PYLON FORWARD YOKE-BUSHING HOUSING - REMOVAL/INSTALLATION

EFFECTIVITY: ALL

1. General

A. This section gives the procedures to remove and install the bushings of the forward Pylon Yoke.

B. 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*
54-51-01-000-801-A	PYLON YOKE BUSHINGS - REMOVAL	ALL
54-51-01-400-801-A	PYLON YOKE BUSHINGS - INSTALLATION	ALL

TASK 54-51-01-000-801-A
EFFECTIVITY: ALL

2. PYLON YOKE BUSHINGS - REMOVAL

A. General

(1) This procedure gives the instructions to remove the bushings of the forward Pylon Yoke.

B. References

REFERENCE	*DESIGNATION*
AMM MPP 20-10-01/200	- MAINTENANCE PRACTICES
AMM MPP 71-00-00/200	- MAINTENANCE PRACTICES
AMM TASK 71-00-00-000-801-A/400	ENGINE - REMOVAL
NDI 54-50-00	-
SRM 54-50-16-RE	-

C. Zones and Accesses

ZONE	*PANEL/DOOR*	*LOCATION*
414		LH Pylon
424		RH Pylon

D. Tools and Equipment

ITEM	*DESCRIPTION*	*PURPOSE*	*QTY*
Commercially available	Workstand	To get access to the work area	
Commercially available	Heat Gun	To apply hot air	
Commercially available	Thermometer -40 to +100 °C (-40 to +212 °F) Minimum Range	To control temperature	
GSE 570		To remove bushing	

E. Auxiliary Items

ITEM	*DESCRIPTION*	*PURPOSE*	*QTY*
Commercially available	Protective Gloves	For protection of technician's hands	1
Commercially available	Safety Goggles	For protection of technician's eyes	1

F. Consumable Materials

SPECIFICATION (BRAND)	*DESCRIPTION*	*QTY*
ASTM-D-740	Methyl Ethyl Ketone - MEK	AR

G. Expandable Parts

Not Applicable

H. Persons Recommended

QTY	*FUNCTION*	*PLACE*
1	Does the task	Pylon
1	Helps the other technician	Pylon

I. Preparation

SUBTASK 841-002-A

WARNING: BEFORE YOU DO THE TASK, OBEY THE SAFETY PRECAUTIONS GIVEN IN AMM MPP 71-00-00/200 TO PREVENT INJURY TO PERSONS AND DAMAGE TO MATERIAL.

(1) Remove the engine (AMM TASK 71-00-00-000-801-A/400).

(2) Put the workstand under the pylon.

J. Removal (Figure 401) (Figure 402) (Figure 403)

SUBTASK 020-002-A

(1) For remove bushings of spar I:

(a) Remove the rear bushing of spar I, as follows.

1 Remove the bolt (5), washer flat (6), and bolt retention sheet (7) from the fittings of spar I. Refer to (Figure 401; DET. D).

NOTE: For torque, refer to (AMM MPP 20-10-01/200).

2 Put the expansible puller assy (GSE 570) between rear and forward bushings. Refer to (Figure 402; Sheet 1; DET. 1).

NOTE: Make sure that the expansible assy is on the correct position. Refer to (Figure 402; Sheet 1; DET. 2).

3 Install the U bushing puller of the U puller assy for the internal side of the spar I and joint with the expansible puller assy with the C clamp. Refer to (Figure 402; Sheet 1; DET. 3).

4 Push the expansible puller assy against the rear bushing, spin the C clamp.

5 If you find corrosion or wear in the internal side of the rear bushing, discard the bushing.

(b) Remove the forward bushing of spar I, as follows.

1 After the removal the rear bushing of spar I, install the U puller assy on the hole.

NOTE: Make sure the U bushing puller of U puller assy is on the external side of the spar I. Refer to (Figure 402; Sheet 2; DET 1.).

NOTE: Use the Bushing OD22.1 as spacer. (Figure 402; Sheet 2; DET 1.).

2 Pull the bolt of the U puller assy against the forward bushing, spin the nut of the U puller assy. Refer to (Figure 402; Sheet 2; DET. 2).

3 If you find corrosion or wear in the internal side of the forward bushing, discard the bushing.

(2) Inspect housings yoke according to Nondestructive Inspection Manual (NDI 54-50-00).

(3) If discrepancy are found, rework the housing according to SRM 54-50-16-RE.

(4) With a cloth soaked in MEK, clean the housing surface.

SUBTASK 020-003-A

(5) For remove bushing of spar II, as follows:

(a) Remove the bolt (3), washer flat (2), and bolt retention sheet (1) from the fittings of spar II. Refer to (Figure 401; DET. C).

NOTE: For torque, refer to (AMM MPP 20-10-01/200).

(b) Put the U puller assy (GSE 570) on position. Refer to (Figure 403; DET. 1).

NOTE: Make sure that the bolt of the U puller assy is on the correct position. (Figure 403; DET. 2).

NOTE: Use the Bushing OD18.9 as spacer. (Figure 403; DET 2.).

(c) Remove the forward bushing with the U puller assy (GSE 570). Refer to (Figure 403; DET. 3).

(d) If you find corrosion or wear in the internal side of the forward bushing, discard the bushing.

