TO: ALL HOLDERS OF REPAIR OF PNEUMATIC DUCTS COMPONENT MAINTENANCE MANUAL 36-10-06

REVISION NO. 55 DATED NOV 01/05

HIGHLIGHTS

Pages which have been added or revised are outlined below together with the highlights of the revision. Remove and insert the affected pages as listed and enter Revision No. and date on the Record of Revision Sheet.

CHAPTER/SECTION AND PAGE NO.	DESCRIPTION OF CHANGE
REPAIR-GEN 601 REPAIR 6-1 601-602	Added repair of cracks on duct 332T4327.
REPAIR 1-1 602,609,616,623, 625,629,634-637, 648,650-651, 658-659	Added clarifications and updated callouts.
REPAIR 1-1 619,624,629	Changed pressures on some ducts.
REPAIR 1-1 635	Added duct 213T4141-47 with better parts.
REPAIR 1-1 661	Added duct 332T4327-5 with changed flange details for a better fit.

REPAIR OF PNEUMATIC DUCTS

NO ASSIGNED PART NUMBER

COMPONENT MAINTENANCE MANUAL

REVISION RECORD

- Retain this record in front of manual. On receipt of revision, insert revised pages in the manual, and enter revision number, date inserted and initial.

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TEMPORARY REVISION AND SERVICE BULLETIN RECORD

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		PRR B13101	MAR 01/05

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INTRODUCTION

The instructions in this manual provide the information necessary to perform maintenance functions ranging from simple checks and replacement to complete shop-type repair.

This manual is divided into separate sections:

1. Title Page
2. Record of Revisions
3. Temporary Revision & Service Bulletin Record
4. List of Effective Pages
5. Table of Contents
6. Introduction
7. Procedures

Refer to the Table of Contents for the page location of applicable sections. An asterisked flagnote *[ ] in place of the page number indicates that no special instructions are provided since the function can be performed using standard industry practices.

The beginning of the REPAIR section includes a list of applicable standard Boeing practices, and general repair procedures. A list of repairable duct assemblies, duct materials, and applicable hydrostatic test pressures is included in REPAIR 1-1.

All weights and measurements used in the manual are in English units, unless otherwise stated. When metric equivalents are given they will be in parentheses following the English units.

REPAIR OF PNEUMATIC DUCTS

DESCRIPTION AND OPERATION

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.

TESTING AND TROUBLE SHOOTING

1. Equipment

NOTE: Equivalent substitutes may be used.

A. Pneumatic Ducts Hydrostatic Pressure Test Plug Set, A36003-1

B. Duct Test Plug Equipment, B36005-1

2. Proof Pressure Test

A. After welding has been checked and approved per CHECK, hydrostatic proof pressure test duct assemblies as follows:

(1) Cap duct ends and pullout openings (Fig. 102) using caps shown in Repair 1-1, Fig. 602, and install duct on test bench. A typical test bench is shown in Fig. 101.

NOTE: Gage pressure range should be suitable to measure hydrostatic pressures listed in Repair 1-1, Fig. 601.

(2) With drain valve open, turn on and run tap water (approximately 50 psig) thru duct, while moving duct around, until all air is removed from duct. Install a shield around duct, close drain valve, and turn off tap water. This will pressurize duct to tap water pressure.

WARNING: ENSURE ALL AIR IS REMOVED PRIOR TO PRESSURIZING DUCT. ANY AIR LEFT IN DUCT COULD CAUSE SEVERE DUCT DAMAGE AND POSSIBLE INJURY TO PERSONNEL SHOULD THE DUCT SEPARATE DURING TESTING.

(3) Slowly pressurize duct in 50 psig increments to pressure listed in REPAIR 1-1, Fig 601 at room temperature. An effective method to pressurize duct is to use a hand pump such as shown in Fig. 101.

(4) When test is completed, release pressure from duct by slowly opening drain valve. Drain duct and remove end caps.

(5) Penetrant check external longitudinal duct welds around pullouts, and internal and external weld beads adjacent to flanges per 20-20-02 to ensure weld integrity.

B. Do a rotation-type hydrostatic proof pressure test on only those duct assemblies indicated as such in REPAIR 1-1, Fig. 601 as follows:

(1) Select one duct section of the duct assembly and keep it stationary throughout the following test procedure.

NOTE: Do not rotate either duct axially with respect to one another.

(2) Swivel the movable duct section to position 1 (neutral position) as shown in Fig. 103.

(3) Perform a hydrostatic proof pressure test on the duct assembly up to the pressure given in Table 1, Fig. 103. Make sure the leakage rate through the ball joint meets the requirements listed in Table 1, Fig. 103.

(4) Apply a hydrostatic pressure of 35 - 50 PSIG to the duct assembly at room temperature. Make sure the leakage rate through the ball joint meets the requirements of Table 1, Fig. 103.

(5) Swivel the movable duct section to position 2 (up position) as shown in Fig. 103.

(6) Repeat steps (3) and (4) in this position.

(7) Swivel the movable duct section to position 3 (down position) as shown in Fig. 103.

(8) Repeat steps (3) and (4) in this position.

(9) Swivel the movable duct section to position 4 (left position) as shown in Fig. 103.

(10) Repeat steps (3) and (4) in this position.

(11) Swivel the movable duct section to position 5 (right position) as shown in Fig. 103.

(12) Repeat steps (3) and (4) in this position.

C. Stress relieve the indicated weld-repaired titanium ducts by one of these procedures:

(1) Stress relieve in a furnace that uses an air atmosphere.

(a) Clean the external surface of the ducts by the procedures of SOPM 20-30-03 or in CLEANING. Strip the solid film lubricant from the duct end flange seal ring.

CAUTION: DO NOT CLEAN THE DUCT BY ANY IMMERSION CLEANING PROCEDURE SUCH AS IN BAC5613, OR DAMAGE TO THE DUCT COULD OCCUR.

(b) Stress-relieve the duct per BAC5613 at 975 ±25°F for 6 hours ±15 minutes.

NOTE: The B2000 coating could turn a gray-white color during the stress relief procedure. Descaling of the duct after stress-relief is not necessary.

(c) Apply BMS 3-8 solid film lubricant (SOPM 20-50-08).

(d) Identify stress-relieved ducts with the word RELIEVED below the hydrostatic test pressure marking, which is below the part number near the duct flange. You can etch this on the duct by abrasive blast or stencil it with BMS 10-60 enamel (SOPM 20-50-10). Equivalent Boeing-approved operator procedures can be used.

(2) Stress-relieve in a vacuum furnace or a furnace that uses a dry argon gas atmosphere.

(a) Clean all accessible surfaces with a nonchlorinated solvent (SOPM 20-30-03).

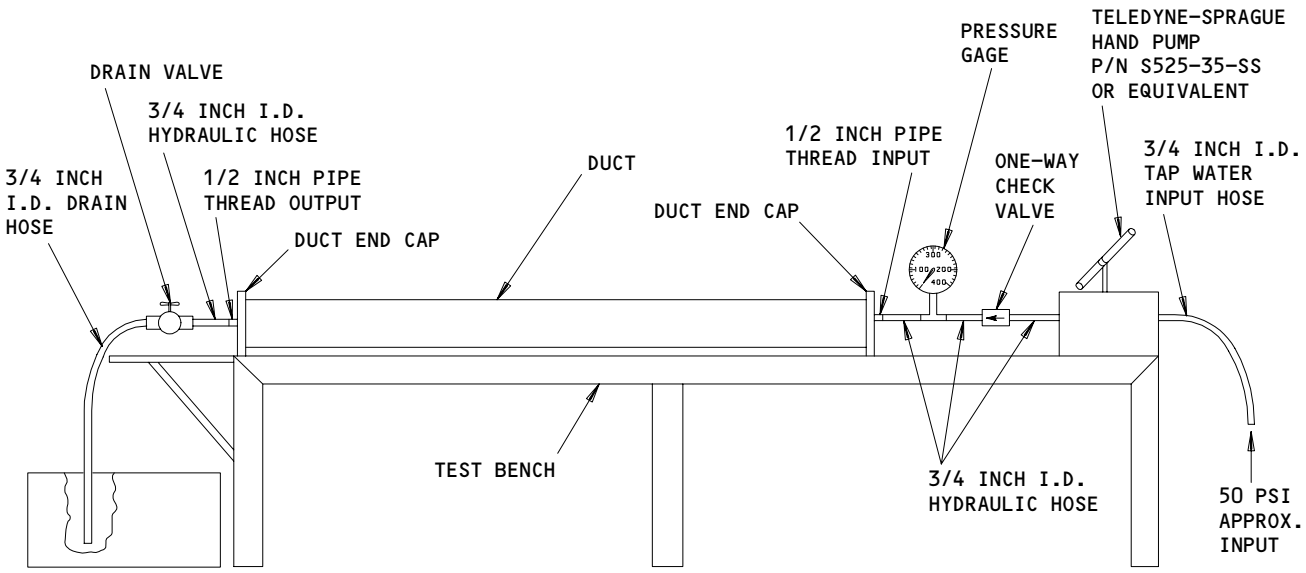
WARNING: ARGON, HELIUM, OR NITROGEN MUST BE USED FOR PURGING FURNACES OR RETORTS PRIOR TO INTRODUCING HYDROGEN AND DURING THE LATTER STAGES OF THE COOL-DOWN CYCLE. HYDROGEN ATMOSPHERE SHALL BE EXCLUDED FROM THE FURNACE AT TEMPERATURES BELOW 1350°F.

(b) Stress-relieve the duct assembly at 1200 ±25°F for 30 ±1 min in a controlled protective atmosphere such as argon, hydrogen, nitrogen, or vacuum. The gases entering the furnace or retort shall have an oxygen content not to exceed 10 parts per million and a dew point of -60° or drier. The gas flow shall be sufficient to maintain a dew point of -25°F or lower in the furnace work zone or retort discharge.

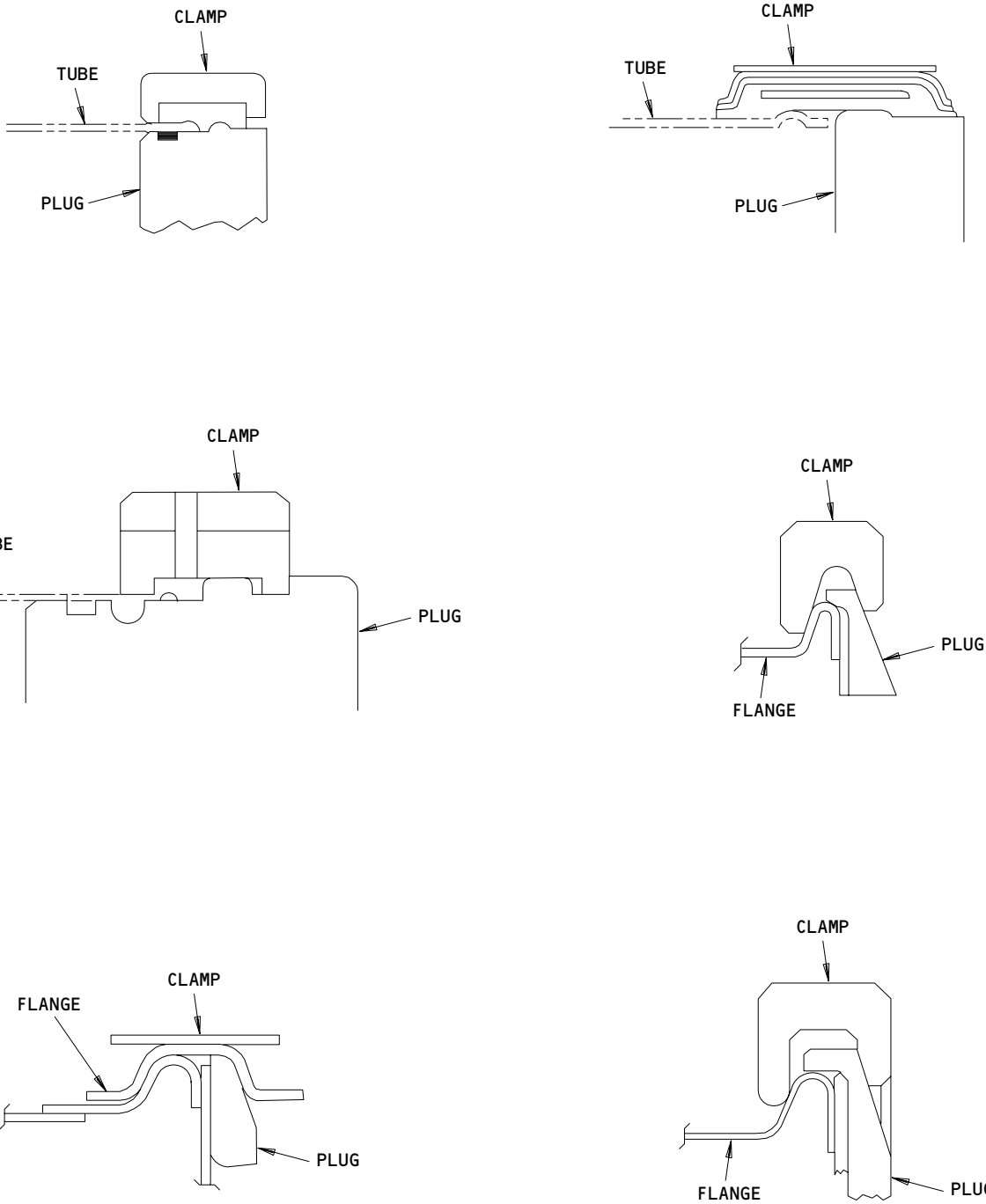
(c) Vacuum furnaces must be operated at a maximum pressure of 100 microns (0.0001 millimeter) of mercury. Cooling in a vacuum furnace can be with argon, helium, or nitrogen. Heat treatment in nitrogen from dissociated ammonia is prohibited.

(d) If applicable, apply BMS 3-8 solid film lubricant (SOPM 20-50-08).

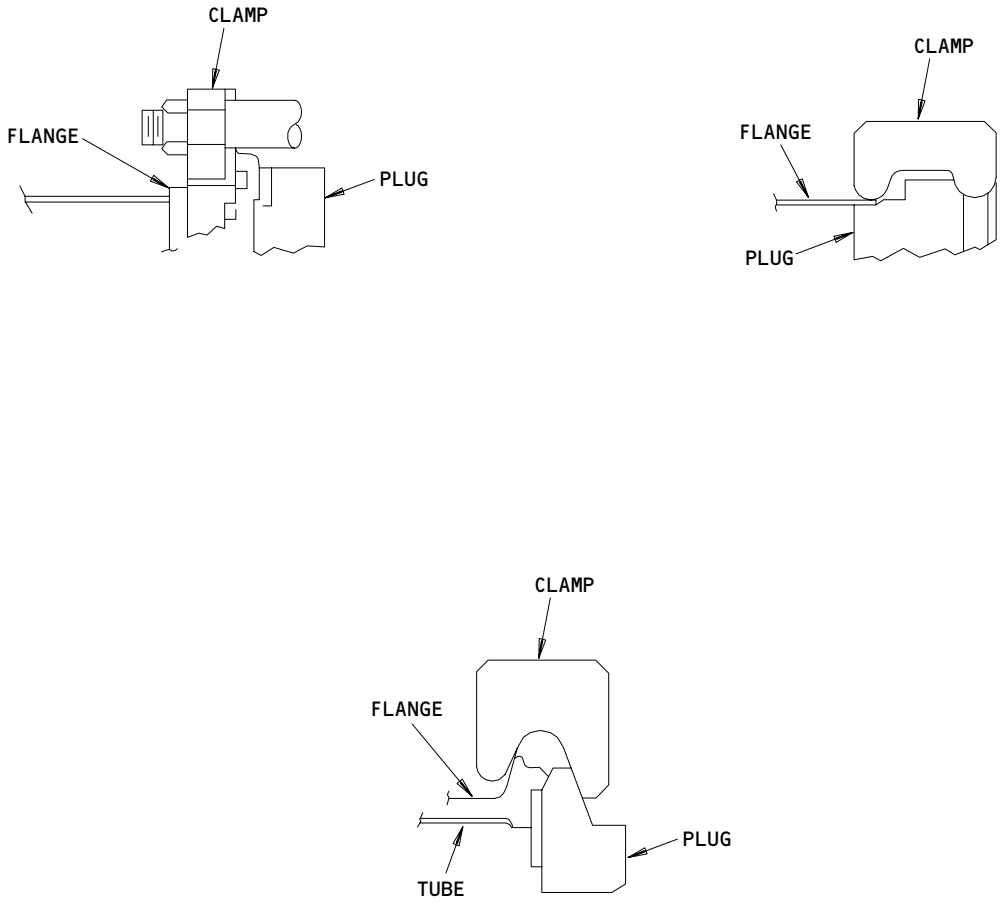
(e) Identify stress-relieved ducts with the word RELIEVED below the hydrostatic test pressure marking, which is below the part number near the duct flange. You can etch this on the duct by abrasive blast or stencil it with BMS 10-60 enamel (SOPM 20-50-10). Equivalent Boeing-approved operators procedures can be used.



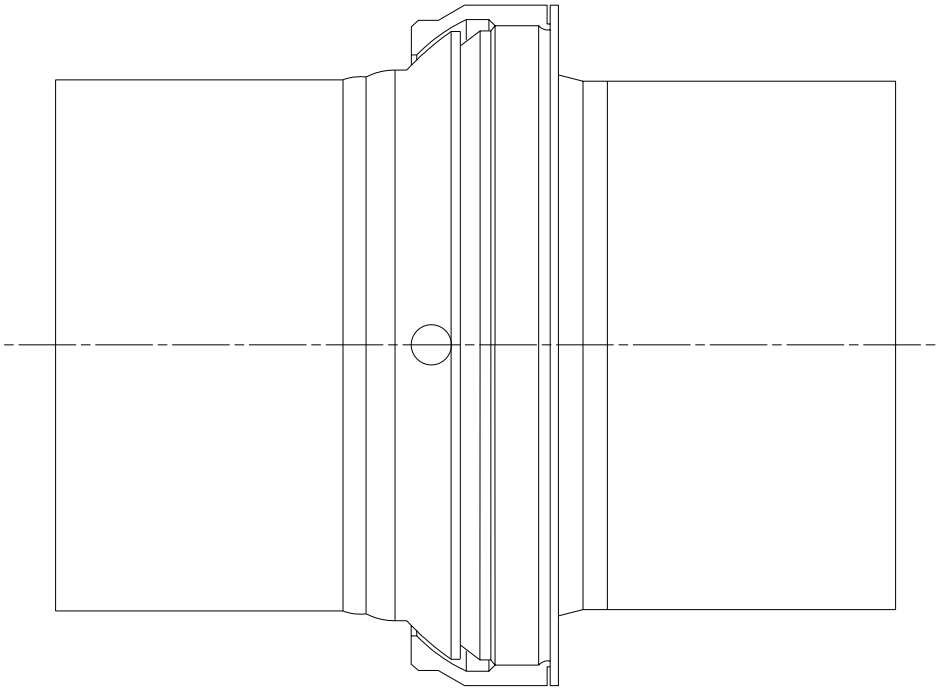
Typical Pneumatic Duct Hydrostatic Proof Pressure Test Bench Setup
Figure 101



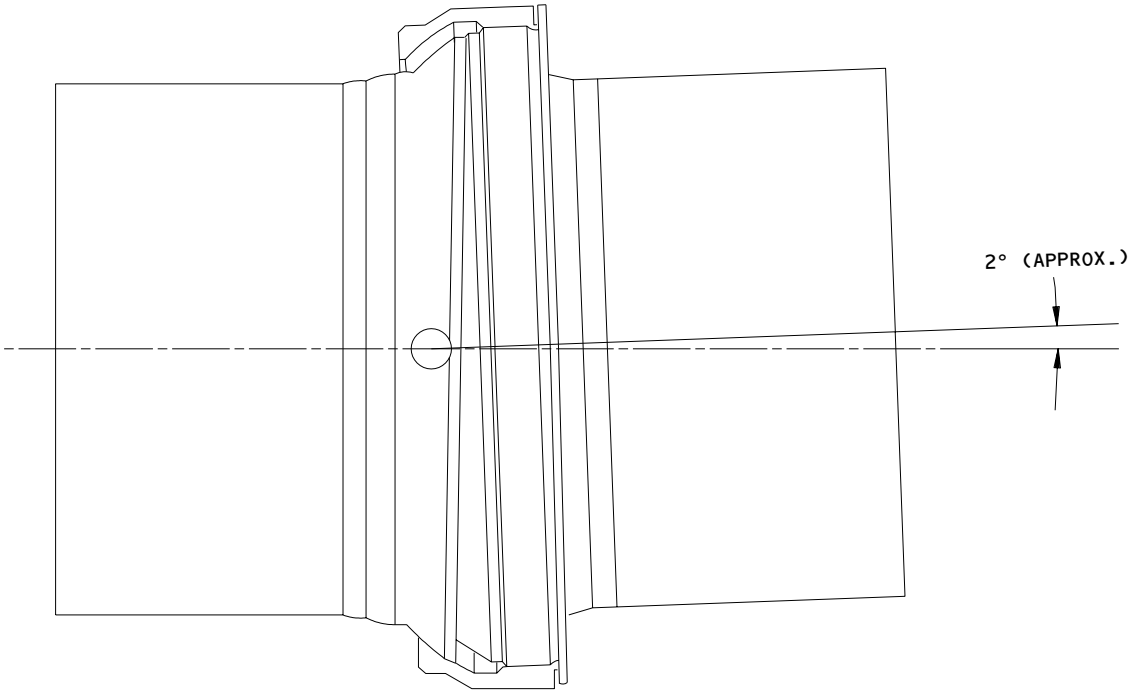
Typical Pneumatic Duct Flange and Test Plug Configurations
Figure 102 (Sheet 1)



Typical Pneumatic Duct Flange and Test Plug Configurations
Figure 102 (Sheet 2)

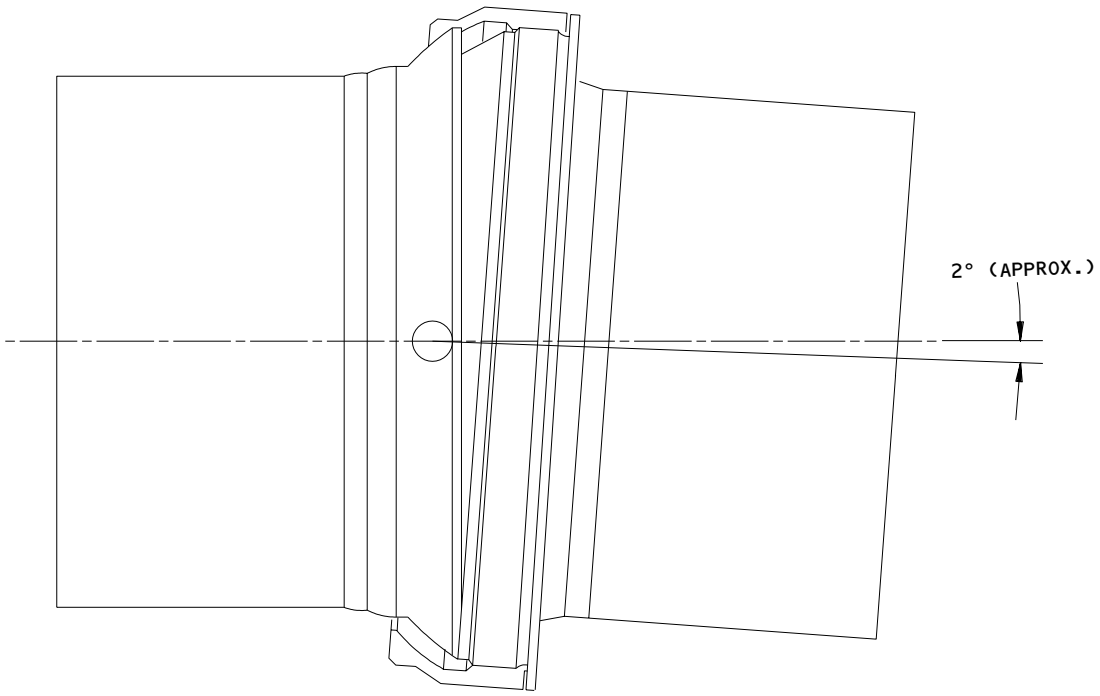


POSITION 1 – NEUTRAL
SIDE VIEW

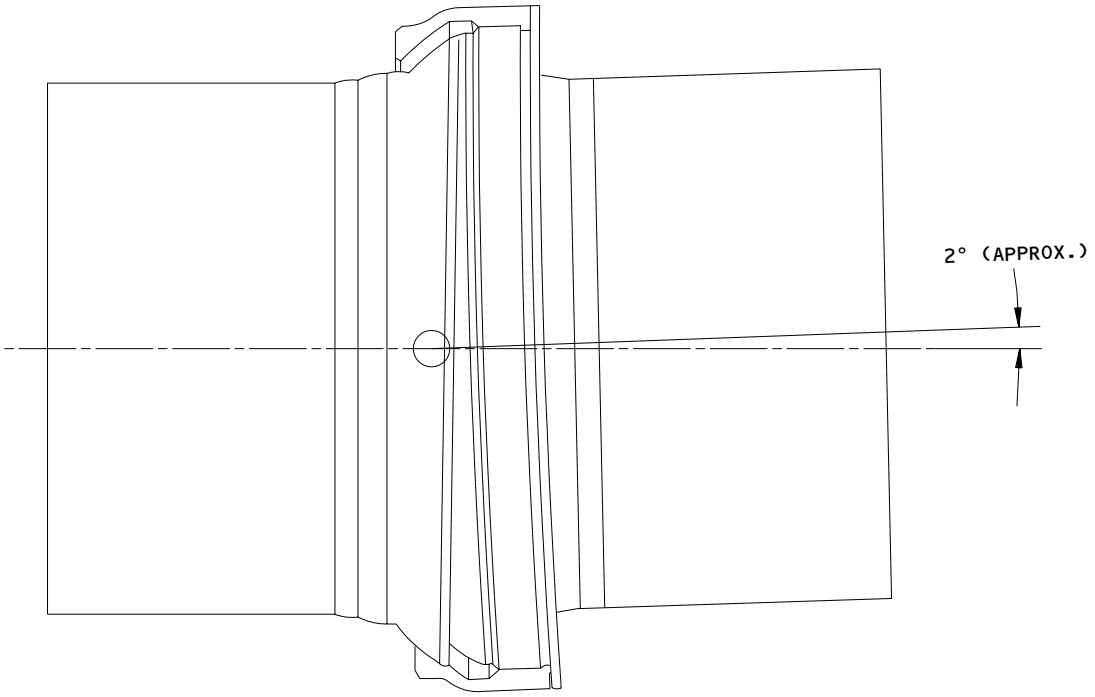


POSITION 2 – SWIVELED UP
SIDE VIEW

Rotational Hydrostatic Proof Pressure Test
Figure 103 (Sheet 1)

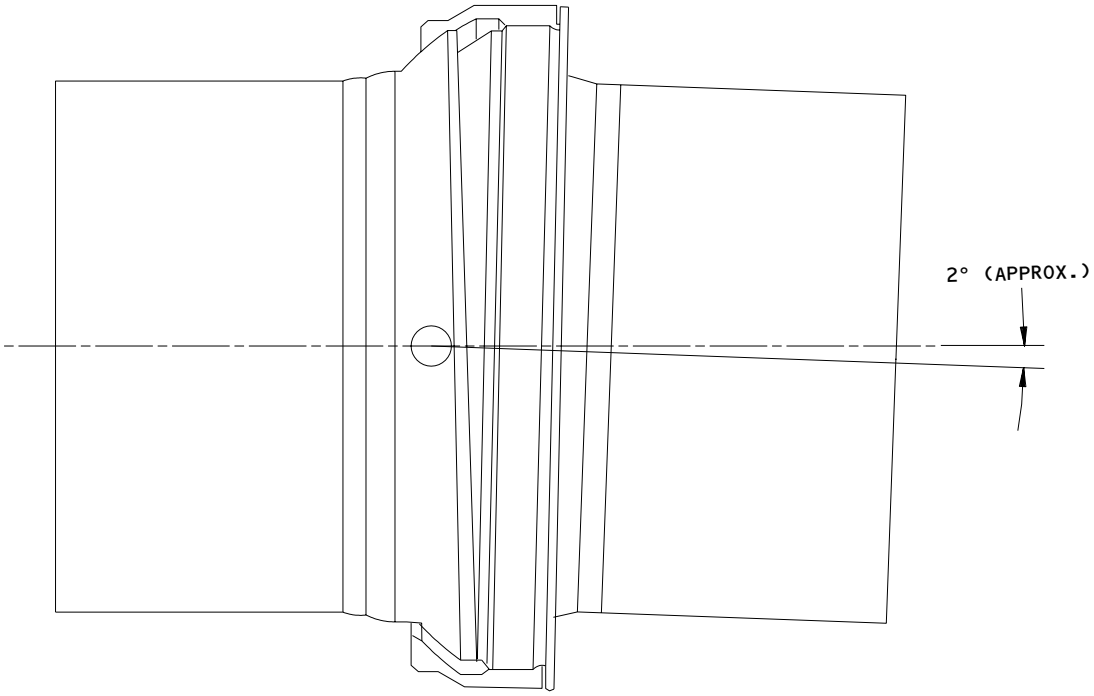


POSITION 3 – SWIVELED DOWN
SIDE VIEW



POSITION 4 – SWIVELED LEFT
SIDE VIEW

Rotational Hydrostatic Proof Pressure Test
Figure 103 (Sheet 2)



POSITION 5 - SWIVELED RIGHT
PLAN VIEW

DUCT ASSEMBLIES	PROOF PRESSURE (PSIG) 1	LEAKAGE ALLOWABLE (CC/MIN) 2
312T1073-XX	267	250
312T3210-XX	190	200
332T1228-XX	310	250
332T1229-XX	310	250
332T1232-XX	960	150
332T1234-XX	960	150
332T1235-XX	960	150
332T1240-XX	310	250
332T3237-XX	190	200
332T3246-XX	190	150

1 THERE MUST BE NO SIGN OF LEAKAGE (OTHER THAN THROUGH THE BALL JOINT), CRACKS, CHANGE IN OVERALL LENGTH, OR DAMAGE. THERE CAN BE A 0.2% PERMANENT SET ON THE DIAMETER ONLY.

2 THROUGH THE BALL JOINT ONLY.

Rotational Hydrostatic Proof Pressure Test
Figure 103 (Sheet 3)

D02092

DISASSEMBLY

1. Disassembly

A. Remove all parts which are clamped or bolted to the basic duct assembly. Do not remove parts that are riveted or welded to the basic duct assembly.

B. Disassemble manifold assembly (332U2322-series) (IPL Fig. 1).

(1) Loosen and remove nut (45) from retainer (15).

(2) Remove and discard shim pack (65) and hairpin seal (70).

(3) Get replacement parts to install after repairs.

CLEANING

1. Material

NOTE: Equivalent substitutes can be used.

A. Alkaline Cleaner -- Vitro-Klene (SOPM 20-30-03)

B. Alkaline Cleaner -- Isoprep 177 (SOPM 20-30-03)

C. Alkaline Cleaner -- Altrex (SOPM 20-30-03)

D. Alkaline Cleaner -- Oakite 61B (SOPM 20-30-03)

E. Acetone -- O-A-51 or JIS-K-1503, Grade 1 (SOPM 20-60-01)

F. Butyl Alcohol -- TT-B-846 or JIS-K-1504 (SOPM 20-60-01)

G. Toluene -- TT-T-558, or JAN-T-171, Grade A (SOPM 20-60-01)

H. Emulsion Cleaners (SOPM 20-30-03)

I. Solvent -- Series 80 (SOPM 20-30-80)

J. Solvent -- Series 82 (SOPM 20-30-82)

K. Nitric hydrofluoric acid, diluted solution (2 volumes of water to 1 volume of acid)

L. Nitric-peroxide-acetic solution

M. Inhibited hydrochloric acid

N. Abrasive Fabric -- Scotch-Brite, Type S (SOPM 20-60-04)

2. Cleaning

A. Clean ducts per SOPM 20-30-03 and these steps.

(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.

CAUTION: DO NOT EXPOSE TITANIUM OR TITANIUM ALLOY PARTS TO CHLORINATED SOLVENTS. IF TITANIUM/TITANIUM ALLOY PARTS ARE EXPOSED TO CHLORINATED SOLVENTS AND HAVE BEEN EXPOSED TO TEMPERATURES OR PROCESSES (I.E., STRESS-RELIEVING, WELDING) CONDUCTED AT TEMPERATURES HIGHER THAN 600°F AFTER EXPOSURE TO THE CHLORINATED SOLVENTS, THE CONTAMINATED PARTS MUST BE PENETRANT INSPECTED PER SOPM 20-20-02. IF NO CRACKS EXIST, THE PARTS CAN BE RETURNED TO SERVICE. IF CRACKS DO EXIST, THE PARTS SHOULD BE SCRAPPED.

IF TITANIUM/TITANIUM ALLOY PARTS ARE EXPOSED TO CHLORINATED SOLVENTS AND HAVE NOT BEEN EXPOSED TO TEMPERATURES OR PROCESSES (I.E., STRESS RELIEVING, WELDING) CONDUCTED AT TEMPERATURES HIGHER THAN 600°F AFTER EXPOSURE TO THE CHLORINATED SOLVENTS, THEN THE PARTS CAN BE RETURNED TO SERVICE WITH NO PENETRANT INSPECTION REQUIRED.

CONTACT WITH CLEANING SOLUTIONS ABOVE 95°F WILL DAMAGE B2000 COATING.

(2) For titanium ducts, use one of the following procedures:

(a) For titanium ducts that do not require treatment against corrosion by high-temperature BMS 3-11 hydraulic fluid, use manual solvent cleaners such as toluene, or emulsion cleaners.

(b) For titanium ducts that are to be treated against high-temperature hydraulic fluid corrosion use these methods:

1) For ducts without B2000 coating, use these cleaning methods:

a) Wipe with a Series 80 solvent to remove loose residue.

b) Elevated Temperature Method (preferred method) -- Soak the ducts in dilute alkaline cleaner at 160°F for a minimum of 15 minutes.

Room Temperature Method -- Soak the ducts in dilute alkaline cleaner at room temperature for 1 to 1-1/2 hours.

Manual Method -- Apply alkaline cleaner at room temperature (60°F minimum) from a squirt bottle.

c) Scrub the ducts with a stiff, nonmetallic bristle brush to loosen and remove residue.

d) Elevated and Room Temperature Method -- Rinse ducts with hot water (over 100°F) for 3-5 minutes. You can use cold water (under 90°F), but rinse time must be a minimum of 15 minutes.

Manual Method -- Soak up depleted cleaner with dry rags and add fresh cleaner frequently. You can use a circular brush attached to a drill motor. Wipe unwanted alkaline cleaner from the ducts with dry rags. Then remove all residue with rags wet with water. Continue to wipe the ducts with wet rags for 5 minutes to be sure you removed all the cleaner residue.

e) Examine the ducts to be sure you removed all visible residues. If visible residue remains, do steps 2.A.(2)(b)1)a) thru e) again as necessary until the residue has been removed.

f) Air dry. Use an oven, hot-air gun, or filtered compressed air to dry the ducts faster. Let the ducts dry for a period sufficient to be sure all moisture is removed from possible defects.

2) For ducts with B2000 coating, use this cleaning method, which will not damage the coating:

a) Wipe with a Series 82 solvent to remove loose residue.

b) Apply Isoprep 177, Turco 4829LT or cleaner 36 alkaline cleaner, prepared per BAC5749, at room temperature (60°F minimum) from a squirt bottle and scrub the weld area with a stiff nonmetallic bristle brush until the residue is removed. You can use a circular bristle brush attached to a drill motor.

c) Wipe unwanted alkaline cleaner from the duct with dry rags.

d) Wipe with rags wet with water until all residue is removed.

e) Air dry. To dry the ducts faster, use filtered compressed air or a hot air gun.

f) Remove the remaining residue with Scotch-Brite abrasive fabric.

