

Service Bulletin

If the instructions in this publication cannot be completed because of an STC change to the aircraft, speak to the STC holder or the regional Federal Aviation Administration (FAA) office for information and disposition.

Contact Information	Distribution Date
Business Aircraft Learjet Inc. MS 53 P.O. Box 7707 Wichita, Kansas 67277-7707 Customer Response Center (CRC) AC.ICT@aero.bombardier.com 1-866-538-1247 (Toll Free) 1-514-855-2999 (Tel) Push 5 then 2 for Parts Services or push 4 then 2 for Technical Publications.	September 11, 2017

FLIGHT CONTROLS - FLAP STRUCTURE MODIFICATION

1. Planning Information

A. Effectivity

(1) Learjet 31-002 thru 31-194.

B. Reason

(1) The purpose of this service bulletin is to replace the nose roller fitting, nose roller support bracket, and adjacent rib support structure with more robust components at all four locations where they were not previously replaced by Service Bulletin 31-27-20, "Inspection/Installation of Flap Structure Components", Basic issue or Revisions 1, 2, 3, 4, 5, or 6.

C. Description

(1) This service bulletin supplies instructions to replace the nose roller fitting, nose roller support bracket, and adjacent rib support structure with more robust components, at all four locations where they were not previously replaced by Service Bulletin 31-27-20, "Inspection/Installation of Flap Structure Components", Basic issue or Revisions 1, 2, 3, 4, 5, or 6.

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D. Compliance

- (1) Recommended - Bombardier Learjet Inc. recommends these instructions are completed within 24 months or 400 landings (whichever comes first) from the initial distribution date of this publication.

E. Approval

- (1) The Federal Aviation Administration (FAA) has approved the technical content in this publication that has an effect on the airplane type design.
- (2) The European Aviation Safety Agency (EASA) has accepted the technical content in this publication that has an effect on the airplane type design.
- (3) Transport Canada Civil Aviation (TCCA) has accepted the technical content in this publication that has an effect on the airplane type design.

F. Labor Hours - Estimated Accomplishment Time

LABOR HOURS	TASK
8.0	Labor hours to gain access.
158.0	Labor hours to do the aircraft modification.
21.0	Labor hours to do a functional test/operational check.
1.0	Labor hours to return the aircraft to airworthy status.
188.0	Total Labor Hours

NOTE: The labor hours provided are estimates to assist scheduling and planning the tasks given in this bulletin. The estimates are for direct labor performed by an experienced crew and do not include the time for familiarization, planning, aircraft preparation in hangar, such as towing and positioning of scaffolds, removal of aircraft loose equipment, acquisition of tools and equipment, training, supervision and inspection.

If labor coverage is provided, only the hours above will be paid.

When planning to complete these instructions, please contact Bombardier Aerospace, Learjet Inc. Business Aircraft Customer Service, Parts Services for parts availability and shipping times as necessary. (Refer to the title page of this document for contact information.)

G. Expense Coverage

- (1) Labor Coverage - None.
- (2) Material Coverage - None.
- (3) Smart Parts Plus Coverage
 - (a) None.

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H. Material Required

PART NUMBER	QTY	NOMENCLATURE
2381000-802	1	Service Bulletin Kit
2381000-804	1	Service Bulletin Kit
2381000-809	1	Service Bulletin Kit
2381000-810	1	Service Bulletin Kit
2381000-817	1	Service Bulletin Kit
2381000-818	1	Service Bulletin Kit
2381000-819	1	Service Bulletin Kit
2381000-820	1	Service Bulletin Kit
2381000-821	1	Service Bulletin Kit

NOTE: For current prices, availability, ordering and shipping information, please call Bombardier Aerospace, Learjet Inc. Business Aircraft Customer Service, Parts Services. (Refer to the title page of this document for contact information.)

Refer to Paragraph 2.A. to know which kit is necessary.

(1) Other materials/parts necessary to complete these instructions.

PART NUMBER	NOMENCLATURE	QTY	SUPPLIER
Hysol EA 9602.3 or Class II (Refer to Chapter 20 of the Maintenance Manual.)	Adhesive film or Adhesive	As Required	Obtain Locally
	Clear Polyurethane Protective Coating	As Required	Obtain Locally

NOTE: For ordering and shipping information, please contact Bombardier Aerospace, Learjet Inc., Business Aircraft Customer Service, Parts Logistics. (Refer to the title page of this document for contact information.)

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I. Tools, Equipment and Materials

- (1) Refer to [Chapter 20 of the Maintenance Manual](#) for standard shop practice tools/equipment required.
- (2) Refer to "Tools and Equipment" in the Removal/Installation of the Flaps section in [Chapter 27 of the Maintenance Manual](#).

NOTE: Other tools and equipment may be necessary based on individual aircraft requirements, facility and personnel capabilities.

J. Weight and Balance

- (1) Change in basic weight and moment.

KIT	CHANGE IN BASIC WEIGHT	CHANGE IN BASIC MOMENT
2381000-802	Plus (+) 0.18 pounds	Plus (+) 77.0 in-lbs
2381000-804	Plus (+) 0.18 pounds	Plus (+) 77.0 in-lbs
2381000-809	Plus (+) 0.18 pounds	Plus (+) 76.0 in-lbs
2381000-810	Plus (+) 0.18 pounds	Plus (+) 76.0 in-lbs
2381000-817	Negligible	Negligible
2381000-818	Plus (+) 0.33 pounds	Plus (+) 141.0 in-lbs
2381000-819	Plus (+) 0.33 pounds	Plus (+) 141.0 in-lbs
2381000-820	Plus (+) 0.30 pounds	Plus (+) 126.0 in-lbs
2381000-821	Plus (+) 0.30 pounds	Plus (+) 126.0 in-lbs

K. References

NOTE: If applicable, referenced third party documentation can be accessed from the Customer Portal under this service bulletin number.

- (1) Service Bulletin Compliance Response Form.
- (2) Service Bulletin Evaluation Sheet.
- (3) Learjet Maintenance Manual, Chapters 20, 24, and 27.
- (4) Learjet Structural Repair Manual, Chapter 51.
- (5) FAA Approved Learjet Flight Manual.

L. Other Publications Affected

- (1) Learjet Illustrated Parts Catalog, Chapter 27.

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2. Material Information

A. Parts Required

NOTE: The determination as to which kit (or kits) is required is based on previous kit installations. Refer to Service Bulletin 31-27-20, "Inspection/Installation of Flap Structure Components". (Refer to aircraft maintenance records for record of modified flap components or contact Bombardier Aerospace, Learjet Inc., Business Aircraft Customer Response Center (CRC). Refer to the title page of this document for contact information.)

(1) The 2381000-802 kit is effective for all aircraft and contains the parts that follow:

NOTE: The 2381000-802 kit replaces the LH outboard flap track roller fitting.

PART NUMBER	QTY	NOMENCLATURE	ALTERNATE PART NUMBER
AN3-5A	3	Bolt	
AN960-10L	8	Washer	
CR3213-5-03	9	Rivet, Blind	
CR3243-5-03	3	Rivet, Blind	
CR3522-5-05	7	Rivet, Blind	
CR3524-5-04	1	Rivet, Blind	
CR3524-5-05	6	Rivet, Blind	
CSR902B-5-5	1	Rivet, 100° Csk Head	MS20426T5-5
CSR902B-5-7	4	Rivet, 100° Csk Head	
CSR904B-5-4	1	Rivet, 100° Csk Head	
CSR904B-5-5	7	Rivet, 100° Csk Head	
CSR904B-5-7	8	Rivet, 100° Csk Head	
MS21042L3	3	Nut	
NAS1097AD4-5	25	Rivet, Shear Head	
NAS1097AD4-7	6	Rivet, Shear Head	
6025021-801	1	Roller Fitting, LH Outboard Flap Track	

NOTE: Some hardware comes in pre-packaged quantities. When that occurs, the quantity in the kit will be more than the quantity in the parts list.

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(2) The 2381000-804 kit is effective for all aircraft and contains the parts as follows:

NOTE: The 2381000-804 kit replaces the RH outboard flap track roller fitting.

PART NUMBER	QTY	NOMENCLATURE	ALTERNATE PART NUMBER
AN3-5A	3	Bolt	
AN960-10L	8	Washer	
CR3213-5-03	9	Rivet, Blind	
CR3243-5-03	3	Rivet, Blind	
CR3522-5-05	7	Rivet, Blind	
CR3524-5-04	1	Rivet, Blind	
CR3524-5-05	6	Rivet, Blind	
CSR902B-5-5	1	Rivet, 100° Csk Head	MS20426T5-5
CSR902B-5-7	4	Rivet, 100° Csk Head	
CSR904B-5-4	1	Rivet, 100° Csk Head	
CSR904B-5-5	7	Rivet, 100° Csk Head	
CSR904B-5-7	8	Rivet, 100° Csk Head	
MS21042L3	3	Nut	
NAS1097AD4-5	25	Rivet, Shear Head	
NAS1097AD4-7	6	Rivet, Shear Head	
6025021-802	1	Roller Fitting, RH Outboard Flap Track	

NOTE: Some hardware comes in pre-packaged quantities. When that occurs, the quantity in the kit will be more than the quantity in the parts list.

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- (3) The 2381000-809 kit is effective for all aircraft and contains the parts as follows:

NOTE: The 2381000-809 kit replaces the LH inboard flap track roller fitting.

PART NUMBER	QTY	NOMENCLATURE	ALTERNATE PART NUMBER
AN3-5A	3	Bolt	
AN960-10L	8	Washer	
CR3213-5-03	9	Rivet, Blind	
CR3243-5-03	3	Rivet, Blind	
CR3522-5-05	7	Rivet, Blind	
CR3524-4-04	2	Rivet, Blind	
CR3524-5-05	6	Rivet, Blind	
CSR902B-5-7	4	Rivet, 100° Csk Head	
CSR904B-5-5	7	Rivet, 100° Csk Head	
CSR904B-5-7	8	Rivet, 100° Csk Head	
MS21042L3	3	Nut	
NAS1097AD4-5	25	Rivet, Shear Head	
NAS1097AD4-7	7	Rivet, Shear Head	
6025022-809	1	Roller Fitting, LH Inboard Flap Track	

NOTE: Some hardware comes in pre-packaged quantities. When that occurs, the quantity in the kit will be more than the quantity in the parts list.

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- (4) The 2381000-810 kit is effective for all aircraft and contains the parts as follows:

NOTE: The 2381000-810 kit replaces the RH inboard flap track roller fitting.

PART NUMBER	QTY	NOMENCLATURE	ALTERNATE PART NUMBER
AN3-5A	3	Nut	
AN960-10L	8	Washer	
CR3213-5-03	9	Rivet, Blind	
CR3243-5-03	3	Rivet, Blind	
CR3522-5-05	7	Rivet, Blind	
CR3524-4-04	2	Rivet, Blind	
CR3524-5-05	6	Rivet, Blind	
CSR902B-5-7	4	Rivet, 100° Csk Head	
CSR904B-5-5	7	Rivet, 100° Csk Head	
CSR904B-5-7	8	Rivet, 100° Csk Head	
MS21042L3	3	Nut	
NAS1097AD4-5	25	Rivet, Shear Head	
NAS1097AD4-7	7	Rivet, Shear Head	
6025022-810	1	Roller Fitting, RH Inboard Flap Track	

NOTE: Some hardware comes in pre-packaged quantities. When that occurs, the quantity in the kit will be more than the quantity in the parts list.

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- (5) The 2381000-818 kit is effective for all aircraft and contains the parts as follows:

NOTE: The 2381000-818 kit replaces the LH outboard flap roller rib and nose roller support rib assembly.

PART NUMBER	QTY	NOMENCLATURE	ALTERNATE PART NUMBER
AN960-616L	2	Washer	
CR3242-4-02	145	Rivet, Blind	
CR3242-4-03	15	Rivet, Blind	
CR3242-4-04	2	Rivet, Blind	
CR3243-4-04	3	Rivet, Blind	
CSR904B-5-3	1	Rivet, 100° Csk Head	
CSR904B-5-5	2	Rivet, 100° Csk Head	
MS14145-4	1	Nut	MS14145L4
MS20470AD5-5	2	Rivet	
MS20470B3-5	30	Rivet	
MS20470B3-7	30	Rivet	
MS24665-134	1	Cotter Pin	
NAS1097AD4-5	6	Rivet, Shear Head	
NAS1097AD5-5	10	Rivet, Shear Head	
NAS334CP16	1	Bolt	
NAS43DD4-30	1	Spacer	NAS43DD4-30N or NAS43DD4-30FC
NAS76A4-20	1	Bushing	
2325000-13	1	Roller, Nose	
2381000-813	1	Rib Assembly, LH Outboard Nose Roller Support	
6025028-803	1	Rib, LH Outboard Flap Roller	

NOTE: Some hardware comes in pre-packaged quantities. When that occurs, the quantity in the kit will be more than the quantity in the parts list.

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- (6) The 2381000-819 kit is effective for all aircraft and contains the parts as follows:

NOTE: The 2381000-819 kit replaces the RH outboard flap roller rib and nose roller support rib assembly.

