

**CHAPTER**

**21**

**AIR CONDITIONING**



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ILLUSTRATED TOOL AND EQUIPMENT MANUAL

CHAPTER 21  
AIR CONDITIONING

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**ILLUSTRATED TOOL AND EQUIPMENT MANUAL**

**PART NUMBER: F72878-1, -2, -3 WAS DELETED**

## ILLUSTRATED TOOL AND EQUIPMENT MANUAL

**PART NUMBER: A21004-1**

**NAME:** TEST BOX - CURRENT SENSOR, FAN, ENVIRONMENTAL CONTROL SYSTEM

**AIRPLANE MAINTENANCE:** NO

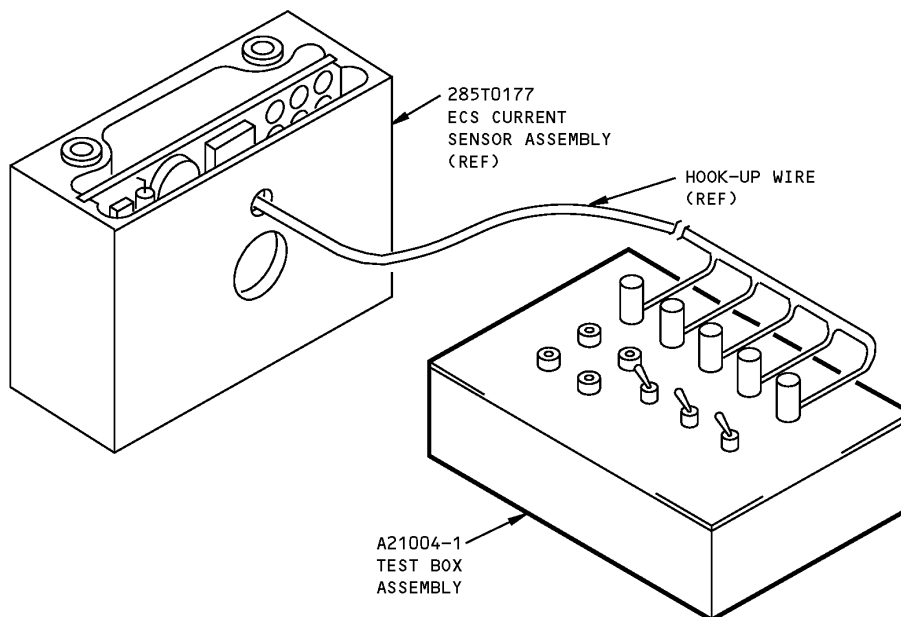
**COMPONENT MAINTENANCE:** YES

**USAGE & DESCRIPTION:** The A21004 drawing has been transferred to BAE Systems and will no longer be revised by Boeing. The A21004 inclusion in the 757 ITEM is for information and historical purposes only.

The A21004-1 test box has a limited applicability during component maintenance on 757-200 airplanes from line number 1 thru 379. A21004 is used to test control panel current sensor assembly 285T0177-1 and -3 on the 757 environmental control system (ECS) fan. Refer to CMM 21-25-51 for complete usage instructions. A21004-1 consists of switches, resistors, banana jacks and electrical circuitry mounted on a panel and chassis.