(3) For ducts made of corrosion-resistant steel AISI 321 or AISI 347 use alkaline cleaners such as Turco Vitro-Klene, Kelite Isoprep 177, Altrex or Oakite 61B.

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

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

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

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

C. Wipe off all residue or rinse it off with an approved solvent per par. 2.A.

D. Treat duct areas to be welded as follows:

WARNING: DO NOT LET ACID SOLUTION GET INTO FAYING SURFACES. BE CAREFUL AND WEAR PROTECTIVE CLOTHING WHEN YOU USE THESE CHEMICAL AGENTS.

(1) On nickel base alloy ducts, to activate surfaces, wipe or swab the areas with a 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 titanium ducts, nitric-fluoride etch (SOPM 20-30-03).

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

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

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

CHECK

1. Examine all ducts for metal deterioration and along weld beads for evidence of leakage. Reject titanium ducts with a dull black residue over bare metal surfaces or any other signs of metal deterioration.

2. Penetrant examine (SOPM 20-20-02) all remaining ducts.

3. Examine all edges to be welded for small cracks, chips or burrs.

4. Examine all welds for quality, uniformity, undercutting and flux removal. Welds must be sound, clean, and free from unwanted materials.

   A. Penetrant examine all welded areas (SOPM 20-20-02).

   B. Optional Inspection Method -- Radiographic examine the welded areas.

5. Check depth and contour of dents in duct wall.

6. Determine depth of sharp scratches or gouges. If depth exceeds 10% of duct wall thickness, defect is to be treated as a crack. If defect is within 0.25 inch of a primary weld joint, it is also to be treated as a crack.

7. The following is a list of acceptable damage not requiring repair:

   A. Slight surface marks and pits.

      NOTE: Treating of corrosion pitted areas may be advisable depending on extension and location.

   B. Smooth dents, provided that the following conditions are met:

      (1) Depth does not exceed 0.05 inch as measured from a straightedge placed logitudinally along the duct.

      (2) Bottom is rounded and free from cuts.

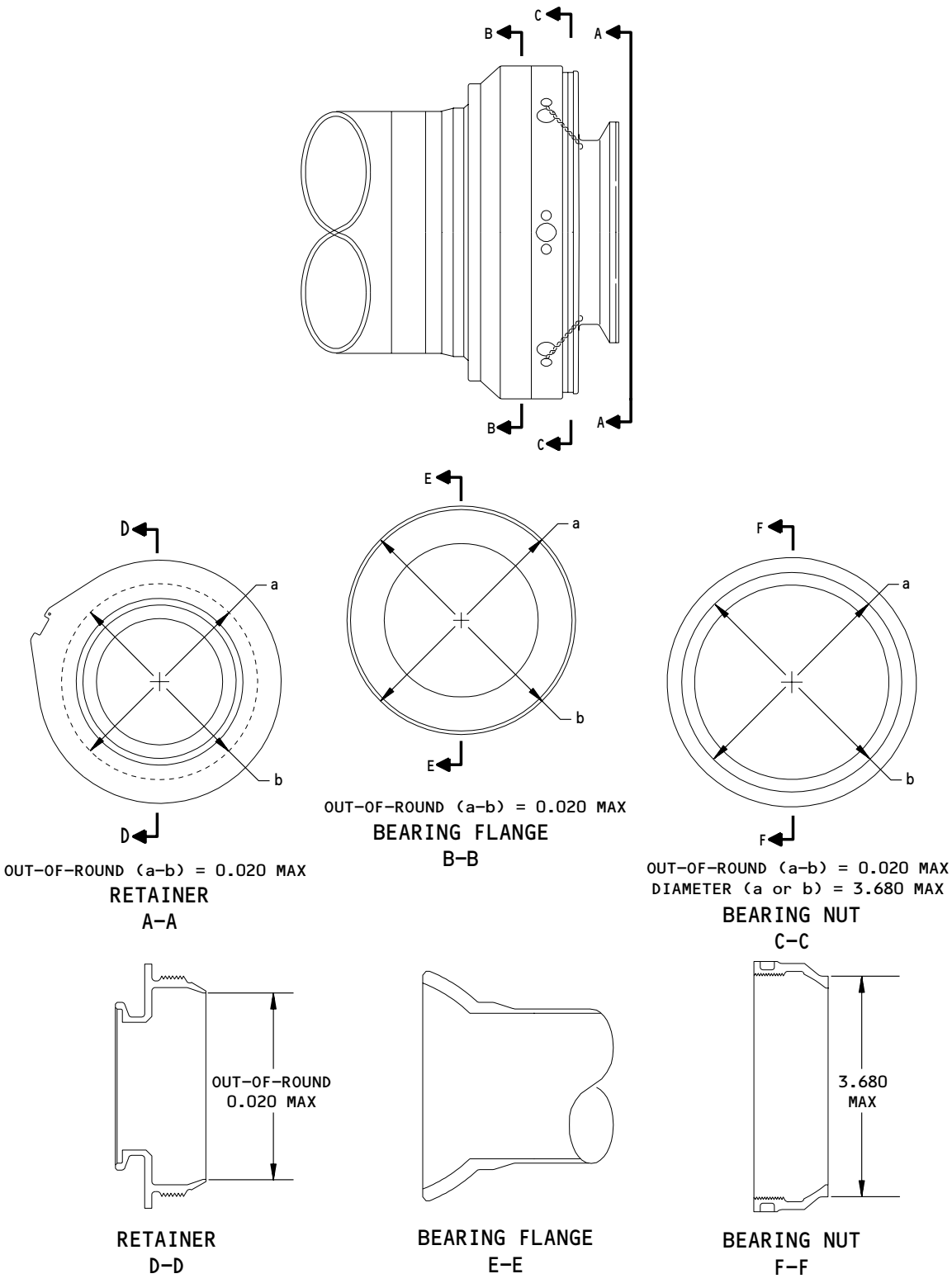
          NOTE: Special attention should be paid to check inner surface of dent bottom for incipient cracks.

   C. Scratches and gouges provided that the depth does not exceed 10 percent of duct nominal wall thickness and that the bottom is smooth and rounded.

8. Do an out-of-round check of bearing nut (P/N 332T1233-4), bearing flange (P/N 332T1233-3), and retainer (P/N 332T1233-2) per Fig. 501.

9. Do a check of flexible connectors in duct assemblies, P/N 212T3114, 212T3130, 212T3131. If cracks exist in the flexible connector, P/N 14A500, replace the existing connector with a new improved flexible connector, P/N 14A640-101 per Repair 4-1.

10. Check ducts coated with high-temperature corrosion-resistant coating B2000 or BMS 10-82 for uniform coating coverage. Reapply coating, if necessary, as shown in Refinish.



Ball Joint Out-Of-Round Check
Figure 501

G74891

REPAIR - GENERAL

1. Content

   A. A list of repairable duct assemblies, duct materials, flange usage and applicable hydrostatic proof pressure limits is in REPAIR 1-1, Fig. 601.

   B. A list of flanges and proof pressure test end caps is in REPAIR 1-1, Fig. 602.

   C. Repair of duct 312T1310-5 is in REPAIR 2-1.

   D. Repair of TAI duct is in REPAIR 3-1.

   E. Repair of ducts 212T3114-1, -8, -12, -21 thru -26; 212T3130-11, -16; 212T3131-1, -6, -13 thru -15 is in REPAIR 4-1.

   F. Repair of duct 332T4313-14 is in REPAIR 5-1.

   G. Repair of ducts 332T4327-1, -5 is in REPAIR 6-1.

2. Standard Practices and References

   A. Refer to the following standard practices and references as applicable for details of procedures in the individual repairs.

      (1) Standard Practices

      20-20-02 Penetrant Methods of Inspection
      20-30-02 Stripping of Protective Finishes
      20-30-03 General Cleaning Procedures
      20-30-88 Solvents for Final Cleaning Before Non-Structural Bonding
      20-41-01 Decoding Table for Boeing Finish Codes
      20-50-03 Bearing and Bushing Replacement
      20-60-02 Finishing Materials
      20-60-04 Miscellaneous Materials

      (2) References

BAC5001 Fluid Lines, Fittings and Pressure Testing

BAC5613 Heat Treatment of Titanium and Titanium Alloys

BAC5616 Heat Treatment of Nickel-Base and Cobalt-Base Alloys

BAC5710 Application of Special Purpose Coatings

BAC5749 Alkaline Cleaning

BAC5750 Solvent Cleaning

BAC5753 Surface Preparation of Titanium and Titanium Alloys

BAC5881 Application of Gold Coating to Titanium and Corrosion-resistant Alloys

BAC5975 Fusion Welding of Titanium, and Corrosion and Heat Resistant Alloys (Includes Nickel Base Alloys and CRES)

BAC5977 Resistance and Seam Welding

D-5257 Process Standardization of Spotweld Quality (Boeing Document)

3. Materials

NOTE: Equivalent substitutes can be used.

Specifications for filler metals and welding gases are given in the standard practices and references in par. 2.A.(2).

Kop-Coat B-2000 per BAC5710, type 24 (SRF-14.87) is replaced by three coats of BMS 10-82, type 1 (F-17.141). These coatings can be applied to any bare titanium duct which could get BMS 3-11 hydraulic fluid contamination.

A. High-temperature coating for titanium -- compound B-731, or Kop-Coat B2000, V71191

B. Protective coating -- BMS 10-82, low emissivity gold

C. Refer to REPAIR 1-1, Fig. 601 for materials used in duct assemblies.

D. Commercially pure titanium tubing per BMS 7-21, grade 2, TI-CP (40 tensile yield strength); or Ti-Com Pure-40. (Optional to BMS 7-21, Grade 2: MIL-T-9046, Type 1, Comp. A, annealed sheet stock for repairs).

NOTE: TI-CP (40 tensile yield strength), grade 2, section is an approved preferred replacement for all TI-CP (70 tensile yield strength), grade 3 material as follows:

ORIGINAL GRADE 3 CP-TI MATERIAL WALL THICKNESS	PREFERRED REPLACEMENT GRADE 2 CP-TI MATERIAL WALL THICKNESS
0.020 INCH WALL	0.028 INCH WALL IN ALL STRAIGHT DUCT SECTIONS 0.035 INCH WALL IN ALL DUCT SECTIONS WITH BENDS AND/OR PULLOUTS
0.028 INCH WALL	0.035 INCH WALL IN ALL STRAIGHT DUCT SECTIONS 0.042 INCH WALL IN ALL DUCT SECTIONS WITH BENDS AND/OR PULLOUTS

E. Solvent -- Series 88 (SOPM 20-30-88)

F. Sealant -- BMS 5-63 (SOPM 20-60-04)

4. Repair

A. General Repair Practices

(1) If a duct assembly has been severely damaged, complete replacement may be more practical and cost effective than repair of the duct. It is important to check for all possible damage before you start the obvious repairs. Pre-repair check techniques may include a thorough cleaning and visual check, a proof pressure test, a dye penetrant check, or an x-ray examination.

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

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

(4) Flatness of ends of tubes to be butt-fusion welded, and mismatch due to out-of-roundness or diameter differences are critical. Sizing tools or special tools may be required to reduce mismatch to specified tolerance.

(5) Adequate inert gas shielding is mandatory both on the work side and the back side of the weld. Gas distribution shoes and backing bars, evacuation chambers, and end plugs are common shielding tools. Do not weld titanium in an air or oxygen atmosphere. Purge the dust interior and shield the exterior weld zone. Argon or helium gas is typically used as the shield gas at pressures ranging from 5 to 15 psig.

(6) All weld repairs shall be per BAC5975, class A, unless otherwise noted.

(7) Some duct assemblies have parts (brackets, placards, etc.) that have material which may be dissimilar to that of the duct onto which they are attached. Refer to the applicable Boeing drawing for welding information when reattaching these parts.

(8) Hydrostatic proof pressure test per TESTING is required for all ducts after weld repair.

(9) Do not use abrasive cleaning methods which use grit, glass beads, or jet blast materials to remove residues from the duct. Abrasive cleaning will make the etching from hydraulic fluid contamination undetectable and the subsequent penetrant check inconclusive.

(10) Univeral joints, flexible duct assemblies and other fittings can be replaced per par. 4.C Extended Repair Practices.

B. Special Repair Practices

(1) Repair smooth dents as follows:

(a) Smooth dents deeper than 5% of nominal outer diameter, greater than 0.02 inch below surface on curved sections, or greater than 0.05 inch below surface on straight sections are recommended to be removed. Wrinkles created during forming do not require rework.

(b) Repair dents deeper than 0.05 inch or with sharp creases as if they were cracks. Use the repair for single line base metal cracks per par. 4.B.(4).

(c) Remove smooth dents by pulling a ball mandrel through the dented area or with a hydraulically or mechanically actuated expansion device. Hydrostatic pressure within the limits given in REPAIR 1-1, Fig. 601 may be used in conjunction with moderate tapping with a non-metallic hammer around the edge of the dent.

NOTE: Methods which produce local work-hardening should not be used.

(2) Repair scratches or gouges as follows:

(a) Shallow scratches or gouges up to 10% of the original wall thickness are allowed without repair.

(b) Repair deep scratches or gouges affecting more than 10% of the original wall thickness by treating the scratches or gouges like a crack per par. 4.B.(4).

(3) Repair weld imperfections by one of the following methods:

NOTE: Examples of imperfections include weld undercut, incomplete root penetration, weld cracks, weld porosity, and incomplete fusion welds. This does not include fatigue cracks in the base metal adjacent to the weld. Weld imperfections are limited to the weld filler metal cap and do not include the heat affected zone on either side of the weld cap.

(a) Cut and replace the duct section per par. 4.C.(1).

(b) Stop drill and direct fusion weld per par. 4.C.(3).

(4) Repair single-line cracks not at the pullout areas by one of the following methods:

(a) Cut and replace the duct section per par. 4.C.(1).

(b) Stop drill and fusion weld a complete circumferential doubler sleeve over the damaged area per par. 4.C.(2) for crack length less than 1.5 inches or no longer than 1/4 of the duct outside diameter, whichever is less.

(c) Stop drill and direct fusion weld per par. 4.C.(3) for crack length less than 1.5 inches or no longer than 1/4 of the duct outside diameter, whichever is less.

NOTE: For titanium ducts, this repair method is limited to a TYPE 2 repair classification only.

(5) Repair single-line cracks at the pullout areas by one of the following methods:

(a) Cut and replace the duct section per par. 4.C.(1).

(b) Cut and remove the cracked area and fusion weld a doubler sleeve with a pullout over the cutout area as follows (Fig. 601):

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

2) Provide a doubler of tube or sheet per material called out in the duct drawing or REPAIR 1-1, Fig. 601, one gage heavier than the duct thickness.

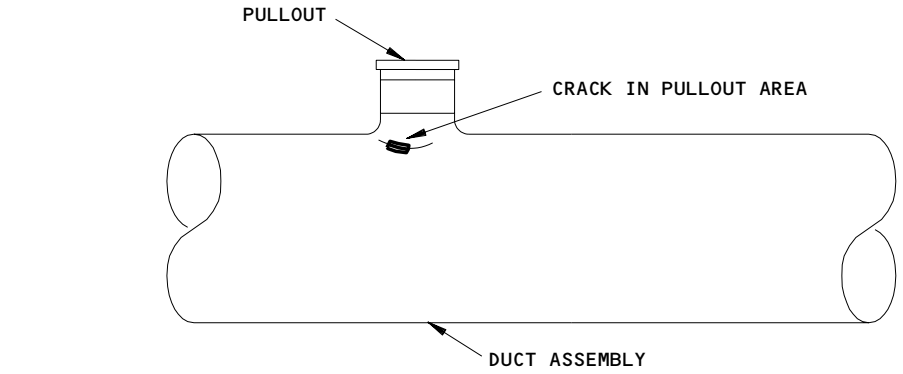
3) Form the doubler around a suitable mandrel to obtain the identical contour as the duct wall, and to provide a snug fit when slipped onto the duct. Locate the gap in the sleeve as far from the defect and the duct wall seam as possible. The doubler must fit closely on the duct. The maximum localized gap permitted is 1/4 thickness of the duct material.

4) Weld a new pullout on the doubler per BAC5975, class B.

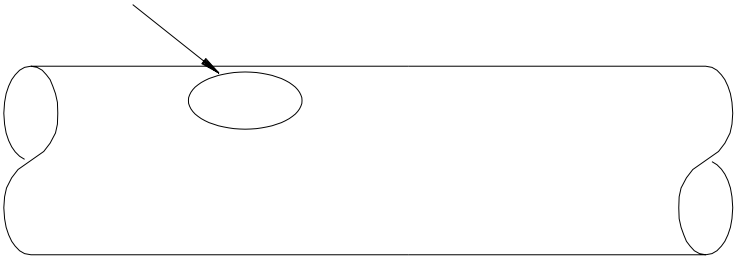
5) Fusion weld the doubler all around per BAC5975, class B. Use filler metal as shown in Fig. 608, 609, 610.

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

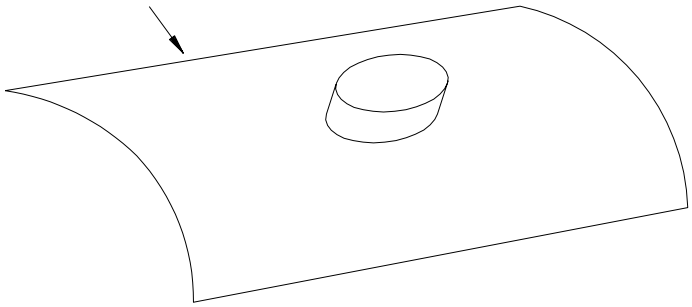
7) For titanium ducts, use the duct assembly inspection method per par. 4.D. to classify as a TYPE 1 repair.



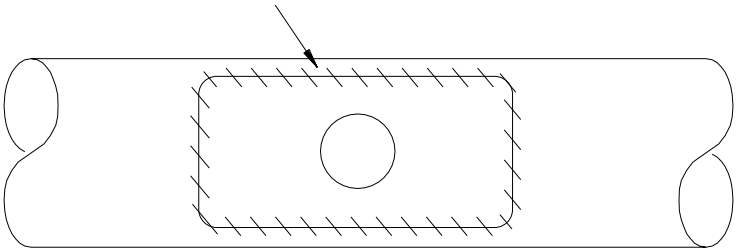
STEP 1: REMOVE THE OLD PULLOUT



STEP 2: MAKE A REPAIR DOUBLER SLEEVE WITH PULLOUT



STEP 3: WELD THE DOUBLER TO THE DUCT



Pullout Repair – Doubler Sleeve with Pullout
Figure 601

E72439

(c) Stop drill and weld a circumferential doubler over the crack as follows (Fig. 602):

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

2) Provide a doubler of tube or sheet per material called out in the duct drawing or REPAIR 1-1, Fig. 601, one gage heavier than the duct thickness.

3) Cut the doubler so that a minimum of a 1-inch edge margin exists beyond stop drilled holes on each side.

4) Form the doubler around a suitable mandrel to obtain the identical contour as the duct wall, and to provide a snug fit when slipped onto the duct. Locate the gap in the sleeve as far from the defect and the duct wall seam as possible. The doubler must fit closely on the duct. The maximum localized gap permitted is 1/4 thickness of the duct material.

5) Fusion weld the doubler all around per BAC5975, class B. Use filler metal as shown in Fig. 608, 609, 610.

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

7) For titanium ducts, use the duct assembly inspection method per par. 4.D. to classify as a TYPE 1 repair.

(d) Stop drill the crack near the pullout and fusion weld a patch doubler around the pullout area as follows (Fig. 603):

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

2) Provide a doubler of tube or sheet per material called out in the duct drawing or REPAIR 1-1, Fig. 601, one gage heavier than the duct thickness.

3) Cut the doubler so that a minimum of a 1-inch edge margin exists beyond stop drilled holes on each side.

4) Form the doubler around a suitable mandrel to obtain the identical contour as the duct wall, and to provide a snug fit when slipped onto the duct. Locate the gap in the sleeve as far from the defect and the duct wall seam as possible. The doubler must fit closely on the duct. The maximum localized gap permitted is 1/4 thickness of the duct material.

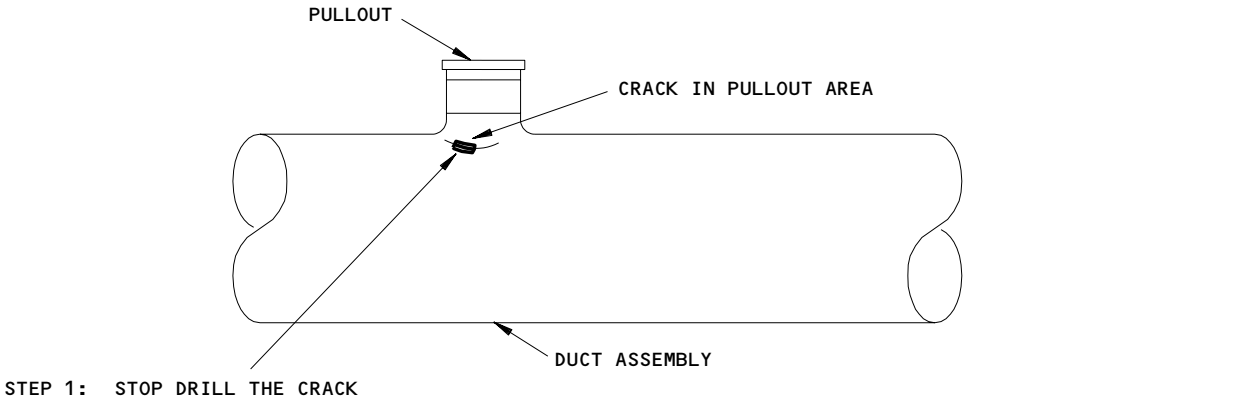
5) Fusion weld the doubler all around per BAC5975, class B. Use filler metal as shown in Fig. 608, 609, 610.

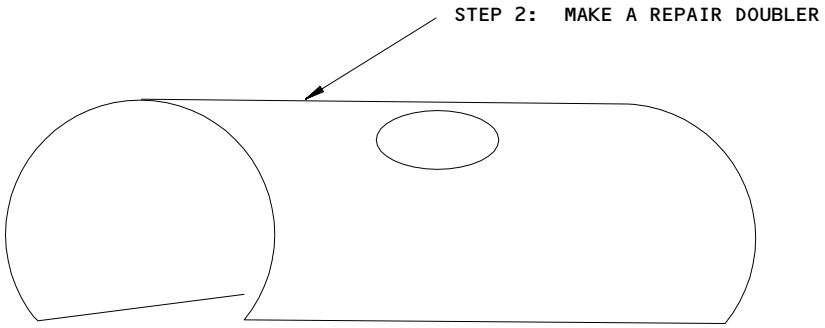
6) For non-titanium ducts, penetrant examine per SOPM 20-20-02.

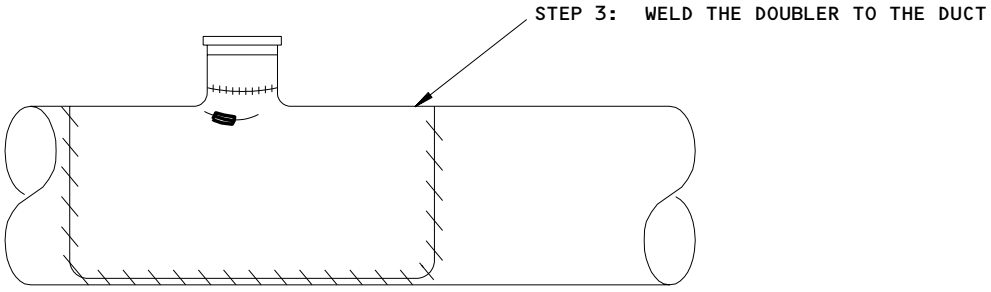
7) For titanium ducts, use the duct assembly inspection method per par. 4.D. to classify as a TYPE 1 repair.

(e) Stop drill and direct fusion weld the crack per par. 4.C.(3).

NOTE: For titanium ducts, this repair method is limited to a TYPE 2 repair classification only.

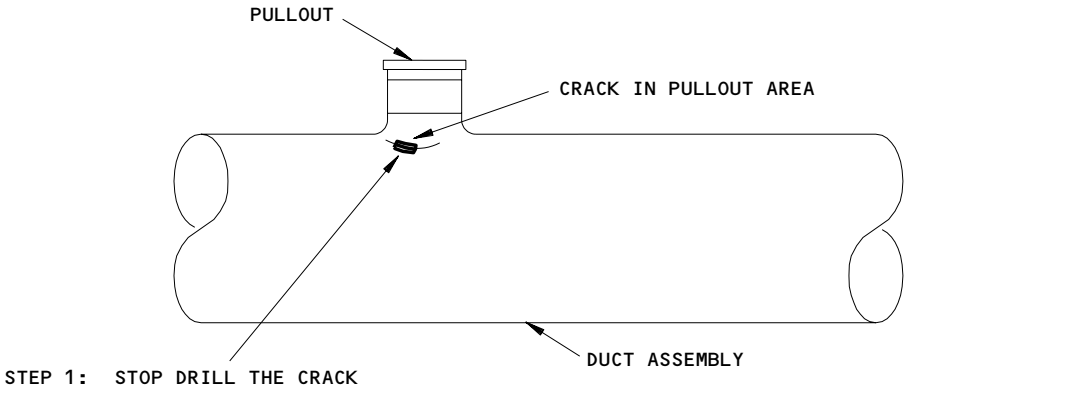


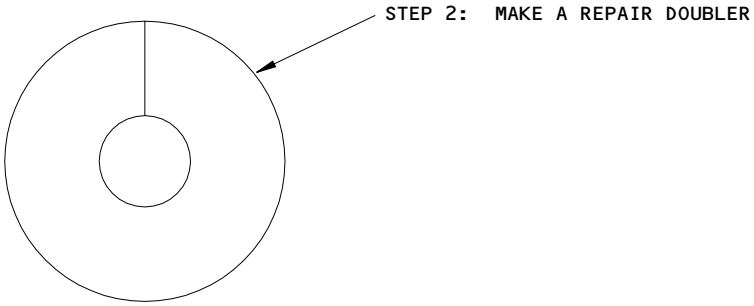


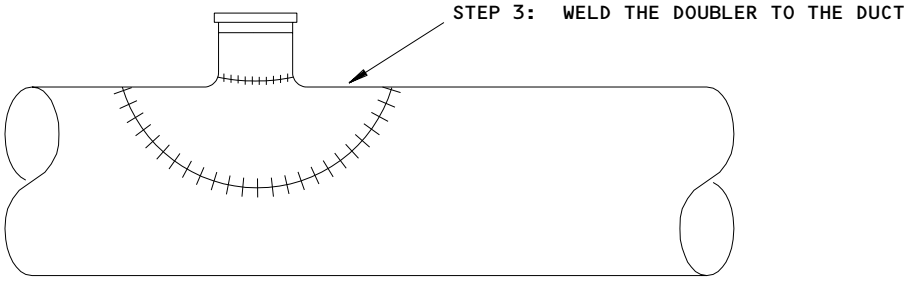


Pullout Repair - Circumferential Doubler
Figure 602

E72486







Pullout Repair - Patch Doubler
Figure 603

E72489

(6) Repair multiple cracks or branch cracks and larger defects by one of the following repair methods:

(a) Cut and replace the duct section per par. 4.C.(1).

(b) Stop drill the crack(s) and fusion weld a complete circumferential doubler sleeve over the damaged area per par. 4.C.(2) for crack length less than 1.5 inches or no longer than 1/4 of the duct outside diameter, whichever is less.

(7) Repair damaged flanges as follows:

(a) Dress out minor damage such as nicks and scratches on flange faces as described in step 4.B.(2).

(b) Flange out-of-roundness and small dents can be repaired with flange reforming tool 6FT001-101 or equivalent.

(c) Damaged sealing surfaces, deep scratches, severe deformation, sharp dents on the flange, or titanium duct/flange separation due to crack propagation shall be repaired as follows (Fig. 604):

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 ducting or use a repair flange with a longer skirt, BACF22ANXXXL, or 10312 from Exotic Metals Forming Company (V06689).

3) Locate the flange as shown in Fig. 604.

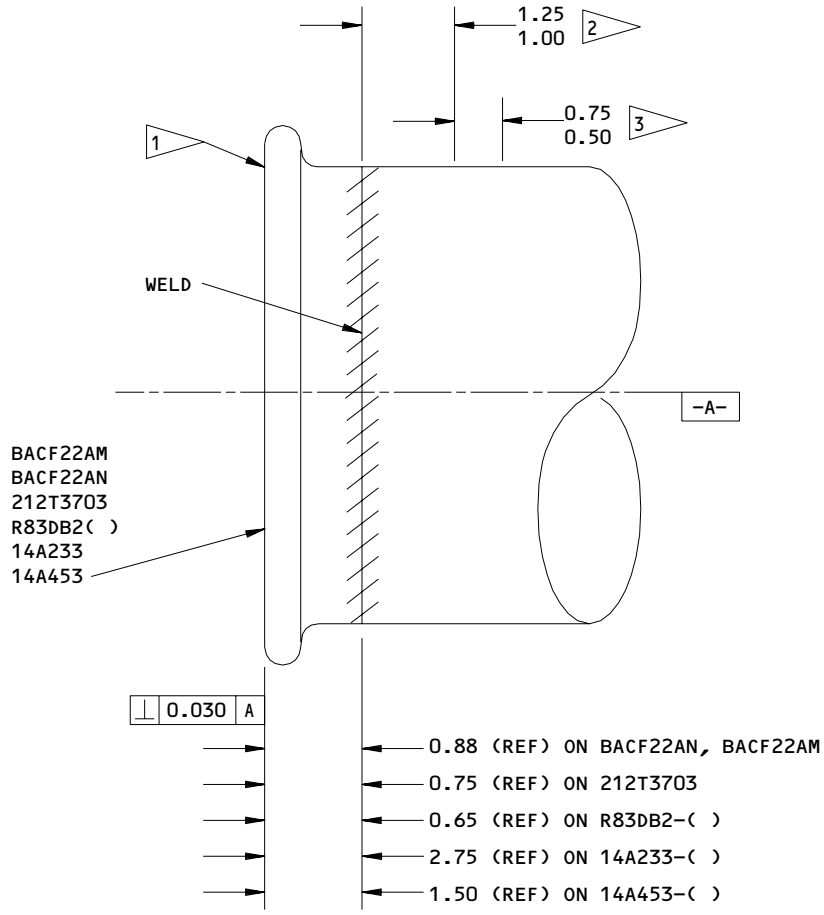
4) Fusion weld the new flange to the duct per BAC5975, Class B,

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

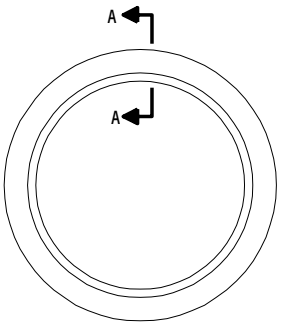
6) For titanium ducts, use the duct assembly inspection method per par. 4.D. to classify as a TYPE 1 repair.

(8) Repair damaged ball joint retainer, flange, and nut as follows:

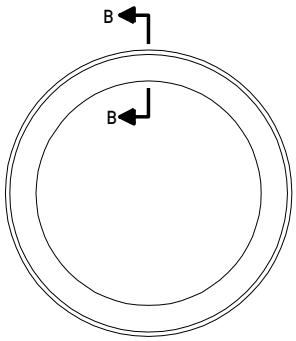
(a) Dress out damage such as pits, gouges, and wear marks detected on ball joint flange, retainer, and nut by manually grinding as shown in Fig. 604.



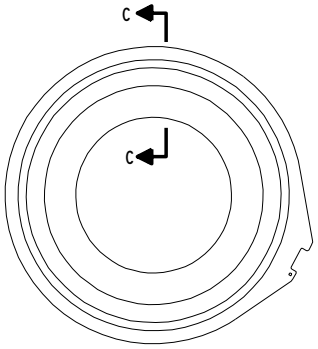
Duct Assembly Repair
Figure 604 (Sheet 1)



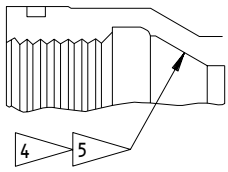
BEARING NUT



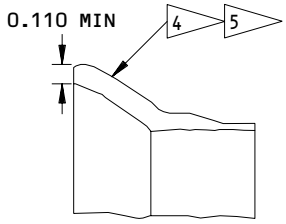
BEARING FLANGE



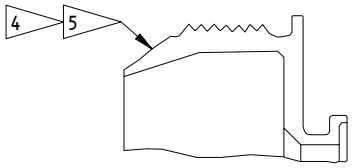
RETAINER



A–A



B–B



C–C

1. SURFACE MUST BE FLAT WITHIN 0.015 INCH WHEN CHECKED AGAINST SURFACE PLATE WITH 15 LB WEIGHT
2. ADJUST DUCT ID TO MATCH FLANGE ID WITHIN 0.005 INCH
3. FOR REPAIR PER 2 TAPER DUCT IN THIS AREA
4. MANUALLY GRIND AREA TO REMOVE DEFECTS WITH A REMAINING SURFACE FINISH OF 32 MICRO INCHES OR SMOOTHER
5. 0.005 INCH MAXIMUM MATERIAL REMOVAL

ALL DIMENSIONS ARE IN INCHES

Duct Assembly Repair
Figure 604 (Sheet 2)

G74854

(9) Replace bushings for duct assembly 332T3263-15 as follows:

(a) Remove the bushings.

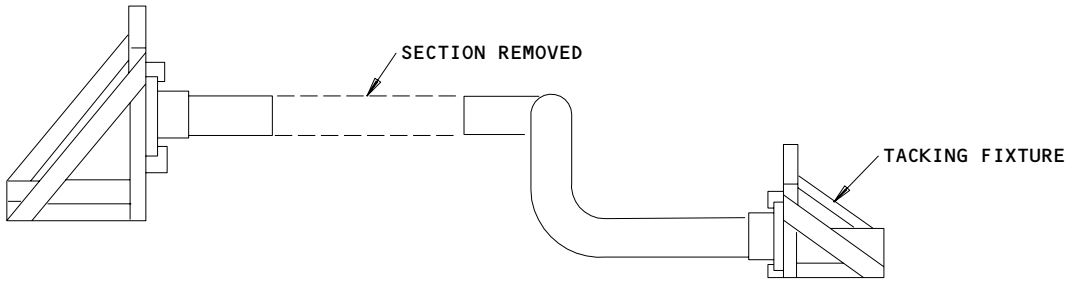
(b) Install the bushings with BMS 5-63 or Dow Corning DC 93-006 sealant.

C. Extended Repair Practices

(1) Cut and replace the duct section as follows:

NOTE: For titanium ducts, this method is suitable for TYPE 1 repair classification.

(a) Make a welding fixture to hold the duct assembly (Fig. 605). This will help the repaired duct be a good fit in the airplane.



Tacking Fixture For Weld Repair
Figure 605

31831

(b) Prepare to make a square groove butt-joint weld as follows:

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

CAUTION: USE A NEW SAW TO CUT TITANIUM AND NICKEL ALLOYS MATERIAL. BLADES THAT HAVE BEEN USED TO CUT CARBON STEEL, PLASTICS, ETC., WILL CONTAMINATE DUCT METALS AT THE SAWED EDGE.

2) Cut the defective section using conventional manual or power cutting tools. Each abutting edge must be flat (planar) within one-half of the permitted root gap as shown in Fig. 606. Use aluminum oxide or carborundum abrasives for sanding or grinding.

3) Deburr, clean, and treat the parts prior to welding.

(c) Fabricate a replacement duct section, pre-weld clean per 20-30-03, align with the existing duct assembly, and clamp securely in the weld fixture.

(d) Fusion weld nickel base alloy, CRES, and titanium ducts using inert gas shielding methods per BAC5975. Use filler metal as shown in Fig. 608, 609, 610.

(e) Fit parts and fusion tack weld symmetrically along or around the joint.

(f) Tack welds shall merge smoothly with base metal. If the tack welds will not be consumed by the fusion weld, grinding of tack welds is allowed as required.

