



DHC-6 TWIN OTTER

(SERIES 100/200/300/400)

GROUND SUPPORT MANUAL



Copyright © 2006 by Viking Air Limited. All rights reserved. No part of this work may be reproduced or copied in any form or by any means without written permission from Viking Air Limited.

Revision 14 - May. 21/19

The information, technical data and designs disclosed in this document (the "Information") are either the exclusive property of Viking Air Limited or are subject to proprietary rights of others. The Information is not to be used for design or manufacture or disclosed to others without express prior written consent of Viking Air Limited. The holder of this document, by its retention and use, agrees to hold the information in confidence. These restrictions do not apply to persons having proprietary rights in the Information, to the extent of those rights.

January 31, 2006

INTRODUCTION

This Page Intentionally Left Blank

Introduction – General

1. INTRODUCTION

This manual contains ground support information with respect to servicing, maintenance and repair of the DHC-6 Twin Otter aircraft. Data is provided to assist in planning suitable ground handling areas and hangar facilities, and replenishment requirements. Lists of special tools and equipment for servicing, maintenance and repair are also included.

The PSM1-6-2T, Part 1 only, is included in the Pilot Operating Handbook (PSM1-63-POH & PSM1-64-POH) for convenience and is meant for reference only.

For the Series 400, CAP Floats are not approved.

The manual is divided into three Parts as follows:

PART 1 AIRCRAFT BASIC DATA

This Part is divided into two sections:

SECTION 1 AIRCRAFT DIMENSIONS. Giving dimensional data for planning suitable ground handling areas and hangar facilities.

SECTION 2 REPLENISHMENT REQUIREMENTS. Giving details of ground equipment required for routine servicing replenishment. Full details of servicing are contained in the aircraft maintenance manuals (PSM 1-6-2, PSM 1-63-2, PSM 1-63S-2 and PSM 1-64-2).

PART 2 GROUND SUPPORT EQUIPMENT

This Part is divided into ATA-100 Chapters and lists items of equipment required for performing maintenance tasks on the airframe, power plant and ancillary equipment.

Chapter 7 of this part provides storage and inspection information for slings and lifting devices.

PART 3 REPAIR EQUIPMENT

Part 3 lists tools required for general repairs to the aircraft. Details of structural repairs are contained in the aircraft structural repair manual (PSM1-6-3).

APPENDIX 1 MECHANIC'S TOOL KIT

Appendix 1 lists the tools recommended for inclusion in a mechanic's tool kit.

This Page Intentionally Left Blank

PART 2

GROUND SUPPORT EQUIPMENT

This Page Intentionally Left Blank

PART 2 – TABLE OF CONTENTS

<u>SUBJECT</u>	<u>PAGE</u>
Part 2 – Ground Support Equipment	5
Chapter 7 – Lifting and Shoring	7
1. Conditions for Storage of Slings and Lifting Devices.....	7
2. Inspection of Slings and Lifting Devices	7
Chapter 9 – Towing and Taxiing	12
Chapter 10 – Parking and Mooring	14
Chapter 12 – Servicing	20
Chapter 22 – Auto Flight	24
Chapter 23 – Communications	26
Chapter 27 – Flight Controls	28
Chapter 31 – Instruments	30
Chapter 32 – Landing Gear	33
Chapter 45 – Central Maintenance System	35
Chapter 51 - Structures – Chapters 52 - 57	37
Chapter 61 – Propellers	40
Chapter 71 – Power Plant	43
Chapter 72 – Engine	45
Chapter 76 – Engine Controls	48
Chapter 77 – Engine Indicating	50
Chapter 79 – Oil	52

<u>LIST OF TABLES</u>	<u>PAGE</u>
1 Recommended Sling/Lifting Device Inspections	8

<u>LIST OF FIGURES</u>	<u>PAGE</u>
1 Ground Support Equipment – Lifting and Shoring	10
2 Ground Support Equipment – Towing and Taxiing	13
3 Ground Support Equipment – Parking and Mooring	16
4 Ground Support Equipment – Servicing	23
5 Ground Support Equipment – Auto Flight	25
6 Ground Support Equipment – Communications	27
7 Ground Support Equipment – Flight Controls	29
8 Ground Support Equipment – Instruments	31
9 Ground Support Equipment – Landing Gear	34
10 Ground Equipment – Laptop & Accessories Kit	36

LIST OF FIGURES

PAGE

11	Ground Support Equipment – Structures	38
12	Ground Support Equipment – Propellers	41
13	Ground Support Equipment – Power Plant	44
14	Ground Support Equipment – Engine	46
15	Ground Support Equipment – Engine Controls	49
16	Ground Support Equipment – Engine Indicating	51
17	Ground Support Equipment – Oil	53

Part 2 – Ground Support Equipment

General

The ground support equipment listed in this Part is that required for flight line and hangar maintenance and does not include tasks undertaken only during component overhaul. The equipment is listed under appropriate ATA-100 Chapter numbers and titles. The chapters follow in numerical order and are:

7	Lifting and Shoring
9	Towing and Taxiing
10	Parking and Mooring
12	Servicing
22	Auto Flight
23	Communications
27	Flight Controls
31	Instruments
32	Landing Gear
45	Central Maintenance Systems
52, 53, 55, 56, 57	Structures
61	Propellers
71	Power Plant
72	Engine
76	Engine Controls
77	Engine Indication
79	Oil

Usage

If an item of equipment is only required for a certain series or modification status of Twin Otters, a usage code appears in the "Description" column. If no usage code appears, the item is applicable to all Twin Otter aircraft.

USAGE CODE

A-A	Series 100/200 aircraft only
A-B	Series 300 Pre Mod 6/1328 only
A-C	Series 300 Post Mod 6/1328 only
A-D	Series 300 Pre Mod 6/1306 only
A-E	Series 300 Post Mod 6/1306 only
A-F	Series 100 Pre Mod 6/1028 only
A-G	Series 300 aircraft only
A-H	Aircraft with Edison Torque System
A-I	Aircraft with Mod 6/1505 only
A-J	Series 300 (MOT) aircraft only

A-K	Aircraft 1 through 15 only
A-L	Aircraft with extended electronic nose
A-M	Aircraft Post Mod 6/1676 only
A-N	Aircraft Post Mod 6/1726 only
A-O	Series 400 aircraft only
A-P	Series 400 Post Mod 6/2200 only
A-Q	Series 400 Post Mod 6/2332 only
A-R	Series 400 Post Mod SOO 6221 only
A-S	Series 400 Post Mod 6/2303 only

Note The items of equipment not illustrated are indicated by a dash preceding the item number.

Part 2 – Ground Support Equipment

General

The ground support equipment listed in this Part is that required for flight line and hangar maintenance and does not include tasks undertaken only during component overhaul. The equipment is listed under appropriate ATA-100 Chapter numbers and titles. The chapters follow in numerical order and are:

7	Lifting and Shoring
9	Towing and Taxiing
10	Parking and Mooring
12	Servicing
22	Auto Flight
23	Communications
27	Flight Controls
31	Instruments
32	Landing Gear
45	Central Maintenance Systems
52, 53, 55, 56, 57	Structures
61	Propellers
71	Power Plant
72	Engine
76	Engine Controls
77	Engine Indication
79	Oil

Usage

If an item of equipment is only required for a certain series or modification status of Twin Otters, a usage code appears in the "Description" column. If no usage code appears, the item is applicable to all Twin Otter aircraft.

USAGE CODE

A-A	Series 100/200 aircraft only
A-B	Series 300 Pre Mod 6/1328 only
A-C	Series 300 Post Mod 6/1328 only
A-D	Series 300 Pre Mod 6/1306 only
A-E	Series 300 Post Mod 6/1306 only
A-F	Series 100 Pre Mod 6/1028 only
A-G	Series 300 aircraft only
A-H	Aircraft with Edison Torque System
A-I	Aircraft with Mod 6/1505 only
A-J	Series 300 (MOT) aircraft only

A-K	Aircraft 1 through 15 only
A-L	Aircraft with extended electronic nose
A-M	Aircraft Post Mod 6/1676 only
A-N	Aircraft Post Mod 6/1726 only
A-O	Series 400 aircraft only
A-P	Series 400 Post Mod 6/2200 only
A-Q	Series 400 Post Mod 6/2332 only
A-R	Series 400 Post Mod SOO 6221 only
A-S	Series 400 Post Mod 6/2303 only

Note The items of equipment not illustrated are indicated by a dash preceding the item number.

Chapter 7 – Lifting and Shoring

The owner of the sling or lifting device is responsible for ensuring the sling or lifting device is maintained and used in accordance with all local regulations. Viking slings and lifting devices are designed to be used in accordance with the ASME B30.20 standard. Refer to the applicable Aircraft Maintenance Manual for each sling and lifting device usage instructions.

Note Slings and Lifting devices are not to be modified without permission from Viking.

1. Conditions for Storage of Slings and Lifting Devices

- A. When not in use, slings must be stored in a dry location away from weather, dirt and moisture.
- B. Do not store while supporting a load.
- C. Do not store in a manner that would allow mechanical damage such as kinking of cables.
- D. Avoid storage in environments with exposure to chemicals.
- E. Avoid storage below -40°C or above 100°C .

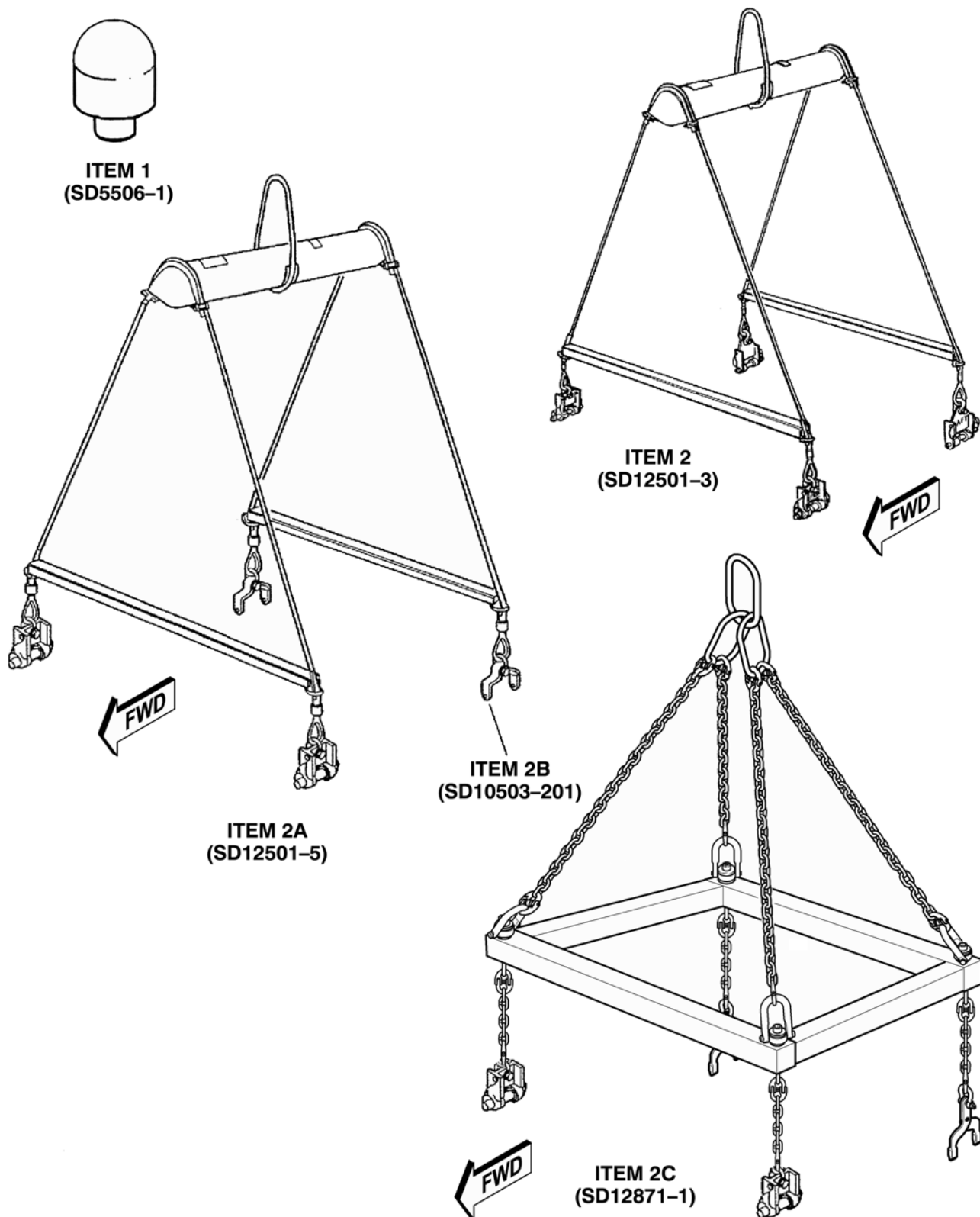
2. Inspection of Slings and Lifting Devices

- A. Before each use, the sling or lifting device must be visually inspected by the operator or designated person. The inspection checklist provided in Table 1 — Recommended Sling/Lifting Device Inspections may be used.
- B. Annually, the sling or lifting device must be visually inspected by a designated person. Records of condition must be kept to provide a basis for continual evaluation. The inspection checklist provided in Table 1 — Recommended Sling/Lifting Device Inspections may be used for record keeping purposes.

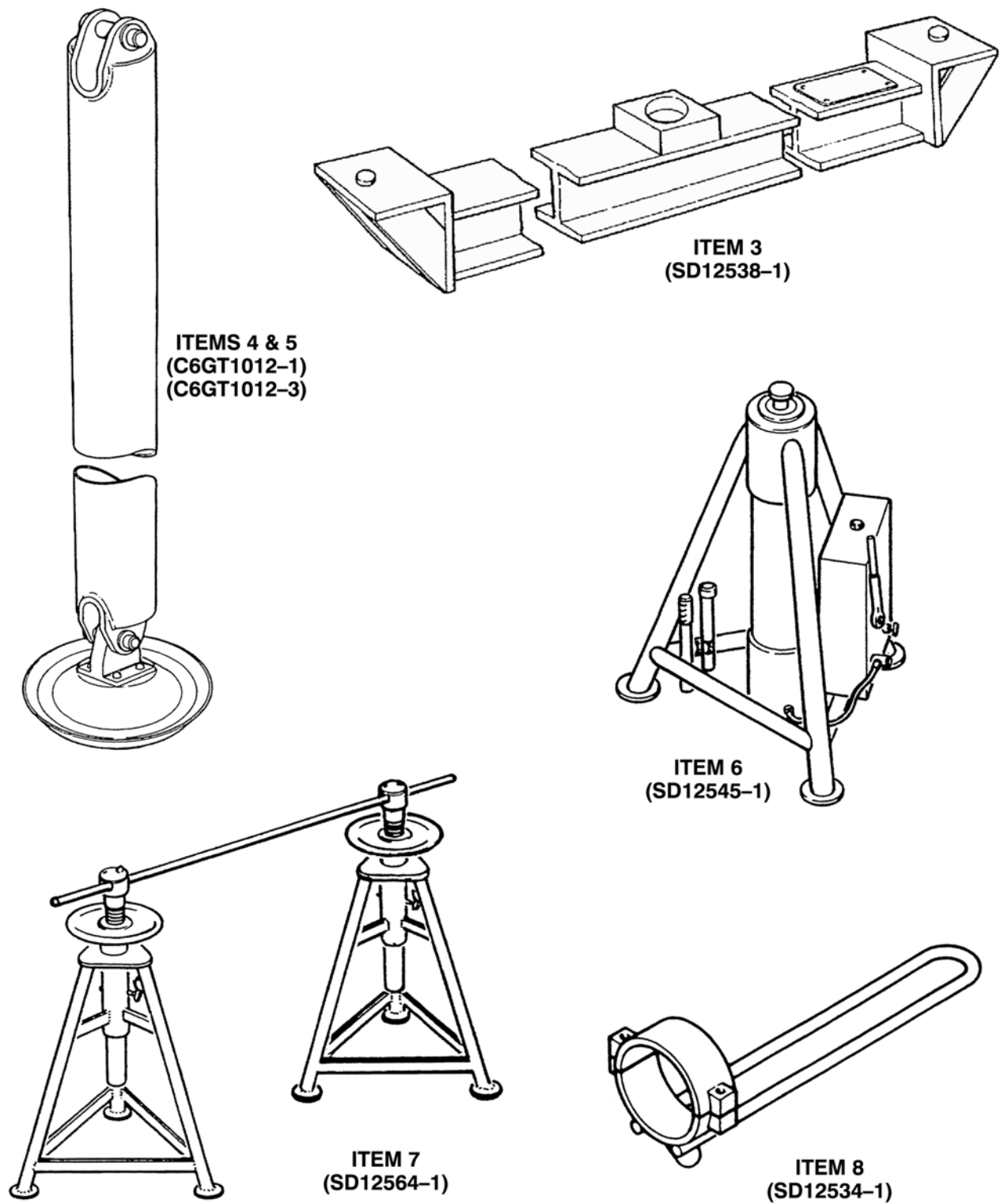
Table 1 Recommended Sling/Lifting Device Inspections

