct Assy	*[8]	*[1]	340
-11	Eighth-Stage Supply Duct Assy	*[8]	*[1]	340
-802	Eighth-Stage Supply Duct Assy	*[8]	*[1]	340
-803	Eighth-Stage Supply Duct Assy	*[8]	*[1]	340
65-53866-16	Eighth- and 13th-Stage Duct Assy	*[8]	*[1]	340
69-45174-1	Eighth-Stage RH Manifold Assy	*[8]	*[1]	340
69-45175-1	Eighth-Stage LH Manifold Assy	*[8]	*[1]	340
65-46852	POWER PLANT CABIN AND STARTER	(Reference)	---	---
65-53863-1	Air Supply Duct Assy	*[8]	*[1]	340
-22	Air Supply Duct Assy	*[8]	*[1]	340
65-53863-24	Air Supply Duct Assy	*[8]	*[1]	340
-28	Air Supply Duct Assy	*[8]	*[1]	340
-30	Air Supply Duct Assy	*[8]	*[1]	340
-32	Air Supply Duct Assy	*[8]	*[1]	340
-802	Air Supply Duct Assy	*[8]	*[1]	340
69-44634-1	Precooler Bypass Duct Assy	*[8]	*[1]	340
-4	Precooler Bypass Duct Assy	*[8]	*[1]	340
69-44635-1	Precooler Bypass Transition Duct Assy	*[8]	*[1]	340
65-46853	POWER PLANT AIR CONDITIONING PRECOOLER	(Reference)	---	
65-53867-1	Fan Air Inlet Duct Assy	SRF-2.31	*[2]	30
-2	Fan Air Inlet Duct Assy	*[8]	*[2]	30
-4	Fan Air Inlet Duct Assy	F-8.07	*[2]	30
69-62261-1	Fan Air Inlet Duct	F-8.07	*[26]	30
65-46854	WING LE CABIN AIR CONDITIONING	(Reference)	---	---
65-67348-21	LH Duct Assy	*[8]	*[1]	340
-23	LH Duct Assy	*[8]	*[2]	340
-26	LH Duct Assy	*[8]	*[1]	340
-27	LH Duct Assy	*[8]	*[2]	340
-34	LH Duct Assy	*[16]	*[2]	340
-35	LH Duct Assy	*[8]	*[2]	340

Duct Material, Finish and Test Data
Figure 17 (Sheet 7)

Part Number	Nomenclature	FINISH *[7]	MATL.	PRESS. *[6]
65-67349-11	RH Duct Assy	*[8]	*[1]	340
-13	RH Duct Assy	*[8]	*[2]	340
65-74580-1	RH Duct Assy	*[8]	*[2]	340
-8	RH Duct Assy	*[16]	*[2]	340
-9	RH Duct Assy	*[8]	*[2]	340
65-67351-17	LH Duct Assy	*[8]	*[2]	340
-18	RH Duct Assy	*[8]	*[2]	340
-24	RH Duct Assy	*[8]	*[2]	340
-28	LH Duct Assy	*[8]	*[2]	340
-31	LH Duct Assy			
-32	RH Duct Assy			
65-51175	FUEL HEATER EXHAUST COWL PANEL	(Reference)	---	---
65-51175-2	Exhaust Duct Assy	*[8]	*[2]	*[5]
65-51177	POWER PLANT ENGINE COWL	(Reference)	---	---
65-60567-1	Precooler Exhaust Duct Assy	*[8]	*[2]	*[5]
65-60567-5	Precooler Exhaust Duct Assy	*[8]	*[2]	*[5]
65-51555	AIR CYCLE SYSTEM PACK	(Reference)	---	---
65-51552-7	Machine Compressor Outlet Duct Assy	*[8]	*[3]	220
-8	Machine Compressor Outlet Duct Assy	*[8]	*[3]	220
65-51557-1	Heat Exchanger - Mix Valve Duct Assy	*[8]	*[3]	220
-2	Heat Exchanger - Mix Valve Duct Assy	*[8]	*[3]	220
-7	Heat Exchanger - Mix Valve Duct Assy	*[8]	*[3]	220
-8	Heat Exchanger - Mix Valve Duct Assy	*[8]	*[3]	220
65-51558-1	Primary Heat Exchanger Inlet Duct	*[8]	*[4]	220
-2	Primary Heat Exchanger Inlet Duct	*[8]	*[4]	220
-7	Primary Heat Exchanger Inlet Duct	*[22](opt *[8])	*[4]	220
-8	Primary Heat Exchanger Inlet Duct	*[22](opt *[8])	*[4]	220
65-79476-1	Duct Air Cleaner	*[8]	*[2]	*[5]
65-79477-1	Duct Air Cleaner	*[8]	*[2]	*[5]
65C33051-1	Duct Assy - Primary Heat Exchanger Inlet	*[22]	*[34]	220
65C33052-3	Duct Assy - Inlet to Standby Valve	*[22]	*[34]	220
65C33054-1	Duct Assy - Downstream Flow Control Valve	*[22]	*[34]	220
-7	Duct Assy - Downstream Flow Control Valve	*[22]	*[34]	220
65C33055-1	Duct Assy - Inlet to Reheater	*[8]	*[4]	220
-2	Duct Assy - Inlet to Reheater	*[8]	*[4]	220
-9	Duct Assy - Inlet to Reheater	*[8]	*[4]	220
65C33056-6	Duct Assy - Secondary Heat Exchanger to Reheater Inlet	*[8]	*[4]	220
65C33057-1	Duct Assy - Manifold to Flow Control Valve	*[22]	*[35]	330
65C33058-1	Duct Assy - Primary Heat Exchanger Inlet	*[22]	*[19]	220
65C33059-1	Duct Assy - Compressor Inlet	*[8]	*[4]	220
-2	Duct Assy - Compressor Inlet	*[8]	*[4]	220
65C33060-1	Duct Assy - Reheater Outlet to Turbine Inlet	*[8]	*[4]	220
65C33061-6	Duct Assy - Turbine Inlet	*[8]	*[4]	220

Duct Material, Finish and Test Data
Figure 17 (Sheet 8)

