

TO ALL HOLDERS OF PACIFIC SCIENTIFIC HTL/KIN-TECH DIVISION  
COMPONENT MAINTENANCE MANUAL ATA 36-10-03  
FOR P/N 212940-2, P/N 40005320-2, P/N 40005337-1, P/N 40005338-5,  
P/N 40005347-3, AND P/N 40005355-1 DATED NOV 15/03

THIS SHEET TRANSMITS REVISION NO. 1

DATED FEB 15/07

HIGHLIGHTS

P/N 40005369-1 and P/N 40005370-1 have been incorporated into this manual.

We reprinted this manual in its entirety. Please replace all of the pages of your manual with this revision. We made many general format and layout changes in addition to technical changes.

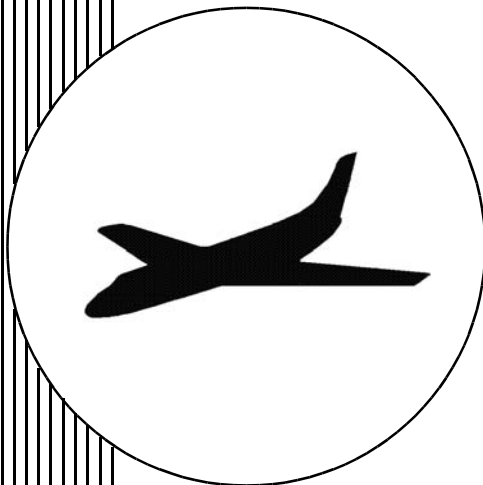
Chapter/Section and Page No.	Description of Change
Title Page, T-2	Listed the revision date, added the new part numbers, and revised CONFIDENTIALITY NOTICE, CRITICALITY NOTICE, PMA PARTS USAGE statements.
Record of Revisions	Listed the revision number and date.
List of Effective Pages	Revised date.
Table of Contents	Updated to latest revision.
List of Figures	Updated to latest revision.
List of Tables	Updated to latest revision.
Introduction, 2	Revised addresses for Product Support Services and revised verification dates.
Description and Operation, 1, 2, 5, 6, 7, 12, 13	Revised the Description and Technical Properties sections to incorporate the two new part numbers. Revised Figure 1, Figure 4, and Figure 5. Added Table 6 and Table 7.
Testing and Fault Isolation, 101, 102	Revised Pneumatic Bottle and Leak Test procedures.
Fits and Clearances, 801	Revised torque values in Table 801.
Illustrated Parts List, 1005, 1009, 1010, 1011	Revised Numerical Index, IPL Figure 1, and Detailed Parts List.

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*HTL/Kin-Tech Division*

**Component Maintenance Manual  
with  
Illustrated Parts List**



**PNEUMATIC BOTTLES**

**HTL PART  
NUMBERS**

212940-2  
40005320-2  
40005337-1  
40005338-5  
40005347-3  
40005355-1  
40005369-1  
40005370-1

**36-10-03**

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Feb 15/07

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The equipment described in this document is aviation safety equipment and has been tested and qualified to meet stringent performance requirements. Sub-component tolerances, material properties, metallurgy, chemistry, interfaces, and interactions of the components are critical to the proper performance of the LRU's.

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Further information may be obtained from the FAA at: <http://www.faa.gov/avr/sups/>



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## INTRODUCTION

### 1. Scope

- A. This Component Maintenance Manual (CMM) contains the bench test instructions for the Pneumatic Bottles. The Pneumatic Bottles are manufactured by Pacific Scientific Company, HTL/Kin-Tech Division, Duarte, California.

### 2. Usage Guide

- A. Refer to the Table of Contents to find the necessary bench test procedures. This ACMM is written to ATA 100, Revision 30 and AECMA Simplified English guidelines.

- (1) **Description and Operation** gives the function, primary components, and technical properties for the Pneumatic Bottles.
- (2) **Testing and Fault Isolation** contains the testing procedures.
- (3) **Disassembly** - not applicable.
- (4) **Cleaning** contains the procedures to clean the Pneumatic Bottles and components.
- (5) **Check** - not applicable.
- (6) **Repair** - not applicable.
- (7) **Assembly (Including Storage)** contains the procedures for proper storage of the Pneumatic Bottles.
- (8) **Fits and Clearances** - contains the torque values for actuation of the control valve.
- (9) **Special Tools, Fixtures, and Equipment** lists the recommended special tools, fixtures, and equipment.
- (10) **Illustrated Parts List** - contains the information needed to order spare parts. A numerical index and an exploded-view drawing are provided to help identify the parts.

- B. The recommended tools and materials are given in each section. Equivalent items can be used.

### 3. Hydrostatic Regulations

- A. This Component Maintenance Manual (CMM) contains hydrostatic regulations and procedures that are based on U. S. Department of Transportation 49 CFR. Refer to Hydrostatic Pressure Test Requisites in Testing and Fault Isolation for additional information.

### 4. Product Support Services

- A. Product support services for the Pneumatic Bottles are available from Pacific Scientific Company.

- B. For technical documentation, please contact:

PACIFIC SCIENTIFIC COMPANY  
11700 N.W. 102nd Road Suite 6  
Miami, Florida 33178 U.S.A.

Telephone: (305) 477-4711  
FAX: (305) 477-9799  
SITA: MIAPSD

C. For repair and overhaul, and spare parts please contact:

PACIFIC SCIENTIFIC COMPANY 11700 N.W. 102nd Road Suite 6 Miami, Florida 33178 U.S.A.	Telephone: (305) 477-4711 FAX: (305) 477-9799 SITA: MIAPSD
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PACIFIC SCIENTIFIC COMPANY 2156 W. Northwest Highway Suite 314 Dallas, Texas 75220 U.S.A.	Telephone: (214) 574-4200 FAX: (214) 574-4210
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PACIFIC SCIENTIFIC LIMITED Howarth Road Maidenhead Berkshire SL6 1AP, United Kingdom	Telephone: 44 (1628) 682200 FAX: 44 (1628) 682250 AOG: 44 (7836) 228480 SITA: LHRPSCR
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PACIFIC SCIENTIFIC AVIATION SERVICES COMPANY Unit 6 Hagen-Park Miramstrasse 74 34123 Kassel Germany	Telephone: 49 (0) 561 5798 10 FAX: 49 (0) 561 5798 125
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5. Verification Dates

<u>Procedure</u>	<u>Date</u>
Testing/Fault Isolation	Jan 15/07
Disassembly	not applicable
Assembly	not applicable

6. Revision Service

A. Revised pages will be issued when necessary throughout the service life of the Pneumatic Bottles. The revised part of the page will be identified by a change bar or capital **R** in the left margin.

7. Abbreviations and Unit Symbols

A. Abbreviations and unit symbols which may be used in this manual are defined below. All weights and measurements are given first in the English standard units followed by the metric equivalent in parentheses.