PART NUMBER	QTY	NOMENCLATURE	ALTERNATE PART NUMBER
AN960-616L	2	Washer	
CR3242-4-02	145	Rivet, Blind	
CR3242-4-03	15	Rivet, Blind	
CR3242-4-04	2	Rivet, Blind	
CR3243-4-04	3	Rivet, Blind	
CSR904B-5-3	1	Rivet, 100° Csk Head	
CSR904B-5-5	2	Rivet, 100° Csk Head	
MS14145-4	1	Nut	MS14145L4
MS20470AD5-5	2	Rivet	
MS20470B3-5	30	Rivet	
MS20470B3-7	30	Rivet	
MS24665-134	1	Cotter Pin	
NAS1097AD4-5	6	Rivet, Shear Head	
NAS1097AD5-5	10	Rivet, Shear Head	
NAS334CP16	1	Bolt	
NAS43DD4-30	1	Spacer	NAS43DD4-30N or NAS43DD4-30FC
NAS76A4-20	1	Bushing	
2325000-13	1	Roller, Nose	
2381000-814	1	Rib Assembly, RH Outboard Nose Roller Support	
6025028-804	1	Rib, RH Outboard Flap Roller	

NOTE: Some hardware comes in pre-packaged quantities. When that occurs, the quantity in the kit will be more than the quantity in the parts list.

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- (7) The 2381000-820 kit is effective for all aircraft and contains the parts as follows:

NOTE: The 2381000-820 kit replaces the LH inboard flap roller rib and nose roller support rib assembly.

PART NUMBER	QTY	NOMENCLATURE	ALTERNATE PART NUMBER
AN960-616L	2	Washer	
CR2245-4-02	40	Rivet, Blind	CR3245-4-02
CR3212-4-04	25	Rivet, Blind	
CR3213-4-02	20	Rivet, Blind	
CR3214-4-04	40	Rivet, Blind	
CR3242-4-01	32	Rivet, Blind	
CR3242-4-02	145	Rivet, Blind	
CR3242-4-03	15	Rivet, Blind	
CR3242-4-04	2	Rivet, Blind	
CR3243-4-01	11	Rivet, Blind	
CR3243-4-04	3	Rivet, Blind	
MS14145-4	1	Nut	MS14145L4
MS20426B3-5	10	Rivet	
MS20426B3-7	10	Rivet	MS20426B3-7N
MS20426B4-5	1	Rivet	
MS20470AD5-5	2	Rivet	
MS20470B3-5	30	Rivet	
MS20470B3-7	30	Rivet	
MS20470B4-5	2	Rivet	
MS24665-134	1	Cotter Pin	
NAS1097AD4-2	4	Rivet, Shear Head	
NAS1097AD4-4	17	Rivet, Shear Head	
NAS1097AD4-5	6	Rivet, Shear Head	
NAS1097AD5-5	10	Rivet, Shear Head	
NAS1097B3-5	8	Rivet, Shear Head	
NAS1097B3-7	8	Rivet, Shear Head	

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PART NUMBER	QTY	NOMENCLATURE	ALTERNATE PART NUMBER
NAS334CP16	1	Bolt	
NAS43DD4-30	1	Spacer	NAS43DD4-30N or NAS43DD4-30FC
NAS76A4-20	1	Bushing	
2325000-13	1	Roller, Nose	
2381000-815	1	Rib Assembly, LH Inboard Nose Roller Support	
6025028-801	1	Rib, LH Inboard Flap Roller	

NOTE: Some hardware comes in pre-packaged quantities. When that occurs, the quantity in the kit will be more than the quantity in the parts list.

- (8) The 2381000-821 kit is effective for all aircraft and contains the parts as follows:

NOTE: The 2381000-821 kit replaces the RH inboard flap roller rib and nose roller support rib assembly.

PART NUMBER	QTY	NOMENCLATURE	ALTERNATE PART NUMBER
AN960-616L	2	Washer	
CR2245-4-02	40	Rivet, Blind	CR3245-4-02
CR3212-4-04	25	Rivet, Blind	
CR3213-4-02	20	Rivet, Blind	
CR3214-4-04	40	Rivet, Blind	
CR3242-4-01	32	Rivet, Blind	
CR3242-4-02	145	Rivet, Blind	
CR3242-4-03	15	Rivet, Blind	
CR3242-4-04	2	Rivet, Blind	
CR3243-4-01	11	Rivet, Blind	
CR3243-4-04	3	Rivet, Blind	
MS14145-4	1	Nut	MS14145L4
MS20426B3-5	10	Rivet	
MS20426B3-7	10	Rivet	

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PART NUMBER	QTY	NOMENCLATURE	ALTERNATE PART NUMBER
MS20426B-4-5	1	Rivet	
MS20470AD5-5	2	Rivet	
MS20470B3-5	30	Rivet	
MS20470B3-7	30	Rivet	MS20426B3-7N
MS20470B4-5	2	Rivet	
MS24665-134	1	Cotter Pin	
NAS1097AD4-2	4	Rivet, Shear Head	
NAS1097AD4-4	17	Rivet, Shear Head	
NAS1097AD4-5	6	Rivet, Shear Head	
NAS1097AD5-5	10	Rivet, Shear Head	
NAS1097B3-5	8	Rivet, Shear Head	
NAS1097B3-7	8	Rivet, Shear Head	
NAS334CP16	1	Bolt	
NAS43DD4-30	1	Spacer	NAS43DD4-30N or NAS43DD4-30FC
NAS76A4-20	1	Bushing	
2325000-13	1	Roller, Nose	
2381000-816	1	Rib Assembly, RH Inboard Nose Roller Support	
6025028-802	1	Rib, RH Inboard Flap Roller	

NOTE: Some hardware comes in pre-packaged quantities. When that occurs, the quantity in the kit will be more than the quantity in the parts list.

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(9) The 2381000-817 kit is effective for all aircraft and contains the parts as follows:

NOTE: One 2381000-817 kit is required to rig and functional test each flap and contains parts for flap alignment of only one (1) flap.

PART NUMBER	QTY	NOMENCLATURE	ALTERNATE PART NUMBER
NAS1149C0716R	4	Washer	
NAS1149C0616R	4	Washer	
AN960-10	8	Washer	
AN960-10L	8	Washer	
AN960-416	6	Washer	
AN960-416L	6	Washer	
AN960-616	4	Washer	
AN960-616L	12	Washer	
AN960-716	4	Washer	
AN960-716L	12	Washer	
AN960-PD416	3	Washer	
CF-1-S-CP	4	Cam Follower	
CF-7/8-S-CP	4	Cam Follower	
MS20364-720	4	Nut	MS20364-720C
MS21042L6	4	Nut	
2322513-1	8	Button	
2322513-2	8	Button	
2614068-811	1	Modification Placard	

NOTE: Some hardware comes in pre-packaged quantities. When that occurs, the quantity in the kit will be more than the quantity in the parts list.

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B. Parts Removed List

(1) If the 2381000-802 kit is to be installed, remove the following parts:

PART NUMBER	QTY	NOMENCLATURE	DISPOSITION	EFFECTIVITY	REPLACED BY
2625024-5	1	Outboard Flap Track Roller Fitting	Destroy	All	6025021-801

(2) If the 2381000-804 kit is to be installed, remove the following parts:

PART NUMBER	QTY	NOMENCLATURE	DISPOSITION	EFFECTIVITY	REPLACED BY
2625024-6	1	Outboard Flap Track Roller Fitting	Destroy	All	6025021-802

(3) If the 2381000-809 kit is to be installed, remove the following parts:

PART NUMBER	QTY	NOMENCLATURE	DISPOSITION	EFFECTIVITY	REPLACED BY
2625023-7 or 2625023-11 or 2625023-17	1	Inboard Flap Track Roller Fitting	Destroy	When Installed	6025022-809

(4) If the 2381000-810 kit is to be installed, remove the following parts:

PART NUMBER	QTY	NOMENCLATURE	DISPOSITION	EFFECTIVITY	REPLACED BY
2625023-8 or 2625023-12 or 2625023-18	1	Inboard Flap Track Roller Fitting	Destroy	When Installed	6025022-810

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(5) If the 2381000-818 kit is to be installed, remove the following parts:

PART NUMBER	QTY	NOMENCLATURE	DISPOSITION	EFFECTIVITY	REPLACED BY
2625015-75	1	Outboard Leading Edge Rib	Destroy	When Installed	6025028-803
2325010-197	1	Backing Plate	Destroy	All	6025028-803
2325010-243	1	Nose Roller Support	Destroy	All	6025028-803
2325010-331	1	Nose Roller Support	Destroy	When Installed	2381000-813
2625015-69	1	Roller Support	Destroy	When Installed	2381000-813
2325010-241	1	Rub Strip	Destroy	All	2381000-813

(6) If the 2381000-819 kit is to be installed, remove the following parts:

PART NUMBER	QTY	NOMENCLATURE	DISPOSITION	EFFECTIVITY	REPLACED BY
2625015-76	1	Outboard Leading Edge Rib	Destroy	When Installed	6025028-804
2325010-197	1	Backing Plate	Destroy	All	6025028-804
2325010-243	1	Nose Roller Support	Destroy	All	6025028-804
2325010-332	1	Nose Roller Support	Destroy	When Installed	2381000-814
2625015-70	1	Roller Support	Destroy	When Installed	2381000-814
2325010-241	1	Rub Strip	Destroy	All	2381000-814

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(7) If the 2381000-820 kit is to be installed, remove the following parts:

PART NUMBER	QTY	NOMENCLATURE	DISPOSITION	EFFECTIVITY	REPLACED BY
2625015-73	1	Inboard Leading Edge Rib	Destroy	When Installed	6025028-801
2325010-303	1	Nose Roller Support	Destroy	When Installed	6025028-801
2325010-304	1	Reinforcement Rib	Destroy	When Installed	6025028-801
2325010-329	1	Nose Roller Support	Destroy	When Installed	2381000-815
2325010-333	1	Roller Support	Destroy	When Installed	2381000-815
2325010-241	1	Rub Strip	Destroy	All	2381000-815

(8) If the 2381000-821 kit is to be installed, remove the following parts:

PART NUMBER	QTY	NOMENCLATURE	DISPOSITION	EFFECTIVITY	REPLACED BY
2625015-74	1	Inboard Leading Edge Rib	Destroy	When Installed	6025028-802
2325010-303	1	Nose Roller Support	Destroy	All	6025028-802
2325010-305	1	Reinforcement Rib	Destroy	All	6025028-802
2325010-330	1	Nose Roller Support	Destroy	When Installed	2381000-816
2325010-334	1	Roller Support	Destroy	When Installed	2381000-816
2325010-241	1	Rub Strip	Destroy	All	2381000-816

3. Accomplishment Instructions

A. Gain Access

- (1) Extend the flaps. (Refer to FAA approved Learjet Flight Manual.)
- (2) Disconnect external electrical power and the main and emergency batteries from the aircraft. (Refer to [Chapter 24 of the Maintenance Manual](#).)

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B. Modification of Aircraft

NOTE: For dimensions defined without specific tolerance information, refer to Paragraph 3.G. for standard tolerances.

- (1) *Aircraft that have previously accomplished the modifications, at all four locations, in accordance with Service Bulletin 31-27-20, "Inspection/Installation of Flap Structure Components" Basic issue dated October 10, 2003, or Rev 1, dated December 16, 2003, or Rev 2, dated May 28, 2004, or Rev 3, dated June 7, 2010, or Rev 4, dated August 16, 2010, or Rev 5, dated August 26, 2013 or Rev 6, dated October 27, 2014, proceed to Step 3.B.(13).*
- (2) *On aircraft that have modified inboard/outboard flap roller ribs, or the inboard/outboard nose roller support rib assemblies, or the inboard/outboard flap track roller fittings on LH or RH sides, **other than** in accordance with Service Bulletin 31-27-20, as stated in the step above, contact Learjet for repair instructions. (Refer to the title page of this document for contact information.)*
- (3) *Aircraft that have **not** previously accomplished the modifications, at all four locations, as stated in Step 3.B.(1), remove flaps from aircraft (Refer to [Chapter 27 of the Maintenance Manual](#).)*
- (4) *On aircraft that have modified both LH and RH inboard flap roller ribs and the inboard nose roller support rib assemblies in accordance with Service Bulletin 31-27-20, as stated in Step 3.B.(1) above, proceed to Step 3.B.(6).*
- (5) *On aircraft that have **not** modified the inboard flap roller ribs and the inboard nose roller support rib assemblies in accordance with Service Bulletin 31-27-20, as stated in Step 3.B.(1), install the -820 (LH) and/or -821 (RH) kits as follows: (See [Figure 1](#).) The nose roller support rib assemblies and the flap roller ribs must be replaced together. Both the LH and RH locations must contain all the modified components required.*
 - (a) Drill out rivets, as required, to allow the lower trailing edge skins to be peeled back to gain access to the spars and the rib attaching rivets. (Refer to [Chapter 51 of the Structural Repair Manual](#).) (See [Figure 4](#) for approximate rivet locations.)
 - (b) Trim the leading edge skins to provide clearance for the replacement nose roller support rib assemblies. (See [Figure 1](#).)
 - (c) Maintain proper minimum edge distance for all rivets when trimming the leading edge skin cut-outs. (Refer to [Chapter 51 of the Structural Repair Manual](#), Section 51-40-02, paragraph 1.D.(1).)
 - (d) Prefit the new flap roller ribs and the new nose roller support ribs to the flap assemblies and match drill to existing holes in skin and structure.
 - (e) Apply chemical film and epoxy primer to bare areas. (Refer to [Chapter 20 of the Maintenance Manual](#).)
 - (f) Solvent clean mating surfaces. (Refer to [Chapter 20 of the Maintenance Manual](#).)
 - (g) Install the flap roller ribs and the nose roller support ribs with the new rivets supplied in conjunction with the adhesive bonding method as follows: (See [Figure 1](#).)

NOTE: It is acceptable to use Class II adhesive as an alternate bonding method. (Refer to [Chapter 20 of the Maintenance Manual](#).)

- 1) Remove the Hysol EA 9602.3 adhesive film from refrigerated storage and allow to warm to room temperature, or until moisture no longer condenses on the container, before opening for use.
- 2) Remove the liner from adhesive film.
- 3) Apply one layer of adhesive film to the upper faying surfaces. Use care to prevent air entrapment under film.
- 4) Heat tack the adhesive to hold in place. Temperature used for heat tacking shall not exceed 150° F [65° C].
- 5) Remove the protective backing from the applied film.