Part Number	Nomenclature	FINISH *[7]	MATL.	PRESS. *[6]
65C33062-1	Primary Heat Exchanger to Compressor Duct Assy	*[8]	*[4]	220
-2	Primary Heat Exchanger to Compressor Duct Assy	*[8]	*[4]	220
65C33063-1	Duct Assy - Inlet to Temp Control Valve	*[22]	*[34]	220
65C33064-9	Duct Assy - Primary Heat Exchanger Inlet	*[22]	*[34]	220
65C33065-5	Duct Assy - Temp Control Valve to Turbine	*[22]	*[34]	220
65C33066-3	Duct Assy - Primary Heat Exchanger to Standby Valve	*[22]	*[34]	220
65C33067-5	Duct Assy - Primary Heat Exchanger to Standby Valve	*[8]	*[34]	220
65C33076-6	Duct Assy - Reheater to Turbine	*[8]	*[4]	220
65C33078-1	Duct Assy - Turbo Fan Supply	*[8]	*[4]	220
65C33079-5	Duct Assy - Turbo Fan Supply	*[8]	*[4]	220
-9	Duct Assy - Turbo Fan Supply	*[8]	*[4]	220
65C33125-3	Duct Assy - TCV to ACM Mix Muff	*[8]	*[4]	220
-8	Duct Assy - TCV to ACM Mix Muff	*[8]	*[4]	220
65C33135-1	Duct Assy - Stby TCV to ACM Mix Miff	*[8]	*[34]	220
-5	Duct Assy - Stby TCV to ACM Mix Miff	*[8]	*[34]	220
-9	Duct Assy - Stby TCV to ACM Mix Miff	*[8]	*[34]	220
65C33247-1	Duct Assy - Inlet to Temp Control Valve	*[8]	*[34]	220
65C33248-1	Duct Assy - Inlet to Standby Valve	*[8]	*[4]	220
65C33249-5	Duct Assy - Primary Heat Exchanger to Standby Valve	*[8]	*[4]	220
65C33250-5	Duct Assy - Temp Control Valve to Turbine	*[8]	*[4]	220
-8	Duct Assy - Temp Control Valve to Turbine	*[8]	*[34]	220
69-38606-6	Compressor Discharge Duct Assy	*[8]	*[2]	220
-12	Compressor Discharge Duct Assy	*[8]	*[2]	220
69-38607-1	Machine Turbine Inset Duct Assy	*[8]	*[3]	220
-6	Machine Turbine Inset Duct Assy	*[8]	*[3]	220
69-38609-7	Turbine Fan Drive Duct Assy	F-8.07	*[2]	330
69-38610-1	Mix Valve - Mix Bay Duct Assy	*[8]	*[4]	220
-2	Mix Valve - Mix Bay Duct Assy	*[8]	*[4]	220
-7	Mix Valve - Mix Bay Duct Assy	*[8]	*[4]	220
-12	Mix Valve - Mix Bay Duct Assy	*[8]	*[4]	220
69-38611-5	Manifold - Flow Control Duct Assy	*[8]	*[2]	330
-7	Manifold - Flow Control Duct Assy	*[8]	*[3]	220
-11	Manifold - Flow Control Duct Assy	*[18]	*[2]	330
69-38614-5	35° Valve - Turbine Duct Assy	*[8]	*[3]	220
-6	35° Valve - Turbine Duct Assy	*[8]	*[3]	220
69-38616-1	Turbine Fan Drive Duct Assy	*[8]	*[3]	220
69-38622-5	Turbine Fan Drive Duct Assy	F-8.07	*[2]	330
69-38623-1	Machine Turbine Inlet Duct Assy	*[8]	*[3]	220
-6	Machine Turbine Inlet Duct Assy	*[8]	*[3]	220

Duct Material, Finish and Test Data
Figure 17 (Sheet 9)

Part Number	Nomenclature	FINISH *[7]	MATL.	PRESS. *[6]
69-38668-9	Downstream Control Valve Duct Assy	*[8]	*[3]	220
-10	Downstream Control Valve Duct Assy	*[8]	*[3]	220
-11	Downstream Control Valve Duct Assy	*[21]	*[3]	220
-12	Downstream Control Valve Duct Assy	*[21]	*[3]	220
69-38670-7	Manifold Control Valve Duct Assy	*[8]	*[2]	330
-9	Manifold Control Valve Duct Assy	*[8]	*[2]	330
69-38671-1	Mix Valve-Control Valve Duct Assy	*[8]	*[3]	220
-2	Mix Valve-Control Valve Duct Assy	*[8]	*[3]	220
69-49790-1	Turbine Fan Drive Duct Assy	*[8]	*[3]	220
-6	Turbine Fan Drive Duct Assy	*[8]	*[3]	220
-13	Turbine Fan Drive Duct Assy	*[8]	*[19]	220
-14	Turbine Fan Drive Duct Assy	*[8]	*[19]	220
-15	Turbine Fan Drive Duct Assy	*[8]	*[19]	220
69-49791-1	Turbine Fan Drive Duct Assy	*[8]	*[3]	220
-5	Turbine Fan Drive Duct Assy	*[8]	*[3]	220
-8	Turbine Fan Drive Duct Assy	*[8]	*[3]	220
-10	Turbine Fan Drive Duct Assy	*[8]	*[3]	220
69-49792-1	Turbine Fan Drive Duct Assy	*[8]	*[3]	220
-5	Turbine Fan Drive Tube Assy	*[8]	*[3]	220
-7	Turbine Fan Drive Tube Assy	*[8]	*[3]	220
69-61738-1	Air Cleaner Duct Assy	*[8]	*[2]	330
69-61739-1	Air Cleaner Duct Assy	*[8]	*[2]	330
65-51556	AIR CONDITIONING WATER SEPARATOR	(Reference)	---	---
65-51561-1	Air Conditioning Muffler Assy	*[8]	*[3]	80
-5	Air Conditioning Muffler Assy	*[8]	*[3]	80
-9	Air Conditioning Muffler Assy	*[8]	*[3]	80
65-51565	AUXILIARY POWER UNIT MANIFOLD	(Reference)	---	---
69-43885-1	Duct Assy	*[8]	*[3]	220
-4	Duct Assy	*[11]	*[3]	220
69-43886-1	Duct Assy	*[8]	*[3]	220
-3	Duct Assy	*[11]	*[3]	220
-5	Duct Assy	*[22]	*[19]	220
65-51573	AUXILIARY POWER UNIT	(Reference)	---	---
65-51562-1	Duct Assy	*[8]	*[3]	*[10]
-4	Duct Assy	*[8]	*[20]	*[10]
-6	Duct Assy	*[8]	*[20]	*[9]
-7	Duct Assy	*[8]	*[3]	*[9]
65-51563-1	Duct Assy	*[8]	*[19]	*[10]
-5	Duct Assy	*[8]	*[19]	*[10]
-9	Duct Assy	*[8]	*[19]	*[10]
-11	Duct Assy	*[8]	*[19]	*[10]
-13	Duct Assy	*[8]	*[19]	*[10]
-14	Duct Assy	*[8]	*[19]	*[10]
65-51566-1	Duct Assy	*[8]	*[3]	*[10]