Sling/Lifting Device Part Number:					
Sling/Lifting Device Serial Number:					
Inspection Date:			Inspector Name:		
Inspection Item	Inspection Criteria	Yes	No	Not Applicable	Comments
Chains, Shackles & Master Link	Cracks, breaks, or gouges				
	Excessive wear				
	Pitting or corrosion				
	Bent, twisted or deformed links				
	Other mechanical damage				
	Discolouration or other evidence of heat damage				
Fasteners	Pitting or corrosion				
	Loose fasteners				
	Other mechanical damage				
	Discolouration or other evidence of heat damage				
Structure	Pitting or corrosion				
	Structural deformation				
	Missing, worn or obscured markings				
	Missing data plate				
	Other mechanical damage				
	Discolouration or other evidence of heat damage				
Cables	Fraying, breaks, or gouges				
	Excessive wear				
	Pitting or corrosion				
	Other mechanical damage				
	Discolouration or other evidence of heat damage				

ITEM NO.	DESCRIPTION	FUNCTION	IDENTIFICATION
1	Adapter	Locates tripod jack on underside of aircraft	SD5506-1
2	Aircraft sling	Used to hoist complete aircraft (Pre Mod 6/1752 and 6/1881)	SD12501-3
2A	Aircraft sling refer to Figure 1, Sheet 1	Used to hoist complete aircraft (Post Mod 6/1752 and 6/1881)	SD12501-5
2B	Conversion Kit refer to Figure 1, Sheet 1	Used to convert sling SD12501-3 into sling SD12501-5	SD10503-201
2C	Aircraft Lifting Device refer to Figure 1, Sheet 1	Used to hoist complete aircraft	SD12871-1 (Alternate to item 2)
3	Jacking beam	Used to jack nose section of aircraft when changing skis	SD12538-1
4	Jury strut (standard landing gear)	Used to support rear fuselage	C6GT1012-1 (SD12539-1)
5	Jury strut (intermediate flotation gear)	Used to support rear fuselage	C6GT1012-3 (SD12539-3)
6	Tripod jack and extension	Used to jack aircraft at main wheel and nose jacking positions; height range 14 1/2 to 51 inches; capacity 3 tons	SD12545-1
7	Support jack	Used to support rear fuselage during heavy maintenance; height range 52 7/8 to 88 1/4 inches	SD12564-1
8	Adapter jacking (A-K)	Used with item 6 at main wheel positions	SD12534-1



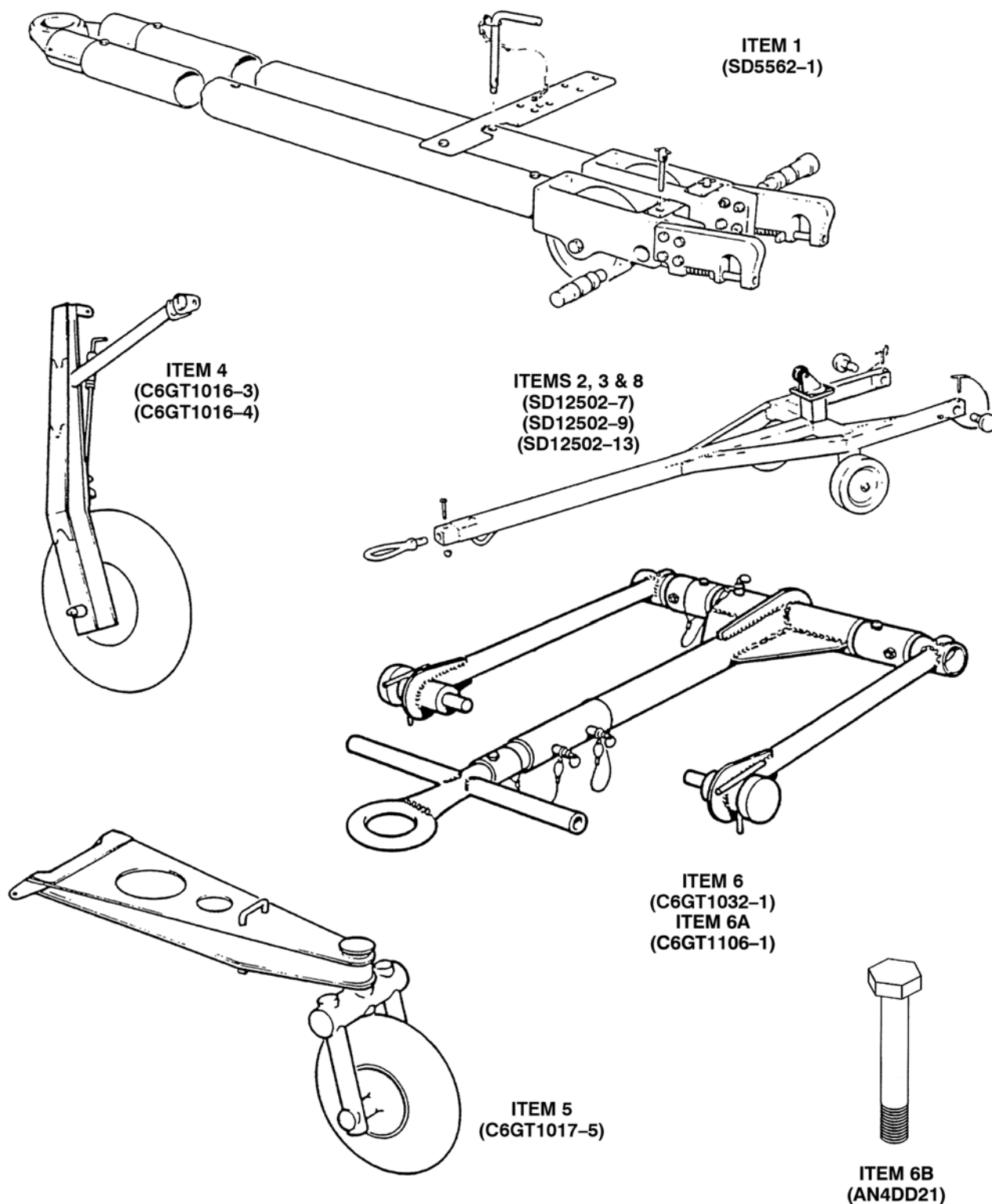
Ground Support Equipment – Lifting and Shoring
Figure 1 (Sheet 1 of 2)



Ground Support Equipment – Lifting and Shoring
Figure 1 (Sheet 2 of 2)

Chapter 9 – Towing and Taxiing

ITEM NO.	DESCRIPTION	FUNCTION	IDENTIFICATION
1	Towbar, floatplane	Used to tow aircraft when beaching gear is fitted	SD5562-1
2	Towbar, wheels or skis	Used to tow aircraft fitted with wheels or skis	SD12502-7
-2A	Towbar, wheels or skis	Used to tow aircraft fitted with wheels or skis	01-1128-0008 (Alternate to item 2) (Tronair Ground Support Equipment)
3	Towbar	Used to tow aircraft with intermediate flotation gear	SD12502-9
4	Beaching gear	Fitted to forward right and left sides of floats when beaching aircraft	C6GT1016-3-LH C6GT1016-4-RH
5	Beaching gear, tail	Fitted to rear end of floats when beaching aircraft	C6GT1017-5
6	Towbar, portable	A collapsible bar to facilitate towing long or short nose aircraft with standard landing gear	C6GT1032-1
6A	Towbar, collapsible	A collapsible bar to facilitate towing long or short nose aircraft with standard landing gear	C6T1106-1 (Alternate to item 6)
6B	Shear bolt	Protective device to be used with C6GT1106-1	AN4DD21
-7	Bilge pump	For emptying water from floats – (replaces item -7)	C6UF1087-1
-7B	Bilge pump	For emptying water from floats – (replaces item -7 and -7A)	C6UF1092-1
8	Towbar (A-L)	Used to tow aircraft fitted with extended electronic nose	SD12502-13 (Has longer frame than items 2 & 3)
-8A	Towbar (A-L)	Used to tow aircraft fitted with extended electronic nose (can be broken down into two sections)	1200SP-513 (alternate to item 8) (Danair Ground Support Equipment)
-8B	Towbar	Used to tow aircraft fitted with 360° Chin Randome	01-1128-00SP-1 (one-piece towbar) 01-1128-00SP-2 (Has central joint to allow shipment with aircraft)



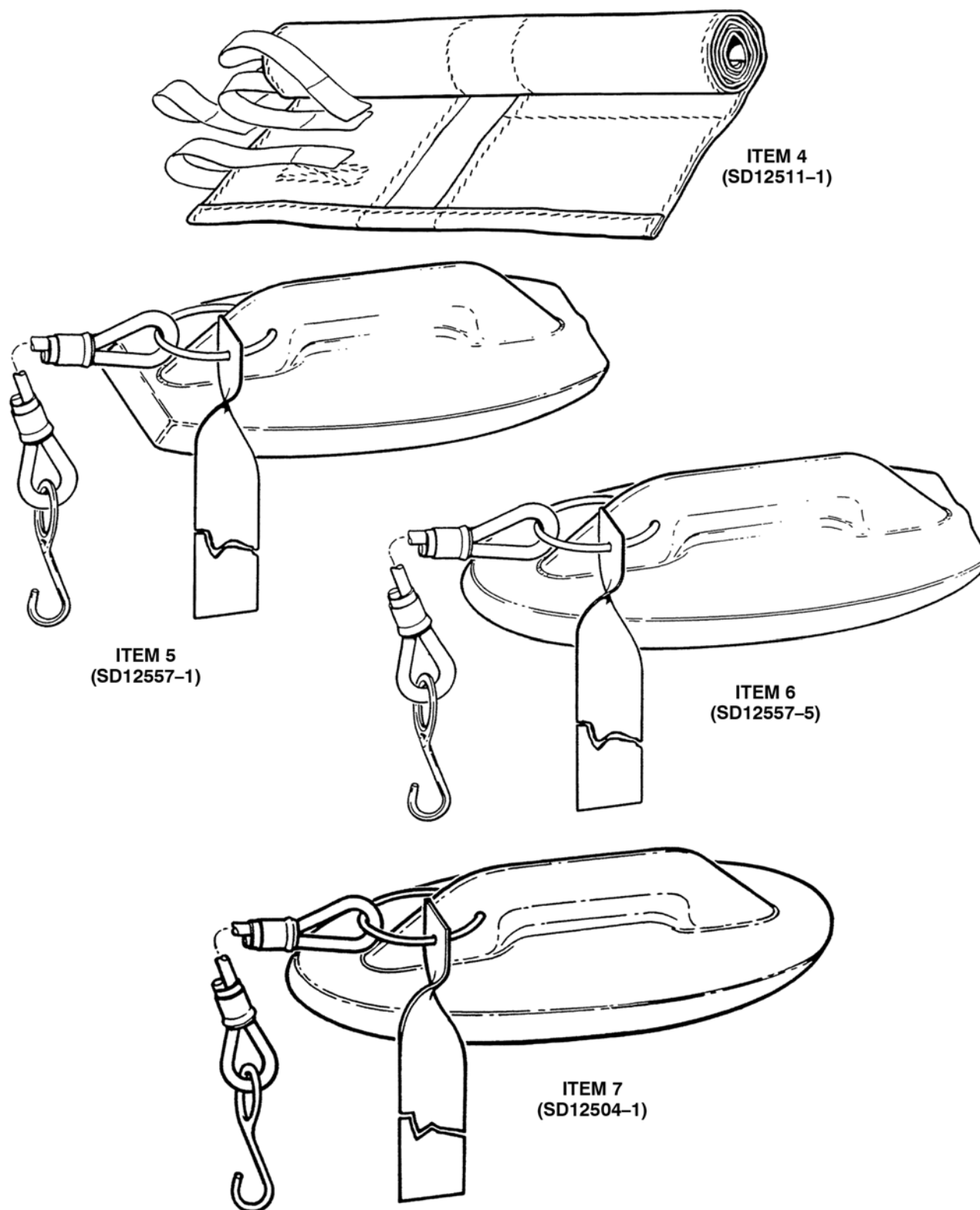
Ground Support Equipment – Towing and Taxiing
Figure 2

PART 2

Chapter 10 – Parking and Mooring

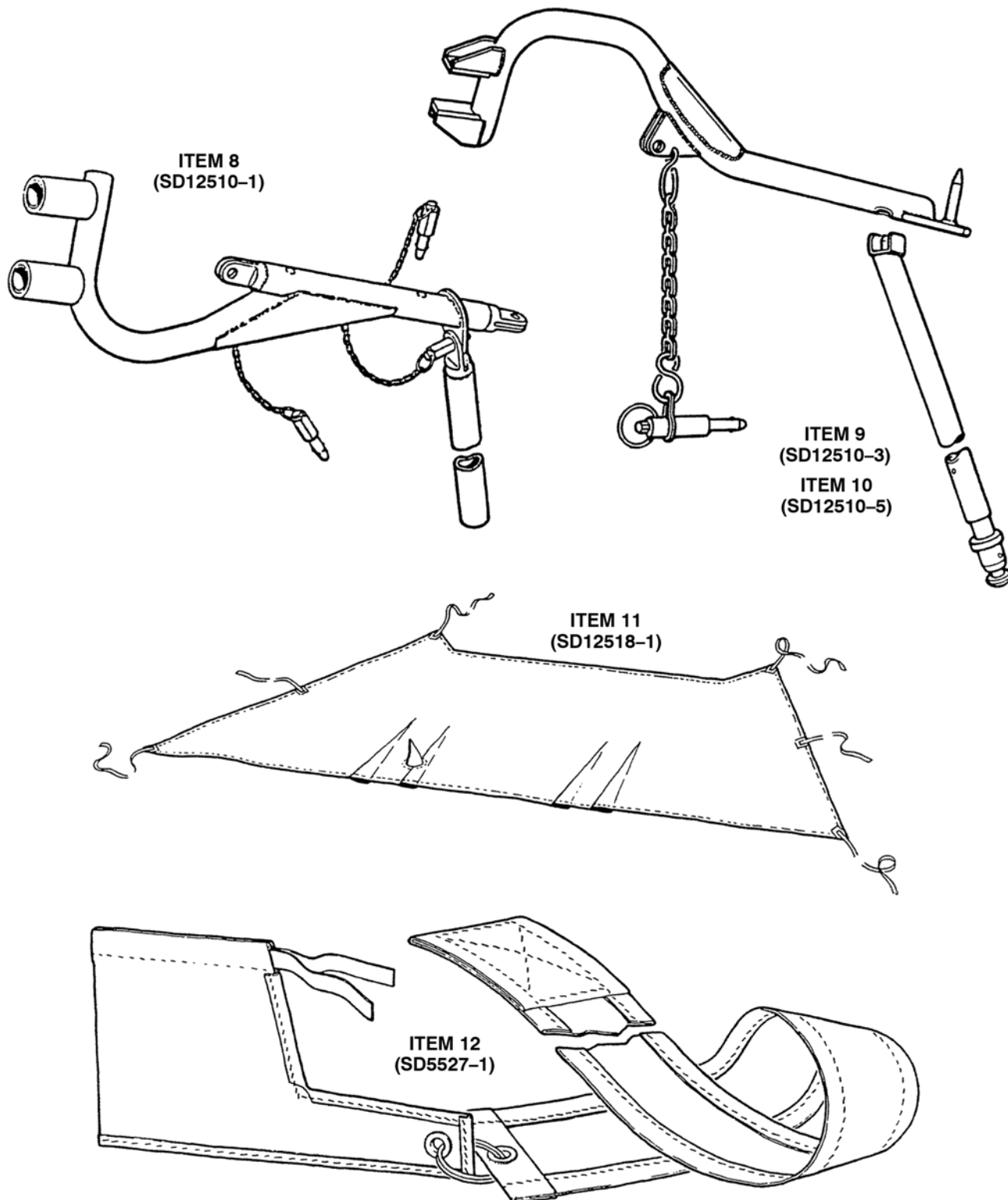
ITEM NO.	DESCRIPTION	FUNCTION	IDENTIFICATION
-1	Tool kit (A-A)	Loose equipment comprising SD12511-1, SD12509-3, SD12510-1, and SD5527-1	SD12512-1
-2	Tool kit (A-B)	Loose equipment comprising SD12511-1, SD12509-3, SD12510-13, and SD5527-1	SD12512-3
-3	Tool kit (A-C)	Loose equipment comprising SD12511-1, SD12509-3, SD12510-5, and SD5527-1	SD12512-5
-3A	Tool kit (A-M)	Loose equipment comprising SD55271-1, SD12509-3, SD12510-7, and SD12511-1 (can be used in place of items 2 and 3)	SD12512-7
-3B	Tool kit (A-N)	Loose equipment comprising SD55271-1, SD12509-3, SD12510-9, and SD12511-3 (can be used in place of items 2, 3 and 3A)	SD12512-9
4	Tool roll	Holds all loose equipment tools (included in kits SD12512-1, -3, -5 and -7)	SD12511-1
4A	Tool roll	Holds all loose equipment tools (included in kits SD12512-1, -3, -5, -7 and -9)	SD12511-3
5	Engine exhaust cover (A-D)	Fits over engine exhaust to prevent ingress of foreign objects when aircraft is parked	SD12557-1
6	Engine exhaust cover (A-E) (A-O)	See item 5	SD12557-5
7	Engine exhaust cover (A-A)	See item 5	SD12504-1
8	Gust lock, elevator and aileron (A-A)	Used to lock elevator and aileron controls (included in kit SD12512-1)	SD12510-1
9	Gust lock, elevator and aileron (A-A)	Used to lock elevator and aileron controls (included in kit SD12512-3)	SD12510-3
10	Gust lock, elevator and aileron (A-C)	Used to lock elevator and aileron controls (included in kit SD12512-5)	SD12510-5
10A	Gust lock, elevator and aileron (A-C)	Used to lock elevator and aileron controls replaces SD12510-5 in kit SD12512-5)	C6GT1020-5
10B	Gust lock, elevator and aileron (A-M)	Used to lock elevator and aileron controls (included in kit SD12512-7) (replaces item 10)	SD12510-7
10C	Gust lock, elevator and aileron (A-N)	Used to lock elevator and aileron controls (included in kit SD12512-9) (replaces items 8, 9, 10 and 10B)	C6GT1042-3 (Alternate to C6GT1042-5)
10D	Gust lock, elevator and aileron (A-N)	Used to lock elevator and aileron controls (included in kit SD12512-9) (replaces items 8, 9, 10 and 10B)	C6GT1042-5 (Alternate to C6GT1042-3)
11	Windshield cover	Fits over windshield during aircraft mooring	SD12518-1