Assy - Assembly	FIG. - Figure
ATA - Air Transport Association	ID - Inside Diameter
cfh - Cubic feet per hour	IPL - Illustrated Parts List
CAGE - Commercial and Government Entity	kg - Kilogram (1 kg = 2.205 pounds)
cm - Centimeter (1 cm = 0.394 inch)	kPag - Kilo Pascal-gauge (1 kPag = 0.15 psig)
DC - Direct Current	m <sup>3</sup> /hr - Cubic meter per hour
DOT - Department of Transportation	m - Meter (1 m = 3.281 feet)
EFF - Effectivity	mA - Milliampere
FAA - Federal Aviation Administration	mm - Millimeter (1 mm = 0.0394 inch)

N·m	-	Newton-meter (1 N·m = 8.3 in-lb)	RF	-	Reference
NHA	-	Next Higher Assembly	rpm	-	Revolutions per minute
No.	-	Number	SB	-	Service Bulletin
OD	-	Outside Diameter	sccs	-	Standard cubic centimeter per second
Para.	-	Paragraph	V	-	Volt
P/N	-	Part Number	VDC	-	Voltage - Direct Current
psig	-	Pounds per square inch- gauge			

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## **DESCRIPTION AND OPERATION**

### **1. Purpose**

- A. The Pneumatic Bottle is an actuation device used in aircraft as an emergency gear blow down unit.

### **2. Description**

- A. Pneumatic Bottles, part numbers 40005338-5, 40005347-3, and 450005369-1, consist of a container assembly, a discharge indicator (burst disk), and a valve (Figure 1).
  - (1) Part numbers 40005338-5 and 40005347-3 use a red glass discharge indicator, part number 13519.
  - (2) Part number 450005369-1 uses foil for the discharge indicator.
- B. Pneumatic Bottles, part numbers 212940-2 and 40005320-2, consist of a container assembly, a red discharge indicator (burst disk), a pressure gauge, and a valve (Figure 2).
- C. Pneumatic Bottles, part numbers 40005337-1, 40005355-1, and 40005370-1, consist of a container assembly, a discharge indicator (burst disk), and a valve (Figure 3 and Figure 4).
  - (1) Part numbers 40005337-1 and 40005355-1 use a red glass discharge indicator, part number 13519.
  - (2) Part number 450005370-1 uses foil for the discharge indicator.
- D. The valve actuates from the 'storage' to the 'discharge' position (Figure 5) and must be manually released before returning to the 'storage' position.

### **3. Operation**

- A. The container assembly is pressurized with air or nitrogen gas with all valves closed. The regulated output pressure acts with actuation devices in the aircraft to blow down gear in an emergency situation.

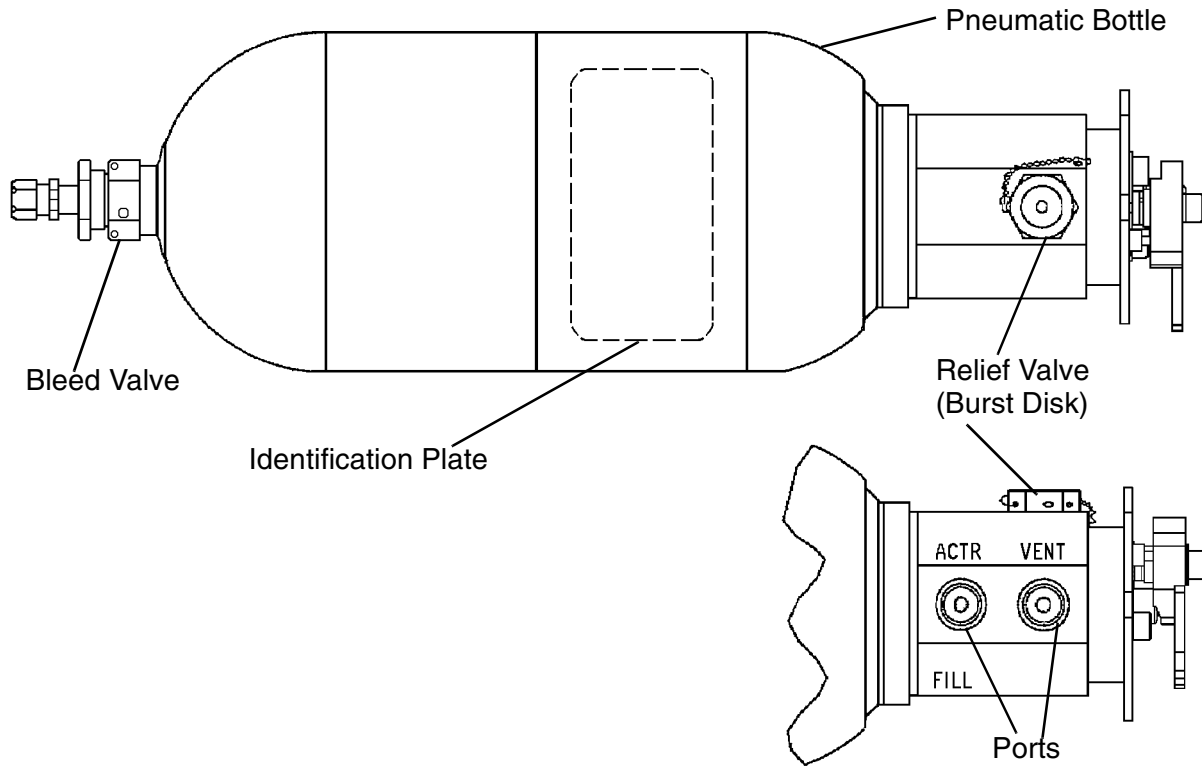


Figure 1. Primary Components for  
Part Numbers 40005338-5, 40005347-3, 40005369-1