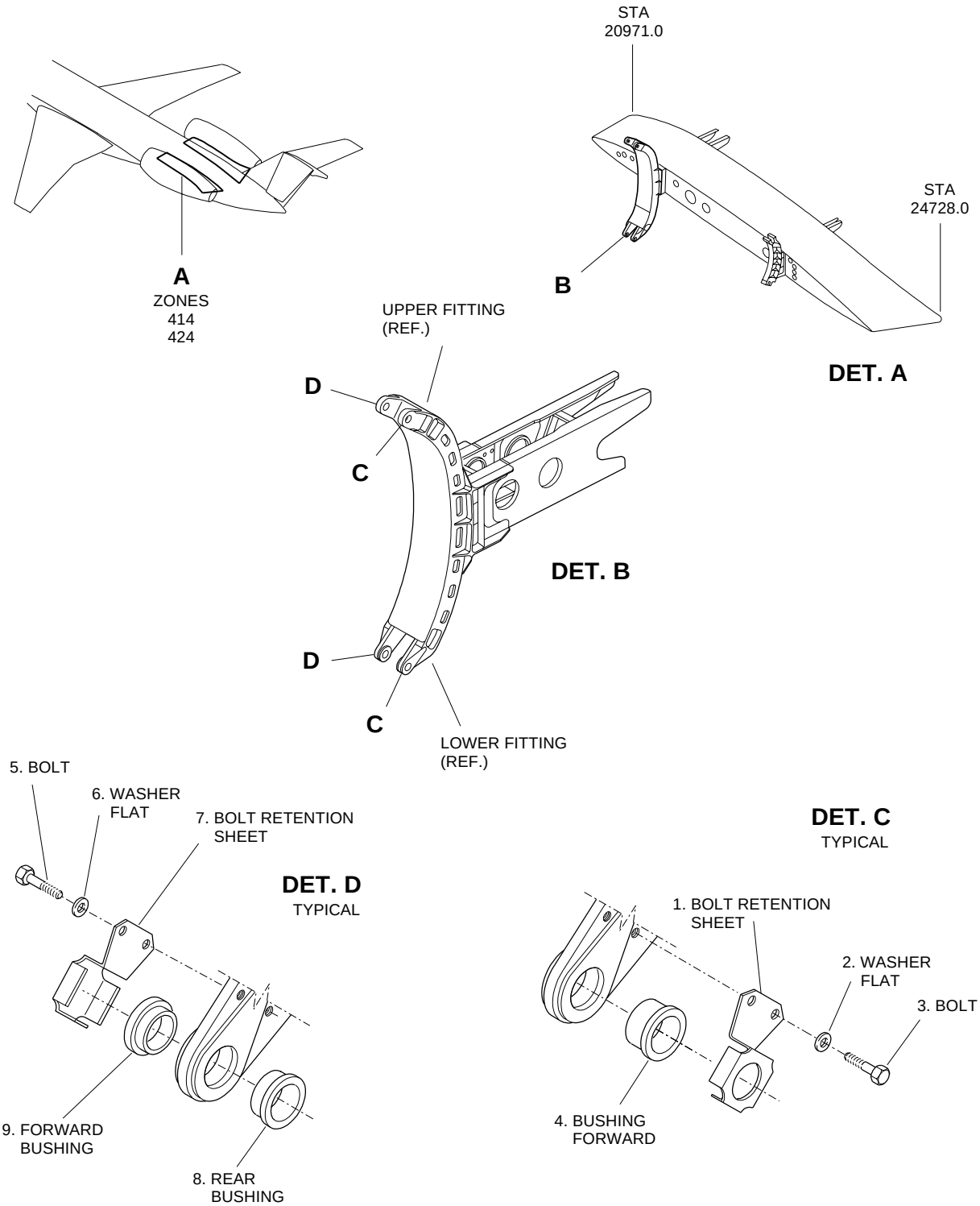
(6) Inspect housing yoke according to Nondestructive Inspection Manual (NDI 54-50-00).

(7) If discrepancy are found, rework the housing according to SRM 54-50-16-RE.

(8) With a cloth soaked in MEK, clean the housing surface.

EFFECTIVITY: ALL

LH/RH Pylon Yoke Bushings Forward, Spar I & II
Figure 401



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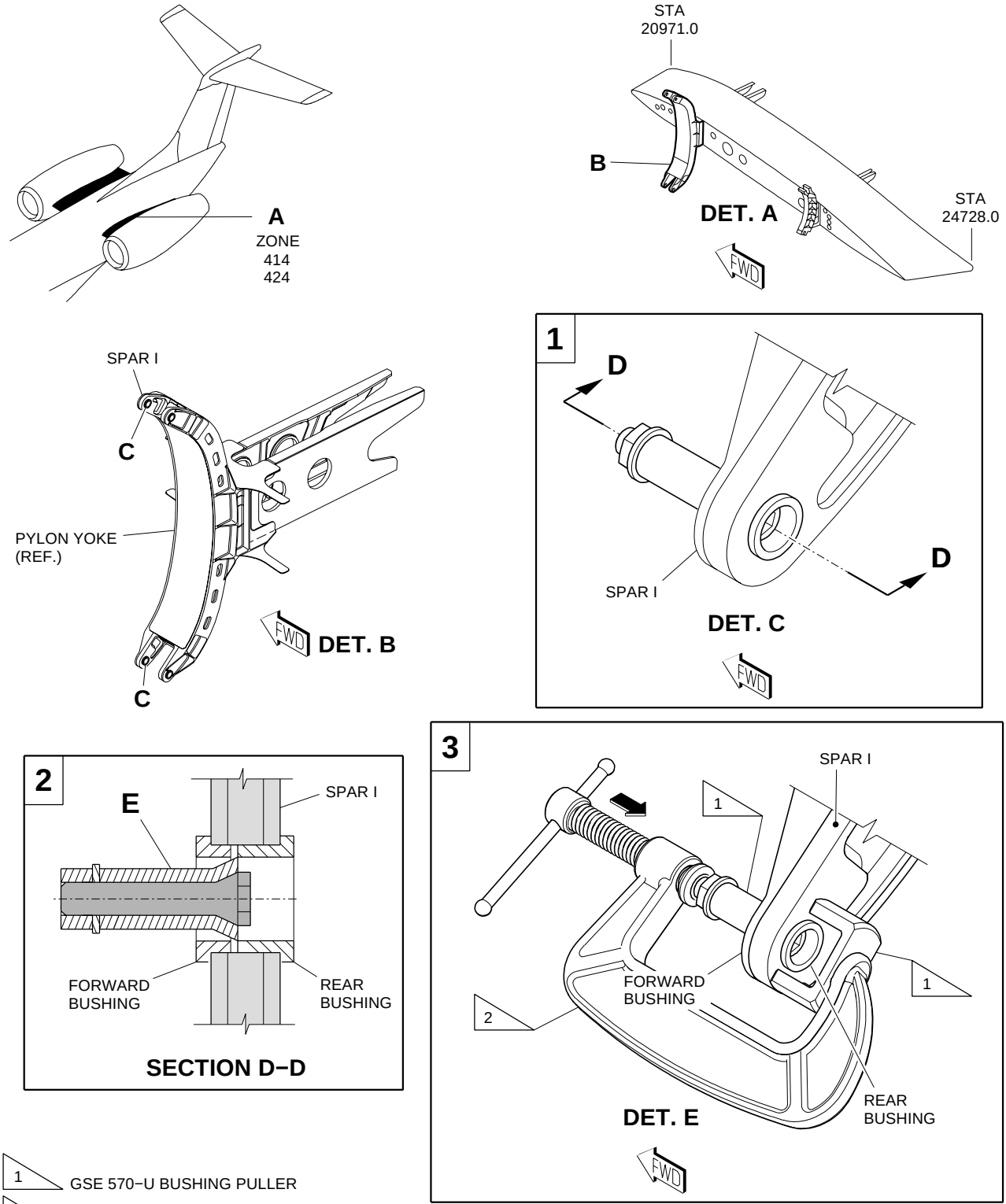
EFFECTIVITY: ALL

