

DEGAUSSING - MAINTENANCE PRACTICES

EFFECTIVITY: ALL

1. General

- A. This section gives the procedures to degauss the Display Units (DU), Landing Gears, Wings, Engine Yokes and Mounts.
- B. The displays can be magnetized after a lightning strike onto the aircraft. After a lightning strike, the colors of the displays can change.
- C. The aircraft parts that can become magnetized after a lightning strike can cause a large error in the standby compass indication and in the attitude and direction system.
- D. The procedures in this section are given in the sequence below. The tasks identified with (♦) are part of the Scheduled Maintenance Requirements Document (SMRD).

TASK NUMBER	DESCRIPTION	EFFECTIVITY
20-13-01-910-801-A	DISPLAY UNIT - DEGAUSSING	AIRCRAFT WITHOUT CURSOR CONTROL DEVICE (CCD)
20-13-01-910-802-A	LANDING GEARS WINGS MOUNTS AND ENGINE YOKES - DEGAUSSING	ALL

TASK 20-13-01-910-801-A

EFFECTIVITY: AIRCRAFT WITHOUT CURSOR CONTROL DEVICE (CCD)

2. DISPLAY UNIT - DEGAUSSING

A. General

- (1) This task gives the procedures to degauss the Cathode Ray Tube (CRT) Display Units (DU).
- (2) The displays can be magnetized after a lightning strike onto the aircraft. If it occurs, their colors can change.
- (3) Degaussing can be done in all DU positions but the measurement procedure can only be done in the MFDs positions. Thus, it is recommended that you move the DU to one of these positions before you start.
- (4) After the display is degaussed, it is necessary to do the measurement procedure to make sure that the alignment of the three electron guns in the CRT of the DU is correct.
- (5) Use the Klein gauge with the vertical and horizontal white lines that you can see in the MFD and PFD displays.
- (6) The horizontal and vertical white lines will be shown in the upper left and upper right corners of the PFD display. The horizontal and vertical white lines will be shown in the lower left and lower right corners of the MFD display when the TCAS mode is set.

B. References

REFERENCE	DESIGNATION
AMM SDS 31-41-00/1	
AMM SDS 31-42-00/1	
AMM SDS 34-22-00/1	
AMM TASK 20-40-01-860-801-A/200	ENERGIZATION OF THE AIRCRAFT WITH AN EXTERNAL POWER SOURCE
AMM TASK 34-22-01-000-801-A/400	DISPLAY UNIT - REMOVAL
AMM TASK 34-22-01-400-801-A/400	DISPLAY UNIT - INSTALLATION

C. Zones and Accesses

ZONE	PANEL/DOOR	LOCATION
223		Cockpit

D. Tools and Equipment

Not Applicable

E. Auxiliary Items

ITEM	DESCRIPTION	PURPOSE	QTY
Commercially available	Degaussing Coil	Degaussing	1

(Continued)

ITEM	DESCRIPTION	PURPOSE	QTY
Model CM7AG or CM7AR	Klein Gauge	Alignment Measurement	1

F. Consumable Materials

Not Applicable

G. Expandable Parts

Not Applicable

H. Persons Recommended

QTY	FUNCTION	PLACE
1	Does the task	Cockpit

I. Preparation

SUBTASK 841-002-A

- (1) Make sure that the DU to be degaussed is installed in the MFD positions. Refer to [AMM TASK 34-22-01-000-801-A/400](#) and [AMM TASK 34-22-01-400-801-A/400](#).
- (2) Energize the aircraft with the External DC Power Supply ([AMM TASK 20-40-01-860-801-A/200](#)).
- (3) Make sure that these systems are operational and on:
 - Integrated Computer System ([AMM SDS 31-42-00/1](#)).
 - EFIS ([AMM SDS 34-22-00/1](#)).
 - EICAS ([AMM SDS 31-41-00/1](#)).

J. Degaussing ([Figure 201](#))

SUBTASK 910-002-A

WARNING: OBEY THE DEGAUSSING COIL OPERATING INSTRUCTIONS TO PREVENT OVERHEATING, FAILURE OF THE COIL, DAMAGE TO EQUIPMENT, AND/OR THE RISK OF ELECTRICAL SHOCK.

CAUTION: KEEP THE DEGAUSSING COIL AWAY FROM MAGNETIC MEDIA. A DEGAUSSING COIL WILL ERASE MAGNETIC MEDIA.

CAUTION: THE DEGAUSSING COIL MUST NOT BE OPERATED FOR MORE THAN ONE MINUTE CONTINUOUSLY. AFTER ONE MINUTE OF OPERATION, STOP FOR THIRTY MINUTES TO LET THE COIL COOL.

- (1) Operate the degaussing coil.
- (2) Hold the degaussing coil at approximately three feet (one meter) from the DU, with the plane of the coil parallel to the front of the display.

- (3) Push and hold the switch on the coil while you move the coil in a circular motion. Slowly move the coil to the DU until the circular movement is 2 inches (50 mm) from the DU.
- (4) After a few seconds of circular movements near the DU, slowly move the coil back out to approximately three feet (one meter) while you continue the circular motion of the coil and release the switch.
- (5) Do the alignment measurement ([SUBTASK 910-003-A](#)) and make sure that all measurements is less than 0.4 mm.

K. Alignment Measurement ([Figure 201](#)) ([Figure 202](#))

SUBTASK 910-003-A

- (1) Operate the Klein Gauge as follows ([Figure 202](#)):

NOTE: Use white lines only for measurements.

- (a) Put the gauge against the screen in an area where convergence is to be measured. The orientation of the gauge shown is for measurement of convergence error in the "Y" direction. To measure the "X" direction, the gauge is turned 90 degrees. Refer to DET. A.
 - (b) If the horizontal lines of the grid pattern are not converged, they will come into view as three separate red, green, and blue lines. Turn the knob to each side of the gauge until the brightness centers of the three images align. Refer to DET. B.
 - (c) The image is now optically converged, and the amount of convergence error between blue/green and red/green can be read from the scales. Refer to DET. C.
 - (d) If the outer lines are high and low from the center line as shown in DET. B, then the absolute value of the measurements must be added and the sum must be no larger than 0.4 mm.
 - (e) If the two outer lines are high or the two of them are low from center then the larger of the two measurements must be less than or equal to 0.4mm from center. Ignore the smaller measurement.
- (2) Push the TCAS bezel button to start the TCAS display.
 - (3) Put the Klein gauge on the MFD display.
 - (4) Make Klein Gauge measurements, as written in item (1), of white line locations 1 through 5 as shown in [Figure 201](#).
 - (5) Turn the MFD rotary switch, on the left reversionary panel, to the PFD position.
 - (a) The MFD is configured to operate as a PFD.
 - (6) Make Klein Gauge measurements of white line locations 6 through 9 as shown in [Figure 201](#).
 - (7) If one of the nine measurements is more than 0.4mm then do the degaussing procedure again ([SUBTASK 910-002-A](#)). If you cannot get 0.4mm minimum then send the DU back to the Honeywell, Inc. service center for repair.