CAUTION: OBSERVE SPECIAL CARE IN FUSION WELDING TITANIUM. NORMAL WELD AREA ATMOSPHERIC PROTECTION AS USED IN WELDING HASTELLOY X OR CRES IS NOT SUFFICIENT. PROPER TRAILING SHIELDS AND BACKUP ATMOSPHERE ARE MANDATORY.

(g) Fusion weld per BAC5975, class B around the joint maintaining root opening and mismatch as shown in Fig. 606.

NOTE: If welding thin gage material, install an internal copper backup ring or an external chill ring to provide adequate alignment and heat sink.

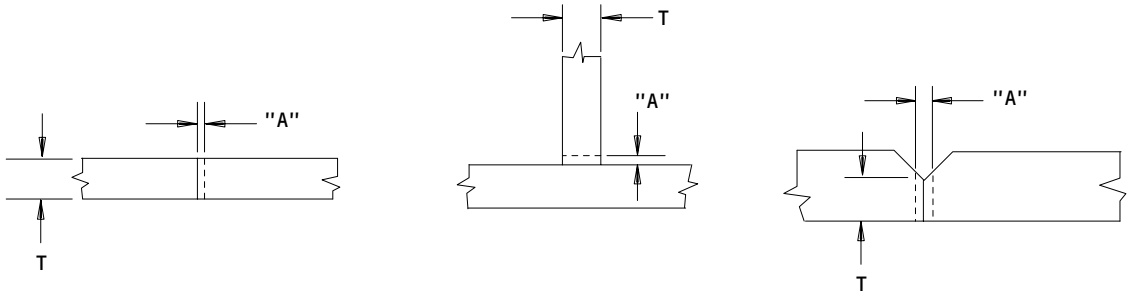
(h) For non-titanium ducts, penetrant examine all welds per SOPM 20-20-02 and pressure test per REPAIR 1-1, Fig. 601.

(i) For titanium ducts, use the duct assembly inspection method per par. 4.D. to classify as a TYPE 1 repair.

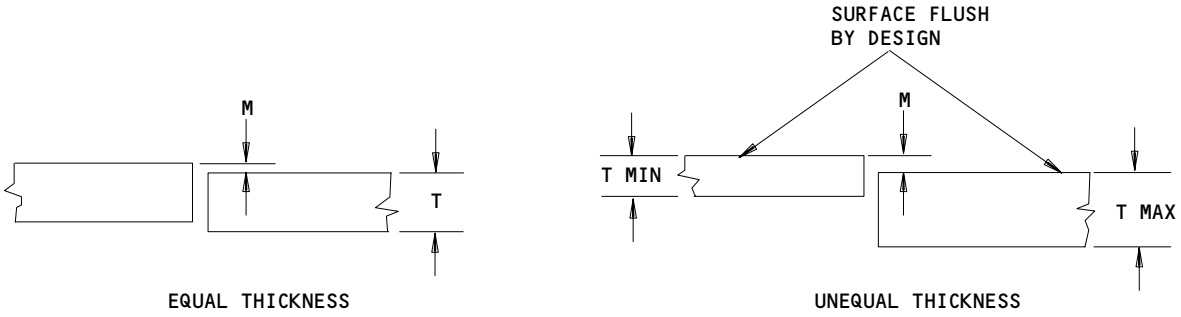
WELDING METHOD GAS METAL ARC WELDING – GMAW GAS TUNGSTEN ARC WELDING – GTAW PLASMA ARC WELDING – PAW THICKNESS 0.010 THRU 0.250 INCH	MAXIMUM ROOT OPENING (GAP) "A"	MAXIMUM MISMATCH "M"
MANUAL	1/2 T MIN OR 0.060 INCH WHICHEVER IS LESS	0.015 INCH PLUS 10% T MAX
MACHINE	1/4 T MIN OR 0.030 INCH WHICHEVER 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 606

(2) Stop drill and weld a circumferential doubler sleeve over the crack as follows (Fig. 607):

NOTE: For titanium ducts, this method is suitable for a TYPE 1 repair classification with the maximum crack length less than 1.5 inches or no longer than 1/4 of the duct outside diameter, whichever is less.

(a) Drill 3/16-inch stop holes at each end of crack.

(b) Provide a doubler of tube or sheet per material called out in the duct drawing or REPAIR 1-1, Fig. 601, one gage heavier than the duct thickness.

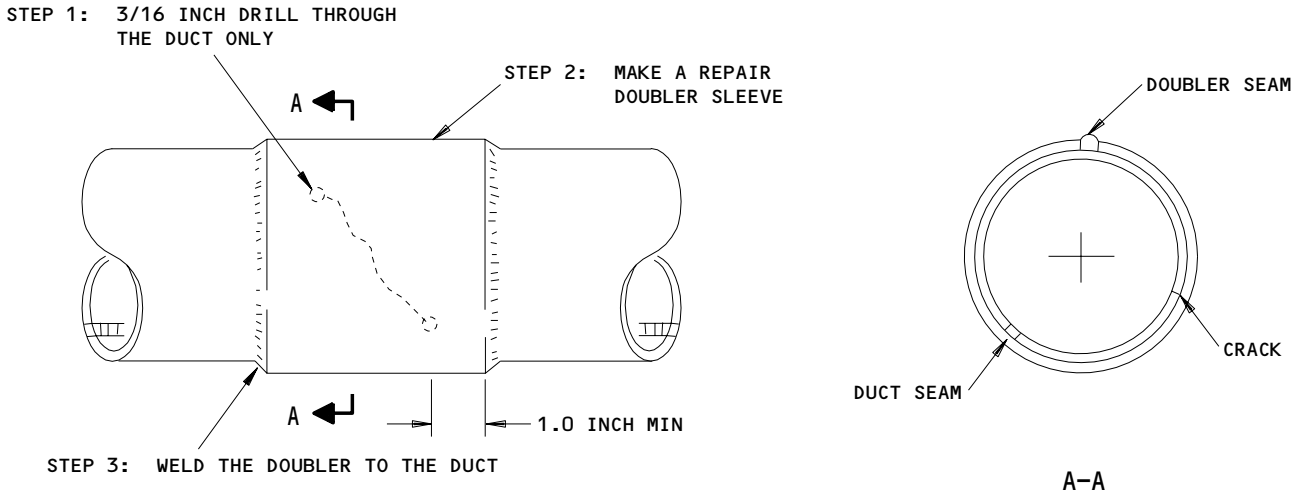
(c) Cut the doubler so that a minimum of a 1-inch edge margin exists beyond stop drilled holes on each side as shown in Fig. 607.

(d) Form the doubler around a suitable mandrel to obtain the identical contour as the duct wall, and to provide a snug fit when slipped onto the duct. Locate the gap in the sleeve as far from the defect and the duct wall seam as possible as shown in section A-A on Fig. 607. The doubler must fit closely on the duct. The maximum localized gap permitted is 1/4 thickness of the duct material.

(e) Fusion weld the doubler all around per BAC5975, class B. Use filler metal as shown in Fig. 608, 609, 610.

(f) For non-titanium ducts, penetrant examine all welds per SOPM 20-20-02 and pressure test per REPAIR 1-1, Fig. 601.

(g) For titanium ducts, use the duct assembly inspection method per par. 4.D. to classify as a TYPE 1 repair.



Circumferential Doubler Sleeve Repair
Figure 607

(3) Stop drill and direct fusion weld as follows:

NOTE: For titanium ducts, this method is suitable for a TYPE 2 repair classification, if the maximum crack length is less than 1.5 inches or no longer than 1/4 of the duct outside diameter, whichever is less.

(a) Drill 3/32 inch stop holes at each end of the defect or crack.

(b) Clean the hole, remove burrs and clean the crack face to remove all dirt and oxidized metal.

(c) Fusion weld the damaged area per BAC5975, class B (100% penetration is required). Use filler metal as shown in Fig. 608, 609, 610.

(d) For non-titanium ducts, penetrant examine all welds per SOPM 20-20-02 and pressure test per REPAIR 1-1, Fig. 601.

(e) For titanium ducts, if applicable, use the duct assembly inspection method per par. 4.D. to classify as a TYPE 1 repair.

D. Repair Classifications for Titanium Ducts

NOTE: This section applies to commercially pure titanium ducts only.

(1) Repair Classification

(a) TYPE 1 repair classification identifies repair procedures for a permanent repair. Permanent repairs require the additon of a doubler welded over the damaged area or complete removal and replacement of the damaged duct section. Also required to complete a TYPE 1 repair is a duct assembly inspection and an end treatment per par. 4.D.(2) following the weld repair. No further action is required.

(b) TYPE 2 repair classification identifies repair procedures for a semi-permanent repair. Semi-permanent repairs require stop drilling and welding the duct crack. As with a TYPE 1 repair, a TYPE 2 repair requires a duct assembly inspection and an end treatment per par. 4.D.(2) for completion. Conversion to a TYPE 1 repair is recommended at the next convenient maintenance interval.

(2) Duct Assembly Inspection and End Treatment

(a) Hydrostatic proof pressure test all commercially pure titanium ducts per BAC5001 to a maximum internal pressure of 290 psig or the pressure defined in REPAIR 1-1, Fig. 601, whichever is lower.

(b) Penetrant examine the exterior surface of the pullout areas, the outside diameter of all duct circumferential welds, the interior diameter of all flange welds, and their heat-affected zones per SOPM 20-20-02.

(c) Stress relieve per BAC5613, but clean the duct surface per BAC5750 before stress relief. Do not clean per BAC5613 and do not descale after stress-relief. Discoloration because of stress relief in an air atmosphere is acceptable. Stress-relief in an inert gas vacuum furnace is preferred.

E. Stress-Relief Procedures for Titanium Ducts

(1) All titanium duct assemblies must be stress relieved after weld repair. After the proof pressure test, stress relieve per BAC5613, but clean the ducts per BAC5750 before stress relief. Do not clean per BAC5613 before stress relief. Do not descale after stress relief. Discoloration because of stress relief in an air atmosphere is acceptable. Stress-relief in a vacuum furnace oven is the preferred method.

F. Hydraulic Fluid Removal

NOTE: At temperatures hotter than 270°F, hydraulic fluids such as BMS 3-11 will damage titanium. Physical signs are a black, glassy, hard or soft tar-like residue.

(1) The detrimental effects of the hydraulic fluid can be prevented if the fluid is detected and removed prior to visible pitting or etching of the base metal. If physical damage has already occurred, standard repair procedures should be implemented. If the area is small, in many cases a doubler can be fusion-fillet welded over the damaged area per par. 4.C.(2). If the area exceeds a resonable pitch size, cut and replace the duct section per par. 4.C.(1).

WARNING: DO NOT ALLOW ALKALINE SOLVENTS TO TOUCH YOUR SKIN. PERSONAL INJURY MAY RESULT.

(2) Remove hydraulic fluid as follows:

CAUTION: PROLONGED EXPOSURE OF MF-30 CAN DAMAGE NICKEL ALLOY STEELS. LIBERAL WATER CLEANUP SHOULD FOLLOW ALL SOLVENT CLEANING.

(a) The most effective method is an immersion soak in a hot alkaline cleaning solution per SOPM 20-30-03.

(b) A manual method would include using a soft wooden scraper (such as a tongue depressor), a mild abrasive (such as Scotchbrite pads), and a diluted alkaline solvent. Scotchbrite and other abrasives should not be used on a surface that will be penetrant checked. MF-30 is a concentrated alkaline cleaner solvent from Pacific Chemical (V93965) which will soften baked-on hydraulic fluid. MF-30 is very effective for removal of baked-on hydraulic fluid from surfaces coated with BMS 10-82 gold. MF-30 is recommended only on titanium.

G. Refinish

(1) The following finishes will protect titanium from the harmful effects of hydraulic fluids:

NOTE: BAC5710, type 24 coating (Andrew Brown B-2000 or Kop-Coat B2000 (SRF-14.87) is replaced by BMS 10-82, type 1 (F-17.141).

BMS 10-82, type 1 coating or Andrew Brown B-2000 coating may be added to any bare titanium ducting that could get to BMS 3-11 hydraulic fluid contamination.

(a) BMS 10-82 coating -- BMS 10-82 is a permanent gold alloy paint. Applied per BAC5881, type 1, class 1 (F-17.14), it is a low emissivity coating. Applied per BAC5881, type 1, class 2 (F-17.141), it is a hydraulic fluid resistant coating. Both finishes can be applied in a localized area on clean titanium surfaces. Initial curing of BMS 10-82, Type 1 can be done in a low temperature oven or with a heat gun.

NOTE: Initial curing is an optional method used to make the coating cure faster.

(b) Kop-Coat B-2000 paint -- This is a black, organic, water soluble, sacrificial coating. It reacts with hot hydraulic fluid to neutralize the harmful effects and, therefore, is temporary but easily restored. B-2000 can be applied on top of BMS 10-82 for repair purposes.

MATERIAL	312, 347, 304L	316L	21 Cr-6Ni-9Mn	15-5PH, 17-4PH
COMBINATION	FILLER MATERIAL	FILLER MATERIAL	FILLER MATERIAL	FILLER MATERIAL
321, 347, 304L	AWS A5.9 CLASS ER347 or ER349 or AMS 5680	---	---	---
316L	AWS A5.9 CLASS ER347 or AMS 5680	AWS A5.9 CLASS ER316L	---	---
21 Cr-6Ni-9Mn	AWS A5.9 CLASS ER219	---	AWS A5.9 CLASS ER219	---
15-5PH, 17-4PH	---	---	---	AMS 5825 or AWS A5.9 CLASS ER630

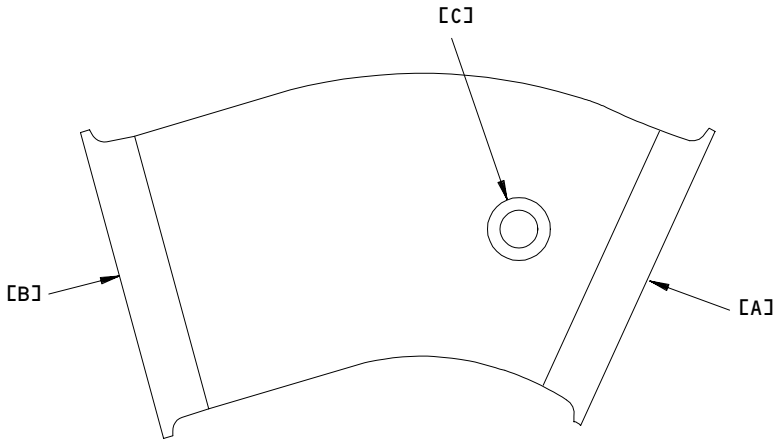
Filler Metal Selection For Corrosion-Resistant Steel (CRES)
Figure 608

MATERIAL COMBINATION	Nickel Alloy 625 Filler Material	Nickel Alloy 718 Filler Material	AISI 680 Hastelloy "X" Filler Material
Nickel Alloy 625	AMS 5837 OR AWS A5.14 CLASS ERNiCrMo-3	---	---
Nickel Alloy 718	AMS 5837 OR AWS A5.14 CLASS ERNiCrMo-3	AMS 5832	---
AISI 680 Hastelloy "X"	---	---	AMS 5786 OR AWS A5.14 CLASS ERNiCrMo-3

Filler Metal Selection For Nickel Base Alloys
Figure 609

MATERIAL COMBINATION	Commercially Pure	5Al - 2.5Sn	6Al - 4V
	Filler Material	Filler Material	Filler Material
Commercially Pure	AWS A5.16 CLASS 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

Filler Metal Selection For Titanium Alloys
Figure 610



NOTE: DUCT ASSEMBLY 312T1072-2 IS SHOWN FOR TABLE USAGE EXAMPLE ONLY. OTHER DUCT ASSEMBLIES WILL BE DIFFERENT AND WILL NOT BE ILLUSTRATED. THIS TABLE'S PURPOSE IS TO PROVIDE QUANTITIES AND PART NUMBERS OF FLANGES, FERRULES, AND BOSSES FOR USE IN TESTING PNEUMATIC DUCT ASSEMBLIES. THIS TABLE IS NOT INTENDED TO SHOW PHYSICAL POSITIONS OF FLANGES, FERRULES, AND BOSSES ON DUCT ASSEMBLIES. FOR END CAP INFORMATION, SEE FIG. 602.

DUCT ASSEMBLY PART NUMBER	MATERIAL CODE	HYDROSTATIC PROOF PRESSURE TEST	FLANGE/FERRULE BOSS PART NUMBER	LOCATION 1	PREF/ OPT	QTY
312T1072-2	E	230	BACF22AU400F R93DB2-0400F0 BACF22AU400N R93DB2-0400N0 312T3253-4	[A] [A] [B] [B] [C]	(PREF) (OPT) (PREF) (OPT)	1 1 1 1 1

1 FLANGE/FERRULE/BOSS LOCATIONS ON DUCT ASSEMBLIES ARE IDENTIFIED AS FOLLOWS: [A],[B],[C], ETC.

Duct Material and Testing Table Usage Example
Figure 601

DUCT ASSY PART NUMBER	MATERIAL CODE	HYDROSTATIC PROOF PRESSURE TEST *[1]	FLANGE/FERRULE BOSS PART NUMBER *[32]	LOCA-TION *[4]	(PREF/ OPT)	QTY
015U0428-7	H*[2]	202	BACF22AV400F	[A]		1
			BACF22AV400M	[B]		1
015T0256-3	G	385	BACF22AV350F	[A]	(PREF)	1
			R51AB3-0350F0	[A]	(OPT)	1
			BACF22AV350M	[B]	(PREF)	1
			R51AB3-0350M0	[B]	(OPT)	1
015T1422-5 *[33] *[35]	H*[31]	1008 *[12]	BACF22AW550M	[A]		1
			332T1233-7	[B]		1
			332T1233-7	[C]		1
			8620-225F	[D]		1
212T3100-12	A*[2]	290	BACF22AN600	[A]		1
			BACF22AN600	[B]		1
212T3100-12X	A*[2]	290	BACF22AN600	[A]		1
			BACF22AN600	[B]		1
212T3100-13	A*[2]	290	BACF22AN600	[A]		1
			BACF22AN600	[B]		1
212T3100-13X	A*[2]	290	BACF22AN600	[A]		1
			BACF22AN600	[B]		1
212T3100-14	A*[2]	290	BACF22AN600	[A]		1
			BACF22AN600	[B]		1
212T3100-14X	A*[2]	290	BACF22AN600	[A]		1
			BACF22AN600	[B]		1

Duct Material and Test Data
Figure 602 (Sheet 1)

DUCT ASSY PART NUMBER	MATERIAL CODE	HYDROSTATIC PROOF PRESSURE TEST *[1]	FLANGE/FERRULE BOSS PART NUMBER *[32]	LOCATION *[16]	(PREF/ OPT)	QTY
212T3100-17	B*[2]	290	BACF22AN600	[A]		1
			BACF22AN600	[B]		1
			69B40951-10	[C]		1
212T3100-17X	B*[2]	290	BACF22AN600	[A]		1
			BACF22AN600	[B]		1
212T3100-18	AB*[2]	290	BACF22AN600	[A]		1
			BACF22AN600	[B]		1
			69B40951-10	[C]		1
212T3100-18X	AB*[2]	290	BACF22AN600	[A]		1
			BACF22AN600	[B]		1
212T3100-27	A*[2]*[22]	290	BACF22AN600	[A]		1
			BACF22AN600	[B]		1
212T3100-28	A*[2]*[22]	290	BACF22AN600	[A]		1
			BACF22AN600	[B]		1
212T3100-29	A*[22]	290	BACF22AN600	[A]		1
			BACF22AN600	[B]		1
212T3100-30	A*[22]	290	BACF22AN600	[A]		1
			BACF22AN600	[B]		1
			69B40951-10	[C]		1
212T3100-31	A*[22]	290	BACF22AN600	[A]		1
			BACF22AN600	[B]		1
			69B40951-10	[C]		1
212T3100-32	B*[22]	282	BACF22AN600	[A]		1
			BACF22AN600	[B]		1
212T3100-33	B*[22]	282	BACF22AN600	[A]		1
			BACF22AN600	[B]		1
212T3100-35	B*[22]	282	BACF22AN600	[A]		1
			BACF22AN600	[B]		1
			69B40951-10	[C]		1

Duct Material and Test Data
Figure 602 (Sheet 2)

DUCT ASSY PART NUMBER	MATERIAL CODE	HYDROSTATIC PROOF PRESSURE TEST *[1]	FLANGE/FERRULE BOSS PART NUMBER *[32]	LOCA-TION *[16]	(PREF/ OPT)	QTY
212T3100-36	B*[22]	282	BACF22AN600	[A]		1
			BACF22AN600	[B]		1
			69B40951-10	[C]		1
212T3100-40	B*[22]	290	BACF22AN600	[A]		1
			BACF22AN600	[B]		1
212T3100-41	B*[22]	290	BACF22AN600	[A]		1
			BACF22AN600	[B]		1
212T3100-47	B*[22]	282	BACF22AN600	[A]		1
			BACF22AN600	[B]		1
212T3100-48	B*[22]	282	BACF22AN600	[A]		1
			BACF22AN600	[B]		1
212T3100-7	A*[2]	290	BACF22AN600	[A]		1
			BACF22AN600	[B]		1
212T3100-7X	A*[2]	290	BACF22AN600	[A]		1
			BACF22AN600	[B]		1
212T3100-8	A*[2]	290	BACF22AN600	[A]		1
			BACF22AN600	[B]		1
212T3100-8X	A*[2]	290	BACF22AN600	[A]		1
			BACF22AN600	[B]		1
212T3100-9	A*[2]	290	BACF22AN600	[A]		1
			BACF22AN600	[B]		1
212T3100-9X	A*[2]	290	BACF22AN600	[A]		1
			BACF22AN600	[B]		1
212T3103-1	B*[2]	290	BACF22AN600	[A]		1
			BACF22AN600	[B]		1
212T3103-1X	B*[2]	290	BACF22AN600	[A]		1
			BACF22AN600	[B]		1
212T3103-11	A*[22]*[24]	290	BACF22AN600	[A]		1
			BACF22AN600	[B]		1
212T3103-12	B*[22]*[26]	282	BACF22AN600	[A]		1
			BACF22AN600	[B]		1
212T3103-12X	B*[22]*[26]	282	BACF22AN600	[A]		1
			BACF22AN600	[B]		1

Duct Material and Test Data
Figure 602 (Sheet 3)

DUCT ASSY PART NUMBER	MATERIAL CODE	HYDROSTATIC PROOF PRESSURE TEST *[1]	FLANGE/FERRULE BOSS PART NUMBER *[32]	LOCATION *[16]	(PREF/ OPT)	QTY
212T3103-13	B*[22]*[26]	290	BACF22AN600	[A]		1
			BACF22AN600	[B]		1
212T3103-13X	B*[22]*[26]	290	BACF22AN600	[A]		1
			BACF22AN600	[B]		1
212T3103-20	B*[22]*[26]	282	BACF22AN600	[A]		1
			BACF22AN600	[B]		1
212T3103-6	A*[2]	290	BACF22AN600	[A]		1
			BACF22AN600	[B]		1
212T3103-6X	A*[2]	290	BACF22AN600	[A]		1
			BACF22AN600	[B]		1
212T3104-1	D*[2]	181	BACF22AM600	[A]		1
			BACF22AM600	[B]		1
212T3104-11	D*[2]	181	BACF22AM600	[A]		1
			BACF22AM600	[B]		1
212T3104-6	H	234	BACF22AM600	[A]		1
			BACF22AM600	[B]		1
			2908EJ600	[C]		1
			2908EJ600	[D]		1
212T3109-1	AB*[2]	358	BACF22AN600	[A]		1
			BACF22AN600	[B]		1
			BACF22AN500	[C]		1
			69B40951-10	[D]		1
212T3109-1X	AB*[2]	358	BACF22AN600	[A]		1
			BACF22AN600	[B]		1
			BACF22AN500	[C]		1
			69B40951-10	[D]		1
212T3109-11	AB*[2]	350	BACF22AN600	[A]		1
			BACF22AN600	[B]		1
			BACF22AN500	[C]		1
212T3109-11X	AB*[2]	350	BACF22AN600	[A]		1
			BACF22AN600	[B]		1
			BACF22AN500	[C]		1

Duct Material and Test Data
Figure 602 (Sheet 4)

DUCT ASSY PART NUMBER	MATERIAL CODE	HYDROSTATIC PROOF PRESSURE TEST *[1]	FLANGE/FERRULE BOSS PART NUMBER *[32]	LOCATION *[16]	(PREF/ OPT)	QTY
212T3109-14	A	358	BACF22AN600	[A]		1
			BACF22AN600	[B]		1
			69B40951-10	[C]		1
212T3109-14X	A	358	BACF22AN600	[A]		1
			BACF22AN600	[B]		1
			69B40951-10	[C]		1
212T3109-2	AB*[2]	358	BACF22AN600	[A]		1
			BACF22AN600	[B]		1
			69B40951-10	[C]		1
212T3109-2X	AB*[2]	358	BACF22AN600	[A]		1
			BACF22AN600	[B]		1
			69B40951-10	[C]		1
212T3109-23	AB*[2]	358	BACF22AN600	[A]		1
			BACF22AN600	[B]		1
			BACF22AN500	[C]		1
212T3109-23X	AB*[2]	358	BACF22AN600	[A]		1
			BACF22AN600	[B]		1
			BACF22AN500	[C]		1
212T3109-30	AB*[22]	392	BACF22AN600	[A]		1
			BACF22AN600	[B]		1
			BACF22AN500	[C]		1
			69B40951-10	[D]		1
212T3109-31	AB*[22]	392	BACF22AN600	[A]		1
			BACF22AN600	[B]		1
			BACF22AN500	[C]		1
212T3109-32	AB*[22]	392	BACF22AN600	[A]		1
			BACF22AN600	[B]		1
			69B40951-10	[C]		1
212T3109-33	A*[22]	392	BACF22AN600	[A]		1
			BACF22AN600	[B]		1
			69B40951-10	[C]		1

Duct Material and Test Data
Figure 602 (Sheet 5)

DUCT ASSY PART NUMBER	MATERIAL CODE	HYDROSTATIC PROOF PRESSURE TEST *[1]	FLANGE/FERRULE BOSS PART NUMBER *[32]	LOCATION *[16]	(PREF/ OPT)	QTY
212T3109-34	A*[2]	392	BACF22AN600	[A]		1
			BACF22AN600	[B]		1
			BACF22AN500	[C]		1
212T3109-37	B*[22]	282	BACF22AN600	[A]		1
			BACF22AN600	[B]		1
			BACF22AN500	[C]		1
			69B40951-10	[D]		1
212T3109-38	B*[22]	282	BACF22AN600	[A]		1
			BACF22AN600	[B]		1
			69B40951-10	[C]		1
212T3109-39	B*[22]	392	BACF22AN600	[A]		1
			BACF22AN600	[B]		1
			BACF22AN500	[C]		1
			69B40951-10	[D]		1
212T3109-40	B*[22]	392	BACF22AN600	[A]		1
			BACF22AN600	[B]		1
			69B40951-10	[C]		1
212T3109-41	B*[22]	282	BACF22AN600	[A]		1
			BACF22AN600	[B]		1
			BACF22AN500	[C]		1
212T3109-42	B*[22]	282	BACF22AN600	[A]		1
			BACF22AN600	[B]		1
			69B40951-10	[C]		1
212T3109-43	B*[22]	392	BACF22AN600	[A]		1
			BACF22AN600	[B]		1
			BACF22AN500	[C]		1
212T3109-44	B*[22]	392	BACF22AN600	[A]		1
			BACF22AN600	[B]		1
			69B40951-10	[C]		1
212T3109-46	B*[22]	282	BACF22AN600	[A]		1
			BACF22AN600	[B]		1
			BACF22AN500	[C]		1

Duct Material and Test Data
Figure 602 (Sheet 6)

DUCT ASSY PART NUMBER	MATERIAL CODE	HYDROSTATIC PROOF PRESSURE TEST *[1]	FLANGE/FERRULE BOSS PART NUMBER *[32]	LOCA-TION *[16]	(PREF/ OPT)	QTY
212T3109-62	B*[22]	282	BACF22AN600	[A]		1
			BACF22AN600	[B]		1
			BACF22AN500	[C]		1
212T3109-63	B*[22]	282	BACF22AN600	[A]		1
			BACF22AN600	[B]		1
			BACF22AN500	[C]		1
212T3109-64	B*[22]	282	BACF22AN600	[A]		1
			BACF22AN600	[B]		1
			69B40951-10	[C]		1
212T3109-71	B*[22]	282	BACF22AN600	[A]		1
			BACF22AN600	[B]		1
			BACF22AN500	[B]		1
			69B40951-10	[D]		1
212T3109-74	B*[22]	282	BACF22AN600	[A]		1
			BACF22AN600	[B]		1
			BACF22AN500	[C]		1
			69B40951-10	[D]		1

Duct Material and Test Data
Figure 602 (Sheet 7)

DUCT ASSY PART NUMBER	MATERIAL CODE	HYDROSTATIC PROOF PRESSURE TEST *[1]	FLANGE/FERRULE BOSS PART NUMBER *[32]	LOCATION *[16]	(PREF/ OPT)	QTY
212T3109-9	AB*[2]	350	BACF22AN600	[A]		1
			BACF22AN600	[B]		1
			69B40951-10	[C]		1
212T3109-9X	AB*[2]	350	BACF22AN600	[A]		1
			BACF22AN600	[B]		1
			69B40951-10	[C]		1
212T3110-11	A	382	69B40951-10	[A]		1
			BACF22AN450	[B]		1
			BACF22AN600	[C]		1
212T3110-13	A*[22]	392	BACF22AN450	[A]		1
			BACF22AN600	[B]		1
			BACF22AN600	[C]		1
			BACF22AN600	[D]		1
			69B40951-10	[E]		1
212T3110-14	B*[2]	282	BACF22AN450	[A]		1
			BACF22AN600	[B]		1
			BACF22AN600	[C]		1
			BACF22AN600	[D]		1
			69B40951-10	[E]		1
212T3110-15	B*[2]*[22]	392	BACF22AN450	[A]		1
			BACF22AN600	[B]		1
			BACF22AN600	[C]		1
			BACF22AN600	[D]		1
			69B40951-10	[E]		1
212T3110-21	B*[22]	282	69B40951-10	[A]		1
			BACF22AN450	[B]		1
			BACF22AN600	[C]		1
			BACF22AN600	[D]		1
			BACF22AN600	[E]		1
212T3110-24	B*[22]*[25]	282	BACF22AN600	[A]		1
			BACF22AN600	[B]		1
			BACF22AN600	[C]		1
			BACF22AN450	[B]		1
			69B40951-10	[C]		1
212T3110-9	AB*[2]	400	BACF22AN450	[A]		1
			BACF22AN600	[B]		1
			BACF22AN600	[C]		1
			BACF22AN600	[D]		1
			69B40951-10	[E]		1

Duct Material and Test Data
Figure 602 (Sheet 8)

DUCT ASSY PART NUMBER	MATERIAL CODE	HYDROSTATIC PROOF PRESSURE TEST *[1]	FLANGE/FERRULE BOSS PART NUMBER *[32]	LOCATION *[16]	(PREF/ OPT)	QTY
212T3110-9X	AB*[2]*[22]	400	BACF22AN450	[A]		1
			BACF22AN600	[B]		1
			BACF22AN600	[C]		1
			BACF22AN600	[D]		1
			69B40951-10	[E]		1
212T3113-10	A*[22]	290	BACF22AN450	[A]		1
			BACF22AN600	[B]		1
			BACF22AN600	[C]		1
212T3113-11	B*[22]	282	BACF22AN450	[A]		1
			BACF22AN600	[B]		1
			BACF22AN600	[C]		1
212T3113-12	B*[22]	290	BACF22AN450	[A]		1
			BACF22AN600	[B]		1
			BACF22AN600	[C]		1
212T3113-16	B*[22]*[25]	392	BACF22AN600	[A]		1
			BACF22AN600	[B]		1
			BACF22AN450	[A]		1
212T3113-7	AB*[2]	290	BACF22AN450	[A]		1
			BACF22AN600	[B]		1
			BACF22AN600	[C]		1
212T3113-7X	AB*[2]*[22]	290	BACF22AN450	[A]		1
			BACF22AN600	[B]		1
			BACF22AN600	[C]		1
212T3114-1	AB*[2]	*[3]	BACF22AN600	[A]		1
			BACF22AN600	[B]		1
			14A504	[C]		1
212T3114-1X	AB*[2]	*[3]	BACF22AN600	[A]		1
			BACF22AN600	[B]		1
			14A504	[C]		1
212T3114-12	A*[22]	*[3]	BACF22AN600	[A]		1
			BACF22AN600	[B]		1
			14A504	[C]		1
212T3114-12X	A*[22]	*[16]	BACF22AN600	[A]		1
			BACF22AN600	[B]		1
			14A504	[C]		1
212T3114-21	A*[22]	282	BACF22AN600	[A]		1
			BACF22AN600	[B]		1
			14A504	[C]		1

Duct Material and Test Data
Figure 602 (Sheet 9)

DUCT ASSY PART NUMBER	MATERIAL CODE	HYDROSTATIC PROOF PRESSURE TEST *[1]	FLANGE/FERRULE BOSS PART NUMBER *[32]	LOCATION *[16]	(PREF/ OPT)	QTY
212T3114-22	A*[22]	282	BACF22AN400	[A]		1
			BACF22AN600	[B]		1
			BACF22AN600	[C]		1
			14A504	[D]		1
212T3114-23	B*[22]	282	BACF22AN600	[A]		1
			BACF22AN600	[B]		1
			14A504	[C]		1
212T3114-24	B*[22]	392	BACF22AN600	[A]		1
			BACF22AN600	[B]		1
			14A504	[C]		1
212T3114-25	B*[22]	282	BACF22AN400	[A]		1
			BACF22AN600	[B]		1
			BACF22AN600	[C]		1
			14A504	[D]		1
212T3114-26	B*[22]	392	BACF22AN400	[A]		1
			BACF22AN600	[B]		1
			BACF22AN600	[C]		1
			14A504	[D]		1
212T3114-37	B*[22]	282	BACF22AN600	[A]		1
			BACF22AN600	[B]		1
			14A641-105	[C]		1
212T3114-39	B*[22]	392	BACF22AN600	[A]		1
			BACF22AN600	[B]		1
			14A641-105	[C]		1
212T3114-41	B*[22]	282	BACF22AN400	[A]		1
			BACF22AN600	[B]		1
			BACF22AN600	[C]		1
			14A641-105	[D]		1
212T3114-42	B*[22]	392	BACF22AN400	[A]		1
			BACF22AN600	[B]		1
			BACF22AN600	[C]		1
			14A641-105	[D]		1
212T3114-45	B*[22]*[25]	282	BACF22AN600	[A]		1
			BACF22AN600	[B]		1
			14A641-105	[B]		1
212T3114-46	B*[22]*[25]	282	BACF22AN600	[A]		1
			BACF22AN600	[B]		1
			14A641-105	[B]		1
212T3114-8	AB*[2]	*[3]	BACF22AN400	[A]		1
			BACF22AN600	[B]		1
			BACF22AN600	[C]		1
			14A504	[D]		1

Duct Material and Test Data
Figure 602 (Sheet 10)

DUCT ASSY PART NUMBER	MATERIAL CODE	HYDROSTATIC PROOF PRESSURE TEST *[1]	FLANGE/FERRULE BOSS PART NUMBER *[32]	LOCATION *[16]	(PREF/ OPT)	QTY
212T3114-8X	AB*[2]	*[3]	BACF22AN400	[A]		1
			BACF22AN600	[B]		1
			BACF22AN600	[C]		1
			14A504	[D]		1
212T3115-1	A	290	BACF22AN600	[A]		1
			BACF22AN600	[B]		1
212T3115-1X	A	290	BACF22AN600	[A]		1
			BACF22AN600	[B]		1
212T3115-13	A*[22]	290	BACF22AN200	[A]		1
			BACF22AN600	[B]		1
			BACF22AN600	[C]		1
212T3115-14	A*[22]	290	BACF22AN600	[A]		1
			BACF22AN600	[B]		1
212T3115-15	B*[22]	290	BACF22AN200	[A]		1
			BACF22AN600	[B]		1
			BACF22AN600	[C]		1
212T3115-16	B*[22]	290	BACF22AN200	[A]		1
			BACF22AN600	[B]		1
			BACF22AN600	[C]		1
212T3115-17	B*[22]	282	BACF22AN600	[A]		1
			BACF22AN600	[B]		1
212T3115-18	B*[22]	290	BACF22AN600	[A]		1
			BACF22AN600	[B]		1
212T3115-5	A*[2]	290	BACF22AN200	[A]		1
			BACF22AN600	[B]		1
			BACF22AN600	[C]		1
212T3115-5X	A*[22]	290	BACF22AN200	[A]		1
			BACF22AN600	[B]		1
			BACF22AN600	[C]		1
212T3116-13	AB*[2]	290	BACF22AN600	[A]		1
			BACF22AN600	[B]		1