Pylon Yoke Bushings Forward, Spar I - Removal

Figure 402 - Sheet 1



1 GSE 570–U BUSHING PULLER

2 TO REMOVE REAR BUHING.

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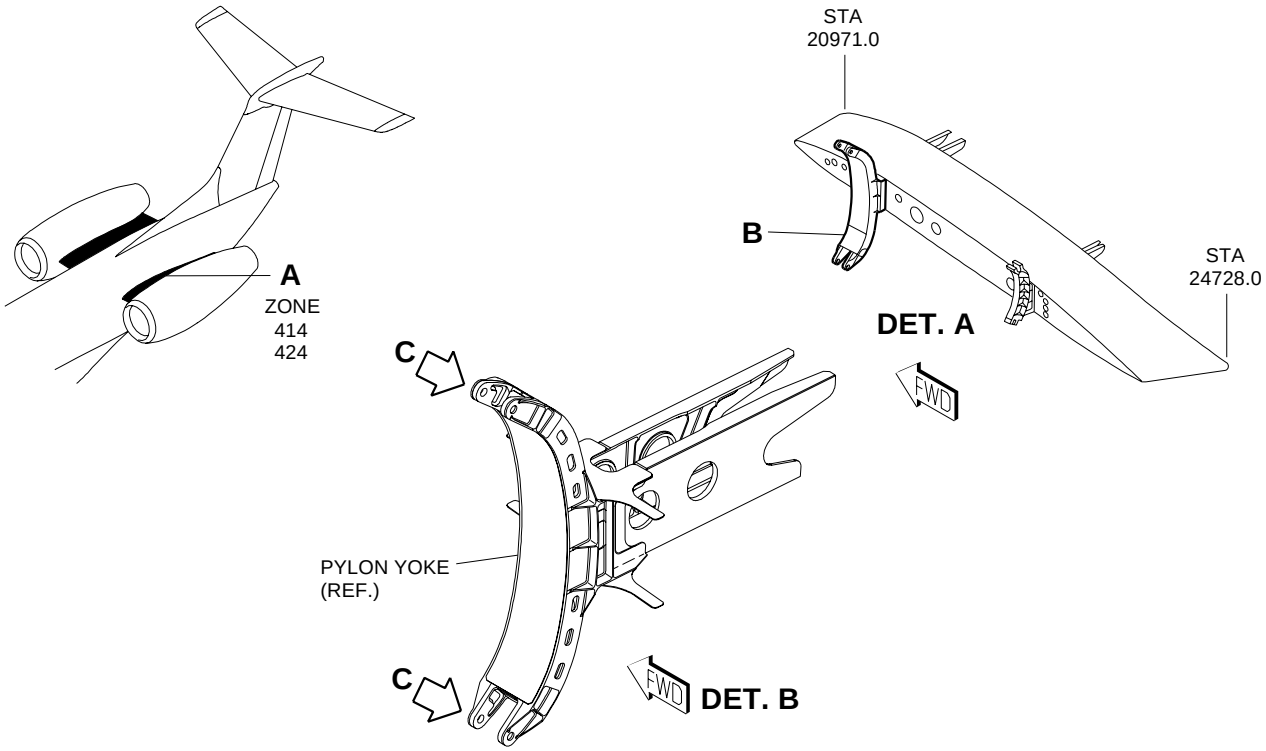
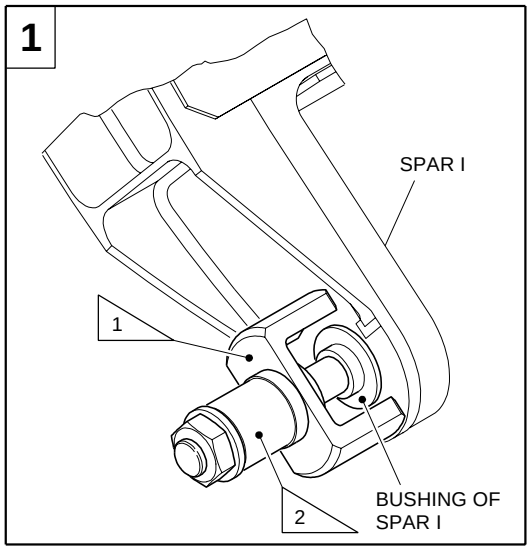
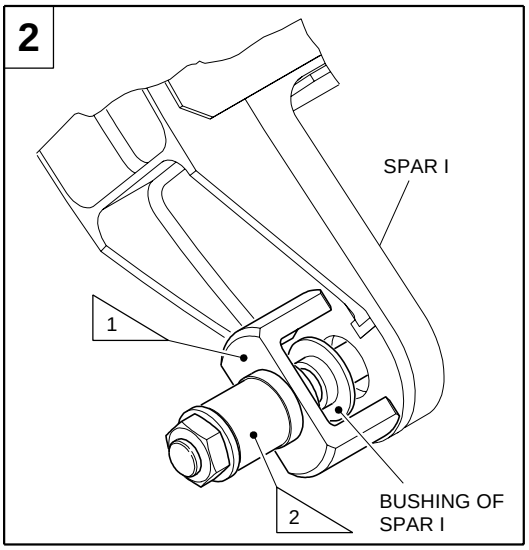
EFFECTIVITY: ALL