NOTE: It can be necessary to do the degaussing procedure many times to get the 0.4mm minimum for all nine measurements.

L. Follow-on

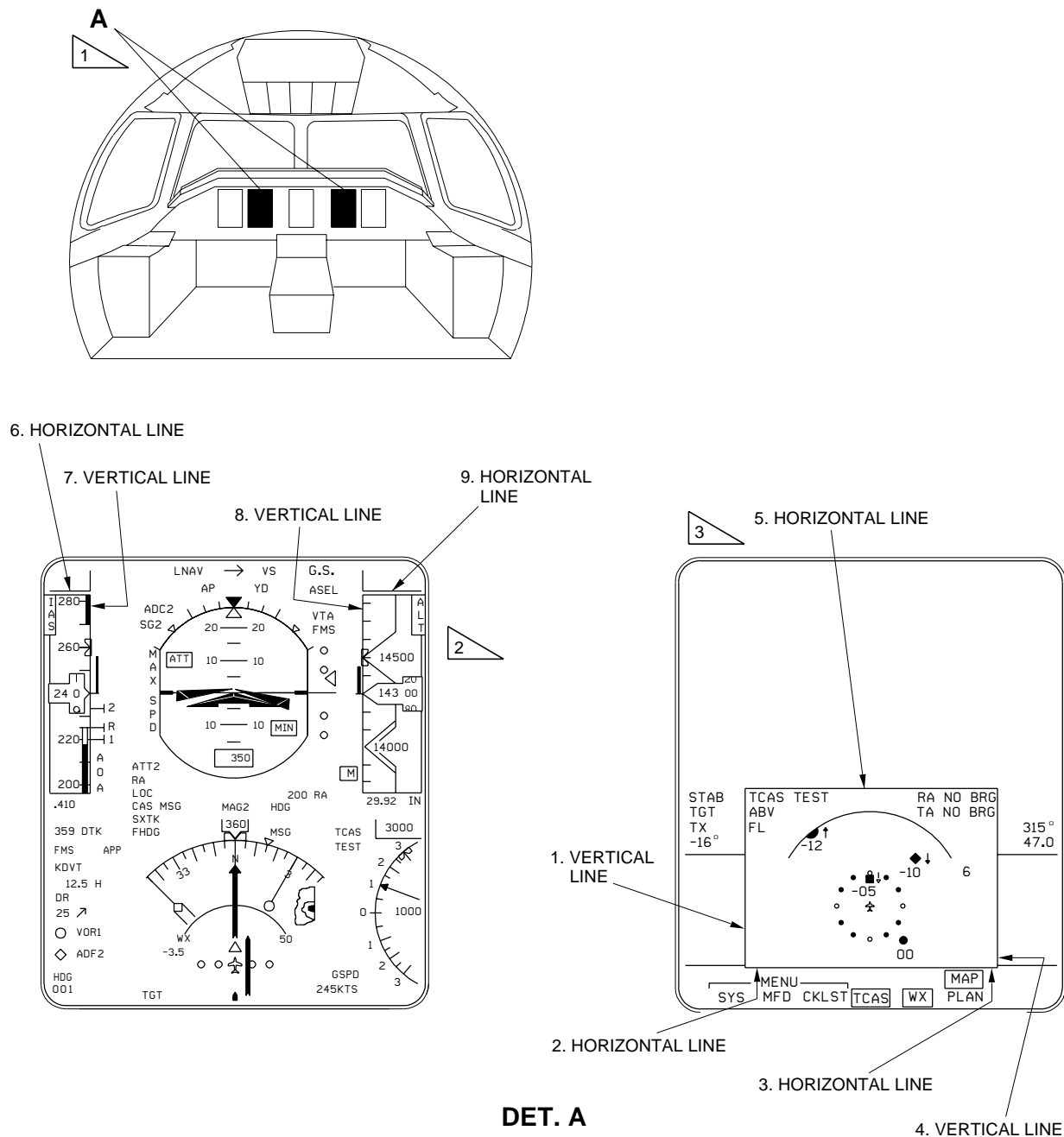
SUBTASK 842-002-A

- (1) If you change any display unit to the MFD position, exchange the display unit back to its original position. Refer to [AMM TASK 34-22-01-000-801-A/400](#) and [AMM TASK 34-22-01-400-801-A/400](#).
- (2) Deenergize the aircraft ([AMM TASK 20-40-01-860-801-A/200](#)).

EFFECTIVITY: AIRCRAFT WITHOUT CURSOR CONTROL DEVICE (CCD)

Display Unit - Alignment Measurement

Figure 201



1 DU MUST BE INSTALLED AT ONE OF THESE POSITIONS FOR THE ALIGNMENT MEASUREMENT

2 DU AS PFD DISPLAY

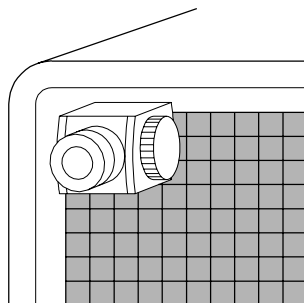
3 DU AS MFD DISPLAY

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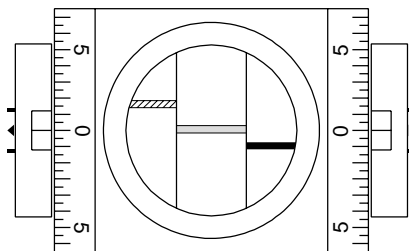
EFFECTIVITY: AIRCRAFT WITHOUT CURSOR CONTROL DEVICE (CCD)

Klein Gauge - Alignment Measurement

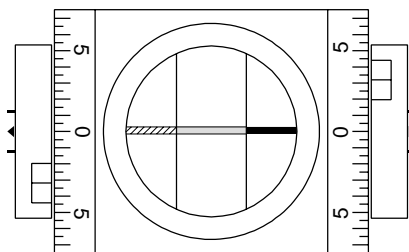
Figure 202



DET. A




DET. B



DET. C

LEGEND

 – RED

 – GREEN

 – BLUE

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TASK 20-13-01-910-802-A

EFFECTIVITY: ALL

3. LANDING GEARS WINGS MOUNTS AND ENGINE YOKES - DEGAUSSING

A. General

- (1) This task gives the procedures to measure magnetization at the Landing Gears, Wing Tips, Flap Actuators, Flap Transmission Brake, Aileron Primary Mechanical Controls, Mounts and Engine Yoke after a lightning strike.
- (2) This task gives also the procedures to degaussing the parts that become magnetized.