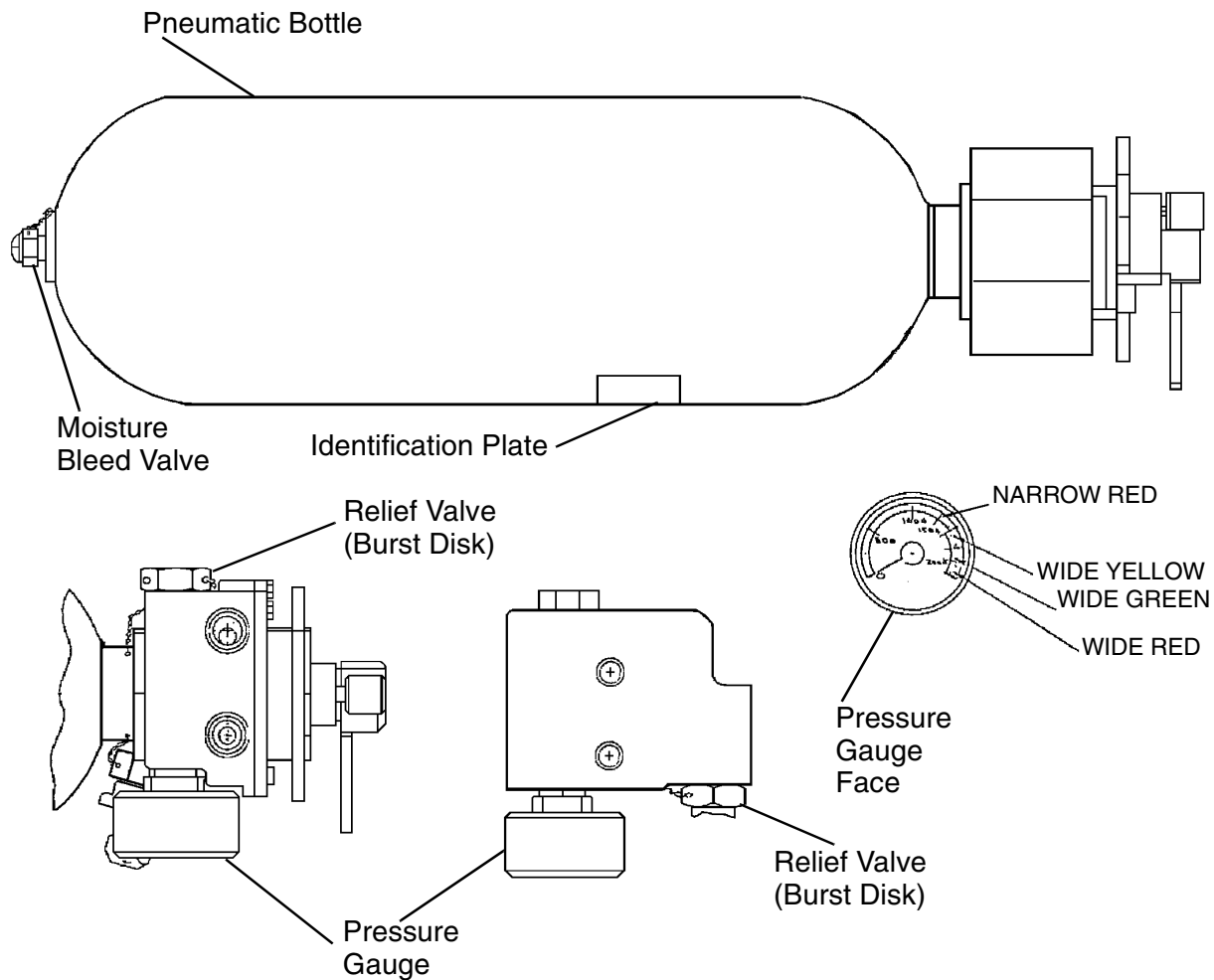


Figure 2. Primary Components for Part Numbers 212940-2 and 40005320-2

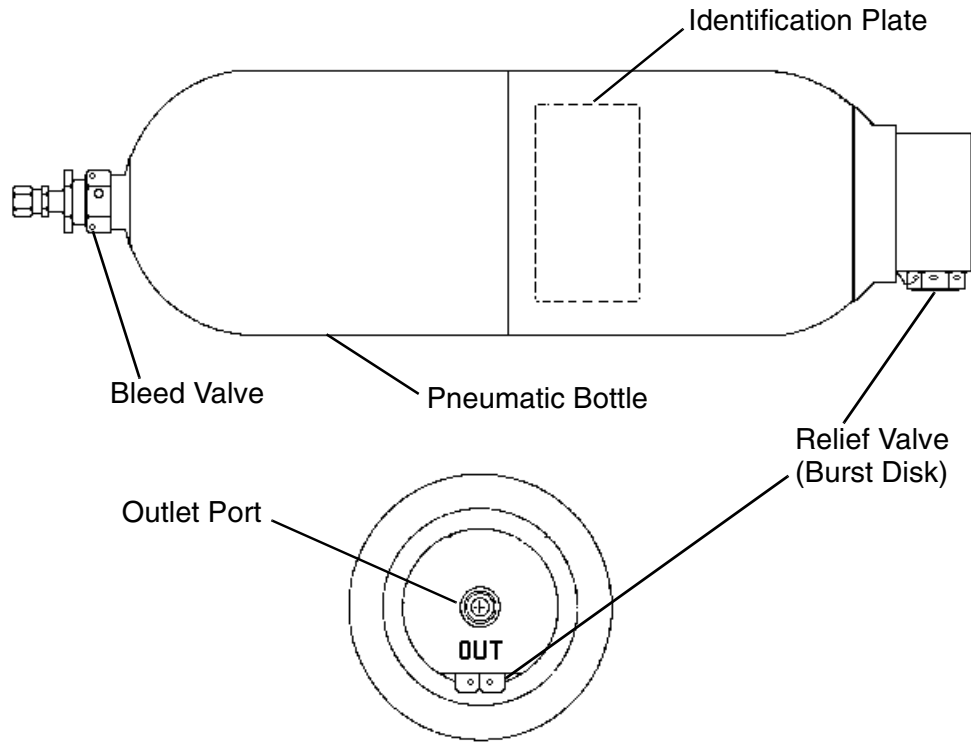


Figure 3. Primary Components for Part Number 40005337-1

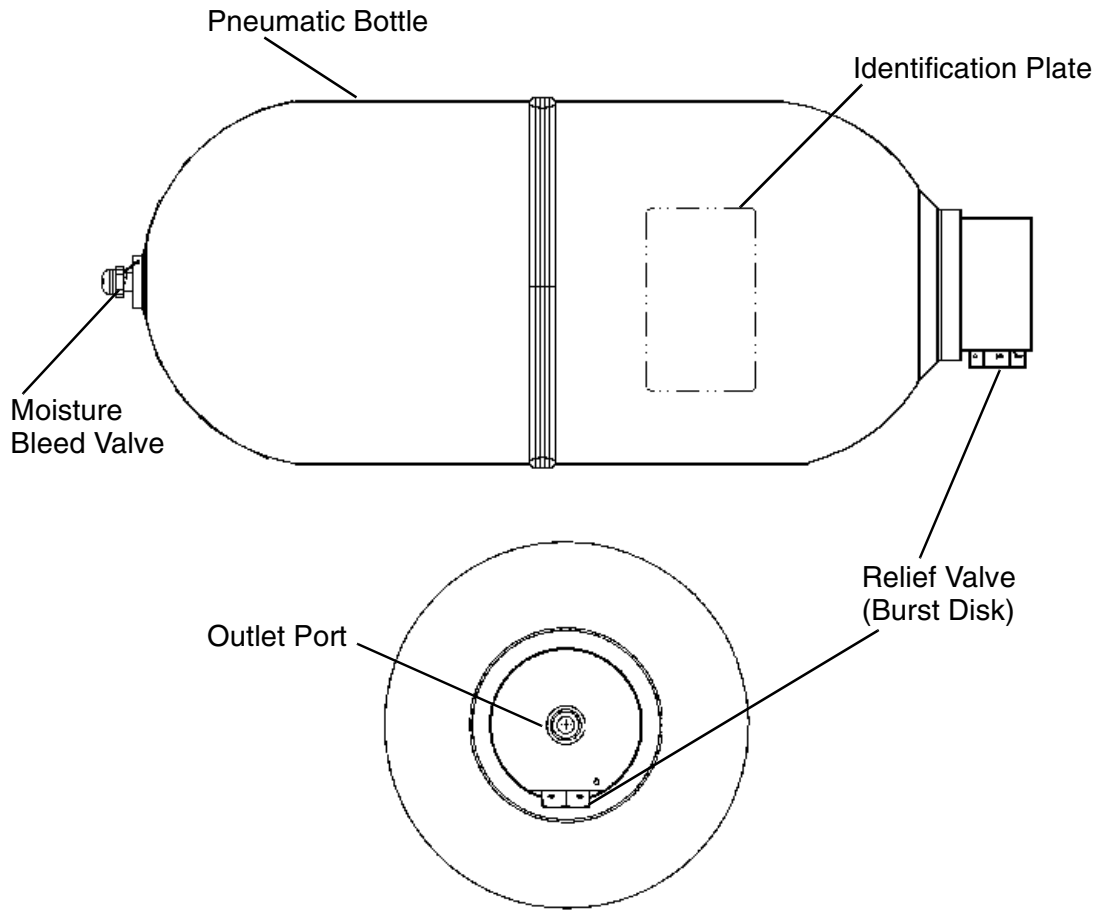
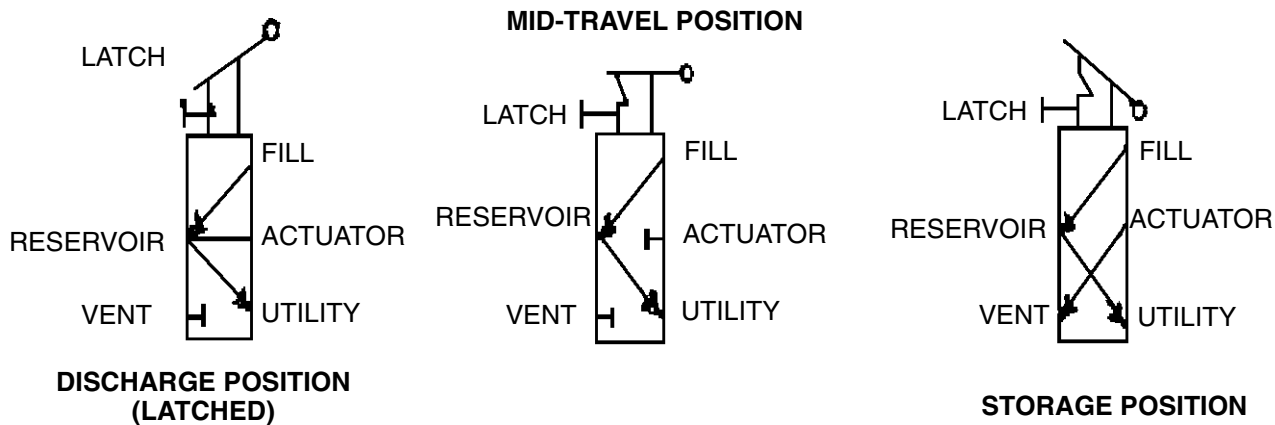


Figure 4. Primary Components for Part Number 40005355-1 and 40005370-1

**PART NUMBER 212940-2 AND 40005320-2**



**PART NUMBERS 40005338-5, 40005347-3, AND 40005369-1**

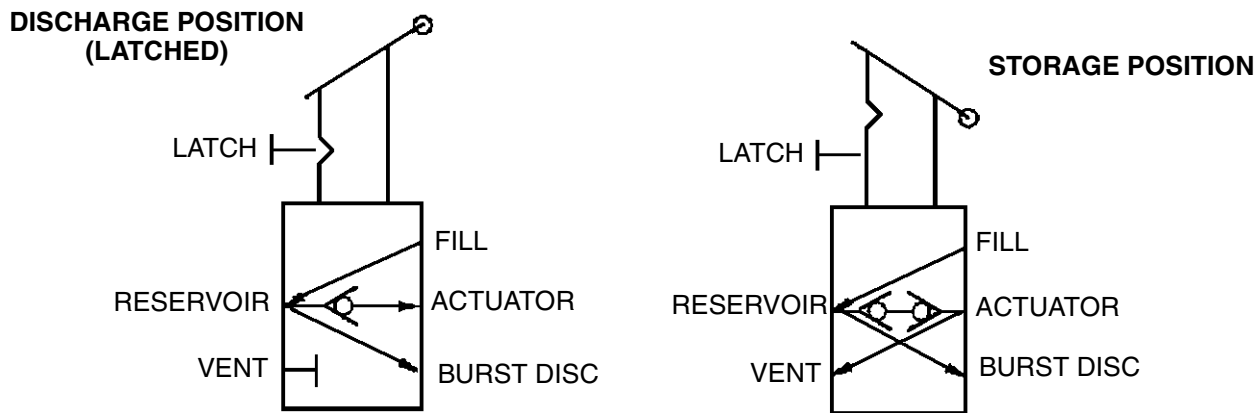


Figure 5. Valve Positions

#### 4. Technical Properties

- A. The technical properties of the Pneumatic Bottles are given in Table 1, Table 2, Table 3, Table 4, Table 5, Table 6, and Table 7.

Table 1. Technical Properties for Part Numbers 212940-2 and 40005320-2

Property	Specifications
Description Manufacturer Part Numbers Nomenclature	Pacific Scientific, HTL/Kin-Tech Division P/N 212940-2 and P/N 40005320-2 Storage and Control Pneumatic System