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- 6) Use an ice pick or similar tool to punch through adhesive film at each rivet hole.
 - 7) Install the flap roller ribs and the nose roller support ribs with the new rivets supplied. (Refer to [Chapter 51 of the Structural Repair Manual](#).)
 - 8) After all modifications to flaps have been completed, cure the assemblies in a circulating hot air oven at 260 (+20; -10) °F [126.7 (+11.1; -5.6) °C] for 65 (+40; -5) minutes. Assemblies must be cured within two (2) weeks with ambient temperature of 90° F [32° C] or within four (4) weeks with ambient temperature of 77° F [25° C].
- (6) On aircraft that have modified both LH and RH outboard flap roller ribs and the outboard nose roller support rib assemblies in accordance with Service Bulletin 31-27-20, as stated in the Step 3.B.(1) of this document, proceed to Step 3.B.(8).
- (7) On aircraft that have **not** modified the outboard flap roller ribs and the outboard nose roller support rib assemblies in accordance with Service Bulletin 31-27-20, as stated in the Step 3.B.(1) of this document, install the -818 (LH) and/or -819 (RH) kits as follows: (See [Figure 2](#).) The nose roller support rib assemblies and the flap roller ribs must be replaced together. Both the LH and RH locations must contain all the modified components required.
- (a) Drill out rivets, as required, to allow the lower trailing edge skin to be peeled back to gain access to the spar and the rib attaching rivets. (Refer to [Chapter 51 of the Structural Repair Manual](#).) (See [Figure 4](#) for approximate rivet locations.)
 - (b) Trim the leading edge skin to provide clearance for the replacement nose roller support rib assembly. (See [Figure 2](#).)
 - (c) Maintain proper minimum edge distance for all rivets when trimming the leading edge skin cut-outs. (Refer to [Chapter 51 of the Structural Repair Manual](#), Section 51-40-02, paragraph 1.D.(1).)
 - (d) Prefit the new flap roller ribs and the new nose roller support ribs to the flap assemblies and match drill to existing holes in skin and structure.
 - (e) Apply chemical film and epoxy primer to bare areas. (Refer to [Chapter 20 of the Maintenance Manual](#).)
 - (f) Solvent clean mating surfaces. (Refer to [Chapter 20 of the Maintenance Manual](#).)
 - (g) Install the flap roller ribs and the nose roller support ribs with the new rivets supplied in conjunction with the adhesive bonding method as follows: (See [Figure 2](#).)

NOTE: It is acceptable to use Class II adhesive as an alternate bonding method. (Refer to [Chapter 20 of the Maintenance Manual](#).)

- 1) Remove the Hysol EA 9602.3 adhesive film from refrigerated storage and allow to warm to room temperature, or until moisture no longer condenses on the container, before opening for use.
- 2) Remove the liner from adhesive film.
- 3) Apply one layer of adhesive film to the upper faying surfaces. Use care to prevent air entrapment under film.
- 4) Heat tack the adhesive to hold in place. Temperature used for heat tacking shall not exceed 150° F [65° C].
- 5) Remove the protective backing from the applied film.
- 6) Use an ice pick or similar tool to punch through adhesive film at each rivet hole.
- 7) Install the flap roller ribs and the nose roller support ribs with the new rivets supplied. (Refer to [Chapter 51 of the Structural Repair Manual](#).)
- 8) After all modifications to flaps have been completed, cure the assemblies in a circulating hot air oven at 260 (+20; -10) °F [126.7 (+11.1; -5.6) °C] for 65 (+40; -5) minutes. Assemblies must be cured within two (2) weeks with an ambient temperature of 90° F [32° C] or within four (4) weeks with an ambient temperature of 77° F [25° C].

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- (8) On aircraft that have modified both LH and RH inboard flap track roller fittings, in accordance with Service Bulletin 31-27-20, as stated in the Step 3.B.(1) of this document, proceed to Step 3.B.(10).
- (9) On aircraft that have **not** modified the inboard flap track roller fittings in accordance with Service Bulletin 31-27-20, as stated in the Step 3.B.(1) of this document, install the -809 (LH) and/or -810 (RH) kits as follows: (See [Figure 1.](#)) Both the LH and RH locations must contain all the modified components required.

CAUTION: **INSTALL RIVETS IN THE FLAP TRACK ROLLER FITTING USING THE SQUEEZE TECHNIQUE. THE FLAP TRACK ROLLER FITTING MAY BE DAMAGED USING OTHER TYPES OF RIVET INSTALLATION.**

- (a) Drill out rivets and remove the flap track roller fittings. (See [Figure 1.](#)) (Refer to [Chapter 51 of the Structural Repair Manual.](#))
- (b) Prefit the new flap track roller fittings to the flap assemblies and match drill to existing holes in skin and structure.
- (c) Apply chemical film and epoxy primer to bare areas. (Refer to [Chapter 20 of the Maintenance Manual.](#))
- (d) Solvent clean mating surfaces. (Refer to [Chapter 20 of the Maintenance Manual.](#))

CAUTION: **INSTALL RIVETS IN THE FLAP TRACK ROLLER FITTING USING THE SQUEEZE TECHNIQUE. THE FLAP TRACK ROLLER FITTING MAY BE DAMAGED USING OTHER TYPES OF RIVET INSTALLATION.**

- (e) Install the inboard flap track roller fittings with the new rivets supplied in conjunction with the adhesive bonding method as follows: (See [Figure 1.](#))

NOTE: It is acceptable to use Class II adhesive as an alternate bonding method. (Refer to [Chapter 20 of the Maintenance Manual.](#))

- 1) Remove the Hysol EA 9602.3 adhesive film from refrigerated storage and allow to warm to room temperature, or until moisture no longer condenses on the container, before opening for use.
- 2) Remove the liner from adhesive film.
- 3) Apply one layer of adhesive film to the upper faying surfaces. Use care to prevent air entrapment under film.
- 4) Heat tack the adhesive to hold in place. Temperature used for heat tacking shall not exceed 150° F [65° C].
- 5) Remove the protective backing from the applied film.
- 6) Use an ice pick or similar tool to punch through adhesive film at each rivet hole.

CAUTION: **INSTALL RIVETS IN THE FLAP TRACK ROLLER FITTING USING THE SQUEEZE TECHNIQUE. THE FLAP TRACK ROLLER FITTING MAY BE DAMAGED USING OTHER TYPES OF RIVET INSTALLATION.**

- 7) Install the new flap track roller fittings with the new rivets supplied. (Refer to [Chapter 51 of the Structural Repair Manual.](#))
- 8) After all modifications to flaps have been completed, cure the assemblies in a circulating-air oven at 260 (+20; -10) °F [126.7 (+11.1; -5.6) °C] for 65 (+40; -5) minutes. Assemblies must be cured within two (2) weeks with ambient temperature of 90° F [32° C] or within four (4) weeks with ambient temperature of 77° F [25° C].

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- (10) On aircraft that have modified both LH and RH outboard flap track roller fittings in accordance with Service Bulletin 31-27-20, as stated in the Step 3.B.(1) of this document, proceed to Step 3.B.(12).
- (11) On aircraft that have **not** modified the outboard flap track roller fittings in accordance with Service Bulletin 31-27-20, as stated in the Step 3.B.(1) of this document, install the -802 (LH) and/or -804 (RH) kits as follows: (See [Figure 2.](#)) Both the LH and RH locations must contain all the modified components required.

CAUTION: **INSTALL RIVETS IN THE FLAP TRACK ROLLER FITTING USING THE SQUEEZE TECHNIQUE. THE FLAP TRACK ROLLER FITTING MAY BE DAMAGED USING OTHER TYPES OF RIVET INSTALLATION.**

- (a) Drill out rivets and remove the flap track roller fittings. (See [Figure 2.](#)) (Refer to [Chapter 51 of the Structural Repair Manual.](#))
- (b) Prefit the new flap track roller fittings to the flap assemblies and match drill to existing holes in skin and structure.
- (c) Apply chemical film and epoxy primer to bare areas. (Refer to [Chapter 20 of the Maintenance Manual.](#))
- (d) Solvent clean mating surfaces. (Refer to [Chapter 20 of the Maintenance Manual.](#))

CAUTION: **INSTALL RIVETS IN THE FLAP TRACK ROLLER FITTING USING THE SQUEEZE TECHNIQUE. THE FLAP TRACK ROLLER FITTING MAY BE DAMAGED USING OTHER TYPES OF RIVET INSTALLATION.**

- (e) Install the outboard flap track roller fittings with the new rivets supplied in conjunction with the adhesive bonding method as follows: (See [Figure 2.](#))

NOTE: It is acceptable to use Class II adhesive as an alternate bonding method. (Refer to [Chapter 20 of the Maintenance Manual.](#))

- 1) Remove the Hysol EA 9602.3 adhesive film from refrigerated storage and allow to warm to room temperature, or until moisture no longer condenses on the container, before opening for use.
- 2) Remove the liner from adhesive film.
- 3) Apply one layer of adhesive film to the upper faying surfaces. Use care to prevent air entrapment under film.
- 4) Heat tack the adhesive to hold in place. Temperature used for heat tacking shall not exceed 150° F [65° C].
- 5) Remove the protective backing from the applied film.
- 6) Use an ice pick or similar tool to punch through adhesive film at each rivet hole.

CAUTION: **INSTALL RIVETS IN THE FLAP TRACK ROLLER FITTING USING THE SQUEEZE TECHNIQUE. THE FLAP TRACK ROLLER FITTING MAY BE DAMAGED USING OTHER TYPES OF RIVET INSTALLATION.**

- 7) Install the new flap track roller fittings with the new rivets supplied. (Refer to [Chapter 51 of the Structural Repair Manual.](#))
- 8) After all modifications to flaps have been completed, cure the assemblies in a circulating-air oven at 260 (+20; -10) °F [126.7 (+11.1; -5.6) °C] for 65 (+40; -5) minutes. Assemblies must be cured within two (2) weeks with ambient temperature of 90° F [32° C] or within four (4) weeks with ambient temperature of 77° F [25° C].

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- (12) Install the skins with the rivets supplied in conjunction with the adhesive bonding method as follows: (See [Figure 4](#).)

NOTE: It is acceptable to use Class II adhesive as an alternate bonding method. (Refer to [Chapter 20 of the Maintenance Manual](#).)

- (a) Apply chemical film and epoxy primer to bare areas. (Refer to [Chapter 20 of the Maintenance Manual](#).)
 - (b) Solvent clean mating surfaces. (Refer to [Chapter 20 of the Maintenance Manual](#).)
 - (c) Remove the Hysol EA 9602.3 adhesive film from refrigerated storage and allow to warm to room temperature, or until moisture no longer condenses on the container, before opening for use.
 - (d) Remove the liner from adhesive film.
 - (e) Apply one layer of adhesive film to the faying surfaces. Use care to prevent air entrapment under film.
 - (f) Heat tack the adhesive to hold in place. Temperature used for heat tacking shall not exceed 150° F [65° C].
 - (g) Remove the protective backing from the applied film.
 - (h) Use an ice pick or similar tool to punch through adhesive film at each rivet hole.
 - (i) Install the flap skin with the new rivets supplied. (Refer to [Chapter 51 of the Structural Repair Manual](#).)
 - (j) After all modifications to flaps have been completed, cure the assemblies in a circulating-air oven at 260 (+20; -10) °F [126.7 (+11.1; -5.6) °C] for 65 (+40; -5) minutes. Assemblies must be cured within two (2) weeks with ambient temperature of 90° F [32° C] or within four (4) weeks with ambient temperature of 77° F [25° C].
- (13) Apply the modification placard to the flap, complete the information, and clear coat the modification placard, supplied in the -817 kit as follows: (See [Figure 4](#), View B-B.)
- (a) Solvent clean area of the flap location where the placard is to be applied. Make sure it is clean and dry before the placard is applied. (Refer to [Chapter 20 of the Maintenance Manual](#).)
 - (b) Apply the placard to the flap.
 - (c) Solvent clean the placard. Make sure the placard is clean and dry before it is marked. (Refer to [Chapter 20 of the Maintenance Manual](#).)
 - (d) Use an indelible marker to write "SB 31-27-35" on the placard. (Kit number is not required, leave blank.)

CAUTION: MAKE SURE TO PAY CLOSE ATTENTION TO ALL MANUFACTURER WARNINGS, MIXING, APPLICATION, DISPOSAL INSTRUCTIONS AND CURE TIMES ON THE PRODUCT CONTAINER(S) IN ORDER TO AVOID PERSONAL INJURY AND/OR COMPROMISED QUALITY OF THE END PRODUCT.

- (e) Placard markings must be over coated with clear polyurethane protective coating as follows:
- 1) Mix catalyst and components as directed on the containers. Mix only the amount needed and stir thoroughly.

NOTE: If thinning is required, a maximum of one part thinner may be added to the mixed material. Stir thoroughly.

- 2) Apply clear polyurethane protective coating with a small throw-away paint brush, as required to achieve a uniform dry film thickness of 1.5 to 2.5 mils.

NOTE: Cure time to handle is 45 minutes at 75° F or 15 Minutes at 150° F.

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- (14) On aircraft that did **not** remove flaps for modification, proceed to Step 3.D.
- (15) On aircraft that removed flaps for modification, do as follows.
 - (a) Replace cam followers (provided in the -817 kit). (See [Figure 3](#).)
 - (b) Replace the cam follower washers common to the stud (provided in the -817 kit). (See [Figure 3](#).)
 - (c) Install the flaps on the aircraft. (Refer to [Chapter 27 of the Maintenance Manual](#).)
- (16) Do not perform the Functional Test of Flap System at this time.