B. References

REFERENCE	DESIGNATION
AMM MPP 06-44-00/100	- COMPONENT LOCATION
AMM TASK 29-10-00-860-802-A/200	HYDRAULIC SYSTEM - PRESSURIZATION WITH EMDP
AMM TASK 32-00-02-910-801-A/200	SAFETY PIN OF THE NLG DOORS SOLENOID VALVE - INSTALLATION AND REMOVAL
AMM TASK 34-20-00-700-801-A/500	ATTITUDE AND DIRECTION - OPERATIONAL TEST AFTER LIGHTNING STRIKE
AMM TASK 34-21-02-000-801-A/400	FLUX DETECTOR UNIT (FDU) - REMOVAL
AMM TASK 34-21-02-400-801-A/400	FLUX DETECTOR UNIT (FDU) - INSTALLATION
AMM TASK 57-56-01-000-801-A/400	INBOARD AND OUTBOARD FLAP LOWER SHROUDS - REMOVAL
AMM TASK 57-56-01-400-801-A/400	INBOARD AND OUTBOARD FLAP LOWER SHROUDS - INSTALLATION
S.B.145-32-0036	-

C. Zones and Accesses

Not Applicable

D. Tools and Equipment

ITEM	DESCRIPTION	PURPOSE	QTY
GSE 036	Hydraulic Platform	To get access to the task area	
GSE 257	Degausser	To degauss the parts	
GSE 258	Gaussmeter	To measure the magnetic fields of the parts	

E. Auxiliary Items

Not Applicable

F. Consumable Materials

SPECIFICATION (BRAND)	DESCRIPTION	QTY
TT-M-261	Methyl Ethyl Ketone (MEK)	AR

G. Expandable Parts

Not Applicable

H. Persons Recommended

QTY	FUNCTION	PLACE
1	Does the task	Where applicable

I. Preparation

SUBTASK 841-003-A

- (1) On aircraft PRE-MOD. [S.B.145-32-0036](#), make sure that the pressure in hydraulic system 1 is fully released ([AMM TASK 29-10-00-860-802-A/200](#)).
- (2) On aircraft POST-MOD. [S.B.145-32-0036](#), install the safety pin of the NLG door solenoid valve ([AMM TASK 32-00-02-910-801-A/200](#)).
- (3) Set the flaps to the 45-degree position to access the flap actuators.
- (4) Put a "DO-NOT-OPERATE-THE-FLIGHT-CONTROLS" warning tag at the control wheels and control pedestal in the cockpit.
- (5) Put the hydraulic platform in the correct position and at the necessary height.

J. Landing Gears, Mounts and Engine Yokes - Magnetization Measurement ([Figure 203](#)) ([Figure 204](#))

SUBTASK 910-004-A

CAUTION: • THE AIRCRAFT PARTS THAT CAN BECOME MAGNETIZED AFTER A LIGHTNING STRIKE ARE: NOSE LANDING GEAR, MAIN LANDING GEARS, MOUNTS AND ENGINE YOKES.

- ON THE NOSE LANDING GEAR, PARTS MUST BE DEMAGNETIZED IF THEY HAVE A MAGNETIC FIELD LARGER THAN 3G (3 GAUSS).
 - IF THE MAIN LANDING GEARS HAVE A MAGNETIC FIELD LARGER THAN 3G (3 GAUSS), YOU MUST MAKE SURE THAT THE ATTITUDE AND DIRECTION SYSTEM IS NOT AFFECTED BY THE LIGHTNING STRIKE ([AMM TASK 34-20-00-700-801-A/500](#)) OR DO THE DEGAUSSING PROCEDURE ([SUBTASK 910-006-A](#)).
 - IF THE MOUNTS AND ENGINE YOKES HAVE A MAGNETIC FIELD LARGER THAN 5G (5 GAUSS), YOU MUST MAKE SURE THAT THE ATTITUDE AND DIRECTION SYSTEM IS NOT AFFECTED BY THE LIGHTNING STRIKE ([AMM TASK 34-20-00-700-801-A/500](#)) OR DO THE DEGAUSSING PROCEDURE ([SUBTASK 910-006-A](#)).
- (1) Do a check of the parts to find magnetic fields as follows:
 - (a) Move the gaussmeter (GSE 258) near the part to be measured.

NOTE: • The area of contact of the gaussmeter with the parts is the area shown by the arrow on the gaussmeter dial.

- The gaussmeter must be put vertically to the parts. When the part is in a horizontal position, the gaussmeter must be in the vertical position. When the part is in the vertical position, the gaussmeter must be in the horizontal position.

- (b) Mark with a felt-tip pen the points where larger values than specified were found, as follows:

NOTE: This measurement must be done in the whole part.

- 1 On the mounts and yokes, the points where values are larger than 5G.
- 2 On the landing gears, the points where values are larger than or equal to 3G.

- K. Wing Tips, Flap Actuators, Flap Transmission Brake, and Aileron Primary Mechanical Controls - Magnetization Measurement ([Figure 203](#)) ([Figure 204](#))

SUBTASK 910-005-A

CAUTION: • THE AIRCRAFT PARTS THAT CAN BECOME MAGNETIZED AFTER A LIGHTNING STRIKE ARE: WING TIPS, FLAP ACTUATORS, FLAP TRANSMISSION BRAKE, AND AILERON PRIMARY MECHANICAL CONTROLS.

- THE WING TIPS MUST NOT HAVE MAGNETIC PARTS INSTALLED (REFER TO IPC AND/OR SRM). IF THE WING TIPS HAVE A MAGNETIC FIELD LARGER THAN 3G (3 GAUSS), YOU MUST MAKE SURE THAT THE ATTITUDE AND DIRECTION SYSTEM IS NOT AFFECTED BY THE LIGHTNING STRIKE ([AMM TASK 34-20-00-700-801-A/500](#)).
- IF THE FLAP ACTUATORS, FLAP TRANSMISSION BRAKE, AND AILERON PRIMARY MECHANICAL CONTROLS HAVE A MAGNETIC FIELD LARGER THAN 3G (3 GAUSS), YOU MUST MAKE SURE THAT THE ATTITUDE AND DIRECTION SYSTEM IS NOT AFFECTED BY THE LIGHTNING STRIKE ([AMM TASK 34-20-00-700-801-A/500](#)) OR DO THE DEGAUSSING PROCEDURE ([SUBTASK 910-007-A](#)).

