

CHAPTER

22

AUTO FLIGHT



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ILLUSTRATED TOOL AND EQUIPMENT MANUAL

CHAPTER 22
AUTO FLIGHT

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PART NUMBER: A22001-15, -22

NAME: REMOTE CONTROL UNIT - MAINTENANCE CONTROL DISPLAY PANEL

AIRPLANE MAINTENANCE: YES

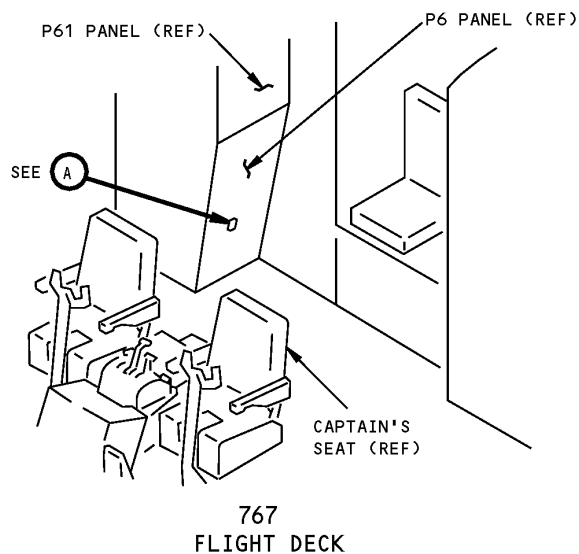
COMPONENT MAINTENANCE: NO

USAGE & DESCRIPTION: This tool enables the remote operation of the maintenance control display panel and the display of its data. Data is displayed on the Engine Indicating Crew Alerting System (EICAS) screen.

WEIGHT: 5 lbs (2.3 kg)

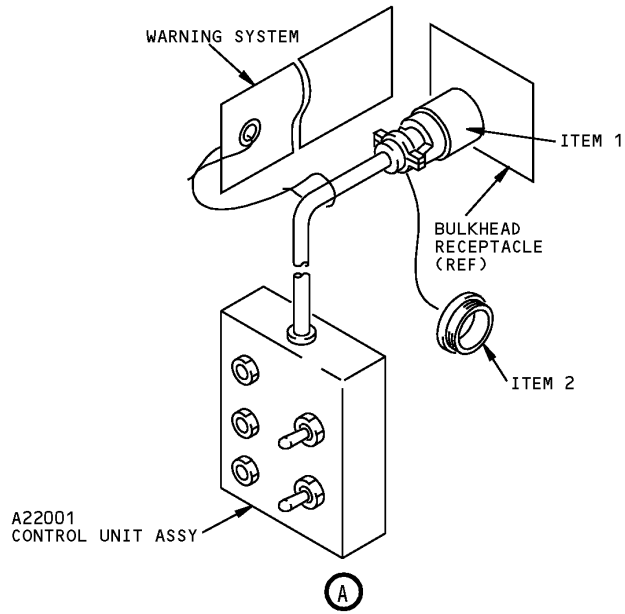
DIMENSIONS: 4 x 9 x 12 inches (102 x 229 x 305 mm)

NOTE: A22001-22 replaces A22001-15 for future procurement.



**Maintenance Control Display Panel Location
Figure 1**

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Maintenance Control Display Panel Remote Control Unit
Figure 2

REPAIRABLE/REPLACEABLE PARTS			
ITEM NO.	PART NO.	NOMENCLATURE	VENDOR CODE
1	MS24266R16B24P7	CONNECTOR	
2	MS27293-4	CONNECTOR CAP	



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PART NUMBER: C22005-1, -7, -8

NAME: BREAKOUT BOX - MULTIPURPOSE, 100/124 PIN

AIRPLANE MAINTENANCE: YES

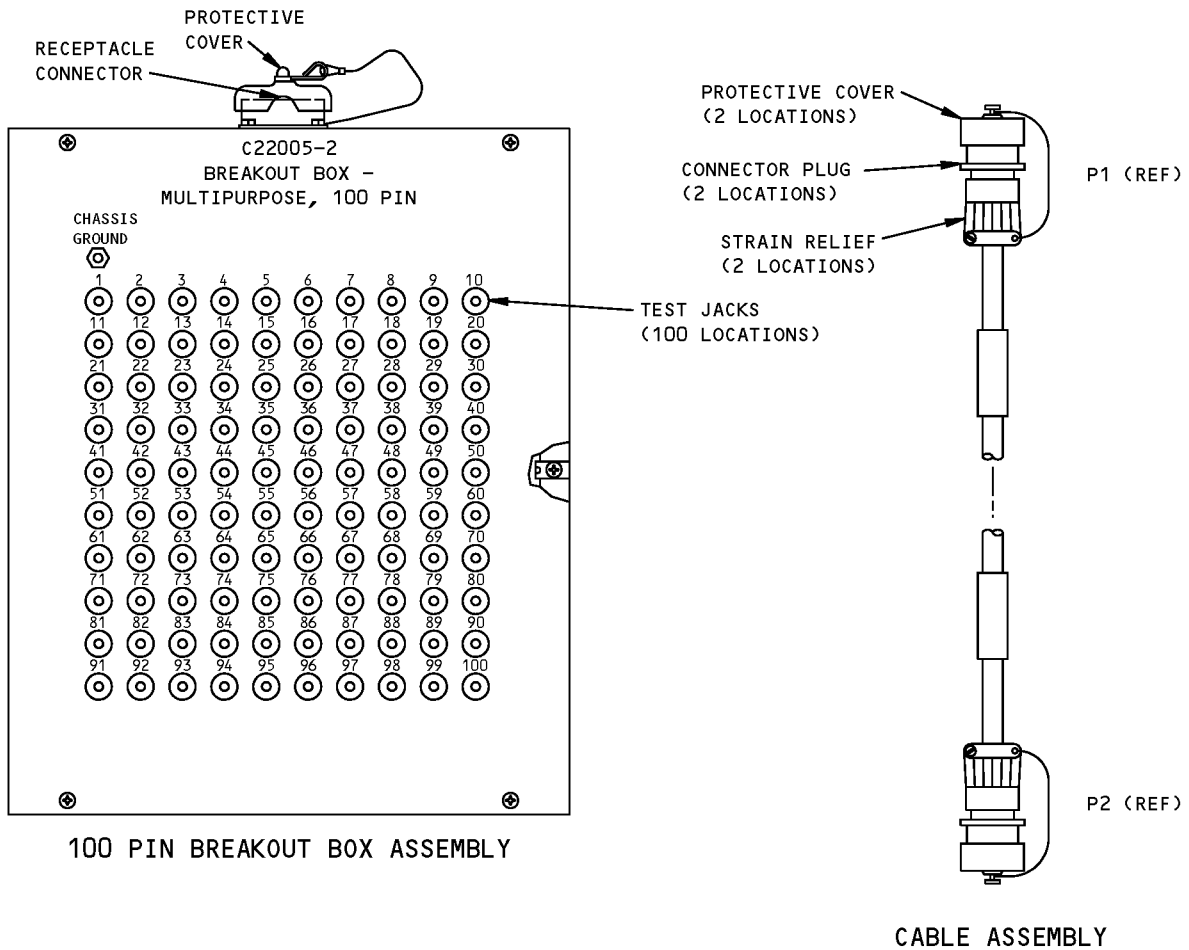
COMPONENT MAINTENANCE: YES

USAGE & DESCRIPTION: This tool is used for testing components and/or systems. It is also used to access (breakout) contacts of connectors. Refer to CMM 34-61-11 for further usage instructions. This tool is used on the 767-400 airplanes. This tool consists of a -2 100 pin breakout box assembly, 2 cables (-7, -8 to be used with J2, J4 respectively) and a storage box assembly. The other end of the two cable assemblies have identical connectors to be used with the breakout box. The breakout box has 100 test jacks.