Container Assembly Volume Operating Pressure Proof Pressure Burst Pressure	90 to 100 Cubic Inch (1,47 to 1,64 liters) 2290 psig (15790 kPag) 4580 psig (31578 kPag) 6870 psig (47367 kPag)
Pressure Gauge Accuracy Full Scale	±3% at 2000 psig (13790 kPag)
Pressure Gauge Narrow Red Band Wide Yellow Band Wide Green Band Wide Red Band	0 to 1600 psig (0 to 11032 kPag) 1600 to 1800 psig (11032 to 12411 kPag) 1500 to 2050 psig (10342 to 14132 kPag) Beyond 2050 psig (14132 kPag)
Relief Valve Rupture Pressure	3750 to 4250 psig (25855 to 29303 kPag)
Flow Rate Actuator to Vent Port	1.8 gpm at 100 psid
Empty Weight	6.00 pounds (2,72 kg) maximum
Handle Torque at 2000 psig (13790 kPag)	20 inch-pounds (2,26 N•m) maximum
Service Media	Dry air or nitrogen
Ambient Temperature	-65°F to 160°F (-54°C to 71°C)
Discharge Indicator	Red glass
Fill Connection	MS28889-1
Utility Port	MS33649-4
Vent Port	MS33649-4
Moisture Bleed Valve	AN6204-1