- (1) Do a check of the parts to find magnetic fields as follows:

- (a) Move the gaussmeter (GSE 258) near the flap actuators.

NOTE: • The area of contact of the gaussmeter with the parts is the area shown by the arrow on the gaussmeter dial.

- The gaussmeter must be put vertically to the parts. When the part is in a horizontal position, the gaussmeter must be in the vertical position. When the part is in the vertical position, the gaussmeter must be in the horizontal position.

- (b) Do this item only if larger values than specified were found analyzing the flap actuators:

- 1 Remove the flap lower shrouds to access the flap transmission brake ([AMM TASK 57-56-01-000-801-A/400](#)).

2 Move the gaussmeter (GSE 258) near the flap transmission brake.

(c) Move the gaussmeter (GSE 258) near the aileron actuators.

(d) Do this item only if larger values than specified were found analyzing the aileron actuators:

1 Remove access doors 551CB and 651CB ([AMM MPP 06-44-00/100](#)).

2 Move the gaussmeter (GSE 258) near the following aileron primary mechanical controls:

a PCA rod ends.

b Input rod.

c Neutral recovery unit (NRU).

d Aileron wing quadrant bolt.

(e) Mark with a felt-tip pen the points where larger values than specified were found, as follows:

NOTE: This measurement must be done in the whole part.

1 On the wing parts above, the points where values are larger than or equal to 3G.

L. Landing Gears, Mounts and Engine Yokes - Degaussing ([Figure 203](#)) ([Figure 204](#)) ([Figure 205](#))
SUBTASK 910-006-A

(1) If the mounts and engine yoke are to be degaussed, refer to [Figure 205](#).

CAUTION: • ON THE NOSE LANDING GEAR, PARTS MUST BE DEMAGNETIZED IF THEY HAVE A MAGNETIC FIELD LARGER THAN 3G (3 GAUSS).

• IF THE MAIN LANDING GEARS HAVE A MAGNETIC FIELD LARGER THAN 3G (3 GAUSS), YOU MUST MAKE SURE THAT THE ATTITUDE AND DIRECTION SYSTEM IS NOT AFFECTED BY THE LIGHTNING STRIKE ([AMM TASK 34-20-00-700-801-A/500](#)) OR DO THE DEGAUSSING PROCEDURE ([SUBTASK 910-006-A](#)).

• IF THE MOUNTS AND ENGINE YOKES HAVE A MAGNETIC FIELD LARGER THAN 5G (5 GAUSS), YOU MUST MAKE SURE THAT THE ATTITUDE AND DIRECTION SYSTEM IS NOT AFFECTED BY THE LIGHTNING STRIKE ([AMM TASK 34-20-00-700-801-A/500](#)) OR DO THE DEGAUSSING PROCEDURE ([SUBTASK 910-006-A](#)).

(2) Remove the magnetic fields of the parts as follows:

(a) With the degausser (GSE 257) off, adjust the degausser arms to make them touch, at the same time, the parts to be degaussed.

CAUTION: THE DEGAUSSER MUST NOT BE SET TO OFF UNTIL IT IS AT A DISTANCE OF APPROXIMATELY 300 MILLIMETERS (12 INCHES) FROM THE PART SURFACE. IF NOT, IT CAN MAGNETIZE THE PART.

- NOTE:**
- To set the degausser to on, push its button and hold it. To set the degausser to off, release the button.
 - It will be necessary to apply a small force to move the degausser away from the surface, when it is on.
 - The degaussing is easier and faster when the degausser arms is near of the part surface.

Do the degaussing as follows:

- 1 Move the degausser (GSE 257) as near the part to be demagnetized as possible.
- 2 Push the button and hold it to keep the degausser in operation.
- 3 Slowly move the degausser away from the part magnetized.
- 4 Release the button to set the degausser to off at a distance of approximately 300 millimeters (12 inches) from the part surface.

- (c) Do step (b) many times until the surface is degaussed. To measure the value of the magnetic field, do the magnetization measurement procedure ([SUBTASK 910-004-A](#)). If the measured value is smaller than specified in that procedure, the surface is degaussed.

- (3) Remove the mark made with a felt-tip pen with a clean cloth soaked in Methyl Ethyl Ketone. Before Methyl Ethyl Ketone evaporates, wipe that area with a clean dry cloth.

M. Flap Actuators, Flap Transmission Brake, and Aileron PrimaryMechanical Controls - Degaussing ([Figure 203](#)) ([Figure 204](#))

SUBTASK 910-007-A

CAUTION: DO NOT DO THE DEGAUSSING PROCEDURE AT THE WING WITH THE FLUX VALVE INSTALLED.

- (1) (For aircraft with AHRS AH-800) If wing parts are to be degaussed, remove the respective flux detector units ([AMM TASK 34-21-02-000-801-A/400](#)) to do the degaussing. After the degaussing, install the flux detector units ([AMM TASK 34-21-02-400-801-A/400](#)).

CAUTION: • THE WING TIPS MUST NOT HAVE MAGNETIC PARTS INSTALLED (REFER TO IPC AND/OR SRM). IF THE WING TIPS HAVE A MAGNETIC FIELD LARGER THAN 3G (3 GAUSS), YOU MUST MAKE SURE THAT THE ATTITUDE AND DIRECTION SYSTEM IS NOT AFFECTED BY THE LIGHTNING STRIKE ([AMM TASK 34-20-00-700-801-A/500](#))

- IF THE FLAP ACTUATORS, FLAP TRANSMISSION BRAKE, AND AILERON PRIMARY MECHANICAL CONTROLS HAVE A MAGNETIC FIELD LARGER THAN 3G (3 GAUSS), YOU MUST MAKE SURE THAT THE ATTITUDE AND DIRECTION SYSTEM IS NOT AFFECTED BY THE LIGHTNING STRIKE ([AMM TASK 34-20-00-700-801-A/500](#)) OR DO THE DEGAUSSING PROCEDURE ([SUBTASK 910-007-A](#)).

(2) Remove the magnetic fields of the parts as follows:

- (a) With the degausser (GSE 257) off, adjust the degausser arms to make them touch, at the same time, the parts to be degaussed.