Duct Material, Finish and Test Data
Figure 17 (Sheet 10)

Part Number	Nomenclature	FINISH *[7]	MATL.	PRESS. *[6]
65-51567-1	Duct Assy	*[8]	*[19]	*[10]
-6	Duct Assy	*[8]	*[19]	*[10]
-13	Duct Assy	*[8]	*[19]	*[10]
-15	Duct Assy	*[8]	*[19]	*[10]
-16	Duct Assy	*[8]	*[19]	*[10]
-17	Duct Assy	*[8]	*[19]	*[10]
-19	Duct Assy	*[8]	*[19]	*[10]
65-51587-1	Duct Assy	*[8]	*[20]	*[10]
-3	Duct Assy	*[8]	*[20]	*[10]
-6	Duct Assy	*[8]	*[20]	*[10]
65C26494-8	Duct Assy	*[8]*[30] (opt *[11] *[30])	*[3]	220
65C29241-1	Deleted			
-8	Duct Assy	*[8]	*[19]	*[10]
65C34312-1	Duct Assy	*[8]	*[19]	*[10]
69-38619-1	Duct Assy	*[8] (opt *[11] *[30])	*[2]	340
-5	Duct Assy	*[8]*[30]	*[2]	340
-7	Duct Assy	*[8]*[30] (opt *[11] *[30])	*[3]	220
69-38620-5	Duct Assy	*[8] (opt *[11] *[30])	*[2]	340
-7	Duct Assy	*[8] (opt *[11] *[30])	*[2]	340
-11	Duct Assy	*[8]*[30]	*[3]	220
69-38621-1	Duct Assy	*[15]	*[2]	340
-5	Duct Assy	*[15]	*[2]	340
69-38624-1	Duct Assy	*[11] (opt*[11] *[30])	*[3]	
-5	Duct Assy	*[11]*[31] (opt *[11]*[30])	*[3]	220
-12	Duct Assy	*[8]*[30]	*[2]	220
69-38625-1	Duct Assy	*[8]	*[3]	*[10]
-5	Duct Assy	*[8]	*[2]	*[10]
-7	Duct Assy *[37]	*[8]	*[2]	*[10]
-9	Duct Assy *[37]	*[8]	*[2]	*[10]
69-38626-1	Duct Assy *[37]	*[8](opt *[11])	*[3]	*[10]
-4	Duct Assy *[37]	*[8](opt *[11])	*[3]	*[10]
65-51576	AIR CONDITIONING AND TAI MANIFOLD	(Reference)	---	---
65-51551-1	Cabin Duct Assy	F-8.07	*[2]	340
-6	Cabin Duct Assy	F-24.02	*[2]	340
-7		*[12]	*[2]	340
65-51559-1	Cabin Duct Assy	*[8]	*[2]	330
-5	Cabin Duct Assy	F-24.02	*[2]	330

Duct Material, Finish and Test Data
Figure 17 (Sheet 11)

Part Number	Nomenclature	FINISH *[7]	MATL.	PRESS. *[6]
65-51584-1	Cabin Duct Assy	F-8.07	*[2]	330
-2	Cabin Duct Assy	F-8.07	*[2]	330
-7	Cabin Duct Assy	F-24.02	*[2]	330
-8	Cabin Duct Assy	F-24.02	*[2]	330
-10		*[12]	*[2]	330
69-38600-7	Cabin Duct Assy	*[8]	*[1]	290
-13	Cabin Duct Assy	*[21]	*[1]	290
-16	Cabin Duct Assy	*[21]	*[1]	290
-18	Cabin Duct Assy	*[22]	*[1]	290
-27	Cabin Duct Assy	*[22]	*[1]	290
-28	Cabin Duct Assy	*[22]	*[1]	290
-31	Cabin Duct Assy	*[22]	*[17]	290
-32	Cabin Duct Assy	*[22]	*[1]	290
69-38602-1	Cabin Duct Assy	*[8]	*[1]	290
-6	Cabin Duct Assy	*[21]	*[1]	290
-7	Cabin Duct Assy	*[21]	*[1]	290
-10	Cabin Duct Assy	F-17.14	*[1]	290
-11	Cabin Duct Assy	F-17.14	*[1]	290
69-38605-7	Cabin Duct Assy	*[8]	*[1]	290
-9	Cabin Duct Assy	*[21]	*[1]	290
-10	Cabin Duct Assy	*[22]	*[17]	290
-12	Cabin Duct Assy	*[22]	*[1]	290
69-38658-1	Cabin Duct Assy	F-8.05	*[2]	330
-3	Cabin Duct Assy	F-8.05	*[2]	330
-5	Cabin Duct Assy	F-24.02	*[2]	330
-6	Cabin Duct Assy	*[22]	*[2]	220
65-51582	WING TAI TELESCOPING SUPPLY	(Reference)	---	---
65-51570-1	LH Tee Assy	*[8]	*[3]	*[5]
-2	RH Tee Assy	*[8]	*[3]	*[5]
-7	LH Tee Assy	*[8]	*[3]	*[5]
-8	RH Tee Assy	*[8]	*[3]	*[5]
65-54756-1	Slat No. 1 and 6 Shaft Tee Assy	*[8]	*[3]	*[5]
65-54757-1	Tee Assy	*[8]	*[3]	*[5]
65-54758-1	Slat No. 3 and 4 Shaft Tee Assy	*[8]	*[3]	*[5]
65C17106-1	Tee Duct Assy	*[27]	*[17]	*[5]
-5	Tee Duct Assy	*[27]	*[17]	*[5]
-6	Tee Duct Assy	*[27]	*[17]	*[5]
65C17107-1	Tee Duct Assy	*[27]	*[17]	*[5]
-4	Tee Duct Assy	*[27]	*[17]	*[5]
65C17108-1	Tee Duct Assy	*[27]	*[17]	*[5]
-5	Tee Duct Assy	*[27]	*[17]	*[5]
-6	Tee Duct Assy	*[27]	*[17]	*[5]