**WEIGHT:** 1 lb (0.45 kg)

**DIMENSIONS:** 2 x 5 x 7 inches (51 x 127 x 178 mm)



**Environmental Control System Fan, Current Sensor, Test Box  
Figure 1**



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**PART NUMBER: B21001-1**

**NAME:** CLAMP - HOLD OPEN UNPRESSURIZED FLIGHT RELIEF VALVE

**AIRPLANE MAINTENANCE:** YES

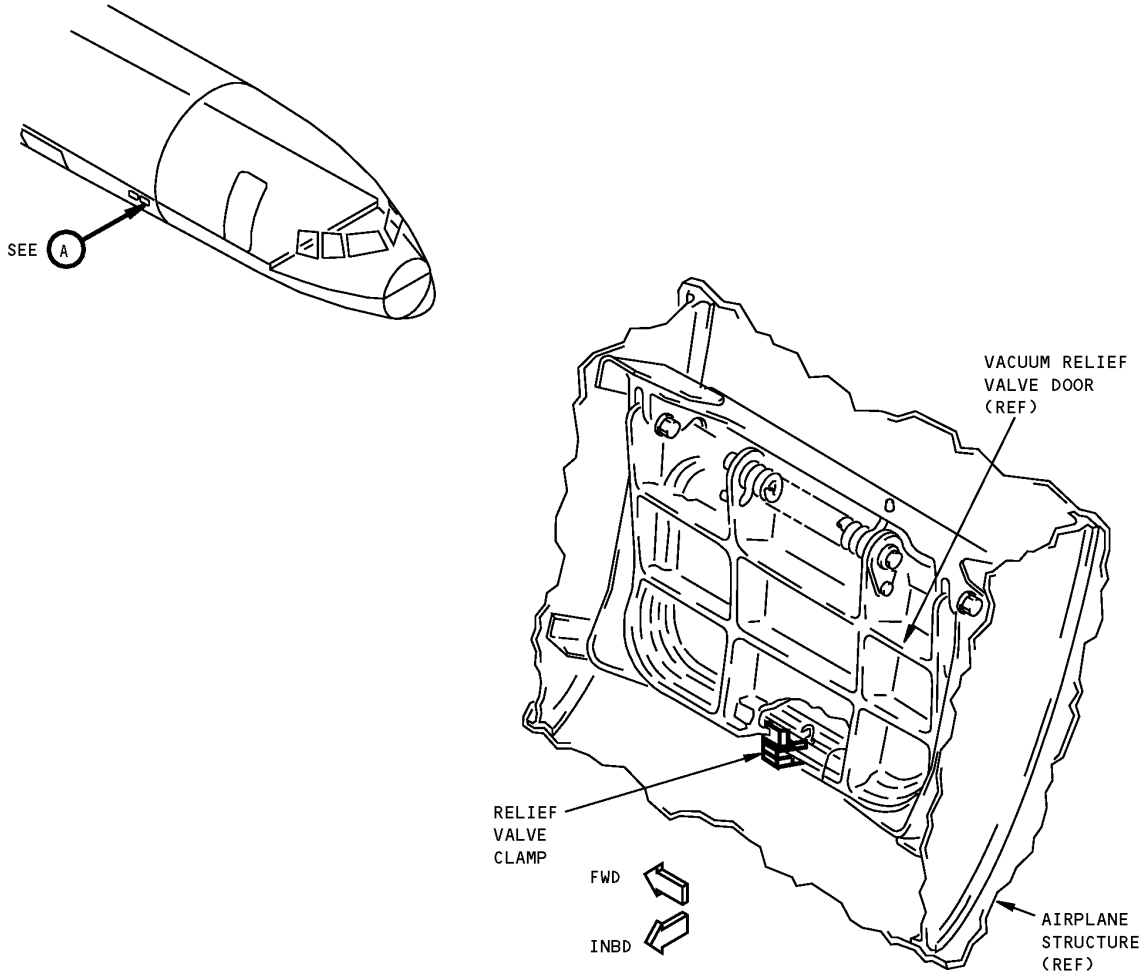
**COMPONENT MAINTENANCE:** NO

**USAGE & DESCRIPTION:** This tool is used to hold open one of two relief valve doors to allow smoke clearance during unpressurized flight. The clamp assembly consists of two clamp halves coated with plastisal and a screw and nut plate to secure the tool to the airplanes structure.

**WEIGHT:** 0.25 lbs (0.11 kg)

**DIMENSIONS:** 2 x 6 x 8 inches (51 x 152 x 203 mm)

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**Hold Open Unpressurized Flight Relief Valve  
Figure 1**