Pylon Yoke Bushings Forward, Spar I - Removal
Figure 402 - Sheet 2







DET. C

FWD

1 GSE 570−U PULLER ASSY

2 GSE 570 − BUSHING OD−18.9 AS SPACER

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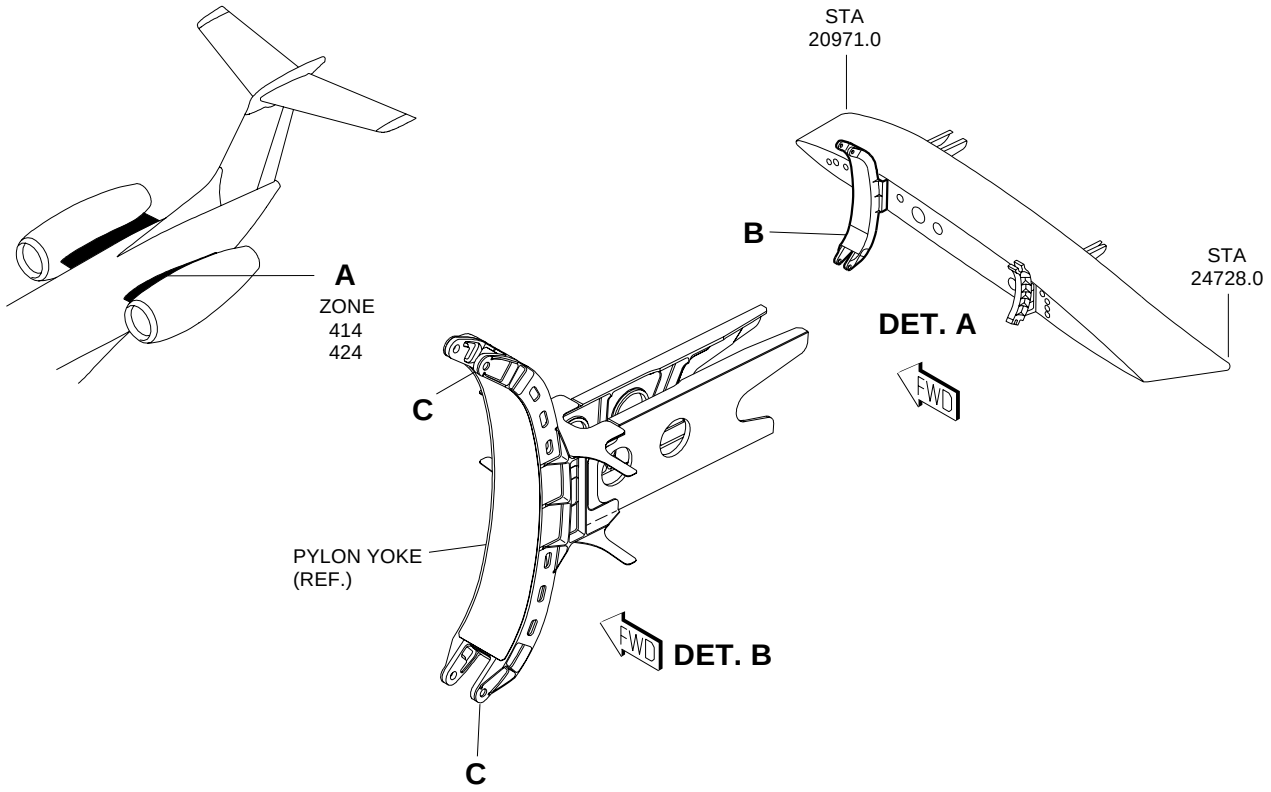
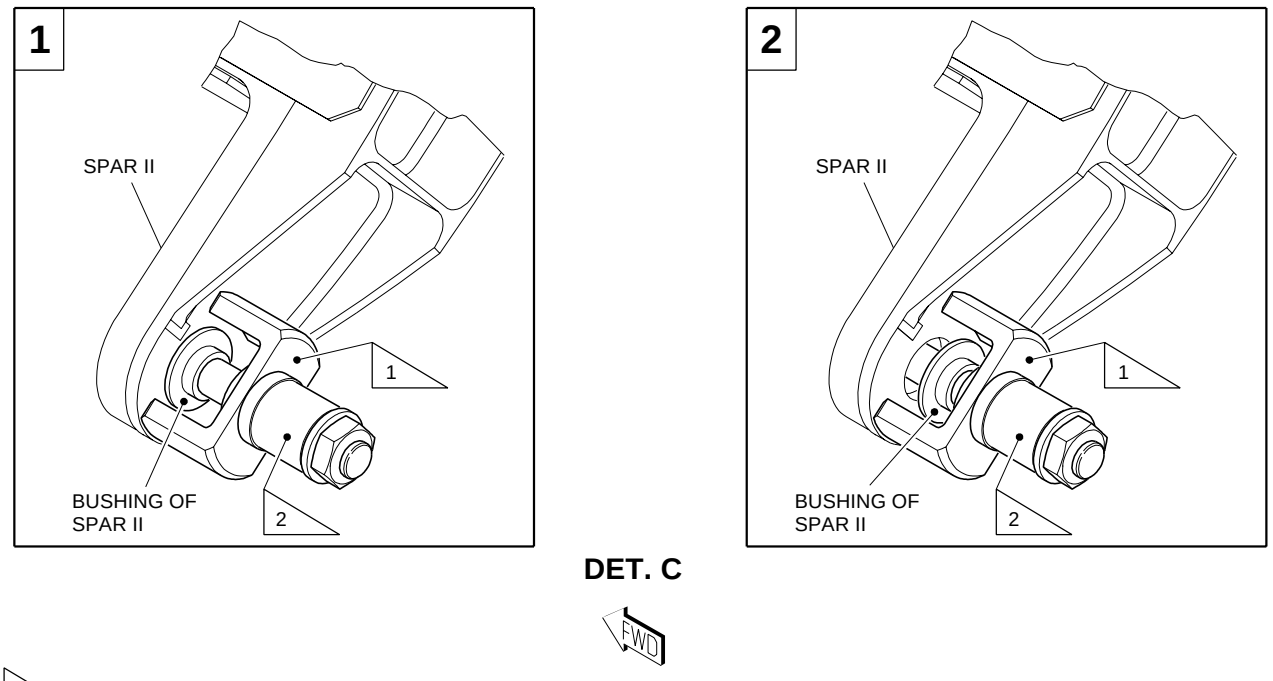
EFFECTIVITY: ALL