Table 2. Technical Properties for Part Number 40005337-1

Property	Specifications
Description Manufacturer Part Number Nomenclature	Pacific Scientific, HTL/Kin-Tech Division P/N 40005337-1 Emergency Pneumatic System
Container Assembly Volume Operating Pressure Proof Pressure Burst Pressure	90 to 100 Cubic Inch (1,47 to 1,64 liters) 2290 psig (15790 kPag) 4580 psig (31578 kPag) 3750 to 4250 psig (25855 to 29303 kPag)
Empty Weight	4.60 pounds (2,09 kg) maximum
Service Media	Dry air or nitrogen
Ambient Temperature	-65°F to 160°F (-54°C to 71°C)
Discharge Indicator	Red glass
Fill Port	MS33649-04
Outlet Port	MS33649-04
Bleed Valve	MS28889-02

Table 3. Technical Properties for Part Number 40005338-5

Property	Specifications
Description Manufacturer Part Number Nomenclature	Pacific Scientific, HTL/Kin-Tech Division P/N 40005338-5 Emergency Pneumatic System
Container Assembly Volume Operating Pressure Proof Pressure Burst Pressure	60 to 70 Cubic Inch (0,99 to 1,15 liters) 2000 psig (13790 kPag) 4800 psig (33085 kPag) 3750 to 4250 psig (25855 to 29303 kPag)
Empty Weight	4.44 pounds (2,01 kg) maximum
Handle Torque at 2000 psig (13790 kPag)	22 inch-pounds (2,49 N•m) maximum
Service Media	Dry air or nitrogen
Ambient Temperature	-65°F to 160°F (-54°C to 71°C)
Discharge Indicator	Red glass
Fill Port	MS33649-04
Actuator Port	MS33649-04
Vent Port	MS33649-04
Bleed Valve	MS28889-2

Table 4. Technical Properties for Part Number 40005347-3

Property	Specifications
Description Manufacturer Part Number Nomenclature	Pacific Scientific, HTL/Kin-Tech Division P/N 40005347-3 Emergency Pneumatic System
Container Assembly Volume Operating Pressure Proof Pressure Burst Pressure	100 to 110 Cubic Inch (1,64 to 1,80 liters) 2000 psig (13790 kPag) 4800 psig (33085 kPag) 3750 to 4250 psig (25855 to 29303 kPag)
Empty Weight	5.7 pounds (2,59 kg) maximum
Handle Torque at 2000 psig (13790 kPag)	5 to 22 inch-pounds (0,56 to 2,49 N•m) maximum
Service Media	Dry air or nitrogen
Ambient Temperature	-65°F to 160°F (-54°C to 71°C)
Discharge Indicator	Red glass
Fill Port	MS33649-04
Actuator Port	MS33649-04
Vent Port	MS33649-04
Bleed Valve	MS28889-2

Table 5. Technical Properties for Part Number 40005355-1

Property	Specifications
Description Manufacturer Part Number Nomenclature	Pacific Scientific, HTL/Kin-Tech Division P/N 40005355-1 Emergency Pneumatic System
Container Assembly Volume Operating Pressure Proof Pressure Burst Pressure	185 to 195 Cubic Inch (3,03 to 3,20 liters) 2000 psig (13790 kPag) 4800 psig (33085 kPag) 3750 to 4250 psig (25855 to 29303 kPag)
Empty Weight	9.25 pounds (4,20 kg) maximum
Service Media	Dry air or nitrogen
Ambient Temperature	-65°F to 160°F (-54°C to 71°C)
Discharge Indicator	Red glass
Inlet/Outlet Port	MS33649-04
Bleed Valve	AN6204-1

Table 6. Technical Properties for Part Number 40005369-1

Property	Specifications
Description	
Manufacturer	Pacific Scientific, HTL/Kin-Tech Division
Part Number	P/N 40005369-1
Nomenclature	Emergency Pneumatic System
Container Assembly	
Volume	60 to 70 Cubic Inch (0,99 to 1,15 liters)
Operating Pressure	2000 psig (13790 kPag)
Proof Pressure	4800 psig (33085 kPag)
Burst Pressure	3750 to 4250 psig (25855 to 29303 kPag)
Empty Weight	4.44 pounds (2,01 kg) maximum
Handle Torque at 2000 psig (13790 kPag)	5 to 22 inch-pounds (0,56 to 2,49 N•m)
Service Media	Dry air or nitrogen
Ambient Temperature	-65°F to 160°F (-54°C to 71°C)
Discharge Indicator	Foil Covered
Adapter	AS4099-04
Bleed Valve	MS28889-2

Table 7. Technical Properties for Part Number 40005370-1

Property	Specifications
Description	
Manufacturer	Pacific Scientific, HTL/Kin-Tech Division
Part Number	P/N 40005370-1
Nomenclature	Emergency Pneumatic System
Container Assembly	
Volume	185 to 195 Cubic Inch (3,03 to 3,20 liters)
Operating Pressure	2000 psig (13790 kPag)
Proof Pressure	4800 psig (33085 kPag)
Burst Pressure	3750 to 4250 psig (25855 to 29303 kPag)
Empty Weight	7.90 pounds (3,58 kg) maximum
Service Media	Dry air or nitrogen
Ambient Temperature	-65°F to 160°F (-54°C to 71°C)
Discharge Indicator	Foil Covered
Adapter	AS4099-04
Bleed Valve	AN6204-1

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## TESTING AND FAULT ISOLATION

### 1. General

- A. This section contains the testing procedures.
- B. There are no fault isolation procedures for the Pneumatic Bottles.
- C. The recommended test equipment and materials are given in Table 101.

**NOTE:** Equivalent items can be used.

Table 101. Test Equipment and Materials

Nomenclature	Part or Specification Number	Source
Hydrotest Test Stand	---	Commercially available
Leak Detector	---	Commercially available
Nitrogen Gas Supply	3000 psig (20685 kPag) minimum	Commercially available

### 2. Hydrostatic Test

**REQUIREMENT:** THE PNEUMATIC BOTTLES REQUIRE DOT HYDROSTATIC TESTING EVERY 3 YEARS. UNIT VALVES MUST BE OVERHAULED AT THE TIME OF THE HYDROSTATIC TEST.

- A. Please consult all governing agencies regulations, (FAA, CAA, JAA, DOT), airframe manufacturers, and Pacific Scientific specifications regarding the interval for unit recertification. It is the responsibility of the owner/operators of this equipment to have absolute understanding of all regulations. This equipment is subject to different rules when installed on an airframe versus being commercially transported.

### 3. Pneumatic Bottle Test

- A. Check the bottle for dents, scratches deeper than 0.006 inch or longer than 2 inches. If the bottle does not pass this test, reject the bottle.
- B. Fill the Pneumatic Bottle with water.
- C. Thread a high strength steel fitting into the boss.
- D. Connect a high pressure line to the steel fitting.
- E. Place the Pneumatic Bottle in the hydrostatic test stand (Table 101) and submerge in water and close the test stand cover.
- F. Adjust the water level in the burette to zero.
- G. Pressurize the Pneumatic Bottle (see Table 1, Table 2, Table 3, Table 4, Table 5, Table 6, and Table 7). Maintain this pressure for 30 seconds, or until burette water level stops rising to obtain maximum unit expansion.

