

CHAPTER

51

STRUCTURES



737-600/700/800/900
ILLUSTRATED TOOL AND EQUIPMENT MANUAL

CHAPTER 51
STRUCTURES

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A = Added, R = Revised, D = Deleted, O = Overflow

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51-00-01	FALL PROTECTION - OVERHEAD PERSONNEL SUPPORT	G51002-1
51-00-02	FALL PROTECTION - OVERHEAD PERSONNEL SUPPORT	G51003-1
51-10-01	STATIC BALANCE EQUIPMENT - CONTROL SURFACES	F70330-126, -162, -3, -4
51-10-03	STANDARD TOOL REAMER - CARBIDE, STRAIGHT FLUTE, PILOTED	ST1864P
51-20-01	PROBE - FILM RESISTANCE MEASURING	F70328-1
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51-50-01	ALIGNMENT EQUIPMENT - AIRPLANE STRUCTURAL REPAIR	A51002-1

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PART NUMBER: G51002-1

NAME: FALL PROTECTION - OVERHEAD PERSONNEL SUPPORT

AIRPLANE MAINTENANCE: YES

COMPONENT MAINTENANCE: NO

USAGE & DESCRIPTION: The G51002-1 fall protection equipment is used on all 737 airplanes.

G51002 is used to provide fall protection for personnel working on the aircraft engines or wings. G51002 is a bolted aluminum frame, gantry-like structure that mounts three Ultralock, dynamic brakes attached to customer-furnished safety harnesses. G51002 includes casters, a trailer tongue for towing and caster jacks, to raise the gantry above the casters and stabilize the structure in place.

G51002-1 is not easily transported. G51003-1, which replaces G51002-1, disassembles and is transportable.

WEIGHT: 1850 lbs (839 kg)

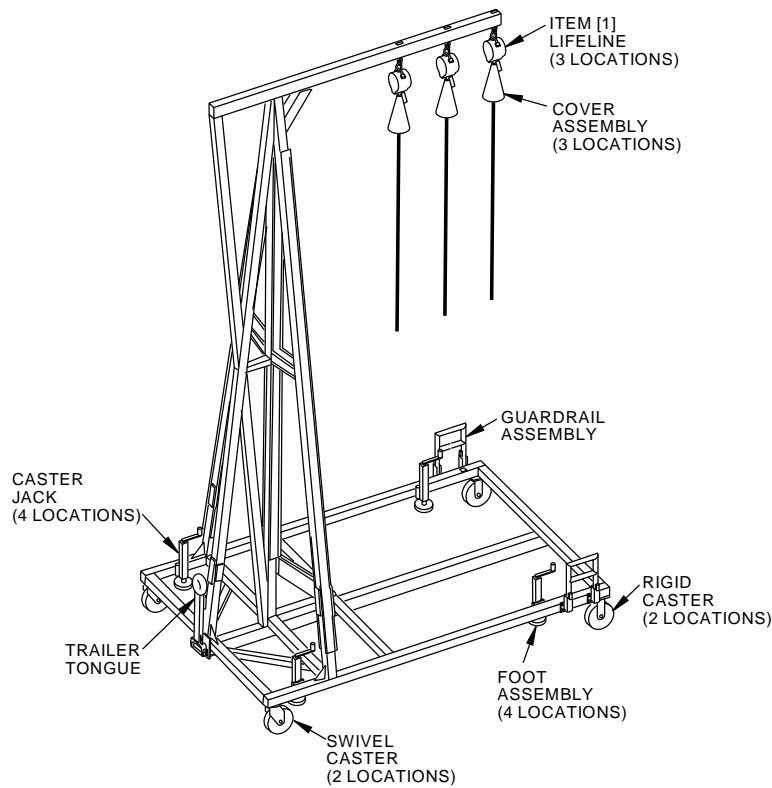
DIMENSIONS: 170 x 108 x 297 inches (4318 x 2743 x 7544 mm)

NOTE: G51003-1 replaces G51002-1 for future procurement.

51-00-01



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SUPPORT ASSEMBLY

**Overhead Personnel Support Fall Protection
Figure 1**

H60607 S0006832026_V3

REPAIRABLE/REPLACEABLE PARTS			
ITEM NO.	PART NO.	NOMENCLATURE	VENDOR CODE
[1]	L3920G-20	ULTRALOCK LIFELINE	4XLC0

51-00-01



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PART NUMBER: G51003-1

NAME: FALL PROTECTION - OVERHEAD PERSONNEL SUPPORT

AIRPLANE MAINTENANCE: YES

COMPONENT MAINTENANCE: NO

USAGE & DESCRIPTION: The G51003-1 fall protection equipment is used on all 737 airplanes. G51003 is used to provide fall protection for personnel working on the aircraft engines. G51003-1 is a bolted-aluminum frame, gantry-like structure that mounts three Ultralock, dynamic brakes, attached to customer-furnished safety harnesses. The G51003 includes casters, a trailer tongue for towing and caster jacks. The caster jacks are used to raise the gantry above the casters and stabilize the structure in place for use. G51003-1 differs from G51002-1 by including features for disassembly and transportation.

WEIGHT: 2500 lbs (1136 kg)

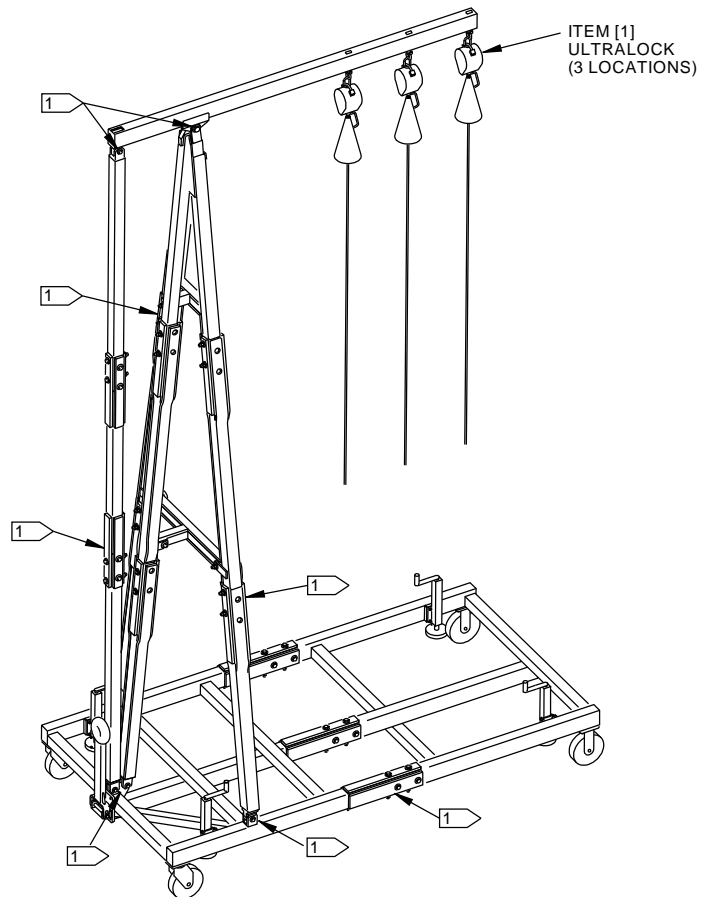
DIMENSIONS: 170 x 108 x 297 inches (4318 x 2743 x 7544 mm)

NOTE: G51003-1 replaces G51002-1 for future procurement.