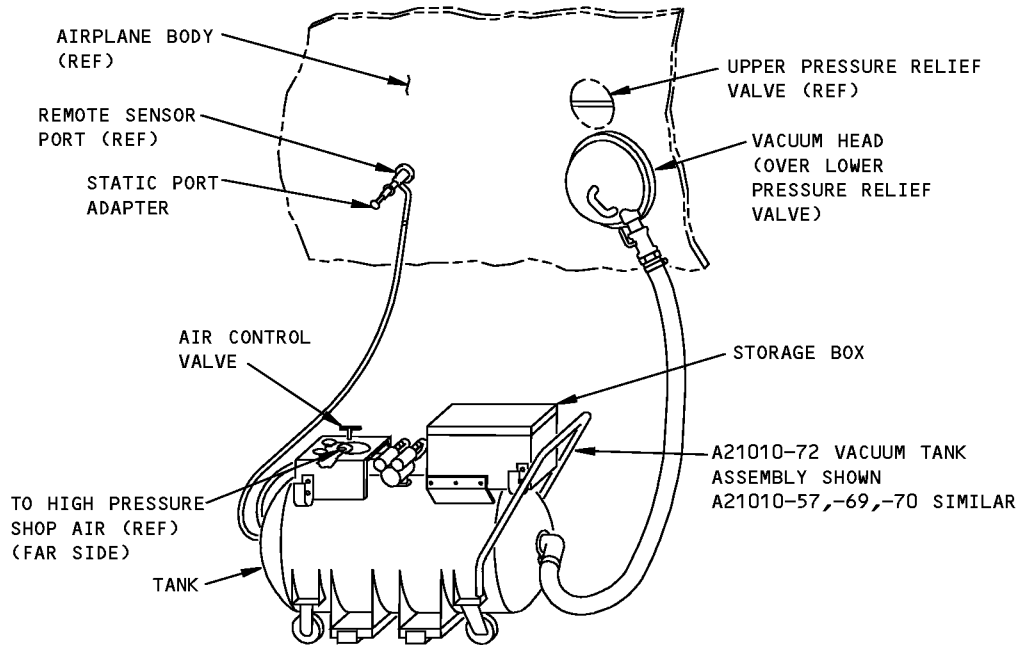
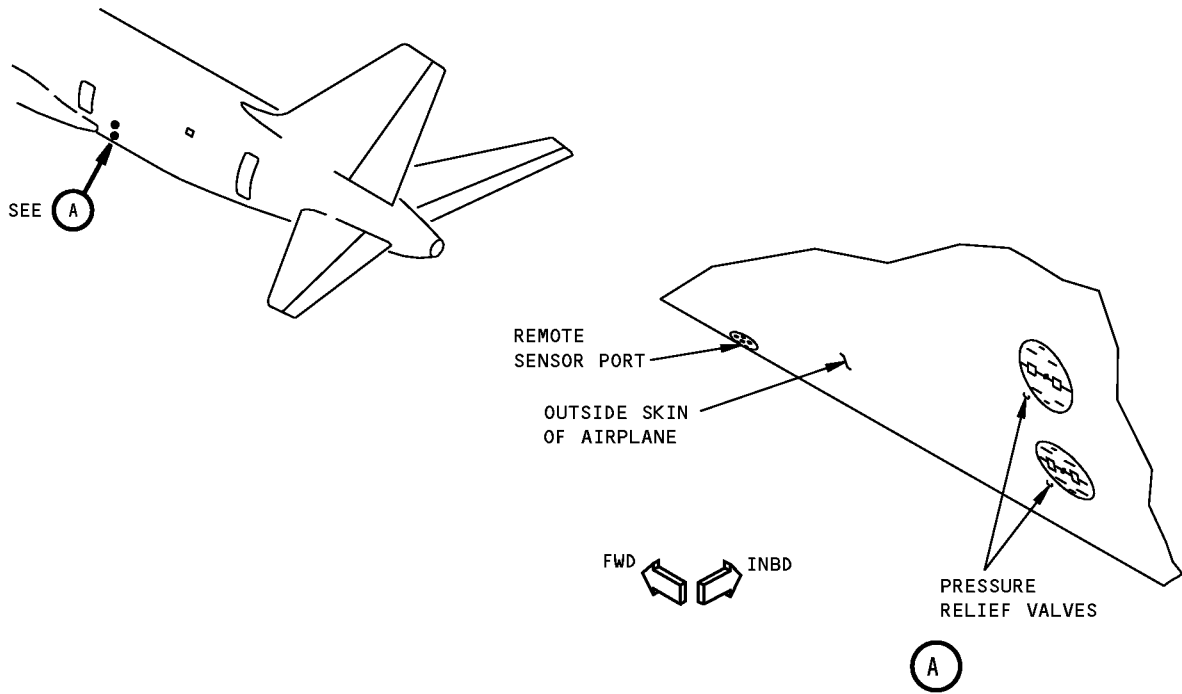
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## ILLUSTRATED TOOL AND EQUIPMENT MANUAL