C. Functional Test/Operational Check.

- (1) Inspect the alignment of the LH and RH flaps as follows:
 - (a) Connect the main and emergency batteries to the aircraft. (Refer to [Chapter 24 of the Maintenance Manual](#).)
 - (b) Extend and retract the flaps. (Refer to [Chapter 27 of the Maintenance Manual](#).)

CAUTION: NOSE ROLLER TRACKS MUST NOT TOUCH THE FLAP ROLLER RIBS OR THE NOSE ROLLER SUPPORT RIBS, THROUGHOUT THE COMPLETE OPERATION OF THE FLAPS, EVEN WHILE PUSHING HARD, INBOARD OR OUTBOARD ON THE FLAPS.

- (c) Make sure that the inboard and outboard nose roller tracks stay approximately centered on the nose rollers throughout the complete operation of the flaps.
- (2) On aircraft with correct flap alignment, proceed to Step 3.C.(4) for the Functional Testing of Flap System.

CAUTION: MAKE SURE TO MAINTAIN MINIMUM GAP REQUIREMENTS BETWEEN FUSELAGE, FLAP, AND AILERON. (REFER TO [CHAPTER 27 OF THE MAINTENANCE MANUAL](#).)

- (3) On aircraft with incorrect flap alignment, use components provided in the -817 kit(s) (as needed) and make adjustments until the nose roller tracks no longer touch the flap roller ribs or the nose roller support ribs. Make adjustments, as required, in the following order:
 - (a) Install any combination of cam follower buttons to tighten up and control the spanwise movement of the flap. (See [Figure 5](#).)
 - (b) Shim the cam follower buttons using one (1) washer under button as required. (See [Figure 5](#).)
 - (c) Shim the cam followers using a maximum of two (2) washers per follower as required. (See [Figure 5](#).)
 - (d) If further adjustment is required, shim the nose roller track away from the flap track support fitting with one (1) washer under each nose roller track bolt. (See [Figure 6](#).)
- (4) Do the Functional Test of Flap System. (Refer to [Chapter 27 of the Maintenance Manual](#).)

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D. Return Aircraft to Airworthy Status

- (1) Install any additional items removed for access.

E. Compliance Response Form

- (1) Complete the compliance response form.
- (2) Send the compliance response form to Learjet Inc. as soon as possible.

F. Aircraft Maintenance Records

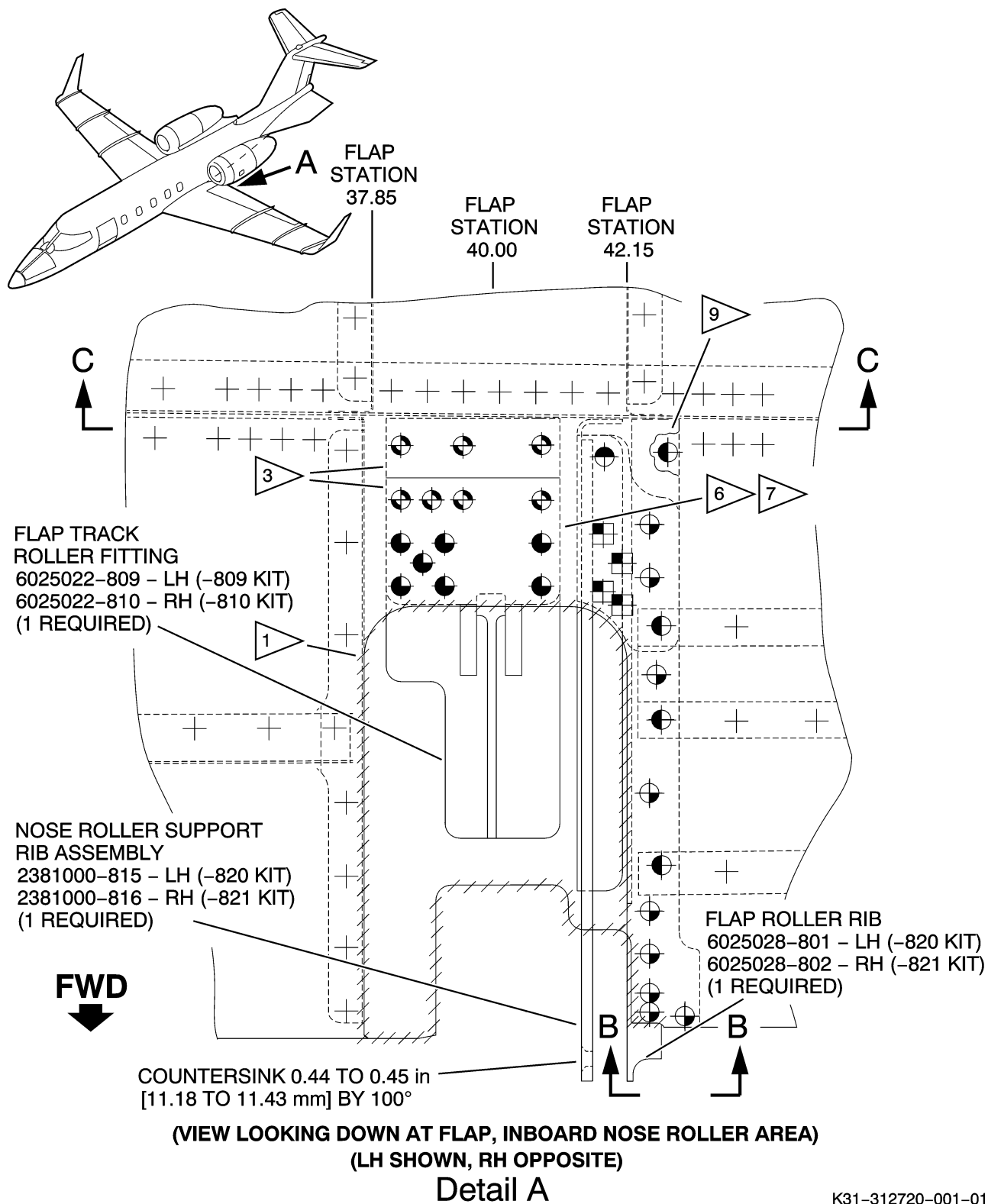
- (1) Complete the Aircraft Maintenance Records in accordance with the regulatory requirements of the appropriate aircraft certification authority.

G. General Information

- (1) The table below lists standard tolerances which shall apply to dimensions defined within the instructions or illustrations of this document that do not have specified tolerances.

UNLESS OTHERWISE SPECIFIED ALL TOLERANCES ARE AS FOLLOWS:		
DECIMALS	ANGLES	
0.0 ± 0.1 in [0.0 mm ± 2.54 mm]	MACHINED	FORMED
0.00 ± 0.03 in [0.00 mm ± 0.76 mm]	± 0°30'	± 2°
0.000 ± 0.010 in [0.000 mm ± 0.254 mm]		

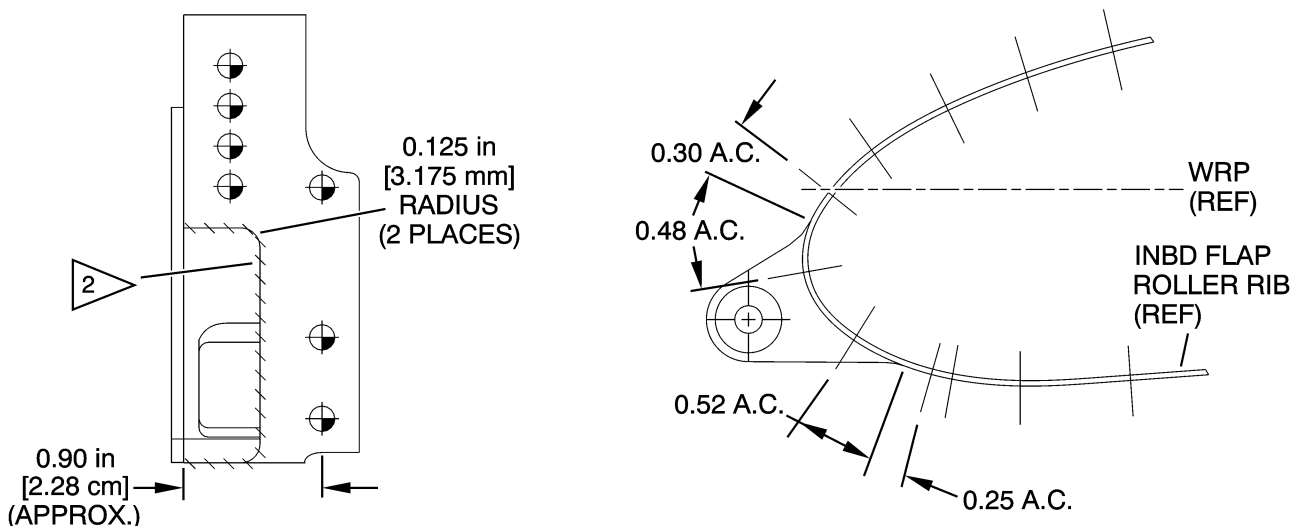
LEARJET 31 **Service Bulletin**



K31-312720-001-01

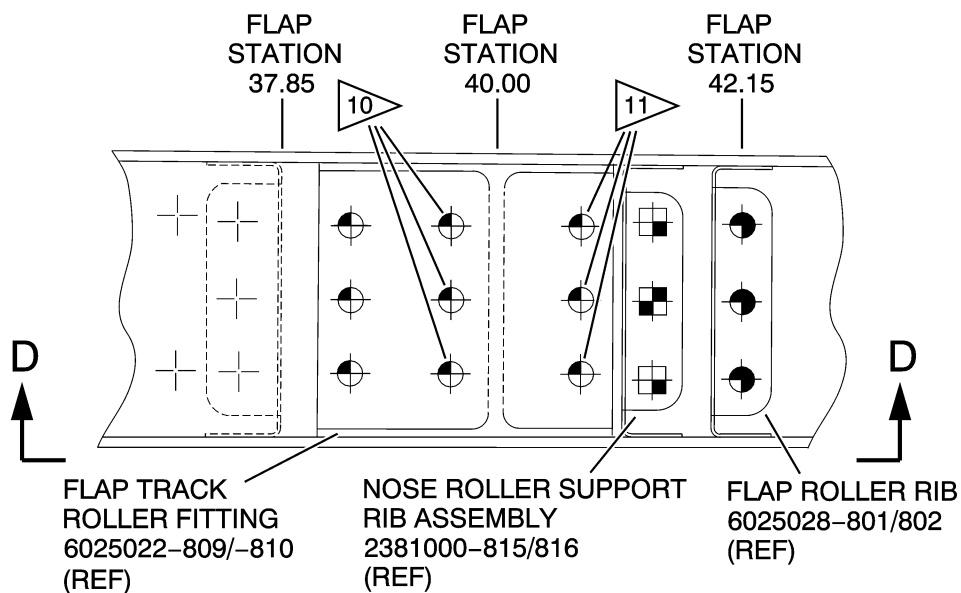
Inboard Flap Track Roller Fitting, Flap Roller Rib, and Nose Roller Support Rib Replacement
Figure 1 (Sheet 1 of 4)

LEARJET 31 Service Bulletin



(SHOWING THE ADDITIONAL SKIN CUTOUT
REQUIRED FOR CLEARANCE FOR THE NEW FLAP ROLLER RIB)
(LH SHOWN, RH OPPOSITE)

View B-B



(VIEW LOOKING AFT TOWARDS FLAP SPAR)
(LH SHOWN, RH OPPOSITE)

View C-C

K31-312720-001-02

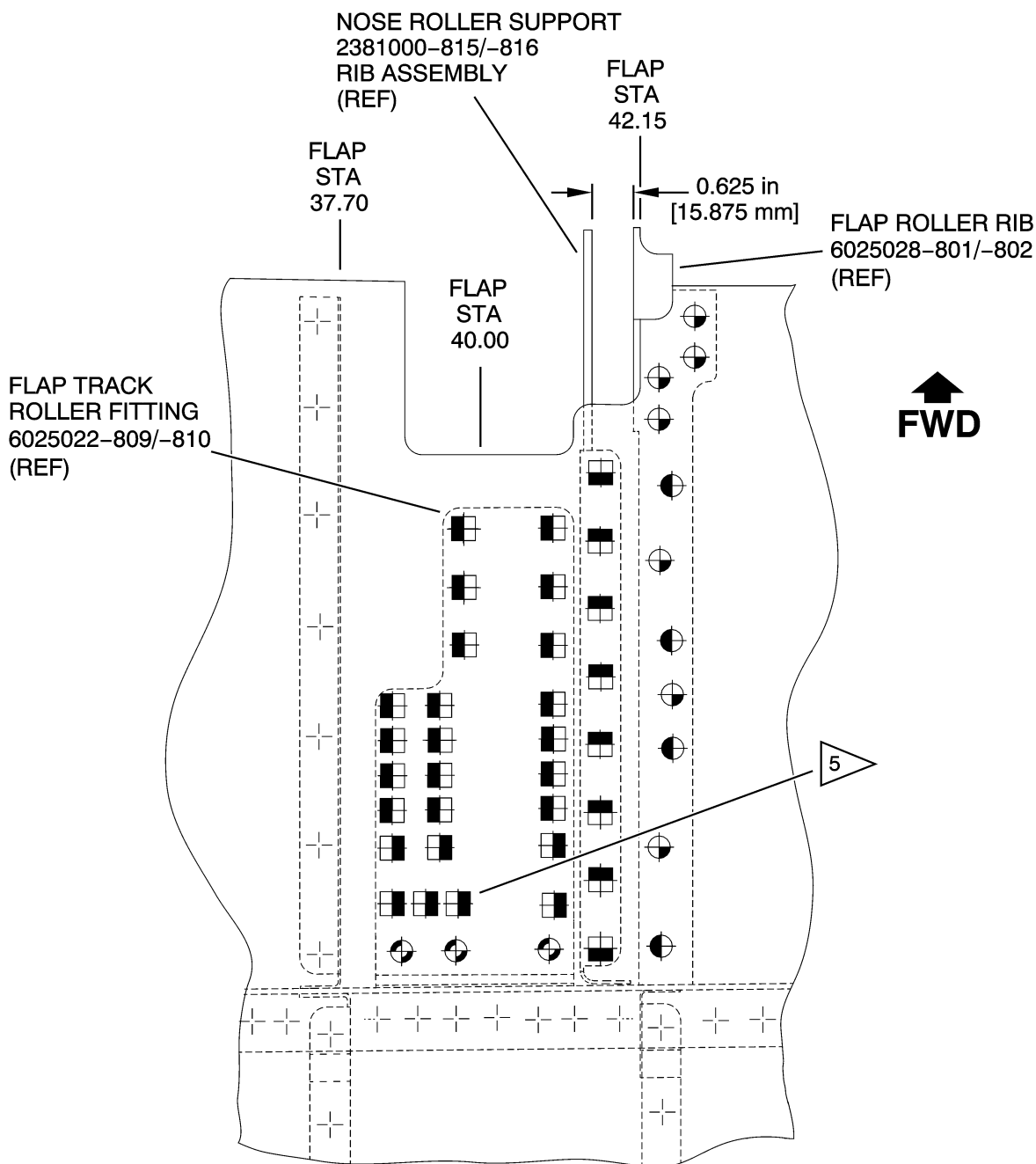
Inboard Flap Track Roller Fitting, Flap Roller Rib, and Nose Roller Support Rib Replacement
Figure 1 (Sheet 2 of 4)