51-00-02



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1 DISASSEMBLE SUPPORT ASSEMBLY AT THESE
LOCATIONS FOR SHIPPING

A

M27347 S0006832029_V3

Overhead Personnel Fall Protection
Figure 1

REPAIRABLE/REPLACEABLE PARTS			
ITEM NO.	PART NO.	NOMENCLATURE	VENDOR CODE
[1]	L3920G-20	LIFELINE (ULTRALOCK)	4XLC0

51-00-02



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PART NUMBER: F70330-3, -4, -126, -162

NAME: STATIC BALANCE EQUIPMENT - CONTROL SURFACES

AIRPLANE MAINTENANCE: NO

COMPONENT MAINTENANCE: NO

OTHER MANUALS: YES

SRM 51-60

USAGE & DESCRIPTION: The F70330-3, 737 'A' kit and F70330-4, beam and accessories are used on all 737-100 thru -500 airplanes.

F70330-126, 737 'B' kit and the F70330-4, beam and accessories are used on all 737-600 thru -900 airplanes.

F70330-162, 737 'C' kit and the F70330-4, beam and accessories are used on all airplanes except -100 thru -500.

F70330 is used in conjunction with a customer-furnished platform scale and two, 4-inch, drop-forged, steel, AN415-2, C-clamps. F70330 is used during all control surface weight and balance procedures. F70330-4 provides the rigid structure for mounting the attach fittings and airplane control surfaces. F70330-3, -126 and -162 provide the fitting that attach the airplane control surfaces to F70330-4.

Refer to Structural Repair Manual (SRM) 51-60 and the current F70330 drawing for complete usage instructions.

F70330-3, -4, -126 and -162 consist of:

F70330-3, 737 'A' KIT		
QUANTITY	NOMENCLATURE	PART NUMBER
1	FITTING ASSEMBLY	F70330-14
3	FITTING ASSEMBLY	F70330-15

F70330-4, BEAM AND ACCESSORIES		
QUANTITY	NOMENCLATURE	PART NUMBER
2	SUPPORT TIP	F70330-12
1	BEAM ASSEMBLY	F70330-16
1	SUPPORT ASSEMBLY	F70330-17
2	SUPPORT YOKE ASSEMBLY	F70330-18
2	SUPPORT BLADE ASSEMBLY	F70330-19
1	STAND ASSEMBLY	F70330-21
1	BLOCK	F70330-22
1	BLOCK	F70330-23

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F70330-126, 737 'B' KIT		
QUANTITY	NOMENCLATURE	PART NUMBER
2	FITTING ASSEMBLY	F70330-105
1	AILERON PIN #2	F70330-108
1	AILERON PIN #5	F70330-109
2	ELEVATOR PIN	F70330-110
2	RUDDER PIN	F70330-111
2	ELEVATOR TAB PIN	F70330-128
2	SOCKET HEAD CAP SCREW	F70330-129
1	BOLT	F70330-132
1	BOLT	F70330-135
1	NUT	F70330-134
2	LOCK PIN	F70330-136
2	WASHER	F70330-133
1	STORAGE BOX	

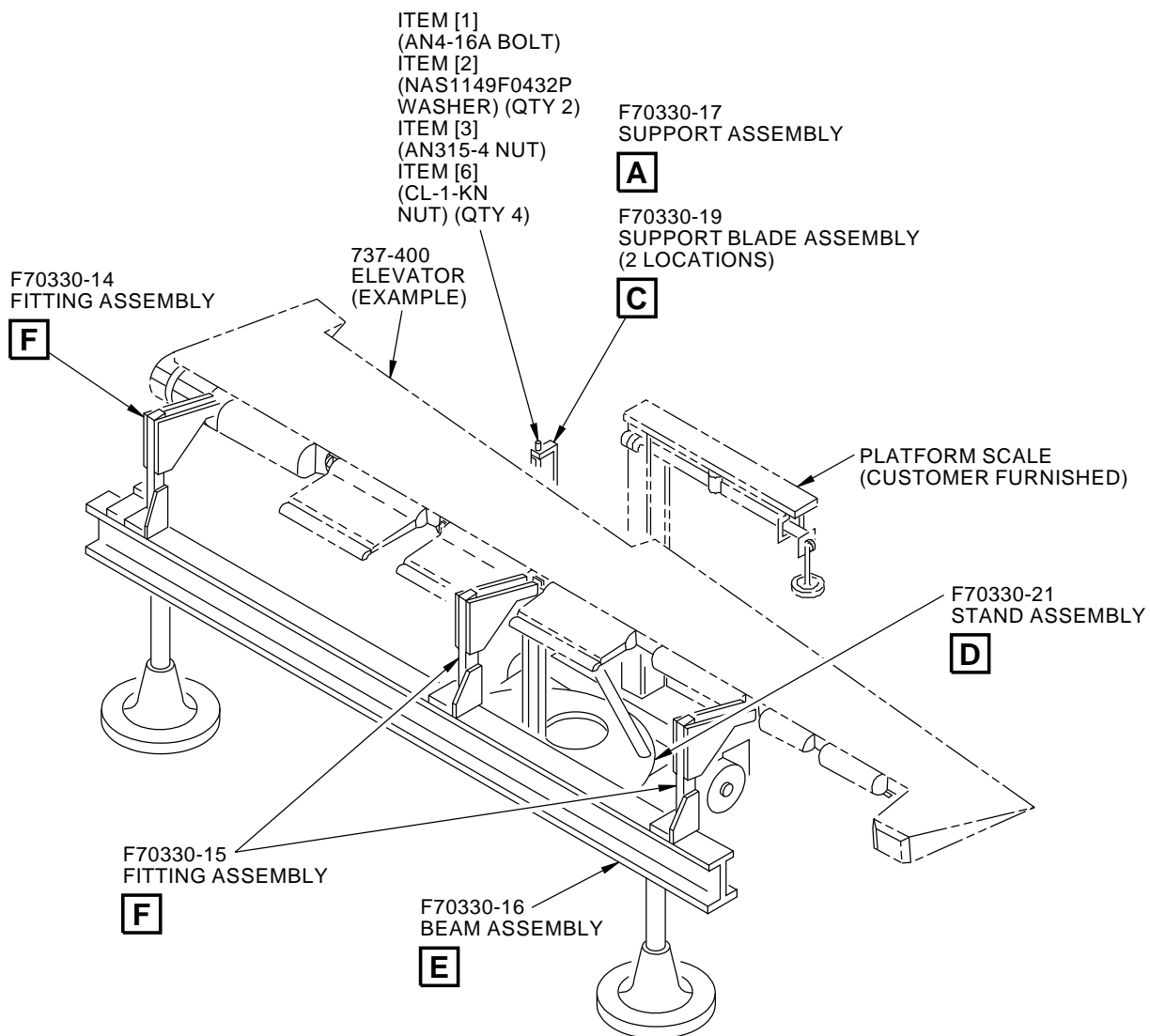
F70330-162, 737 'C' KIT		
QUANTITY	NOMENCLATURE	PART NUMBER
2	FITTING ASSEMBLY	F70330-105
1	AILERON PIN #2	F70330-108
1	AILERON PIN #5	F70330-109
2	ELEVATOR PIN	F70330-110
2	RUDDER PIN	F70330-111
2	ELEVATOR TAB PIN	F70330-128
2	SOCKET HEAD CAP SCREW	F70330-129
1	BOLT	F70330-132
1	BOLT	F70330-135
1	NUT	F70330-134
2	LOCK PIN	F70330-136
2	WASHER	F70330-133
1	PIN - ELEVATOR	F70330-164
1	STORAGE BOX	