<b>I</b>	<b>PART NUMBER:</b>	<u>A21010-57, -69, -70, -72,</u>
<b>NAME:</b>	VACUUM TANK - PRESSURE RELIEF VALVE TEST	
<b>AIRPLANE MAINTENANCE:</b>	YES	
<b>COMPONENT MAINTENANCE:</b>	NO	
<b>I USAGE &amp; DESCRIPTION:</b>	<p>The A21010-57, -69, -70 or -72 (preferred) vacuum tank is used on all 757 airplanes. A21010 simulates differential pressures in a ground test to ensure the positive pressure relief valve functions correctly in flight. A21010-57, -69, -70 and -72 share most of the same components and have a similar appearance. The A21010-57, -69, -70 and -72 vacuum tanks all have similar test functions. The A21010 vacuum tanks are operated on a clean dry, 60 to 105 psi air source. A21010 consists of a tank mounted on casters, a vacuum head assembly, a hand assembly, a static port adapter, two vacuum pumps, two mufflers, a vacuum regulator, a pressure gauge, a differential pressure gauge, a vacuum rate gauge, hoses, plumbing and associated hardware. Refer to current A21010 drawing and AMM 21-32-01 for complete usage information.</p>	
<b>WEIGHT:</b>	430 lbs (195 kg)	
<b>DIMENSIONS:</b>	22 x 39 x 66 inches (559 x 991 x 1676 mm)	
<b>I NOTE:</b>	A21010-72 replaces A21010-57, -69, -70 for future procurement. A21010-69 supersedes A21010-63.	



**ILLUSTRATED TOOL AND EQUIPMENT MANUAL**



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**Pressure Relief Valve Test Vacuum Tank  
Figure 1**



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**ILLUSTRATED TOOL AND EQUIPMENT MANUAL**

**PART NUMBER: B21004-91 WAS DELETED**



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**ILLUSTRATED TOOL AND EQUIPMENT MANUAL**

**PART NUMBER: A21008-2**

**NAME:** HOLD OPEN SET - CABIN AIR OUTFLOW

**AIRPLANE MAINTENANCE:** YES

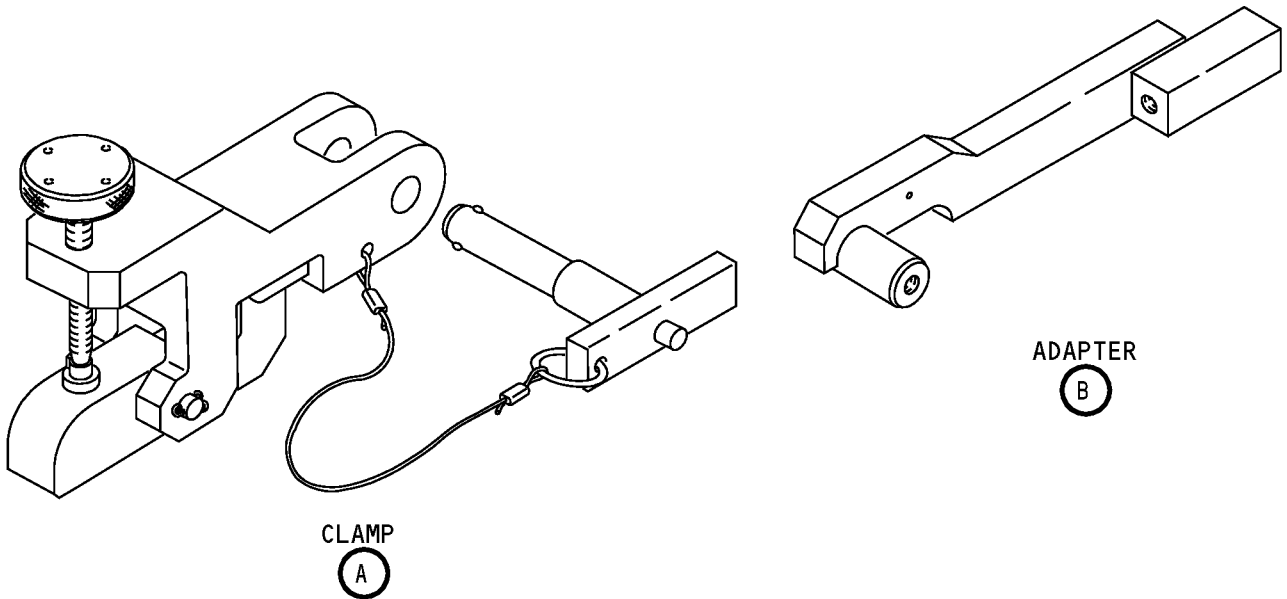
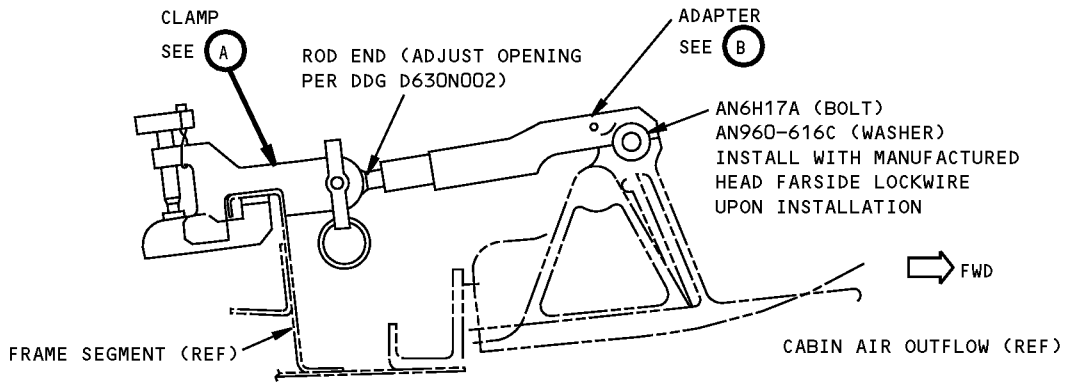
**COMPONENT MAINTENANCE:** NO