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(VIEW LOOKING UP AT FLAP)
(LH SHOWN, RH OPPOSITE)
View D-D

K31-312720-001-03

Inboard Flap Track Roller Fitting, Flap Roller Rib, and Nose Roller Support Rib Replacement
Figure 1 (Sheet 3 of 4)

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FASTENER SYMBOL LEGEND					
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	CR3213-5-03		CR3524-5-05 Rivet (C'Sink 100°) (Head on Near Side)		CSR904B-5-7 (C'Sink 100°) (Head on Near Side)
	CR3242-4-02 (C'Sink 100°) (Head on Near Side)		MS20470AD5-5		NAS1097AD4-2 (C'Sink 100°) (Head on Near Side)
	CR3242-4-03 (C'Sink 100°) (Head on Near Side)		NAS1097AD4-4 (C'Sink 100°) (Head on Near Side)		NAS1097AD5-5 (C'Sink 100°) (Head on Near Side)
	CR3242-4-04 (C'Sink 100°) (Head on Near Side)		NAS1097AD4-5 (C'Sink 100°) (Head on Near Side)		NAS1097AD4-7 (C'Sink 100°) (Head on Near Side)
	CR3243-4-04		NAS1097AD4-5 (2xC'Sink 100°) (Double Flush) (Head on Near Side)		
	CSR904B-5-5 (C'Sink 100°) (Head on Near Side)				

NOTES

1. Inspect skin perimeter for cracks (upper and lower).
2. Cutout approximately 1.50 x 0.50 in [38.10 x 12.70 mm] along contour.
3. Permissible to reinstall existing shims or fabricate new shims as necessary to fill any voids between fitting and adjacent mating structure. Make from 2024-T3.
4. Maintain proper edge margin for all rivets.
5. Acceptable to use CR3524-4-04 rivet if unable to squeeze NAS1097AD rivet (1 place only).
6. Install rivets in the flap attach fitting using the squeeze technique.
7. Bond upper surface of fitting with HYSOL EA 9602.3 adhesive film. (Acceptable to bond with Class II adhesive as an alternate.) (Refer to Learjet Maintenance Manual, Chapter 20.)
8. Install rivets wet with Class II adhesive.
(Refer to Learjet Maintenance Manual, Chapter 20.)
9. Acceptable to notch or trim the top aft edge of rib to clear rivet if unable to install with proper minimum edge distance.
10. Install CR3243-5-03 rivets in lieu of CR3213-5-03 on aircraft equipped with flaps modified by SSK 0976.
11. Install one each AN3-5A bolt, AN960-10L washer, and MS21042-L3 nut three places on aircraft with flaps modified by SSK 0976.

K31-312720-001-04

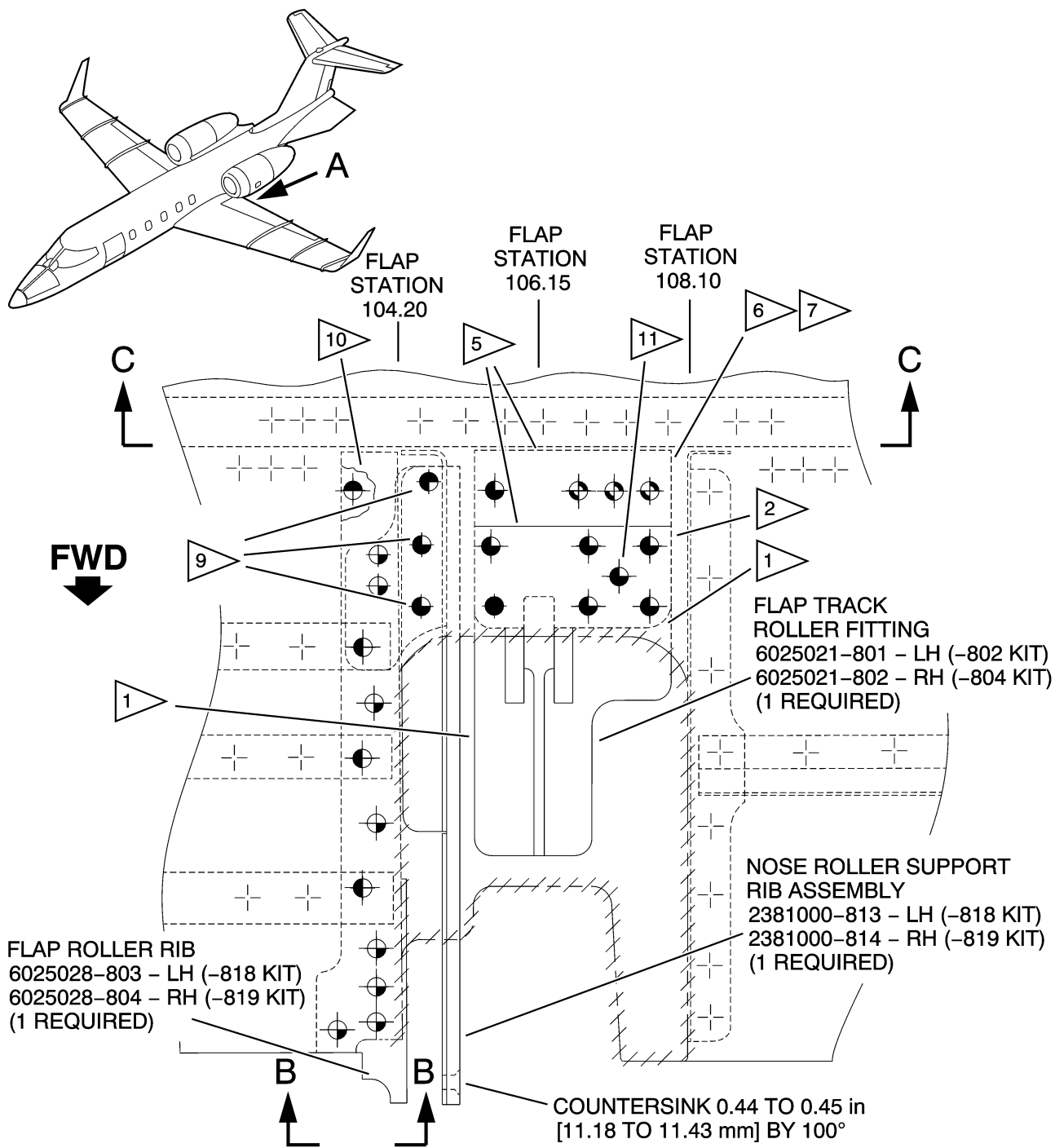
Inboard Flap Track Roller Fitting, Flap Roller Rib, and Nose Roller Support Rib Replacement
Figure 1 (Sheet 4 of 4)

Basic Issue: Sep 11/17

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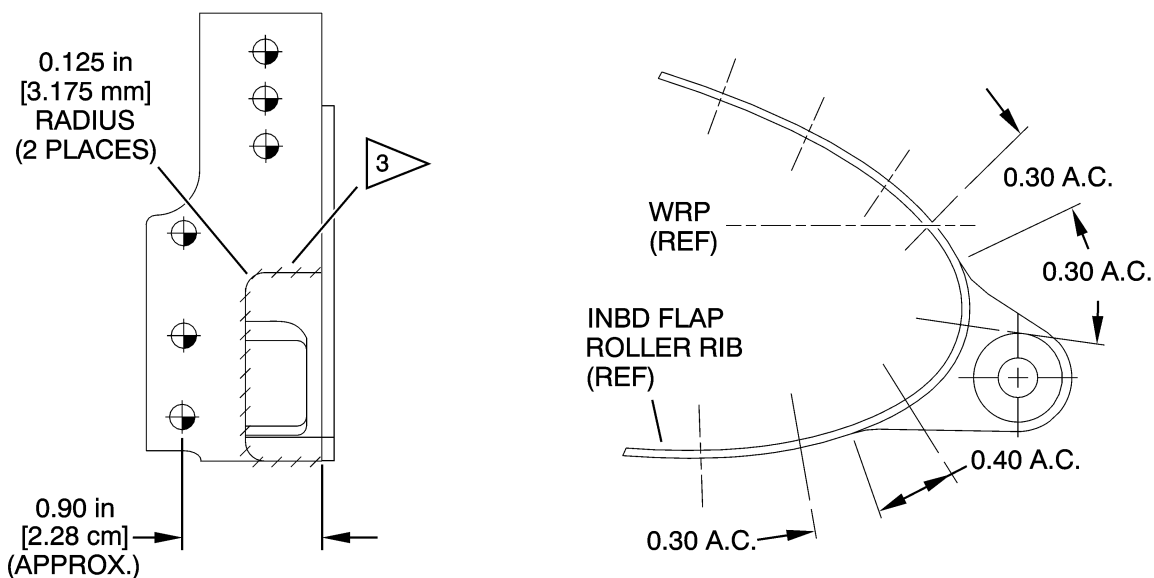
(VIEW LOOKING DOWN AT FLAP, OUTBOARD NOSE ROLLER AREA)
(LH SHOWN, RH OPPOSITE)

Detail A

K31-312720-002-01

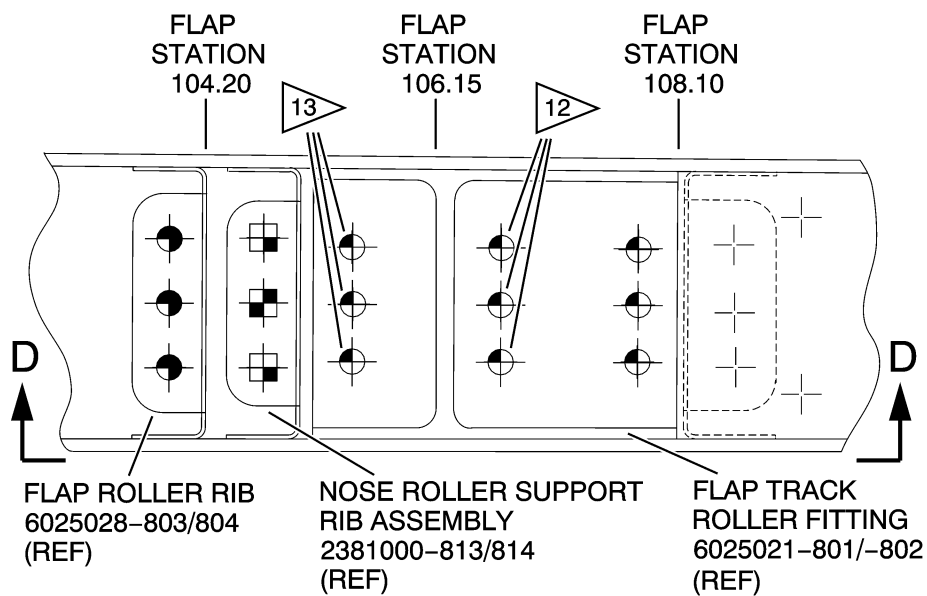
Outboard Flap Track Roller Fitting, Flap Roller Rib, and Nose Roller Support Rib Replacement
Figure 2 (Sheet 1 of 4)

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(SHOWING THE ADDITIONAL SKIN CUTOUT)
(REQUIRED FOR CLEARANCE FOR THE NEW FLAP ROLLER RIB)
(LH SHOWN, RH OPPOSITE)

View B-B



(VIEW LOOKING AFT TOWARDS FLAP SPAR)
(LH SHOWN, RH OPPOSITE)