NOTE: F70330 replaces 5ME65-73788 for future procurement.
F70330-126 supersedes F70330-104.

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**F70330-3, 737 'A' KIT AND
F70330-4, BEAM AND ACCESSORIES
USAGE ON 737-100 THRU -500**

2084577 S0000439216_V3

**Control Surfaces Static Balance Equipment
Figure 1 (Sheet 1 of 6)**

51-10-01

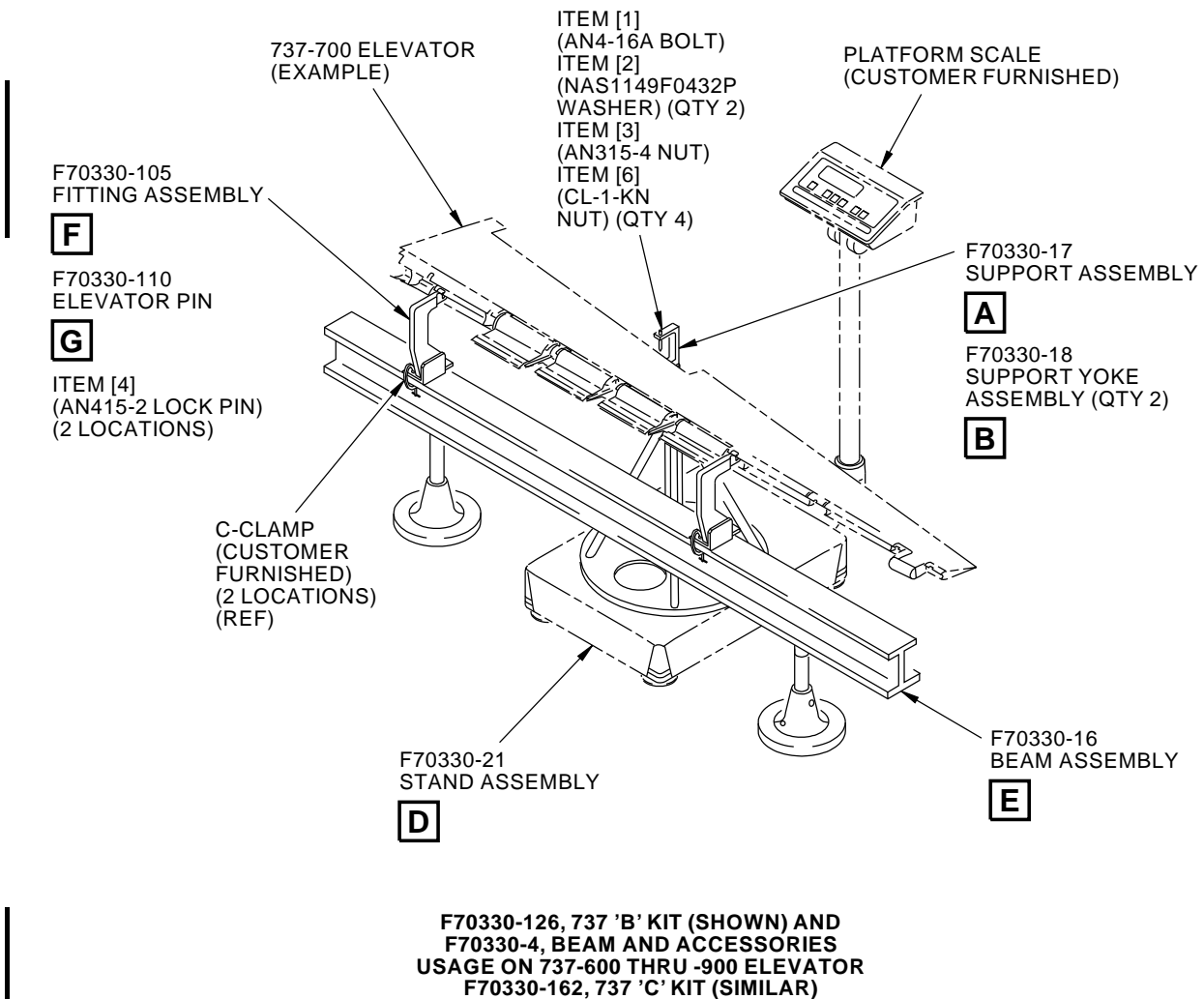
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G80895 S0006832032_V5