WEIGHT: 5 lbs (2.3 kg)

DIMENSIONS: 5 x 10 x 16 inches (127 x 254 x 406 mm)

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**Multipurpose 100/124 Pin Breakout Box
Figure 1**

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PART NUMBER: A22005-1, -9

NAME: BREAKOUT BOX - ATS LOADBOARD YAW DAMPER MONITOR RECEIVER, PCA

AIRPLANE MAINTENANCE: NO

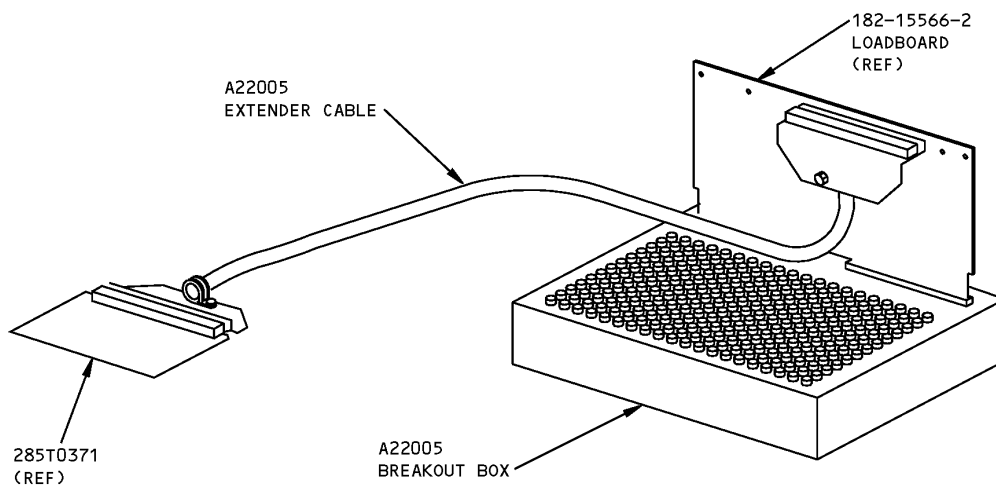
COMPONENT MAINTENANCE: YES

USAGE & DESCRIPTION: The A22005 drawing has been transferred to BAE Systems and will no longer be revised by Boeing. The A22005 inclusion in the 767 ITEM is for information and historical purposes only.

This tool is used to test the Yaw Damper Monitor Receiver PCA. Refer to CMM 22-21-70 for further usage instructions. The -1 test box and -9 extender cable are used together for 767-200 and -300 airplanes only.

WEIGHT: 5 lbs (2.3 kg)

DIMENSIONS: 3 x 14 x 17 inches (76 x 356 x 432 mm)

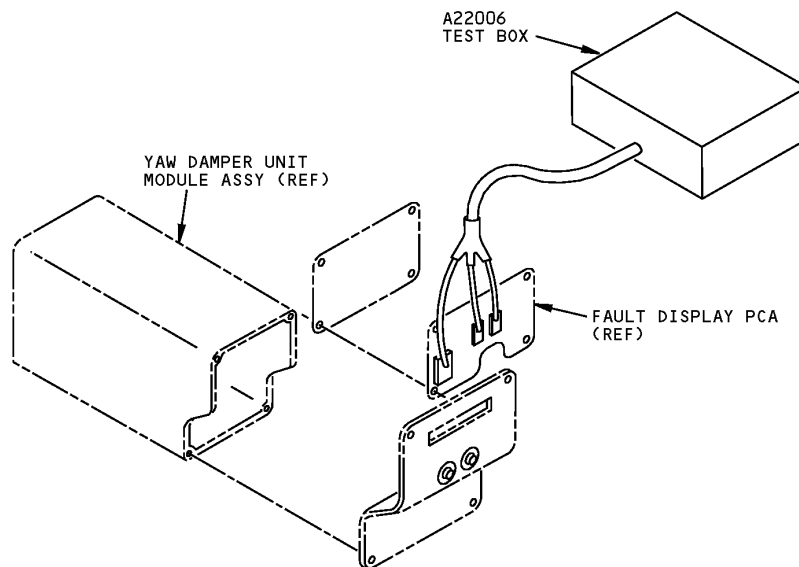


**PCA ATS Loadboard Yaw Damper Monitor Receiver Breakout Box
Figure 1**

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PART NUMBER: A22006-1**NAME:** BREAKOUT BOX - FAULT DISPLAY PCA, YAW DAMPER**AIRPLANE MAINTENANCE:** NO**COMPONENT MAINTENANCE:** YES**USAGE & DESCRIPTION:** The A22006 drawing has been transferred to BAE Systems and will no longer be revised by Boeing. The A22006 inclusion in the 767 ITEM is for information and historical purposes only.

Use to test the yaw damper unit module fault display PCA. This tool consists of a -2 panel, -3 chassis assy, -4 and -5 sleeving, -6,-7, and -8 marker, -9 marker cover, -10 schematic placard, -11 pocket, -12 placard, and a -13 pop rivet.

WEIGHT: 10 lbs (4.5 kg)**DIMENSIONS:** 2 x 7 x 10 inches (51 x 178 x 254 mm)

**Yaw Damper Fault Display PCA Breakout Box
Figure 1**



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PART NUMBER: A22007-1

NAME: BREAKOUT BOX - ARINC/FILTER/FUSE PCA, YAW DAMPER

AIRPLANE MAINTENANCE: YES

COMPONENT MAINTENANCE: NO

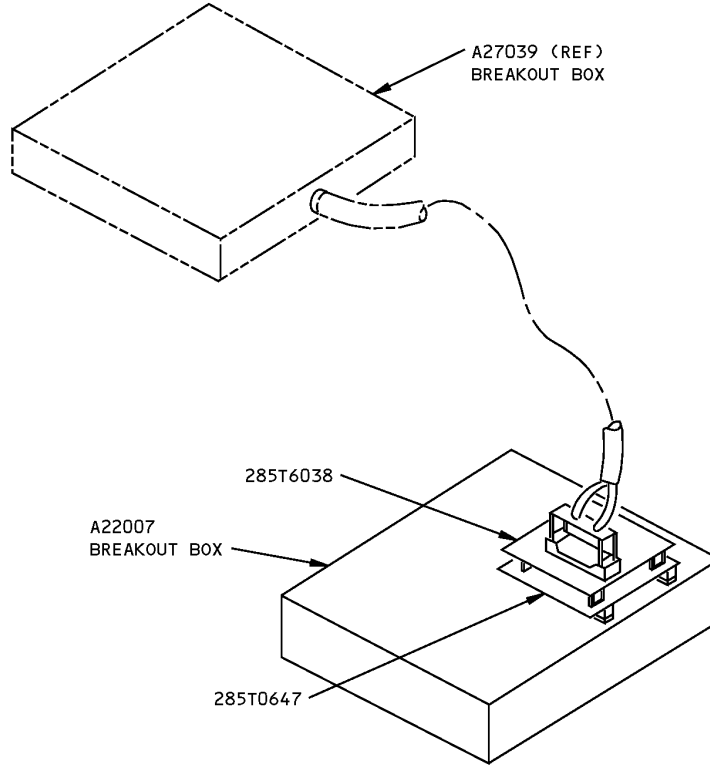
USAGE & DESCRIPTION: The A22007 drawing has been transferred to BAE Systems and will no longer be revised by Boeing. The A22007 inclusion in the 767 ITEM is for information and historical purposes only.