Duct Material, Finish and Test Data
Figure 17 (Sheet 12)

Part Number	Nomenclature	FINISH *[7]	MATL.	PRESS. *[6]
65C17142-1	Tee Duct Assy	*[8]	*[28]	*[5]
-2	Tee Duct Assy	*[8]	*[28]	*[5]
-3	Tee Duct Assy	*[8]	*[28]	*[5]
-4	Tee Duct Assy	*[8]	*[28]	*[5]
-5	Tee Duct Assy	*[8]	*[28]	*[5]
-6	Tee Duct Assy	*[8]	*[28]	*[5]
-7	Tee Duct Assy	*[8]	*[28]	*[5]
-8	Tee Duct Assy	*[8]	*[28]	*[5]
-9	Tee Duct Assy	*[8]	*[28]	*[5]
-10	Tee Duct Assy	*[8]	*[28]	*[5]
-11	Tee Duct Assy	*[8]	*[28]	*[5]
-12	Tee Duct Assy	*[8]	*[28]	*[5]
65-54413	CONTROL CABIN AIR CONDITIONING	(Reference)	---	---
65C15620-1	Duct Assy	*[8]	*[2]	*[5]
-10	Duct Assy	*[8]	*[2]	*[5]
-12	Duct Assy	*[8]	*[2]	*[5]
69-69426-1	Duct Assy	*[8]	*[2]	*[5]
65-54420	AIR CONDITIONING DISTRIBUTION BAY	(Reference)	---	---
65-54466-1	Cold Air Supply Duct Assy	*[8]	*[3]	80
65-54467-1	LH Hot Air Supply Duct Assy	*[8]	*[3]	80
65-54474-1	RH Hot Air Supply Duct Assy	*[8]	*[3]	220
65-55359-1	Ram Air Supply Duct Assy	*[8]	*[3]	*[5]
65C27582-1	Duct Assy	*[8]	*[3]	220
65C27583-1	Duct Assy	*[8]	*[3]	220
65C27584-1	Duct Assy	*[8]	*[3]	220
65C28003-1	Duct Assy	*[8]	*[3]	220
65C28012-1	Duct Assy	*[8]	*[3]	220
69-41825-1	RH Individual Crossover Duct Assy	*[8]	*[3]	*[5]
69-41826-1	LH Individual Crossover Duct Assy	*[8]	*[3]	*[5]
69-42781-1	Ram Air Supply Duct Assy	*[8]	*[3]	*[5]
69-47871-1	Individual Air Duct Assy	*[8]	*[3]	10
65-54421	GROUND SERVICE AIR CONDITIONING CONNECTOR	(Reference)	---	---
65-55347-3	Duct Assy	*[8]	*[2]	*[5]
65-54750	CABIN AIR AND TAI CROSSOVER	(Reference)	---	---
65-51578-23	LH Duct Assy	*[8]	*[2]	330
-24	RH Duct Assy	*[8]	*[2]	330
-25	Duct Assy	*[16]	*[2]	330
-26	Duct Assy	*[16]	*[2]	330
-27	Duct Assy	*[8]	*[2]	330
-28	Duct Assy	*[16]	*[2]	330
-30	Duct Assy	*[8]	*[2]	330
-32	Duct Assy	*[16]	*[2]	330

Duct Material, Finish and Test Data
Figure 17 (Sheet 13)

Part Number	Nomenclature	FINISH *[7]	MATL.	PRESS. *[6]
69-38633-11	LH Duct Assy	*[8]	*[2]	330
-12	RH Duct Assy	*[8]	*[2]	330
-13	Duct Assy	*[8]	*[2]	330
-14	Duct Assy	*[8]	*[2]	330
-17	Duct Assy	*[16]	*[2]	330
-18	Duct Assy	*[16]	*[2]	330
-19	Duct Assy	*[8](opt *[18])	*[3]	330
-20	Duct Assy	*[8](opt *[18])	*[3]	330
-27	Duct Assy	*[18]	*[3]	220
-28	Duct Assy	*[18]	*[3]	220
69-38634-11	Duct Assy	F-8.05	*[2]	330
-12	Duct Assy	*[16]	*[2]	330
-13	Duct Assy	*[8](opt *[18])	*[3]	220
-15	Duct Assy	*[18]	*[3]	220
65C27491-7	Duct Assy	*[8](opt *[18])	*[3]	220
-8	Duct Assy	*[8](opt *[18])	*[3]	220
-13	Duct Assy	*[18]	*[3]	220
-14	Duct Assy	*[18]	*[3]	220
65-54753	WING TAI OUTBOARD	(Reference)	---	---
65-54754-12	LH Spray Assy	*[8]	*[3]	*[5]
-13	RH Spray Assy	*[8]	*[3]	*[5]
-14	LH Spray Assy	*[8]	*[3]	*[5]
-15	RH Spray Assy	*[8]	*[3]	*[5]
-16	LH Spray Assy	*[8]	*[3]	*[5]
-17	RH Spray Assy	*[8]	*[3]	*[5]
-19	RH Spray Assy	*[8]	*[20]	*[5]
-20	LH Spray Assy	*[8]	*[20]	*[5]
-21	RH Spray Assy	*[8]	*[20]	*[5]
65-54754-22	LH Spray Assy	*[8]	*[20]	*[5]
-23	RH Spray Assy	*[8]	*[20]	*[5]
-24	LH Spray Assy	*[8]	*[20]	*[5]
-29	RH Spray Assy	*[8]	*[20]	*[5]
-30	LH Spray Assy	*[8]	*[20]	*[5]
-31	RH Spray Assy	*[8]	*[20]	*[5]
-32	LH Duct Assy	*[8]	*[20]	*[5]
-33	RH Duct Assy	*[8]	*[20]	*[5]
-34	LH Duct Assy	*[8]	*[20]	*[5]
65-54755-12	LH Duct Assy	*[8]	*[3]	*[5]
-13	RH Duct Assy	*[8]	*[3]	*[5]
-14	LH Duct Assy	*[8]	*[3]	*[5]
-15	RH Duct Assy	*[8]	*[3]	*[5]
-16	LH Duct Assy	*[8]	*[3]	*[5]
-17	RH Duct Assy	*[8]	*[3]	*[5]
-21	RH Duct Assy	*[8]	*[3]	*[5]