**USAGE & DESCRIPTION:** This tool is used to allow a 757 airplane to be dispatched with the cabin air outflow valve inoperative. Usage of the tool is explained in "Dispatch Deviation Guide D630N002".

**WEIGHT:** 3 lbs (1.4 kg)

**DIMENSIONS:** 12 x 3 x 1 inches (305 x 76 x 25 mm)

**ILLUSTRATED TOOL AND EQUIPMENT MANUAL**



**Cabin Air Outflow Hold Open Set  
Figure 1**



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## ILLUSTRATED TOOL AND EQUIPMENT MANUAL

**PART NUMBER: A21001-44, -45**

**NAME:** HOIST ADAPTERS - AIR CONDITIONING PACK

**AIRPLANE MAINTENANCE:** YES

**COMPONENT MAINTENANCE:** NO

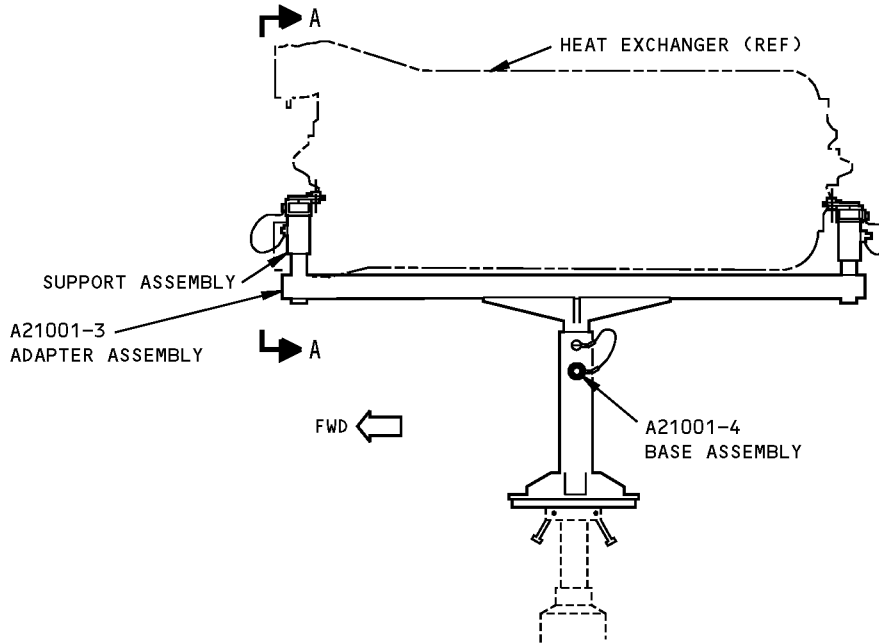
**USAGE & DESCRIPTION:** The -44 and -45 hoist adapters are used to remove and install the air cycle machine and heat exchangers. The -44 hoist adapter equipment is used with a customer supplied jack. The -45 is used with an A71015 engine accessory lift fixture. The -44 consists of a -48 adapter assembly, a -3 adapter assembly, a -4 base assembly and related hardware. The -45 consists of a -46 adapter assembly, a -36 adapter assembly and related hardware.