Use in conjunction with A27039 to test Yaw Damper Unit Module ARINC/ Filter/Fuse PCA card. This tool consists of a test box assy, -2 panel, -3 chassis assy, -4 schematic placard and a -5 pocket.

WEIGHT: 15 lbs (7 kg)

DIMENSIONS: 14 x 17 x 3 inches (356 x 432 x 76 mm)

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Yaw Damper ARINC/Filter/Fuse PCA Breakout Box
Figure 1

REPAIRABLE/REPLACEABLE PARTS			
ITEM NO.	PART NO.	NOMENCLATURE	VENDOR CODE
1	HPD096JFXL 0020-BEC	CONNECTOR	



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PART NUMBER: B22002-1

NAME: BREAKOUT BOX - YAW DAMPER EMI FILTER

AIRPLANE MAINTENANCE: NO

COMPONENT MAINTENANCE: YES

USAGE & DESCRIPTION: The B22002 drawing has been transferred to BAE Systems and will no longer be revised by Boeing. The B22002 inclusion in the 767 ITEM is for information and historical purposes only.

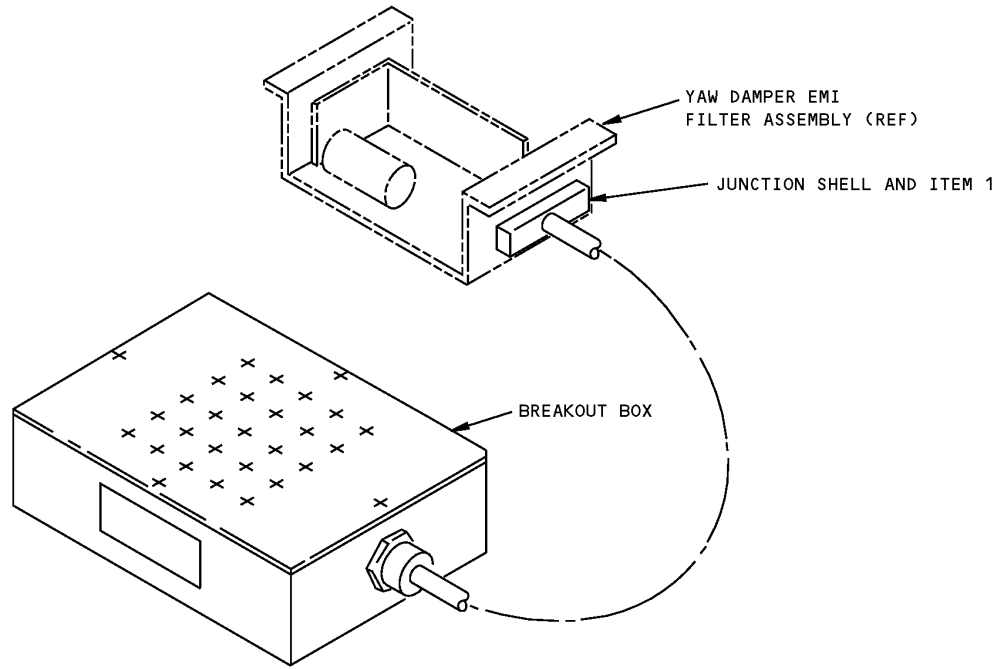
This tool is used to test the yaw damper Electro Magnetic Interference (EMI) filter assembly, P/N 285T0374. Refer to CMM 22-21-65 for further usage instructions. This tool is used on the 767-200 airplanes equipped with 285T0013-101 through -110 Yaw Damper Module. Refer to 285T0374 EMI filter assembly drawing.

WEIGHT: 1 lb (0.45 kg)

DIMENSIONS: 4 x 8 x 10 inches (102 x 203 x 254 mm)

NOTE: B22002-1 replaces A27036-16 for future procurement.

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Yaw Damper EMI Filter Breakout Box
Figure 1

REPAIRABLE/REPLACEABLE PARTS			
ITEM NO.	PART NO.	NOMENCLATURE	VENDOR CODE
1	M24308/3-3	CONNECTOR	

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PART NUMBER: B29005-17

NAME: SIMULATOR - YAW DAMPER MODULE

AIRPLANE MAINTENANCE: YES

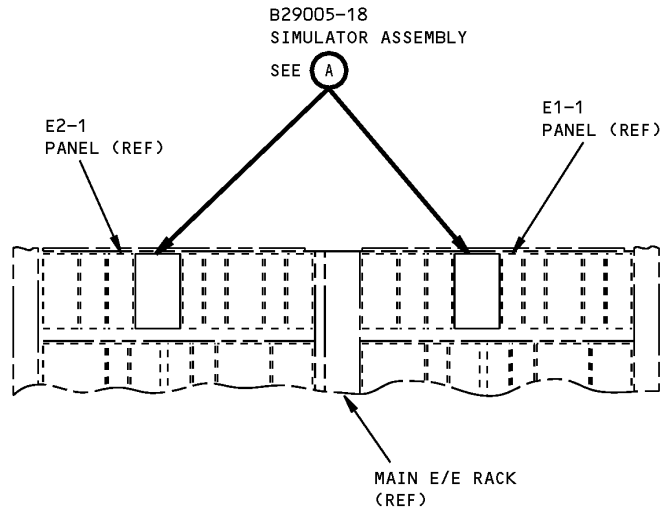
COMPONENT MAINTENANCE: NO

USAGE & DESCRIPTION: This simulator is used in place of the yaw damper modules when performing test requiring yaw damper servo input for rudder displacement. This simulator is used on 767-200/-300 airplanes equipped with M522 and M523 (285T0013) Yaw Damper Module (YDM). Refer to drawing B29006 for airplanes equipped with M11482 and M11483 (285T1122) Yaw Damper/ Stabilizer Trim Module (YSM). Refer to AMM 27-21-00 for further usage instructions. The simulator consists of two simulator assemblies and a storage box assembly.

WEIGHT: 10 lbs (4.5 kg)

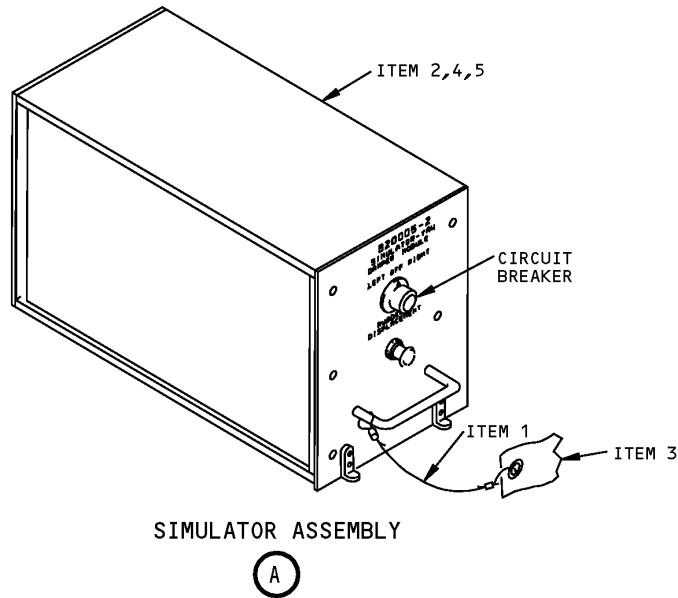
DIMENSIONS: 12 x 17 x 17 inches (305 x 432 x 432 mm)

NOTE: B29005-17 supersedes B29005-1.