Duct Material and Test Data
Figure 602 (Sheet 11)

DUCT ASSY PART NUMBER	MATERIAL CODE	HYDROSTATIC PROOF PRESSURE TEST *[1]	FLANGE/FERRULE BOSS PART NUMBER *[32]	LOCA-TION *[16]	(PREF/ OPT)	QTY
212T3116-14	B*[22]	282	BACF22AN600	[A]		1
			BACF22AN600	[B]		1
212T3116-15	B*[22]	290	BACF22AN600	[A]		1
			BACF22AN600	[B]		1
212T3116-5	AB*[2]	290	BACF22AN600	[A]		1
			BACF22AN600	[B]		1
212T3116-5X	AB*[2]	290	BACF22AN600	[A]		1
			BACF22AN600	[B]		1
212T3117-11	A*[22]	290	BACF22AN600	[A]		1
			BACF22AN600	[B]		1
212T3117-12	B*[22]	282	BACF22AN600	[A]		1
			BACF22AN600	[B]		1
212T3117-13	B*[22]	290	BACF22AN600	[A]		1
			BACF22AN600	[B]		1
212T3117-5	AB*[2]	290	BACF22AN600	[A]		1
			BACF22AN600	[B]		1
212T3117-5X	AB*[2]	290	BACF22AN600	[A]		1
			BACF22AN600	[B]		1
212T3117-7	A	290	BACF22AN600	[A]		1
			BACF22AN600	[B]		1
212T3117-7X	A	290	BACF22AN600	[A]		1
			BACF22AN600	[B]		1
212T3118-1	A*[2] *[28]	290	BACF22AN450	[A]		1
			BACF22AN600	[B]		1
			BACF22AN600	[C]		1
212T3118-1X	A*[2] *[28]	290	BACF22AN450	[A]		1
			BACF22AN600	[B]		1
			BACF22AN600	[C]		1
212T3118-11	A*[22] *[28]	290	BACF22AN450	[A]		1
			BACF22AN600	[B]		1
			BACF22AN600	[C]		1

Duct Material and Test Data
Figure 602 (Sheet 12)

DUCT ASSY PART NUMBER	MATERIAL CODE	HYDROSTATIC PROOF PRESSURE TEST *[1]	FLANGE/FERRULE BOSS PART NUMBER *[32]	LOCATION *[16]	(PREF/ OPT)	QTY
212T3118-12	A*[22] *[28]	290	BACF22AN450	[A]		1
			BACF22AN600	[B]		1
			BACF22AN600	[C]		1
212T3118-13	B*[22] *[28]	282	BACF22AN450	[A]		1
			BACF22AN600	[B]		1
			BACF22AN600	[C]		1
212T3118-14	B*[22] *[28]	290	BACF22AN450	[A]		1
			BACF22AN600	[B]		1
			BACF22AN600	[C]		1
212T3118-6	A*[28]	290	BACF22AN450	[A]		1
			BACF22AN600	[B]		1
			BACF22AN600	[C]		1
212T3119-1	A*[2]	358 positive	BACF22AN200	[A]		1
		12.9 negative	BACF22AN600	[B]		1
			BACF22AN600	[C]		1
212T3119-1X	A*[2]	358 positive	BACF22AN200	[A]		1
		12.9 negative	BACF22AN600	[B]		1
			BACF22AN600	[C]		1
212T3119-11	A*[2]	358 positive	BACF22AN600	[A]		1
		12.9 negative	BACF22AN600	[B]		1
212T3119-11X	A*[2]	358 positive	BACF22AN600	[A]		1
		12.9 negative	BACF22AN600	[B]		1
212T3119-14	A*[22]	358 positive	BACF22AN200	[A]		1
		12.9 negative	BACF22AN600	[B]		1
			BACF22AN600	[C]		1
212T3119-15	A*[22]	358 positive	BACF22AN600	[A]		1
		12.9 negative	BACF22AN600	[B]		1
212T3119-16	A*[22]	358 positive	BACF22AN600	[A]		1
		12.9 negative	BACF22AN600	[B]		1
212T3119-17	A*[22]	358 positive	BACF22AN200	[A]		1
		12.9 negative	BACF22AN600	[B]		1
			BACF22AN600	[C]		1

Duct Material and Test Data
Figure 602 (Sheet 13)

DUCT ASSY PART NUMBER	MATERIAL CODE	HYDROSTATIC PROOF PRESSURE TEST *[1]	FLANGE/FERRULE BOSS PART NUMBER *[32]	LOCATION *[16]	(PREF/ OPT)	QTY
212T3119-18	B*[22]	247 positive	BACF22AN200	[A]		1
		12.9 negative	BACF22AN600	[B]		1
			BACF22AN600	[C]		1
212T3119-19	B*[22]	247 positive	BACF22AN600	[A]		1
		12.9 negative	BACF22AN600	[B]		1
212T3119-2	A*[2]	358 positive	BACF22AN600	[A]		1
		12.9 negative	BACF22AN600	[B]		1
212T3119-2X	A*[2]	358 positive	BACF22AN600	[A]		1
		12.9 negative	BACF22AN600	[B]		1
212T3119-20	B*[22]	247 positive	BACF22AN600	[A]		1
		12.9 negative	BACF22AN600	[B]		1
212T3119-21	B*[22]	247 positive	BACF22AN200	[A]		1
		12.9 negative	BACF22AN600	[B]		1
			BACF22AN600	[C]		1
212T3119-23	B*[22]	328 positive	BACF22AN600	[A]		1
		12.9 negative	BACF22AN600	[B]		1
212T3119-24	B*[22]	328 positive	BACF22AN600	[A]		1
		12.9 negative	BACF22AN600	[B]		1
212T3119-25	B*[22]	328 positive	BACF22AN200	[A]		1
		12.9 negative	BACF22AN600	[B]		1
			BACF22AN600	[C]		1
212T3119-39	B*[22]	247-257 positive	BACF22AN600	[A]		1
		12.9 negative	BACF22AN600	[B]		1
212T3119-8	A*[2]	358 positive	BACF22AN200	[A]		1
		12.9 negative	BACF22AN600	[B]		1
			BACF22AN600	[C]		1
212T3119-8X	A*[2]	358 positive	BACF22AN200	[A]		1
		12.9 negative	BACF22AN600	[B]		1
			BACF22AN600	[C]		1
212T3120-1	AB*[2]*[22]	290	BACF22AN600	[A]		1
			BACF22AN600	[B]		1
			69B90951-10	[C]		1
212T3120-10	AB*[2]*[22]	290	BACF22AN600	[A]		1
			BACF22AN600	[B]		1
			69B90951-10	[C]		1

Duct Material and Test Data
Figure 602 (Sheet 14)

DUCT ASSY PART NUMBER	MATERIAL CODE	HYDROSTATIC PROOF PRESSURE TEST *[1]	FLANGE/FERRULE BOSS PART NUMBER *[32]	LOCA-TION *[16]	(PREF/ OPT)	QTY
212T3120-12	B*[22]	290	BACF22AN600	[A]		1
			BACF22AN600	[B]		1
			69B90951-10	[C]		1
212T3120-16	B*[22]	247	BACF22AN600	[A]		1
			BACF22AN600	[B]		1
			69B90951-10	[C]		1
212T3120-22	B*[22]	247	BACF22AN600	[A]		1
			BACF22AN600	[B]		1
212T3121-1	AB*[2]*[22]	290	BACF22AN600	[A]		1
			BACF22AN600	[B]		1
212T3121-1X	AB*[2]*[22]	290	BACF22AN600	[A]		1
			BACF22AN600	[B]		1
212T3121-4	AB*[2]*[22]	290	BACF22AN600	[A]		1
			BACF22AN600	[B]		1
212T3121-4X	AB*[2]*[22]	290	BACF22AN600	[A]		1
			BACF22AN600	[B]		1
			212T3433-1	[C]		1
			212T3433-8	[D]		1
212T3121-5	A*[22]	290	BACF22AN600	[A]		1
			BACF22AN600	[B]		1
			212T3433-1	[C]		1
			212T3433-8	[D]		1
212T3121-6	B*[22]	247	BACF22AN600	[A]		1
			BACF22AN600	[B]		1
212T3121-7	B*[22]	290	BACF22AN600	[A]		1
			BACF22AN600	[B]		1

Duct Material and Test Data
Figure 602 (Sheet 15)

DUCT ASSY PART NUMBER	MATERIAL CODE	HYDROSTATIC PROOF PRESSURE TEST *[1]	FLANGE/FERRULE BOSS PART NUMBER *[32]	LOCATION *[16]	(PREF/ OPT)	QTY
212T3122-1	A*[2]	290	BACF22AN450	[A]		1
			BACF22AN450	[B]		1
212T3122-1X	A*[2]	290	BACF22AN450	[A]		1
			BACF22AN450	[B]		1
212T3122-11	B*[2]	247-257 pos	BACF22AN400	[A]		1
		12.9-14.9 neg	BACF22AN500	[B]		1
212T3122-2	A*[2]	290	BACF22AN400	[A]		1
			BACF22AN400	[B]		1
212T3122-2X	A*[2]	290	BACF22AN400	[A]		1
			BACF22AN400	[B]		1
212T3122-5	A*[2]*[22]	290	BACF22AN450	[A]		1
			BACF22AN450	[B]		1
212T3122-6	A*[2]*[22]	290	BACF22AN400	[A]		1
			BACF22AN400	[B]		1
212T3122-7	B*[22]	290	BACF22AN450	[A]		1
			BACF22AN450	[B]		1
212T3122-8	B*[22]	290	BACF22AN400	[A]		1
			BACF22AN400	[B]		1
212T3123-11	B*[22]	247	BACF22AN600	[A]		1
			BACF22AN600	[B]		1
212T3123-13	B*[22]	290	BACF22AN600	[A]		1
			BACF22AN600	[B]		1
212T3123-14	B*[22]	328 positive	BACF22AN600	[A]		1
		12.9 negative	BACF22AN600	[B]		1
212T3123-5	B*[2]	230	BACF22AN600	[A]		1
			BACF22AN600	[B]		1
212T3123-5X	B*[2]	230	BACF22AN600	[A]		1
			BACF22AN600	[B]		1
212T3123-7	A*[2]	290	BACF22AN600	[A]		1
			BACF22AN600	[B]		1
212T3123-7X	A*[2]	290	BACF22AN600	[A]		1
			BACF22AN600	[B]		1
212T3123-9	A*[22]	290	BACF22AN600	[A]		1
			BACF22AN600	[B]		1

Duct Material and Test Data
Figure 602 (Sheet 16)

DUCT ASSY PART NUMBER	MATERIAL CODE	HYDROSTATIC PROOF PRESSURE TEST *[1]	FLANGE/FERRULE BOSS PART NUMBER *[32]	LOCA-TION *[16]	(PREF/ OPT)	QTY
212T3124-14	B*[2]	230	BACF22AN600	[A]		1
			BACF22AN600	[B]		1
212T3124-14X	B*[2]	230	BACF22AN600	[A]		1
			BACF22AN600	[B]		1
212T3124-15	AB*[5]	290	BACF22AN600	[A]		1
			BACF22AN600	[B]		1
212T3124-15X	AB*[5]	290	BACF22AN600	[A]		1
			BACF22AN600	[B]		1
212T3124-20	AB*[22]	290	BACF22AN600	[A]		1
			BACF22AN600	[B]		1
212T3124-23	B*[22]	247	BACF22AN600	[A]		1
			BACF22AN600	[B]		1
212T3124-27	B*[22]	290	BACF22AN600	[A]		1
			BACF22AN600	[B]		1
212T3125-7	D*[2]	181	BACF22AM450	[A]		1
			BACF22AM600	[B]		1
212T3127-1	AB*[2]	290	BACF22AN500	[A]		1
			BACF22AN600	[B]		1
212T3127-1X	AB*[2]	290	BACF22AN500	[A]		1
			BACF22AN600	[B]		1
212T3127-11	A*[22]	290	BACF22AN500	[A]		1
			BACF22AN600	[B]		1
212T3127-12	B*[22]	282	BACF22AN500	[A]		1
			BACF22AN600	[B]		1
212T3127-13	B*[22]	290	BACF22AN500	[A]		1
			BACF22AN600	[B]		1
212T3128-1	AB*[2]	290	BACF22AN500	[A]		1
			R83DB2-0500N0	[B]		1
212T3128-1X	AB*[2]	290	BACF22AN500	[A]		1
			RB3DB2-0500N0	[B]		1
212T3128-11	A*[22]	290	BACF22AN500	[A]		1
			R83DB2-0500N0	[B]		1

Duct Material and Test Data
Figure 602 (Sheet 17)

DUCT ASSY PART NUMBER	MATERIAL CODE	HYDROSTATIC PROOF PRESSURE TEST *[1]	FLANGE/FERRULE BOSS PART NUMBER *[32]	LOCATION *[16]	(PREF/ OPT)	QTY
212T3128-12	B*[22]	290	BACF22AN500	[A]		1
			R83DB2-0500NO	[B]		1
212T3128-13	B*[22]	290	BACF22AN500	[A]		1
			R83DB2-0500NO	[B]		1
212T3128-14	B*[22]	282	BACF22AN500	[A]		1
			R83DB2-0500NO	[B]		1
212T3128-15	B*[22]	282	BACF22AN500	[A]		1
			R83DB2-0500NO	[B]		1
212T3128-16	B*[22]	282	BACF22AN500	[A]		1
			R93DB2-0500NO	[B]		1
212T3128-17	B*[22]	290	BACF22AN500	[A]		1
			R83DB2-0500NO	[B]		1
212T3128-24	B*[22]	282	BACF22AN500	[A]		1
			R83DB2-0500NO	[B]		1
212T3128-25	B*[22]	282	BACF22AN500	[A]		1
			R83DB2-0500NO	[B]		1
212T3128-7	B*[2]	290	BACF22AN500	[A]		1
			R83DB2-0500NO	[B]		1
212T3128-7X	B*[2]	290	----------			
212T3128-8	B*[2]	290	BACF22AN500	[A]		1
			R83DB2-0500NO	[B]		1
212T3128-8X	B*[2]	290	----------			
212T3130-1	B	280	BACF22AN500	[A]		1
			212T3703-1	[B]		1
			212T3703-1	[C]		1
212T3130-11	B*[22]	280	BACF22AN500	[A]		1
			212T3703-2	[B]		1
212T3130-16	B*[22]	392	BACF22AN500	[A]		1
			212T3703-2	[B]		1
212T3130-17	B*[22]	280	BACF22AN500	[A]		1
			212T3703-2	[B]		1
			212T3703-2	[C]		1
212T3130-18	B*[22]	280	BACF22AN500	[A]		1
			212T3703-2	[B]		1
212T3130-21	B*[22]	280	212T3703-1	[A]		1
			212T3703-1	[B]		1
			BACF22AN500	[C]		1
212T3130-7	B*[22]	280	BACF22AN500	[A]		1
			212T3703-2	[B]		1
			212T3703-2	[C]		1

Duct Material and Test Data
Figure 602 (Sheet 18)

DUCT ASSY PART NUMBER	MATERIAL CODE	HYDROSTATIC PROOF PRESSURE TEST *[1]	FLANGE/FERRULE BOSS PART NUMBER *[32]	LOCATION *[16]	(PREF/ OPT)	QTY
212T3131-1	AB*[2]	*[3]	BACF22AN400	[A]		1
			BACF22AN500	[B]		1
			BACF22AN500	[C]		1
212T3131-1X	AB*[2]	*[3]	BACF22AN400	[A]		1
			BACF22AN500	[B]		1
			BACF22AN500	[C]		1
			14A500	[D]		1
212T3131-13	B*[22]	282	BACF22AN400	[A]		1
			BACF22AN500	[B]		1
			BACF22AN500	[C]		1
212T3131-14	AB*[22]	282	BACF22AN400	[A]		1
			BACF22AN500	[B]		1
			BACF22AN500	[C]		1
			69B40951-10	[D]		1
212T3131-15	B*[22]	392	BACF22AN400	[A]		1
			BACF22AN500	[B]		1
			BACF22AN500	[C]		1
212T3131-16	B*[22]	392	BACF22AN400	[A]		1
			BACF22AN500	[B]		1
			BACF22AN500	[C]		1
212T3131-19	B*[22]	282	BACF22AN400	[A]		1
			BACF22AN500	[B]		1
			BACF22AN500	[C]		1
212T3131-20	B*[22]	282	BACF22AN400	[A]		1
			BACF22AN500	[B]		1
			BACF22AN500	[C]		1
212T3131-23	B*[22]	392	BACF22AN400	[A]		1
			BACF22AN500	[B]		1
			BACF22AN500	[C]		1
212T3131-28	B*[22]	282	BACF22AN500	[A]		1
			BACF22AN500	[B]		1
212T3131-31	B*[22]	282	BACF22AN500	[A]		1
			BACF22AN500	[B]		2
			14A641-101	[B]		1
212T3131-6	AB*[2]	*[27]	BACF22AN400	[A]		1
			BACF22AN500	[B]		1
			BACF22AN500	[C]		1
			69B40951-10	[D]		1
212T3131-6X	AB*[2]	*[27]	BACF22AN400	[A]		1
			BACF22AN500	[B]		1
			BACF22AN500	[C]		1
			69B40951-10	[D]		1

Duct Material and Test Data
Figure 602 (Sheet 19)

DUCT ASSY PART NUMBER	MATERIAL CODE	HYDROSTATIC PROOF PRESSURE TEST *[1]	FLANGE/FERRULE BOSS PART NUMBER *[32]	LOCATION *[16]	(PREF/ OPT)	QTY
212T3134-1	B	290	BACF22AN400	[A]		1
			BACF22AN450	[B]		1
212T3134-1X	B	290	BACF22AN400	[A]		1
			BACF22AN450	[B]		1
			212T3431-1	[C]		1
212T3134-10	B*[22]	290	BACF22AN400	[A]		1
			BACF22AN450	[B]		1
212T3134-8	B*[22]	290	BACF22AN400	[A]		1
			BACF22AN450	[B]		1
212T3134-9	B*[22]	282	BACF22AN400	[A]		1
			BACF22AN450	[B]		1
212T3135-1	J	230	BACF22AM400	[A]		1
			BACF22AM400	[B]		1
212T3138-1	AB*[2]	290	BACF22AN600	[A]		1
			BACF22AN600	[B]		1
212T3138-1X	AB*[2]*[22]	290	BACF22AN600	[A]		1
			BACF22AN600	[B]		1
212T3138-4	A	290	BACF22AN600	[A]		1
			BACF22AN600	[B]		1
212T3138-4X	AB*[2]*[22]	290	BACF22AN600	[A]		1
			BACF22AN600	[B]		1
212T3138-7	AB*[22]	290	BACF22AN600	[A]		1
			BACF22AN600	[B]		1
212T3138-8	B*[2]*[22]	282	BACF22AN600	[A]		1
			BACF22AN600	[B]		1
212T3138-9	B*[2]*[22]	290	BACF22AN600	[A]		1
			BACF22AN600	[B]		1
212T3138-12	B*[2]*[22] *[25]	290 positive 13.9 negative	BACF22AN600	[A]		1
			BACF22AN600	[B]		1
			212T3400-4	[C]		1

Duct Material and Test Data
Figure 602 (Sheet 20)

DUCT ASSY PART NUMBER	MATERIAL CODE	HYDROSTATIC PROOF PRESSURE TEST *[1]	FLANGE/FERRULE BOSS PART NUMBER *[32]	LOCA-TION *[16]	(PREF/ OPT)	QTY
212T3139-1	AB*[2]	290	BACF22AN600	[A]		1
			BACF22AN600	[B]		1
212T3139-1X	AB*[2]	290	BACF22AN600	[A]		1
			BACF22AN600	[B]		1
212T3139-4	A	290	BACF22AN600	[A]		1
			BACF22AN600	[B]		1
212T3139-4X	A	290	BACF22AN600	[A]		1
			BACF22AN600	[B]		1
212T3139-7	AB*[22]	290	BACF22AN600	[A]		1
			BACF22AN600	[B]		1
212T3139-8	B*[2]*[22]	282	BACF22AN600	[A]		1
			BACF22AN600	[B]		1
212T3139-9	B*[2]*[22]	290	BACF22AN600	[A]		1
			BACF22AN600	[B]		1
212T3140-1	A*[28]	290	69B40951-10	[A]		1
			BACF22AN600	[B]		1
212T3140-10	H*[28]	*[17]	BACF22AM600	[A]		1
			BACF22AM600	[B]		1
			66-13607-5	[C]		1
212T3140-9	D*[28]	181	BACF22AM600	[A]		1
			BACF22AM600	[B]		1
			66-13607-5	[C]		1
213T2038-1	B*[2]	290	BACF22AN400	[A]		1
			BACF22AN600	[B]		1
213T2038-1X	B*[2]	290	BACF22AN400	[A]		1
			BACF22AN600	[B]		1
213T2038-10	B*[22]	290	BACF22AN400	[A]		1
			BACF22AN600	[B]		1
213T2038-11	B*[22]	282	BACF22AN400	[A]		1
			BACF22AN600	[B]		1
213T2038-12	B*[22]	290	BACF22AN400	[A]		1
			BACF22AN600	[B]		1
213T2038-13	B*[22]	290	BACF22AN400	[A]		1
			BACF22AN600	[B]		1

Duct Material and Test Data
Figure 602 (Sheet 21)

DUCT ASSY PART NUMBER	MATERIAL CODE	HYDROSTATIC PROOF PRESSURE TEST *[1]	FLANGE/FERRULE BOSS PART NUMBER *[32]	LOCA-TION *[16]	(PREF/ OPT)	QTY
213T2038-2	B*[2]	290	BACF22AN400	[A]		1
			BACF22AN600	[B]		1
213T2038-2X	B*[2]	290	BACF22AN400	[A]		1
			BACF22AN600	[B]		1
213T2038-6	B*[2]*[22]	290	BACF22AN400	[A]		1
			BACF22AN600	[B]		1
213T2038-7	B*[2]*[22]	160	BACF22AN400	[A]		1
			BACF22AN600	[B]		1
213T2100-1	B*[2]	290	BACF22AN400	[A]		1
			BACF22AN400	[B]		1
			213T2119-1	[C]		1
213T2100-1X	B*[2]	290	BACF22AN400	[A]		1
			BACF22AN400	[B]		1
			213T2119-1	[C]		1
213T2100-10	B*[22]	282	BACF22AN400	[A]		1
			BACF22AN400	[B]		1
			213T2119-1	[C]		1
213T2100-11	B*[22]	290	BACF22AN400	[A]		1
			BACF22AN400	[B]		1
			213T2119-1	[C]		1
213T2100-12	B*[22]	290	BACF22AN400	[A]		1
			BACF22AN400	[B]		1
			213T2119-1	[C]		1
213T2100-12X	B*[22]	290	BACF22AN400	[A]		1
			BACF22AN400	[B]		1
			213T2119-1	[C]		1
213T2100-14	B*[2]	292	BACF22AN400	[A]		1
			BACF22AN400	[B]		1
213T2100-15	B*[2]	292	BACF22AN400	[A]		1
			BACF22AN400	[B]		1
213T2100-18	B*[22]	292	BACF22AN400	[A]		1
			BACF22AN400	[B]		1

Duct Material and Test Data
Figure 602 (Sheet 22)

DUCT ASSY PART NUMBER	MATERIAL CODE	HYDROSTATIC PROOF PRESSURE TEST *[1]	FLANGE/FERRULE BOSS PART NUMBER *[32]	LOCA-TION *[16]	(PREF/ OPT)	QTY
213T2100-2	B*[2]	290	BACF22AN400	[A]		1
			BACF22AN400	[B]		1
			213T2119-1	[C]		1
213T2100-2X	B*[2]	290	BACF22AN400	[A]		1
			BACF22AN400	[B]		1
			213T2119-1	[C]		1
213T2100-20	B	292	BACF22AN400	[A]		1
			BACF22AN400	[B]		1
			213T2119-1	[C]		1
213T2100-6	B*[2]	290	BACF22AN400	[A]		1
			BACF22AN400	[B]		1
			213T2119-1	[C]		1
213T2100-6X	B*[2]	290	BACF22AN400	[A]		1
			BACF22AN400	[B]		1
			213T2119-1	[C]		1
213T2100-7	B*[2]	290	BACF22AN400	[A]		1
			BACF22AN400	[B]		1
			213T2119-1	[C]		1
213T2100-7X	B*[2]	290	BACF22AN400	[A]		1
			BACF22AN400	[B]		1
			213T2119-1	[C]		1
213T2101-1	B*[2]	130	BACF22AN200	[A]		1
			BACF22AN200	[B]		1
213T2102-1	B*[2]	160	BACF22AN300	[A]		1
			BACF22AN400	[B]		1
			BACF22AN400	[C]		1
			69B40951-2	[D]		1
213T2102-7	B*[2]*[22]	160	BACF22AN300	[A]		1
			BACF22AN400	[B]		1
			BACF22AN400	[C]		1
			69B40951-2	[D]		1
213T2102-8	B*[2]*[22]	160	BACF22AN400	[A]		1
			BACF22AN400	[B]		1
			BACF22AN300	[C]		1
			69B40951-8	[C]		1
213T2102-9	B*[2]*[22]	247-257	BACF22AN400	[A]		1
			BACF22AN400	[B]		1
213T2102-11	B*[2]*[22]	247-257	BACF22AN450	[A]		1
			BACF22AN450	[B]		1
			BACF22AN250	[B]		1

Duct Material and Test Data
Figure 602 (Sheet 23)

DUCT ASSY PART NUMBER	MATERIAL CODE	HYDROSTATIC PROOF PRESSURE TEST *[1]	FLANGE/FERRULE BOSS PART NUMBER *[32]	LOCATION *[16]	(PREF/ OPT)	QTY
213T2103-10	B*[2]	NONE	BACF22AN200	[A]		1
			14A545-1	[B]		1
213T2103-13	B*[2]	160	BACF22AN400	[A]		1
			BACF22AN400	[B]		1
			14A545-11	[C]		1
			69B40951-2	[D]		1
213T2103-14	B*[2]	NONE	BACF22AN200	[A]		1
			BACF22AN400	[B]		1
			BACF22AN400	[C]		1
213T2103-15	B*[2]	NONE	BACF22AN400	[A]		1
			BACF22AN400	[B]		1
			14A545-11	[C]		1
			69B40951-2	[D]		1
213T2103-16	B*[2]*[22]	160	BACF22AN200	[A]		1
			14A545-1	[B]		1
213T2103-17	B*[2]*[22]	160	BACF22AN400	[A]		1
			BACF22AN400	[B]		1
			14A545-11	[C]		1
			69B40951-2	[D]		1
213T2103-19	B*[2]*[22]	160	BACF22AN400	[A]		1
			BACF22AN400	[B]		1
			14A545-11	[C]		1
			69B40951-8	[C]		1
213T2103-20	B*[2]*[22]	247-257	BACF22AN450	[A]		1
			BACF22AN450	[B]		1
			BACF22AN250	[B]		1
213T2103-23	B*[2]*[22]	247-257	BACF22AN400	[A]		1
			BACF22AN400	[B]		1
213T2103-7	B*[2]	160	BACF22AN400	[A]		1
			BACF22AN400	[B]		1
			14A545-3	[C]		1
			69B40951-2	[D]		1
213T2104-1	B*[2]	160	BACF22AN250	[A]		1
			BACF22AN400	[B]		1
			BACF22AN400	[C]		1
213T2104-6	B*[2]*[22]	160	BACF22AN250	[A]		1
			BACF22AN400	[B]		1
			BACF22AN400	[C]		1
213T2107-11	B*[2]	160	BACF22AN200	[A]		1
			14A545-1	[B]		1

Duct Material and Test Data
Figure 602 (Sheet 24)

DUCT ASSY PART NUMBER	MATERIAL CODE	HYDROSTATIC PROOF PRESSURE TEST *[1]	FLANGE/FERRULE BOSS PART NUMBER *[32]	LOCA-TION *[16]	(PREF/ OPT)	QTY
213T2107-13	B*[2]	160	BACF22AN250	[A]		1
			BACF22AN300	[B]		1
			14A545-11	[C]		1
213T2107-14	B*[2]	160	BACF22AN250	[A]		1
			BACF22AN300	[B]		1
			14A545-11	[C]		1
213T2107-21		NONE	BACF22AN200	[A]		1
			BACF22AN250	[B]		1
			BACF22AN300	[C]		1
213T2107-22		NONE	BACF22AN200	[A]		1
			BACF22AN250	[B]		1
			BACF22AN300	[C]		1
213T2107-24		NONE	BACF22AN200	[A]		1
			BACF22AN250	[B]		1
			BACF22AN300	[C]		1
213T2107-25		NONE	BACF22AN200	[A]		1
			BACF22AN250	[B]		1
			BACF22AN300	[C]		1
213T2107-26	B*[2]	160	BACF22AN200	[A]		1
			14A545-1	[B]		1
213T2107-27	B*[2]	160	BACF22AN250	[A]		1
			BACF22AN300	[B]		1
			14A545-11	[C]		1
213T2107-28	B*[2]*[22]	160	BACF22AN250	[A]		1
			BACF22AN300	[B]		1
			14A545-11	[C]		1
213T2107-6	B*[2]	160	BACF22AN250	[A]		1
			BACF22AN300	[B]		1
			14A545-3	[C]		1
213T2108-1	B*[2]	160	BACF22AN250	[A]		1
			BACF22AN250	[B]		1
213T2108-10	B*[2]	160	BACF22AN250	[A]		1
			BACF22AN250	[B]		1
			BACF22AN300	[C]		1
213T2108-11	B*[2]*[22]	160	BACF22AN250	[A]		1
			BACF22AN250	[B]		1
213T2108-12	B*[2]*[22]	160	BACF22AN250	[A]		1
			BACF22AN250	[B]		1
			BACF22AN300	[C]		1

Duct Material and Test Data
Figure 602 (Sheet 25)

DUCT ASSY PART NUMBER	MATERIAL CODE	HYDROSTATIC PROOF PRESSURE TEST *[1]	FLANGE/FERRULE BOSS PART NUMBER *[32]	LOCATION *[16]	(PREF/ OPT)	QTY
213T2108-4	B*[2]	160	BACF22AN250	[A]		1
			BACF22AN250	[B]		1
			BACF22AN300	[C]		1
213T2108-9	B*[2]	160	BACF22AN250	[A]		1
			BACF22AN250	[B]		1
213T2109-1	B*[2]	160	BACF22AN250	[A]		1
			BACF22AN250	[B]		1
213T2109-4	B*[2]	160	BACF22AN250	[A]		1
			BACF22AN250	[B]		1
213T2109-5	B*[2]*[22]	160	BACF22AN250	[A]		1
			BACF22AN250	[B]		1
213T2110-1	B*[2]	160	BACF22AN250	[A]		1
			BACF22AN250	[B]		1
213T2110-10	B*[2]*[22]	160	BACF22AN250	[A]		1
			BACF22AN250	[B]		1
213T2110-11	B*[2]*[22]	160	BACF22AN250	[A]		1
			BACF22AN250	[B]		1
213T2110-15	B*[22]	160	BACF22AN250	[A]		1
			BACF22AN250	[B]		1
213T2110-4	B*[2]	160	BACF22AN250	[A]		1
			BACF22AN250	[B]		1
213T2110-7	B*[2]	160	BACF22AN250	[A]		1
			BACF22AN250	[B]		1
213T2111-1	B*[2]	160	BACF22AN250	[A]		1
			BACF22AN250	[B]		1
			BACF22AN300	[C]		1
213T2111-13	B*[2]	160	BACF22AN250	[A]		1
			BACF22AN250	[B]		1
213T2111-14	B*[2]*[22]	160	BACF22AN250	[A]		1
			BACF22AN250	[B]		1
			BACF22AN300	[C]		1

Duct Material and Test Data
Figure 602 (Sheet 26)

DUCT ASSY PART NUMBER	MATERIAL CODE	HYDROSTATIC PROOF PRESSURE TEST *[1]	FLANGE/FERRULE BOSS PART NUMBER *[32]	LOCA-TION *[16]	(PREF/ OPT)	QTY
213T2111-15	B*[2]*[22]	160	BACF22AN250	[A]		1
			BACF22AN250	[B]		1
213T2111-9	B*[2]	160	BACF22AN250	[A]		1
			BACF22AN250	[B]		1
213T2112-1	B*[2]	130	BACF22AN200	[A]		1
			BACF22AN200	[B]		1
			BACF22AN200	[C]		1
			BACF22AN300	[D]		1
			69B40951-10	[E]		1
213T2112-11	B*[2]	130	BACF22AN200	[A]		1
			BACF22AN200	[B]		1
			BACF22AN200	[C]		1
			BACF22AN200	[D]		1
			BACF22AN300	[E]		1
			69B40951-10	[F]		1
213T2112-18	B	130	BACF22AN200	[A]		1
			BACF22AN200	[B]		1
			BACF22AN200	[C]		1
			BACF22AN200	[D]		1
			BACF22AN300	[E]		1
			69B40951-10	[F]		1
213T2112-25	B*[2]	130	BACF22AN200	[A]		1
			BACF22AN200	[B]		1
			BACF22AN200	[C]		1
			BACF22AN200	[D]		1
			BACF22AN200	[E]		1
			BACF22AN200	[F]		1
			BACF22AN300	[G]		1
			69B40951-10	[H]		1
213T2112-33	B*[2]*[22]	130	BACF22AN200	[A]		1
			BACF22AN200	[B]		1
			BACF22AN200	[C]		1
			BACF22AN200	[D]		1
			BACF22AN300	[E]		1
			69B40951-10	[F]		1

Duct Material and Test Data
Figure 602 (Sheet 27)

DUCT ASSY PART NUMBER	MATERIAL CODE	HYDROSTATIC PROOF PRESSURE TEST *[1]	FLANGE/FERRULE BOSS PART NUMBER *[32]	LOCATION *[16]	(PREF/ OPT)	QTY
213T2112-34	B*[2]*[22]	130	BACF22AN200	[A]		1
			BACF22AN200	[B]		1
			BACF22AN200	[C]		1
			BACF22AN200	[D]		1
			BACF22AN200	[E]		1
			BACF22AN200	[F]		1
			BACF22AN300	[G]		1
			69B40951-10	[H]		1
213T2112-35	B*[2]*[22]	130	BACF22AN200	[A]		1
			BACF22AN200	[B]		1
			BACF22AN200	[C]		1
			BACF22AN300	[D]		1
			69B40951-10	[E]		1
213T2112-36	B*[2]*[22]	130-140	BACF22AN200	[A]		1
			BACF22AN200	[A]		1
			BACF22AN200	[A]		1
			BACF22AN300	[B]		1
			69B40951-10	[C]		1
213T2112-51	B*[2]*[22]	130-140	BACF22AN250	[A]		1
			BACF22AN250	[A]		1
			BACF22AN250	[A]		1
			BACF22AN250	[B]		1
			69-43887-4	[C]		1
213T2112-52	B*[2]*[22]	130-140	BACF22AN250	[A]		1
			BACF22AN250	[A]		1
			BACF22AN250	[A]		1
			BACF22AN250	[B]		1
			69-43887-4	[C]		1
213T2112-70	B*[2]*[22]	130-140	BACF22AN250	[A]		1
			BACF22AN325	[B]		1
213T2112-9	B*[2]	130	BACF22AN200	[A]		1
			BACF22AN200	[B]		1
			BACF22AN200	[C]		1
			BACF22AN300	[D]		1
			69B40951-10	[E]		1
213T2113-1	B*[2]	130	BACF22AN200	[A]		1
			BACF22AN200	[B]		1
213T2113-10	B*[2]	100	BACF22AN200	[A]		1
			BACF22AN200	[B]		1
213T2113-14	B*[2]	100	BACF22AN200	[A]		1
			BACF22AN200	[B]		1