**Control Surfaces Static Balance Equipment
Figure 1 (Sheet 2 of 6)**

51-10-01

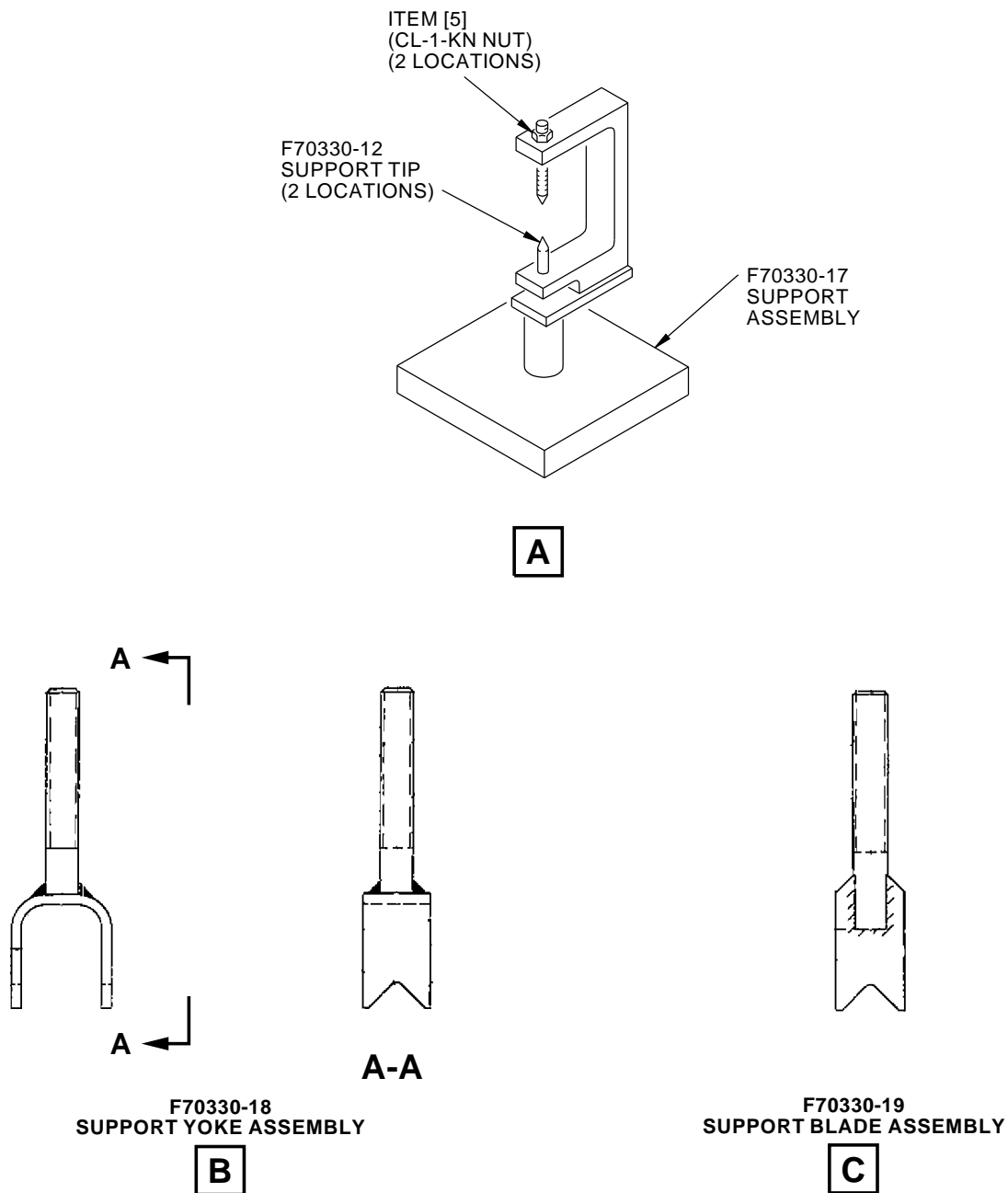
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2084685 S0000439231_V2

Control Surfaces Static Balance Equipment
Figure 1 (Sheet 3 of 6)

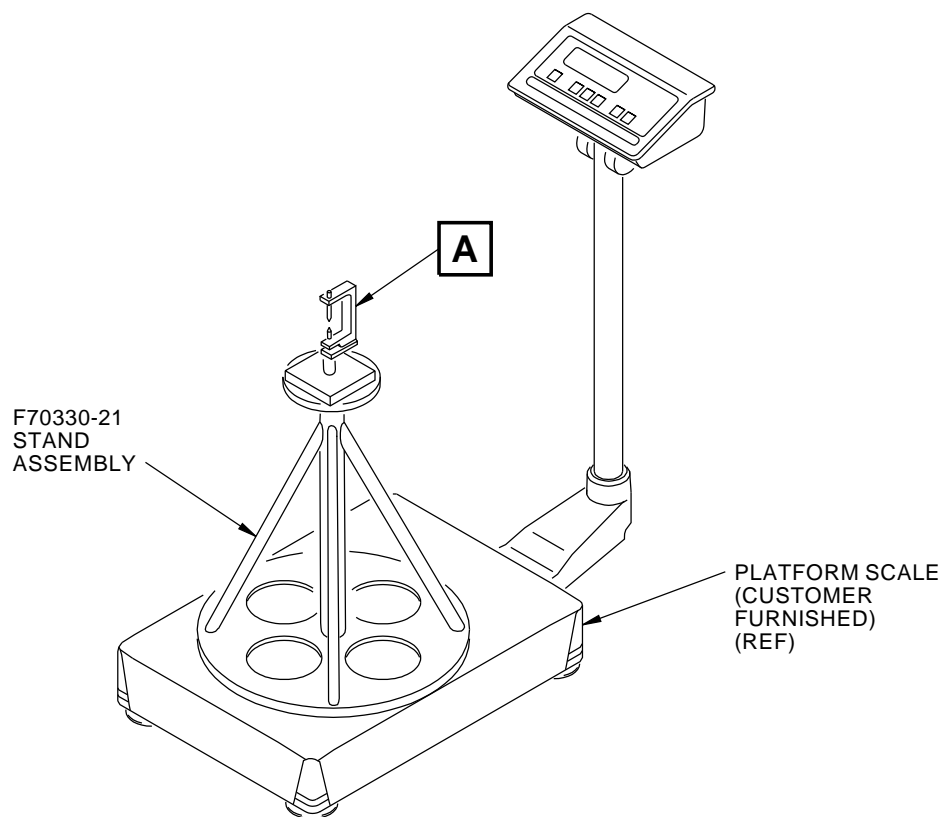
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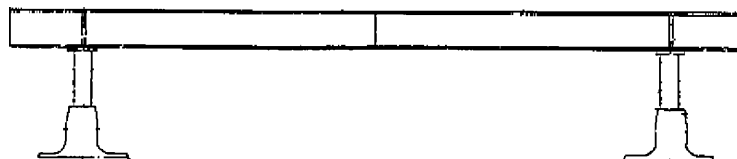


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PLATFORM SCALE AND TOOL STAND

D



F70330-16
BEAM ASSEMBLY

E

2084717 S0000439232_V2

Control Surfaces Static Balance Equipment
Figure 1 (Sheet 4 of 6)

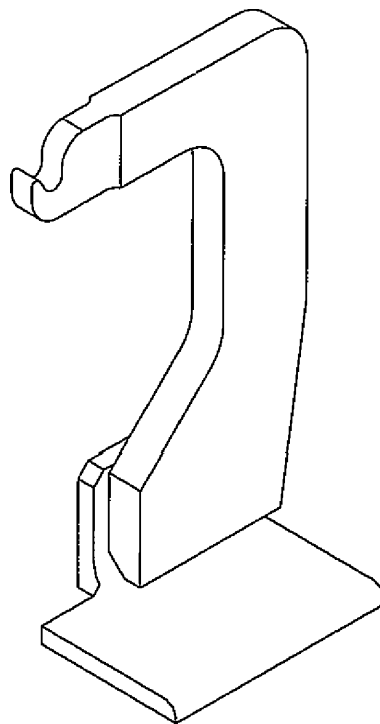
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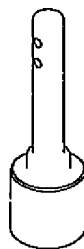