**Yaw Damper Module Simulator
Figure 1 (Sheet 1 of 2)**

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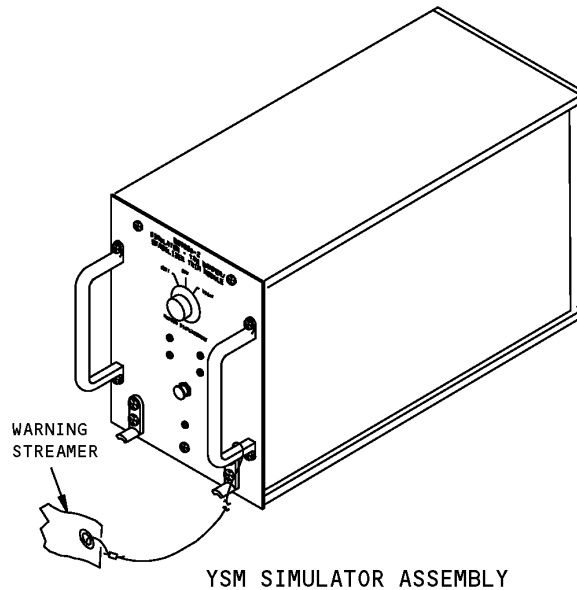
Yaw Damper Module Simulator
Figure 1 (Sheet 2 of 2)

REPAIRABLE/REPLACEABLE PARTS			
ITEM NO.	PART NO.	NOMENCLATURE	VENDOR CODE
1	CL-23-KA-12.OLR	CABLE ASSEMBLY	V99862
2	BKAD2-313-40011FO	CONNECTOR	
3	NAS1756-24	WARNING STREAMER	
4	031-1287-000	CONTACT	V71468
5	030-2273-000	CONTACT	V71468

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PART NUMBER: B29006-1**NAME:** SIMULATOR - YAW DAMPER/STABILIZER TRIM MODULE**AIRPLANE MAINTENANCE:** YES**COMPONENT MAINTENANCE:** NO

USAGE & DESCRIPTION: This simulator is used in place of yaw damper/stabilizer trim modules when performing test requiring yaw damper servo input for rudder displacement. Refer to AMM 27-21-00 and AMM 29-11-00 for further usage information. The simulator is used on 767-200/-300 airplanes equipped with 285T1122 yaw damper/stabilizer trim module (YSM) only, starting at line number 870. This simulator is used on all 767-400 airplanes. The simulator consists of two YSM simulator assemblies and a case assembly.

WEIGHT: 23 lbs (10.4 kg)**DIMENSIONS:** 9 x 20 x 25 inches (229 x 508 x 635 mm)

YAW Damper/Stabilizer Trim Module Simulator
Figure 1



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PART NUMBER: A22003-22

NAME: COMPONENT MAINTENANCE EQUIPMENT - AUTOTHROTTLE CLUTCH

AIRPLANE MAINTENANCE: NO

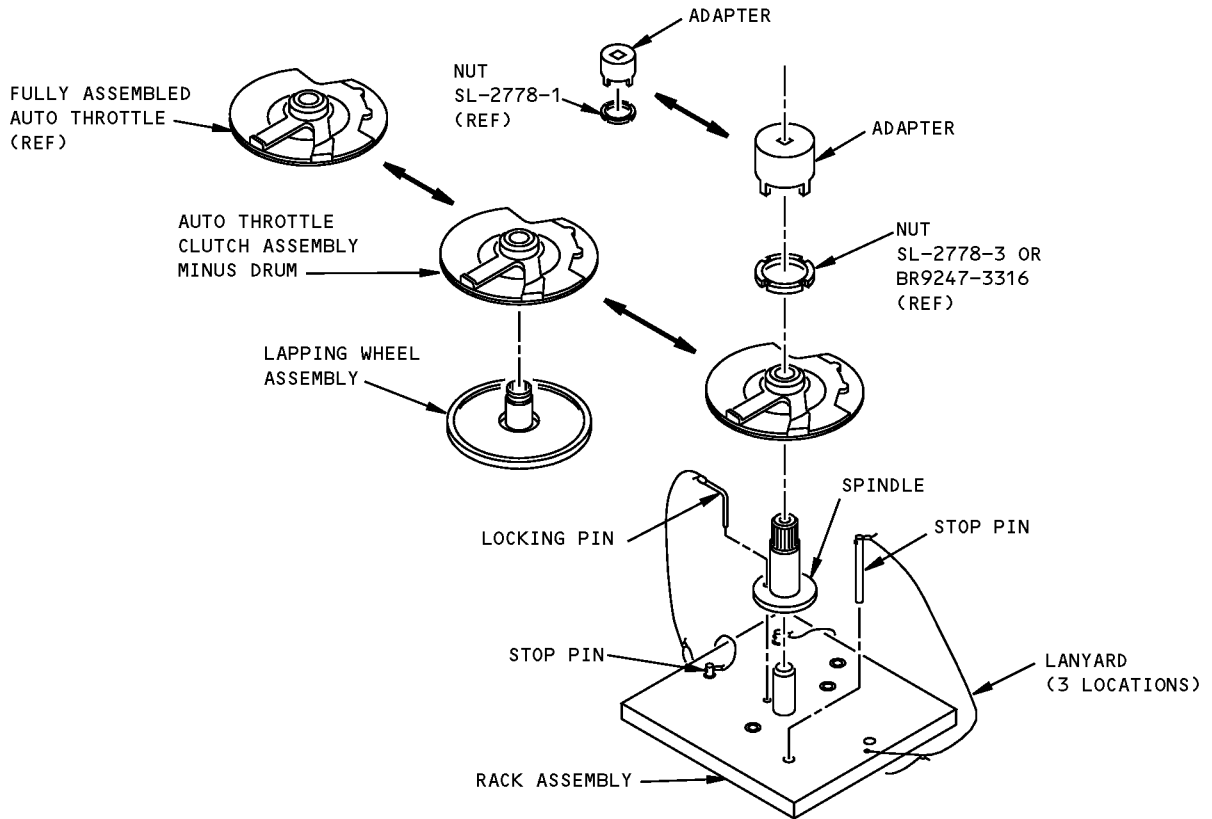
COMPONENT MAINTENANCE: YES

USAGE & DESCRIPTION: This tool consists of the following: Three adapters, a lapping wheel, spindle assembly, and torque rack assembly. Each adapter is used with a customer supplied 1/2-inch square drive torque wrench to disassemble/assemble different autothrottle clutch pack assemblies. A lapping wheel, spindle and torque rack assembly are used to mount the clutch assembly to lap the clutch shoe linings. A locking pin secures the clutch assembly for nut removal and a stop pin restrains the clutch pack outer case during the clutch shoe lapping operation.