**REQUIREMENT:** THE PERMANENT VOLUMETRIC EXPANSION SHALL NOT EXCEED 10% OF THE TOTAL VOLUMETRIC EXPANSION FOLLOWING A HYDROSTATIC TEST PRESSURIZATION OF 4300 PSIG (29649 KPAG).

- H. Adjust burette to bring water level to the reference mark. Read and record total expansion.
- I. Release inter pressure from the Pneumatic Bottle.
- J. Adjust burette to bring water level to the reference mark. Read and record permanent expansion.

#### **4. Inspection**

- A. Inspect the o-ring for damage and lubrication.
- B. Inspect the threads for damage.
- C. Inspect the valve assembly for completion.

#### **5. Leak Test**

**NOTE:** Other leak test methods may be used with the approval of Pacific Scientific Aftermarket Services.

- A. Charge the Pneumatic Bottle with dry nitrogen or air (see Table 1, Table 2, Table 3, Table 4, Table 5, Table 6, and Table 7) .
- B. Follow the manufacturer's manual to set up the leak detector (Table 101).
- C. Set the leak detector range at  $1 \times 10^{-3}$  standard cubic centimeter per second.
- D. Using the probe, sniff all welds, joints and surface areas.

RETURN FAILED PNEUMATIC BOTTLE  
FOR REPAIR TO:

PACIFIC SCIENTIFIC COMPANY  
11700 N.W. 102ND ROAD SUITE 6  
MIAMI, FLORIDA 33178 U.S.A.

## **DISASSEMBLY**

### **1. General**

- A. No field disassembly is possible. Return failed Pneumatic Bottle for analysis and repair to:

PACIFIC SCIENTIFIC COMPANY  
11700 N.W. 102ND ROAD SUITE 6  
MIAMI, FLORIDA 33178 U.S.A.

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## CLEANING

### 1. Cleaning Materials

A. The recommended cleaning materials are given in Table 401.

**NOTE:** Equivalent items can be used.

Table 401. Cleaning Materials

Nomenclature	Part or Specification Number	Source
Alcohol, Isopropyl	---	Commercially available
Brush, Soft-bristle	---	Commercially available
Tissues, Lint-free	---	Commercially available

### 2. General

A. This section contains instructions for cleaning the metal component parts externally.

### 3. Cleaning Procedure

**WARNING:** ISOPROPYL ALCOHOL IS FLAMMABLE AND AN IRRITANT TO THE EYES AND NOSE. USE ISOPROPYL ALCOHOL ONLY IN A WELL VENTILATED AREA AWAY FROM OPEN FLAMES. IF EYES BECOME IRRITATED, FLUSH THEM WITH WATER.

**CAUTION:** THE INLET FITTING AND OUTLET FITTING MUST BE CAPPED DURING CLEANING.

- A. Use isopropyl alcohol (Table 401) and clean all the metal component parts externally. If necessary, use a soft bristle brush (Table 401) to clean in areas difficult to reach. Dry parts using clean dry compressed air 5 to 10 psig (34 to 69 kPag).
- B. Clean all nonmetallic parts by wiping surface with lint-free tissue moistened (Table 401) with isopropyl alcohol (Table 401).

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## **CHECK**

### **1. General**

- A. Refer to the Testing and Fault Isolation section for all testing procedures.

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## **REPAIR**

### **1. General**

A. No field repair is possible. Return failed Pneumatic Bottle for analysis and repair to:

PACIFIC SCIENTIFIC COMPANY  
11700 N.W. 102ND ROAD SUITE 6  
MIAMI, FLORIDA 33178 U.S.A.

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## ASSEMBLY (INCLUDING STORAGE)

### 1. Assembly

A. Not applicable.

### 2. Storage

A. The recommended storage materials are given in Table 701.

**NOTE:** Equivalent items can be used.

Table 701. Storage Materials

Nomenclature	Part or Specification Number	Source
Cardboard Container	12 inch x 12 inch x 12 inch (30 cm x 30 cm x 30 cm)	Commercially available
Packing Material	---	Commercially available
Plastic Bag	18 inch x 12 inch (45 cm x 30 cm)	Commercially available

B. Insert the Pneumatic Bottle into a plastic bag (Table 701) and seal closed.

C. Put the Pneumatic Bottle in a cardboard container (Table 701). Fill the cardboard container with packing material (Table 701) as needed to prevent damage and seal.

D. Write the Pneumatic Bottle part number and the date of maintenance on the cardboard container.

E. Storage temperatures are +40°F to +100°F (+4°C to +38°C).

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## FITS AND CLEARANCES

### 1. Torque Values

A. Torque values for the actuation of the control valve are given in Table 801.

Table 801. Torque Limits

Part Number	Nomenclature	Torque Values
212940-2	Control Valve	20 inch-pounds (2,26 N•m)
40005320-2	Control Valve	20 inch-pounds (2,26 N•m)
40005338-5	Control Valve	22 inch-pounds (2,49 N•m)
40005347-3	Control Valve	5 to 22 inch-pounds (0,56 to 2,49 N•m)
40005369-1	Control Valve	5 to 22 inch-pounds (0,56 to 2,49 N•m)

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## **SPECIAL TOOLS, FIXTURES, AND TEST EQUIPMENT**

### **1. General**

- A. The special tools, fixtures, and test equipment recommended for maintenance of the Pneumatic Bottle are given in Table 901.

**NOTE:** Equivalent items can be used.

Table 901. Special Tools, Fixtures, and Equipment

Nomenclature	Part or Specification Number	Source
Hydrotest Test Stand	---	Commercially available
Leak Detector	---	Commercially available
Nitrogen Gas Supply	3000 psig (20685 kPag) minimum	Commercially available

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## ILLUSTRATED PARTS LIST

### 1. Introduction

#### A. Purpose

(1) This IPL illustrates and lists the spare parts with attaching hardware.

#### B. Guide to use of the IPL

(1) If the part number is not known:

- (a) Find the part in the illustration for the IPL Figure.
- (b) Note the item number assigned to the part.
- (c) Refer to the parts list and find the item number in the **Fig & Item** column.

(2) If the part number is known:

- (a) Refer to the numerical index or parts list and find the part in the **Part Number** column.
- (b) Note the figure number and item number assigned to the part.
- (c) Refer to the illustration to find attaching hardware and related assembly parts.

### 2. Manufacturer Names and Address

A. The CAGE codes for the manufacturers of the parts, materials, special tools, and test equipment which may be referenced in this CMM are given below. The codes are taken from Cataloging Handbook H4/H8. The absence of a code in the **Nomenclature** column of the Detail Parts List means the part is manufactured or modified by the HTL/Kin-Tech Division of Pacific Scientific Company. Manufacturers Names and Address

<u>Code</u>	<u>Name and Address</u>
05167	Pacific Scientific Company HTL/Kin-Tech Division 1800 Highland Avenue Duarte, California 91010 U.S.A. Telephone: (626) 359-9317 FAX: (626) 359-7013 SITA: LAXPSCR

B. Explanation of Numerical Index Entries

C. The Numerical Index is provided to help find parts in the Detail Parts List by part number. The figure number, item number, and total quantity required are given for each entry.