Duct Material and Test Data
Figure 602 (Sheet 28)

DUCT ASSY PART NUMBER	MATERIAL CODE	HYDROSTATIC PROOF PRESSURE TEST *[1]	FLANGE/FERRULE BOSS PART NUMBER *[32]	LOCATION *[16]	(PREF/ OPT)	QTY
213T2113-18	B*[2]	100	BACF22AN200	[A]		1
			BACF22AN200	[B]		1
213T2113-22	B*[2]	100	BACF22AN200	[A]		1
			BACF22AN200	[B]		1
213T2113-26	B*[2]	100	BACF22AN200	[A]		1
			BACF22AN200	[B]		1
213T2113-28	B*[2]	100	BACF22AN200	[A]		1
			BACF22AN200	[B]		1
213T2113-31	B*[2]	130-140	BACF22AN200	[A]		1
			BACF22BE200W275	[B]		1
213T2113-4	B*[2]	100	BACF22AN200	[A]		1
			BACF22AN200	[B]		1
213T2113-8	B*[2]*[23]	100	BACF22AN200	[A]		1
			BACF22AN200	[B]		1
213T2114-1	B*[2]	NONE	BACF22AN200	[A]		1
			BACF22AN200	[B]		1
213T2114-10	B*[2]*[23]	100	BACF22AN200	[A]		1
			BACF22AN200	[B]		1
213T2114-12	B*[2]	130-140	BACF22AN200	[A]		1
			BACF22BE200W275	[B]		1
213T2114-13	B*[2]	130-140	BACF22AN250	[A]		1
			BACF22BE250W275	[B]		1
213T2114-5	B*[2]	130	BACF22AN200	[A]		1
			BACF22AN200	[B]		1
213T2115-1	B*[2]	130	BACF22AN200	[A]		1
			BACF22AN200	[B]		1
213T2115-5	B*[2]	130	BACF22AN200	[A]		1
			BACF22AN200	[B]		1
213T2115-7	B*[2]*[23]	100	BACF22AN200	[A]		1
			BACF22AN200	[B]		1
213T2120-1	B*[2]	130	BACF22AN200	[A]		1
			BACF22AN200	[B]		1
213T2120-5	B*[2]*[23]	100	BACF22AN200	[A]		1
			BACF22AN200	[B]		1
213T2120-9	B*[2]	130-140	BACF22AN200	[A]		1
			BACF22BE200W275	[B]		1
213T2120-10	B*[2]	130-140	BACF22AN200	[A]		1
			BACF22BE200W275	[B]		1
213T4101-1	B*[2]	130	BACF22AN200	[A]		1
			213T4128-1	[A]	OPT	1
			213T4128-4	[A]	PREF	1
			MS33660-24	[B]		1

Duct Material and Test Data
Figure 602 (Sheet 29)

DUCT ASSY PART NUMBER	MATERIAL CODE	HYDROSTATIC PROOF PRESSURE TEST *[1]	FLANGE/FERRULE BOSS PART NUMBER *[32]	LOCATION *[16]	(PREF/ OPT)	QTY
213T4101-9	B*[2]	130	BACF22AN200	[A]		1
			213T4128-1	[A]	OPT	1
			213T4128-4	[A]	PREF	1
			MS33660-24	[B]		1
213T4101-20	B*[2]	130-140	BACF22AN200	[A]		1
			213T4128-1	[A]	OPT	1
			213T4128-4	[A]	PREF	1
			NONE	[B]		1
213T4101-26	B*[2]	130-140	BACF22AN200	[A]		1
			213T4128-1	[A]	OPT	1
			213T4128-4	[A]	PREF	1
			NONE	[B]		1
213T4102-1	B*[2]	130	BACF22AN200	[A]		1
			213T4128-1	[A]	OPT	1
			213T4128-4	[A]	PREF	1
			BACF22AN250	[B]		1
213T4102-12	B*[2]	130	BACF22AN200	[A]		1
			213T4128-1	[A]	OPT	1
			213T4128-4	[A]	PREF	1
			NONE	[B]		1
			NONE	[C]		1
213T4102-26	B*[2]	130-140	BACF22AN200	[A]		1
			213T4128-1	[A]	OPT	1
			213T4128-4	[A]	PREF	1
			MS33660-32	[B]		1
213T4102-28	B*[2]	130-140	BACF22AN200	[A]		1
			213T4128-1	[A]	OPT	1
			213T4128-4	[A]	PREF	1
			MS33660-32	[B]		1
213T4102-31	B*[2]	130-140	BACF22AN200	[A]		1
			213T4128-1	[A]	OPT	1
			213T4128-4	[A]	PREF	1
			BACF22AN200	[B]		1
213T4102-35	B*[2]	130-140	BACF22AN200	[A]		1
			213T4128-1	[A]	OPT	1
			213T4128-4	[A]	PREF	1
			NONE	[B]		1
213T4102-37	B*[2]	130-140	BACF22AN200	[A]		1
			213T4128-1	[A]	OPT	1
			213T4128-4	[A]	PREF	1
			NONE	[B]		1

Duct Material and Test Data
Figure 602 (Sheet 30)

DUCT ASSY PART NUMBER	MATERIAL CODE	HYDROSTATIC PROOF PRESSURE TEST *[1]	FLANGE/FERRULE BOSS PART NUMBER *[32]	LOCATION *[16]	(PREF/ OPT)	QTY
213T4102-41	B*[2]	130-140	BACF22AN200	[A]		1
			NONE	[B]		1
213T4102-43	B*[2]	130-140	BACF22AN200	[A]		1
			213T4128-1	[A]	OPT	1
			213T4128-4	[A]	PREF	1
			NONE	[B]		1
213T4102-45	B*[2]	130-140	BACF22AN200	[A]		1
			213T4128-1	[A]	OPT	1
			213T4128-4	[A]	PREF	1
			NONE	[B]		1
213T4102-47	B*[2]	130-140	NONE	[A]		1
			NONE	[B]		1
213T4102-49	B*[2]	130-140	BACF22AN200	[A]		1
			NONE	[B]		1
213T4102-7	B*[2]	130	BACF22AN200	[A]		1
			213T4128-1	[A]	OPT	1
			213T4128-4	[A]	PREF	1
			BACF22AN250	[B]		1
213T4103-1	B*[2]	130	BACF22AM250	[A]		1
			MS33660-32	[B]		1
			MS33660-32	[C]		1
213T4103-5	B*[2]	130	BACF22AM250	[A]		1
			MS33660-32	[B]		1
			MS33660-32	[C]		1
213T4104-1	B*[2]	130	BACF22AN200	[A]		1
			BACF22AN300	[B]		1
213T4104-9	B*[2]	130	BACF22AN200	[A]		1
			BACF22AN300	[B]		1
213T4105-1	B*[2]	130	BACF22AN300	[A]		1
			MS33660-40	[B]		1
			MS33660-40	[C]		1
213T4129-1	B*[2]	130	BACF22AN200	[A]		1
			MS33660-40	[B]		1
213T4129-13	B*[2]	130	BACF22AN200	[A]		1
			MS33660-40	[B]		1
213T4129-17	B*[2]	130	BACF22AN200	[A]		1
			MS33660-40	[B]		1
213T4129-28	B*[2]	130	BACF22AN200	[A]		1
			MS33660-40	[B]		1
213T4129-29	B*[2]	130	BACF22AN200	[A]		1
			MS33660-40	[B]		1

Duct Material and Test Data
Figure 602 (Sheet 30A)

DUCT ASSY PART NUMBER	MATERIAL CODE	HYDROSTATIC PROOF PRESSURE TEST *[1]	FLANGE/FERRULE BOSS PART NUMBER *[32]	LOCATION *[16]	(PREF/ OPT)	QTY
213T4129-30	B*[2]	130	BACF22AN200	[A]		1
			MS33660-40	[B]		1
213T4129-31	B*[2]	130	BACF22AN200	[A]		1
			MS33660-40	[B]		1
213T4129-50	B*[2]	130-140	BACF22AN250	[A]		1
			213T4128-5	[A]		1
213T4129-53	B*[2]	130-140	----------			1
			----------			1
213T4129-54	B*[2]	130-140	BACF22AN200	[A]		1
			213T4128-4	[A]		1
213T4129-56	B*[2]	130-140	BACF22AN200	[A]		1
			213T4128-4	[A]		1
213T4129-7	B*[2]	130	BACF22AN200	[A]		1
			MS33660-40	[B]		1
213T4136-1	B	19.9	MS33660-32	[A]		1
			MS33660-32	[B]		1
213T4136-104	B	19.9	----------			1
213T4136-11	B	19.9	MS33660-32	[A]		1
			MS33660-32	[B]		1
213T4136-16	B	19.9	MS33660-32	[A]		1
			MS33660-32	[B]		1
213T4136-19	B	19.9	MS33660-32	[A]		1
			MS33660-32	[B]		1
213T4136-2	B	19.9	MS33660-32	[A]		1
			MS33660-32	[B]		1
213T4136-22	B	19.9	BACF22AN200	[A]		1
			MS33660-32	[B]		1
213T4136-3	B	19.9	MS33660-32	[A]		1
			MS33660-40	[B]		1
213T4136-33	B	19.9	MS33660-32	[A]		1
			MS33660-32	[B]		1
213T4136-34	B	19.9	MS33660-32	[A]		1
			MS33660-40	[B]		1
213T4136-40	B	19.9	BACF22AN200	[A]		1
			MS33660-32	[B]		1
213T4136-41	B	19.9	MS33660-32	[A]		1
			MS33660-32	[B]		1

Duct Material and Test Data
Figure 602 (Sheet 31)

DUCT ASSY PART NUMBER	MATERIAL CODE	HYDROSTATIC PROOF PRESSURE TEST *[1]	FLANGE/FERRULE BOSS PART NUMBER *[32]	LOCA-TION *[16]	(PREF/ OPT)	QTY
213T4136-42	B	19.9	MS33660-32	[A]		1
			MS33660-32	[B]		1
213T4136-46	B	19.9	MS33660-32	[A]		1
			MS33660-32	[B]		1
213T4136-51	B	19.9	MS33660-32	[A]		1
			MS33660-32	[B]		1
213T4136-55	B	19.9	BACF22AN200	[A]		1
			MS33660-32	[B]		1
213T4136-61	B	19.9	BACF22AN200	[A]		1
			MS33660-32	[B]		1
213T4136-66	B	19.9	MS33600-32	[A]		1
			MS33600-32	[B]		1
213T4136-7	B	19.9	MS33600-32	[A]		1
			MS33600-32	[B]		1
213T4136-73	B	19.9	MS33600-32	[A]		1
			MS33600-32	[B]		1
213T4136-79	B	19.9	MS33600-32	[A]		1
			MS33600-32	[B]		1
213T4136-80	B	19.9	BACF22AN200	[A]		1
			MS33600-32	[B]		1
213T4136-86	B	19.9	MS33600-32	[A]		1
			MS33600-40	[B]		1
213T4136-94	A	19.9	MS33600-32	[A]		1
			MS33600-32	[B]		1
213T4136-96	A	19.9	MS33600-32	[A]		1
			MS33600-32	[B]		1
213T4141-1	B*[2]	130	BACF22AN200	[A]		1
			MS33660-24	[B]		1

Duct Material and Test Data
Figure 602 (Sheet 32)

DUCT ASSY PART NUMBER	MATERIAL CODE	HYDROSTATIC PROOF PRESSURE TEST *[1]	FLANGE/FERRULE BOSS PART NUMBER *[32]	LOCATION *[16]	(PREF/ OPT)	QTY
213T4141-10	B*[2]	130	BACF22AN200	[A]		1
			MS33660-32	[B]		1
213T4141-15	B*[2]	130	213T4141-17	[A]		1
			MS33660-24	[B]		1
213T4141-18	B*[2]	130	213T4141-20	[A]		1
			MS33660-32	[B]		1
213T4141-23	B*[2]	130	BACF22AN200	[A]		1
			213T4128-4	[A]		1
213T4141-26	B*[2]	130	BACF22AN200	[A]		1
			213T4128-4	[A]		1
213T4141-29	B*[2]	130	NONE	[A]		1
			NONE	[B]		1
213T4141-47	B*[2]	130	213T4141-19	[A]		1
			NONE	[B]		1
213T4141-6	B*[2]	130	BACF22AN200	[A]		1
			MS33660-32	[B]		1
214T6120-1	B*[2]	NONE	BACF22AN200	[A]		1
			MS33600-24	[B]		1
214T6120-12	B*[2]	NONE	BACF22AN200	[A]		1
			BACF22AN200	[B]		1
			69B41264-14	[C]		1
214T6120-15	B*[2]	NONE	BACF22AN200	[A]		1
			MS33600-24	[B]		1
214T6120-3	B*[2]	NONE	BACF22AN200	[A]		1
			BACF22AN200	[B]		1
214T6120-5	B*[2]	NONE	BACF22AN200	[A]		1
			BACF22AN200	[B]		1
			14A628	[C]		1
214T6120-8	B*[2]	NONE	BACF22AN200	[A]		1
			MS33600-32	[B]		1
214T6404-1	B*[2]	NONE	BACF22AN200	[A]		1
			BACF22AN200	[B]		1
214T6404-10	B*[2]	NONE	----------			
214T6404-11	B*[2]	NONE	----------			
214T6404-25	B*[2]	NONE	BACF22AN200	[A]		1
214T6404-27	B*[2]	NONE	BACF22AN200	[A]		1
214T6404-3	B*[2]	NONE	BACF22AN200	[A]		1
			BACF22AN200	[B]		1

Duct Material and Test Data
Figure 602 (Sheet 33)

DUCT ASSY PART NUMBER	MATERIAL CODE	HYDROSTATIC PROOF PRESSURE TEST *[1]	FLANGE/FERRULE BOSS PART NUMBER *[32]	LOCA-TION *[16]	(PREF/ OPT)	QTY
214T6404-38	B*[2]	NONE	BACF22AN200	[A]		1
			BACF22AN200	[B]		1
214T6404-39	B*[2]	NONE	BACF22AN200	[A]		1
			BACF22AN200	[B]		1
214T6404-4	B*[2]	NONE	BACF22AN200	[A]		1
			BACF22AN200	[B]		1
214T6404-41	B*[2]	NONE	BACF22AN200	[A]		1
			BACF22AN200	[B]		1
214T6404-42	B*[2]	NONE	BACF22AN200	[A]		1
			BACF22AN200	[B]		1
214T6404-43	B*[2]	NONE	BACF22AN200	[A]		1
214T6404-44	B*[2]	NONE	BACF22AN200	[A]		1
214T6404-45	B*[2]	NONE	----------			
214T6404-46	B*[2]	NONE	----------			
214T6404-47	B*[2]	NONE	----------			
214T6404-5	B*[2]	NONE	BACF22AN200	[A]		1
214T6404-6	B*[2]	NONE	----------			
214T6404-7	B*[2]	NONE	----------			
214T6404-71	B*[2]	NONE	BACF22AN200	[A]		1
214T6404-76	B*[2]	NONE	----------			
214T6404-8	B*[2]	NONE	----------			
214T6404-81	B*[2]	NONE	----------			
214T6404-82	B*[2]	NONE	BACF22AN200	[A]		1
214T6404-83	B*[2]	NONE	BACF22AN200	[A]		1
214T6404-85	B*[2]	NONE	BACF22AN200	[A]		1
			BACF22AN200	[B]		1
214T6404-9	B*[2]	NONE	----------			
214T6405-1	B*[2]	NONE	BACF22AN200	[A]		1
214T6405-12	B	NONE	BACF22AN200	[A]		1
			BACF22AN200	[B]		1
214T6405-16	B*[22]	160	BACF22AN200	[A]		1
214T6405-18	B*[22]	160	BACF22AN200	[A]		1
214T6405-20	B*[22]	160	BACF22AN200	[A]		1
214T6405-24	B*[22]	160	BACF22AN200	[A]		1

Duct Material and Test Data
Figure 602 (Sheet 34)

DUCT ASSY PART NUMBER	MATERIAL CODE	HYDROSTATIC PROOF PRESSURE TEST *[1]	FLANGE/FERRULE BOSS PART NUMBER *[32]	LOCATION *[16]	(PREF/ OPT)	QTY
214T6405-3	B*[2]	NONE	BACF22AN200	[A]		1
			BACF22AN200	[B]		1
214T6405-9	B*[2]	NONE	BACF22AN200	[A]		1
			BACF22AN200	[B]		1
214T6406-1	B*[2]	NONE	----------			
214T6406-11	B*[2]	NONE	----------			
214T6406-13	B*[2]	NONE	----------			
214T6406-14	B*[2]	NONE	----------			
214T6406-16	B*[2]	NONE	----------			
214T6406-18	B	NONE	----------			
214T6406-19	B	NONE	----------			
214T6406-2	B*[2]	NONE	----------			
214T6406-21	B	NONE	----------			
214T6406-3	B*[2]	NONE	----------			
214T6406-9	B*[2]	NONE	----------			
217T1134-64	B	NONE	----------			
217T1153-5	C	NONE	----------			
218T1100-1	B	122	NONE-1	[A]		1
			NONE-1	[B]		1
218T1100-5	B	NONE	----------			
218T1101-12	B	NONE	----------			
218T1101-5	B	122	NONE-1	[A]		1
			NONE-1	[B]		1
218T1101-7	B	NONE	NONE-1	[A]		1
			NONE-1	[B]		1
218T1102-1	B*[2]	NONE	----------			
218T1102-2	B*[2]	NONE	----------			
218T1102-28	B*[2]	NONE	----------			

Duct Material and Test Data
Figure 602 (Sheet 35)

DUCT ASSY PART NUMBER	MATERIAL CODE	HYDROSTATIC PROOF PRESSURE TEST *[1]	FLANGE/FERRULE BOSS PART NUMBER *[32]	LOCA-TION *[16]	(PREF/ OPT)	QTY
218T1102-29	B*[2]	NONE	----------			
218T1102-30	B*[2]	NONE	----------			
218T1102-31	B*[2]	NONE	----------			
218T1102-32	B*[2]	NONE	----------			
218T1102-33	B*[2]	NONE	----------			
218T1102-34	B*[2]	NONE	----------			
218T1103-5	B*[2]	122	BACF22AN300	[A]		1
			BACF22AN300	[B]		1
			69B40951-11	[C]		1
			69B40951-9	[D]		1
218T1103-6	B*[2]	NONE	BACF22AN300	[A]		1
218T1103-7	B*[2]	NONE	BACF22AN300	[A]		1
218T1105-10	B*[2]	122	BACF22AN300	[A]		1
			BACF22AN300	[B]		1
218T1105-6	B*[2]	122	BACF22AN300	[A]		1
			BACF22AN300	[B]		1
218T1105-7	B*[2]	122	BACF22AN300	[A]		1
			NONE	[B]		1
218T1105-9	B*[2]	122	BACF22AN300	[A]		1
			BACF22AN300	[B]		1
218T1106-13	B*[2]	122	BACF22AN300	[A]		1
			14A233	[B]		1
			69B40951-10	[C]		1
218T1106-14	B*[2]	122	BACF22AN300	[A]		1
			14A233	[B]		1
			69B40951-10	[C]		1
218T1106-7	B*[2]	122	BACF22AN300	[A]		1
			14A233	[B]		1
			69B40951-10	[C]		1

Duct Material and Test Data
Figure 602 (Sheet 36)

DUCT ASSY PART NUMBER	MATERIAL CODE	HYDROSTATIC PROOF PRESSURE TEST *[1]	FLANGE/FERRULE BOSS PART NUMBER *[32]	LOCA-TION *[16]	(PREF/ OPT)	QTY
218T1106-8	B*[2]	122	BACF22AN300	[A]		1
			14A233	[B]		1
			69B40951-10	[C]		1
218T1108-1	B*[2]	122	BACF22AN300	[A]		1
			BACF22AN300	[B]		1
312T1072-1	E	230	BACF22AU400N	[A]	(PREF)	1
			R93DB2-0400N0	[A]	(OPT)	1
			BACF22AV400M	[B]	(PREF)	1
			R91AB3-0400M0	[B]	(OPT)	1
312T1072-2	E	230	BACF22AU400F	[A]	(PREF)	1
			R93DB2-0400F0	[A]	(OPT)	1
			BACF22AU400N	[B]	(PREF)	1
			R93DB2-0400N0	[B]	(OPT)	1
			312T3253-4	[C]		1
312T1073-11	E	267*[6]*[7]*[9]	BACF22AU600F	[A]	(PREF)	1
			R93DB2-0600F0	[A]	(OPT)	1
			BACF22AV350M	[B]	(PREF)	1
			R51AB3-0350M0	[B]	(OPT)	1
			AS1895-8-600	[C]	(PREF)	1
			BACF22AV600F	[C]	(OPT)	1
			312T1075-1	[D]		1
			312T1075-3	[E]		1
312T1073-12	E	715*[6]*[7]*[9]	BACF22AU600F	[A]		1
			R93DB2-0600F0	[A]		1
			BACF22AV350M	[B]		1
			R51AB3-0350M0	[B]		1
			312T1075-1	[C]		1
			312T1075-2	[D]		1
			312T1075-3	[E]		1

Duct Material and Test Data
Figure 602 (Sheet 37)

DUCT ASSY PART NUMBER	MATERIAL CODE	HYDROSTATIC PROOF PRESSURE TEST *[1]	FLANGE/FERRULE BOSS PART NUMBER *[32]	LOCA-TION *[16]	(PREF/ OPT)	QTY
312T1073-17	E	715*[6]*[7]*[9]	BACF22AU600F	[A]	(PREF)	1
			R93DB2-0600F0	[A]	(OPT)	1
			BACF22AV350M	[B]	(PREF)	1
			R51AB3-0350M0	[B]	(OPT)	1
			312T1075-1	[C]		1
			312T1075-3	[D]		1
			AS1895-8-600	[E]	(PREF)	1
			BACF22AV600F	[E]	(OPT)	1
312T1073-18	E	715*[6]*[7]*[9]	BACF22AU600F	[A]	(PREF)	1
			R93DB2-0600F0	[A]	(OPT)	1
			BACF22AV350M	[B]	(PREF)	1
			R51AB3-0350M0	[B]	(OPT)	1
			AS1895-8-600	[C]	(PREF)	1
			BACF22AV600F	[C]	(OPT)	1
			312T1075-1	[D]		1
			312T1075-2	[E]		1
			312T1075-3	[F]		1
312T1073-22	E	715*[6]*[7]*[9]	BACF22AU600F	[A]	(PREF)	1
			R93DB2-0600F0	[A]	(OPT)	1
			BACF22AV350M	[B]	(PREF)	1
			R51AB3-0350M0	[B]	(OPT)	1
			AS1895-8-600	[C]	(PREF)	1
			BACF22AV600F	[C]	(OPT)	1
			312T1075-1	[D]		1
			312T1075-3	[E]		1
			312T1075-3	[F]		1

Duct Material and Test Data
Figure 602 (Sheet 38)

DUCT ASSY PART NUMBER	MATERIAL CODE	HYDROSTATIC PROOF PRESSURE TEST *[1]	FLANGE/FERRULE BOSS PART NUMBER *[32]	LOCATION *[16]	(PREF/OPT)	QTY
312T1073-24	E	267*[6]*[7]*[9]	BACF22AU600F	[A]	(PREF)	1
			R93DB2-0600F0	[A]	(OPT)	1
			BACF22AV350M	[B]	(PREF)	1
			R51AB3-0350M0	[B]	(OPT)	1
			AS1895-8-600	[C]	(PREF)	1
			BACF22AV600F	[C]	(OPT)	1
			312T1075-1	[D]		1
			312T1075-2	[E]		1
			312T1075-3	[F]		1
312T1073-25	E	267*[6]*[7]*[9]	BACF22AU600F	[A]	(PREF)	1
			R93DB2-0600F0	[A]	(OPT)	1
			BACF22AV350M	[B]	(PREF)	1
			R51AB3-0350M0	[B]	(OPT)	1
			AS1895-8-600	[C]	(PREF)	1
			BACF22AV600F	[C]	(OPT)	1
			312T1075-1	[D]		1
			312T1075-3	[E]		1
			312T1075-3	[F]		1
312T1073-26	E	267*[8]	BACF22AU600F	[A]	(PREF)	1
			R93DB2-0600F0	[A]	(OPT)	1
			BACF22AV350M	[B]	(PREF)	1
			R51AB3-0350M0	[B]	(OPT)	1
			AS1895-8-600	[C]	(PREF)	1
			BACF22AV600F	[C]	(OPT)	1
			312T1075-1	[D]		1
			312T1075-3	[E]		1

Duct Material and Test Data
Figure 602 (Sheet 39)

DUCT ASSY PART NUMBER	MATERIAL CODE	HYDROSTATIC PROOF PRESSURE TEST *[1]	FLANGE/FERRULE BOSS PART NUMBER *[32]	LOCATION *[16]	(PREF/OPT)	QTY
312T1073-27	E	267*[8]	BACF22AU600F	[A]	(PREF)	1
			R93DB2-0600F0	[A]	(OPT)	1
			BACF22AV350M	[B]	(PREF)	1
			R51AB3-0350M0	[B]	(OPT)	1
			AS1895-8-600	[C]	(PREF)	1
			BACF22AV600F	[C]	(OPT)	1
			312T1075-1	[D]		1
			312T1075-2	[E]		1
			312T1075-3	[F]		1
312T1073-28	E	267*[8]	BACF22AU600F	[A]	(PREF)	1
			R93DB2-0600F0	[A]	(OPT)	1
			BACF22AV350M	[B]	(PREF)	1
			R51AB3-0350M0	[B]	(OPT)	1
			AS1895-8-600	[C]	(PREF)	1
			BACF22AV600F	[C]	(OPT)	1
			312T1075-1	[D]		1
			312T1075-3	[E]		1
312T1073-29	E	267*[8]	BACF22AU600F	[A]	(PREF)	1
			R93DB2-0600F0	[A]	(OPT)	1
			BACF22AV350M	[B]	(PREF)	1
			R51AB3-0350M0	[B]	(OPT)	1
			AS1895-8-600	[C]	(PREF)	1
			BACF22AV600F	[C]	(OPT)	1
			312T1075-1	[D]		1
			312T1075-2	[E]		1
			312T1075-3	[F]		1

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Figure 602 (Sheet 40)

DUCT ASSY PART NUMBER	MATERIAL CODE	HYDROSTATIC PROOF PRESSURE TEST *[1]	FLANGE/FERRULE BOSS PART NUMBER *[32]	LOCATION *[16]	(PREF/OPT)	QTY
312T1073-30	E	267*[8]	BACF22AU600F	[A]	(PREF)	1
			R93DB2-0600F0	[A]	(OPT)	1
			BACF22AV350M	[B]	(PREF)	1
			R51AB3-0350M0	[B]	(OPT)	1
			AS1895-8-600	[C]	(PREF)	1
			BACF22AV600F	[C]	(OPT)	1
			312T1075-1	[D]		1
			312T1075-3	[E]		1
			312T1075-3	[F]		1
312T1073-31	E	267*[8]	BACF22AU600F	[A]	(PREF)	1
			R93DB2-0600F0	[A]	(OPT)	1
			BACF22AV350M	[B]	(PREF)	1
			R51AB3-0350M0	[B]	(OPT)	1
			AS1895-8-600	[C]	(PREF)	1
			BACF22AV600F	[C]	(OPT)	1
			312T1075-1	[D]		1
			312T1075-2	[E]		1
			312T1075-3	[F]		1
312T1073-32	E	267*[8]	BACF22AU600F	[A]	(PREF)	1
			R93DB2-0600F0	[A]	(OPT)	1
			BACF22AV350M	[B]	(PREF)	1
			R51AB3-0350M0	[B]	(OPT)	1
			AS1895-8-600	[C]	(PREF)	1
			BACF22AV600F	[C]	(OPT)	1
			312T1075-1	[D]		1
			312T1075-3	[E]		1
			312T1075-3	[F]		1
312T1241-1	H	385	BACF22AV300F	[A]	(PREF)	1
			R51AB3-0300F0	[A]	(OPT)	1
			BACF22AV300M	[B]	(PREF)	1
			R51AB3-0300M0	[B]	(OPT)	1
312T1242-1	H	385	BACF22AV300F	[A]	(PREF)	1
			R51AB3-0300F0	[A]	(OPT)	1
			BACF22AV300M	[B]	(PREF)	1
			R51AB3-0300M0	[B]	(OPT)	1

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Figure 602 (Sheet 41)

DUCT ASSY PART NUMBER	MATERIAL CODE	HYDROSTATIC PROOF PRESSURE TEST *[1]	FLANGE/FERRULE BOSS PART NUMBER *[32]	LOCATION *[16]	(PREF/OPT)	QTY
312T1242-2	H	385	BACF22AV300M	[A]	(PREF)	1
			R51AB3-0300M0	[A]	(OPT)	1
			BACF22AV350F	[B]	(PREF)	1
			R51AB3-0350F0	[B]	(OPT)	1
			312T3253-4	[C]		1
312T1242-9	E	385	BACF22AV300M	[A]	(PREF)	1
			R51AB3-0300M0	[A]	(OPT)	1
			BACF22AV350F	[B]	(PREF)	1
			R51AB3-0350F0	[B]	(OPT)	1
			312T3253-4	[C]		1
312T1243-1	H	385	BACF22AV350F	[A]	(PREF)	1
			R51AB3-0350F0	[A]	(OPT)	1
			BACF22AV350M	[B]	(PREF)	1
			R51AB3-0350M0	[B]	(OPT)	1
			312T3253-4	[C]		1
312T1243-7	H	385	BACF22AV350F	[A]	(PREF)	1
			R51AB3-0350F0	[A]	(OPT)	1
			BACF22AV350M	[B]	(PREF)	1
			R51AB3-0350M0	[B]	(OPT)	1
			312T3253-4	[C]		1
312T1243-8	E	385	BACF22AV350F	[A]	(PREF)	1
			R51AB3-0350F0	[A]	(OPT)	1
			BACF22AV350M	[B]	(PREF)	1
			R51AB3-0350M0	[B]	(OPT)	1
			312T3253-4	[C]		1
312T1310-1		NONE	312T1310-8	[A]		1
312T1310-5	E	NONE	312T1310-8	[A]		1
312T1310-9		NONE	312T1310-8	[A]		1
312T2331-15	H	202*[18]	BACF22AU600F	[A]		1
			BACF22AV350M	[B]		1
			312U2355-4	[C]		1
			AS1895-8-600	[D]		1
			BACF22AV600F	[D]		1
			312T1075-1	[E]		1
			312T1075-10	[F]		1
			312T1075-7	[G]		1

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Figure 602 (Sheet 42)

DUCT ASSY PART NUMBER	MATERIAL CODE	HYDROSTATIC PROOF PRESSURE TEST *[1]	FLANGE/FERRULE BOSS PART NUMBER *[32]	LOCATION *[16]	(PREF/ OPT)	QTY
312T2331-16	H	202*[18]	BACF22AU600F	[A]		1
			BACF22AV350M	[B]		1
			312U2355-4	[C]		1
			AS1895-8-600	[D]	(PREF)	1
			BACF22AV600F	[D]	(OPT)	1
			312T3253-9	[E]		1
			312T1075-1	[F]		1
			312T1075-10	[G]		1
			312T1075-7	[H]		1
312T2331-19	H	202*[18]	BACF22AU600F	[A]		1
			BACF22AV350M	[B]		1
			312U2355-7	[C]		1
			AS1895-8-600	[D]	(PREF)	1
			BACF22AV600F	[D]	(OPT)	1
			312T1075-10	[E]		1
			312T1075-12	[F]		1
			312T1075-7	[G]		1
312T2331-20	H	202*[18]	BACF22AU600F	[A]		1
			BACF22AV350M	[B]		1
			AS1895-8-600	[C]	(PREF)	1
			BACF22AV600F	[C]	(OPT)	1
			312U2355-7	[D]		1
			312T3253-9	[E]		1
			312T1075-10	[F]		1
			312T1075-12	[G]		1
			312T1075-7	[H]		1
312T2331-23	H	202*[18]	BACF22AU600F	[A]		1
			BACF22AV350M	[B]		1
			312U2355-7	[C]		1
			AS1895-8-600	[D]	(PREF)	1
			BACF22AV600F	[D]	(OPT)	1
			312T1075-10	[E]		1
			312T1075-12	[F]		1
			312T1075-7	[G]		1

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Figure 602 (Sheet 43)

DUCT ASSY PART NUMBER	MATERIAL CODE	HYDROSTATIC PROOF PRESSURE TEST *[1]	FLANGE/FERRULE BOSS PART NUMBER *[32]	LOCA-TION *[16]	(PREF/ OPT)	QTY
312T2331-24	H	202*[18]	BACF22AU600F	[A]		1
			BACF22AV350M	[B]		1
			AS1895-8-600	[C]	(PREF)	1
			BACF22AV600F	[C]	(OPT)	1
			312U2355-7	[D]		1
			312T3253-9	[E]		1
			312T1075-10	[F]		1
			312T1075-12	[G]		1
			312T1075-7	[H]		1
312T2331-25	H	202*[18]	BACF22AU600F	[A]		1
			AS1895-8-350	[B]		1
			AS1895-8-600	[C]	(PREF)	1
			BACF22AV600F	[C]	(OPT)	1
			312U2355-7	[D]		1
			312T3253-9	[E]		1
			312T1075-10	[F]		1
			312T1075-12	[G]		1
			312T1075-7	[H]		1
312T2351-1	H	210	BACF22AV300F	[A]		1
			BACF22AV300M	[B]		1
312T2351-11	H	210	BACF22AV300M	[A]		1
			R5BAB3-0300FR	[B]		1
			312T2357-7	[C]		1
312T2351-12	H	210	BACF22AV300F	[A]		1
			BACF22AV300M	[B]		1
			312T2357-7	[C]		1
312T2351-14	E	210	BACF22AV300F	[A]		1
			BACF22AV300M	[B]		1
312T3210-1	H	190*[7]*[14]	312T3210-6	[A]		1
			BACF22AU600F	[B]		1
			BACF22AV350M	[C]		1
			AS1895-8-600	[D]	(PREF)	1
			BACF22AV600F	[D]	(OPT)	1
			312T3253-1	[E]		1
			312T3253-2	[F]		1
312T3210-19	H	464*[7]*[14]	AS1895-8-600	[A]	(PREF)	1
			BACF22AV600F	[A]	(OPT)	1
			312T3210-6	[B]		1
			BACF22AU600F	[C]		1
			BACF22AV350M	[D]		1
			312T3253-1	[E]		1
			312T3253-2	[F]		1

Duct Material and Test Data
Figure 602 (Sheet 44)

DUCT ASSY PART NUMBER	MATERIAL CODE	HYDROSTATIC PROOF PRESSURE TEST *[1]	FLANGE/FERRULE BOSS PART NUMBER *[32]	LOCATION *[16]	(PREF/ OPT)	QTY
312T3210-23	H	464*[7]*[14]	312T3210-6	[A]		1
			AS1895-8-600	[B]	(PREF)	1
			BACF22AV600F	[B]	(OPT)	1
			BACF22AU600F	[C]		1
			BACF22AV350M	[D]		1
			312T3253-1	[E]		1
			312T3253-2	[F]		1
			312T3253-9	[G]		1
312T3210-26	H	*[8]	AS18958-600	[A]	(PREF)	1
			BACF22AV600F	[A]	(OPT)	1
			BACF22AV350M	[B]		1
			BACF22AU600F	[C]		1
			312T3253-1	[D]		1
			312T3253-2	[E]		1
			312T3210-6	[F]		1
312T3210-31		464	AS1895-9-600	[A]		1
			AS1895-8-350	[B]		1
			312T3210-6	[C]		1
			312T3253-10	[D]		1
			312T3253-11	[E]		1
			BACF22AU600F	[F]		1
312T3210-32		464	AS1895-9-600	[A]		1
			AS1895-8-350	[B]		1
			312T3210-6	[C]		1
			312T3253-10	[D]		1
			312T3253-11	[E]		1
			BACF22AU600F	[F]		1
312T3210-37		464	AS1895-9-600	[A]		1
			AS1895-8-350	[B]		1
			312T3210-6	[C]		1
			312T3253-10	[D]		1
			312T3253-11	[E]		1
			BACF22AU600F	[F]		1
			312T1075-2	[G]		1
312T3210-38		464	AS1895-9-600	[A]		1
			AS1895-8-350	[B]		1
			312T3210-6	[C]		1
			312T3253-10	[D]		1
			312T3253-11	[E]		1
			BACF22AU600F	[F]		1
			312T1075-18	[G]		1