WEIGHT: 28 lbs (13 kg)

DIMENSIONS: 8 x 17 x 27 inches (203 x 432 x 686 mm)

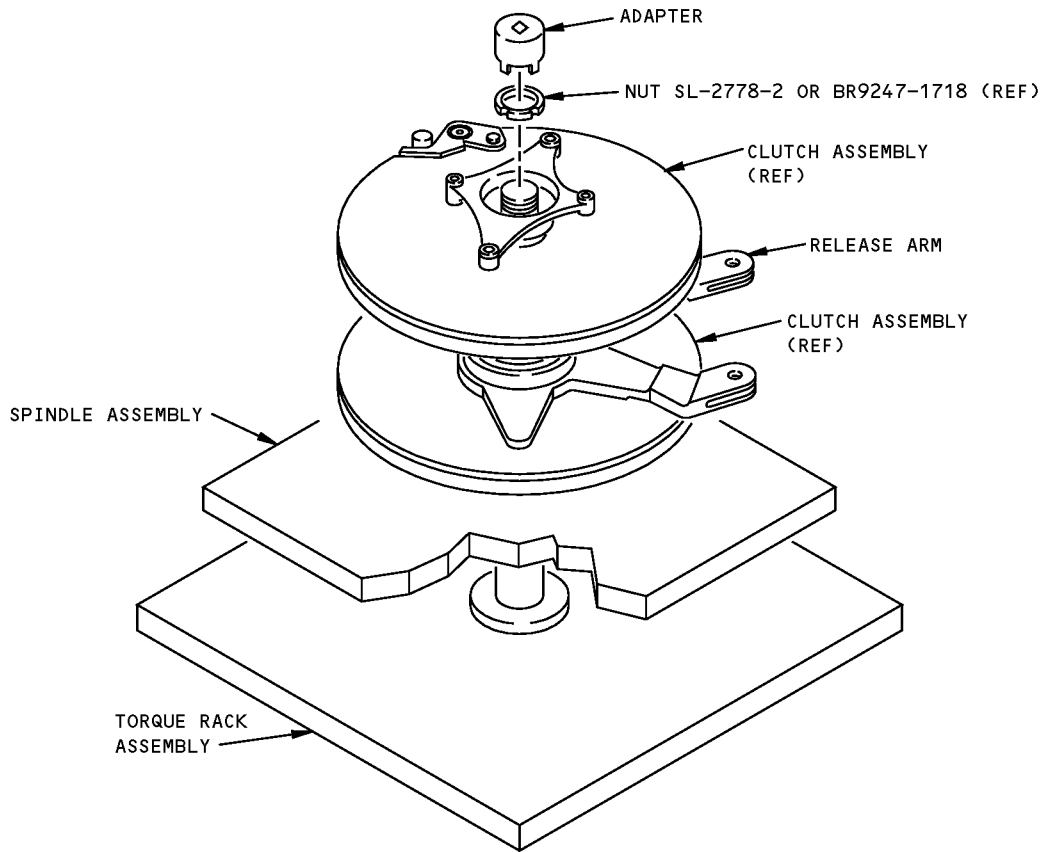
NOTE: A22003-22 supersedes A22003-20
A22003-20 supersedes A22003-1



LAPPING ARM SHOE LINING
USAGE I

Autothrottle Clutch Component Maintenance Equipment
Figure 1

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**TORQUE SUPPORT BRACKET NUT
USAGE II**

**Autothrottle Clutch Component Maintenance Equipment
Figure 2**



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PART NUMBER: A22004-1

NAME: CHECKING FIXTURE - AUTOTHROTTLE GEARBOX

AIRPLANE MAINTENANCE: NO

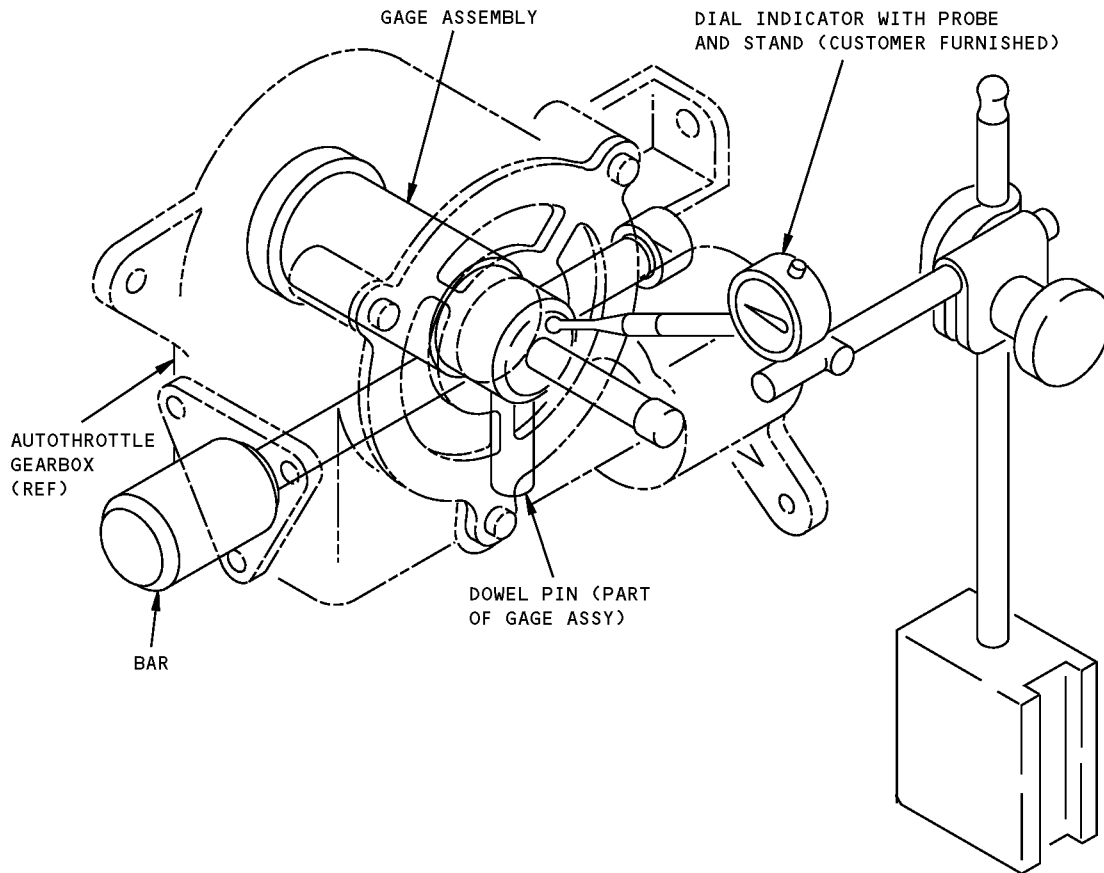
COMPONENT MAINTENANCE: YES

USAGE & DESCRIPTION: This tool is used to determine shim thickness required to establish the proper mounting distance during autothrottle gearbox assembly. The tool consists of two assemblies, the gage assembly and bar.

WEIGHT: 1.5 lbs (0.7 kg)

DIMENSIONS: 2.34 x 5.60 inches (59 x 142 mm)

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Autothrottle Gearbox Checking Fixture
Figure 1



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PART NUMBER: A22008-1, -17, -26

NAME: RIGGING EQUIPMENT - AUTOTHROTTLE BRAKE

AIRPLANE MAINTENANCE: NO

COMPONENT MAINTENANCE: YES

USAGE & DESCRIPTION: The A22008-1, -17, -26 rigging equipment is used on all 767 airplanes. This equipment is used to assemble the housing assembly by compressing the spring end cap and to install or remove the autothrottle nut. For -1 refer to CMM 22-31-03 and CMM 22-32-43 and current A22008 drawing for further usage instructions. For -17 and -26 refer to CMM 22-32-45 and current A22008 drawing for further usage instructions. This equipment consists of a base assembly, a spacer, a socket a washer, a MS51963-23 nut and a storage box assembly. A22008-17 and -26 has an additional thick washer.