ITEM NO.	DESCRIPTION	FUNCTION	IDENTIFICATION
12	Pitot tube cover	Fits over pitot tube to prevent ingress of foreign objects when aircraft is parked (included in kits SD12512-1, -3, -5, -7 and -9)	SD5527-1
13	Engine air intake	Fits over engine air intake to prevent ingress of foreign objects when aircraft is parked	SD12503-1
14	Engine air intake cover, deiced	See item 13	SD12503-3
-14A	Engine air intake cover	See item 13 (replaces items 13 and 14)	C6GT1050-1
-15	Engine air intake cover (A-O)	See item 13	C6GT1050-3
16	Tie-down ring	Used to secure aircraft during mooring	SD12509-3
17	Tie-down rope	Used with tie-down rings when mooring aircraft	SD12519-1
18	Propeller restraining device	Prevents propeller windmilling when aircraft is parked	SD12523-1
19	Propeller restraining device (A-I)	Prevents propeller windmilling when aircraft is parked	SD12523-3
-20	Engine nacelle cover	Used for winter protection of engine	C6GT1033-1

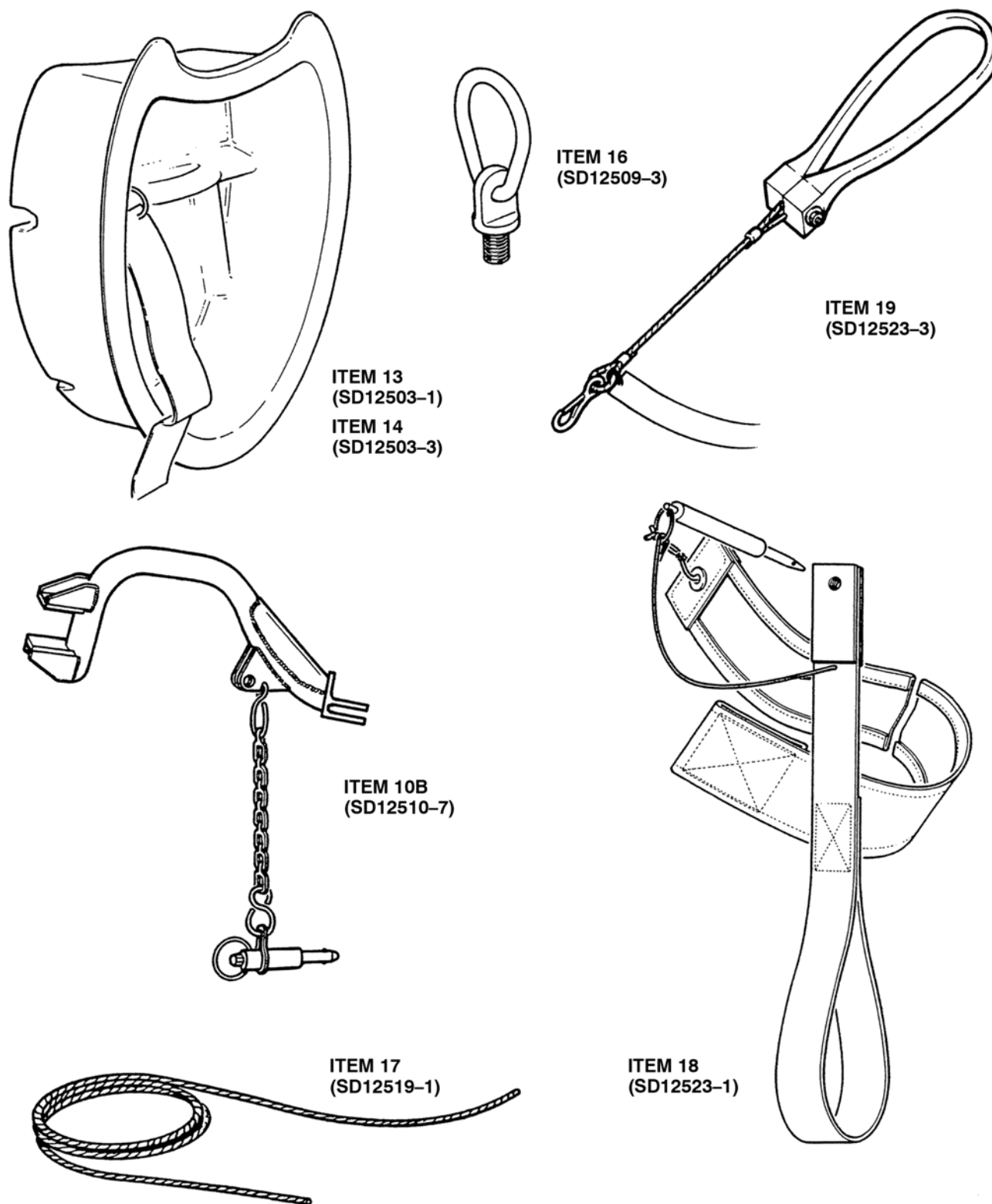


Ground Support Equipment – Parking and Mooring
Figure 3 (Sheet 1 of 4)

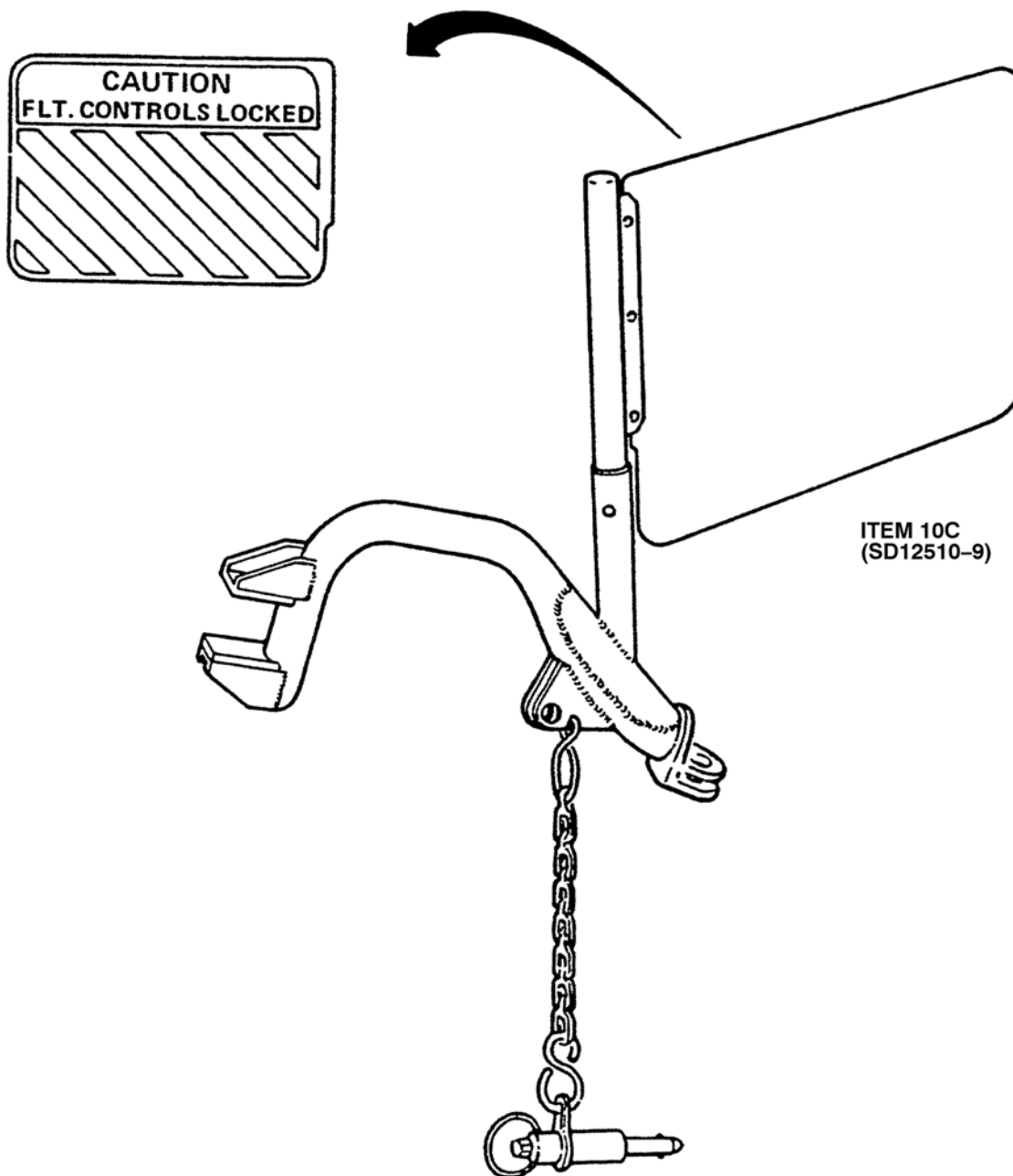
PART 2



Ground Support Equipment – Parking and Mooring
Figure 3 (Sheet 2 of 4)



Ground Support Equipment – Parking and Mooring
Figure 3 (Sheet 3 of 4)



Ground Support Equipment – Parking and Mooring
Figure 3 (Sheet 4 of 4)

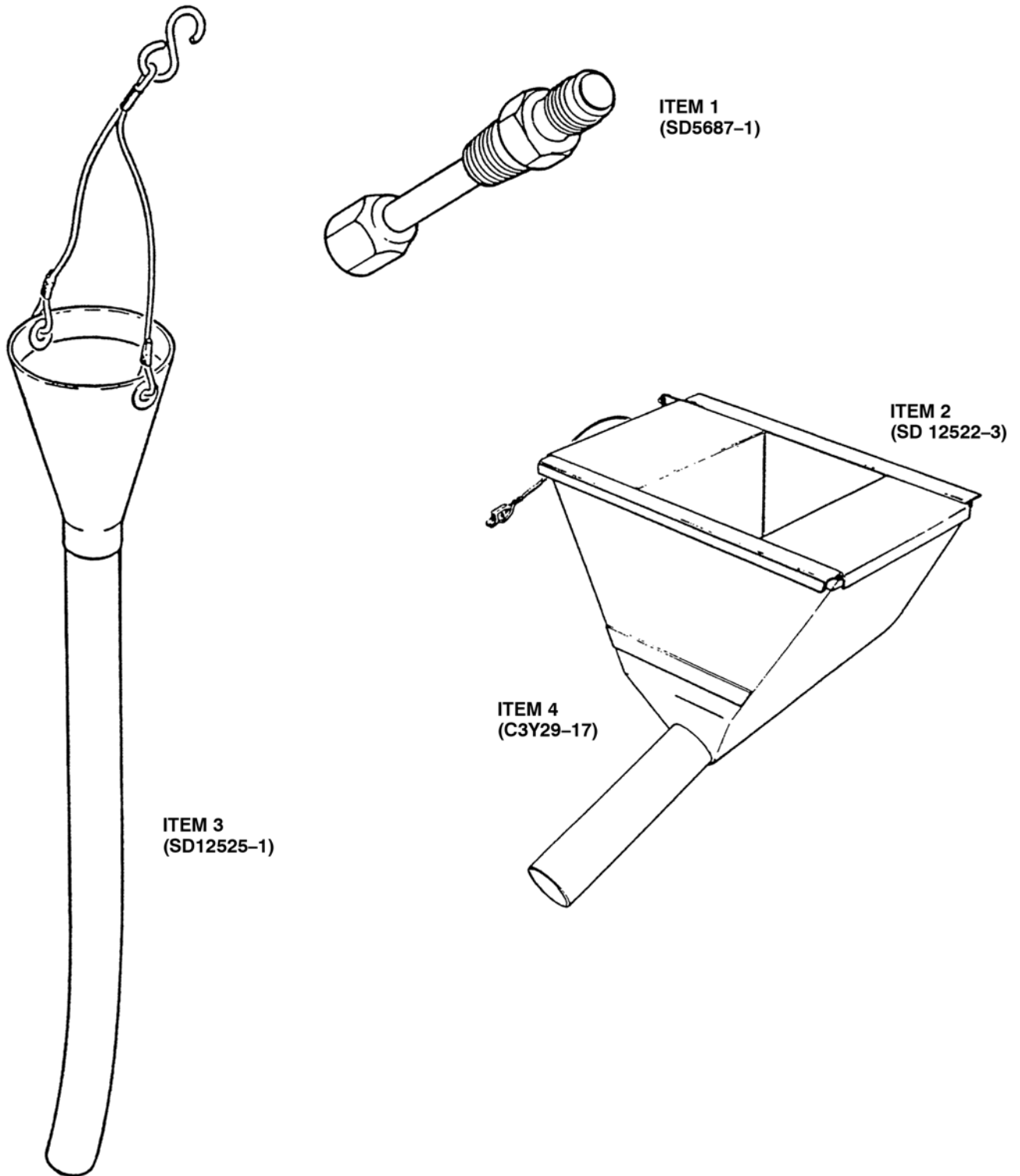
Chapter 12 – Servicing

ITEM NO.	DESCRIPTION	FUNCTION	IDENTIFICATION
1	Oxygen recharging adapter	Used to recharge oxygen cylinders	SD5687–1
2	Fuel funnel filter	Used with fuel funnel C3Y29–17	SD12522–3
3	Nozzle extension (A-F)	Used to increase rate of refueling	SD12525–1
4	Fuel funnel	Used with filter SD12522 to fuel aircraft when manual refueling from cans is required	C3Y29–17
-5	Fuel dipstick gauge	Used to check approximate levels of fuel tanks (lbs)	C6G1088–1
-5A	Fuel dipstick gauge (A-O)	Used to check approximate levels of fuel tanks (kgs)	C6G1088–3
-6	Fuel quantity test assembly	To test fuel quantity indicating system	C5GT100112–3 or C5GT100126–3
	Test Set		89–108–1 (Ragen)
	Harness to measure probe capacitance		78–108–1 (Ragen)
	AC power cable		78–108–5 (Ragen)
	DC power cable (if required)		78–108–7 (Ragen)
	System harness – single tank		78–108–4 (Ragen)
-7	Oil or fuel warning switch pressure tester	To bench test pressure settings of oil or fuel warning switches	SD5688–3 (See Chapter 79)
-8	Engine wash compression tank	Used to provide solution under pressure to nacelle mounted engine spray ring	C6G1084–3 (Two tank system)
-9	Multimeter	Testing aircraft	8010A (Fluke) (or equivalent)
-10	Combination level and angle finder	Used for checking angles when rigging or leveling aircraft or components	Model XLO (Ex-Cell-O Corp) (Bushing Sales)
-11	Plumb bob	Used in leveling aircraft	LS STarret Tool No.87 (or equivalent)
-12	Grease gun	General lubrication	28–2715 (Canadian Tire) (or equivalent)
-13	Adapter valve	To adapt to nitrogen charging points	2755 (Schrader) (or equivalent)
-14	Bevel protractor	For flight controls rigging, propeller deicing brush block setting, etc.	607–436813–48 (Do-All)
-15	Battery power unit, portable	For use when engine/generator units are not available and when numerous starts/functioning are not scheduled activity (Re-chargeable from AC single phase 115/60 Hz or 220V/50 Hz)	Mocart (Trilectron Industries Inc.) Note: When ordering, appropriate voltage/Hz must be specified