CAUTION: THE DEGAUSSER MUST NOT BE SET TO OFF UNTIL IT IS AT A DISTANCE OF APPROXIMATELY 300 MILLIMETERS (12 INCHES) FROM THE PART SURFACE. IF NOT, IT CAN MAGNETIZE THE PART.

- NOTE:** • To set the degausser to on, push its button and hold it. To set the degausser to off, release the button.
- It will be necessary to apply a small force to move the degausser away from the surface, when it is on.
 - The degaussing is easier and faster when the degausser arms is near of the part surface.

Do the degaussing as follows:

- 1 Move the degausser (GSE 257) as near the part to be demagnetized as possible.
 - 2 Push the button and hold it to keep the degausser in operation.
 - 3 Slowly move the degausser away from the part magnetized.
 - 4 Release the button to set the degausser to off at a distance of approximately 300 millimeters (12 inches) from the part surface.
- (c) Do step (b) many times until the surface is degaussed. To measure the value of the magnetic field, do the magnetization measurement procedure ([SUBTASK 910-005-A](#)). If the measured value is smaller than specified in that procedure, the surface is degaussed.
- (3) Remove the mark made with a felt-tip pen with a clean cloth soaked in Methyl Ethyl Ketone. Before Methyl Ethyl Ketone evaporates, wipe that area with a clean dry cloth.

N. Follow-on

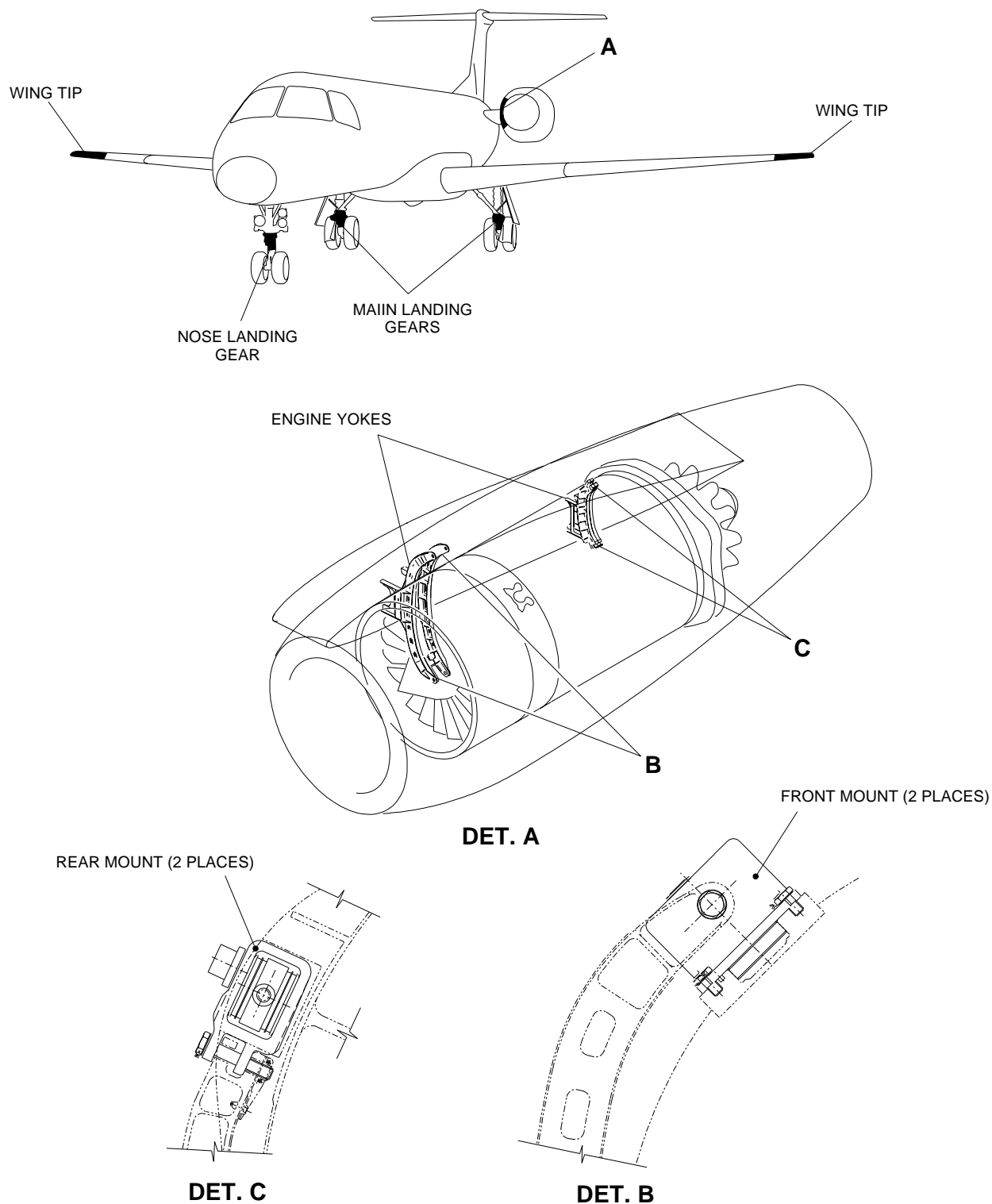
SUBTASK 842-003-A

- (1) On aircraft POST-MOD. [S.B.145-32-0036](#), remove the safety pin of the NLG door solenoid valve ([AMM TASK 32-00-02-910-801-A/200](#)).
- (2) Install the flap lower shrouds ([AMM TASK 57-56-01-400-801-A/400](#)), if applicable.
- (3) Install access doors 551CB and 651CB ([AMM MPP 06-44-00/100](#)), if applicable.
- (4) Remove the hydraulic platform.
- (5) Remove the "DO-NOT-OPERATE-THE-FLIGHT-CONTROLS" tag from the cockpit.