Duct Material and Test Data
Figure 602 (Sheet 45)

DUCT ASSY PART NUMBER	MATERIAL CODE	HYDROSTATIC PROOF PRESSURE TEST *[1]	FLANGE/FERRULE BOSS PART NUMBER *[32]	LOCATION *[16]	(PREF/ OPT)	QTY
312T3210-40	E	464	AS1895-9-600	[A]		1
			AS1895-8-350	[B]		1
			312T3210-6	[C]		1
			312T3253-10	[D]		1
			312T3253-11	[E]		1
			BACF22AU600F	[F]		1
			312T1075-18	[G]		1
312T3212-1	E	220	BACF22AU300F	[A]		1
			BACF22AU400F	[B]		1
			BACF22AU500F	[C]		1
			BACF22AU600N	[D]		1
312T3212-11	H	220	BACF22AU300F	[A]		1
			BACF22AU400F	[B]		1
			BACF22AU500F	[C]		1
			BACF22AU600N	[D]		1
312T3212-24	E	220	BACF22AU300F	[A]		1
			BACF22AU400F	[B]		1
			BACF22AU500F	[C]		1
			BACF22AU600N	[D]		1
312T3212-25	E	220	BACF22AU300F	[A]		1
			BACF22AU400F	[B]		1
			BACF22AU500F	[C]		1
			BACF22AU600N	[D]		1
312T3213-1	H	180	BACF22AR400M	[A]	(PREF)	1
			BACF22AV400M	[A]	(OPT)	1
			R91AS3-0400M0	[A]	(OPT)	1
			BACF22AU400N	[B]	(PREF)	1
			R93DB2-0400N0	[B]	(OPT)	1
312T3214-1	E	180	BACF22AU400F	[A]	(PREF)	1
			R93DB2-0400F0	[A]	(OPT)	1
			BACF22AU400N	[B]	(PREF)	1
			R93DB2-0400N0	[B]	(OPT)	1
			312T3253-2	[C]		1
312T3220-9	E	533	BACF22AR350M	[A]	(PREF)	1
			BACF22AV350M	[A]	(OPT)	1
			BACF22AV350F	[B]		1
			R51AS3-0350F0	[C]		1
			R51AB3-0350M0	[D]		1

Duct Material and Test Data
Figure 602 (Sheet 46)

DUCT ASSY PART NUMBER	MATERIAL CODE	HYDROSTATIC PROOF PRESSURE TEST *[1]	FLANGE/FERRULE BOSS PART NUMBER *[32]	LOCA-TION *[16]	(PREF/ OPT)	QTY
312T3241-14	E	533	BACF22AR300M	[A]	(PREF)	1
			BACF22AV300M	[A]	(OPT)	1
			BACF22AV350F	[B]		1
312T3243-12	E	533	BACF22AV350F	[A]	(PREF)	1
			R51AB3-0350F0	[A]	(OPT)	1
			BACF22AV350M	[B]	(PREF)	1
			R51AB3-0350M0	[B]	(OPT)	1
			312T3253-4	[C]		1
312T3243-14	E	533	BACF22AV350F	[A]	(PREF)	1
			R51AB3-0350F0	[A]	(OPT)	1
			BACF22AV350M	[B]	(PREF)	1
			R51AB3-0350M0	[B]	(OPT)	1
			312T3253-4	[C]		1
312T3243-18	E	533	BACF22AV350F	[A]	(PREF)	1
			R51AB3-0350F0	[A]	(OPT)	1
			BACF22AV350M	[B]	(PREF)	1
			R51AB3-0350M0	[B]	(OPT)	1
			312T3253-4	[C]		1
312T3243-19	E	533	BACF22AV350F	[A]	(PREF)	1
			R51AB3-0350F0	[A]	(OPT)	1
			BACF22AV350M	[B]	(PREF)	1
			R51AB3-0350M0	[B]	(OPT)	1
			312T3253-4	[C]		1
312T4311-1		240	332T4361-2	[A]		1
			BACF22AV550M	[B]		1

Duct Material and Test Data
Figure 602 (Sheet 47)

DUCT ASSY PART NUMBER	MATERIAL CODE	HYDROSTATIC PROOF PRESSURE TEST *[1]	FLANGE/FERRULE BOSS PART NUMBER *[32]	LOCATION *[16]	(PREF/ OPT)	QTY
312T4336-1	E	167	BACF22AV400F	[A]		1
			BACF22AV400M	[B]		1
312T4351-1	H	167	BACF22AV300M	[A]		1
			BACF22AV350F	[B]		1
312T5321-4	H	238	312T1075-3	[A]		1
			312T5324-2	[B]		1
			AS1895-10-550	[C]		1
			AS1895-8-400	[D]		1
312T5322-5	I	114	AS1895-8-550	[A]		1
			S332T003-20	[B]		1
312T5322-7	I	114	AS1895-8-550	[A]		1
			S332T003-20	[B]		1
			312T3253-4	[C]		1
312T5323-1	I	152	BACF22AU500F	[A]		1
			AS1895-9-550	[B]		1
			BACF22AU300F	[C]		1
312T5323-2	I	152	BACF22AU500F	[A]		1
			AS1895-9-550	[B]		1
			BACF22AU300F	[C]		1
312T5325-1	H	152	AS1895-8-550	[A]		1
			S332T003-17	[B]		1
			312T2357-7	[C]		1
312T5331-1	I	238	AS1895-8-400	[A]		1
			S332T003-18	[B]		1
312T5332-1	I	238	69B89711-1	[A]		1
			AS1895-9-400	[B]		1

Duct Material and Test Data
Figure 602 (Sheet 48)

DUCT ASSY PART NUMBER	MATERIAL CODE	HYDROSTATIC PROOF PRESSURE TEST *[1]	FLANGE/FERRULE BOSS PART NUMBER *[32]	LOCATION *[16]	(PREF/OPT)	QTY
312U2312-1	H	NONE	312U2312-2	[A]		1
312U2312-5	H	NONE	312U2312-2	[A]		1
312U2371-1	A*[2]	335	BACF22AV55OF	[A]		1
			312U2374-1	[B]		1
312U2371-13	A*[2]	335	312U2371-10	[A]		1
			BACF22AV55OF	[B]		1
312U2371-16	E	NONE	332U2338-2	[A]		1
			312U2374-1	[B]		1
312U2371-19	A*[2]	371	312U2374-1	[A]		1
			8036-55ONR	[B]		1
312U2371-2	A*[2]	222	312U2371-10	[A]		1
			312U2371-11	[B]		1
312U2371-20	I	335	R9BAB3-0500F0	[A]		1
			20250-500MR	[B]		1
314T1015-2	B	NONE	R71AB3-0300F0	[A]		1
314T1210-1		NONE	314T1210-5	[A]		1
314T1239-1		NONE	314T3809-3	[A]		1
314T1327-1		NONE	----------			
314T3015-10	B	NONE	R71AB3-0300F0	[A]		1
314T3234-1	E	NONE	314T3234-4	[A]		1
			314T3809-1	[B]	(PREF)	1
			314T3242-2	[B]	(OPT)	1
314T3234-21	E	NONE	314T3234-22	[A]		1
			314T3809-1	[B]	(PREF)	1
			314T3242-2	[B]	(OPT)	1
314T3234-27	H	NONE	314T3234-4	[A]		1
			314T3809-4	[B]	(PREF)	1
			314T3242-6	[B]	(OPT)	1
314T3234-29	H	NONE	314T3234-22	[A]		1
			314T3809-4	[B]	(PREF)	1
			314T3242-6	[B]	(OPT)	1

Duct Material and Test Data
Figure 602 (Sheet 49)

DUCT ASSY PART NUMBER	MATERIAL CODE	HYDROSTATIC PROOF PRESSURE TEST *[1]	FLANGE/FERRULE BOSS PART NUMBER *[32]	LOCATION *[16]	(PREF/ OPT)	QTY
314T4015-12	B	NONE	R71AB3-0300F0	[A]		1
314T4015-2	B	NONE	R71AB3-0300F0	[A]		1
314U2103-1	A	NONE	----------			
314U2109-1		NONE	314U2108-1	[A]		1
315T3114-20	E	NONE	315T3114-27	[A]		1
			315T3114-28	[B]		1
315T3114-30	H	NONE	315T3114-27	[A]		1
			315T3114-28	[B]		1
315T3114-32	H	NONE	315T3114-28	[A]		1
			315T3114-33	[B]		1
315T3123-21	E	NONE	315T3123-16	[A]		1
315T3123-24	E	NONE	315T3123-45	[A]	(PREF)	1
			315T3123-32	[A]	(OPT)	1
			315T3123-33	[B]		1
315T3123-37	H	NONE	315T3123-33	[A]		1
			315T3123-4	[B]		1
			315T3123-45	[C]		1
315T3123-49	H	NONE	315T3123-33	[A]		1
			315T3123-4	[B]		1
			315T3123-52	[C]		1
315T3123-55	H	NONE	315T3123-33	[A]		1
			315T3123-52	[B]		1

Duct Material and Test Data
Figure 602 (Sheet 50)

DUCT ASSY PART NUMBER	MATERIAL CODE	HYDROSTATIC PROOF PRESSURE TEST *[1]	FLANGE/FERRULE BOSS PART NUMBER *[32]	LOCATION *[16]	(PREF/OPT)	QTY
332T1225-1	I	230	BACF22AV400F	[A]	(PREF)	1
			R91AB3-0400F0	[A]	(OPT)	1
			BACF22AV400M	[B]	(PREF)	1
			R91AB3-0400M0	[B]	(OPT)	1
332T1225-9	I	230	BACF22AV400F	[A]	(PREF)	1
			R91AB3-0400F0	[A]	(OPT)	1
			BACF22AV400M	[B]	(PREF)	1
			R91AB3-0400M0	[B]	(OPT)	1
332T1226-6	I	230	BACF22AV400F	[A]	(PREF)	1
			R91AB3-0400F0	[A]	(OPT)	1
			BACF22AV400M	[B]	(PREF)	1
			R91AB3-0400M0	[B]	(OPT)	1
332T1228-1	E*[13]	310*[7]*[14]	8621-400FR	[A]		1
			8621-400FR	[B]		1
			332T3256-2	[C]		1
332T1228-14	E*[13]	310*[7]*[10]	8621-400FR	[A]		1
			8621-400FR	[B]		1
			332T3256-2	[C]		1
332T1228-16	E*[13]	*[8]	8621-400FR	[A]		1
			8621-400FR	[B]		1
			332T3256-2	[C]		1
332T1228-17	E*[13]	*[8]	8621-400FR	[A]		1
			8621-400FR	[B]		1
			332T3256-2	[C]		1
332T1229-1	E*[13]	310*[7]*[10]	BACF22AV550M	[A]	(PREF)	1
			R91AB3-0550M0	[A]	(OPT)	1
			BACF22AV550F	[B]		1

Duct Material and Test Data
Figure 602 (Sheet 51)

DUCT ASSY PART NUMBER	MATERIAL CODE	HYDROSTATIC PROOF PRESSURE TEST *[1]	FLANGE/FERRULE BOSS PART NUMBER *[32]	LOCA-TION *[16]	(PREF/ OPT)	QTY
332T1229-6	E*[13]	310*[7]*[10]	BACF22AV550F	[A]	(PREF)	1
			R91AB3-0550F0	[A]	(OPT)	1
			BACF22AV550M	[B]	(PREF)	1
			R91AB3-0550M0	[B]	(OPT)	1
332T1229-8	E*[13]	*[8]	BACF22AV550M	[A]	(PREF)	1
			R91AB3-0550M0	[A]	(OPT)	1
			BACF22AV550F	[B]	(PREF)	1
			R91AB3-0550F0	[B]	(OPT)	1
332T1229-9	E*[13]	*[8]	BACF22AV550F	[A]	(PREF)	1
			R91AB3-0550F0	[A]	(OPT)	1
			BACF22AV550M	[B]	(PREF)	1
			R91AB3-0550M0	[B]	(OPT)	1
332T1232-1	E*[13]	960*[7]*[12]	BACF22AW300M	[A]	(PREF)	1
			R52AB5-0300M0	[A]	(OPT)	1
			8620-225F	[B]		1
332T1232-14	E*[13]	*[8]	BACF22AW300M	[A]	(PREF)	1
			R52AB5-0300M0	[A]	(OPT)	1
			8620-225F	[B]		1
332T1232-15	E*[13]	*[8]	BACF22AW300M	[A]	(PREF)	1
			R52AB5-0300M0	[A]	(OPT)	1
			8620-225F	[B]		1
332T1232-9	E*[13]	960*[7]*[12]	BACF22AW300M	[A]	(PREF)	1
			R52AB5-0300M0	[A]	(OPT)	1
			8620-225F	[B]		1

Duct Material and Test Data
Figure 602 (Sheet 52)

DUCT ASSY PART NUMBER	MATERIAL CODE	HYDROSTATIC PROOF PRESSURE TEST *[1]	FLANGE/FERRULE BOSS PART NUMBER *[32]	LOCATION *[16]	(PREF/OPT)	QTY
332T1234-1	E*[13]	960*[7]*[12]	BACF22AW300F	[A]	(PREF)	1
			10206	[A]	(OPT)	1
			R52AB5-0300F0	[A]	(OPT)	1
			332T1234-6	[B]	(PREF)	1
			10207	[B]	(OPT)	1
			332T1233-7	[C]		1
			332T3257-4	[D]		1
332T1234-7	E*[13]	960*[7]*[12]	BACF22AW300F	[A]	(PREF)	1
			10206	[A]	(OPT)	1
			R52AB5-0300F0	[A]	(OPT)	1
			332T1234-6	[B]	(PREF)	1
			10207	[B]	(OPT)	1
			332T1233-7	[C]		1
			332T3257-4	[D]		1
332T1234-8	E*[13]	*[8]	BACF22AW300F	[A]	(PREF)	1
			10206	[A]	(OPT)	1
			R52AB5-0300F0	[A]	(OPT)	1
			332T1234-6	[B]	(PREF)	1
			10207	[B]	(OPT)	1
			332T1233-7	[C]		1
			332T3257-4	[D]		1
332T1234-9	E*[13]	*[8]	BACF22AW300F	[A]	(PREF)	1
			10206	[A]	(OPT)	1
			R52AB5-0300F0	[A]	(OPT)	1
			332T1234-6	[B]	(PREF)	1
			10207	[B]	(OPT)	1
			332T1233-7	[C]		1
			332T3257-4	[D]		1
332T1235-16	E*[13]	960*[7]*[12]	BACF22AW300M	[A]	(PREF)	1
			R52AB5-0300M0	[A]	(OPT)	1
			8620-225F	[B]		1

Duct Material and Test Data
Figure 602 (Sheet 53)

DUCT ASSY PART NUMBER	MATERIAL CODE	HYDROSTATIC PROOF PRESSURE TEST *[1]	FLANGE/FERRULE BOSS PART NUMBER *[32]	LOCA-TION *[16]	(PREF/ OPT)	QTY
332T1235-17	E*[13]	960*[7]*[12]	BACF22AW300M	[A]	(PREF)	1
			R52AB5-0300M0	[A]	(OPT)	1
			8620-225F	[B]		1
332T1235-21	E*[13]	*[8]	BACF22AW300M	[A]	(PREF)	1
			R52AB5-0300M0	[A]	(OPT)	1
			8620-225F	[B]		1
332T1235-22	E*[13]	*[8]	BACF22AW300M	[A]	(PREF)	1
			R52AB5-0300M0	[A]	(OPT)	1
			8620-225F	[B]		1
332T1235-23	E*[13]	*[8]	BACF22AW300M	[A]		1
			R52AB5-0300M0	[A]		1
			8620-225F	[B]		1
332T1235-9	E*[13]	960*[7]*[12]	BACF22AW300M	[A]		1
			R52AB5-0300M0	[A]		1
			8620-225F	[B]		1
332T1236-1	E*[13]	960	BACF22AW550M	[A]	(PREF)	1
			R92AB5-0550M0	[A]	(OPT)	1
			332T1244-1	[B]		1
332T1240-12	F	*[8]	BACF22AW550F	[A]	(PREF)	1
			R92AB5-0550F0	[A]	(OPT)	1
			332T1240-8	[B]	(PREF)	1
			332T1240-7	[B]	(OPT)	1
332T1240-13	F	*[8]	BACF22AW550F	[A]	(PREF)	1
			R92AB5-0550F0	[A]	(OPT)	1
			332T1240-8	[B]	(PREF)	1
			332T1240-7	[B]	(OPT)	1

Duct Material and Test Data
Figure 602 (Sheet 54)

DUCT ASSY PART NUMBER	MATERIAL CODE	HYDROSTATIC PROOF PRESSURE TEST *[1]	FLANGE/FERRULE BOSS PART NUMBER *[32]	LOCATION *[16]	(PREF/OPT)	QTY
332T1240-5	F	310*[7]*[20]	BACF22AW550F	[A]	(PREF)	1
			R92AB5-0550F0	[A]	(OPT)	1
			332T1240-8	[B]	(PREF)	1
			332T1240-7	[B]	(OPT)	1
332T1240-9	F	310*[7]*[20]	BACF22AW550F	[A]	(PREF)	1
			R92AB5-0550F0	[A]	(OPT)	1
			332T1240-8	[B]	(PREF)	1
			332T1240-7	[B]	(OPT)	1
332T1241-25	D	NONE	332T1248-1	[A]		1
332T1241-26	D	NONE	332T1248-1	[A]		1
332T1241-27	D	NONE	332T1248-1	[A]		1
332T1241-29	J	NONE	332T1248-1	[A]		1
332T1241-31	J	NONE	332T1248-1	[A]		1
332T1241-32		NONE	332T1248-1	[A]		1
332T1246-1	H	250*[15]	BACF22AR300M	[A]	(PREF)	1
			R51AB3-0300M0	[A]	(OPT)	1
			332T3246-10	[B]		1
332T1700-15	E	NONE	332T1700-4	[A]		1
			332T1700-7	[B]		1
332T1700-17	E	NONE	332T1700-7	[A]		1
			332T1700-8	[B]		1
332T3072-13	G	NONE	332T3072-11	[A]		1
			332T3072-14	[B]		1
			332T3072-5	[C]		1
332T3072-2	G	NONE	332T3072-11	[A]		1
			332T3072-5	[B]		1
332T3072-4	G	NONE	332T3072-11	[A]		1
			332T3072-5	[B]		1

Duct Material and Test Data
Figure 602 (Sheet 55)

DUCT ASSY PART NUMBER	MATERIAL CODE	HYDROSTATIC PROOF PRESSURE TEST *[1]	FLANGE/FERRULE BOSS PART NUMBER *[32]	LOCATION *[16]	(PREF/ OPT)	QTY
332T3077-2	J	45*[1]	332T3077-3	[A]		1
			332T3077-4	[B]		1
332T3232-1	H	200	BACF22AV400M	[A]	(PREF)	1
			R91AB3-0400M0	[A]	(OPT)	1
			65B90192-1	[B]		1
332T3233-1	E	200	BACF22AV400F	[A]	(PREF)	1
			R91AB3-0400F0	[A]	(OPT)	1
			BACF22AV400F	[B]	(PREF)	1
			R91AB3-0400F0	[B]	(OPT)	1
			332T3256-2	[C]		1
332T3234-1	H	200	BACF22AV400M	[A]	(PREF)	1
			R91AB3-0400M0	[A]	(OPT)	1
			65B90192-1	[B]		1
332T3234-7	I	200	BACF22AV400M	[A]	(PREF)	1
			R91AB3-0400M0	[A]	(OPT)	1
			65B90192-1	[B]		1
332T3235-10	E	590	332T3075-1	[A]		1
			332T3079-1	[B]		1
332T3237-18	H	190*[7]*[14]	BACF22AW550F	[A]	(PREF)	1
			R92AB5-0550F0	[A]	(OPT)	1
			BACF22AV550M	[B]	(PREF)	1
			R91AB3-0550M0	[B]	(OPT)	1
332T3237-19	H	*[8]	BACF22AW550F	[A]	(PREF)	1
			R92AB5-0550F0	[A]	(OPT)	1
			BACF22AV550M	[B]	(PREF)	1
			R91AB3-0550M0	[B]	(OPT)	1
332T3237-20	H	*[8]	BACF22AW550F	[A]	(PREF)	1
			R92AB5-0550F0	[A]	(OPT)	1
			BACF22AV550M	[B]	(PREF)	1
			R91AB3-0550M0	[B]	(OPT)	1
332T3237-8	H	190*[7]*[14]	BACF22AW550F	[A]	(PREF)	1
			R92AB5-0550F0	[A]	(OPT)	1
			BACF22AV550M	[B]	(PREF)	1
			R91AB3-0550M0	[B]	(OPT)	1

Duct Material and Test Data
Figure 602 (Sheet 56)

DUCT ASSY PART NUMBER	MATERIAL CODE	HYDROSTATIC PROOF PRESSURE TEST *[1]	FLANGE/FERRULE BOSS PART NUMBER *[32]	LOCATION *[16]	(PREF/OPT)	QTY
332T3238-10	E	590	332T3075-1	[A]		1
			332T3079-1	[B]		1
332T3239-7	E	590	332T3075-1	[A]		1
			332T3079-1	[B]		1
332T3240-10	E	590	BACF22AW550M	[A]	(PREF)	1
			R92AB5-0550M0	[A]	(OPT)	1
			332T3079-1	[B]		1
			332T3075-4	[C]		1
			332T3075-4	[D]		1
			332T3075-4	[E]		1
332T3241-12	H	NONE	332T3241-10	[A]		1
			312T3253-3	[B]		1
			331T3241-4	[C]		1
332T3246-11	E	190*[7]*[12]	BACF22AR300F	[A]	(PREF)	1
			R51AS3-0300F0	[A]	(OPT)	1
			BACF22AR300M	[B]	(PREF)	1
			R51AS3-0300M0	[B]	(OPT)	1
332T3246-14	E	190*[8]	BACF22AR300F	[A]	(PREF)	1
			R51AS3-0300F0	[A]	(OPT)	1
			BACF22AR300M	[B]	(PREF)	1
			R51AS3-0300M0	[B]	(OPT)	1
332T3246-15	E	190*[7]*[12]	AS1895-8-300	[A]		1
			AS1895-9-300	[B]		1
332T3261-10	E	NONE	332T3261-6	[A]		1
			332T3261-7	[B]		1
			312T3253-3	[C]		1
332T3261-11	E	NONE	332T3261-6	[A]		1
			332T3261-7	[B]		1

Duct Material and Test Data
Figure 602 (Sheet 57)

DUCT ASSY PART NUMBER	MATERIAL CODE	HYDROSTATIC PROOF PRESSURE TEST *[1]	FLANGE/FERRULE BOSS PART NUMBER *[32]	LOCA-TION *[16]	(PREF/ OPT)	QTY
332T3261-13	E	NONE	332T3261-16	[A]		1
			332T3261-6	[B]		1
332T3263-15	H	150	BACF22AV400F	[A]	(PREF)	1
			R91AB3-0400F0	[A]	(OPT)	1
			BACF22AV400M	[B]	(PREF)	1
			R91AB3-0400M0	[B]	(OPT)	1
332T3263-8	H	150	BACF22AV400F	[A]	(PREF)	1
			R91AB3-0400F0	[A]	(OPT)	1
			BACF22AV400M	[B]	(PREF)	1
			R91AB3-0400M0	[B]	(OPT)	1
332T4313-14	H	115	BACF22AV400F	[A]		1
			BACF22AV400M	[B]		1
332T4321-1	H	1060	BACF22AW550M	[A]		1
			332T3079-1	[B]		1
			332T4334-4	[C]		1
			332T4334-4	[D]		1
			332T4334-4	[E]		1
332T4322-1	I	1030	332T3079-1	[A]		1
			332T4334-1	[B]		1
332T4323-1	I	1030	332T3079-1	[A]		1
			332T4334-1	[B]		1
332T4324-1	I	1030	332T3079-1	[A]		1
			332T4334-1	[B]		1
332T4325-1	H	240	BACF22AW550F	[A]		1
			R92AB5-0750F0	[B]		1
			332T4331-1	[C]		1

Duct Material and Test Data
Figure 602 (Sheet 58)

DUCT ASSY PART NUMBER	MATERIAL CODE	HYDROSTATIC PROOF PRESSURE TEST *[1]	FLANGE/FERRULE BOSS PART NUMBER *[32]	LOCATION *[16]	(PREF/ OPT)	QTY
332T4326-1	I	240	BACF22AV400F	[A]		1
			BACF22AV550M	[B]		1
			332T4339-1	[C]		1
332T4327-1	I	240	BACF22AV400M	[A]		1
			65B90192-1	[B]		1
332T4327-5	I	240	AS1895-8-400	[A]	(PREF)	1
			BACF22AV400M	[A]	(OPT)	1
			65B90192-1	[B]		1
332T4328-1	H *[30]	238	BACF22AV550M	[A]		1
			BACF22AW550F	[B]		1
332T4335-1	G	NONE	----------			
332T4366-1	I	NONE	----------			
332T4391-1	E	250*[19]*[21]	BACF22AV300F	[A]		1
			BACF22AV300M	[B]		1
332U2312-1	H*[2]	202	BACF22AV400F	[A]		1
			BACF22AV400M	[B]		1
332U2312-9	H	275	AS1895-8-400	[A]		1
			AS1895-9-400	[B]		1
332U2321-1	E	340	BACF22AV550M	[A]		1
			8621-400FR	[B]		1
			8621-400FR	[C]		1
332U2321-11	E	340	AS1895-8-550	[A]		1
			8621-400FR	[B]		1
			8621-400FR	[C]		1
332U2322-13 *[34]	H	1008*[12]	BACF22AW550M	[A]		1
			8620-225F	[B]		1
			332T1233-7	[C]		1
			332T1233-7	[D]		1
332U2322-26	I	1008*[12]	AS1895-10-550	[A]		1
			332T1233-8	[B]		1
			332T1233-8	[C]		1
			8620-225F	[D]		1
332U2322-35	I	1008*[12]	AS1895-10-550	[A]		1
			332T1233-8	[B]		1
			332T1233-8	[C]		1
			8620-225F	[D]		1
332U2324-1	H*[2]	335	BACF22AV550M	[A]		1
			BACF22AW550F	[B]		1
			R92AB5-0750F0	[C]		1

Duct Material and Test Data
Figure 602 (Sheet 59)

DUCT ASSY PART NUMBER	MATERIAL CODE	HYDROSTATIC PROOF PRESSURE TEST *[1]	FLANGE/FERRULE BOSS PART NUMBER *[32]	LOCA-TION *[16]	(PREF/ OPT)	QTY
332U2324-7	H*[2]	335	BACF22AW55OF	[A]		1
			R92AB5-O75OFO	[B]		1
			332U2338-1	[C]		1
332U2324-10	H*[2]	335	AS1895-11-55O	[A]		1
			AS1895-11-75O	[B]		1
			332U2338-1	[C]		1
332U2391-1	H	32O*[12]	BACF22AV3OOF	[A]		1
			312T2357-14	[B]		1
332U2391-5	I	32O*[31]	BACF22AV3OOF	[A]		1
			312T2357-47	[B]		1
355T32O1-1	J	32O	BACF22AM45O	[A]		1
			BACF22AM45O	[B]		1
355T32O3-1	K	NONE	----------			

Duct Material and Test Data
Figure 602 (Sheet 60)

*[1] Hydrostatic proof pressure test (Refer to TESTING AND TROUBLE SHOOTING par. 2.A.) to the given internal pressure (PSIG) at room temperature. Make sure that there is no sign of leaks, cracks, change in overall length or damage to the duct. A maximum of 0.2% permanent set is permitted on the diameter only.

*[2] Maximum in-service design temperature is 450°F.

*[3] Hydrostatic proof pressure test all duct segments to 358 psig, and the assembly, with the flexible connector cables, to 158 psig.

*[4] Flange/ferrule/boss locations on the duct assemblies are identified as follows: [A], [B], [C] . . . etc.

*[5] Maximum in-service design temperature is 400°F.

*[6] A 0.1% permanent set is permitted on the diameter only.

*[7] Before repair, test the duct assembly to the pressure listed in REPAIR 1-1, Fig. 601. After repair, test the duct assembly as shown in TESTING AND TROUBLE SHOOTING, par. 2.B.

*[8] Test the duct assembly as shown in TESTING AND TROUBLE SHOOTING, par. 2.B.

*[9] Leaks must be only in the flex joint and must not be more than 250cc per minute.

*[10] Leakage of 250cc per minute through ball joint is permitted.

*[11] Leakage of 200cc per minute through ball joint is permitted.

*[12] Leakage of 150cc per minute through ball joint is permitted.

*[13] Heat treat stress relieve the reformed duct sections before you weld them to the duct assembly.

*[14] Hydrostatic proof pressure test to the given internal pressure at room temperature. A 200cc per minute of leakage is permitted at proof pressure. Make sure there is no sign of cracks, change in overall length or damage to the duct. A 0.2% permanent set is permitted on the diameter only.

*[15] Hydrostatic proof pressure test to the given internal pressure at room temperature. A 300cc per minute of leakage is permitted at proof pressure. Make sure there is no sign of cracks, change in overall length or damage to the duct. A 0.2% permanent set is permitted on the diameter only.

*[16] Hydrostatic proof pressure test all duct segments to 400 psig, and the assembly, with the flexible connector cables, to 168 psig.

*[17] Hydrostatic proof pressure test to a minimum of one cycle of varying pressure of negative 13.3 psig and positive 228 psig. Make sure the reinforcing rings do not come loose.

*[18] A 0.1% permanent set is permitted on the diameter, and flex joint leakage of 250cc per minute is permitted at proof pressure.

*[19] Refer to Assembly 3.A. for special ball joint assembly procedures.

*[20] Hydrostatic low pressure test to an internal pressure of 35-50 psig at room temperature. Leakage through the ball joint must not be more than 250cc per minute.

*[21] Leakage of 300cc per minute through the ball joint is permitted.

*[22] Stress relieve ducts at 950-1000°F for 5.75-6.25 hrs after the hydrostatic proof pressure test, then clean as specified by SOPM 20-30-03.

*[23] After the hydrostatic test, bake at 180-200°F for 24 hrs.

*[24] After the stress relief, apply phosphate-floride coating (F-14.87).

*[25] Apply BMS 10-82 low emissivity coating (F-17.14), to the exterior of the duct assembly after the stress relief. If the duct has a 69B40951-10 boss, do not apply coating to the boss.

*[26] Apply BMS 10-82 low emissivity coating (F-17.14) before the stress relief.

*[27] Hydrostatic proof pressure test all duct segments to 350 psig, and the assembly, with the flexible connector cables, to 168 psig.

*[28] Replace defective threaded inserts per SOPM 20-50-22.

*[29] This duct assembly includes duct assembly 332T4328-1 and insulation blankets.

*[30] This duct assembly is a subcomponent of insulated duct assembly 332T4320-3.

*[31] Leakage of 50cc per minute through the ball joint is permitted.

*[32] Refer to Fig. 602 for special end cap tools for ducts with no flange or ferrule, identified with title "None".

*[33] Manifold assembly 015T1422-5 is made from manifold assembly 332U2322-13 and the following parts: 332T1233-11 (shim), 11952-300 (hairpin seal), 332T1233-4 (nut), 332T1233-5 (seal ring), and 332T1233-3 (bearing flange).

*[34] Pre SB 767-36-0047

*[35] Post SB 767-36-0047

Material Code

A = Commercially pure titanium per BMS 7-21, grade 3

B = Commercially pure titanium per BMS 7-21, grade 2
(Optional: MIL-T-9046, Type 1, Comp. A, annealed sheet stock for repairs)

C = 321 CRES

D = Corrosion resistant stainless steel tubing per BMS 7-41

E = Nickel alloy 625

F = Nickel alloy 718

G = Nickel alloy 625 sht. per AMS 5599, or nickel alloy tube per BMS 7-188.

H = Nickel alloy 625 sht. per AMS 5599 (duct half).

I = Nickel alloy 625 tube per BMS 7-188 (duct section).