PART 2

ITEM NO.	DESCRIPTION	FUNCTION	IDENTIFICATION
-16	Engine/generator unit, portable, trailer type with tow bar	Electrical power source for starting and ground functioning tests	Rev-it III (Diesel) (Trilectron Industries Inc.)
-17	Self-propelled unit (capable of towing aircraft)	See item 16	Power-tug 20 (gasoline) Alternative: Power-tug D24 (diesel) (Trilectron Industries Inc.)
-17A	Mobile unit, hand pushable	See item 16. Operates on AC 3-phase 220 V/60 Hz or 440/480V or 380V 50 Hz supply	D. C. Lectropak (Trilectron Industries Inc.) Note: When ordering specify "with wheels" and appropriate voltage/Hz required
-18	Engine/generator unit, trailer type with tow bar or unit suitable for mounting on a wheeled vehicle	See item 16	Model Jet EX II (Hobart)
-19	AC to DC converter unit, stationary or portable	For use in hangar, or on ramp where AC supply is available	6FR28-400CL (60 Hz) 5FR28-400 CL (50 Hz) (Hobart) Note: When ordering, appropriate voltage/Hz must be specified.
-20	Master tool list of commercially available tools	Used for general maintenance	C5GT100158-1
-21	Demineralizer	To purify water used in engine wash	8901 (Fisher) (or as required)
-22	DC output cable (length 20 or 30 ft)	For use with items 18 and 19	AN2551
-23	Suction gauge (0.30 Hg)	Required to test aircraft deicing system (when installed)	Fig. 5801 Spec No. 126596 (Ametek)
-24	Pressure gauge (0-30 psi)	For pneumatic system functional test	Fig. 5801 Spec No. 126587 (Ametek)
-25	Fuel transfer pump	To transfer fuel from drums or underground tanks to aircraft	Wix model
-26	Hose kit	Used with item 25	Wix
-27	Tool kit, basic line maintenance	Used for ground servicing	C5GT100113-1
-28	Roller, cabinet	Used with item 20	2260
-29	Engine Compressor Washer, portable	Used for engine compressor motoring was (Includes 7 gallon tank, 50-foot hose and AN connector)	08-4022-1000 (Tronair Inc (Danair)

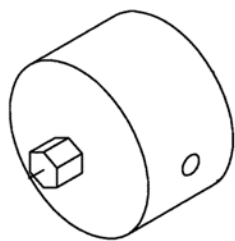
ITEM NO.	DESCRIPTION	FUNCTION	IDENTIFICATION
-30	Battery service kit	For servicing Marathon battery	71300174-001 (DHC)
-31	Battery service kit	For servicing Saft battery	71300174-003 (DHC)
-32	LCD screen cleaner & microfibre cloth (A-O)	Used for servicing LCD screens	1518600



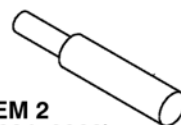
Ground Support Equipment – Servicing
Figure 4

Chapter 22 – Auto Flight

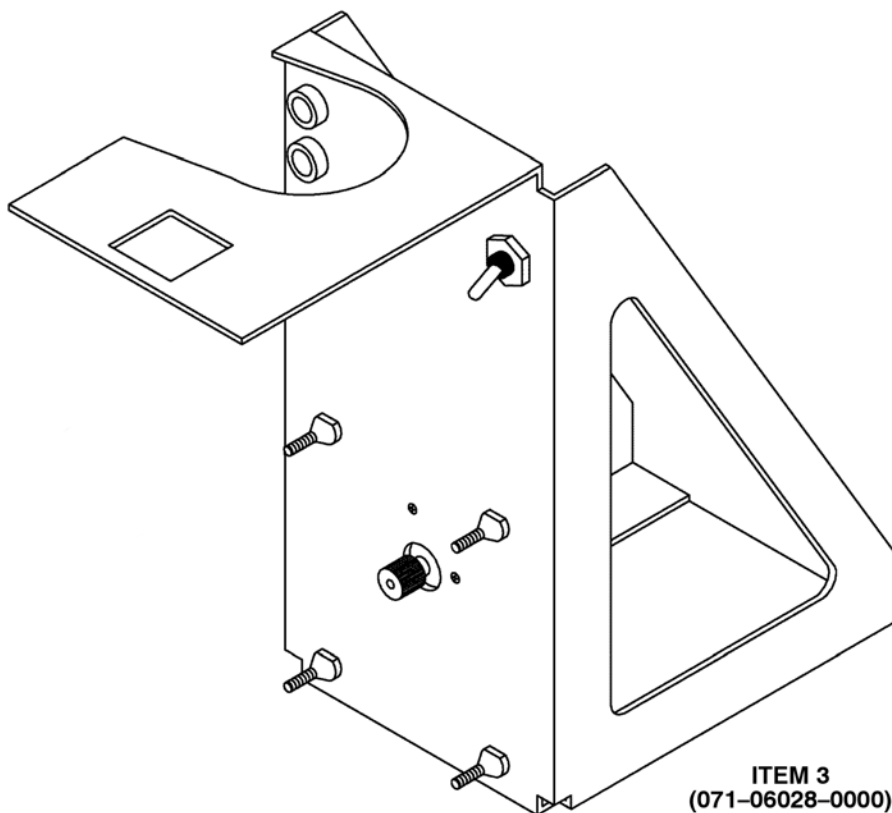
ITEM NO.	DESCRIPTION	FUNCTION	IDENTIFICATION
1	Adapter Tool (A-R)	Used during the clutch adjustment of the pitch trim capstan	071-06021-0003
2	Adapter Pin (A-R)	See item 1	071-06021-0002
3	Test Stand	See item 1	071-06028-0000



ITEM 1
(071-06021-0003)



ITEM 2
(071-06021-0002)

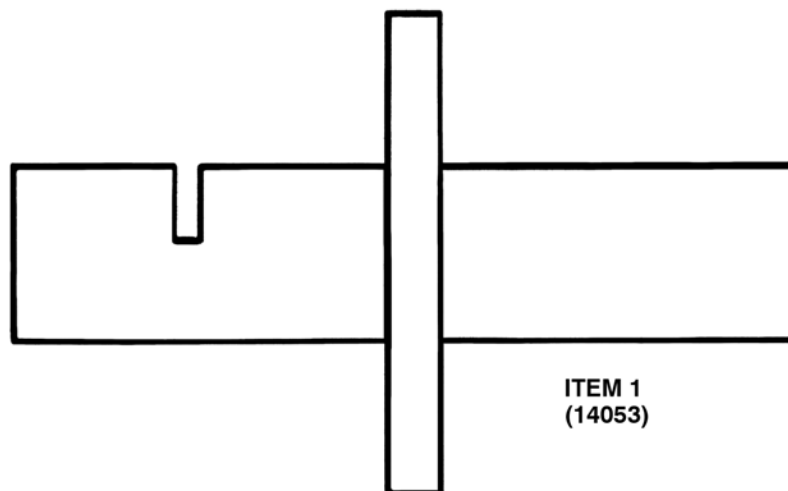


ITEM 3
(071-06028-0000)

Ground Support Equipment – Auto Flight
Figure 5

Chapter 23 – Communications

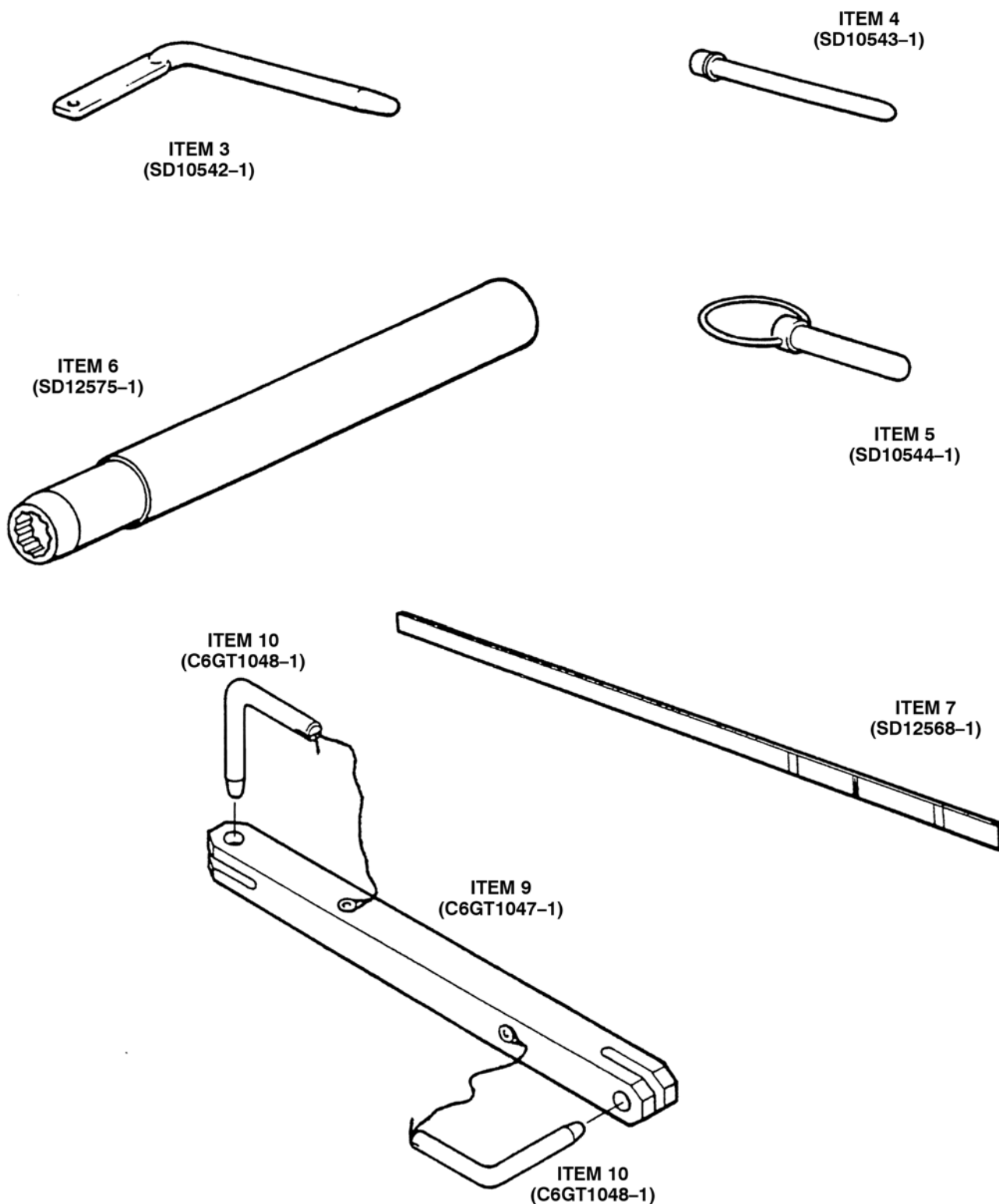
ITEM NO.	DESCRIPTION	FUNCTION	IDENTIFICATION
1	Wire Retriever for HF Antenna	Used to retrieve broken antenna wire and cut insulation without scoring wire	14053 (Dayton Aircraft Products Inc.)



Ground Support Equipment – Communications
Figure 6

Chapter 27 – Flight Controls

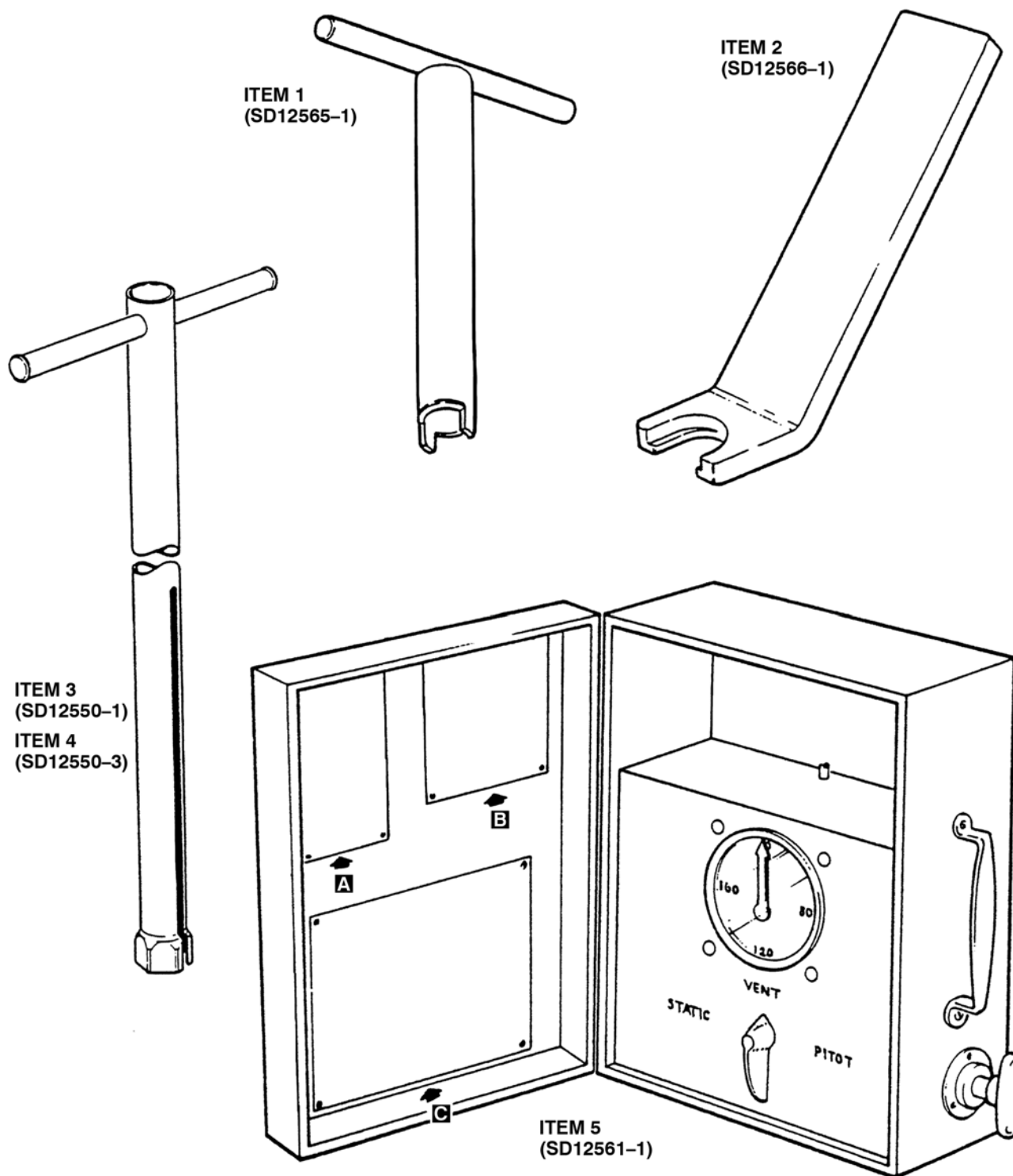
ITEM NO.	DESCRIPTION	FUNCTION	IDENTIFICATION
-1	Airframe rigging kit	Used to rig flight controls comprising SD12567-1, SD12568-1 and SD12571-1	SD12572-1
-2	Rigging pin kit	See item 1 comprising pins SD10542-1, SD10543-1 and SD10544-1	SD12567-1
3	Rigging pin, aileron elevator	Rigging pin (included in kit SD12567-1)	SD10542-1
4	Rigging pin, aileron	Rigging pin (included in kit SD12567-1)	SD10543-1
5	Rigging pin, aileron	Rigging pin (included in kit SD12567-1)	SD10544-1
6	Wrench, control column	To attain access to control column locknut	SD12575-1
7	Rudder travel scale	To measure travel of rudder (included in kit SD12572-1)	SD12568-1
-8	Tool roll	Holds loose tools (included in kit AD12572-1)	SD12571-1
9	Rigging tool, elevator	Used with gust lock SD12510-7	C6GT1047-1
10	Rigging pin	Attached to and used with item 9	C6GT1048-1