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**F70330-105
FITTING ASSEMBLY SHOWN
F70330-14 AND -15 SIMILAR**

F



**F70330-108 AILERON PIN NUMBER 2 SHOWN
F70330-109, -110, -111, -128 AND -164 SIMILAR**

G

2084763 S0000439233_V3

**Control Surfaces Static Balance Equipment
Figure 1 (Sheet 5 of 6)**

51-10-01

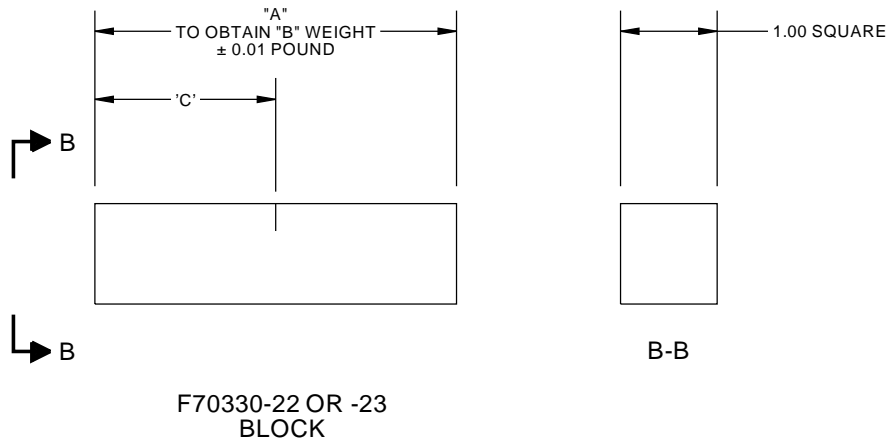
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PART NUMBER	"A" APPROXIMATE (REF)	"B"	"C" = A/2 ± 0.02
F70330-22	3.70	1.00 POUND	1.85 (REF)
F70330-23	5.80	1.60 POUND	2.90 (REF)

2084776 S0000439234_V1

Control Surfaces Static Balance Equipment
Figure 1 (Sheet 6 of 6)

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REPAIRABLE/REPLACEABLE PARTS			
ITEM NUMBER	PART NUMBER	NOMENCLATURE	VENDOR CODE
[1]	F70330-132	BOLT (AN4-16A)	---
[2]	F70330-133	WASHER (NAS1149F0432P)	---
[3]	F70330-134	NUT (AN315-4)	---
[4]	F70330-136	LOCK PIN (AN415-2)	---
[5]	F70330-135 ^{*[1]}	BOLT (AN6-20A)	---
[6]	F70330-131	NUT (CL-1-KN)	

*[1] MISCELLANEOUS ATTACH HARDWARE BETWEEN RUDDER CONTROL SURFACE AND TOOL (NOT SHOWN)

51-10-01



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PART NUMBER: ST1864P

NAME: STANDARD TOOL REAMER - CARBIDE, STRAIGHT FLUTE, PILOTED

AIRPLANE MAINTENANCE: NO

COMPONENT MAINTENANCE: NO

OTHER MANUALS: YES

SRM 51-20-07

USAGE & DESCRIPTION: The ST1864P standard tool reamer is used during structural repair on all 737 airplanes. ST1864P is used to generate close tolerance holes in graphite, epoxy, fiberglass and composite stackups. ST1864P is made from C2 carbide. Refer to the current ST1864P drawing and the Structural Repair Manual SRM 51-20-07 for complete usage instructions.

ST1864P tool code number is listed as ST1864P-XXXX-XXX-X-XX-X, where:

ST1864P- is the basic tool number

XXXX- is the diameter in 1/10,000-inch increments, see "A."

XXX- is the pilot diameter in 1/1,000-inch increments, see "B."

X- is the pilot length in 1/16-inch increments, see "C."

XX- is the overall length in 1/16-inch increments, see "L."

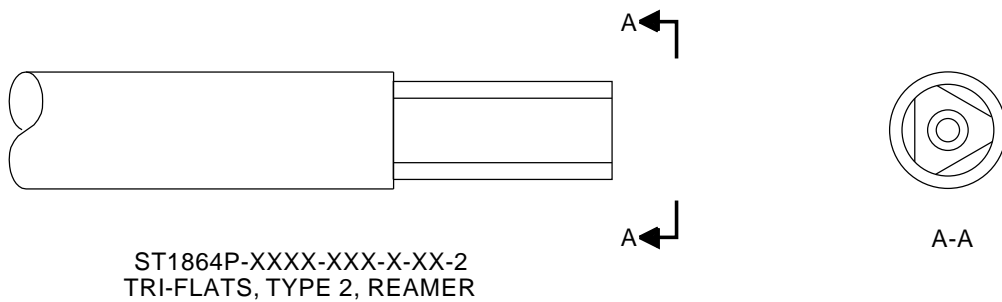
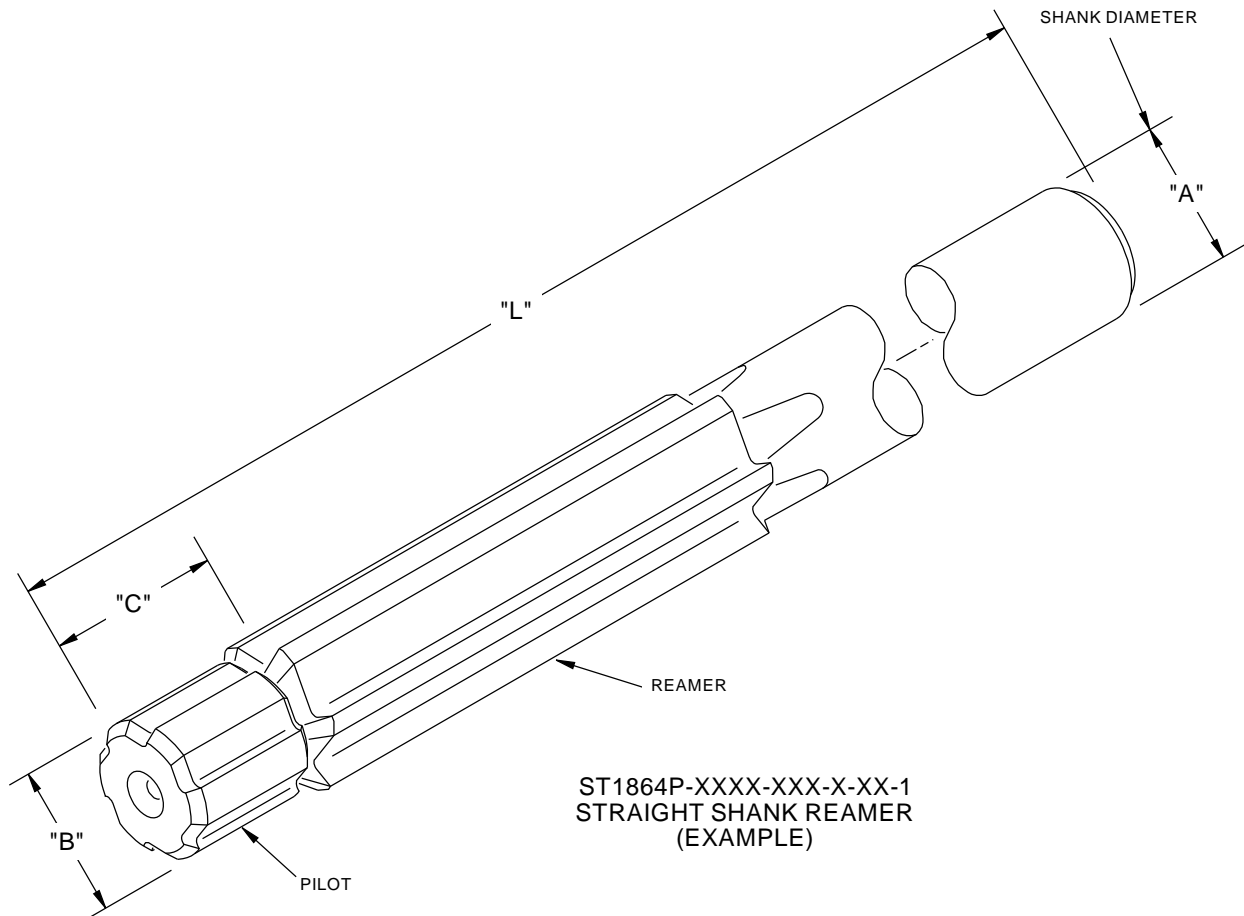
The final X is the shank type. See the following table.