Pylon Yoke Bushings Forward, Spar II - Removal
Figure 403





1 GSE 570−U PULLER ASSY

2 GSE 570 − BUSHING OD−18.9 AS SPACER

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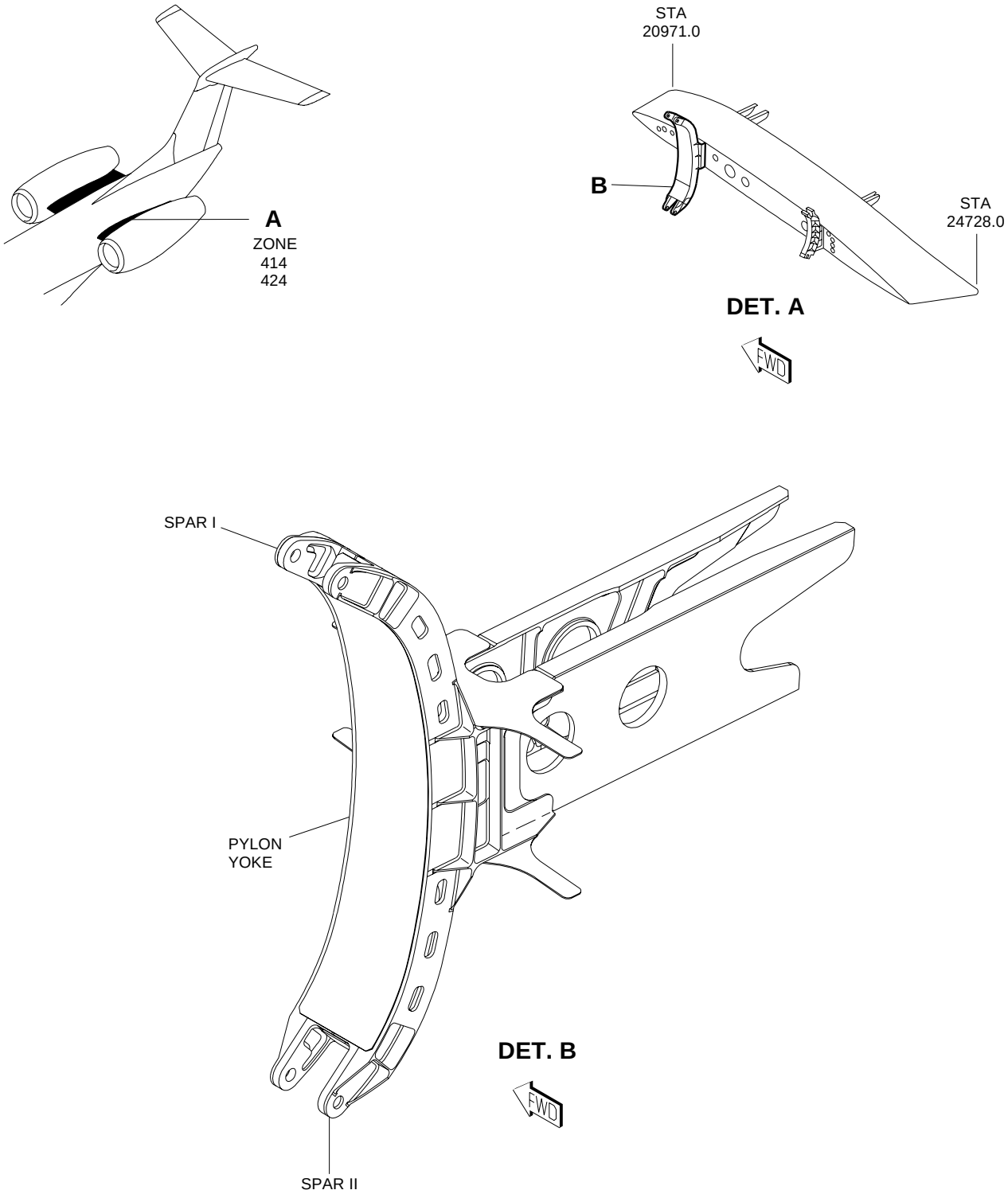
EFFECTIVITY: ALL