D. The part numbers are arranged from left to right, one character at a time. The order of precedence is: (1) dash, (2) letter A through Z, and (3) numerals 0 through 9.

### 3. Explanation of Detail Parts List Entries

A. The Detail Parts List is arranged in general sequence of disassembly. The parts are illustrated in an exploded-view illustration and listed in the related parts list.

#### (1) Fig & Item Column

- (a) The first number at the top of each **Fig & Item** column is the figure number of the corresponding illustration. The number given opposite each part number is the item number assigned to the part in the illustration.
- (b) A dash (-) in front of an item number means the part is not illustrated.
- (c) Alpha-variants A through Z (except I and O) are assigned to item numbers, when necessary to identify:
  - Added parts
  - Alternate parts
  - Service bulletin modified parts

#### (2) Part Number Column

- (a) This column contains the manufacturer's part number for each part, as modified to meet the requirements of ATA 200/2000. These modifications can include:
  - 1 Removal of blank spaces and special characters, with the possible exception of dashes. Dashes are permitted only between numeric characters.
  - 2 Insertion of a reference part number compatible with ATA 200/2000 if the manufacturer's part number exceeds 15 characters. In these cases, the manufacturer's part number is given in the **Nomenclature** column.

#### (3) Nomenclature Column

- (a) This column contains descriptive nomenclature for each part, the manufacturer's CAGE code (if the part is not manufactured by Pacific Scientific Company, HTL/Kin-Tech Division), part number (if longer than 15 characters or modified per ATA 200/2000), service bulletins affecting the part, and obsolete part numbers.
- (b) The indenture system used in the **Nomenclature** column indicates the relationship of one part to another, as follows:

```

1 2 3
End Item or Major Assembly
ATTACHING PARTS
Attaching Parts for End Item or Major Assembly
* * *

. Detail Parts for End Item or Major Assembly
. Subassemblies
ATTACHING PARTS
. Attaching Parts for Subassemblies
* * *

. . Detail Parts for Subassemblies
ATTACHING PARTS
. . Attaching Parts for Detail Parts
* * *
```

- (c) Assemblies, subassemblies, and detail parts subject to modification, deletion, addition, or replacement by an issued service bulletin, are annotated to indicate both pre- and post-service bulletin configurations. The term (PRE SB XXXX) in the **Nomenclature** column designates the original configuration, and the term (POST SB XXXX) identifies assemblies and parts after the modification has been completed.
- (d) The terms defined below are used when applicable to indicate the interchangeability of parts.

Term	Abbreviation	Definition
Alternate	ALT	The listed part is alternate to, and interchangeable with, other parts within the same item number variant group or other item numbers if designated.
Superseded By	SUPSD BY	The part is replaced by and is not interchangeable with the item number designated in the notation.
Supersedes	SUPSDS	The part replaces and is not interchangeable with the item number designated in the notation.
Replaced By	REPLD BY	The part is replaced by and is interchangeable with the item number designated in the notation.
Replaces	REPLS	The part replaces and is interchangeable with the item number designated in the notation.

(4) **Eff Code** (Effectivity Code) Column

- (a) This column contains effectivity codes (A, B, etc) to indicate the alternate models or configurations of the end item to which the parts apply. This column is left blank when the parts apply to all models or configurations, included in the parts list.

(5) **UPA** (Units Per Assembly) Column

- (a) The quantity shown in this column represents the units required for one NHA or, when referring to attaching parts, the quantity to attach one such item. The abbreviation RF (reference) indicates that the end item assembly is listed for reference purposes.

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#### 4. Numerical Index

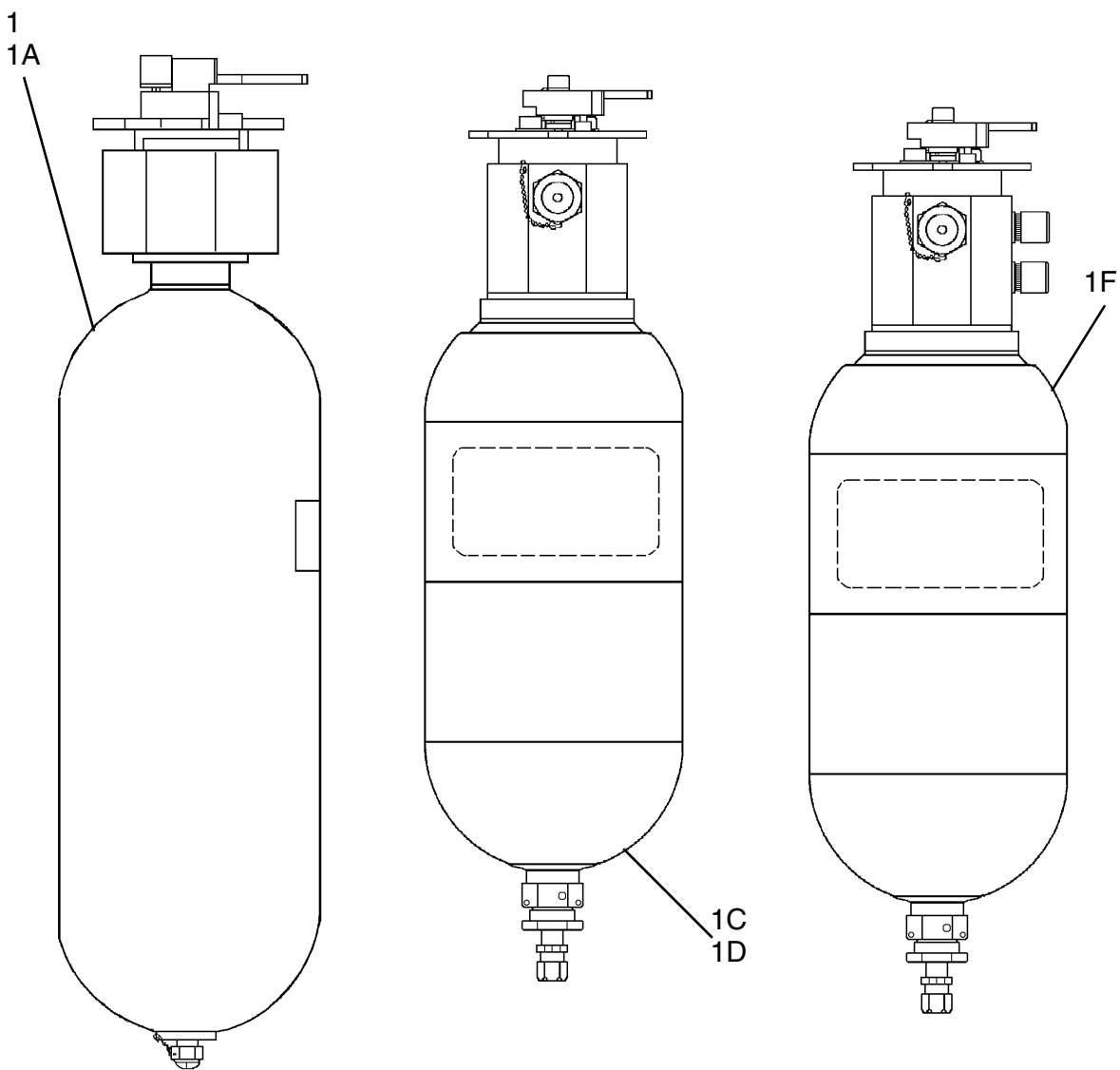
Part Number	Airline Part Number	Fig - Item	Total Req.	Part Number	Airline Part Number	Fig - Item	Total Req.
13519		1 - 10	1	40005338-5		1 - 1C	RF
18225901		1 - 5	1	40005347-3		1 - 1D	RF
212940-2		1 - 1	RF	40005355-1		1 - 1E	RF
40005320-2		1 - 1A	RF	40005369-3		1 - 1G	RF
40005337-1		1 - 1B	RF	40005370-1		1 - 1H	RF