Ground Support Equipment – Flight Controls
Figure 7

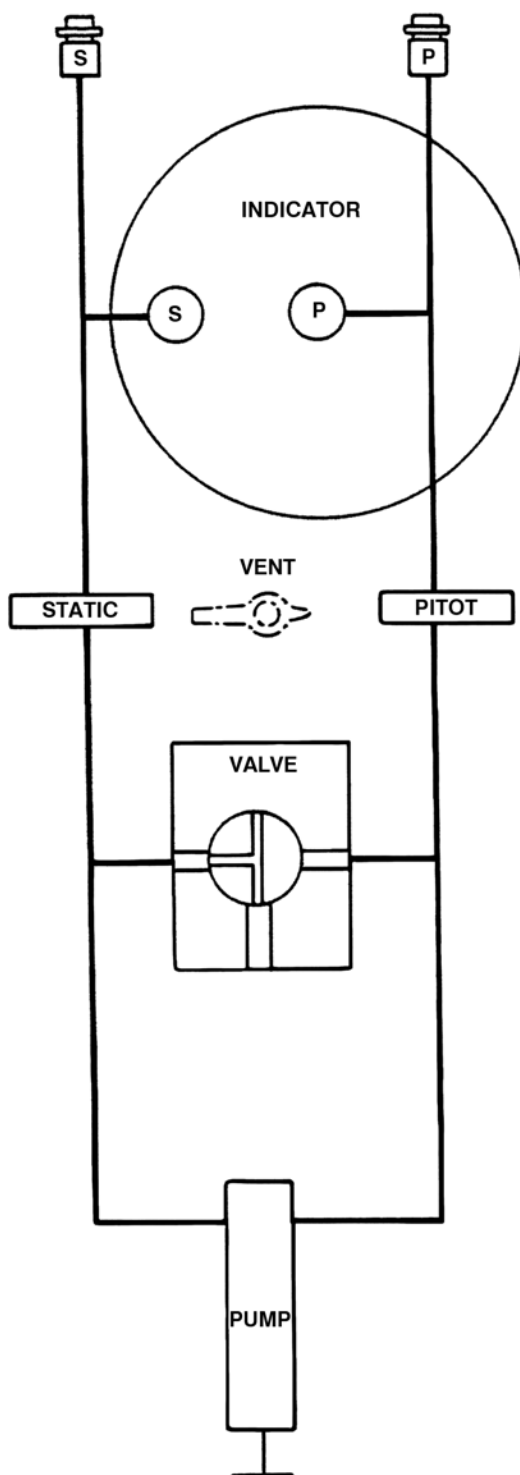
Chapter 31 – Instruments

ITEM NO.	DESCRIPTION	FUNCTION	IDENTIFICATION
1	Nut driver	Used during removal and installation of instrument panel lamps (post type lights)	SD12565–1
2	Wrench	See item 1	SD12566–1
3	Wrench, box	See item 1	SD12550–1
4	Wrench box	See item 1	SD12550–3
5	Pitot static tester	Used to leak test pitot static system	SD12561–1
-6	Magnetic sighting	Required for aircraft compass swing	80–0000
-7	Tripod	For use with item 6	80–0055
-8	Portable Interface (PI) (A-Q)	Portable interface for the 512 FDR	17ES0043
-9	PI Memory Card Module (A-Q)	See Item 8	17TES0054
-10	Ultrasonic Test Set (A-Q)	Used to test the Underwater Locator Device (ULD)	15977



Ground Support Equipment – Instruments
Figure 8 (Sheet 1 of 2)

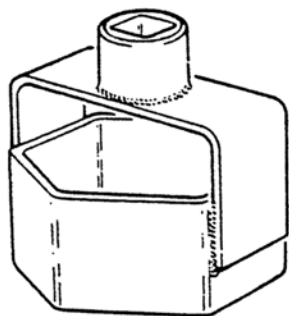
SD12561-1 TEST BOX
SCHEMATIC



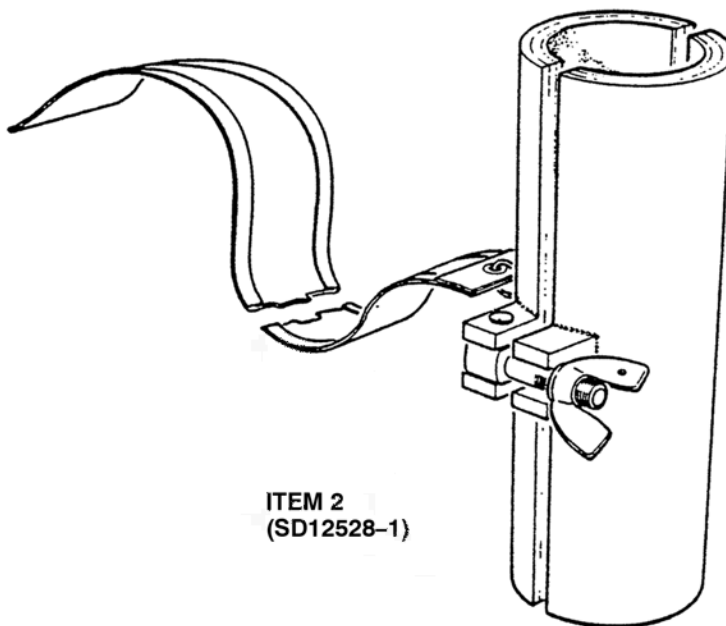
Ground Support Equipment – Instruments
Figure 8 (Sheet 2 of 2)

Chapter 32 – Landing Gear

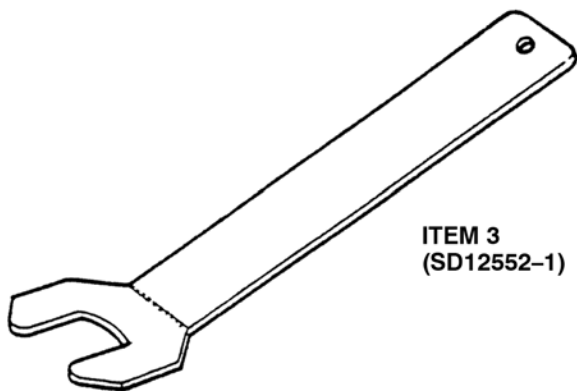
ITEM NO.	DESCRIPTION	FUNCTION	IDENTIFICATION
1	Wrench socket	Fits main wheel bearing nut	SD5523–1
2	Restricting clamp, nose leg	Restricts the vertical movement of the nose gear, to prevent excessive movement of aircraft during maintenance at light load	SD12528–1
3	Wrench	Used during removal and installation of nose wheel	SD12552–1
4	Wrench	Used during removal and installation of nose wheel	SD12553–1
5	Pin	To facilitate installation of L/G mounting bolts to airframe	SD12576–1
6	Acorn	See item 5	SD12576–3
-7	Tire gauge	Used to check air pressure in tires	8106B (Schrader) (or equivalent)
8	Wrench, 3 7/16	Used for removal and installation of nose wheel on aircraft fitted with intermediate flotation gear	SD12577–1
9	Wrench, 2 3/4	Used with item 8	SD12577–3
-10	Wheel balancer	Used to balance nose wheel	WBK–2C (Snap-On)



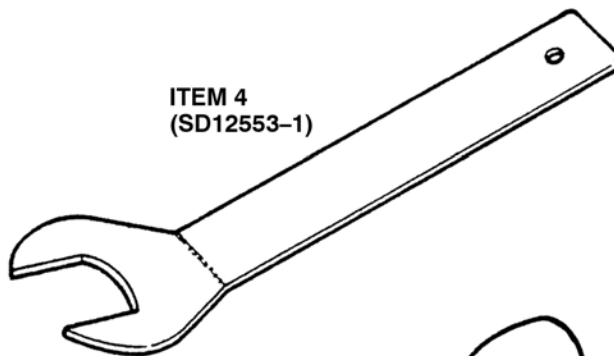
ITEM 1
(SD5523-1)



ITEM 2
(SD12528-1)



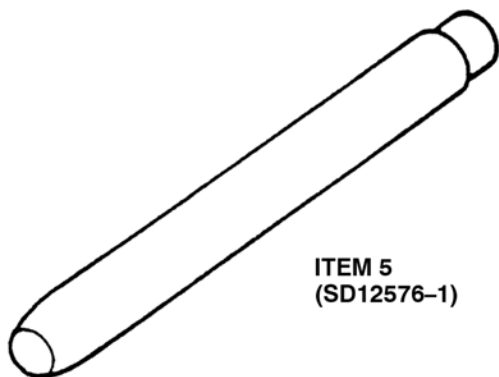
ITEM 3
(SD12552-1)



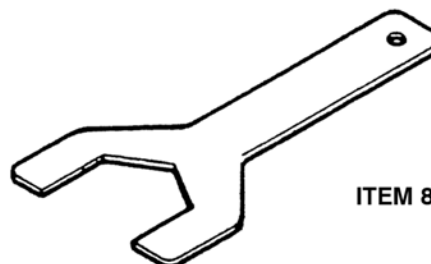
ITEM 4
(SD12553-1)



ITEM 6
(SD12576-3)



ITEM 5
(SD12576-1)

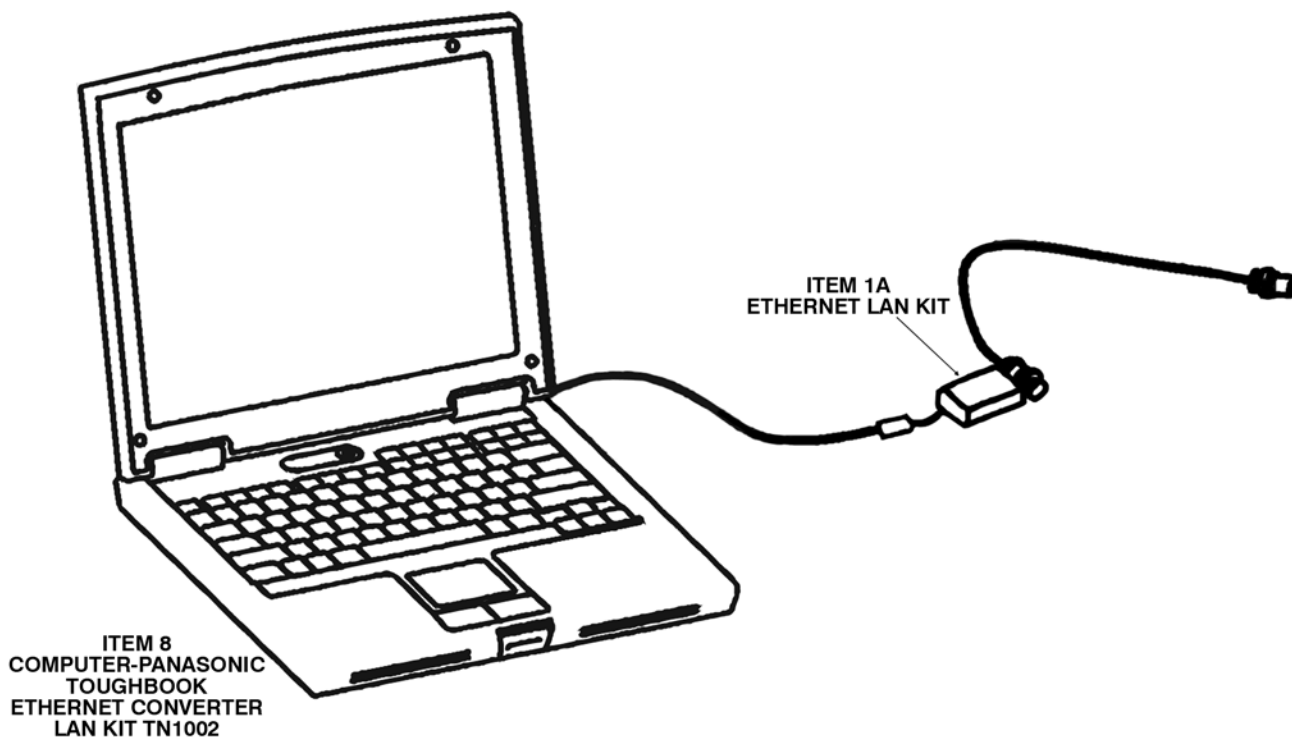
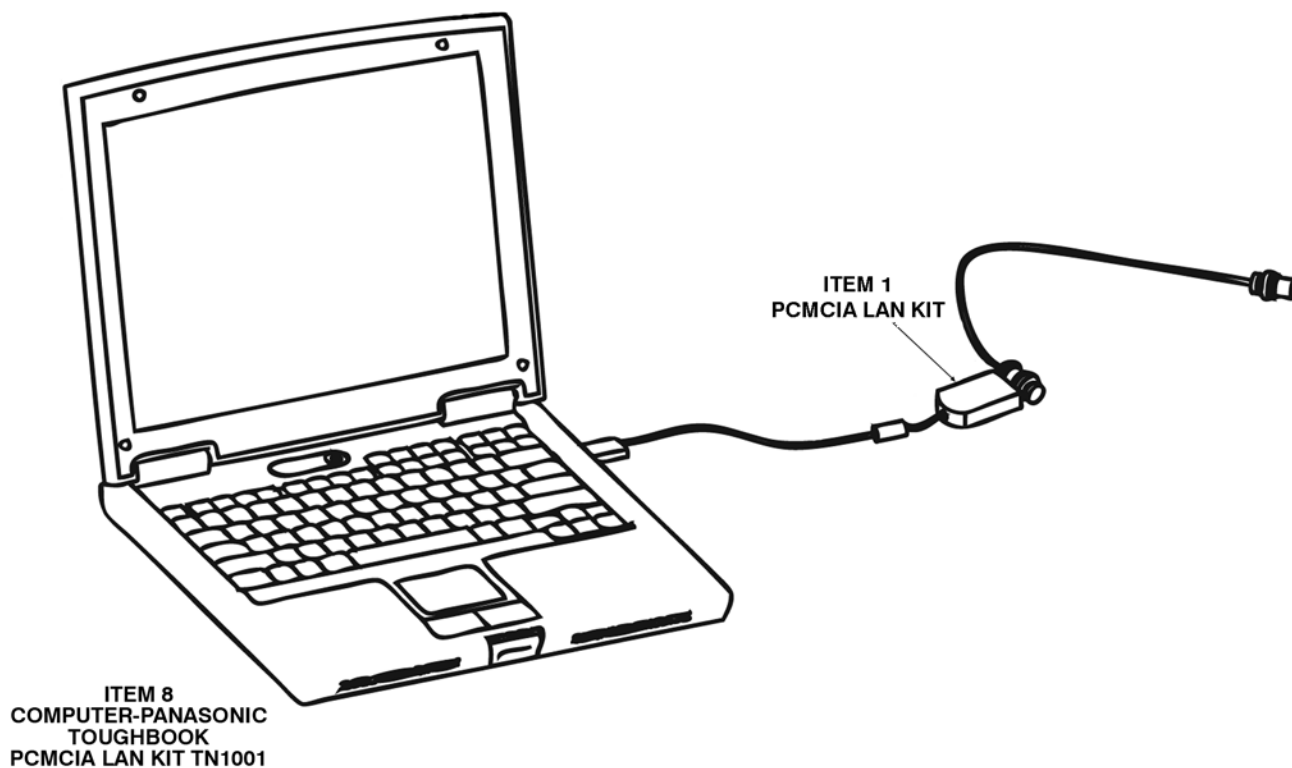


ITEM 8 (SD12577-1)
and
ITEM 9 (SD12577-3)