TYPE	DESCRIPTION
-1	STRAIGHT SHANK
-2	TRI-FLATS
-3	1/4-28 THREADED
-3A	1/4-28 THREADED ADAPTER
-4	5/16-24 THREADED
-4A	5/16-24 THREADED ADAPTER
-5	3/8-24 THREADED
-5A	3/8-24 THREADED ADAPTER
-6	QUICK CHANGE

51-10-03



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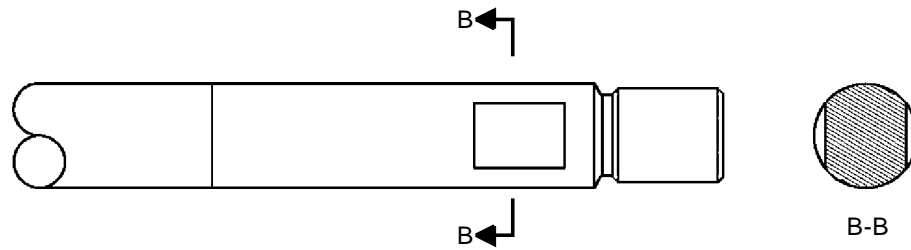
1572935 S0000294234_V1

Piloted Straight Flute Carbide Standard Tool Reamer
Figure 1 (Sheet 1 of 2)

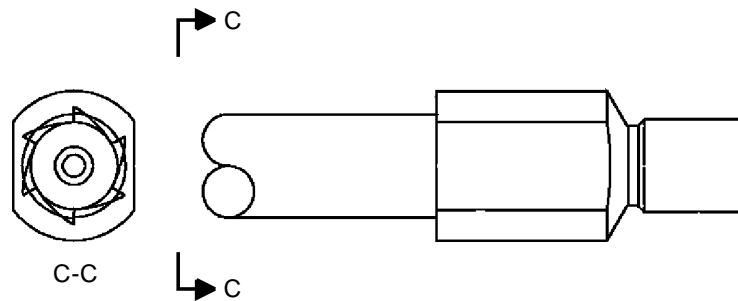
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ST1864-XXXX-XXX-X-XX-3,-4 OR -5
THREADED ADAPTER, TYPE 3, REAMER
(EXAMPLE)



ST1864-XXXX-XXX-X-XX-3A,-4A OR -5A
THREADED ADAPTER, TYPE 3A, REAMER
(EXAMPLE)



ST1864-XXXX-XXX-X-XX-6
QUICK CHANGE REAMER
(EXAMPLE)

1572972 S0000294236_V1

Piloted Straight Flute Carbide Standard Tool Reamer
Figure 1 (Sheet 2 of 2)

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PART NUMBER: F70328-1

NAME: PROBE - FILM RESISTANCE MEASURING

AIRPLANE MAINTENANCE: YES

AMM 51-21-71

COMPONENT MAINTENANCE: NO

USAGE & DESCRIPTION: The F70328-1 probe is used on 737-100 thru -900 airplanes.

F70328 is used in conjunction with a customer-furnished multimeter to measure the resistance of an electrical bond between a conductive coating on the non-conductive plastic sheeting and the grounding fasteners. F70328 includes a nylon cylinder, which is machined to hold a spring-loaded brass probe. The nylon cylinder is capped by a brass collar to contain the probe. The electrical leads on the probe and collar attach to the customer-furnished multimeter.

Refer to the current F70328 drawing and AMM 51-21-71 for complete usage instructions.

The F70328-1 probe consists of a single probe contained in a storage box.

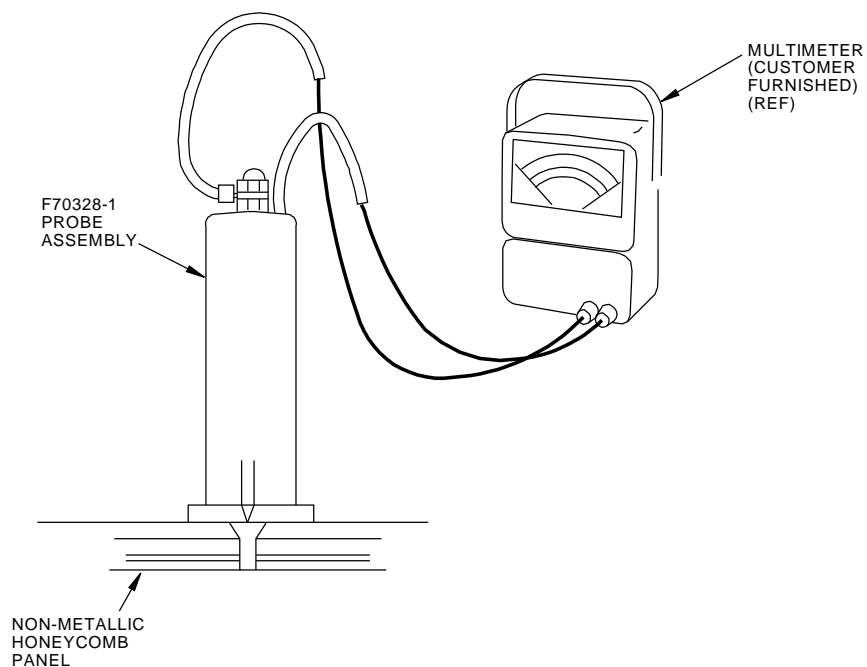
DIMENSIONS: 6 x 2 x 2 inches (127 x 51 x 51 mm)

NOTE: F70328 replaces ST895A-1 for future procurement.