Pylon Yoke Bushings Forward, Spar I and Spar II- Install

Figure 404



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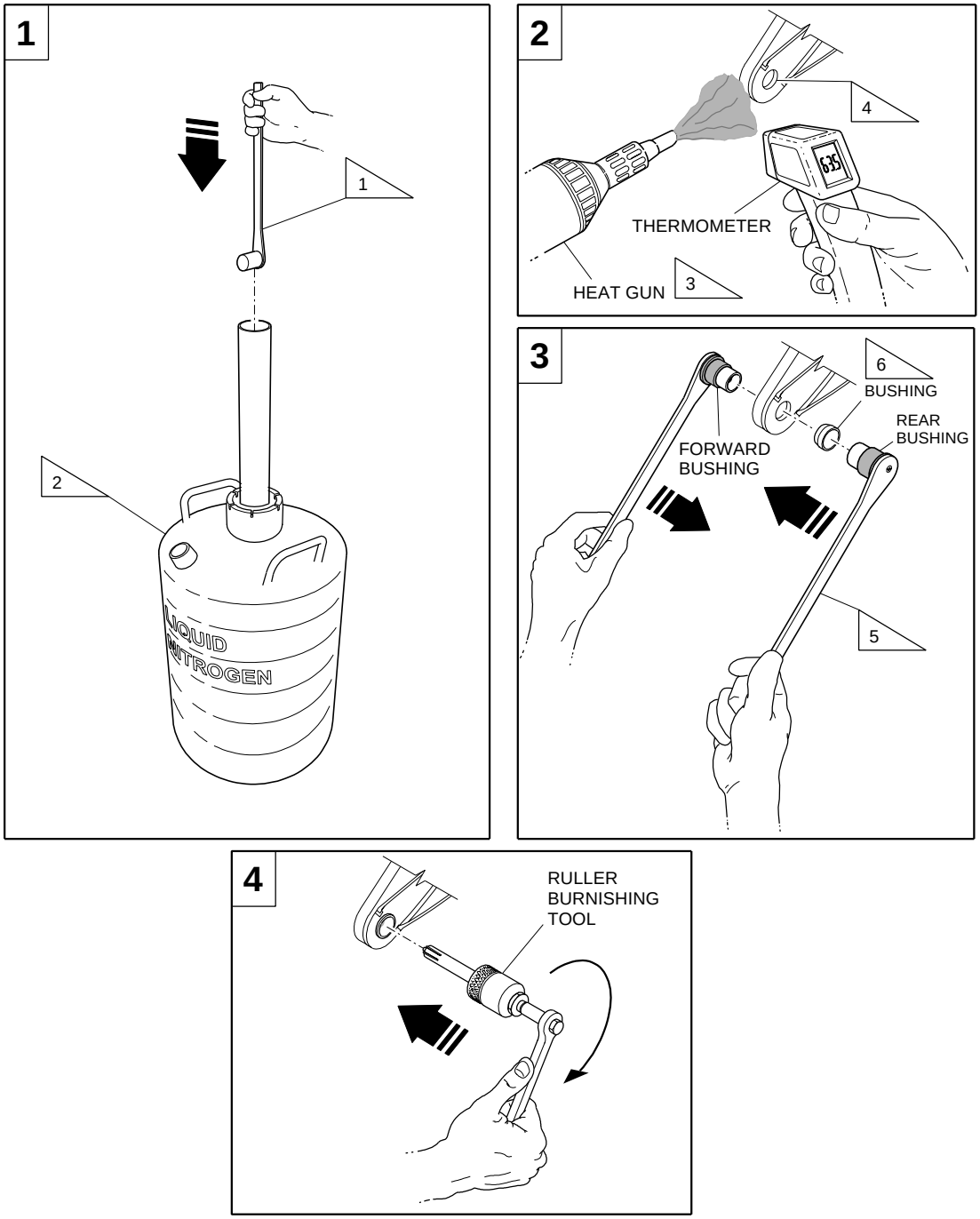
EFFECTIVITY: ALL

Pylon Yoke Bushings Forward, Spar I - Install
Figure 405



1 GSE 570− USE ARM P/N 145T06089−401 OR P/N 145T06089−403, AS REQUIRED.

2 LET THE BUSHING STAY IN LIQUID NITROGEN FOR 30 MINUTES.

3 THE TEMPERATURE MUST NOT BE HIGHER THAN 100°C (212°F).

4 AFTER YOU HAVE THE CORRECT TEMPERATURE, APPLY SEALANT P/S 870 C12.

5 INSTALL FIRST REAR BUSHING.

6 GSE 570− USE BUSHING P/N 145T06087−001 OR P/N 145T06087−003, AS REQUIRED.

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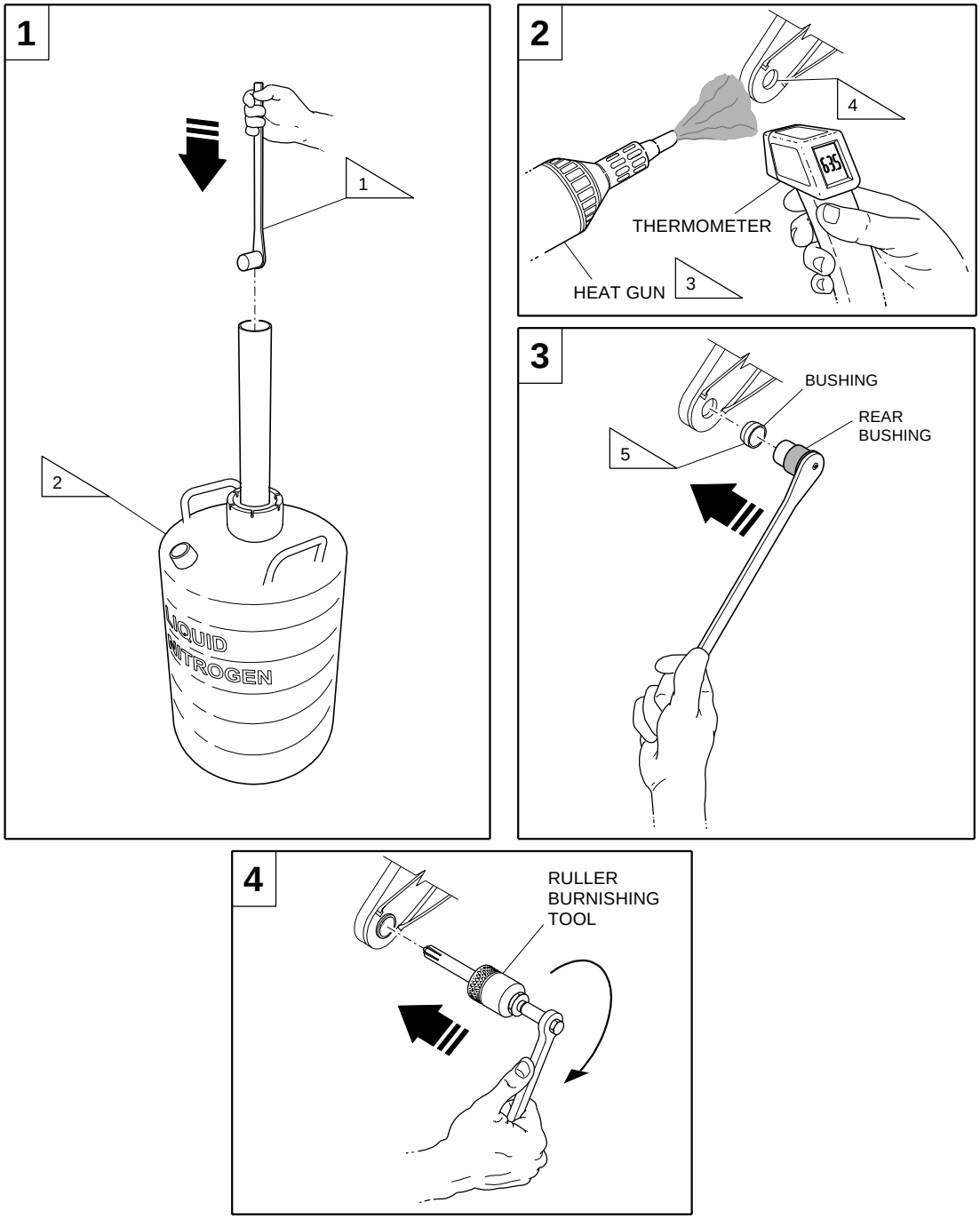
EFFECTIVITY: ALL