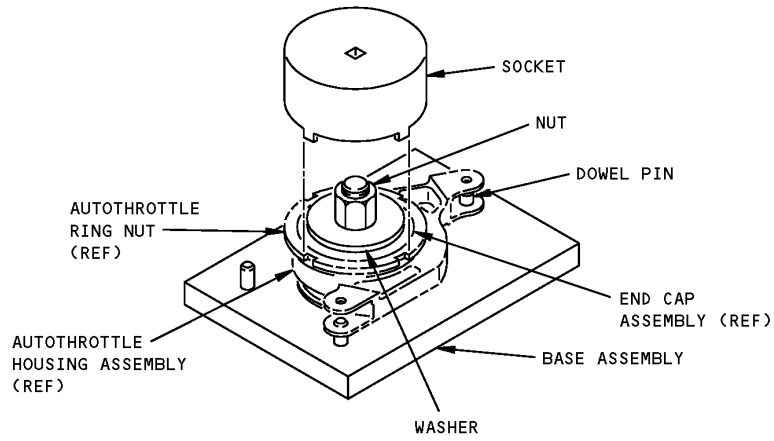
NOTE: A22008-1 is for airplanes without the 253T7531 Autothrottle Brake Assembly.

WEIGHT: A22008-1 or -17 - 20 lbs (9 kg)
A22008-26 - 17 lbs (7.7 kg)

DIMENSIONS: A22008-1 or -17 - 4 x 9 x 12 inches (102 x 229 x 305 mm)
A22008-26 - 4 x 6 x 16 inches (102 x 152 x 406 mm)

NOTE: A22008-17 replaces A22008-1 for future procurement.
A22008-26 replaces A22008-17 for future procurement.

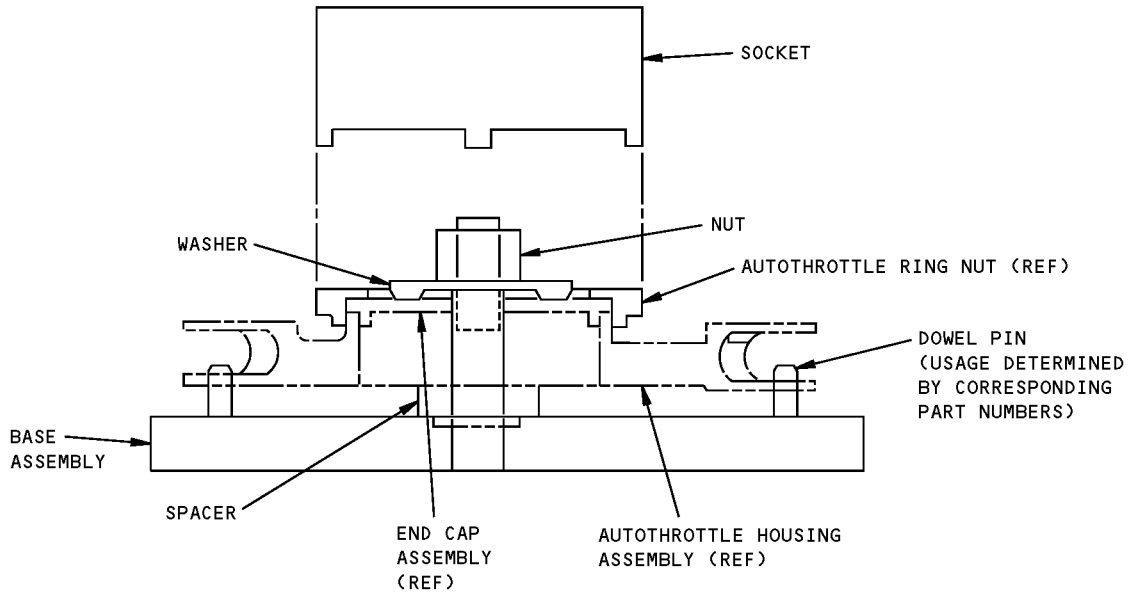
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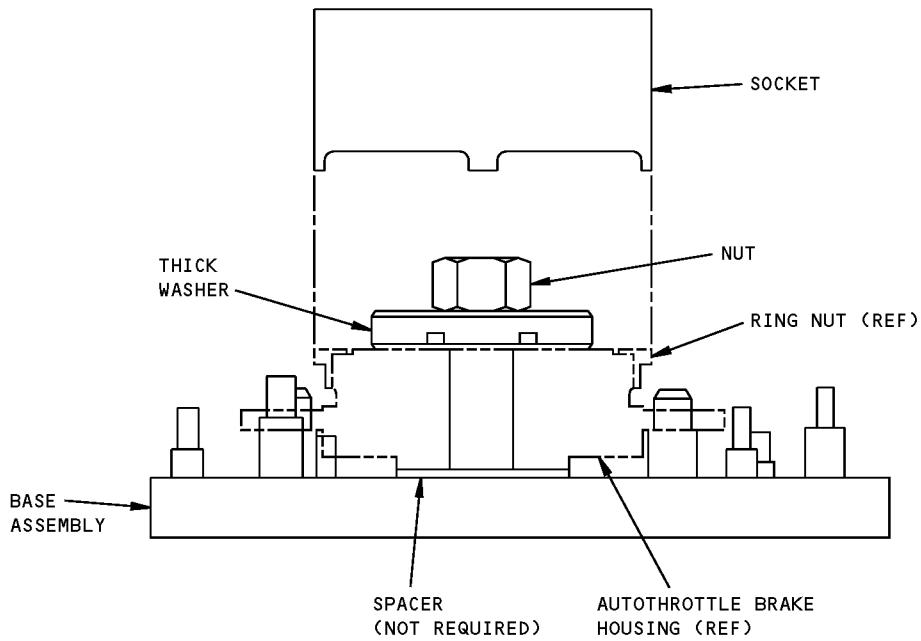
A22008-1 RIGGING EQUIPMENT

Autothrottle Brake Rigging Equipment
Figure 1

ILLUSTRATED TOOL AND EQUIPMENT MANUAL



A22008-1 RIGGING EQUIPMENT



A22008-17,-26 RIGGING EQUIPMENT

**Autothrottle Brake Rigging Equipment
Figure 2**

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PART NUMBER: B22003-39

NAME: TEST EQUIPMENT - AUTOTHROTTLE CLUTCH

AIRPLANE MAINTENANCE: NO

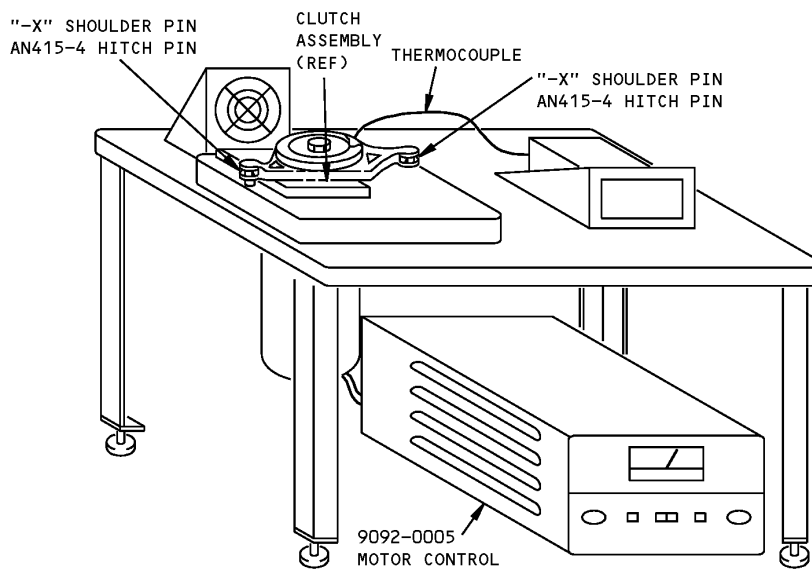
COMPONENT MAINTENANCE: YES

USAGE & DESCRIPTION: Use for run-in procedure of the autothrottle clutch assembly.