Ground Support Equipment – Landing Gear
Figure 9

Chapter 45 – Central Maintenance System

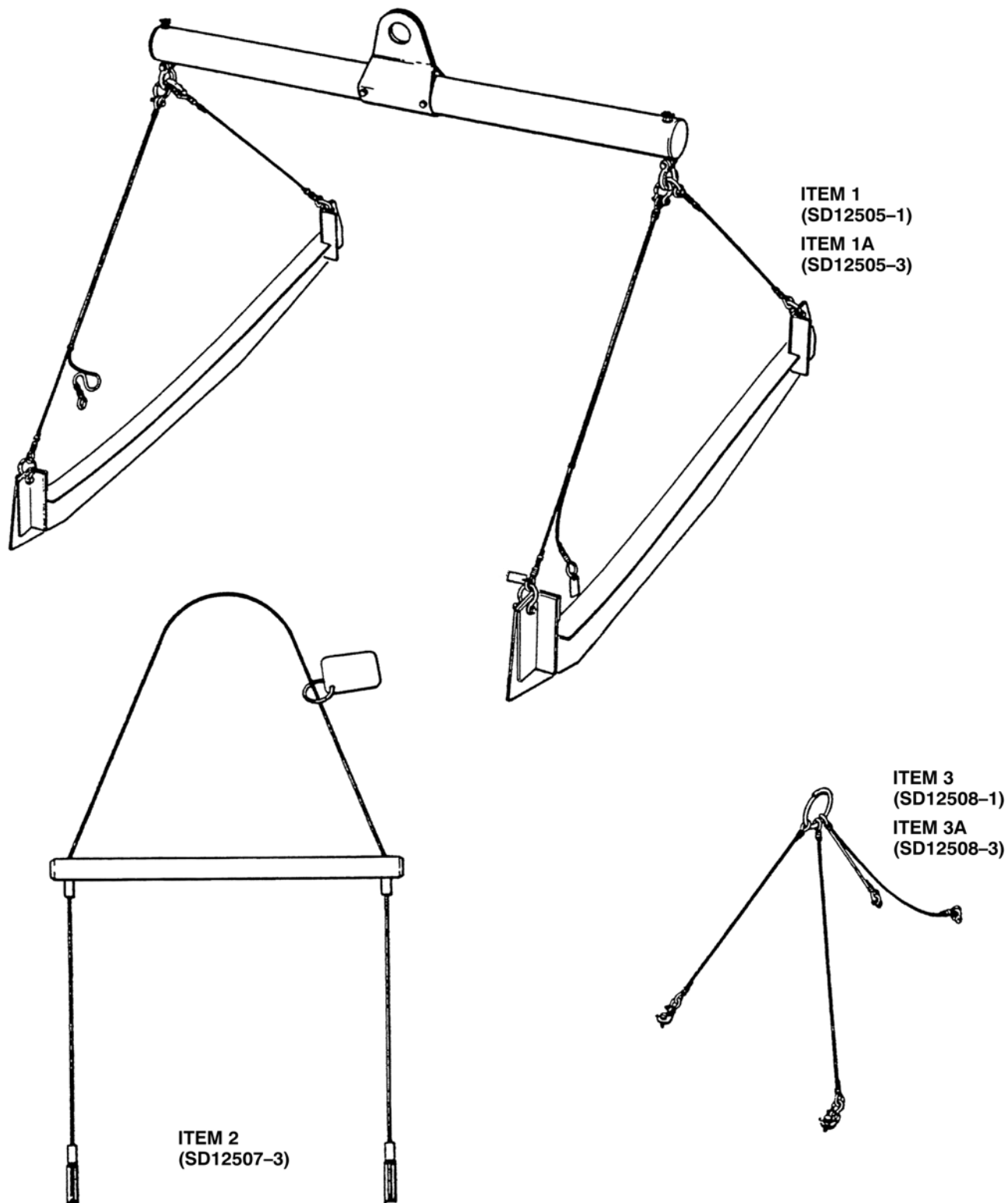
ITEM NO.	DESCRIPTION	FUNCTION	IDENTIFICATION
1	PCMCIA Lan kit (A-O)	10BASE2 LAN Coaxial Connection to PCMCIA	TN1001
1A	LAN Tool Kit (A-O)	LAN Kit with Ethernet Converter and Coaxial Cable Connection.	TN1002
-2	Wrist strap W/6ft Cord (A-O)	Electro-static discharge wrist strap	09070
-3	EGPWS smart cable (A-O)	Enhanced Ground Proximity Warning System (EGPWS) Cable for Database Loading & Line Maintenance	951-0386-001
-4	Serial cable DB9M-DB9F 3M (A-O)	DB9M – DB9F Serial Cable	AK178-3-R
-5	MKVI EGPWS RS-232 cable (A-O)	DB15M – DB9F Serial Cable	VPS23-1
-6	Caution label (A-O)	Label to be affixed to laptop	C6GT1102-27
-7	Computer case (A-O)	Protective cover for laptop when not in use	CF-TOUGH
8	Computer Panasonic – Toughbook (A-O)	Laptop	CFGGNBXP
-9	APEX tools disk (A-O)	Primus Apex Avionics CMC Remote Terminal	TM60000075-001
-10	Winviews software (A-O)	Windows Virtual Interface to the Enhanced Warning System (WINVIEWS), EGPWS Configuration Software	Winviews software
-11	KPA900 configuration module programmer (A-O)	RDR2000 Configuration Programmer	050-03281-0000
-12	KPA900 program (A-O)	REDR2000 Configuration Program	222-00366-0003
-13	Serial to parallel adapter (A-O)	DB9M to DB25F Adapter	F2L087
-14	Laptop software kit (A-O)	Software delivered on CD	C6GT1101-13
-15	KPA900 configuration module programmer kit (A-P)		050-03311-0003
-16	PI/2 Kit (A-Q)	512 Word Portable Download Kit	17TES0065
-17	Laptop software kit (A-S)	Software installed on laptop	C6GT1101-19
-18	Laptop software kit (A-S)	Software delivered on CD	C6GT1101-21



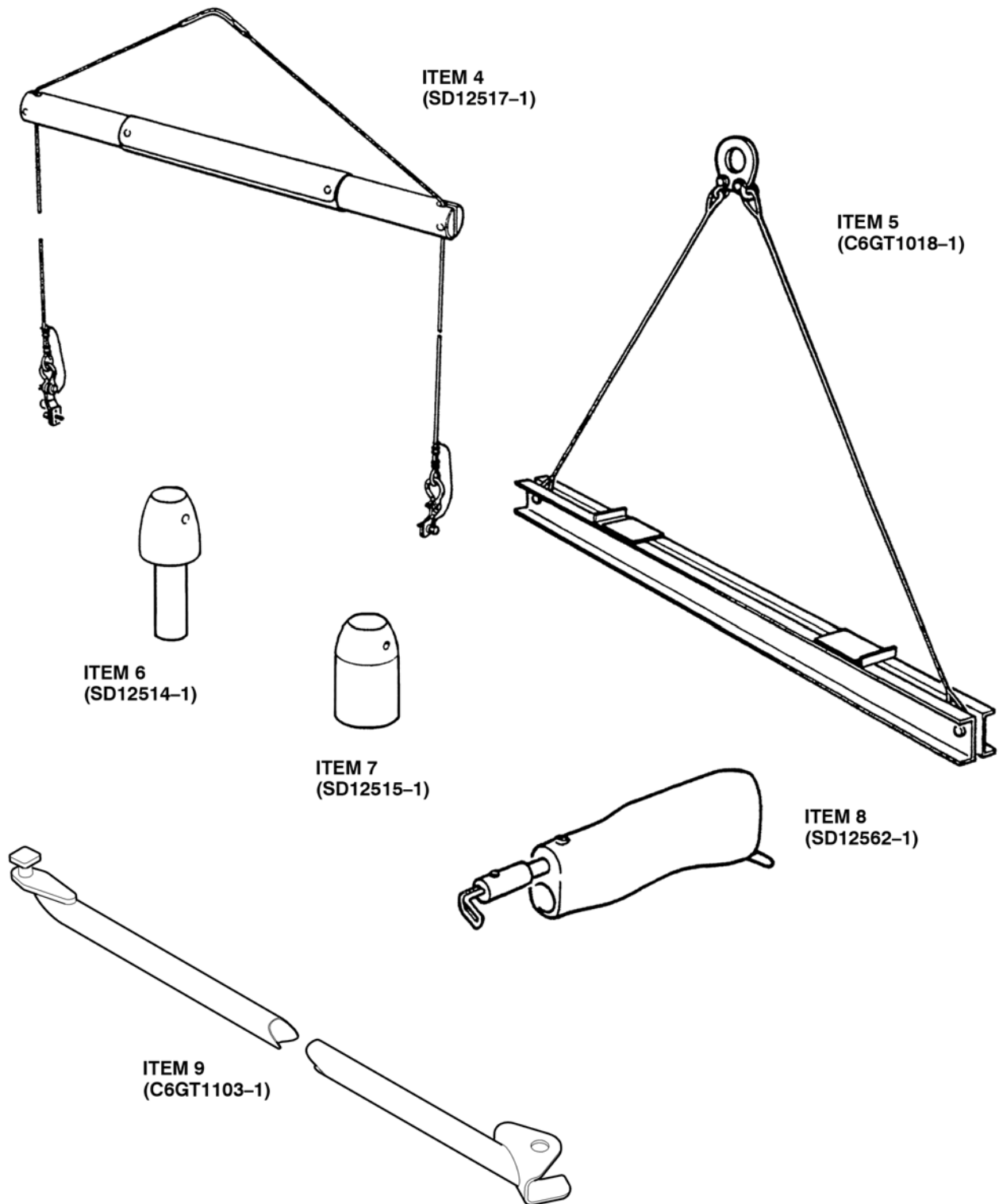
Ground Equipment – Laptop & Accessories Kit
Figure 10

Chapter 51 - Structures – Chapters 52 - 57

ITEM NO.	DESCRIPTION	FUNCTION	IDENTIFICATION
1	Wing sling	Used to hoist complete wing	SD12505–1
1A	Wing sling	Used to hoist complete wing	SD12505–3 (Alternate to Item 1)
2	Vertical stabilizer sling	Used to hoist complete vertical stabilizer	SD12507–3
3	Horizontal stabilizer and elevator sling	Used to hoist horizontal stabilizer and elevator	SD12508–1
3A	Horizontal stabilizer and elevator sling	Used to hoist horizontal stabilizer and elevator	SD12508–3 (Alternate to Item 3)
4	Rudder sling	Used to hoist complete rudder	SD12517–1
5	Engine sling	Used to hoist wing complete with engine	C6GT1018–1
6	Acorn, wing to fuselage (front)	Used to align and enter front pickup bolt during installation of wing	SD12514–1
7	Acorn, wing to fuselage (rear)	Used to align and enter rear pickup bolt during installation of wing	SD12515–1
8	Filler strip installation tool (A – A)	Used when installing emergency roof hatch	SD12562–1
9	LH aft cargo door stay	Used to restrain the LH aft cargo door in the open position during loading	C6GT1103–1



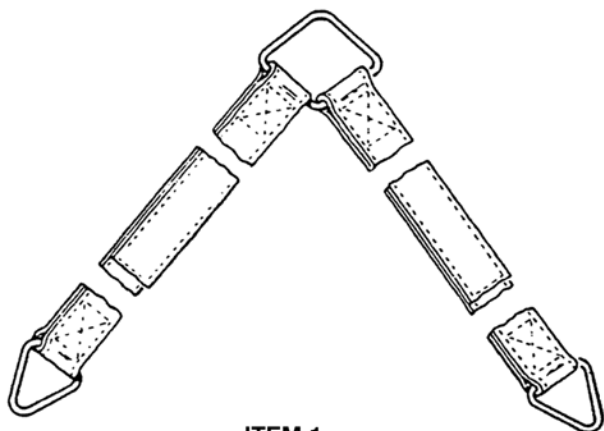
Ground Support Equipment – Structures
Figure 11 (Sheet 1 of 2)



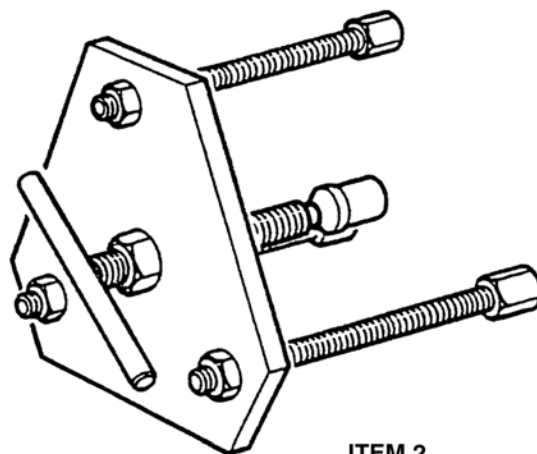
Ground Support Equipment – Structures
Figure 11 (Sheet 2 of 2)

Chapter 61 – Propellers

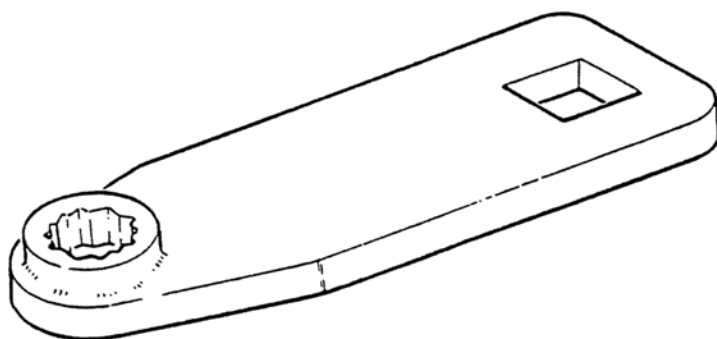
ITEM NO.	DESCRIPTION	FUNCTION	IDENTIFICATION
1	Propeller sling	Used to hoist propeller	SD5534–1
2	Retraction clamp	Used to pull rod stops and collar forward allowing access to propeller retaining bolts; also used when rigging propeller (used with item 3)	SD12559–1
3	Wrench, torque adapter	Used on propeller retaining bolts during propeller removal and installation; used in conjunction with retraction clamp SD12559–1 (if retraction clamp not used, see item 4) used with 9/16" head bolt (P/N A-2047 Ref)	SD12540–1
3A	Wrench, torque adapter	Used on propeller retaining bolts during propeller removal and installation; used in conjunction with retraction clamp SD12559–1 (if retraction clamp not used, see item 4) used with 5/8" head bolt (P/N B-3339 Ref)	SD12540–3
4	Wrench, torque adapter	Used during removal and installation of propeller if retraction clamp (item 2) is not available	SD125413–3
5	Wrench, torque adapter	Used on flexlock nut ahead of propeller hub, during removal and installation of propeller	SD12549–1
6	Wrench	Used to hold clamp bolts when torquing nuts during assembly of blades from shipping crate	SD12579–1



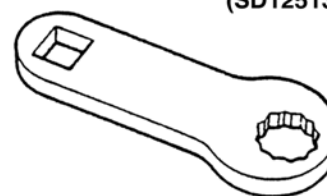
ITEM 1
(SD5534-1)



ITEM 2
(SD12559-1)

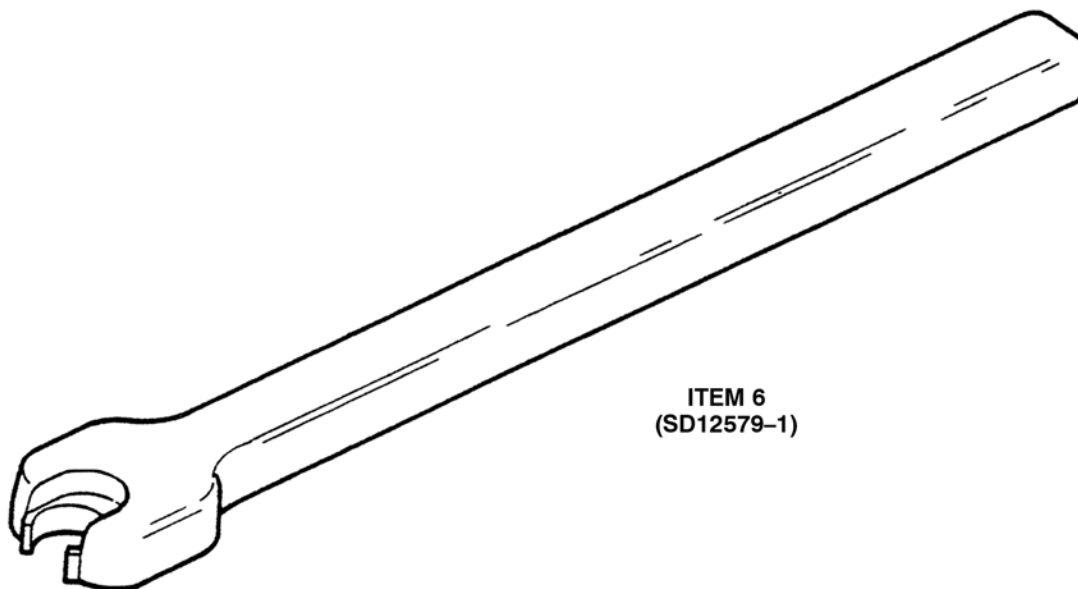
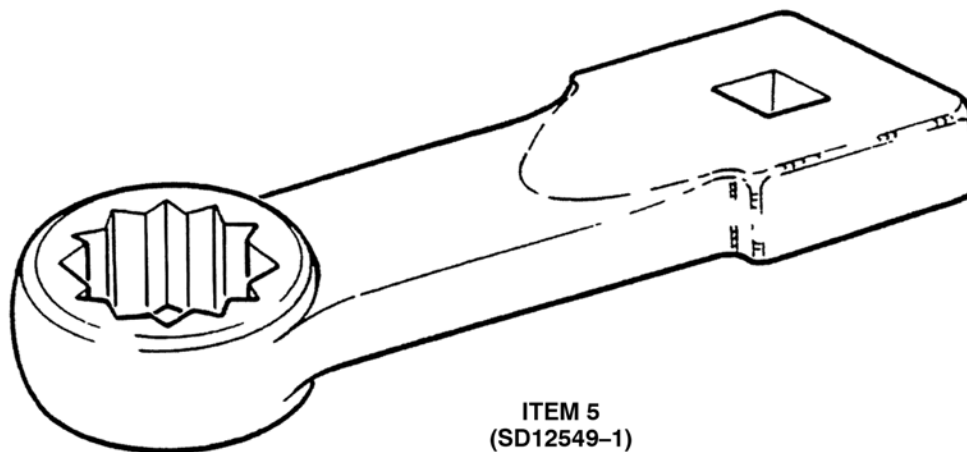