J = 321 or 347 CRES

K = 301 CRES

FLANGE/ FERRULE/BOSS PART NUMBER	PREFERRED GSE TOOL NUMBER	OPTIONAL GSE TOOL NUMBER	OPTIONAL GSE TOOL NUMBER	STANDARD TOOL NUMBER
10206	A36003-33			ST869FB-300-F
10207	A36003-33			ST869FB-300-F
14A233				ST869W3
14A504				
14A545-1	A36014-1			
14A545-11	A36014-1			
14A545-3	A36014-1			
14A628				
14A641-101				
14A641-105				
20250-500MR				ST869-AJ
212T3703-1				
212T3703-2				
213T2119-1	A36016-1			
213T4128-1				
213T4128-4				
213T4128-5				
213T4141-17				
213T4141-20				
2908EJ600	G36006-4			ST869EA-600
312T1075-1				ST869-P
312T1075-10				ST869C-9-18
312T1075-12				ST869-P
312T1075-2				ST869C-10-18
312T1075-3				ST869C-12-16
312T1075-7				ST869C-12-16
312T2357-14				ST869FC-350-M
312T2357-47				ST869C-350-M
312T2357-7				ST869C-9-18

Flange/End Cap Cross Reference Table
Figure 603 (Sheet 1)

FLANGE/ FERRULE/BOSS PART NUMBER	PREFERRED GSE TOOL NUMBER	OPTIONAL GSE TOOL NUMBER	OPTIONAL GSE TOOL NUMBER	STANDARD TOOL NUMBER
312T3210-6				ST869-P
312T3253-1				ST869C-12-16
312T3253-10				ST869C-9-18
312T3253-11				ST869C-12-16
312T3253-2				ST869C-9-18
312T3253-4				ST869C-9-18
312T3253-9				ST869C-10-18
312U2355-4	A36017-1			
312U2355-7	A36017-1			
312U2371-10	A36003-10			ST869FC-550-M
312U2371-11	A36003-34			ST869FB-550-F
312U2374-1				ST869FA-550-M
332T1233-7	A36003-39			ST869FB-200-F
332T1233-7	A36003-174			ST869FC-225-F
332T1233-8	A36003-174			
332T1234-6	A36003-33			ST869FB-300-F
332T1240-7	A36003-14			ST869FB-550-M
332T1240-8	A36003-14			ST869FB-550-M
332T1244-1				
332T3075-1	A36018-1			
332T3075-4				
332T3077-3	A36003-128			
332T3077-4	A36003-43			
332T3079-1	A36003-133			
332T3256-2	A36003-41			

Flange/End Cap Cross Reference Table
Figure 603 (Sheet 2)

FLANGE/ FERRULE/BOSS PART NUMBER	PREFERRED GSE TOOL NUMBER	OPTIONAL GSE TOOL NUMBER	OPTIONAL GSE TOOL NUMBER	STANDARD TOOL NUMBER
332T4331-1				
332T4334-1	A36019-1			
332T4334-4	A36015-1			
332T4339-1	A36013-1			
332T4361-2	A36003-6			ST869FC-550-F
332U2338-1	A36003-10			ST869FC-550-M
65B90192-1	A36003-134	G36023-1		
66-13607-5				ST869C-8-20
69-43887-4				
69B40951-10				ST869C-9-18
69B40951-11				ST869C-12-16
69B40951-2				ST869C-10-18
69B40951-9				ST869C-7-20
69B89711-1	G36011-1			
8036-550NR				ST869AH-550
8620-225F	A36003-39			ST869FC-225F
8620-225F	A36003-174			ST869FB-200F
8621-400FR	G36033-1			
AS1895-10-550	A36003-14			ST869FB-550-M
AS1895-11-550				ST869FC-550-F
AS1895-11-750				ST869FC-750-F
AS1895-8-300	A36003-7			ST869FC-300-M
AS1895-8-350				ST869FC-350-M
AS1895-8-400				ST869FC-400-M
AS1895-8-550	A36003-10			ST869FC-550-M
AS1895-8-600				ST869FC-600-M
AS1895-9-300	A36003-3			ST869FC-300-F
AS1895-9-400				ST869FC-400-F
AS1895-9-550	A36003-6			ST869FC-550-F
AS1895-9-600				ST869FC-600-F
BACF22AM250	G36020-31	G36020-14		ST869EA-250
BACF22AM400				ST869EA-400
BACF22AM450				ST869EA-450

Flange/End Cap Cross Reference Table
Figure 603 (Sheet 3)

FLANGE/ FERRULE/BOSS PART NUMBER	PREFERRED GSE TOOL NUMBER	OPTIONAL GSE TOOL NUMBER	OPTIONAL GSE TOOL NUMBER	STANDARD TOOL NUMBER
BACF22AM250	G36020-31	G36020-14		ST869EA-250
BACF22AM400				ST869EA-400
BACF22AM450				ST869EA-450
BACF22AM600				ST869EA-600
BACF22AN200				ST869EA-200
BACF22AN250	G36020-31	G36020-14		ST869EA-250
BACF22AN300	G36006-1			ST869EA-300
BACF22AN325				ST869EA-325
BACF22AN400				ST869EA-400
BACF22AN450				ST869EA-450
BACF22AN500				ST869EA-500
BACF22AN600				ST869EA-600
BACF22AN650				ST869EA-650
BACF22AR300F	A36003-3			ST869F-F-300
BACF22AR300M	A36003-7			ST869F-M-300
BACF22AR350M	A36003-8			ST869F-M-350
BACF22AR400M	A36003-9			ST869F-M-400
BACF22AU300F	A36003-15			ST869FD-H-300F
BACF22AU400F	A36003-16			ST869FD-H-400F
BACF22AU400N	A36003-27			ST869FD-H-400N
BACF22AU500F	A36003-17			ST869FD-H-500F
BACF22AU600F	A36003-18			ST869FD-H-600F
BACF22AU600N	A36003-29			ST869FD-H-600N
BACF22AV300F	A36003-3			ST869FC-300-F
BACF22AV300M	A36003-7			ST869FC-300-M
BACF22AV350F	A36003-4			ST869FC-350-F

Flange/End Cap Cross Reference Table
Figure 603 (Sheet 4)

FLANGE/ FERRULE/BOSS PART NUMBER	PREFERRED GSE TOOL NUMBER	OPTIONAL GSE TOOL NUMBER	OPTIONAL GSE TOOL NUMBER	STANDARD TOOL NUMBER
BACF22AV350M	A36003-8			ST869FC-350-M
BACF22AV400F	A36003-5			ST869FC-400-F
BACF22AV400M	A36003-9			ST869FC-400-M
BACF22AV550F	A36003-6			ST869FC-550-F
BACF22AV550M	A36003-10			ST869FC-550-M
BACF22AV600F				ST869FC-600-F
BACF22AW300F	A36003-33			
BACF22AW300M	A36003-13			
BACF22AW550F	A36003-34			ST869FB-550F
BACF22AW550M	A36003-14			ST869FB-550M
BACF22BE200W275				ST869EA-275
BACF22BE250W275				ST869EA-275
MS33660-24	G36015-6	A36003-130		ST863-PB-1500
MS33660-40	A36003-132			ST863-PB-2500
NONE-1	A36020-1			
R51AB3-0300F0	A36003-3			ST869FC-300-F
R51AB3-0300M0	A36003-13			ST869FB-300-M
R51AB3-0350F0	A36003-4			ST869FC-350-F
R51AB3-0350M0	A36003-8			ST869FC-350-M
R51AS3-0300F0	A36003-3			ST869F-F-300
R51AS3-0300M0	A36003-7			ST869F-M-300
R51AS3-0350F0				ST869F-F-350
R52AB5-0300F0	A36003-33			ST869FB-300-F
R52AB5-0300M0	A36003-13			ST869FB-300-M
R5BAB3-0300FR	A36003-4			ST869PC-350-F
R83DB2-0500N0				ST869-R
R91AB3-0400F0	A36003-5			ST869FC-400-F
R91AB3-0400M0	A36003-9			ST869FC-400-M
R91AB3-0550F0	A36003-6			ST869FC-550-F
R91AB3-0550M0	A36003-10			ST869FC-550-M
R91AS3-0400M0	A36003-9			ST869FC-400-F
R92AB5-0550F0	A36003-34			ST869FB-550-F
R92AB5-0550M0	A36003-14			ST869FB-550-M
R92AB5-0750F0				ST869FB-750-F

Flange/End Cap Cross Reference Table
Figure 603 (Sheet 5)

FLANGE/ FERRULE/BOSS PART NUMBER	PREFERRED GSE TOOL NUMBER	OPTIONAL GSE TOOL NUMBER	OPTIONAL GSE TOOL NUMBER	STANDARD TOOL NUMBER
R93DB2-0400F0	A36003-16			ST869FD-H-400F
R93DB2-0400N0	A36003-27			ST869FD-H-400N
R93DB2-0600F0	A36003-18			ST869FD-H-600F
R9BAB3-0500F0	A36003-6			ST869FC-550-F
S332T003-17	A36003-6			ST869FC-550-F
S332T003-18	A36003-5			ST869FC-400-F
S332T003-20	A36003-6			ST869FC-550-F

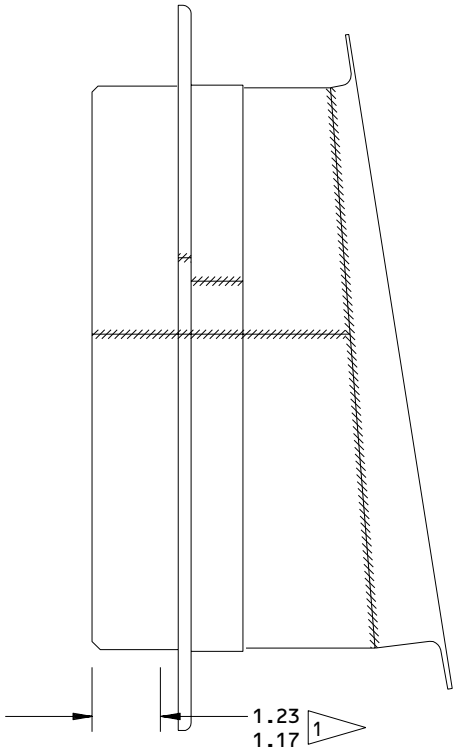
Flange/End Cap Cross Reference Table
Figure 603 (Sheet 6)

DUCT ASSEMBLY - REPAIR 2-1

312T1310-5

1. Coating Repair

A. Repair is only replacement of the original finish. Refer to Refinish Instructions, Fig. 601. Refer to REPAIR - GENERAL for a list of applicable standard practices.



REFINISH

APPLY THERMAL SPRAY COATING AS SHOWN BY 1. NO FINISH ON OTHER SURFACES.

1 APPLY TUNGSTEN CARBIDE COBALT THERMAL SPRAY COATING (F-15.21), 0.003-0.006 THICK, WITH 180 MICROINCH FINISH OR SMOOTHER. OVERSPRAY OF THE COATING IS PERMITTED ON ADJACENT SURFACES

REPAIR
(SAME AS REFINISH)

125 ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

MATERIAL: NICKEL ALLOY 625 (AMS 5599)

ALL DIMENSIONS ARE IN INCHES

312T1310-5
Duct Assembly Repair
Figure 601

131545

TAI DUCT - REPAIR 3-1

NOTE: Refer to REPAIR - GENERAL for a list of applicable standard practices.

A. Repair all other defects, other than the type of cracks listed below, per REPAIR - GENERAL.

B. Repair of Cracks (Fig. 601)

(1) Cracks in regions (A) or (B).

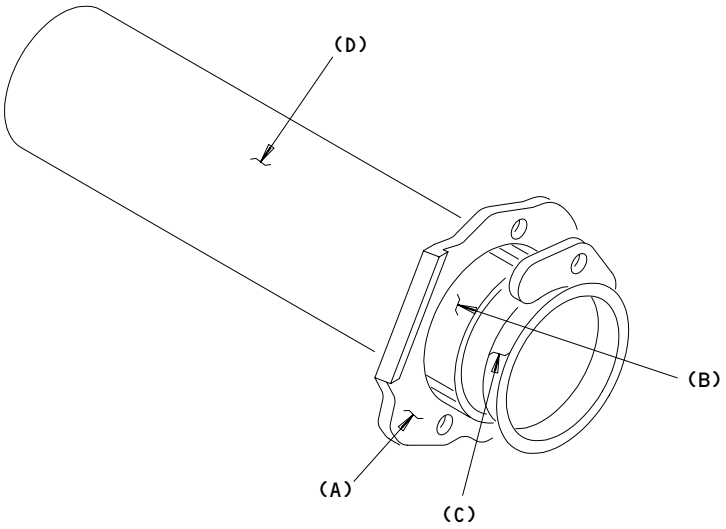
(a) Fusion-weld the cracks by inert gas shielding methods (BAC 5975). Use AWS A5.16 class ERTI-2 or AMS 4951 filler material.

(2) Cracks in region (C).

(a) Complete duct replacement is recommended.

(3) Cracks in region (D).

(a) Repair per REPAIR - GENERAL 4.B. (3).



TAI Duct Repair
Figure 601

964443

DUCT ASSEMBLY - REPAIR 4-1

212T3114-1, -8, -12, -21 thru -26
212T3130-11, -16
212T3131-1, -6, -13 thru -15

NOTE: Refer to REPAIR - GENERAL for a list of applicable standard practices.

1. Repair of cracks in flexible duct section 14A500.

   A. To repair the cracks, replace duct section 14A500 with 14A640-101 as follows:

      (1) Prepare the area to be welded per REPAIR - GENERAL, par. 4.B.(3)(a) thru 4.B.(3)(c), but cut the area from both sides of duct assemblies adjacent to the old flex duct section 14A500 as shown in Fig. 601

      NOTE: New flexible duct section 14A640-101 is approximately 1.00 inch longer than flex duct section 14A500. Make sure the overall duct assembly dimensions, after repair, agree with the original duct assembly overall dimensions.

      (2) Refer to REPAIR - GENERAL, Fig. 607, 608, and 609 for the applicable filler material to fusion weld titanium alloy by inert gas shielding. Also, before you weld the flex connector, make sure the gusset supports at both ends of the cable are aligned within ± two degrees.

      (3) Fusion weld the replacement flexible duct section 14A640-101 into position per REPAIR - GENERAL, par. 4.B.(3)(d).

      (4) Examine all welds for quality, uniformity, undercuts and flux removal. Welds must be good, clean, and have no unwanted materials.

      (5) Hydrostatic proof pressure test ducts per REPAIR 1-1. Leakage of 5 cc/min is permitted around O-ring seals on the flex connector assembly only. All other areas must have no signs of leakage, cracks, change in overall length or damage to the duct assembly. A 0.2% permanent set is permitted on the diameter only.

      (6) Penetrant examine all welds (SOPM 20-20-02).

(7) Disconnect the flex connector, remove the two O-ring seals and stress relieve the two duct sections per REPAIR - GENERAL, par. 4.B.(6).

2. Repair of cracks in flexible duct section 14A504.

A. To repair the cracks, replace duct section 14A504 with 14A641-105 as follows:

(1) Prepare area to be welded per REPAIR - GENERAL, par. 4.B.(3)(a) thru 4.B.(3)(c), but cut the area of duct assemblies adjacent to the old existing flex duct section 14A504 as shown in Fig. 601 and REPAIR - GENERAL, par. 4.B.(7)(c)1). Cut the 6-inch-diameter duct at the locations shown by flagnote 1. Make the X-section the length to let the 14A641-105 flexible duct section come together with the adjacent duct section at the specified dimensions. Fill in the Y-section with the same thickness of material as the 6-inch-diameter pullout duct.

NOTE: New flexible duct section 14A641-105 is approximately 2.30 inches longer than flex duct section 14A504. Make sure the overall duct assembly dimensions, after repair, agree with the original duct assembly overall dimensions.

(2) Refer to REPAIR - GENERAL, Fig. 607, 608, and 609 for the applicable filler material to fusion weld titanium alloy by inert gas shielding. Also, before you weld the flex connector, make sure the gusset supports at both ends of the cable are aligned within ± two degrees.

(3) Fusion weld the replacement flexible duct section 14A641-105 into position per REPAIR - GENERAL, par. 4.B.(3)(d).

(4) Examine all welds for quality, uniformity, undercuts and flux removal. Welds must be good, clean, and have no unwanted materials.

(5) Hydrostatic proof pressure test ducts per REPAIR 1-1. Leakage of 5 cc/min is permitted around O-ring seals on the flex connectors assembly only. All other areas must have no signs of leakage, cracking, change in overall length or damage to the duct assembly. A 0.2% permanent set is permitted on the diameter only.

(6) Penetrant examine all welds (SOPM 20-20-02).

(7) Disconnect the flex connector, remove the two O-ring seals and stress relieve the two duct sections per REPAIR-GEN, par. 4.B.(6).

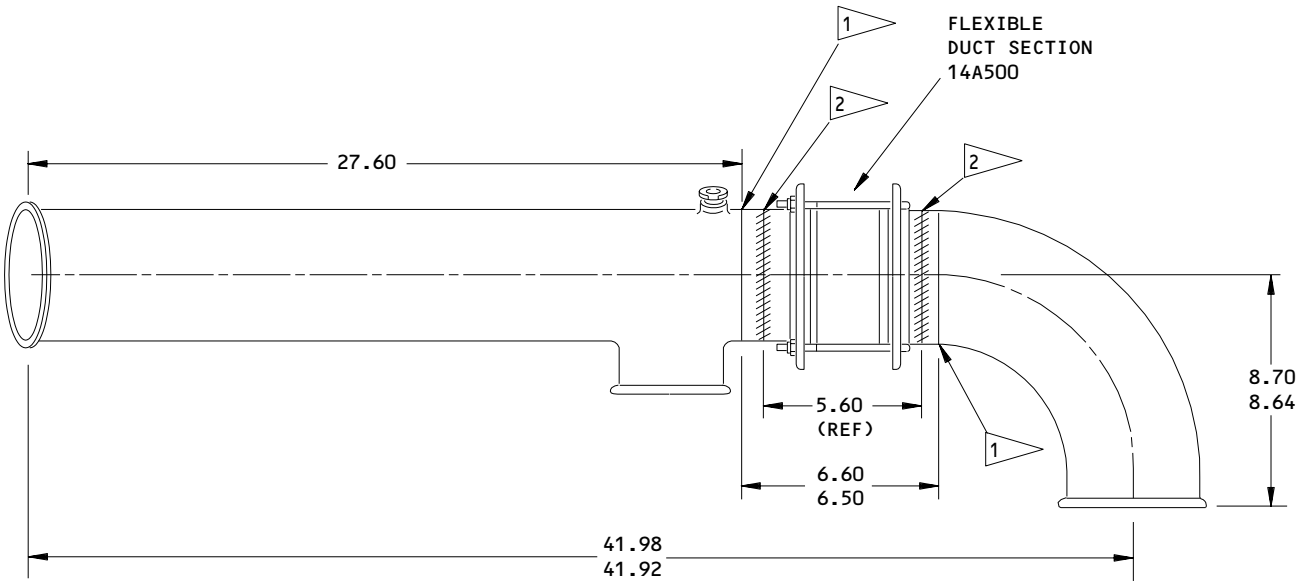
(8) Attach a note to the repaired duct assemblies with the following instructions:

NOTE: When you install this duct in the airplane, do the following:

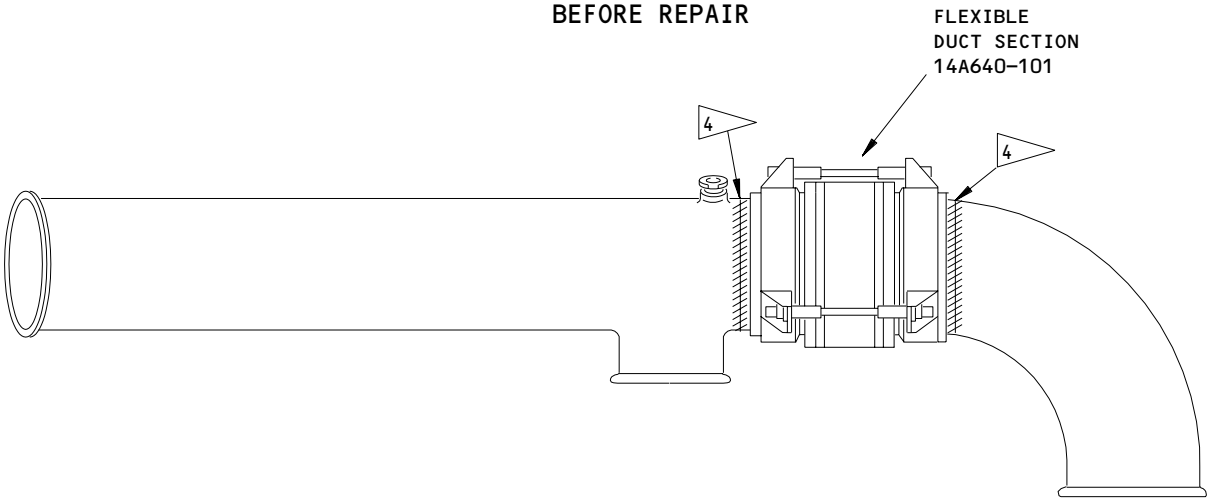
Release the tension in the duct cables. If necessary, loosen the cable nuts.

Make sure there is no tension in the cables before you install the duct V-bend clamps.

After you install the duct V-bend clamps, tighten the nuts on the cables in sequence until the tension in the cables is the same.



BEFORE REPAIR

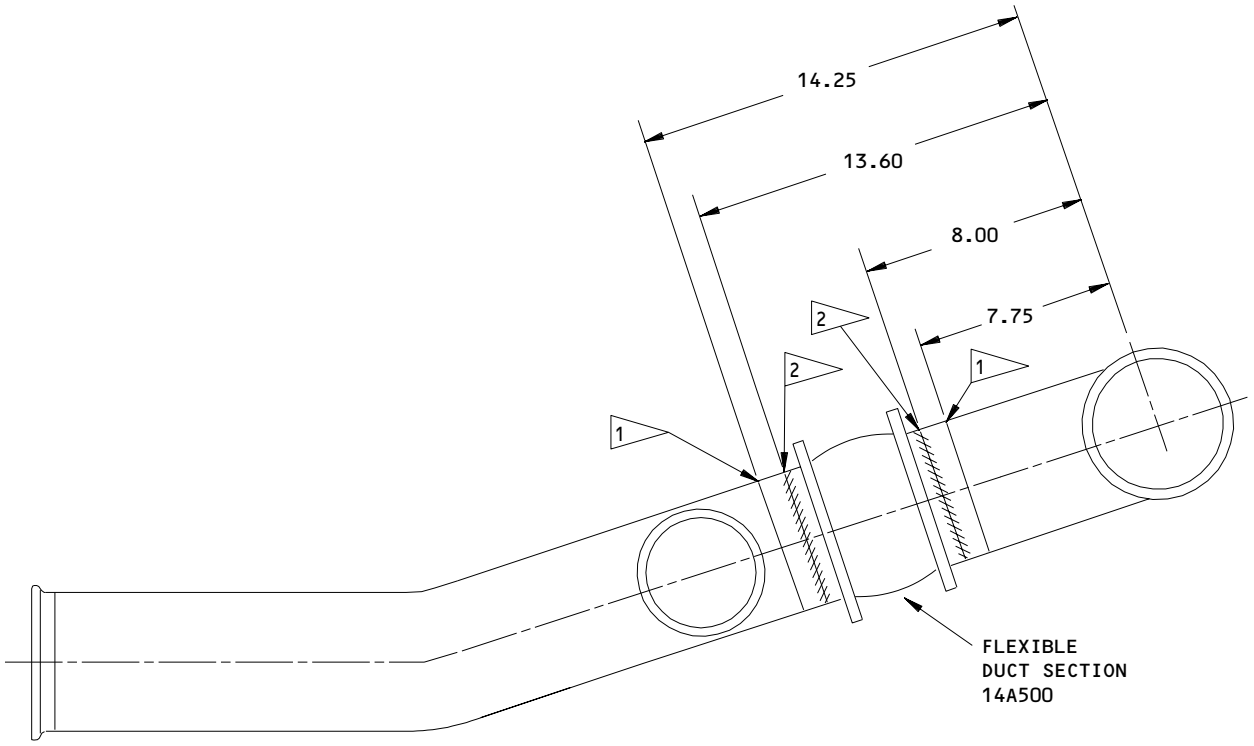


AFTER REPAIR

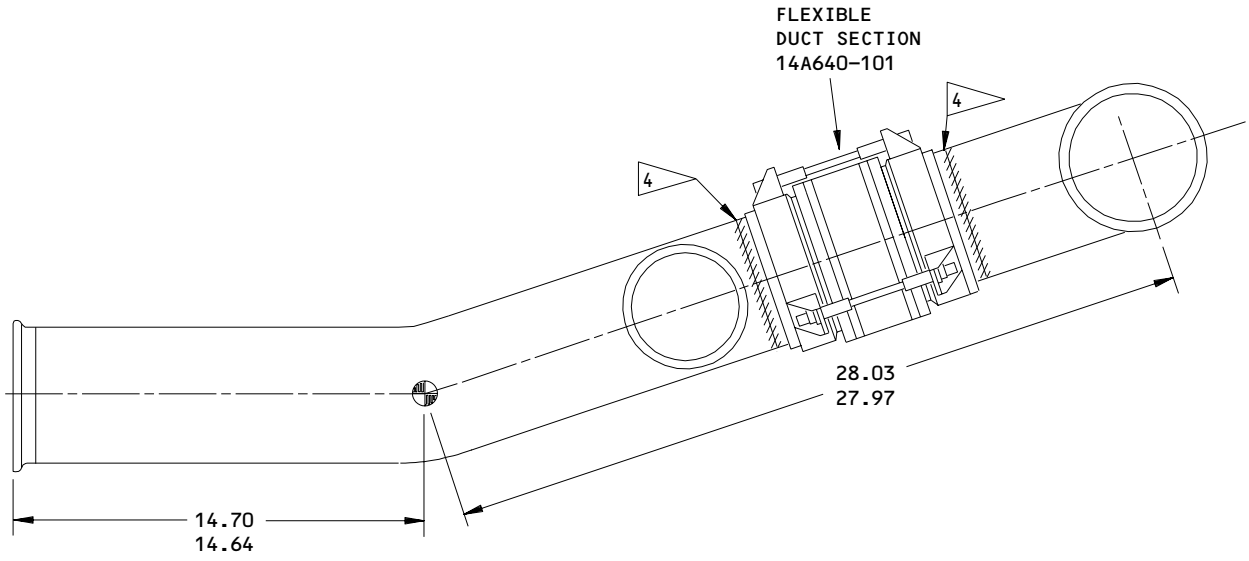
DUCT ASSEMBLY
212T3131-1,-6,-13,-14

Flexible Duct Section Replacement
Figure 601 (Sheet 1)

B63669



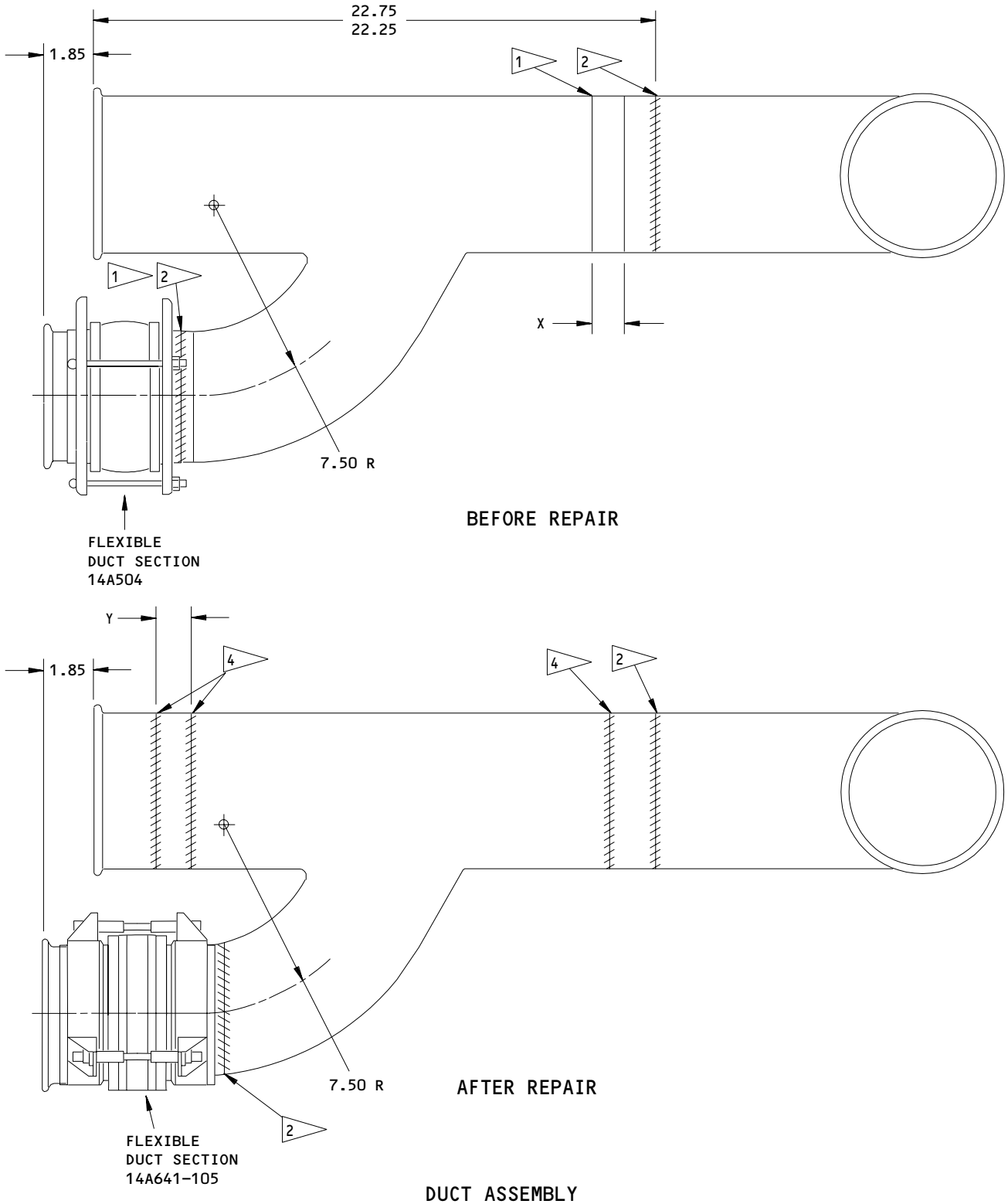
BEFORE REPAIR



AFTER REPAIR

DUCT ASSEMBLY
212T3131-15

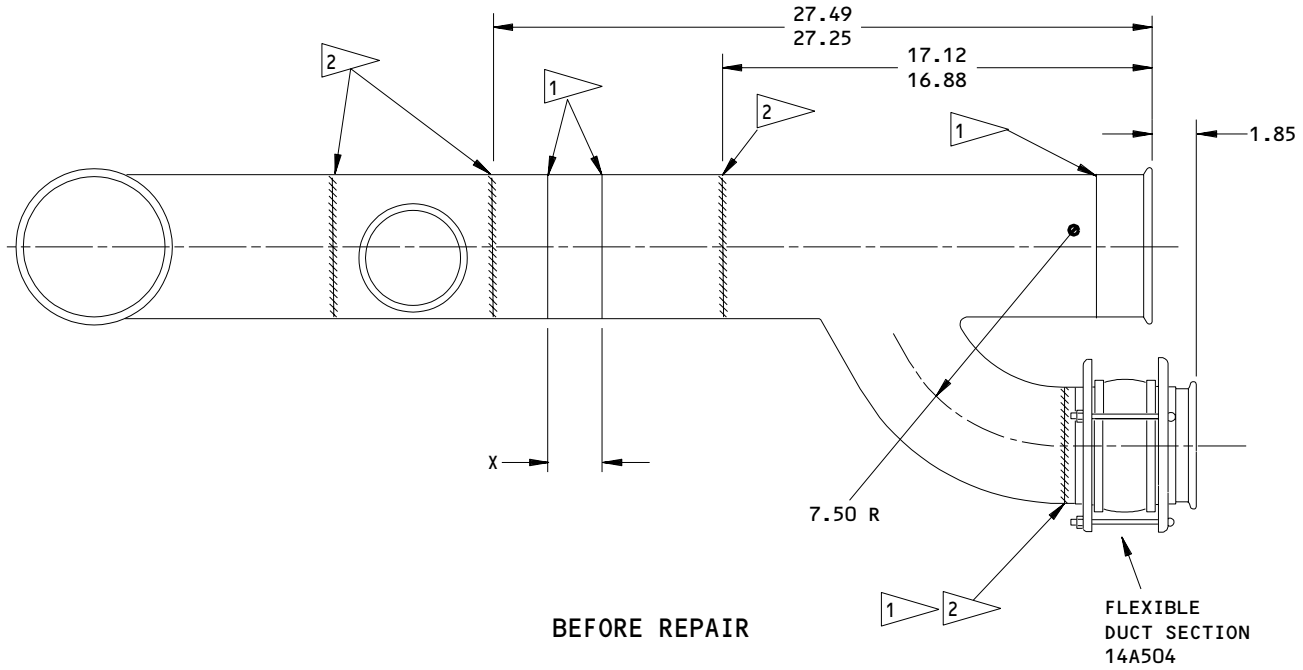
Flexible Duct Section Replacement
Figure 601 (Sheet 2)



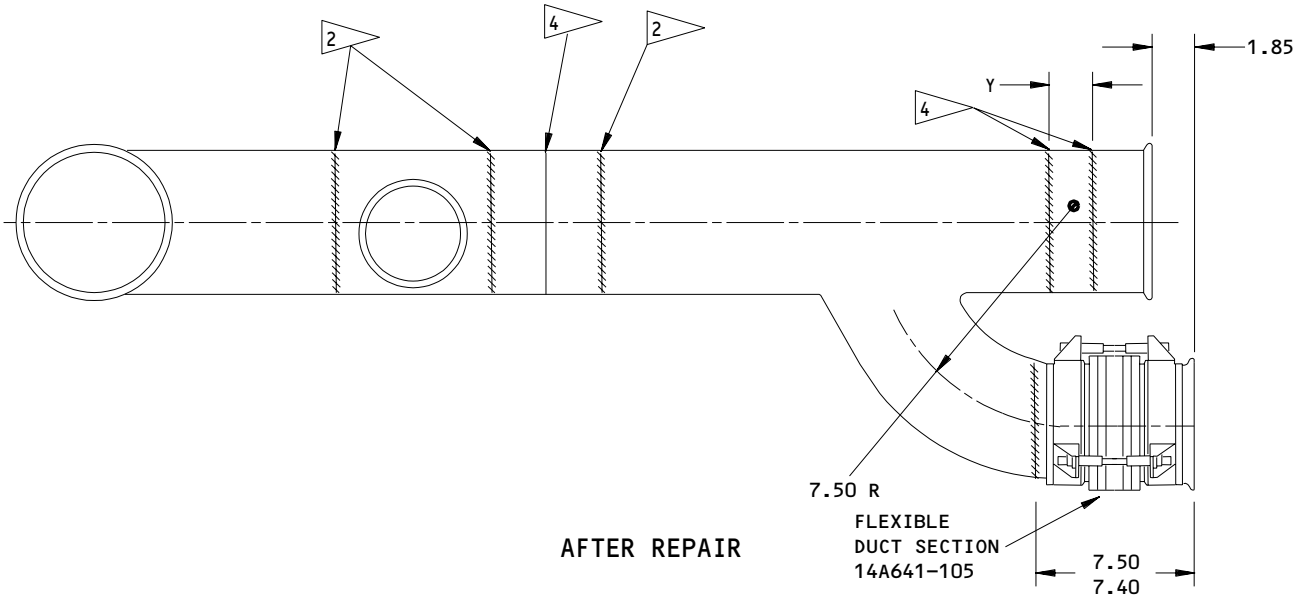
DUCT ASSEMBLY
212T3114-1,-12,-21

Flexible Duct Section Replacement
Figure 601 (Sheet 3)

B64738



BEFORE REPAIR

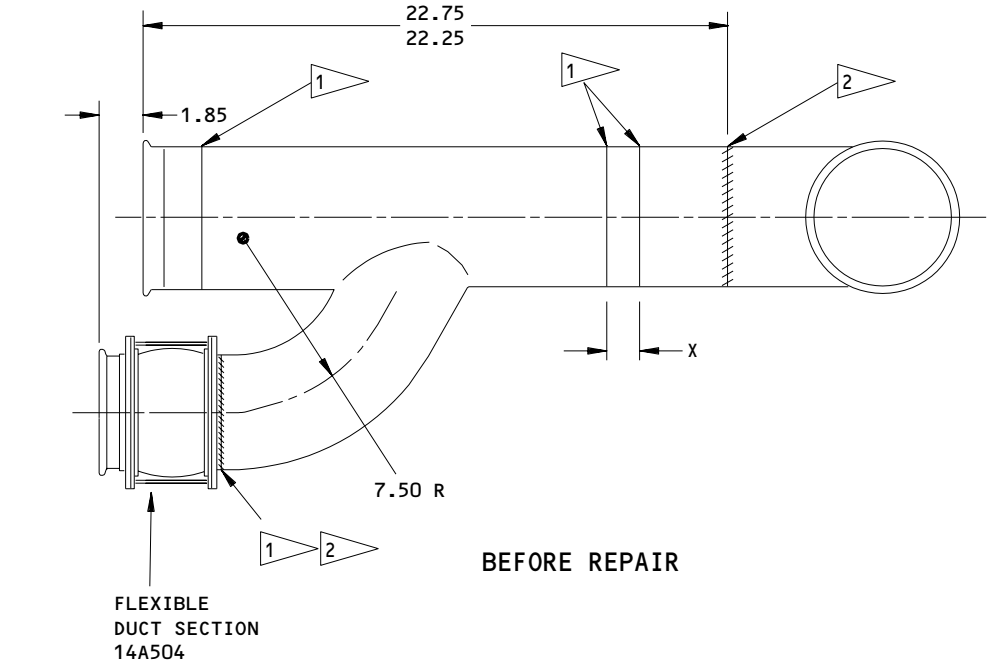


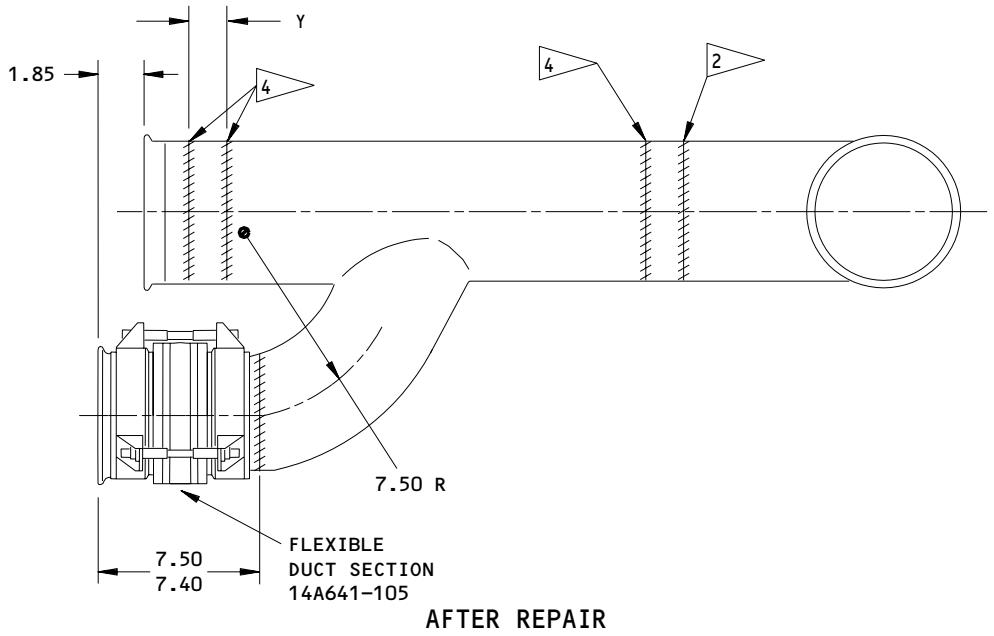
AFTER REPAIR

DUCT ASSEMBLY
212T3114-8,-22

Flexible Duct Section Replacement
Figure 601 (Sheet 4)