Duct Material, Finish and Test Data
Figure 17 (Sheet 14)

Part Number	Nomenclature	FINISH *[7]	MATL.	PRESS. *[6]
65-54755-22	LH Duct Assy	*[8]	*[3]	*[5]
-23	RH Duct Assy	*[8]	*[20]	*[5]
-24	LH Duct Assy	*[8]	*[20]	*[5]
-25	RH Duct Assy	*[8]	*[20]	*[5]
-26	LH Duct Assy	*[8]	*[20]	*[5]
-27	RH Duct Assy	*[8]	*[20]	*[5]
-28	LH Duct Assy	*[8]	*[20]	*[5]
-33	RH Duct Assy	*[8]	*[20]	*[5]
-34	LH Duct Assy	*[8]	*[20]	*[5]
-35	RH Duct Assy	*[8]	*[20]	*[5]
-36	LH Duct Assy	*[8]	*[20]	*[5]
-37	RH Duct Assy	*[8]	*[20]	*[5]
-38	LH Duct Assy	*[8]	*[20]	*[5]
65C17142-21	Tee Duct Assy	*[8]	*[28]	*[5]
-22	Tee Duct Assy	*[8]	*[28]	*[5]
-23	Tee Duct Assy	*[8]	*[28]	*[5]
-24	Tee Duct Assy	*[8]	*[28]	*[5]
-25	Tee Duct Assy	*[8]	*[28]	*[5]
-26	Tee Duct Assy	*[8]	*[28]	*[5]
-27	Tee Duct Assy	*[8]	*[28]	*[5]
-28	Tee Duct Assy	*[8]	*[28]	*[5]
-29	Tee Duct Assy	*[8]	*[28]	*[5]
-30	Tee Duct Assy	*[8]	*[28]	*[5]
-31	Tee Duct Assy	*[8]	*[28]	*[5]
-32	Tee Duct Assy	*[8]	*[28]	*[5]
-33	Tee Duct Assy	*[8]	*[28]	*[5]
-34	Tee Duct Assy	*[8]	*[28]	*[5]
-35	Tee Duct Assy	*[8]	*[28]	*[5]
-36	Tee Duct Assy	*[8]	*[28]	*[5]
-37	Tee Duct Assy	*[8]	*[28]	*[5]
-38	Tee Duct Assy	*[8]	*[28]	*[5]
-39	Tee Duct Assy	*[8]	*[28]	*[5]
-40	Tee Duct Assy	*[8]	*[28]	*[5]
-41	Tee Duct Assy	*[8]	*[28]	*[5]
-42	Tee Duct Assy	*[8]	*[28]	*[5]
-43	Tee Duct Assy	*[8]	*[28]	*[5]
-44	Tee Duct Assy	*[8]	*[28]	*[5]
-45	Tee Duct Assy	*[8]	*[28]	*[5]
-46	Tee Duct Assy	*[8]	*[28]	*[5]
-47	Tee Duct Assy	*[8]	*[28]	*[5]
-48	Tee Duct Assy	*[8]	*[28]	*[5]

Duct Material, Finish and Test Data
Figure 17 (Sheet 15)

Part Number	Nomenclature	FINISH *[7]	MATL.	PRESS. *[6]
65-54760	WING TAI SLATS NO. 1 AND 6	(Reference)	---	---
69-38660-9	Duct Assy	*[8](opt *[11])	*[19]	220
-10	Duct Assy	*[8](opt *[11])	*[19]	220
69-38661-3	Duct Assy	*[8](opt *[11])	*[19]	220
69-38662-5	Duct Assy	*[8](opt *[11])	*[19]	220
69-38663-9	Duct Assy	*[8](opt *[11])	*[19]	220
-10	Duct Assy	*[8](opt *[11])	*[19]	220
-11	Duct Assy	*[8](opt *[11])	*[19]	220
-12	Duct Assy	*[8](opt *[11])	*[19]	220
65C27056-1	Duct Assy	*[8](opt *[11])	*[19]	220
-8	Duct Assy	*[8](opt *[11])	*[19]	220
65C27057-1	Duct Assy	*[8](opt *[11])	*[19]	220
-2	Duct Assy	*[8](opt *[11])	*[19]	220
-5	Duct Assy	*[8](opt *[11])	*[19]	220
-6	Duct Assy	*[8](opt *[11])	*[19]	220
65C27058-1	Duct Assy	*[8](opt *[11])	*[19]	220
-6	Duct Assy	*[8](opt *[11])	*[19]	220
-9	Duct Assy	*[8](opt *[11])	*[19]	220
-10	Duct Assy	*[8](opt *[11])	*[19]	220
65C27059-1	Duct Assy	*[8](opt *[11]	*[19]	220
65C27060-1	Duct Assy	*[8](opt *[11])	*[19]	220
-5	Duct Assy	*[8](opt *[11])	*[19]	220
65C27061-1	Duct Assy	*[8](opt *[11])	*[19]	220
65-54761	WING TAI SLATS NO. 2 AND 5	(Reference)	---	---
65C27062-1	Duct Assy	*[8](opt *[11])	*[19]	220
-2	Duct Assy	*[8](opt *[11])	*[19]	220
-9	Duct Assy	*[8](opt *[11])	*[19]	220
-10	Duct Assy	*[8](opt *[11])	*[19]	220
65C27063-1	Duct Assy	*[8](opt *[11])	*[19]	220
-2	Duct Assy	*[8](opt *[11])	*[19]	220
-11	Duct Assy	*[8](opt *[11])	*[19]	220
-12	Duct Assy	*[8](opt *[11])	*[19]	220
-15	Duct Assy	*[8](opt *[11])	*[3]	220
-16	Duct Assy	*[8](opt *[11])	*[3]	220
65C27064-1	Duct Assy	*[8](opt *[11])	*[19]	220
-2	Duct Assy	*[8](opt *[11])	*[19]	220
-7	Duct Assy	*[8](opt *[11])	*[19]	220
-8	Duct Assy	*[8](opt *[11])	*[19]	220
-9	Duct Assy	*[8](opt *[11])	*[19]	220
-10	Duct Assy	*[8](opt *[11])	*[19]	220
-11	Duct Assy	*[8](opt *[11])	*[3]	220
-12	Duct Assy	*[8](opt *[11])	*[3]	220