ITEM 3
(SD12540-1)
ITEM 3A
(SD12540-3)



ITEM 4
(SD12513-3)

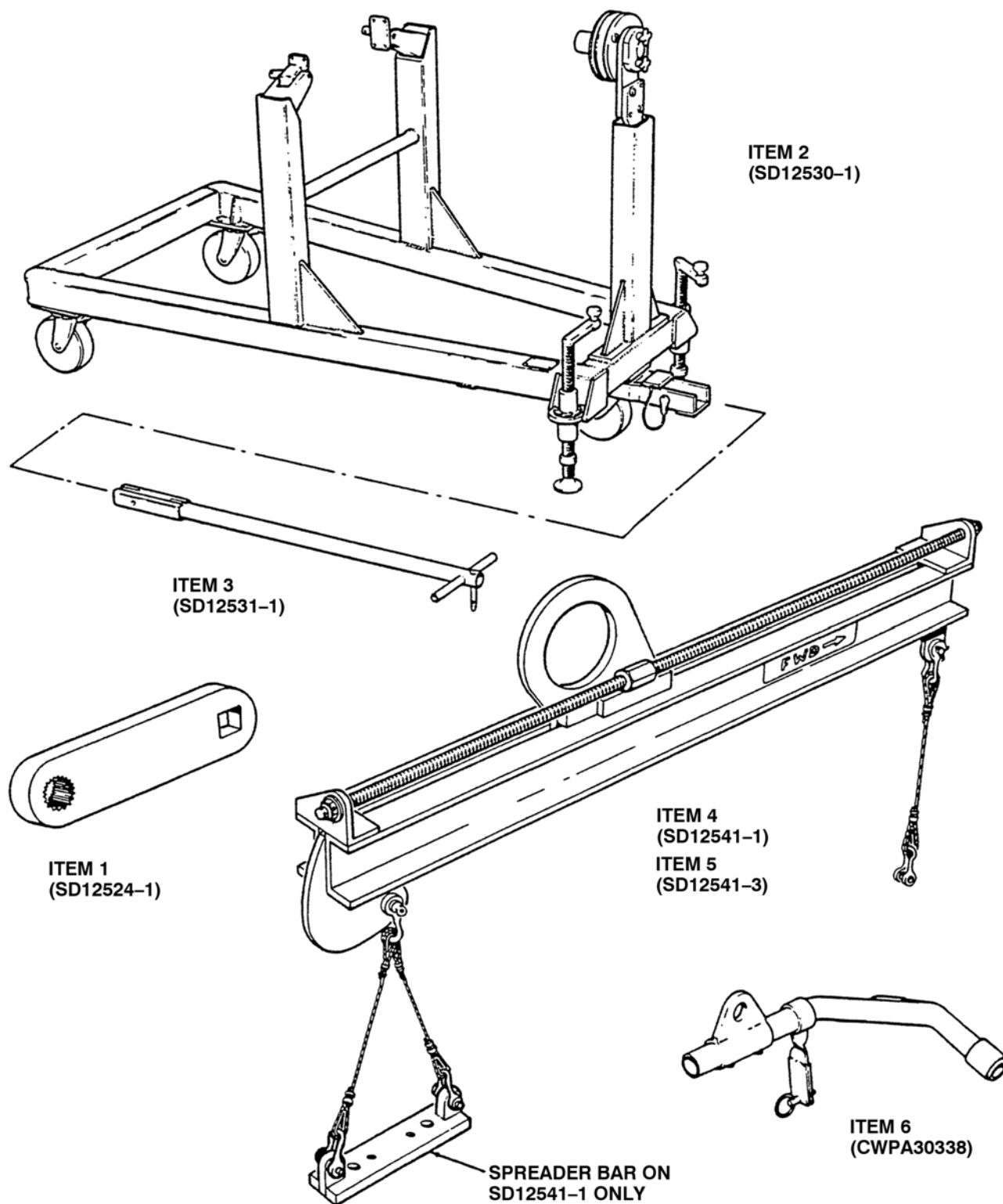
Ground Support Equipment – Propellers
Figure 12 (Sheet 1 of 2)



Ground Support Equipment – Propellers
Figure 12 (Sheet 2 of 2)

Chapter 71 – Power Plant

ITEM NO.	DESCRIPTION	FUNCTION	IDENTIFICATION
1	Wrench	Used on engine mounting securing bolts during removal and installation of engine	SD12524–1
2	Engine build-up dolly c/w towbar	Used to service and transport an engine	SD12530–1
3	Towbar	Used to tow engine build dolly (included with item 2)	SD12531–1
4	Engine sling (A-A)	Used to hoist complete quick engine change unit with or without propeller	SD12541–1
5	Engine sling (A-G)	See item 4	SD12541–3
6	Sling	Used to hoist engine power section complete with propeller	CPWA30338
-7	Bracket	Installed at front end of engine to facilitate removal of hot end c/w propeller; used with item 6	CPWA3004742
-8	Engine/propeller hoist	Used to hoist propeller and complete engine	92275A (Field Aviation)

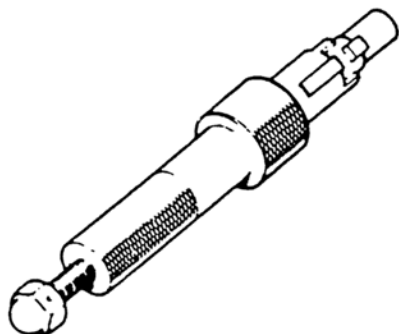


Ground Support Equipment – Power Plant
Figure 13

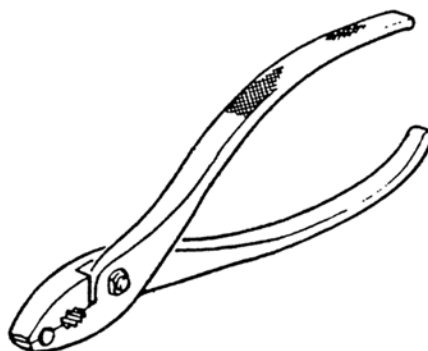
PART 2

Chapter 72 – Engine

ITEM NO.	DESCRIPTION	FUNCTION	IDENTIFICATION
1	Puller	Used on compressor turbine disk	PWC30403
2	Pliers	Used on T5 thermocouple leads to crimp terminal lugs	PWC30425
3	Compressor	Used on oil relief valve retaining ring	PWC30415
4	Puller	Used on fuel nozzle sheath	PWC30416
5	Squeezer	Used to install compressor or power turbine disk retaining bolt keywasher	PWC30458
-6	Tool kit (A-A)	To remove metal seals on engine	SD12521-1
7	Puller	Used on tachometer generator gearshaft or seal carrier	PWC30046-51
8	Puller	Used on external scavenge pump gearshaft oil seal carrier	PWC30046-52
9	Wrench torque adapter	Used on T5 thermocouple probe retaining nut	PWC30114-8
10	Puller	Used on oil filter housing	PWC30328
11	Wrench	Used on compressor turbine disk	PWC30331
12	Spreader	Used to remove compressor or power turbine disk retaining bolt keywasher (use with CPWA30336)	PWC30335
13	Protector sleeve	Used on turbine disks (use with CPWA30335)	PWC30336
14	Gauge	Used to check spline wear on starter generator shaft	PWC30499-50



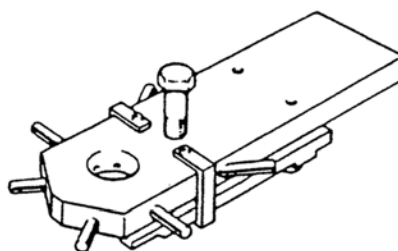
ITEM 1
(PWC30403)



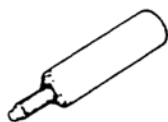
ITEM 2
(PWC30425)



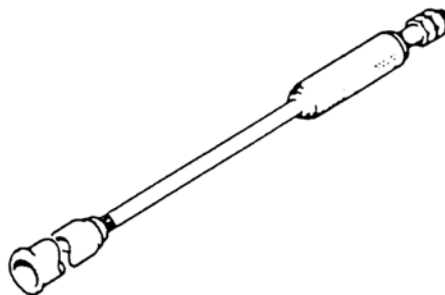
ITEM 3
(PWC30415)



ITEM 4
(PWC30416)



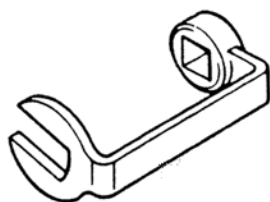
ITEM 5
(PWC30458)



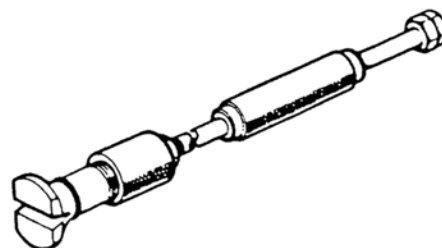
ITEM 7
(PWC30046-51)

ITEM 8
(PWC30046-52)

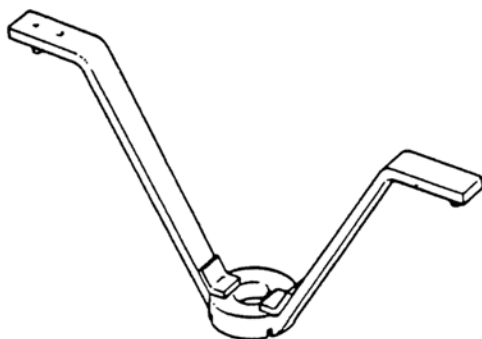
Ground Support Equipment – Engine
Figure 14 (Sheet 1 of 2)



ITEM 9
(PWC30114-8)



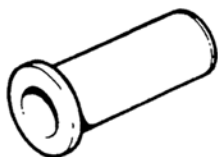
ITEM 10
(PWC30328)



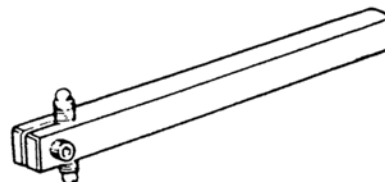
ITEM 11
(PWC30331)



ITEM 12
(PWC30335)



ITEM 13
(PWC30336)

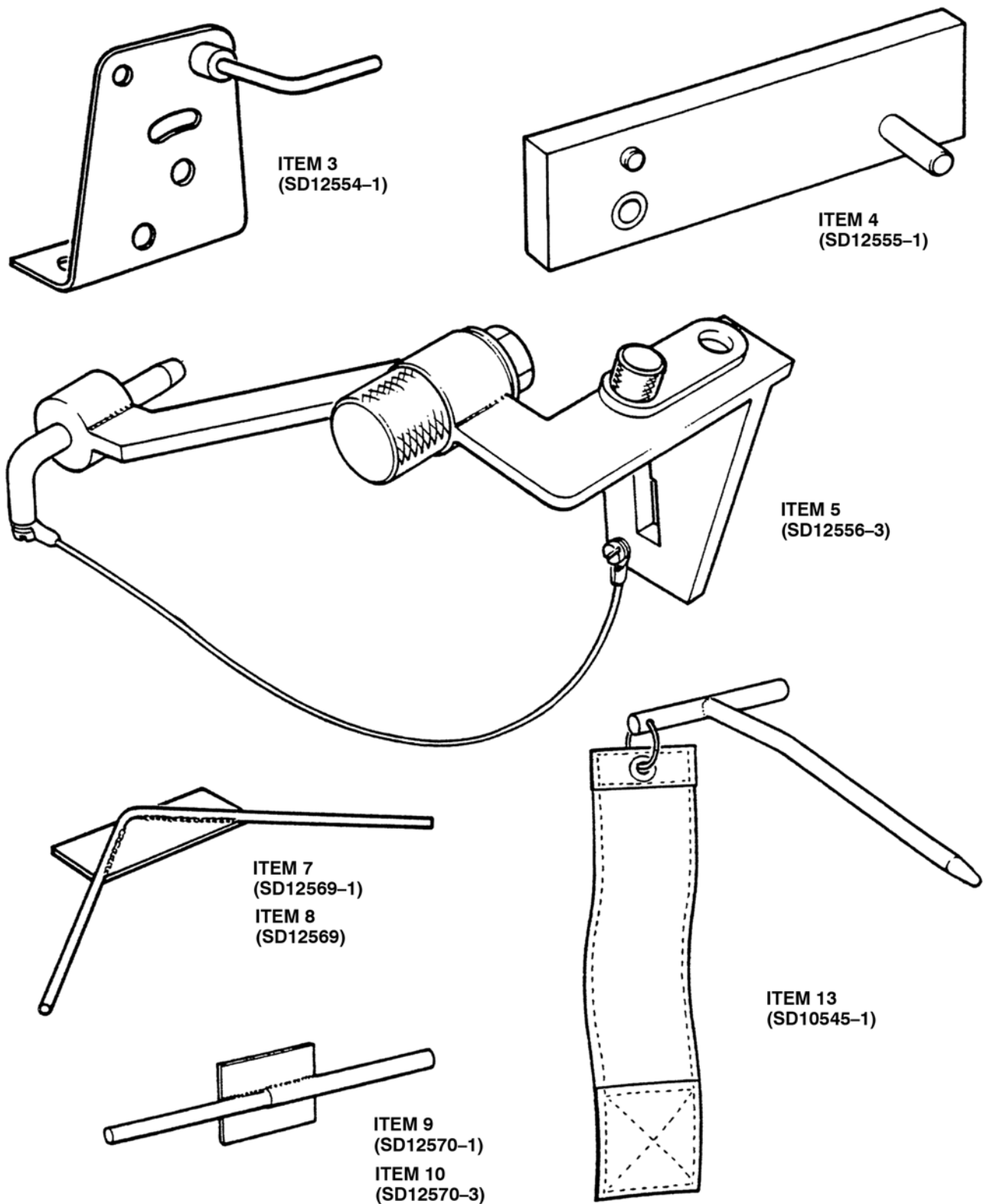


ITEM 14
(PWC30499-50)

Ground Support Equipment – Engine
Figure 14 (Sheet 2 of 2)