Pylon Yoke Bushings Forward, Spar II - Install
Figure 406



1. GSE 570− USE ARM P/N 145T06089−401 OR P/N 145T06089−403, AS REQUIRED.
2. LET THE BUSHING STAY IN LIQUID NITROGEN FOR 30 MINUTES.
3. THE TEMPERATURE MUST NOT BE HIGHER THAN 100°C (212°F).
4. AFTER YOU HAVE THE CORRECT TEMPERATURE, APPLY SEALANT P/S 870 C12.
5. GSE 570− USE BUSHING P/N 145T06087−001 OR P/N 145T06087−003, AS REQUIRED.

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TASK 54-51-01-400-801-A
EFFECTIVITY: ALL

3. PYLON YOKE BUSHINGS - INSTALLATION

A. General

(1) This procedure gives the instructions to install the bushings of the forward Pylon Yoke.

B. References

REFERENCE	*DESIGNATION*
AMM MPP 20-10-01/200	- MAINTENANCE PRACTICES
AMM TASK 71-00-00-200-801-A/600	ENGINE STATIC CHECKS
AMM TASK 71-00-00-400-801-A/400	ENGINE - INSTALLATION
IPC 54-51-00	MAIN STRUCTURE
IPC 71-20-00	ENGINE MOUNTS
SRM 51-20-01-PR	-

C. Zones and Accesses

ZONE	*PANEL/DOOR*	*LOCATION*
414		LH Pylon
424		RH Pylon

D. Tools and Equipment

ITEM	*DESCRIPTION*	*PURPOSE*	*QTY*
Commercially available	C-Clamp specification: Opening 150mm minimum; Clamping depth 45mm minimum		
Commercially available	Roller burnishing tool for low ductility material, style through, nominal diameter 25.4 mm, with adjustment range of: -0.2 / + 0.8 mm	To adjust final internal diameter of the bushing	
Commercially available	Workstand	To get access to the work area	
Commercially available	Heat Gun	To apply hot air	
Commercially available	Thermometer -40 to +100 °C (-40 to +212 °F) Minimum Range	To control temperature	
GSE 570		To install bushing	
Commercially available	Acrylic spatula	To apply sealant	
Commercially available	Burnisher	To install bushing	

E. Auxiliary Items

ITEM	*DESCRIPTION*	*PURPOSE*	*QTY*
Commercially available	Protective Gloves	For protection of technician's hands	1
Commercially available	Safety Goggles	For protection of technician's eyes	1

F. Consumable Materials

SPECIFICATION (BRAND)	*DESCRIPTION*	*QTY*
MIL-S-81733 TYPE IV-12	Sealant P/S 870C-12	AR
ASTM-D-740	Methyl Ethyl Ketone - MEK	AR
Commercially available	Liquid Nitrogen	AR

G. Expendable Parts

ITEM	*IPC REFERENCE (VENDOR REFERENCE)*	*QTY*
Main Structure - Bushing	IPC 54-51-00	AR
Mounts	IPC 71-20-00	AR

H. Persons Recommended

QTY	*FUNCTION*	*PLACE*
1	Does the task	Pylon
1	Helps the other technician	Pylon

I. Installation

SUBTASK 420-002-A

(1) For install bushings of spar I:

(a) Install the forward bushing of the spar I, as follows.

WARNING: LIQUID NITROGEN IS EXTREMELY COLD. CONTACT OF THE COLD GAS OR LIQUID WITH THE SKIN MAY CAUSE SEVERE BURNS. NITROGEN VAPORS MAY CAUSE QUICK SUFFOCATION DUE TO THE DEFICIENCY OF OXYGEN. PROTECT CONTAINER AGAINST PHYSICAL DAMAGE. STORE AND USE IN VENTILATED ROOMS. DO NOT ALLOW THE LIQUID TO CONTACT EYES, SKIN, OR CLOTHING. ALWAYS WEAR PROTECTION FOR THE SKIN, HANDS, AND EYES.

1 With the arm assy OD18.95 (GSE 570), put the forward bushing on liquid nitrogen. Refer to (Figure 404; Sheet 2; DET. 1).

2 Let the bushing stay in liquid nitrogen for 30 minutes.

WARNING: OBEY THE SAFETY PRECAUTIONS WHEN YOU DO TASKS WITH A HEATING GUN. IF YOU USE AN INCORRECT HEAT GUN NEAR FLAMMABLE MATERIAL OR FUEL VENT, EXPLOSION CAN OCCUR.

3 With a heat gun, apply hot air to the upper or lower fitting. Refer to (Figure 404; Sheet 2; DET. 2).

4 With a thermometer, control the temperature. Refer to (Figure 404; Sheet 2; DET. 2).

NOTE: The temperature must not be higher than 100°C (212 °F).

WARNING: BE CAREFUL WHEN YOU USE SEALANTS. FOR HAZARD, PROTECTION AND HANDLING OF MATERIAL, REFER TO ITS MATERIAL SAFETY DATA SHEET.

5 Apply sealant P/S 870C-12 around the housing yoke.

NOTE: The sealant cure time changes with the environmental conditions. Refer to (SRM 51-20-01-PR).

6 Remove the bushing from the liquid nitrogen, align and install the bushing into the fitting immediately. Refer to (Figure 404; Sheet 2; DET. 3).