51-20-01



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K35683 S0006832037_V4

Probe Assembly Usage and Components
Figure 1

51-20-01

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PART NUMBER: ST895A-1

NAME: SENSOR FOR FILM THICKNESS

AIRPLANE MAINTENANCE: YES

COMPONENT MAINTENANCE: NO

USAGE & DESCRIPTION: The ST895A-1 sensor for film thickness is used on all 737 airplanes.

ST895A-1 is used in conjunction with a customer-furnished milliohm meter or bonding meter to measure the resistance of the electrical bond between the conductive coating on the plastic sheeting and the grounding fasteners. A spring-loaded brass probe contacts the fastener. A brass ring, that is insulated from the probe, makes contact with the conductive surface. ST895A-1 includes a nylon cylinder, which is machined to hold the spring-loaded brass probe and contact ring. Electrical leads on the probe and collar attach to a customer-furnished meter. Refer to the current ST895A-1 drawing for usage instructions.

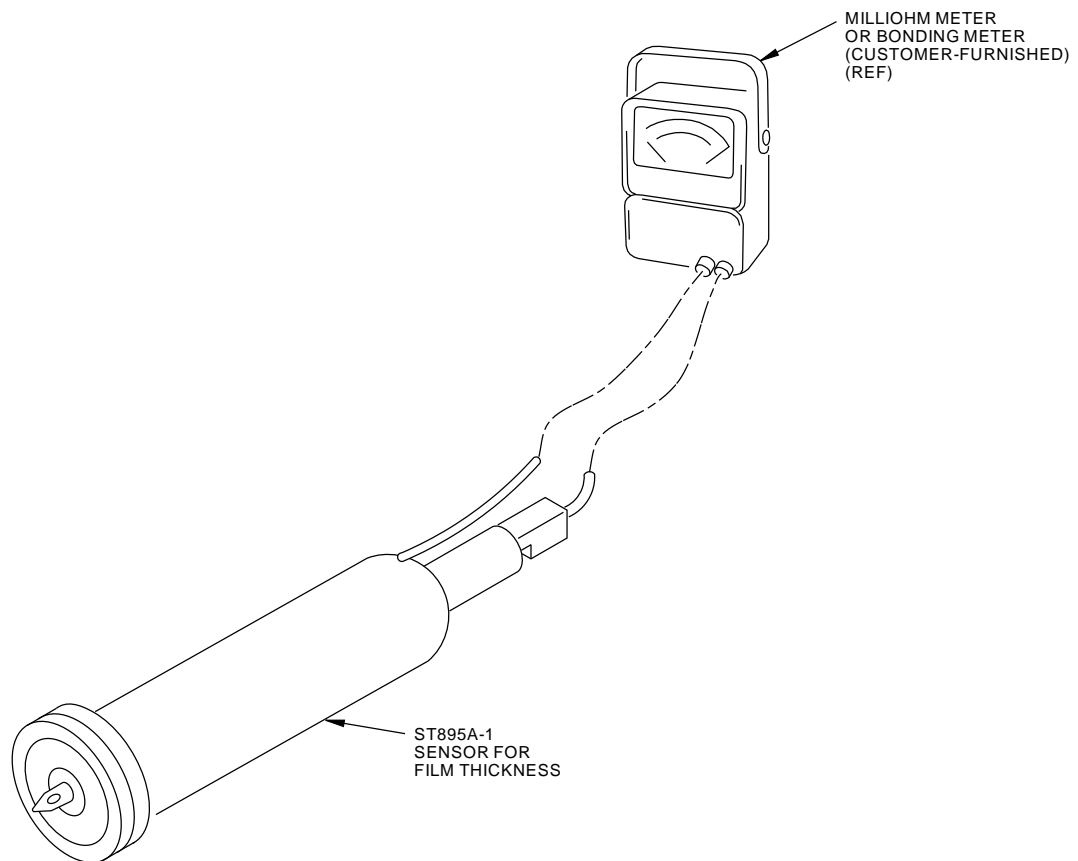
The ST895A-1 sensor for film thickness is a single probe that is not contained in a storage box.

NOTE: F70328 replaces ST895A-1 for future procurement.

51-20-02



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1997201 S0000389660_V1

**Sensor For Film Thickness
Figure 1**

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PART NUMBER: A51002-1

NAME: ALIGNMENT EQUIPMENT - AIRPLANE STRUCTURAL REPAIR

AIRPLANE MAINTENANCE: NO

COMPONENT MAINTENANCE: NO

OTHER MANUALS: YES

STRUCTURAL REPAIR MANUAL 51-50-01

USAGE & DESCRIPTION: The A51002-1 alignment equipment is used on all 737-100 thru -900 airplanes.

A51002 is used to aid in evaluating structural deformations that may have occurred on the airplane.

Refer to the current A51002 tool drawing and Structural Repair Manual (SRM) 55-50-01 for complete usage instructions.

A51002-1 alignment equipment consists of:

A51002-1		
QUANTITY	NOMENCLATURE	PART NUMBER
1	TOW RING TARGET	A51002-2 ^{*[1]}
1	POINTER ASSEMBLY	A51002-3
1	36 INCH INCLINOMETER SUPPORT ASSEMBLY	A51002-4
1	72 INCH INCLINOMETER SUPPORT ASSEMBLY	A51002-5
1	STORAGE BOX	

*[1] A51002-2 IS NOT USED FOR 737 STRUCTURAL REPAIR TASKS.