Duct Material, Finish and Test Data
Figure 17 (Sheet 16)

Part Number	Nomenclature	FINISH *[7]	MATL.	PRESS. *[6]
65C27065-1	Duct Assy	*[8](opt *[11])	*[19]	220
-2	Duct Assy	*[8](opt *[11])	*[19]	220
-7	Duct Assy	*[8](opt *[11])	*[19]	220
-8	Duct Assy	*[8](opt *[11])	*[19]	220
-9	Duct Assy	*[8](opt *[11])	*[19]	220
-10	Duct Assy	*[8](opt *[11])	*[19]	220
-11	Duct Assy	*[8](opt *[11])	*[3]	220
-12	Duct Assy	*[8](opt *[11])	*[3]	220
65C27066-1	Duct Assy	*[8](opt *[11])	*[13]	220
-5	Duct Assy	*[8](opt *[11])	*[3]	220
65C27067-1	Duct Assy	*[8](opt *[11])	*[19]	220
65C27068-1	Duct Assy	*[8](opt *[11])	*[19]	220
-6	Duct Assy	*[8](opt *[11])	*[19]	220
65C27069-1	Duct Assy	*[8](opt *[11])	*[19]	220
-7		*[8](opt *[11])	*[19]	220
65C27070-1	Duct Assy	*[8](opt *[11])	*[19]	220
65C27071-1	Duct Assy	*[8](opt *[11])	*[19]	220
65C36374-1	Duct Assy	*[8]	*[34]	220
65C36375-1	Duct Assy	*[8]	*[34]	220
69-38679-7	Outboard Duct Assy	*[8](opt *[11])	*[20]	220
-8	Outboard Duct Assy	*[8](opt *[11])	*[20]	220
69-50808-1	Outboard Duct Assy	*[8](opt *[11])	*[20]	220
69-50809-1	Outboard Duct Assy	*[8](opt *[11])	*[20]	220
69-50810-1	Outboard Duct Assy	*[8](opt *[11])	*[20]	220
69-50811-1	Outboard Duct Assy	*[8](opt *[11])	*[20]	220
-2	Outboard Duct Assy	*[8](opt *[11])	*[19]	220
69-50812-1	Duct Assy	*[8](opt *[11])	*[20]	220
69-50813-1	Duct Assy	*[8](opt *[11])	*[19]	220
69-50814-1	Duct Assy	*[8](opt *[11])	*[20]	220
65-54762	WING TAI SLATS NO. 3 AND 4 SUPPLY	(Reference)	---	---
65-54773-1	LH Duct Assy	*[8](opt *[11])	*[19]	220
-2	RH Duct Assy	*[8](opt *[11])	*[19]	220
-7	LH Duct Assy	*[8](opt *[11])	*[19]	220
-8	RH Duct Assy	*[8](opt *[11])	*[19]	220
65C27072-1	Wing TAI Supply Duct Assy	*[8](opt *[11])	*[13]	220
65C27073-1	Wing TAI Supply Duct Assy	*[8](opt *[11])	*[19]	220
-2	Wing TAI Supply Duct Assy	*[8](opt *[11])	*[19]	220
-7	Wing TAI Supply Duct Assy	*[8](opt *[11])	*[19]	220
-8	Wing TAI Supply Duct Assy	*[8](opt *[11])	*[19]	220
65C27074-1	Wing TAI Supply Duct Assy	*[8](opt *[11])	*[19]	220
65C27576-1	Outboard Wing TAI Supply Duct Assy	*[8](opt *[11])	*[19]	220
-2	Outboard Wing TAI Supply Duct Assy	*[8](opt *[11])	*[19]	220
-5	Outboard Wing TAI Supply Duct Assy	*[8](opt *[11])	*[19]	220
-6	Outboard Wing TAI Supply Duct Assy	*[8](opt *[11])	*[19]	220
-7	Outboard Wing TAI Supply Duct Assy	*[8](opt *[11])	*[19]	220

Duct Material, Finish and Test Data
Figure 17 (Sheet 17)