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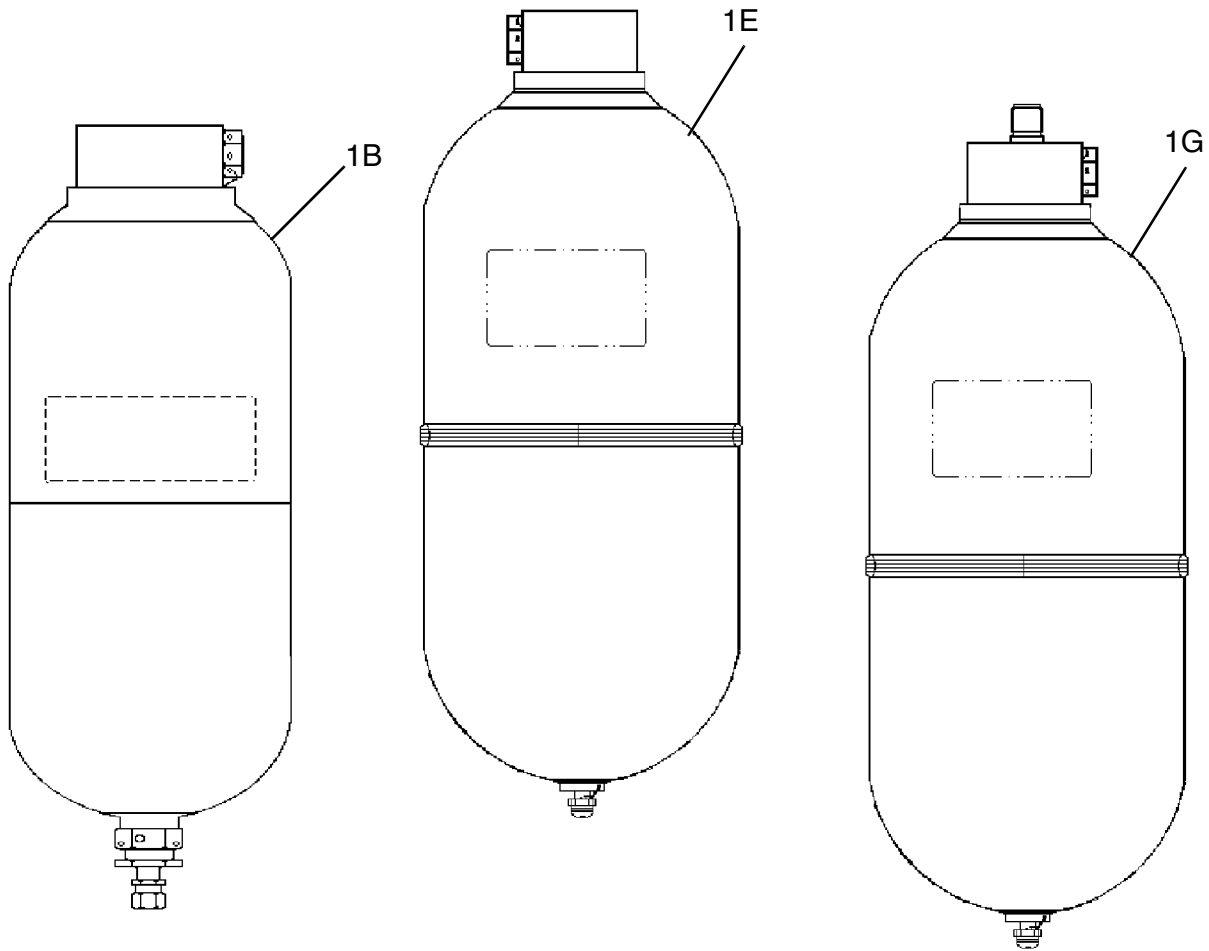
## 5. Detailed Parts List

**NOTE:** The items in this list are made or supplied by the HTL/Kin-Tech Division of Pacific Scientific, or by the suppliers shown in this list. Pacific Scientific does not give approval for items that are procured from suppliers who are not shown in this list. Approval from Pacific Scientific is not necessary for government and industry standard parts.

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IPL Figure 1 (Sheet 1 of 2). Pneumatic Bottles



IPL Figure 1 (Sheet 2 of 2). Pneumatic Bottles

Fig &	Item	Part Number	Airline Part Number	1234567Nomenclature	Eff Code	UPA
1	1	212940-2		PNEUMATIC STORAGE AND CONTROL SYSTEM	A	RF
	1A	40005320-2		PNEUMATIC STORAGE AND CONTROL SYSTEM	B	RF
	1B	40005337-1		EMERGENCY PNEUMATIC BOTTLE ASSEMBLY SYSTEM	C	RF
	1C	40005338-5		EMERGENCY PNEUMATIC BOTTLE ASSEMBLY SYSTEM	D	RF
	1D	40005347-3		EMERGENCY PNEUMATIC BOTTLE RESERVOIR SYSTEM	E	RF
	1E	40005355-1		EMERGENCY PNEUMATIC BOTTLE RESERVOIR SYSTEM	F	RF
	1F	40005369-1		EMERGENCY PNEUMATIC BOTTLE RESERVOIR SYSTEM	G	RF
	1G	40005370-1		EMERGENCY PNEUMATIC BOTTLE RESERVOIR SYSTEM	H	RF
	- 5	18225901		. PRESSURE GAUGE (FOR REFERENCE ONLY, ORDER NHA ITEM 1 OR -1A)	A,B	1
	- 10	13519		. RED GLASS DISCHARGE INDICATOR (FOR REFERENCE ONLY, ORDER NHA ITEM 1. -1A, -1B, -1C, -1D, OR -1E)	A-F	1
- ITEM NOT ILLUSTRATED						

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