View C-C

K31-312720-002-02

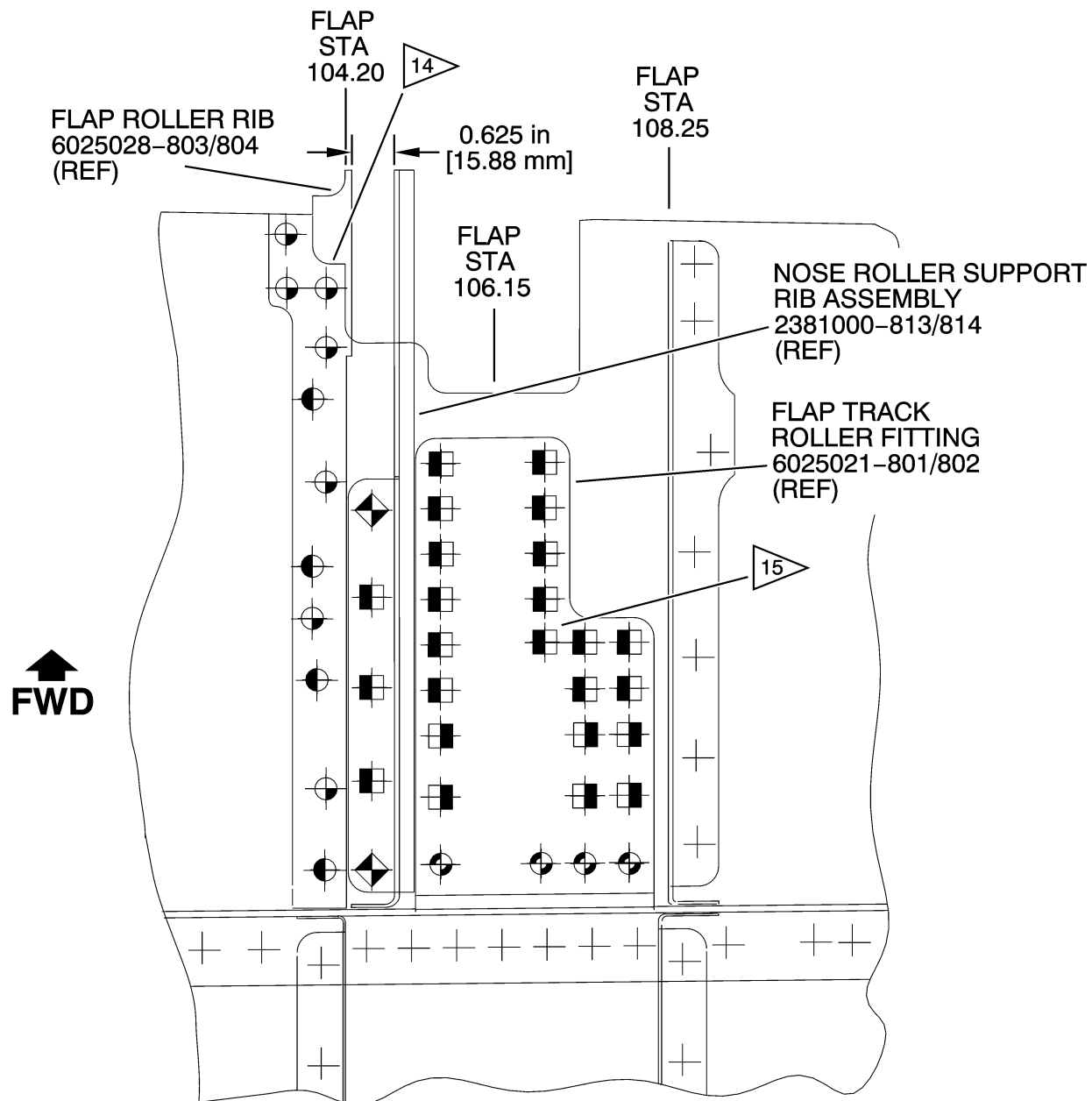
Outboard Flap Track Roller Fitting, Flap Roller Rib, and Nose Roller Support Rib Replacement
Figure 2 (Sheet 2 of 4)

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(VIEW LOOKING UP AT FLAP)
(LH SHOWN, RH OPPOSITE)

View D-D

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Outboard Flap Track Roller Fitting, Flap Roller Rib, and Nose Roller Support Rib Replacement
Figure 2 (Sheet 3 of 4)

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FASTENER SYMBOL LEGEND					
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	CR3213-5-03		CSR904B-5-7 (C'Sink 100°) (Head on Near Side)		CSR904B-5-4 (C'Sink 100°) (Head on Near Side)
	CR3242-4-02 (C'Sink 100°) (Head on Near Side)		CR3524-5-05 Rivet (C'Sink 100°) (Head on Near Side)		CSR904B-5-5 (C'Sink 100°) (Head on Near Side)
	CR3242-4-03 (C'Sink 100°) (Head on Near Side)		NAS1097AD4-5 (C'Sink Both Sides 100°) (Head on Near Side)		NAS1097AD4-7 (C'Sink 100°) (Head on Near Side)
	CR3242-4-04 (C'Sink 100°) (Head on Near Side)		NAS1097AD4-5 (C'Sink 100°) (Head on Near Side)		MS20470AD5-5
	CSR904B-5-3 (C'Sink 100°) (Head on Near Side)		NAS1097AD5-5 (2xC'Sink 100°) (Double Flush) (Head on Near Side)		CR3243-4-04

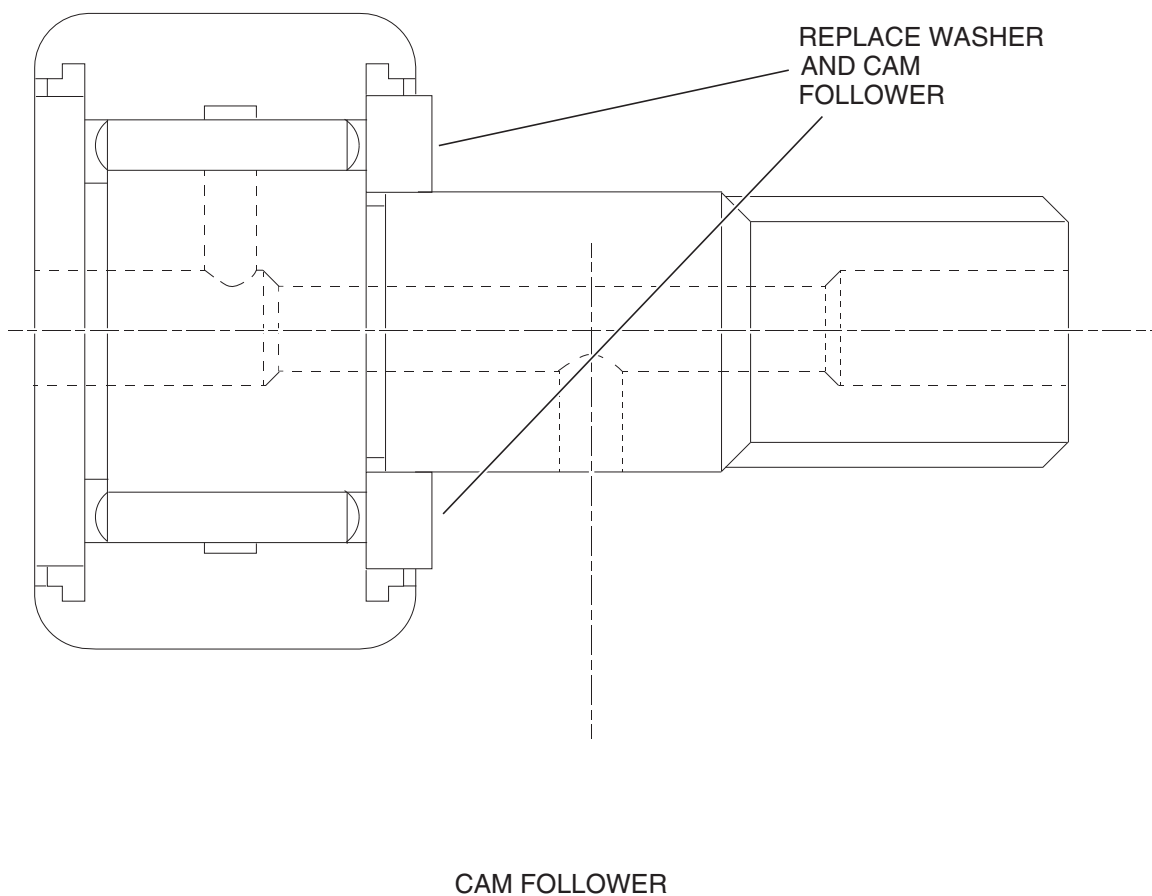
NOTES

1. Trim this edge, if required, for clearance.
2. Inspect skin perimeter for cracks (upper and lower).
3. Cutout approximately 1.50 x 0.50 in [38.10 x 12.70 mm] along contour.
4. Maintain proper edge margin for all rivets.
5. Permissible to reinstall existing shims or fabricate new shims as necessary to fill any voids between fitting and adjacent mating structure. Make from 2024-T3.
6. Install rivets in the flap attach fitting using the squeeze technique.
7. Bond upper surface of fitting with HYSOL EA9602.3 adhesive film. (Acceptable to bond with Class II adhesive as an alternate.) (Refer to Learjet Maintenance Manual, Chapter 20.)
8. Install rivets wet with Class II adhesive.
(Refer to Learjet Maintenance Manual, Chapter 20.)
9. Acceptable to use CR3524-5-05 rivet if unable to squeeze CSR904B-5 rivet.
10. Acceptable to notch or trim the top aft edge of rib to clear rivet if unable to install with proper minimum edge distance.
11. New location. Center within group.
12. Install CR3243-5-03 rivets in lieu of CR3213-5-03 on aircraft equipped with flaps modified by SSK 0976.
13. Install one each AN3-5A bolt, AN960-10L washer, and MS21042-L3 nut three places with flaps modified by SSK 0976.
14. Continue trim line aft only as far as necessary to remove unused fastener hole in skin.
15. Plug this hole in skin if rivet falls in radius of fitting.

K31-312720-002-04

Outboard Flap Track Roller Fitting, Flap Roller Rib, and Nose Roller Support Rib Replacement
Figure 2 (Sheet 4 of 4)

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K60-602722-006-01

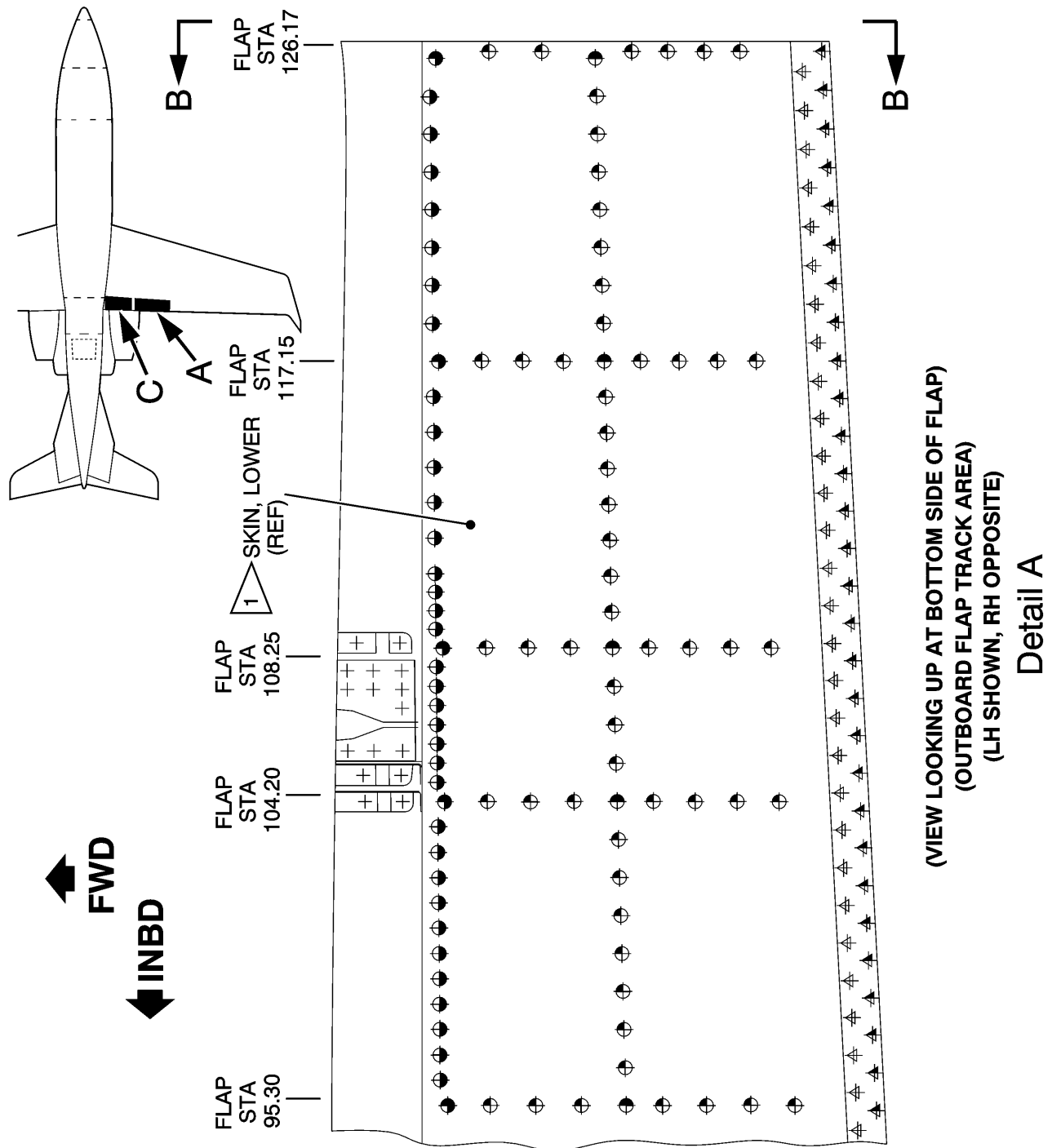
Replacement of the Cam Follower and Washer
Figure 3