7 Check the diameter of the bushing, if diameter bushing is much close-fit use a roller burnishing tool. Refer to (Figure 404; Sheet 2; DET. 4 and DET. 5).

(b) Install the rear bushing of the spar I, as follows.

WARNING: LIQUID NITROGEN IS EXTREMELY COLD. CONTACT OF THE COLD GAS OR LIQUID WITH THE SKIN MAY CAUSE SEVERE BURNS. NITROGEN VAPORS MAY CAUSE QUICK SUFFOCATION DUE TO THE DEFICIENCY OF OXYGEN. PROTECT CONTAINER AGAINST PHYSICAL DAMAGE. STORE AND USE IN VENTILATED ROOMS. DO NOT ALLOW THE LIQUID TO CONTACT EYES, SKIN, OR CLOTHING. ALWAYS WEAR PROTECTION FOR THE SKIN, HANDS, AND EYES.

1 With the arm assy OD18.95 (GSE 570), put the rear bushing on liquid nitrogen. Refer to (Figure 404; Sheet 2; DET. 1).

2 Let the bushing stay in liquid nitrogen for 30 minutes.

WARNING: OBEY THE SAFETY PRECAUTIONS WHEN YOU DO TASKS WITH A HEATING GUN. IF YOU USE AN INCORRECT HEAT GUN NEAR FLAMMABLE MATERIAL OR FUEL VENT, EXPLOSION CAN OCCUR.

3 With a heat gun, apply hot air to the upper or lower fitting. Refer to (Figure 404; Sheet 2; DET. 2).

4 With a thermometer, control the temperature. Refer to (Figure 404; Sheet 2; DET. 2).

NOTE: The temperature must not be higher than 100°C (212 °F).

WARNING: BE CAREFUL WHEN YOU USE SEALANTS. FOR HAZARD, PROTECTION AND HANDLING OF MATERIAL, REFER TO ITS MATERIAL SAFETY DATA SHEET.

5 Apply sealant P/S 870C-12 around the housing yoke.

NOTE: The sealant cure time changes with the environmental conditions. Refer to (SRM 51-20-01-PR).

6 Remove the bushing from the liquid nitrogen, align and install the bushing into the fitting immediately. Refer to (Figure 404; Sheet 2; DET. 3).

7 Check the diameter of the bushing, if diameter bushing is much close-fit use a roller burnishing tool. Refer to (Figure 405; Sheet 2; DET. 4 and DET. 5).

WARNING: BE CAREFUL WHEN YOU USE SOLVENTS BECAUSE THEY ARE A HEALTH AND FIRE HAZARD. USE SAFETY GOGGLES AND PROTECTIVE CLOTHING WHEN YOU HANDLE THEM. DO NOT BREATHE THEIR GASES AND WORK IN A WELL VENTILATED AREA.

(c) With a cloth soaked in MEK, clean the housing surface.

(d) Install the bolt retention sheet (7), washer flat (6), and bolt (5) from the fittings of spar I. Refer to (Figure 401; DET. D).

NOTE: For torque, refer to (AMM MPP 20-10-01/200).

SUBTASK 420-003-A

(2) For install bushing of spar II, as follows:

WARNING: LIQUID NITROGEN IS EXTREMELY COLD. CONTACT OF THE COLD GAS OR LIQUID WITH THE SKIN MAY CAUSE SEVERE BURNS. NITROGEN VAPORS MAY CAUSE QUICK SUFFOCATION DUE TO THE DEFICIENCY OF OXYGEN. PROTECT CONTAINER AGAINST PHYSICAL DAMAGE. STORE AND USE IN VENTILATED ROOMS. DO NOT ALLOW THE LIQUID TO CONTACT EYES, SKIN, OR CLOTHING. ALWAYS WEAR PROTECTION FOR THE SKIN, HANDS, AND EYES.

(a) With the arm assy OD22.125 (GSE 570), put the bushing on liquid nitrogen. Refer to (Figure 405; Sheet 2; DET. 1).

(b) Let the bushing stay in liquid nitrogen for 30 minutes.

WARNING: OBEY THE SAFETY PRECAUTIONS WHEN YOU DO TASKS WITH A HEATING GUN. IF YOU USE AN INCORRECT HEAT GUN NEAR FLAMMABLE MATERIAL OR FUEL VENT, EXPLOSION CAN OCCUR.

(c) With a heat gun, apply hot air to the upper or lower fitting. Refer to (Figure 405; Sheet 2; DET. 2).

(d) With a thermometer, control the temperature. Refer to (Figure 405; Sheet 2; DET. 2).

NOTE: The temperature must not be higher than 100°C (212 °F).

WARNING: BE CAREFUL WHEN YOU USE SEALANTS. FOR HAZARD, PROTECTION AND HANDLING OF MATERIAL, REFER TO ITS MATERIAL SAFETY DATA SHEET.

(e) Apply sealant P/S 870C-12 around the housing yoke.

NOTE: The sealant cure time changes with the environmental conditions. Refer to (SRM 51-20-01-PR).

(f) Remove the bushing from the liquid nitrogen, align and install the bushing into the fitting immediately. Refer to (Figure 405; Sheet 2; DET. 3).

(g) Check the diameter of the bushing, if diameter bushing is much close-fit use a roller burnishing tool. Refer to (Figure 405; Sheet 2; DET. 4 and DET. 5).

WARNING: BE CAREFUL WHEN YOU USE SOLVENTS BECAUSE THEY ARE A HEALTH AND FIRE HAZARD. USE SAFETY GOGGLES AND PROTECTIVE CLOTHING WHEN YOU HANDLE THEM. DO NOT BREATHE THEIR GASES AND WORK IN A WELL VENTILATED AREA.

(h) With a cloth soaked in MEK, clean the housing surface.

(i) Install the bolt retention sheet (1), washer flat (2), and bolt (3) from the fittings of spar II. Refer to (Figure 401; DET. C).

NOTE: For torque, refer to (AMM MPP 20-10-01/200).

J. Follow-on

SUBTASK 842-002-A

(1) Install the engine (AMM TASK 71-00-00-400-801-A/400).

(2) Remove the workstand from the work area.

(3) Do the engine operational check (AMM TASK 71-00-00-200-801-A/600).