Part Number	Nomenclature	FINISH *[7]	MATL.	PRESS. *[6]
65C27576-8	Outboard Wing TAI Supply Duct Assy	*[8](opt *[11])	*[19]	220
-9	Outboard Wing TAI Supply Duct Assy	*[8](opt *[11])	*[3]	220
-10	Outboard Wing TAI Supply Duct Assy	*[8](opt *[11])	*[3]	220
65C27577-6	Wing TAI Supply Duct Assy	*[8](opt *[11])	*[19]	220
-10	Wing TAI Supply Duct Assy	*[8](opt *[11])	*[19]	220
-11	Wing TAI Supply Duct Assy	*[8](opt *[11])	*[19]	220
-16	Wing TAI Supply Duct Assy	*[8](opt *[11])	*[19]	220
65C27578-5	Wing TAI Supply Duct Assy	*[8](opt *[11])	*[19]	220
-6	Wing TAI Supply Duct Assy	*[8](opt *[11])	*[19]	220
-7	Wing TAI Supply Duct Assy	*[8](opt *[11])	*[19]	220
-8	Wing TAI Supply Duct Assy	*[8](opt *[11])	*[19]	220
65C27579-1	Wing TAI Supply Duct Assy	*[8](opt *[11])	*[3]	220
-2	Wing TAI Supply Duct Assy	*[8](opt *[11])	*[3]	220
65C27580-1	Wing TAI Supply Duct Assy	*[8](opt *[11])	*[3]	220
-2	Wing TAI Supply Duct Assy	*[8](opt *[11])	*[19]	220
69-38682-1	LH Duct Assy	*[11]	*[19]	220
-2	RH Duct Assy	*[11]	*[19]	220
-7	LH Duct Assy	*[8](opt *[11])	*[19]	220
-8	RH Duct Assy	*[8](opt *[11])	*[19]	220
69-50802-1	LH Duct Assy	*[8](opt *[11])	*[19]	220
-2	RH Duct Assy	*[8](opt *[11])	*[19]	220
69-50803-1	LH Duct Assy	*[8](opt *[11])	*[20]	220
-2	RH Duct Assy	*[8](opt *[11])	*[20]	220
69-50806-1	LH Duct Assy	*[8](opt *[11])	*[19]	220
-2	RH Duct Assy	*[8](opt *[11])	*[19]	220
69-50807-1	LH Duct Assy	*[8](opt *[11])	*[19]	220
-2	RH Duct Assy	*[8](opt *[11])	*[19]	220
65-58126	AIR CONDITIONING SENSING AND THERMAL ANTI-ICING PLUMBING	(Reference)	---	---
65-58123-1	Nose Cowl Duct Assy	*[8]	*[2]	500
-2	Nose Cowl Duct Assy	*[8]	*[2]	500
-7	Nose Cowl Duct Assy	*[8]	*[2]	500
-9	Nose Cowl Duct Assy	*[8]	*[2]	500
-10	Nose Cowl Duct Assy	*[8]	*[2]	500
-13	Nose Cowl Duct Assy	*[15]	*[2]	500
65-58126-6	Tube Assy	*[8]	*[23]	*[5]
-10	Tube Assy	*[8]	*[23]	*[5]
-11	Tube Assy	*[8]	*[23]	*[5]
-12	Tube Assy	*[8]	*[23]	*[5]
-17	Tube Assy	*[8]	*[23]	*[5]
-18	Tube Assy	*[8]	*[23]	*[5]
-19	Tube Assy	*[8]	*[23]	*[5]
-21	Tube Assy	*[8]	*[23]	*[5]
-23	Tube Assy	*[8]	*[24]	*[5]

Duct Material, Finish and Test Data
Figure 17 (Sheet 18)

Part Number	Nomenclature	FINISH *[7]	MATL.	PRESS. *[6]
65-58126-26	Tube Assy	*[8]	*[25]	*[5]
-27	Tube Assy	*[8]	*[25]	*[5]
-800	Tube Assy	*[8]	*[23]	*[5]
-801	Tube Assy	*[8]	*[23]	*[5]
65-75968-6	Vortex Dissipator Duct Assy	*[8]	*[2]	500
-8	Vortex Dissipator Duct Assy	*[8]	*[2]	500
65-77452-1	Vortex Dissipator Tube Assy	*[8]	*[2]	500
-10	Vortex Dissipator Tube Assy	*[8]	*[2]	500
-13	Vortex Dissipator Tube Assy	*[8]	*[26]	500
-16	Vortex Dissipator Tube Assy	*[8]	*[26]	500
65-61783	POWER PLANT GEARBOX	(Reference)	---	---
65-61783-2	Breather Weld Assy	F-8.07	*[2]	*[5]
-12	Breather Weld Assy	F-8.07	*[2]	*[5]
65-66200	AUXILIARY POWER UNIT BLEED AIR	(Reference)	---	---
65-50966-1	Duct Assy	*[8]	*[2]	220
65-50992-1	Duct Assy	*[8]	*[2]	220
65-66201-1	Duct Assy	*[8]	*[2]	220
-9	Duct Assy	*[8]	*[2]	220
-11	Duct Assy	*[8]	*[13]	220
69-37931-3	Duct Assy	*[8]	*[3]	220
-4	Duct Assy	*[8]	*[3]	220
-6	Duct Assy	*[11]	*[3]	220
-7	Duct Assy	*[11]	*[3]	220
-9	Duct Assy	*[11]	*[3]	220
-10	Duct Assy	*[11]	*[3]	220
65-66212	APU UPPER SHROUD	(Reference)	---	---
65-66222-9, -10,-12,-16, -18,-22,-24	Cooling Air APU Duct Assy	*[8]	*[2]	*[5]
65C33037	ZONE TEMPERATURE CONTROL	(Reference)	---	---
65C33053-8	Duct Assy	*[22]	*[4]	220
-11	Duct Assy	*[22]	*[4]	220
65C33068-10	Duct Assy	*[22]	*[34]	220
-15	Duct Assy	*[22]	*[34]	220
65C33069-3	Duct Assy	*[22]	*[4]	220
-5	Duct Assy	*[22]	*[4]	220
65C33070-3	Duct Assy	*[22]	*[4]	220
-5	Duct Assy	*[22]	*[4]	220
65C33071-5	Duct Assy	*[22]	*[4]	220
-7	Duct Assy	*[22]	*[4]	220
65C33072-3	Duct Assy	*[22]	*[4]	220
-8	Duct Assy	*[22]	*[4]	220

Duct Material, Finish and Test Data
Figure 17 (Sheet 19)

Part Number	Nomenclature	FINISH *[7]	MATL.	PRESS. *[6]
65C33073-1	Duct Assy	*[22]	*[4]	220
-3	Duct Assy	*[22]	*[4]	220
65C33074-1	Duct Assy	*[22]	*[4]	220
-3	Duct Assy	*[22]	*[4]	220
65C33230	DISTRIBUTION BAY AIR CONDITIONING	(Reference)	---	---
213N2230-5	Duct Assy	*[8]		50
65-55347-3	Duct Assy	F-16.01 + F-21.03	*[2]	*[5]
-7	Duct Assy	F-16.01 + F-21.03	*[2]	*[5]
65C33486-1	Duct Assy	*[8]	*[19]	220
-6	Duct Assy	*[8]	*[19]	220
65C33522-1	Nozzle Assy	*[8]	*[39]	*[5]
-6	Nozzle Assy	*[8]	*[39]	*[5]
-11	Nozzle Assy	*[8]	*[39]	*[5]
-15	Nozzle Assy	*[8]	*[39]	*[5]
65C33545-1	Nozzle Assy	*[8]	*[39]	*[5]
69-36670	POWER PLANT FUEL HEATER	(Reference)	---	---
69-36671-1	Exhaust Air Duct Assy	F-8.07	*[2]	*[5]

Duct Material, Finish and Test Data
Figure 17 (Sheet 20)

*[1] Hastelloy "X" per BMS 7-82; or AISI 680 CRES per AMS 5536.