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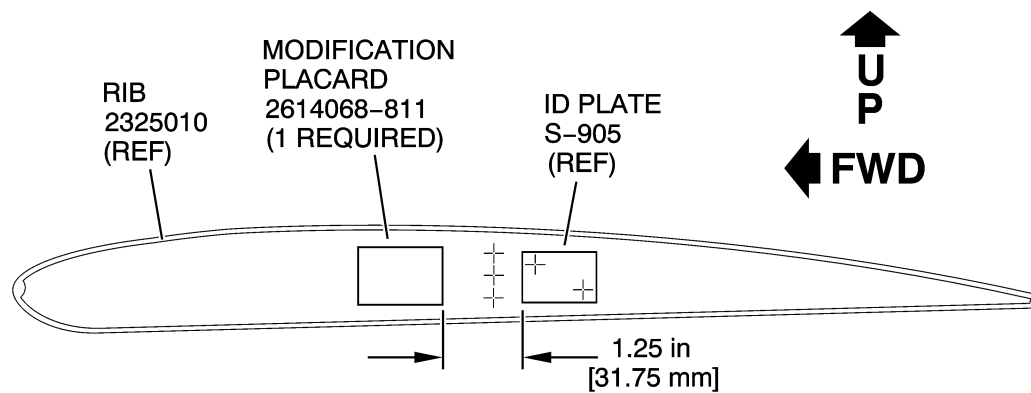
K31-312720-004-01

Flap Lower Skin Rivet Location
Figure 4 (Sheet 1 of 4)

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(MODIFICATION PLACARD INSTALLATION)
(OUTBOARD END OF FLAP)
(LH SHOWN, RH OPPOSITE)
View B-B

K31-312720-004-02

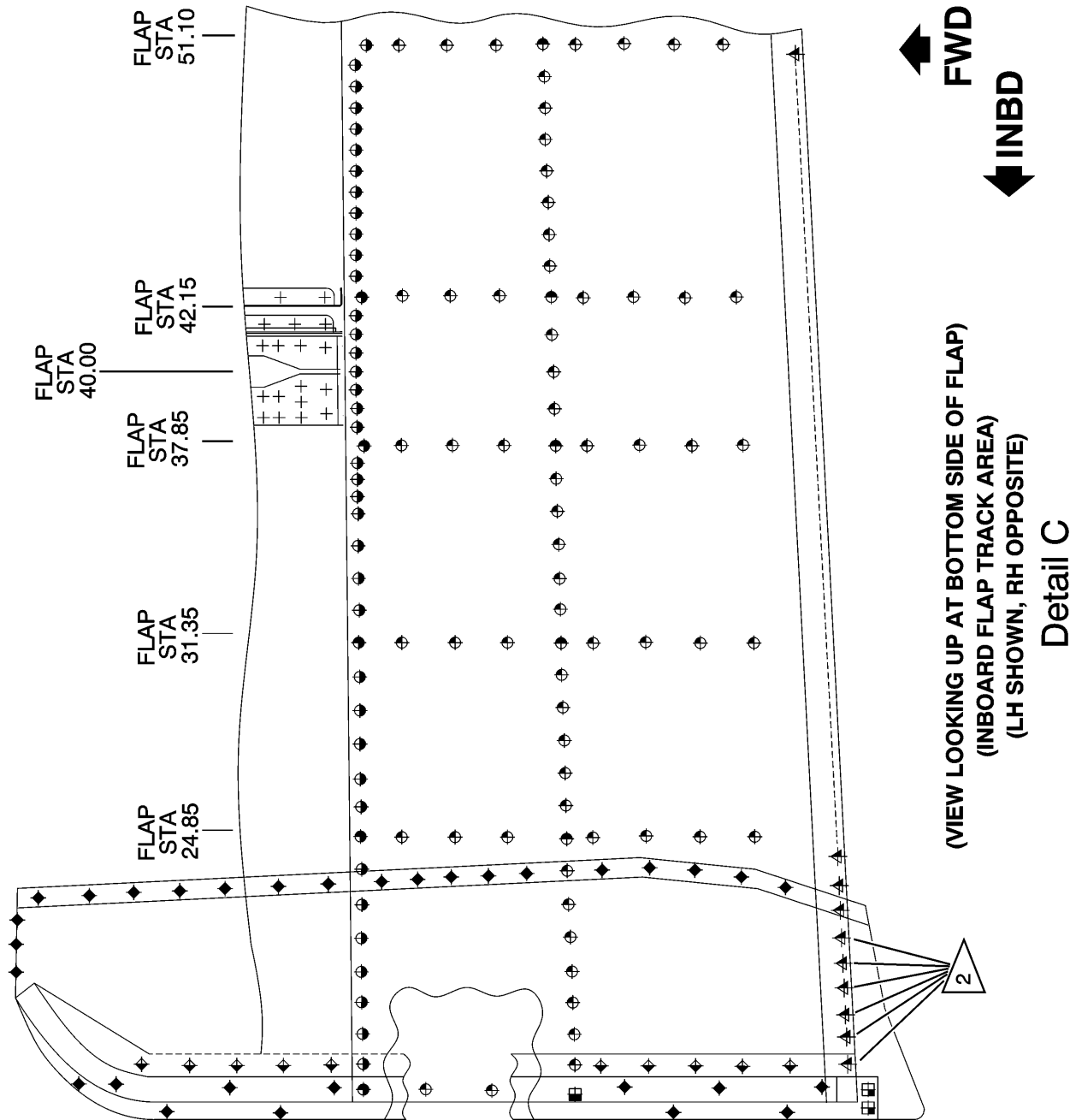
Flap Lower Skin Rivet Location
Figure 4 (Sheet 2 of 4)

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K31-312720-004-03

Flap Lower Skin Rivet Location
Figure 4 (Sheet 3 of 4)

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FASTENER SYMBOL LEGEND					
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	CR3242-4-02 (2xDimple 100°) (Head on Near Side)		CR3242-4-03 (C'Sink 100°) (Dimple 100°) (Head on Near Side)		CR3243-4-01
	CR3242-4-02 (C'Sink 100°) (Dimple 100°) (Head on Near Side)		CR3242-4-01 (C'Sink 100°) (Head on Near Side)		CR3242-4-02 (3x Dimple 100°) (Head on Near Side) or CR3242-4-04 (C'Sink 100°) (Head on Near Side)
	CR3242-4-03 (3xDimple 100°) (Head on Near Side)		NAS1097AD4-4 (C'Sink 100°) (Head on Near Side)		MS20470B3-5
					MS20470B3-7

NOTE

- 1 Bond all surfaces with HYSOL EA9602.3 adhesive film (acceptable to bond with Class II adhesive as an alternate.) (Refer to Learjet Maintenance Manual, Chapter 20.)
- 2 When applicable, install NAS1097B3-5 rivets.

K31-312720-004-4

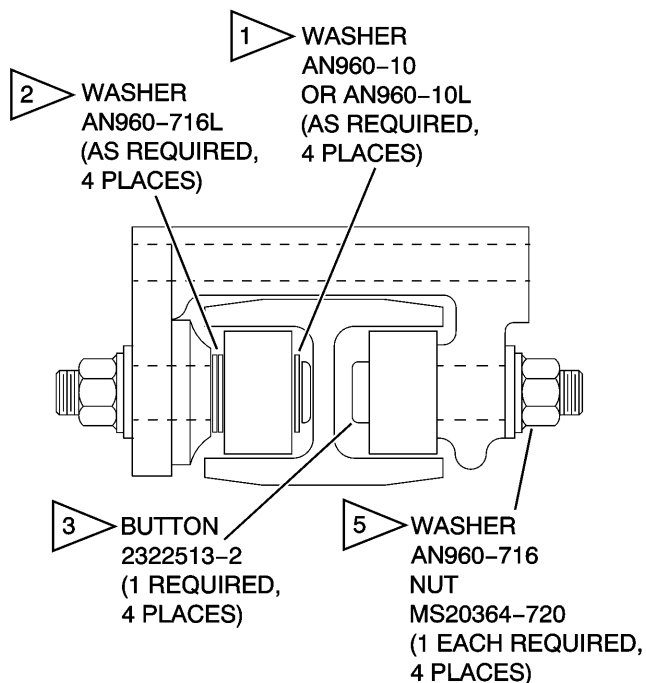
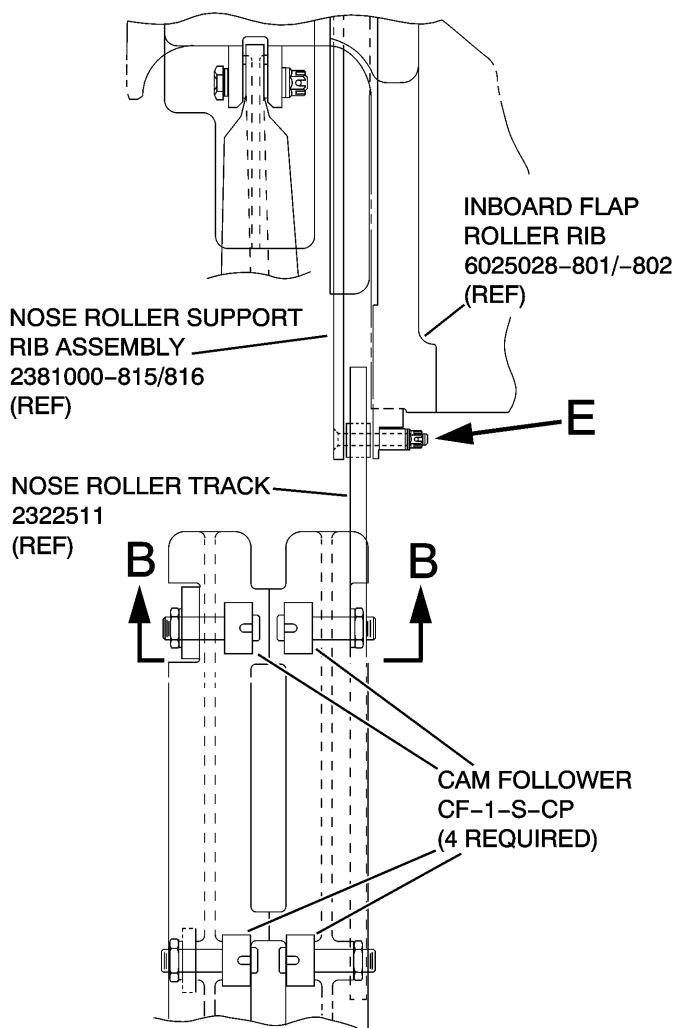
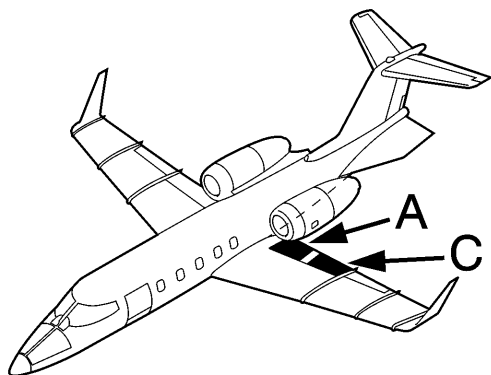
Flap Lower Skin Rivet Location
Figure 4 (sheet 4 of 4)

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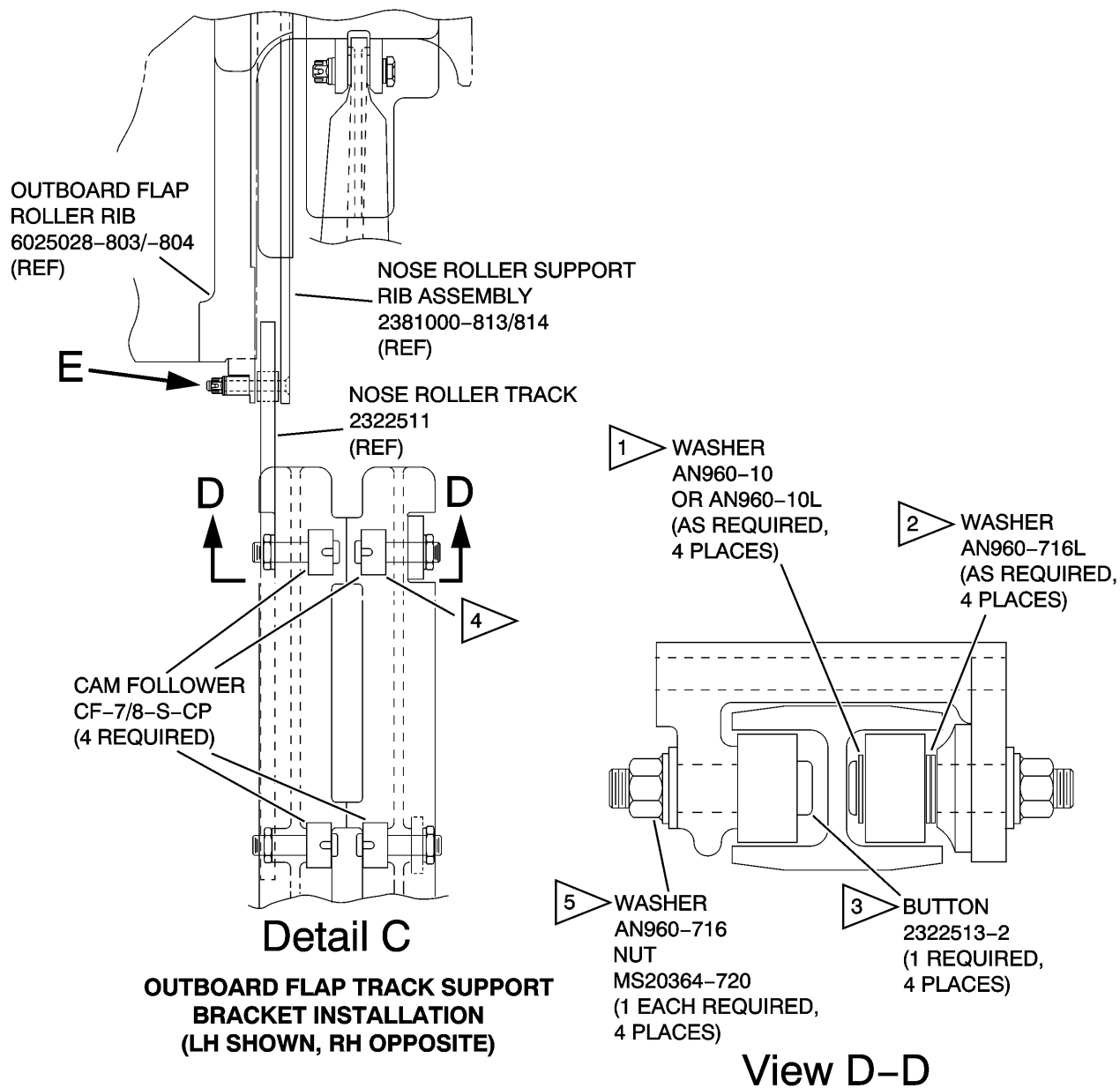