EFFECTIVITY: ALL

Landing Gears, Wings, Mounts and Engine Yokes - Location

Figure 203 - Sheet 1

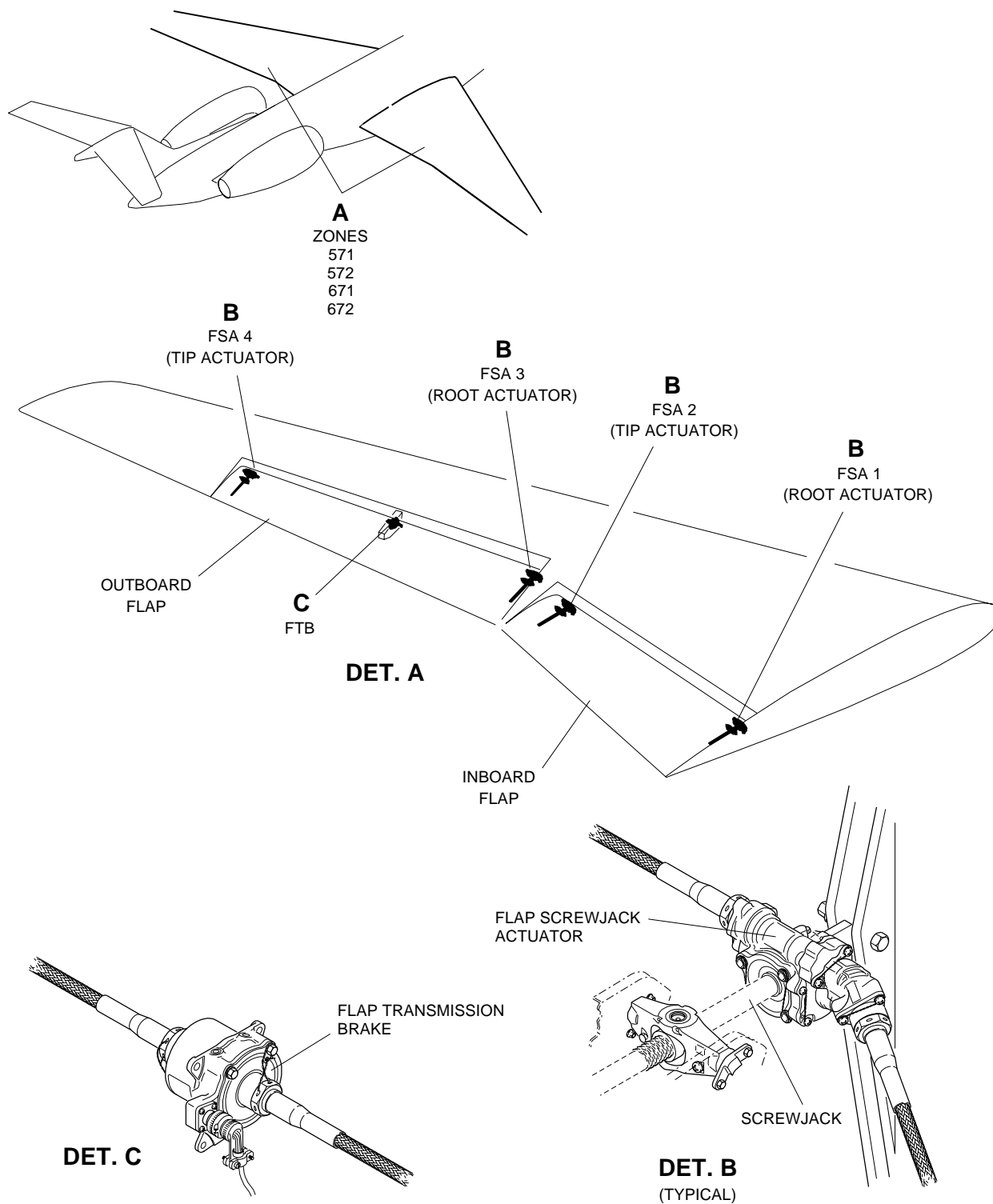


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EFFECTIVITY: ALL

Landing Gears, Wings, Mounts and Engine Yokes - Location

Figure 203 - Sheet 2