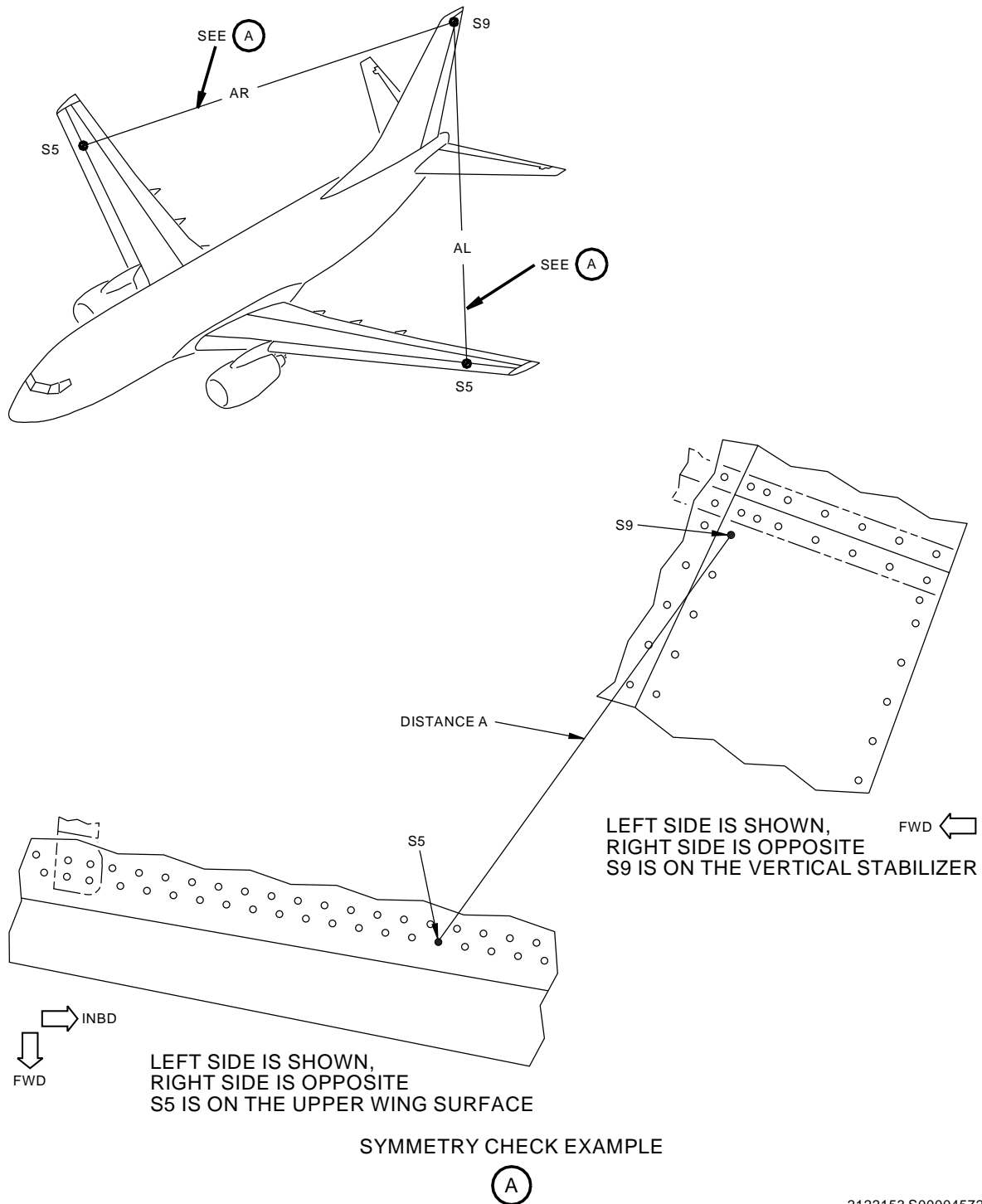
WEIGHT: 21 lbs (10 kg)

DIMENSIONS: 4 x 12 x 73 inches (102 x 305 x 1854 mm)

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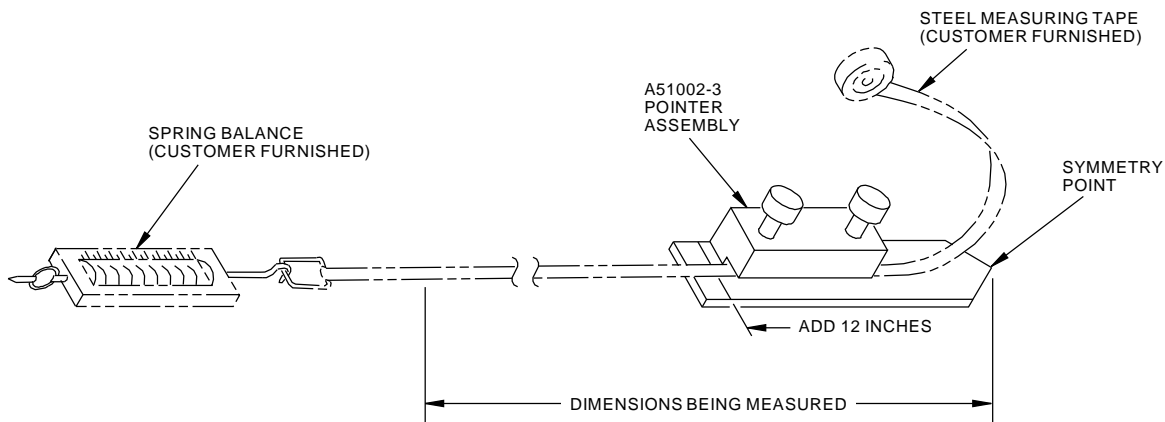
2122153 S0000457281_V1

Airplane Structural Repair Alignment Equipment
Figure 1 (Sheet 1 of 2)

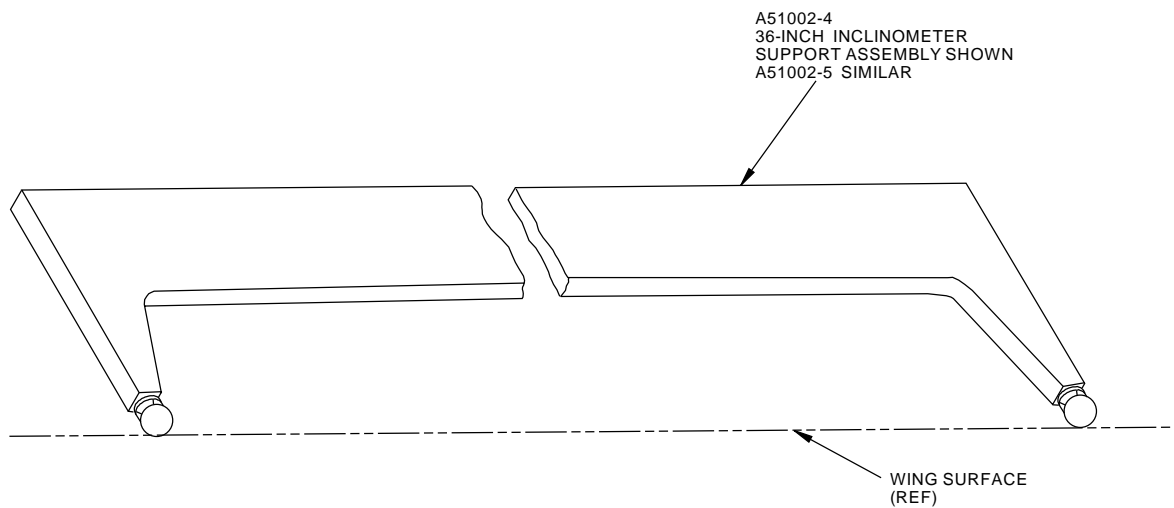
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POINTER ASSEMBLY



INCLINOMETER SUPPORT ASSEMBLY

2122154 S0000457286_V1

Airplane Structural Repair Alignment Equipment
Figure 1 (Sheet 2 of 2)

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