Chapter 76 – Engine Controls

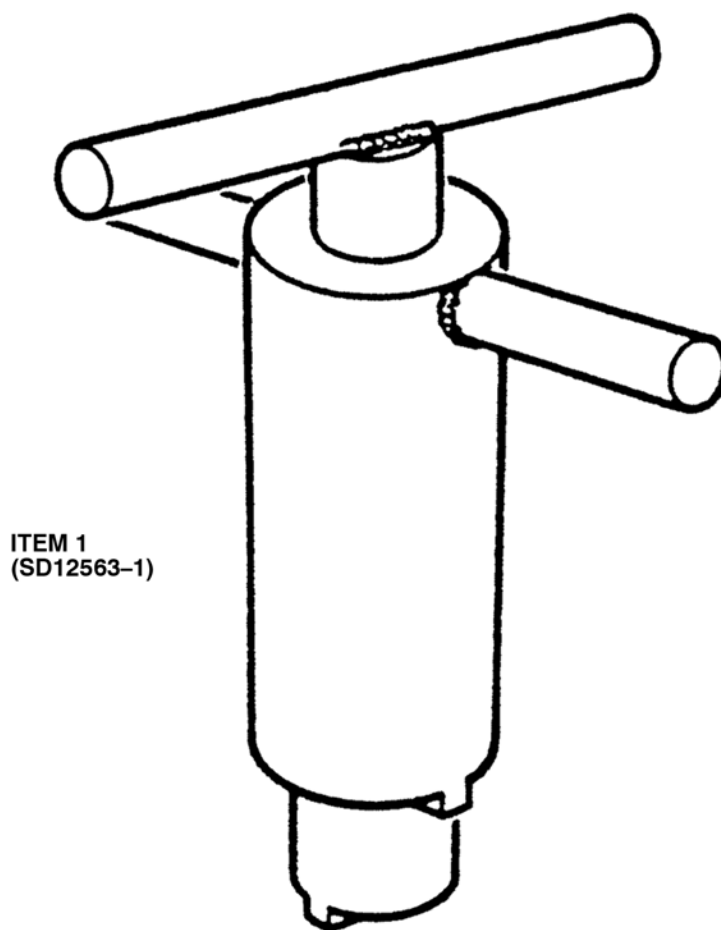
ITEM NO.	DESCRIPTION	FUNCTION	IDENTIFICATION
-1	Rigging kit (A-F)	Used to rig engine controls, comprising SD12554-1, SD12555-1, SD12556-3, SD12569-1 and SD12569-1 and -3, SD 12570-1 and -3, SD12573-1 and SD10545-1	SD12574-1
-2	Rigging kit	Used to rig engine controls, comprising SD12555-1, SD12556-3, SD12570-3, SD12573-3 and SD10545-1	SD12574-3
3	Alignment fixture (A-A)	Used to rig fuel shutoff control (included in kit SD1257-1)	SD12554-1
4	Rigging tool	Used to rig (power controls) cam cluster (included in kits SD12574-1 and -3)	SD12555-1
5	Rigging tool	Used to rig throttle control (FCU) (included in kits SD12574-1 and -3)	SD12556-3
-6		D E L E T E D	
7	Rigging pin (A-A)	Used to rig FCU (included in kit SD12574-1)	SD12569-1
-8	Rigging pin (A-F)	Used to rig FCU (included in kit SD12574-1)	SD12569-3
9	Rigging pin (A-A)	Used to rig propeller governor control on engine (included in kit SD12574-1)	SD12570-1
-10	Rigging pin	Used to rig propeller governor control in flight compartment (included in kits SD12574-1 and -3)	SD12570-3
-11	Tool roll (A-A)	Holds loose tools (included in kit SD12574-1)	SD12573-1
-12	Tool roll (A-G)	Holds loose tools (included in kit SD12574-3)	SD12573-3
13	Rigging pin	Used to rig control pulley (included in kits SD12574-1 and -3)	SD10545-1



Ground Support Equipment – Engine Controls
Figure 15

Chapter 77 – Engine Indicating

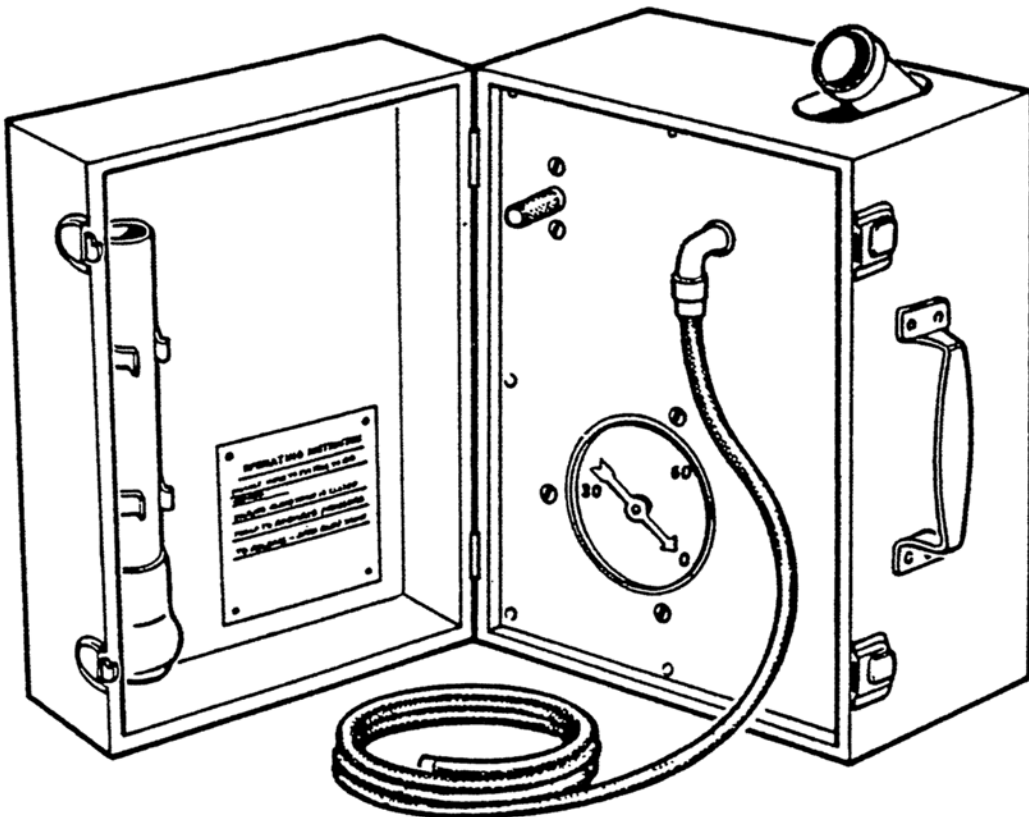
ITEM NO.	DESCRIPTION	FUNCTION	IDENTIFICATION
1	Wrench (A-H)	To adjust torque pressure transmitter	SD12563–1
-2	Potentiometer	To produce voltage simulating thermocouples output	Type P4/E (Cropico)
-3	Portable resistance bridge	To provide a precision check of resistance in thermocouple harness	Type PW3/EM (Cropio)
-4	Pressure tester	Used to test torque pressure indicator and transmitter calibration	Model No. 2311F (Barfield)
-5	Test gauge	For use with item 4	0 – 160 psi (Inspector type)
-6	Hose assembly	For use with item 4	601000–4–0240 (Aeroquip)
-7	Nipple	For use with item 4 and 6	AN816–4
-8	Union	For use with item 4 and 6	AN815–4
-9	O-ring	For use with item 4 and 6	NAS617–4



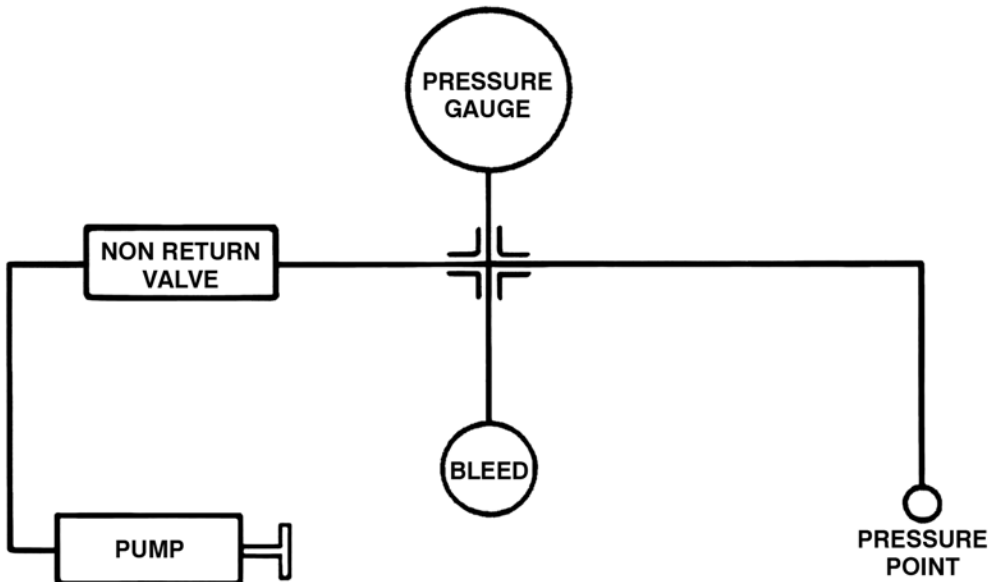
Ground Support Equipment – Engine Indicating
Figure 16

Chapter 79 – Oil

ITEM NO.	DESCRIPTION	FUNCTION	IDENTIFICATION
1	Test Box	Used to check low oil pressure indicating system	SD5688-3



ITEM 1
(SD5688-3)



TEST BOX SCHEMATIC

Ground Support Equipment – Oil
Figure 17

This Page Intentionally Left Blank

PART 3

REPAIR EQUIPMENT

This Page Intentionally Left Blank

Part 3 – Repair Equipment

ITEM NO.	DESCRIPTION	FUNCTION	IDENTIFICATION
1	Compressor, electrically driven	To provide compressed air to power air tools, flow – approx 50 cfm at nominal 125 psi	Available on request
2	Compressor, gasoline driven	As above (item 1)	Available on request
3	Repair tool kit	Hand held non-power tools to effect repairs	C5GT100113–7
4	Pneumatic rivet gun – blind riveting	Used to install a wide range of blind rivets	G–784 'Cherry'
4A	Adapter – blind rivet gun	To ensure fitment of H80 series head assemblies to item 4	680B46 'Cherry'
5	Hand rivet gun – blind rivets	Used to install blind rivets by hand	G36 'Cherry'
6	Pulling heads for 700 series Cherry rivets	For use with items 4 and 5, with item 4A	
	Head assembly	Universal head rivet 1/8 dia	H80–4U
	Head assembly	Countersunk head rivet 1/8 dia	H80–4C
	Head assembly	Universal head rivet 5/32 dia	H80–5U
	Head assembly	Countersunk head rivet 5/32 dia	H80–5C
	Head assembly	Universal head rivet 3/16 dia	H80–6U
	Head assembly	Countersunk head rivet 3/16 dia	H80–6C
7	Pulling heads for 2000 series Cherry universal or counter sunk rivets	For use with items 4 and 5	
	Head assembly	Countersunk head rivet 1/8 dia for use with item 5 only	H615–4C
	Head assembly	Countersunk head rivet 1/8 dia for use with items 4 and 5	H681–4C
	Head assembly	Countersunk head rivet 5/32 dia for use with items 4 and 5	H681–5C
	Head assembly	Countersunk head rivet 3/16 dia for use with items 4 and 5	H681–6C
7A	Service kit	To service item 4	784KS
7B	Air bleeder	To service item 4	700A77
8	Pneumatic Jo-bolt gun	Used to install various jo-bolts used on Twin Otter	Model OA2N
9	Wrench adapters for Jo-bolts:	To fit directly onto pneumatic gun	
	Wrench adapter	0.164 dia	NS–T–164
	Wrench adapter	0.200 dia	NS–T–200

ITEM NO.	DESCRIPTION	FUNCTION	IDENTIFICATION
	Wrench adapter	0.260 dia	NS-T-260
	Wrench adapter	0.312 dia	NS-T-312
10	Nose adapters:	Used in conjunction with wrench adapter on pneumatic gun	
	Nose adapter	0.164 dia flush	NSF-T-164
	Nose adapter	0.164 dia protruding	NSP-T-164
	Nose adapter	0.200 dia flush	NSF-T-200
	Nose adapter	0.200 dia protruding	NSP-T-200
	Nose adapter	0.260 dia flush	NSF-T-260
	Nose adapter	0.260 dia protruding	NSP-T-260
	Nose adapter	0.312 dia flush	NSF-T-312
	Nose adapter	0.312 dia protruding	NSP-T-312
11	Hand tool	Used to install jo-bolts by hand	F-71-M
12	Wrench adapters:	To fit directly on to hand gun	
	Wrench adapter	0.164 dia	NS-HT-164
	Wrench adapter	0.200 dia	NS-HT-200
	Wrench adapter	0.260 dia	NS-HT-260
	Wrench adapter	0.312 dia	NS-HT-312
13	Nose adapters:	Used in conjunction with wrench adapter on hand gun	
	Nose adapter	0.164 dia flush	NS-F-164
	Nose adapter	0.164 dia protruding	NS-P-164
	Nose adapter	0.200 dia flush	NS-F-200
	Nose adapter	0.200 dia protruding	NS-P-200
	Nose adapter	0.260 dia flush	NS-F-260
	Nose adapter	0.260 dia protruding	NS-P-260
	Nose adapter	0.312 dia flush	NS-F-312
	Nose adapter	0.312 dia protruding	NS-P-312
14	Pneumatic rivet gun	Used to drive solid rivets	CP-3X 'Chicago pneumatic'
15	Driving heads, universal rivet heads	To fit directly onto rivet gun	
	Driving head	3/32 dia rivet	SM10 4703
	Driving head	1/8 dia rivet	SM10 4704
	Driving head	5/32 dia rivet	SM10 4705
	Driving head	3/16 dia rivet	SM10 4706

PART 3

ITEM NO.	DESCRIPTION	FUNCTION	IDENTIFICATION
16	Driving head, flush	To fit directly onto rivet gun	
	Driving head	Flush rivet – all sizes	SM91 'Schaefer' (Avdel)
17	Pneumatic drill	General purpose drill	M.1. Desoutter
18	Pneumatic drill	90° angle head for restricted drilling	M.2. Desoutter
19	Collets:	Used on item 18 to allow change of drill size	Desoutter
	Collet	For #40 drill (0.098 dia)	2322
	Collet	For #30 drill (0.1285 dia)	2402
	Collet	For #20 drill (0.161 dia)	2482
	Collet	For 1/8 drill (0.125 dia)	2392
20	Paint spray gun	For general painting of aircraft for components	JGA 502 cup gun 'Devillbiss'

This Page Intentionally Left Blank

APPENDIX 1

MECHANICS TOOL KIT

This Page Intentionally Left Blank

Appendix 1 – Mechanic's Tool Kit

The tools recommended for inclusion in a mechanic's tool kit are as follows:	
Tool box	Crowfoot set
Punch, pin – 1/8, 3/16 and 1/4 inch	Center punch
Pliers, water pump	Chisel – 6 inches
Pliers, gripping	Screwdriver, standard – 6, 8 and 12 inches
Pliers, duck bill	Screwdriver, standardd – “stubby”
Pliers, diagonal cutting	Screwdriver, Phillips 1, 2 and 3
Off-set screwdriver – 1 set	Off-set screwdriver, Phillips 1 and 2
Inspection mirror	Screwdriver, electrician's – 10 inches
Off-set wrench set – 3/8 to 7/8 inch	Adjustable wrench – 12 inches
Off-set wrench – 15/16 and 1 inch	Mechanical fingers – 18 inches
Box end wrench set – 3/8 to 1 inch	Magnetic pick-up
Combination wrench set – 1/4 to 1 inch	Allen key wrench set
Socket set, 1/4 inch drive, standard 12 pt – 3/16 to 9/16 inch	Feeler gauge set – 15 blades
Socket set, 1/4 inch drive, deep 12 pt – 3/16 to 3/8 inch	Hammer, ball pein
Universal, 1/4 inch drive	Hammer, plastic
Flexible socket – 1/4 inch	Hammer, rubber
Ratchet, 1/4 inch drive	Wrench open-end, short – 1 1/16 to 1 1/2 inches
Extension, 1/4 inch drive – 2 and 6 inches	Sheet metal snips
Handle	File body
Ratchet adapter	File body holder
Nut spinner bar	Hand drill, heavy duty
Ratchet, 3/8 inch drive	Tubular hack saw
Extension, 3/8 inch drive – 3, 6 and 12 inches	Scratch awl
Speed handle	'C' Clamps – 1 and 2 inches
Universal, 3/8 inch drive	Steel tape – 10 feet
Socket set, 3/8 inch drive, standard – 3/8 to 7/8 inch	Strap wrench
Socket set, 3/8 inch drive, deep – 3/8 to 7/8 inch	Steel scale – 6 inches
Adapter – 3/8 female to 1/4 male	Drills 1/16 to 1/4 inch
Adapter – 1/4 female to 3/8 male	File handles
Steel rule	File, flat – 8 and 10 inches
Lock ring pliers set	File, round – 8 inches
Tube cutter	File card
Flashlight	

APPENDIX 1

This Page Intentionally Left Blank