**WEIGHT:** A21001-44 - 50 lbs (23 kg)  
A21001-45 - 33 lbs (15 kg)

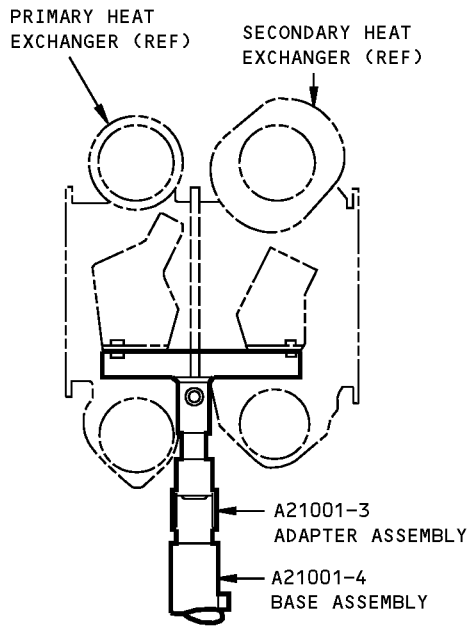
**DIMENSIONS:** A21001-44  
A21001-48 - 10 x 16 x 24 inches (254 x 406 x 610 mm)  
A21001-3 - 11 x 26 x 45 inches (279 x 660 x 1143 mm)  
A21001-4 - 10 x 10 x 14 inches (254 x 254 x 356 mm)  
A21001-45  
A21001-46 - 11 x 11 x 16 inches (279 x 279 x 406 mm)  
A21001-36 - 6 x 9 x 45 inches (152 x 229 x 1143 mm)

**NOTE:** A21001-44 and -45 supersedes -1 and -34 respectively.  
A21001-45 is applicable to 757 if used in conjunction with a work stand, or other shoring device, to accommodate higher ground clearance.

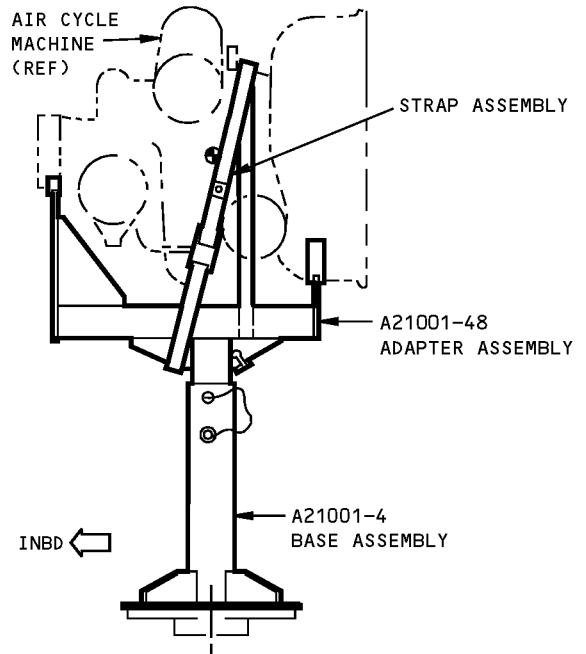
**ILLUSTRATED TOOL AND EQUIPMENT MANUAL**