WEIGHT: 55 lbs (25 kg)

DIMENSIONS: 24 x 12 x 20 inches (610 x 305 x 508 mm)

NOTE: G22003 replaces B22003 for future procurement.
B22003-39 supersedes B22003-20, -1.



Autothrottle Clutch Test Equipment
Figure 1



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PART NUMBER: G22003-132, -133, -134, -135

NAME: TEST EQUIPMENT - AUTOTHROTTLE CLUTCH

AIRPLANE MAINTENANCE: NO

COMPONENT MAINTENANCE: YES

USAGE & DESCRIPTION: The G22003-132, -133, -134, -135 test equipment is used on all 767 airplanes. This tool is used to perform run-in and acceptance tests on the autothrottle clutches and brake assemblies. The G22003-132 and -134 test equipment operates on 60 hertz. The G22003-133 and -135 test equipment operates on 50 hertz. Refer to CMM 22-32-43 and current G22003 drawing for additional usage instructions. G22003-134 and -135 consist of:

G22003-134		
QUANTITY	NOMENCLATURE	PART NUMBER
1	SMALL SPROCKET ASSEMBLY	G22003-111
1	MEDIUM SPROCKET ASSEMBLY	G22003-113
1	LARGE SPROCKET ASSEMBLY	G22003-115
1	TRANSDUCER ASSEMBLY	G22003-94
1	TEST UNIT (60 HZ)	G22003-138
1	SHORT SQUARE ADAPTER	G22003-5
1	SHORT CHAIN	35X45.75 INCHES
1	LONG CHAIN	35X40.5 INCHES
1	STORAGE BOX	

G22003-135		
QUANTITY	NOMENCLATURE	PART NUMBER
1	SMALL SPROCKET ASSEMBLY	G22003-112
1	MEDIUM SPROCKET ASSEMBLY	G22003-114
1	LARGE SPROCKET ASSEMBLY	G22003-115
1	TRANSDUCER ASSEMBLY	G22003-94
1	TEST UNIT (50 HZ)	G22003-139
1	SHORT SQUARE ADAPTER	G22003-5
1	SHORT CHAIN	35X45.75 INCHES
1	LONG CHAIN	35X37.5 INCHES
1	STORAGE BOX	

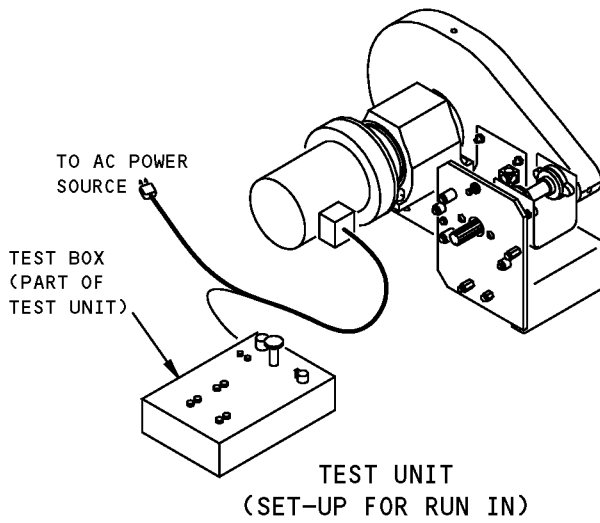
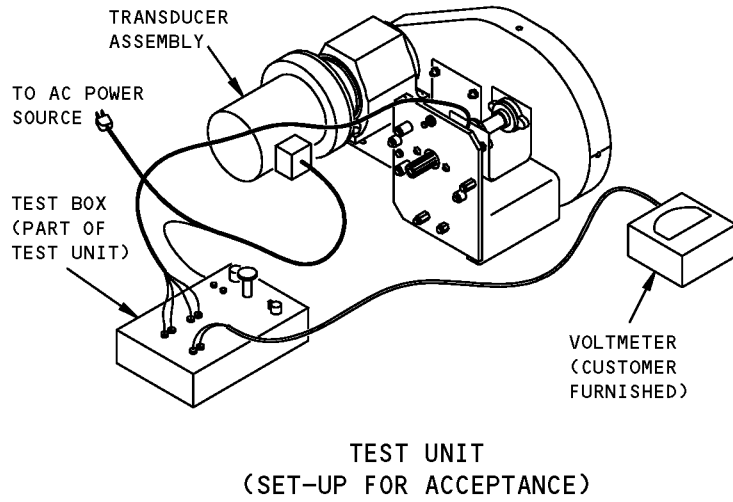


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- WEIGHT:** 110 lbs. (50 kg) (excluding box)
- DIMENSIONS:** 15 x 19 x 24 inches (381 x 483 x 610 mm) (excluding box)
- NOTE:** G22003-134 replaces G22003-132 for future procurement.
G22003-135 replaces G22003-133 for future procurement.
G22003-132 supersedes G22003-107.
G22003-133 supersedes G22003-108.
G22003-107 supersedes G22003-1, -50, -83, -92.
G22003-108 supersedes G22003-2, -51, -89, -93.
G22003-107, -108 replaces B22003-39 for future procurement.

ILLUSTRATED TOOL AND EQUIPMENT MANUAL



**Autothrottle Clutch Test Equipment
Figure 1**



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ILLUSTRATED TOOL AND EQUIPMENT MANUAL

PART NUMBER: J22004-67, -68

NAME: TEST EQUIPMENT - AUTOTHROTTLE, GEARBOX, BRAKE

AIRPLANE MAINTENANCE: NO

COMPONENT MAINTENANCE: YES

USAGE & DESCRIPTION: The J22004-67 or -68 test equipment is used on all 767 airplanes. The J22004 is used in the run in and acceptance test procedures for the autothrottle brake (254W4101), rudder control brake (254W3349), autothrottle gearbox brake (254W4140), autothrottle brake (254A1141), stabilizer trim brake (251A4117). J22004-67 is for 50 Hz power requirements (230 VAC). J22004-68 is for 60 Hz power requirements (110 VAC). Refer to CMM 22-32-33 and current J22004 drawing for additional usage instructions. The J22004-67 and -68 consist of the following:

J22004-67		
QUANTITY	NOMENCLATURE	PART NUMBER
4	TEST UNIT ASSEMBLY (50 Hz)	J22004-71
2	TEST BOX ASSEMBLY (50 Hz)	J22004-69
2	TRANSDUCER ASSEMBLY	J22004-83
2	ADAPTER - A	J22004-10
1	ADAPTER - B	J22004-11
1	SQUARE SHAFT	J22004-12
3	SPLINE SHAFT - A	J22004-13
2	SPLINE SHAFT - B	J22004-14
3	SPLINE SHAFT - C	J22004-15
1	ADAPTER ASSEMBLY	J22004-58
4	WASHER	AN960-10L
2	SCREW	MS35206-228
2	SCREW	MS35206-261
2	SCREW	MS35206-267
1	WASHER	MS15795-848
1	SCREW	MS3506-268
3	SCREW	MS3506-277
2	SCREW	MS3506-265
3	WASHER	NAS1149G0432H
1	STORAGE BOX	