B66745

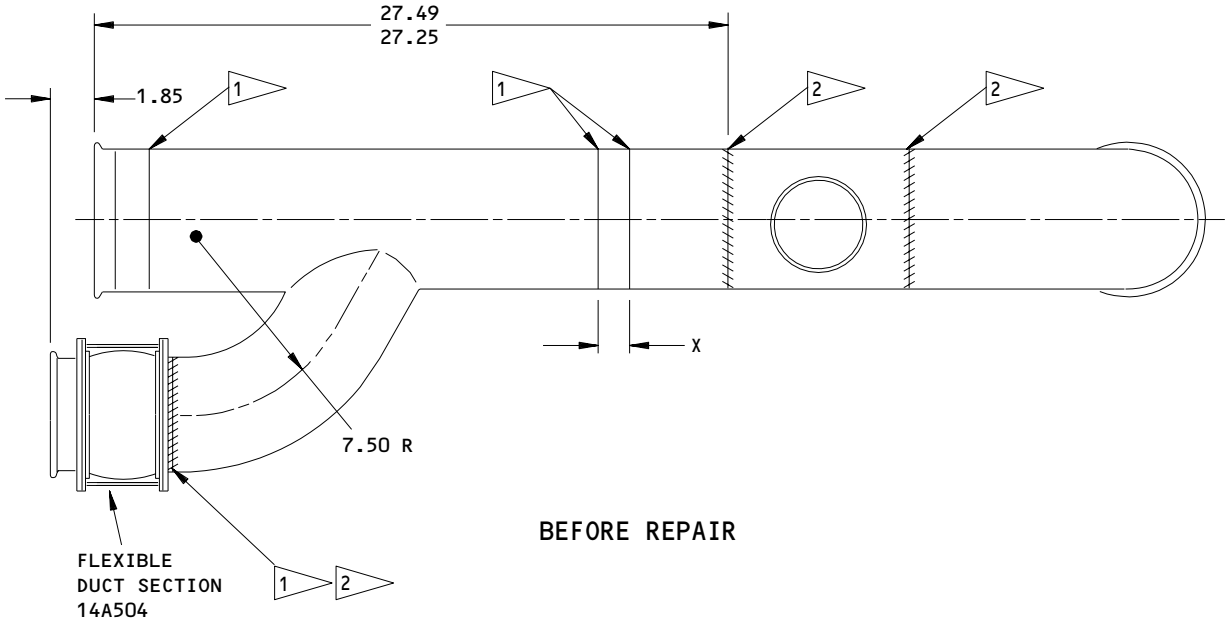




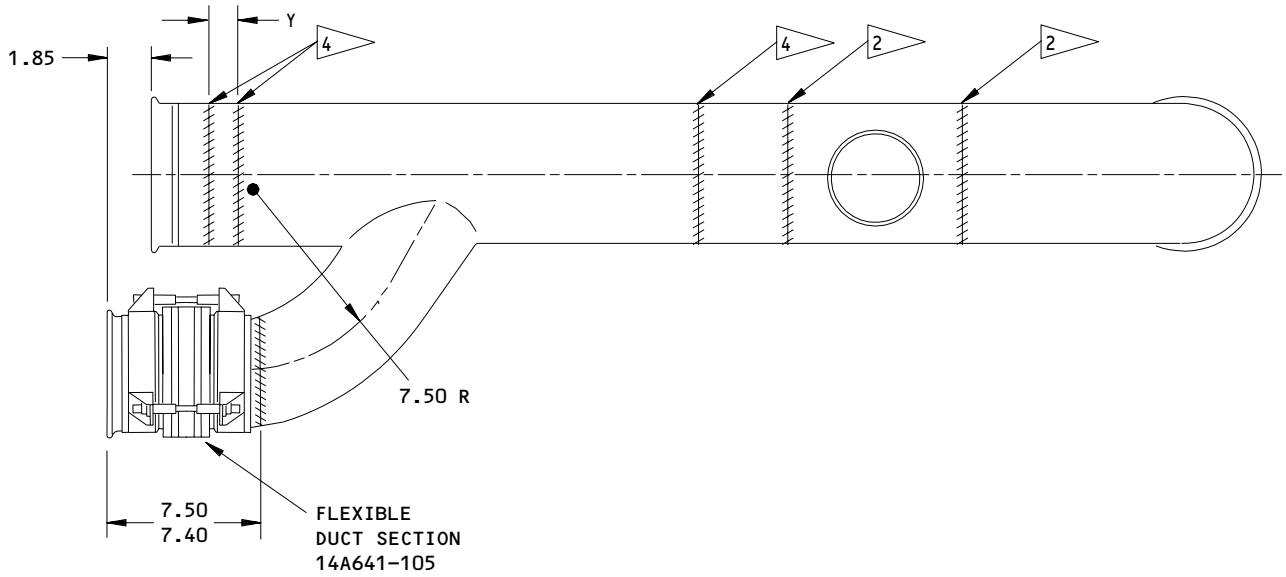
DUCT ASSEMBLY
212T3114-23,-24

Flexible Duct Section Replacement
Figure 601 (Sheet 5)

B66534



BEFORE REPAIR

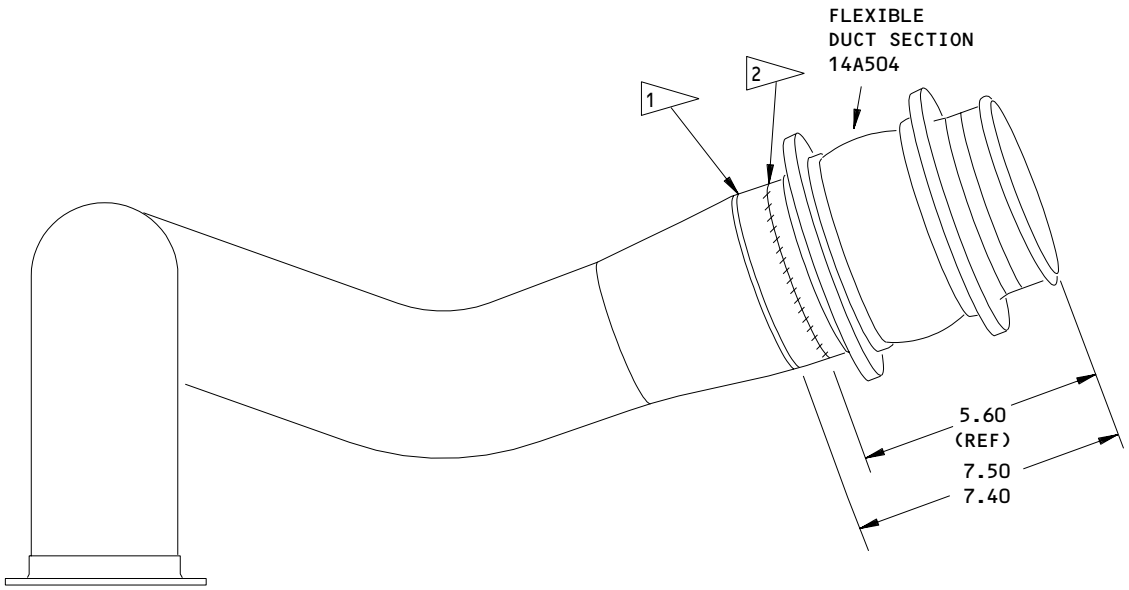


AFTER REPAIR

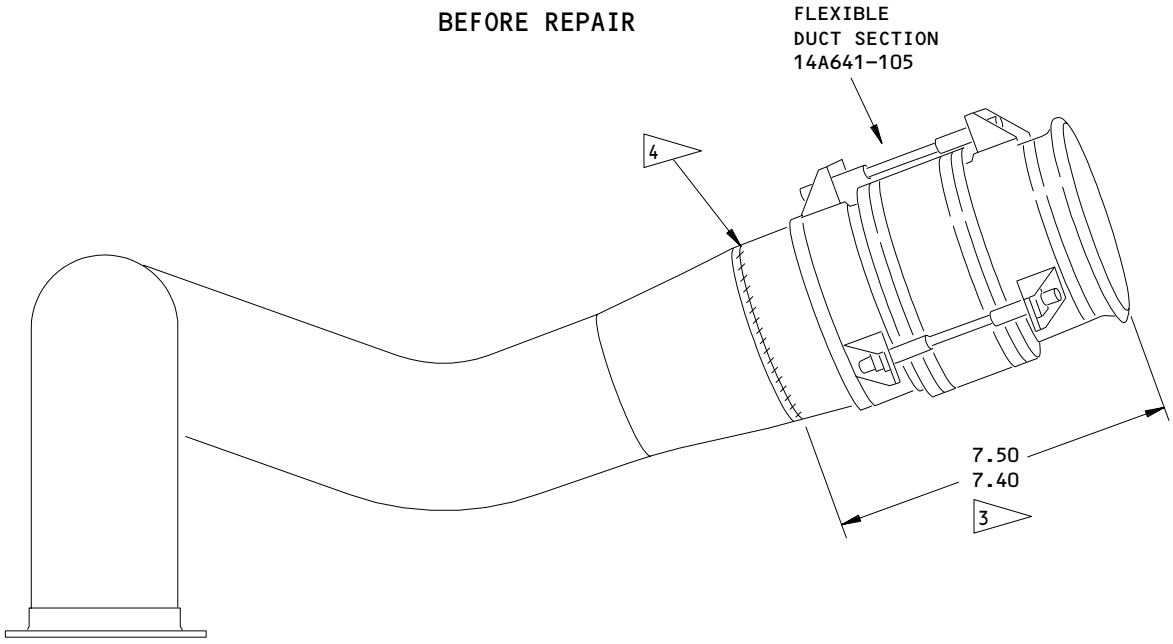
DUCT ASSEMBLY
212T3114-25,-26

Flexible Duct Section Replacement
Figure 601 (Sheet 6)

B66550



BEFORE REPAIR



AFTER REPAIR

1 CUT DUCT HERE

2 ORIGINAL WELD LOCATION

3 ADJUSTMENTS OF THE FLEXIBLE DUCT 14A641-105 LENGTH COULD BE NECESSARY TO GET THIS DIMENSION

4 NEW WELD LOCATION

ALL DIMENSIONS ARE IN INCHES

DUCT ASSEMBLY
212T3130-11,-16

Flexible Duct Section Replacement
Figure 601 (Sheet 7)

B65345

DUCT ASSEMBLY - REPAIR 5-1

332T4313-14

NOTE: Refer to REPAIR - GENERAL for a list of applicable standard practices.
Refer to IPL Fig. 2 for item numbers.

1. Bushing Replacement

A. Remove the old bushings.

B. Examine the mating bores on the duct supports for defects. Design diameter is 0.3750-0.3756 inch. Material is nickel alloy. If you find defects on hole surfaces, ask Boeing for advice.

C. Install replacement bushings by the press-fit or shrink-fit method (SOPM 20-50-03). BMS 5-63 sealant can be used as the installation finish, but this is not necessary.

D. Machining of the installed bushings is not necessary.

DUCT ASSEMBLY - REPAIR 6-1

332T4327-1, -5

NOTE: Refer to REPAIR - GENERAL for a list of applicable standard practices.

1. Cracks in weld bead ends on compression stops on flex duct assemblies.

   A. Record important dimensions to help during assembly after repair.

   B. Grind down the intermittent weld beads that attach the defective compression stop (shield) to the inner race.

   C. Carefully move the defective stop (shield) away from the flex joint.

   D. Clean the area to be welded (SOPM 20-30-03, BAC5758).

   E. Penetrant examine (SOPM 20-20-02) the removed stops (shields) to find the cracks.

   F. Stop drill the ends of all of the cracks.

   G. Fusion weld the cracks (BAC5975 Class B) with Class ERNiCrMo-3 filler metal (AWS A5.14 or AMS5837). Keep the original contour.

   H. Grind and remove unwanted weld deposit until almost flush with the adjacent surface on each face. Keep the original contour and a 63-microinch finish.

   I. Penetrant examine (SOPM 20-20-02) the welds to make sure the original cracks are removed, and to be sure there are no new cracks.

   J. Apply MIL-L-23398 solid film lubricant (F-19.90) to the inner spherical contact surface of the repaired stop (shield).

   K. Install the repaired compression stop (shield) on the flex joint assembly, in the original position. Align the original weld positions of the repaired stop (shield) with those on the inner race.

   L. Use the original weld patterns and fillet weld the stop (shield) to the inner race (BAC5975 Class B) with nickel alloy 625 filler material (AWS A5.14, Class ERNiCrMo-3). Make sure the welds do not cause interference with the free motion of the flex joint.

   M. Grind and remove unwanted weld deposit until the surface of the weld deposit is approximately 0.010 inch above the adjacent surface.

   N. Penetrant examine (SOPM 20-20-02) the track welds to be sure there are no cracks.

   O. Give the duct assembly a proof pressure test (REPAIR 1-1).

P. Make sure the flex joint can move within plus or minus 5 degrees.

Q. An X-ray inspection is not necessary.

ASSEMBLY

1. Content

   A. The ducts in Repair 1-1, Fig. 601 can be assembled by standard industry practices. For ducts with special assembly procedures, use the instructions given below.

2. Material

   NOTE: Equivalent substitutes can be used.

   A. Antiseize compound -- Bostik Never-Seez Pure Nickel Special (replaces Ease-Off 990) (SOPM 20-60-03)

3. Equipment

   A. A36004-15, -20 -- Ball joint installation equipment

4. Assembly

   A. Ball Joint Assembly

      NOTE: Refer to Fig. 701 for duct applicability and corresponding torque values.

      (1) Make sure that threads of nut and retainer are clean and have no burrs.

      (2) Apply a thin layer of antiseize compound to threads of nut and retainer (SOPM 20-50-07).

      (3) Assemble the joint without the shim and tighten the nut to torque A (Fig. 701).

      (4) Unless specified, loosen the nut to torque B (Fig. 701). Then measure the shim gap with a filler gage in three equally spaced positions. Shim thickness must be +0.000/-0.005 of feeler gage measurement.

      (5) Disassemble the joint and apply antiseize compound to the threads (SOPM 20-50-07).

      (6) Assemble the joint again with the hairpin seal and shim pack. Make sure the shim pack is concentric to the retainer flange (Fig. 703).

      (7) Tighten the nut to torque C (Fig. 701).

      (8) Tap the nut with a soft mallet and tighten it again to the torque C value. Do this until no further movement of nut occurs at specified torque.

(9) Install lockwire between nut and retainer (SOPM 20-50-02).

(10) After assembly and before the hydrostatic pressure test, heat the duct assembly to 550°F, hold at this temperature for 30 minutes and then let it cool to room temperature.

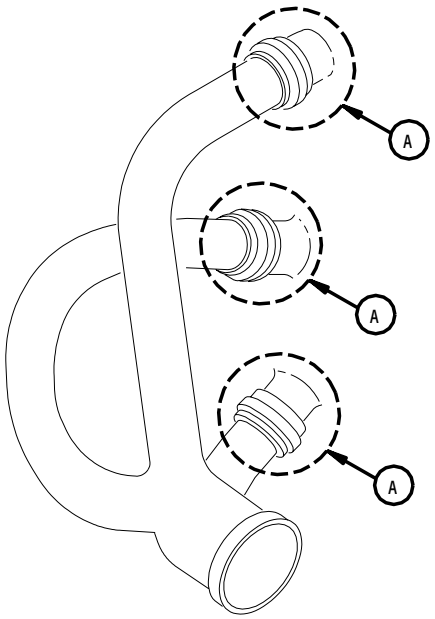
DUCT ASSEMBLY PART NUMBER	FOLLOW BALL JOINT ASSEMBLY PROCEDURE STEPS 4.A.( )	BALL JOINT ASSY TORQUE VALUES (LB-FT, UNLESS SHOWN DIFFERENTLY)		
		A See Assy 4.A.(3)	B See Assy 4.A.(4)	C See Assy 4.A.(7)
312T1073-11,-12, -17,-18,-22, -24,-25	1 thru 10	75-85	15-20	130-150
312T2331-15,-16, -19,-23,-24	1 thru 7,9	75-85	15-20	130-150
312T3210-1,-19, -23	1 thru 5,7,8,9,10	75-85	15-20	130-150
332T1228-1	1 thru 5,7,8,9,10	75-85	15-20	130-150
332T1228-14	1 thru 5,7,8,9,10	130-150	15-20	130-150
332T1229-1,-6	1 thru 5,7,8,9,10	75-85	15-20	130-150
332T1232-1,-9	1 thru 5,7,8,9,10	50-60	15-20	50-60
332T1234-1,-7	1 thru 9	50-60	15-20	50-60
332T1235-9,-16, -17	1 thru 9	50-60	15-20	50-60
332T1240-5,-9	1 thru 5,7,8,9,10	130-150	15-20	130-150
332T3237-8	1 thru 5,7,8,9,10	75-85	15-20	130-150
332T3246-11,-14, -15	1 thru 7,9	50-60	16.7-20	50-60
332T4391-1	1 thru 7,9	50-60	15-20	50-60
332U2322-13	1 thru 7,9,10	95-105	15-20	95-105
332U2322-26,-35	1 thru 7,9	400 (LB-IN)	*[1]	800 (LB-IN)
015T1422-5	1 thru 7,9	400 (LB-IN)	*[1]	800 (LB-IN)

*[1] Do not loosen the nut before the gap measurement

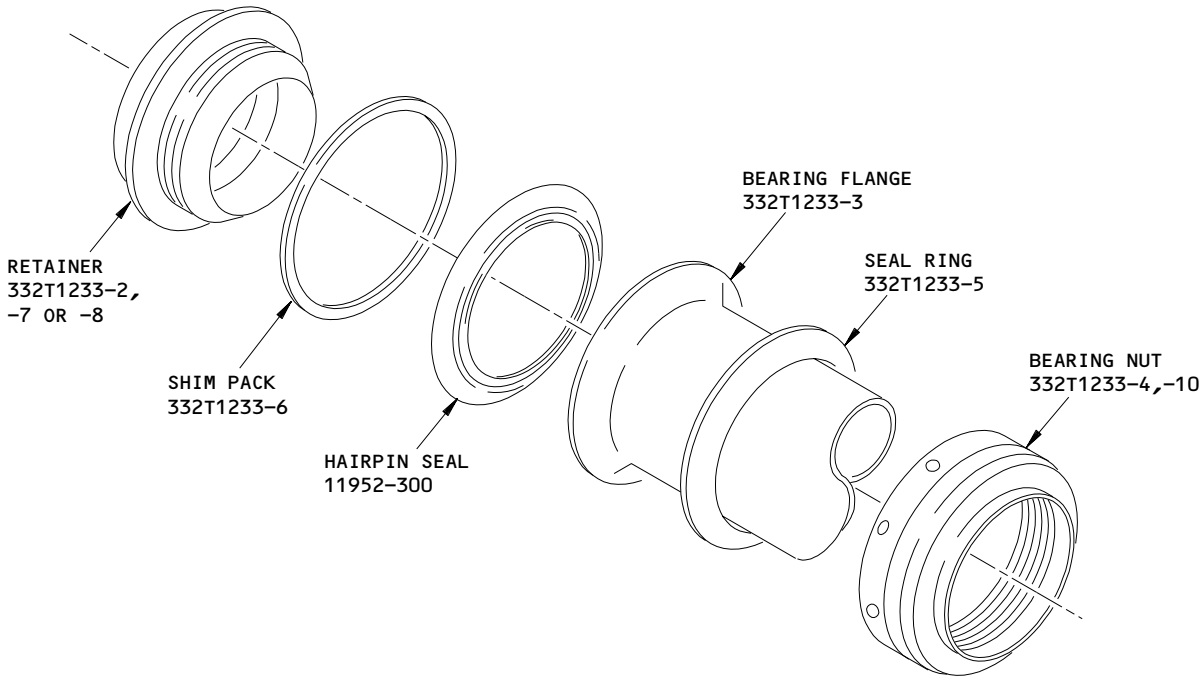
Ball Joint Assembly Torque Values
Figure 701

DUCT ASSEMBLY PART NO.	DUCT BALL JOINT SHIM PART NO. (QTY)
312T1073-11,-12,-17,-18,-22, -24,-25 312T2331-15,-16,-19,-23,-24 312T3210-1,-19,-23	312T3256-5 (2)
332T1228-1,-14	----------
332T1229-1,-6	332T3257-5 (1)
332T1232-1,-9 332T1234-1,-7 332T1235-9,-16,-17	332T1233-6 (1)
332T1240-5,-9 332T3237-8	332T3257-5 (1)
332T3246-11,-14,-15	69-56508-2 (1)
332T4391-1	69-56508-2 (1)
332U2322-13	332T1233-6 (3)
015T1422-5 332U2322-26,-35	332T1233-11 (3)

Ball Joint Shim Part Numbers
Figure 702



MANIFOLD ASSEMBLY



015T1422-5
332U2322-13,-26,-35
Manifold Assembly Details
Figure 703

G74527

FITS AND CLEARANCES

DUCT ASSEMBLY PART NUMBER	BALL JOINT ASSEMBLY TORQUE VALUES (LB-FT UNLESS SHOWN DIFFERENTLY)		
	TORQUE BEFORE SHIM INSTALLATION	INTERMEDIATE TORQUE FOR SHIM GAP MEASUREMENT	TORQUE AFTER SHIM INSTALLATION
312T1073-11,-12,-17,-18, -22,-24,-25	75-85	15-20	130-150
312T2331-15,-16,-19,-23, -24	75-85	15-20	130-150
312T3210-1,-19,-23	75-85	15-20	130-150
332T1228-1	75-85	15-20	130-150
332T1228-14	130-150	15-20	130-150
332T1229-1,-6	75-85	15-20	130-150
332T1232-1,-9	50-60	15-20	50-60
332T1234-1,-7	50-60	15-20	50-60
332T1235-9,-16,-17	50-60	15-20	50-60
332T1240-5,-9	130-150	15-20	130-150
332T3237-8	75-85	15-20	130-150
332T3240-11,-14,-15	50-60	16.7-20	50-60
332T4391-1	50-60	15-20	50-60
332U2322-13	95-105	15-20	95-105
332U2322-26,-35	400 (LB-IN)		800 (LB-IN)
015T1422-5	400 (LB-IN)		800 (LB-IN)

Torque Table
Figure 801

SPECIAL TOOLS, FIXTURES AND EQUIPMENT

NOTE: Equivalent substitutes can be used.

1. Pneumatic Ducts Hydrostatic Pressure Test Plug Set -- A36003-173, ST869FC225F
2. Ball Joint Installation Equipment -- A36003-14, A36004-15, -20
3. Flange Reforming Tool -- 6FT001-101, Adams-Bird, VOTDH1

ILLUSTRATED PARTS LIST

1. This section lists and illustrates replaceable or repairable component parts. The Illustrated Parts Catalog contains a complete explanation of the Boeing part numbering system.

2. Indentures show parts relationships as follows:

    Assembly
      Detail Parts for Assembly
      Subassembly
      Attaching Parts for Subassembly
        Detail Parts for Subassembly

    Detail Installation Parts (Included only if installation parts may be returned to shop as part of assembly)

3. One use code letter (A, B, C, etc.) is assigned in the EFF CODE column for each variation of top assembly. All listed parts are used on all top assemblies except when limitations are shown by use code letter opposite individual part entries.

4. Letter suffixes (alpha-variants) are added to item numbers for optional parts, Service Bulletin modification parts, configuration differences (except left- and right-hand parts), product improvement parts, and parts added between two sequential item numbers. The alpha-variant is not shown on illustrations when appearance and location of all variants of the part is the same.

5. Service Bulletin modifications are shown by the notations PRE SB XXXX and POST SB XXXX.

    A. When a new top assembly part number is assigned by Service Bulletin, the notations appear at the top assembly level only. The configuration differences at detail part level are then shown by use code letter.

    B. When the top assembly part number is not changed by the Service Bulletin, the notations appear at the detail part level.

6. Parts Interchangeability

Optional (OPT)	The parts are optional to and interchangeable with other parts having the same item number.
Supersedes, Superseded By (SUPSDS, SUPSD BY)	The part supersedes and is not interchangeable with the original part.
Replaces, Replaced By (REPLS, REPLD BY)	The part replaces and is interchangeable with, or is an alternate to, the original part.

VENDORS

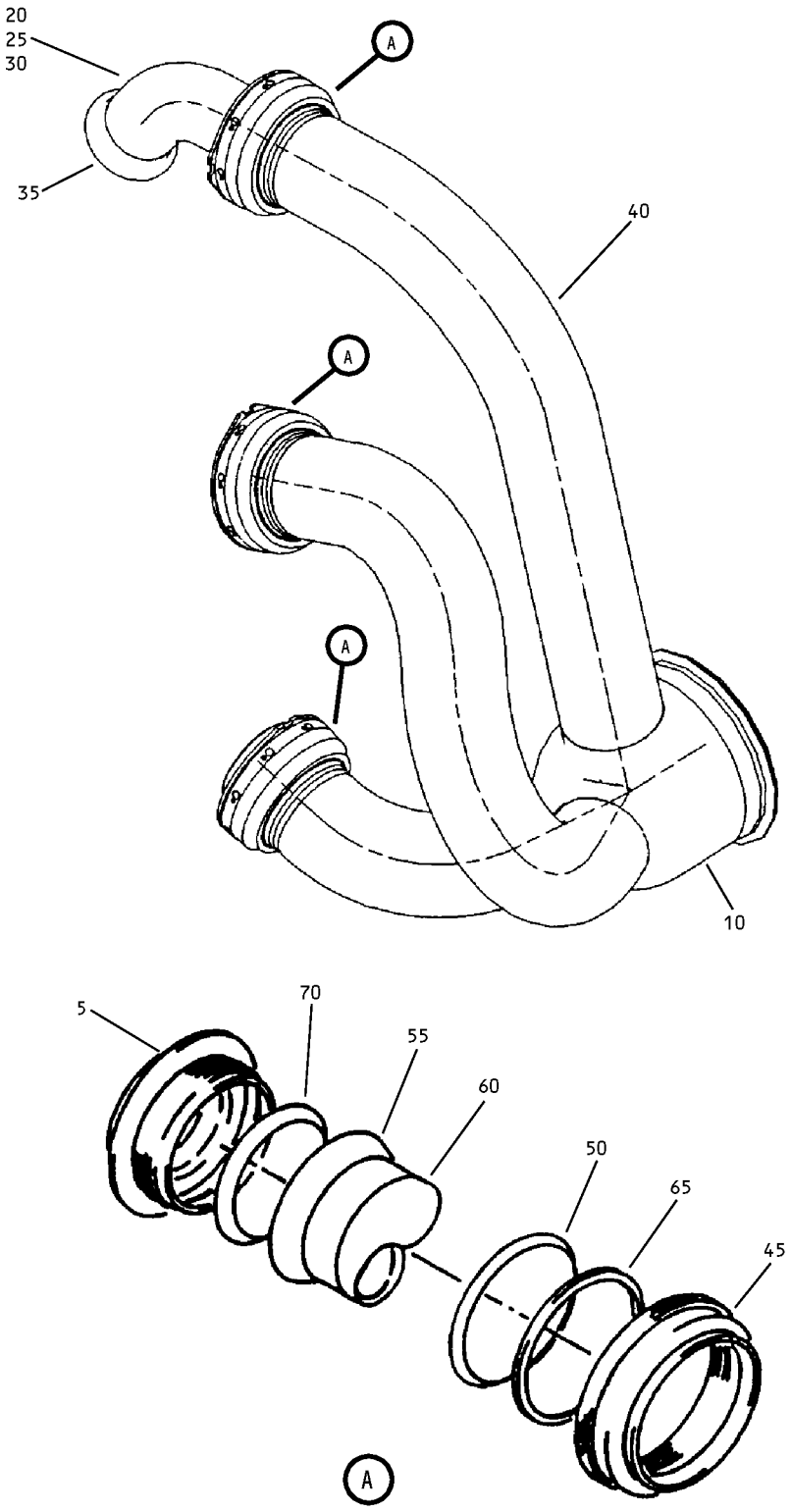
OTDH1 INNOVATIVE SUPPORT EQUIPMENT ENGINEERING INC
745 POTSGROVE PLACE
TRACY, CALIFORNIA 95377-9023

06689 EXOTIC METAL FORMING CO
5411 SOUTH 226TH STREET
KENT, WASHINGTON 98032-1891

15284 PERKINELMER INC DBA PERKINELMER FLUID SERVICES
11642 OLD BALTIMORE PIKE
BELTSVILLE, MARYLAND 20705-1294
FORMERLY VONYS5; EG&G PRESSURE SCIENCE INC

71191 KOP-COAT INC
5431 DISTRICT BLVD
LOS ANGELES, CALIFORNIA 90040

93965 PACIFIC CHEMICAL, DIV OF INTL LP
500 SEVENTH AVE SOUTH, PO BOX 558
KIRKLAND, WASHINGTON 98083



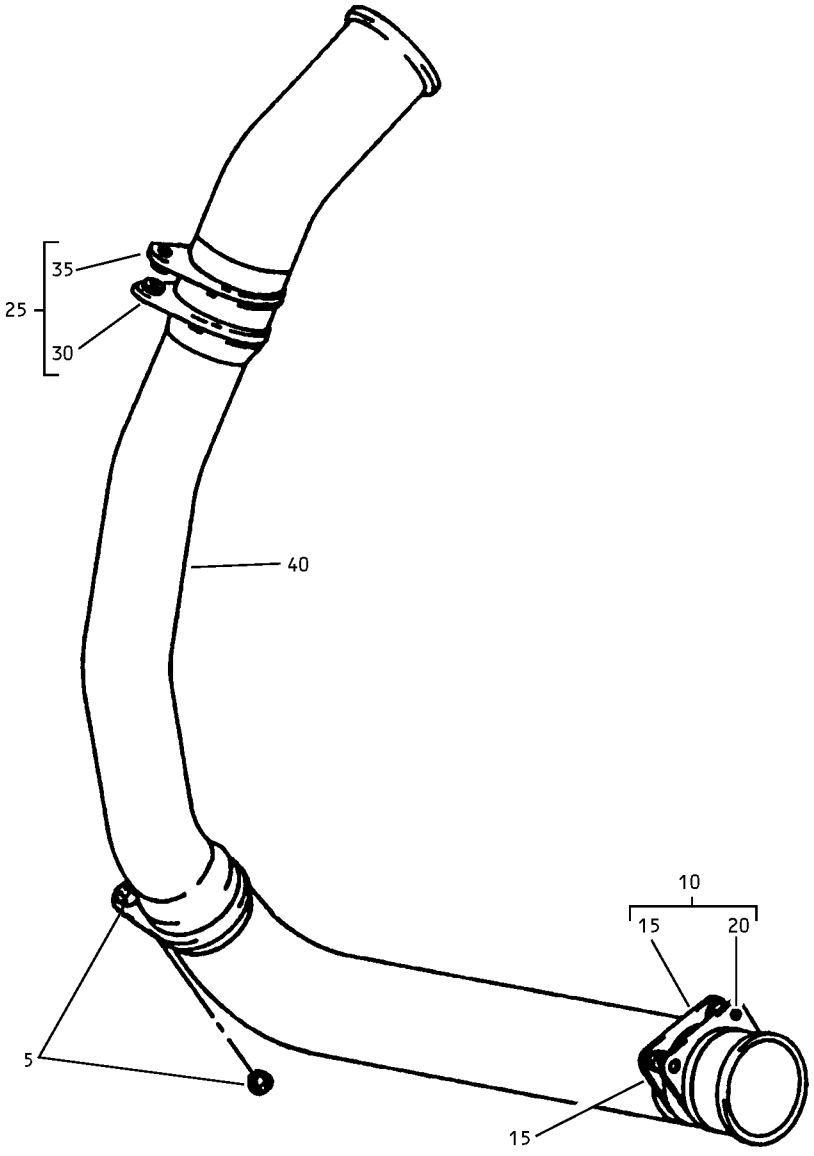
14th Stage Manifold Assembly
Figure 1

M36790

FIG. & ITEM	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1234567	EFF CODE	QTY PER ASSY
01-					
-1	332U2322-13		MANIFOLD ASSY-14TH-STAGE (PRE SB 767-36-0047)	A	RF
-1A	015T1422-5		MANIFOLD ASSY-14TH-STAGE (POST SB 767-36-0047)	B	RF
-1B	332U2322-26		MANIFOLD ASSY-14TH-STAGE	C	RF
-1C	332U2322-35		MANIFOLD ASSY-14TH-STAGE	D	RF
5	332T1233-7		.RETAINER	AB	1
-5A	332T1233-8		.RETAINER	CD	1
10	332U2322-10		.DUCT ASSY	AB	1
-10A	332U2322-25		.DUCT ASSY	C	1
-10B	332U2322-34		.DUCT ASSY	D	1
15	332T1233-2		..RETAINER (USED ON ITEM 10)		1
-15A	332T1233-12		..RETAINER (USED ON ITEM 10A)		1
-15B	332T1233-14		..RETAINER (USED ON ITEM 10B)		1
20	332U2322-11		..DUCT HALF (USED ON ITEM 10)		1
-20A	332U2322-31		..DUCT HALF (USED ON ITEM 10A)		1
25	332U2322-12		..DUCT HALF (USED ON ITEM 10)		1
-25A	332U2322-32		..DUCT HALF (USED ON ITEM 10A)		1
-30	332U2322-33		..DUCT (USED ON ITEM 10B)		1
35	8620-225F		..FLANGE (V15284)		1
40	332U2322-9		.DUCT ASSY	AB	1
-40A	332U2322-24		.DUCT ASSY	CD	1
45	332T1233-4		..NUT (USED ON ITEM 40)		3
-45A	332T1233-10		..NUT (USED ON ITEM 40A)		3
50	332T1233-5		..RING-SEAL (USED ON ITEM 40)		3
55	332T1233-3		..FLANGE (USED ON ITEM 40)		3
-55A	332T1233-9		..FLANGE (USED ON ITEM 40A)		3

FIG. & ITEM	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1234567	EFF CODE	QTY PER ASSY
01-					
60	DUCT		..WELDED ASSY		1
65	332T1233-6		.SHIM	A	3
-65A	332T1233-11		.SHIM	BCD	3
70	11952-300		.SEAL (V15284)	BCD	3

- Item Not Illustrated



Lower Engine Starter Duct Assembly
Figure 2

W56053

FIG. & ITEM	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1234567	EFF CODE	QTY PER ASSY
02-					
-1	332T4313-14		DUCT ASSY-LOWER ENGINE STARTER		RF
5	BACB28X4E009		.BUSHING		2
10	332T4314-1		.SUPPORT ASSY		1
-10A	332T4314-4		.SUPPORT ASSY		1
15	BACB28X4E011		..BUSHING		2
20	332T4314-2		..SUPPORT (USED ON ITEM 10)		1
-20A	332T4314-5		..SUPPORT (USED ON ITEM 10A)		1
25	332T4336-1		.SUPPORT ASSY (OPT)		1
-25A	332T4336-5		.SUPPORT ASSY (OPT)		1
-25B	332T4336-6		.SUPPORT ASSY		1
30	BACB28X4E010		..BUSHING		
35	332T4336-2		..SUPPORT (USED ON ITEM 25)		1
-35A	332T4336-4		..SUPPORT (USED ON ITEM 25A)		1
-35B	332T4336-7		..SUPPORT (USED ON ITEM 25B)		1
40	DUCT		.WELDED ASSY		1

- Item Not Illustrated