View B-B

K31-312720-005-01

Flap Track Support Bracket with Allowable Shims
Figure 5 (Sheet 1 of 3)

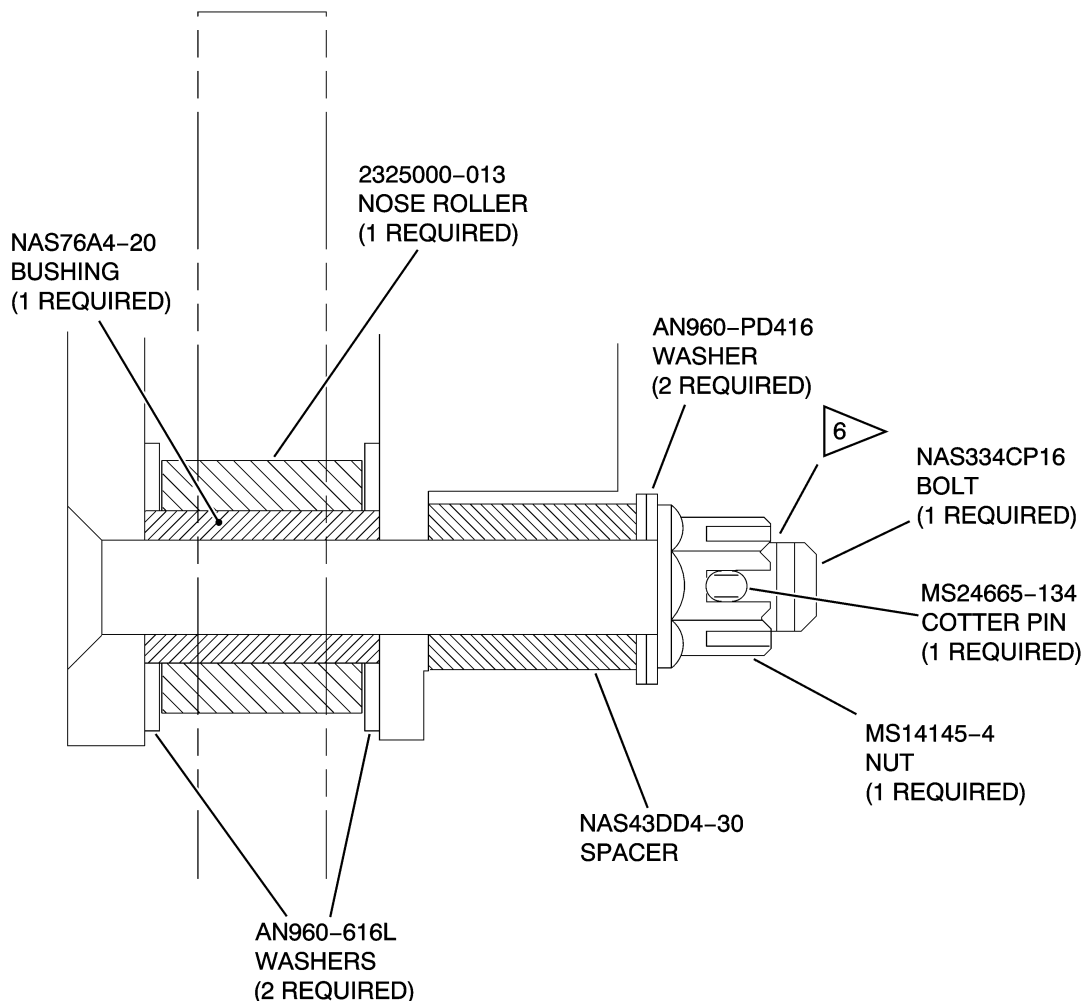
LEARJET 31 Service Bulletin



K31-312720-005-02

Flap Track Support Bracket with Allowable Shims
Figure 5 (Sheet 2 of 3)

LEARJET 31 Service Bulletin



Detail E

NOTES

- 1 Only one (1) washer may be used to shim each cam button.
- 2 A maximum of two (2) washers may be used to shim each cam follower.
- 3 Button 2322513-1 may be used as an alternate for 2322513-2 as required.
- 4 For aircraft 31-156 LH flap, see Illustrated Parts Catalog for P/N.
- 5 If minimum of one thread does not extend past end on nut, use AN960-616L or AN960716L washer. If still less than one thread, use NAS1149C0616R or NAS 1149C0716R washer. End of stud shall extend no less than flush with end of nut.
- 6 Torque nut to 30 in-lbs (3.38 Nm). If the cotter pin can not be installed, continue to increase the torque while trying to install the cotter pin to a maximum of 50 in-lbs (5.64 Nm).

K31-312720-005-03

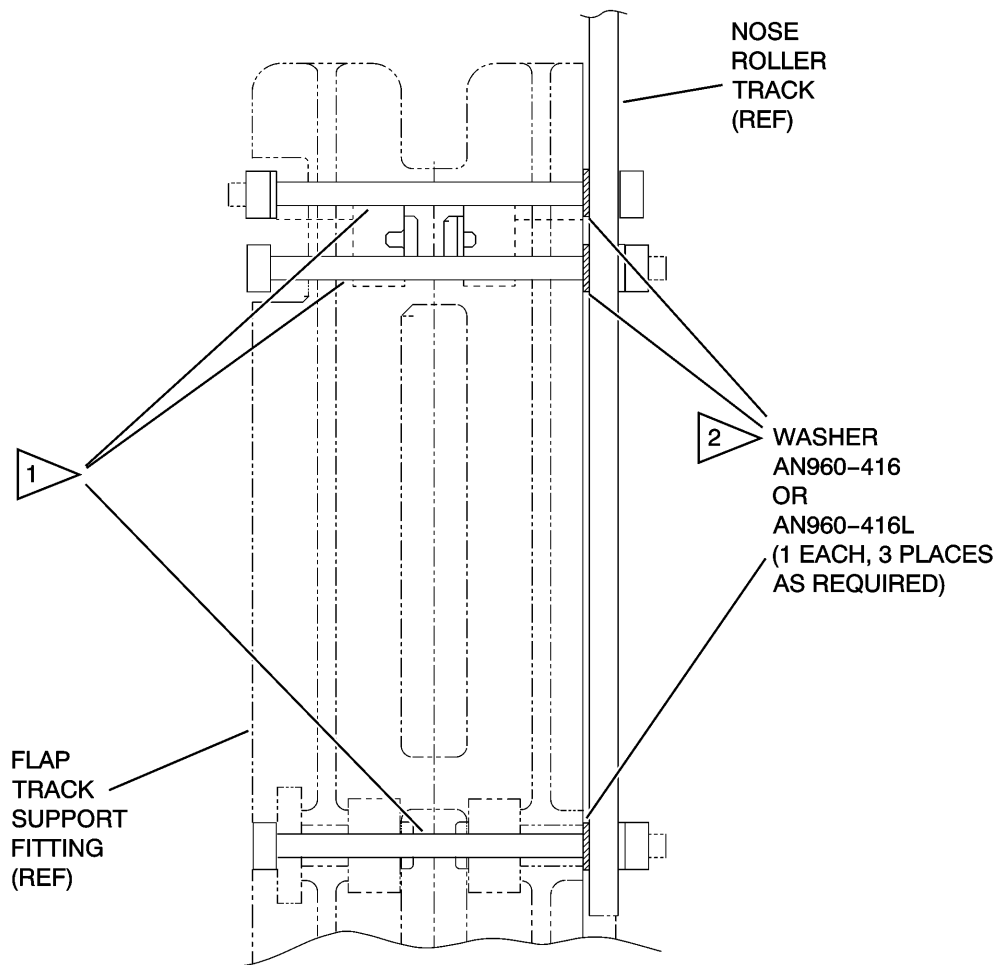
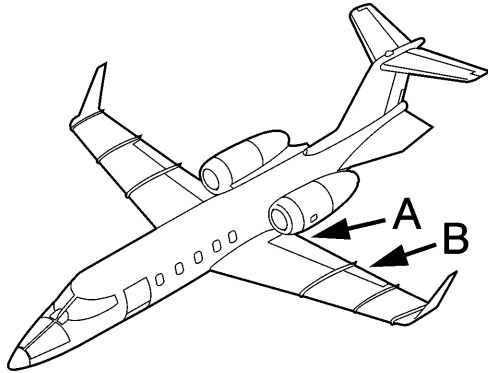
Flap Track Bracket Support with Allowable Shims
Figure 5 (Sheet 3 of 3)

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Detail A
(INBOARD FLAP TRACK SUPPORT)
(LH SHOWN, RH OPPOSITE)

K31-312720-006-01

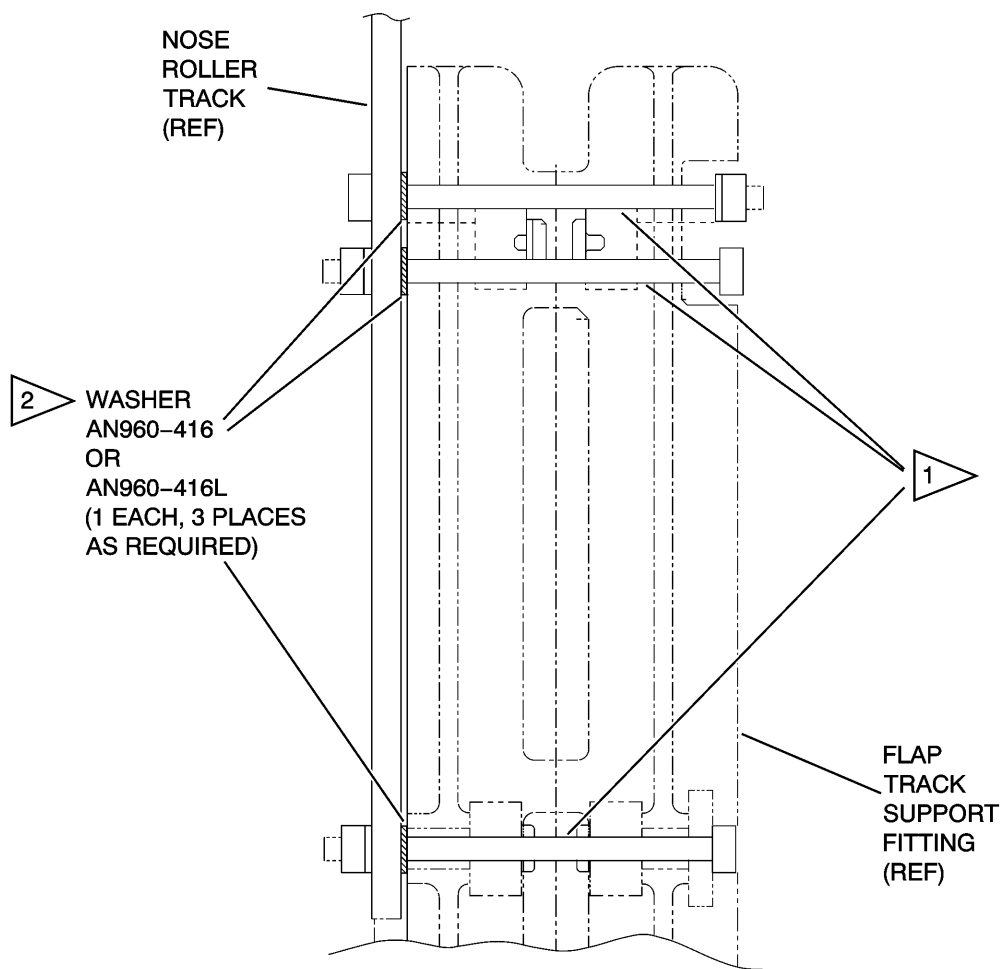
Flap Track Support with Shimmed Nose Track
Figure 6 (Sheet 1 of 2)

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Detail B
(OUTBOARD FLAP TRACK SUPPORT)
(LH SHOWN, RH OPPOSITE)

NOTES

- 1 Permissible to replace bolts with one size longer when necessary for proper nut engagement.
- 2 One washer may be used under each nose roller track bolt for flap rigging.

K31-3152720-006-02

Flap Track Support with Shimmed Nose Track
Figure 6 (Sheet 2 of 2)

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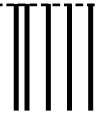
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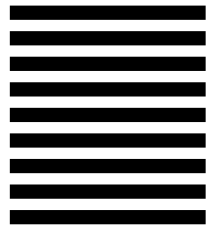
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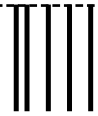
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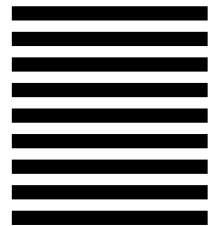
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