*[2] 321 CRES (optional 347 CRES) per BMS 7-41; or CRES plate, sheet and strip per MIL-S-6721.

*[3] Titanium per BMS 7-21, Grade 2; or annealed titanium sheet and strip per AMS 4902. (Optional: MIL-T-9046, Type 1, Comp A, annealed titanium sheet for stock for repairs)

*[4] BMS 7-21, Grade 1 or 2 titanium.

*[5] No pressure test necessary.

*[6] Pressure value in psi. Do the hydrostatic pressure test (BAC5001-2) at room temperature.

*[7] Refer to par. 5.B.

*[8] Apply no finish (F-25.01).

*[9] Do a hydrostatic pressure test (BAC5001-2) at 130-psig positive pressure, and then at 8.6-psig negative pressure.

*[10] Do a hydrostatic pressure test (BAC5001-2) at 220-psig positive pressure, and then at 8.6-psig negative pressure.

*[11] BMS 10-82 coating (F-17.14) on the external surface is optional to the Type 24 (SRF-14.87) finish. But the BMS 10-82 coating is preferred for overhaul. Three spray coats are recommended for protection from hot hydraulic fluid. Apply Type 24 coating (SRF-14.87), to the exterior surface. Minor overspray allowed. Do not let the coating get on threads, flange sealing surfaces or O-ring sealing surfaces. This is an effective but sacrificial coating when in contact with hot hydraulic fluids. Localized touchup and reapplication rates must be determined by experience or inspection.

*[12] Passivate (F-17.25, which replaces F-17.09).

*[13] Nickel alloy 625 per ASTM B444 or AMS 5599.

*[14] 321 or 347 CRES per BMS 7-41

*[15] Passivate (F-8.07) but not on flanges.

*[16] Apply BMS 14-4 Type 1 coating (F-24.02) on external surface only.

*[17] Nickel alloy 625 per BMS 7-188 or AMS 5599.

*[18] Give protection to parts as required and handle with clean gloves to prevent contamination. Spray apply BMS 10-82 (low emissivity gold coating) to a minimum film weight of 6.3 gm/ft^2 (approximately equivalent to three spray layers) to make a transparent red coating. Bake coated parts as quickly as possible after application at 800°F-850°F for 10-15 minutes.

Duct Material, Finish and Test Data
Figure 17 (Sheet 21)

*[19] Titanium-Commercially-Pure - 25 per BMS 7-21, Grade 1, or Titanium-Commercially-Pure -40 per BMS 7-21, Grade 2. (Optional to BMS 7-21, Grade 2: MIL-T-9046, Type 1, Comp A, annealed sheet stock for repairs).

*[20] Titanium-Commercially-Pure - 25 per BMS 7-21, Grade 1, or Titanium-Commercially-Pure - 40 per BMS 7-21, Grade 2, or Titanium-Commercially-Pure - 70 per BMS 7-21, Grade 3. (Optional to BMS 7-21, Grade 2: MIL-T-9046, Type 1, Comp A, annealed sheet stock for repairs).

*[21] Preferred finish: Apply BMS 10-82 coating (F-17.14) on external surface only.
Optional finish: Apply Sheldahl G103300 or 146494-001 tape, or Scotch Y9184S tape only when no finish (F-8.05) is applied.

*[22] Apply BMS 10-82 coating (F-17.14) on external surface only.

*[23] 304 CRES cold drawn tubing per MIL-T-6845. Optional: 304 annealed tubing per MIL-T-8504.

*[24] CRES seamless or welded tube per BMS 7-185.

*[25] 304 annealed CRES per MIL-T-8504.

*[26] 321 or 347 CRES tubing per MIL-T-8808.

*[27] Apply Type 47 polyphenylene coating (SOPM 20-44-01), 0.003-0.004 inch thick on all exterior surfaces.

*[28] Titanium tubing per BMS 7-21, Grade 3. Optional: BMS 7-21, Grade 1 and 2, BMS 7-21, Grade 2 or MIL-T-9046, Type 1, Comp A, annealed sheet stock for repairs).

*[29] Maximum leakage: 1 milliliter/minute. There must be no sign of leaks, cracks, change in overall length or damage to duct. A 0.2% permanent set is permitted on diameter only.

*[30] Use the clamps to attach the 400677 fiberglass shields over the duct surface.

*[31] Wrap the duct with T2664 insulation blanket (only after duct surfaces are fully cured, if applicable). Wrap the blanket on the portion of duct that will be in the unpressurized area of the airplane. Wrap the blanket with Sheldahl G103300 or 146494-001 tape, or Scotch Y9184S tape.

*[32] Do a hydrostatic pressure test (BAC5001-2) at 240-250-psig positive pressure, and then at 9.1-14.1-psig negative pressure.

*[33] Apply BMS 10-82 coating (F-17.14) but not on or under the ring seal. Overspray is acceptable on or under the ring seal.

*[34] BMS 7-21 Grade 2 titanium.

*[35] 321 CRES per BMS 7-41.

*[36] Apply BMS 10-82, Type 1, Class 2 coating (F-17.141) on exterior. Keep interior overspray to a minimum.

Duct Material, Finish and Test Data
Figure 17 (Sheet 22)

*[37] Refer to 737-SL-36-012 for better seal rings to use on these ducts.

*[38] Titanium commercially pure 40 annealed per BMS 7-21 Grade 2 or MIL-T-9046 Code CP-3.

*[39] Titanium per BMS 7-21 Type 1 or AMS 4944.

*[40] Do a hydrostatic pressure test (BAC5001-2) at 240-250-psig positive pressure, and then at 13.5-14.0-psig negative pressure.

*[41] Maximum leakage: 61 milliliters/minute. There must be no sign of leaks, cracks, change in overall length or damage to duct. A 0.2% permanent set is permitted on diameter only. You can do the leak test at 181 psig.

Duct Material, Finish and Test Data
Figure 17 (Sheet 23)