**USAGE: JACKING HEAT EXCHANGER  
(LEFT SIDE VIEW)**



**USAGE: JACKING HEAT EXCHANGER  
(SECTION A-A)**



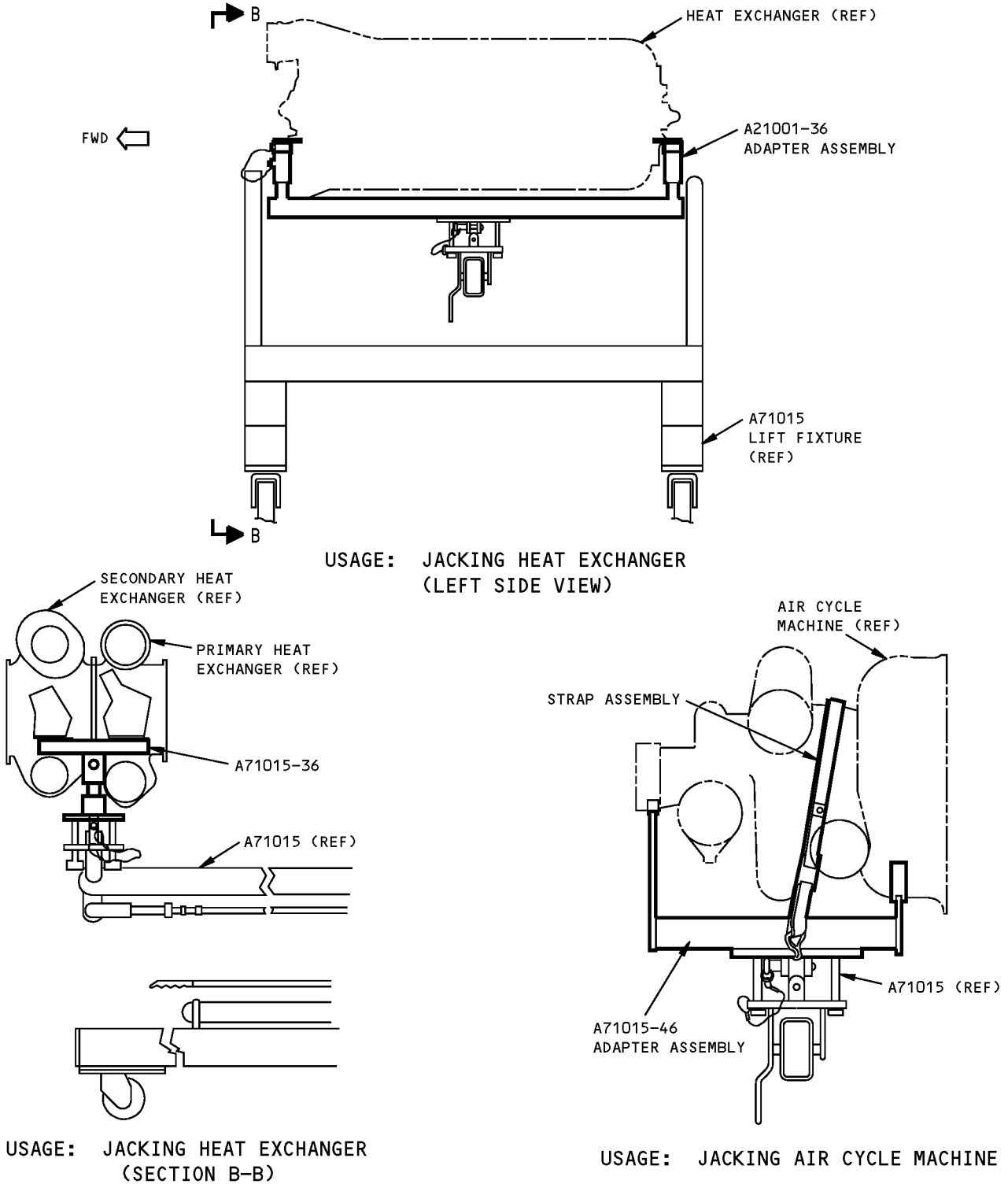
**USAGE: JACKING AIR CYCLE MACHINE**

**A21001-44 HOIST ADAPTER**

**Air Conditioning Pack Hoist Adapters - A21001-44**

**Figure 1**

**ILLUSTRATED TOOL AND EQUIPMENT MANUAL**



A21001-45 HOIST ADAPTER

**Air Conditioning Pack Hoist Adapters - A21001-45**

**Figure 2**

## ILLUSTRATED TOOL AND EQUIPMENT MANUAL

**PART NUMBER: A21007-1**

**NAME:** HOLD-OPEN ROD - RAM AIR DOOR, FLIGHT DISPATCH

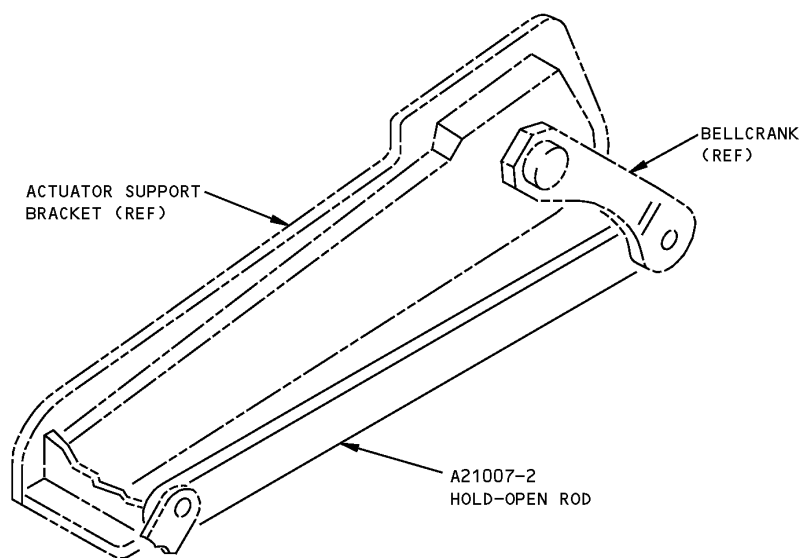
**AIRPLANE MAINTENANCE:** YES

**COMPONENT MAINTENANCE:** NO

**USAGE & DESCRIPTION:** This tool is used to lock ram air inlet and exhaust doors in fully open position. The tool consists of a -2 bar assembly and a -3 stowage box assembly. Usage is covered in document D630N002 "Dispatch Deviations Guide".

**WEIGHT:** 1 lb (0.45 kg)

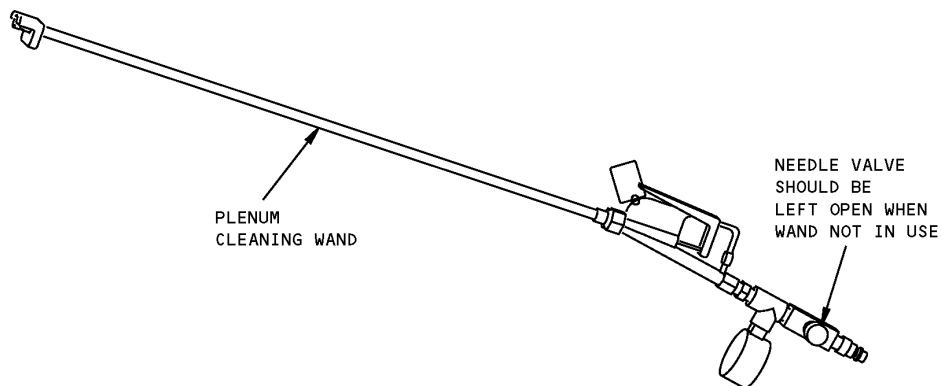
**DIMENSIONS:** 1 x 3.5 x 13 inches (25 x 89 x 330 mm)



**Flight Dispatch Ram Air Door Hold-Open Rod**  
**Figure 1**



## ILLUSTRATED TOOL AND EQUIPMENT MANUAL

**PART NUMBER: B21005-1, -10****NAME:** CLEANING WAND EQUIPMENT - HEAT EXCHANGER**AIRPLANE MAINTENANCE:** YES**COMPONENT MAINTENANCE:** NO**USAGE & DESCRIPTION:** This tool is used for cleaning the secondary heat exchanger. Refer to Maintenance Manual 21-51-02 for complete usage instructions. The -1 tool consists of a -2 outlet plenum cleaning wand and a -3 inlet cleaning wand and -4 storage box assembly. The -10 tool consists of a -11 outlet plenum cleaning wand and a -3 inlet cleaning wand and a -16 storage box assembly.**WEIGHT:** 5 lbs (2.3 kg)**DIMENSIONS:** 6 x 12 x 36 inches (152 x 305 x 914 mm)**NOTE:** B21005-10 replaces B21005-1 for future procurement.

**Heat Exchanger Cleaning Wand Equipment  
Figure 1**