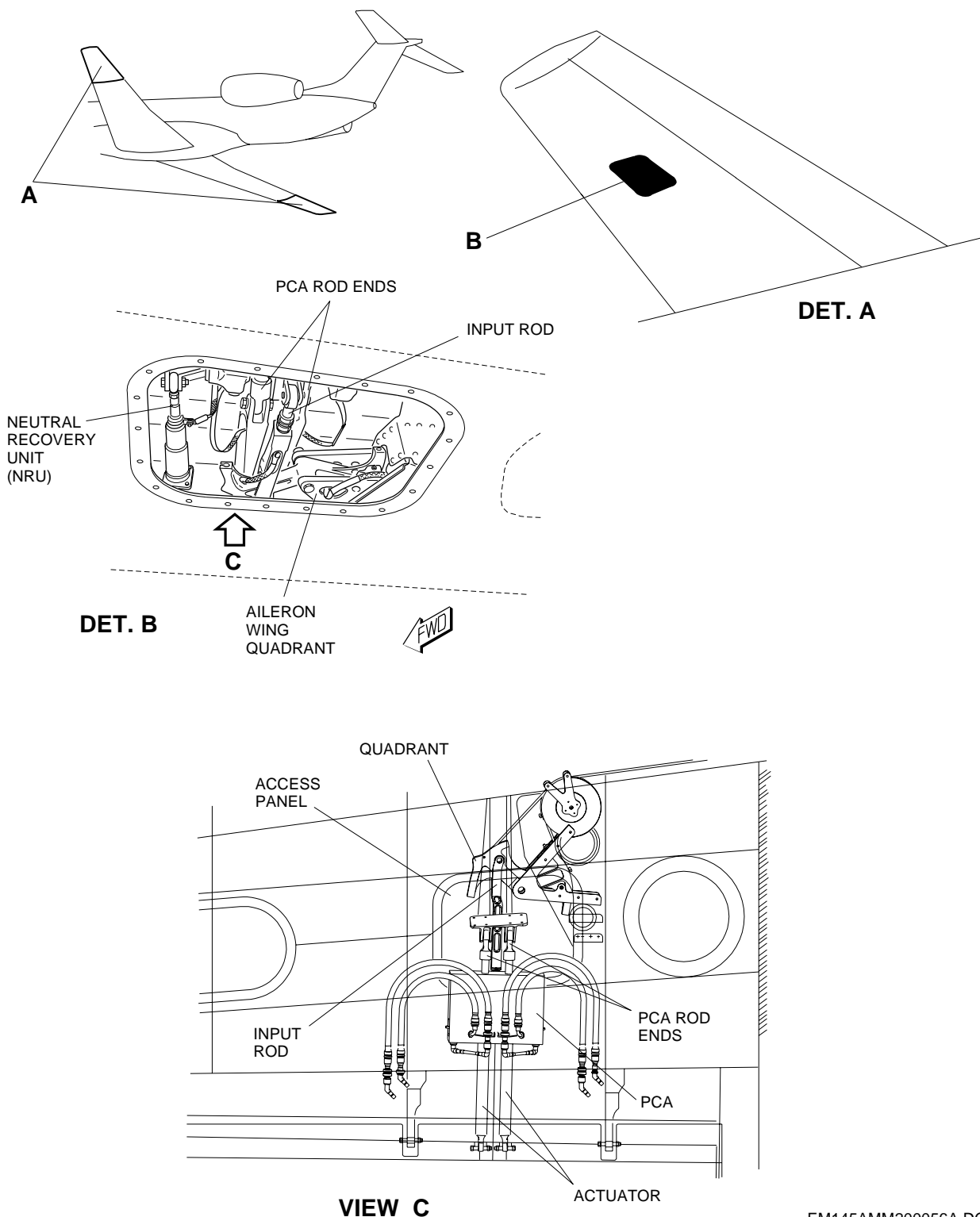


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EFFECTIVITY: ALL

Landing Gears, Wings, Mounts and Engine Yokes - Location

Figure 203 - Sheet 3

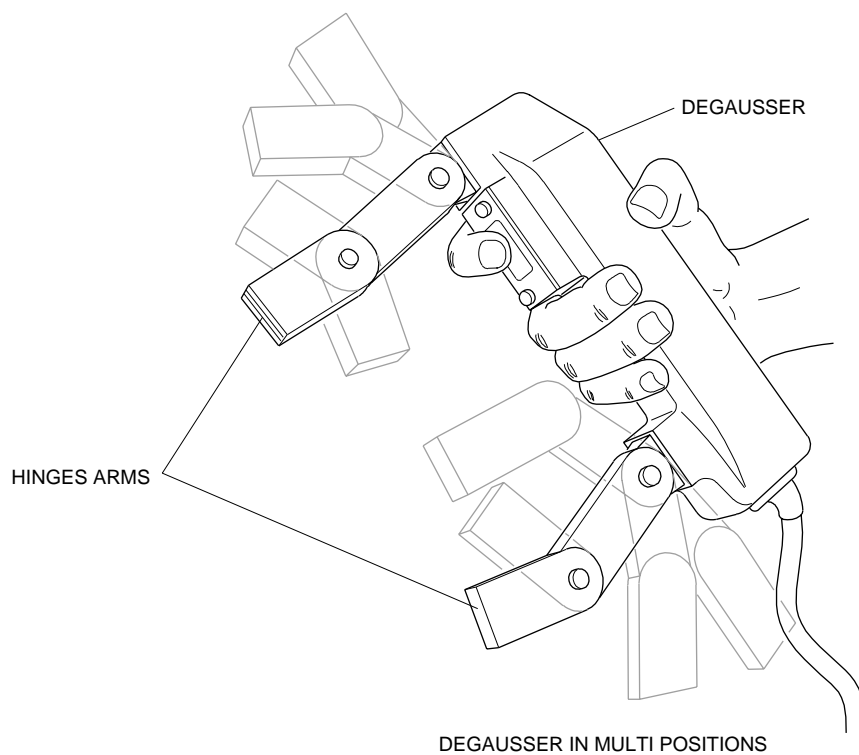
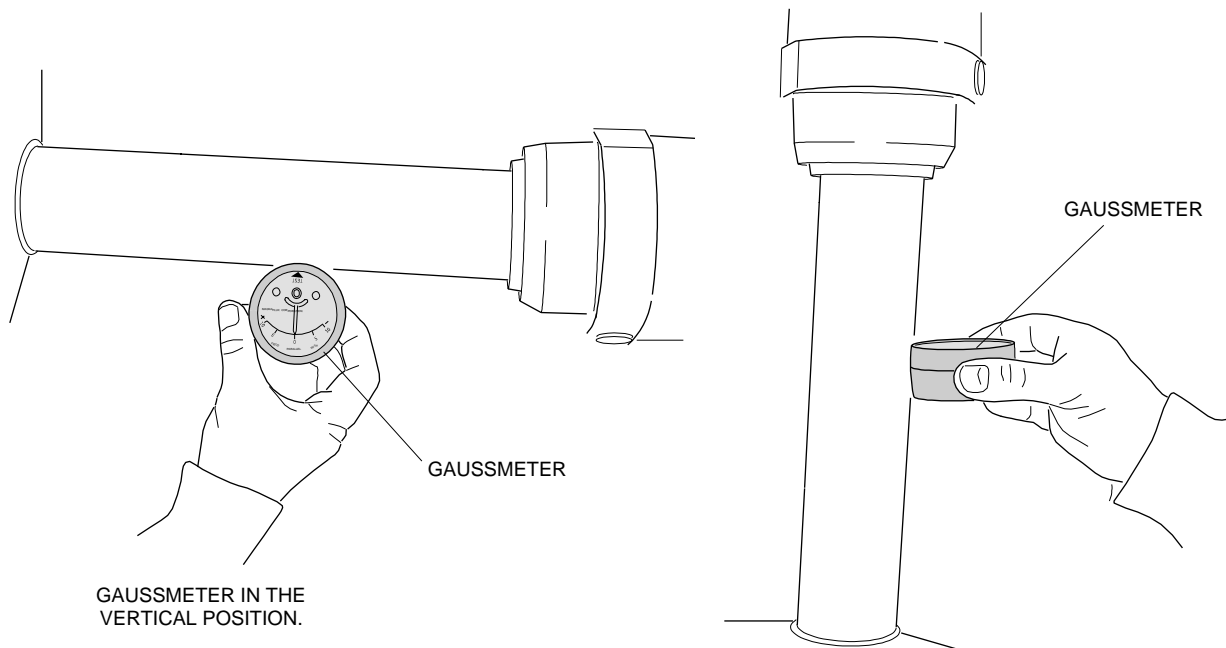