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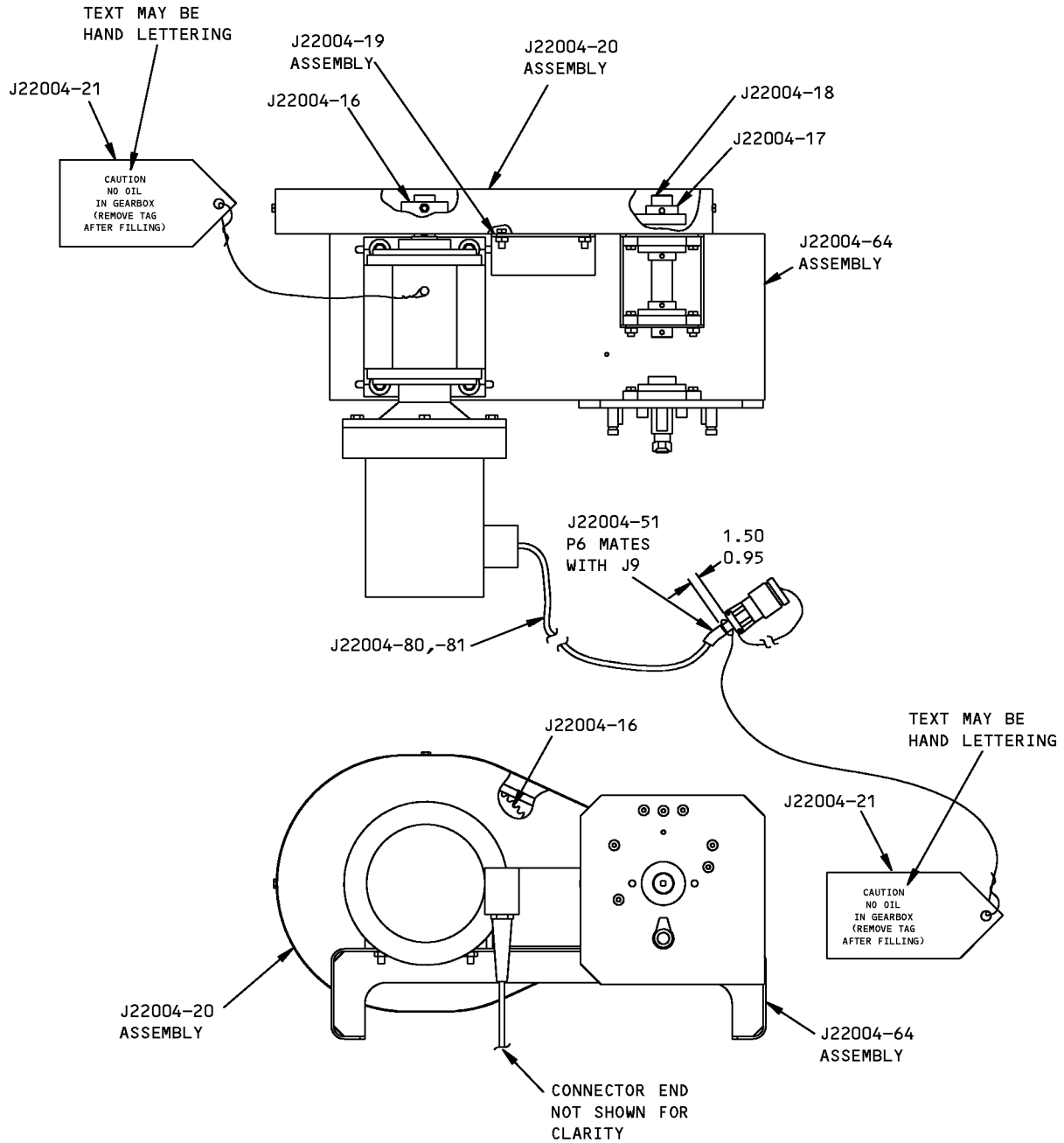
J22004-68		
QUANTITY	NOMENCLATURE	PART NUMBER
1	TEST UNIT ASSEMBLY (60 Hz)	J22004-72
1	TEST BOX ASSEMBLY (60 Hz)	J22004-70
1	TRANSDUCER ASSEMBLY	J22004-9
1	ADAPTER - A	J22004-10
1	ADAPTER - B	J22004-11
1	SQUARE SHAFT	J22004-12
1	SPLINE SHAFT - A	J22004-13
1	SPLINE SHAFT - B	J22004-14
1	SPLINE SHAFT - C	J22004-15
1	ADAPTER ASSEMBLY	J22004-58
4	WASHER	AN960-10L
2	SCREW	MS35206-228
2	SCREW	MS35206-261
2	SCREW	MS35206-267
1	WASHER	MS15795-848
1	SCREW	MS35206-268
3	SCREW	MS35206-277
2	SCREW	MS35206-265
3	WASHER	NAS1149G0432H
1	STORAGE BOX	

WEIGHT: 105 lbs (48 kg)

DIMENSIONS: 15 x 19 x 24 inches (381 x 483 x 610 mm)

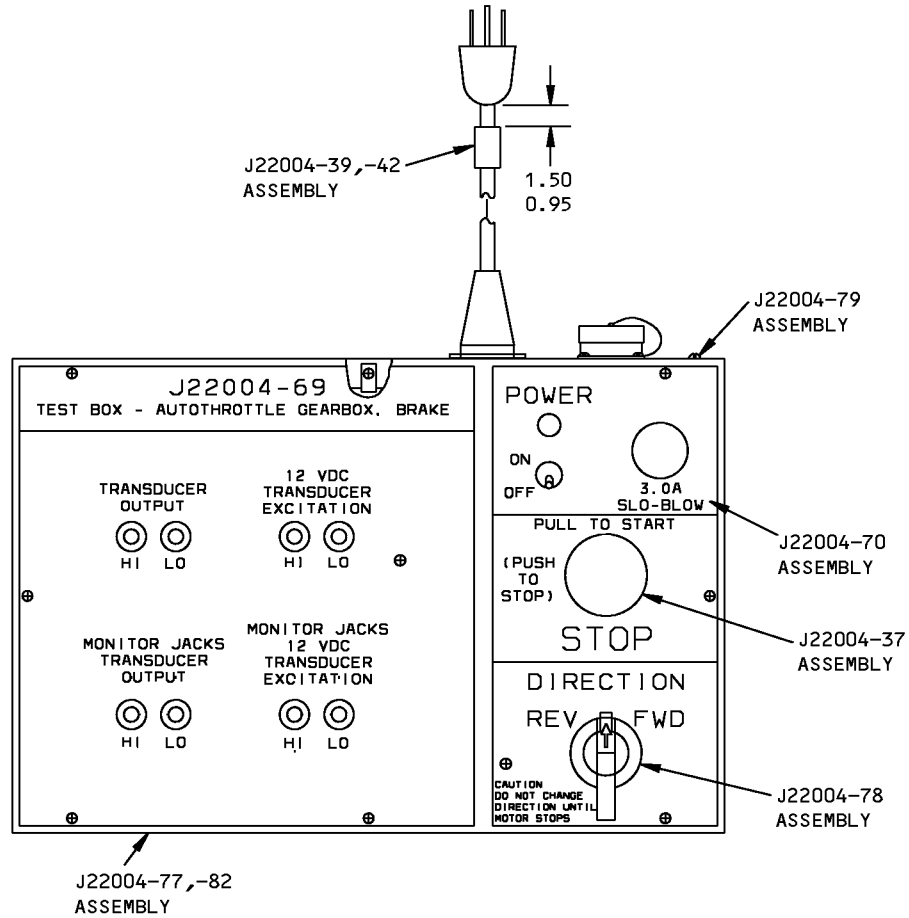
NOTE: J22004-67 supersedes J22004-1 and J22004-54.
J22004-68 supersedes J22004-2 and J22004-55.

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ILLUSTRATED TOOL AND EQUIPMENT MANUAL



Test Unit Assembly - Autothrottle, Gearbox, Brake
Figure 1

ILLUSTRATED TOOL AND EQUIPMENT MANUAL



J22004-69 SHOWN
 J22004-70 NOTED

**Test Box Assembly - Autothrottle, Gearbox, Brake
 Figure 2**