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EFFECTIVITY: ALL

Gaussmeter and Degausser - Positioning

Figure 204

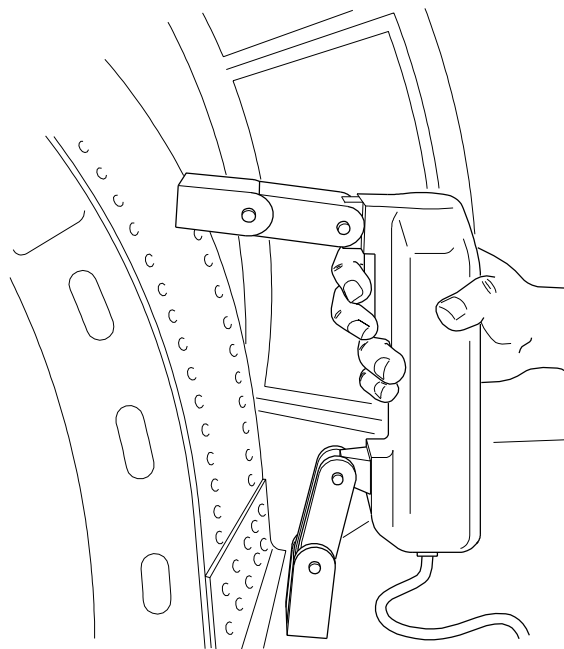
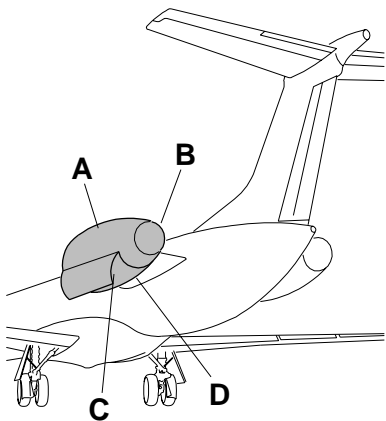


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EFFECTIVITY: ALL

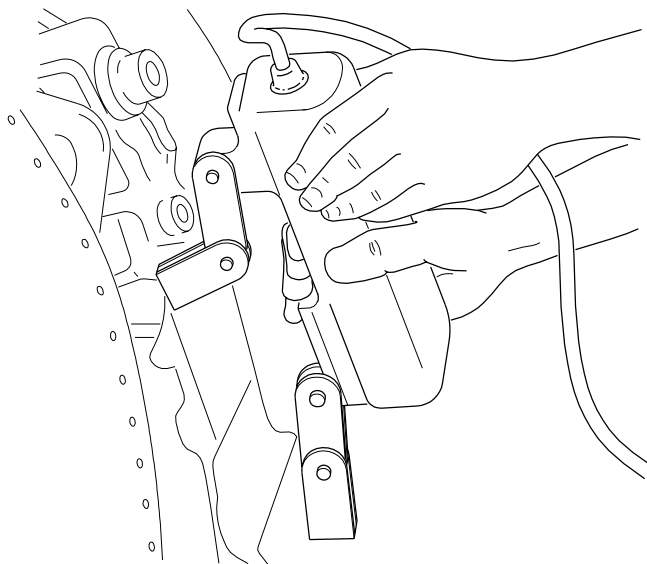
Mount and Engine Yoke Degaussing - Example

Figure 205 - Sheet 1



FORWARD ENGINE-YOKE / MOUNTS
UPPER SIDE

DET. A



AFT ENGINE-YOKE / MOUNTS
UPPER SIDE

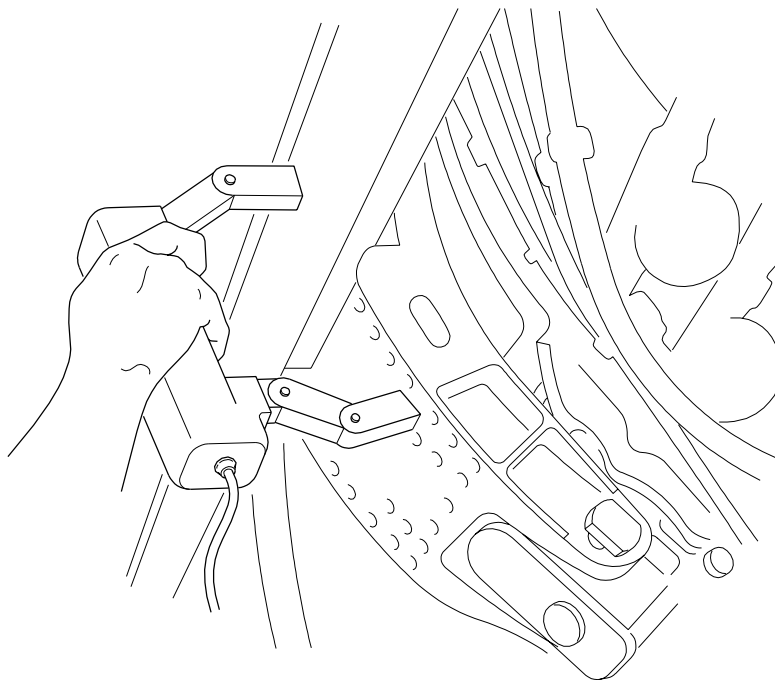
DET. B

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EFFECTIVITY: ALL

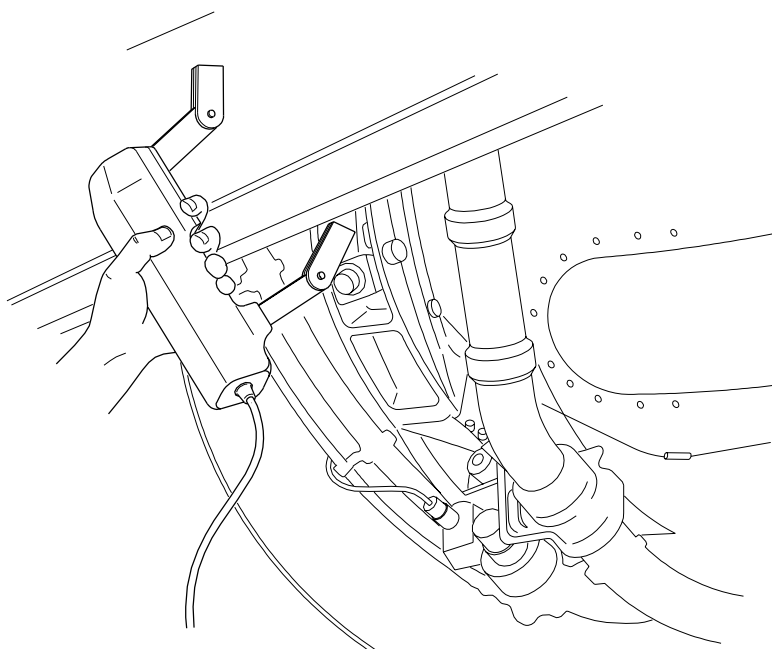
Mount and Engine Yoke Degaussing - Example

Figure 205 - Sheet 2



**FORWARD ENGINE-YOKE / MOUNTS
LOWER SIDE**

DET. C



**AFT ENGINE-YOKE / MOUNTS
LOWER SIDE**

DET. D

145AMM050547.MCE A