



**MASS SYSTEMS
A UNIT OF AMERON GLOBAL, INC.
COMPONENT MAINTENANCE MANUAL**

**TO: HOLDERS OF THE TEMPERATURE COMPENSATED PRESSURE SWITCH
(TCPS) COMPONENT MAINTENANCE MANUAL 26-22-04, DATED JAN 15/08.**

REVISION NO. 1 DATED AUG 28/08

HIGHLIGHTS

THIS PUBLICATION HAS BEEN REPRINTED IN ITS ENTIRETY. REPLACE ALL PREVIOUSLY ISSUED COPIES OF THE COMPONENT MAINTENANCE MANUAL.

The highlights of the revision are outlined below. The pages have been revised and maintain the format of ATA 100 and the AECMA Simplified English guidelines.

Chapter/Section and Page No.	Description of Change	Effectivity
Title Page	Added revision date and additional part numbers.	All models
Page RR-1	Added revision status and revision date	All models
Page LEP-1	Added revision date. Revised affected page dates.	All models
Page T/C-1/T/C-2	Added revision dates, Figure 4 and Table 105, 106, 107, 108, 109, 110, 111.	All models
Page 1	Added TCPS part number lists Added “and 4”, “105, 106, 107, 108, 109, 110 or 111”	All models
Page 2	Updated Figure 1	All models
Page 3	Updated Figure 2 & 3	All models
Page 4	Added Figure 4	All models
Page 5	Updated Table 1 and added additional part numbers	All models
Page 104	Added “105, 106, 107, 108, 109, 110, or 111”	All models
Page 109 thru 115	Added Table 105, 106, 107, 108, 109, 110, and 111	All models
Page 702	Added “105, 106, 107, 108, 109, 110, or 111”	All models



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**REMOVAL, INSTALLATION, AND TEST OF
TEMPERATURE COMPENSATED
PRESSURE SWITCH**

M35071509	M35071531	M35071533	M35071477	M35071498	M35071498-1
M35071499	M35071499-1	M35071500	M35071500-4	M35071500-8	M35071500-15
M35071503	M35071512	M35071512-2	M35071512-3	M35071513	M35071514
M35071516	M35071517	M35071518	M35071518-1	M35071518-2	M35071519
M35071520	M35071534	M35071549	M35071552-2	M35071574	-

**ABBREVIATED COMPONENT MAINTENANCE MANUAL
USE WITH FIRE EXTINGUISHER MANUFACTURER'S
COMPONENT MAINTENANCE MANUAL**

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**PAGE T-1
JAN 15/08
Revised AUG 28/08**



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PMA PARTS NOTICE

MASS Systems, A Unit of Ameron Global, Inc. recommends that this component part be used in the repair and overhaul of the fire extinguisher. This is an FAA-PMA component part that has formal after market authority by design computation and test. This FAA-PMA Component part is superior in design, and DOES NOT require removal from the fire extinguisher for periodic hydrostatic testing.



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ORI	JAN 15/08	JAN 15/08	ER
1	AUG 28/08	AUG 28/08	SB

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INTRODUCTION

SCOPE

This Abbreviated Component Maintenance Manual covers testing, disassembly, cleaning, check, and assembly procedures for the Temperature Compensated Pressure Switch (TCPS) manufactured by MASS Systems, A Unit of Ameron Global, Inc.

MANUFACTURING ENTITY & PRODUCT SUPPORT

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4601 Littlejohn Street	
Baldwin Park, California 91706	CAGE Code: 0FRR4
U.S.A.	

In addition to our factory Product Support, Overhaul and Recharge stations are available worldwide.

USE MANUAL WITH THE FIRE EXTINGUISHER MANUFACTURER'S MANUAL

This Abbreviated Component Maintenance Manual is written to cover test, removal, and installation of the MASS Systems, A Unit of Ameron Global, Inc. Temperature Compensated Pressure Switch (TCPS).

REVISION SERVICE

Revised pages will be issued when necessary throughout the service life of the Temperature Compensated Pressure Switch (TCPS). The revised part of the page will be identified with a change bar or capital **R** in the left margin.



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ABBREVIATIONS AND UNIT SYMBOLS

Abbreviations and unit symbols used in this manual are defined below.

Assy.	Assembly	Min	Minimum
ATA	Air Transport Association	mm	Millimeter (1 mm = 0.0394-inch)
CAA	Civil Aviation Authority	M ³ /hr	Cubic meter per hour
CAGE	Commercial and Government Entity	N.C.	Normally Closed
cfh	Cubic feet per hour	N·m	Newton-meter (1 N·m = 8.3 inch-pound)
CFR	Code of Federal Regulations	N.O.	Normally Open
cm	Centimeter (1 cm = 0.394-inch)	No.	Number
DOT	Department of Transportation	OD	Outside Diameter
FAA	Federal Aviation Administration	Ohm	Ohmmeter
GN ₂	Nitrogen Gas	Psig	Pounds per square inch-gauge
ID	Inside Diameter	Rev.	Revision
IPL	Illustrated Parts List	RJA	Regional Jet Association
JAA	Joint Aviation Authorities	rpm	Revolutions per minute
kg	Kilogram (1 kg = 2.205-pounds)	SB	Service Bulletin
kPag	Kilo Pascal-gauge (1 kPag = 0.15-psig)	TCPS	Temperature Compensated Pressure Switch
MA	Milliampere	Temp	Temperature
Max	Maximum	VDC	Voltage-Direct Current



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DESCRIPTION AND OPERATION

PURPOSE

The Temperature Compensated Pressure Switch (TCPS) P/N M35071XXX series are manufactured by MASS Systems, A Unit of Ameron Global, Inc. is an FAA – PMA approved (by test and computation) replacement part for Pacific Scientific Company’s Temperature Compensated Pressure Switch, see list below.

MASS Systems TCPS P/N	Pacific Scientific TCPS P/N	MASS Systems TCPS P/N	Pacific Scientific TCPS P/N
M35071477	35071477	M35071514	35071514
M35071498	35071498	M35071516	35071516
M35071498-1	35071498-1	M35071517	35071517
M35071499	35071499	M35071518	35071518
M35071499-1	35071499-1	M35071518-1	35071518-1
M35071500	35071500	M35071518-2	35071518-2
M35071500-4	35071500-4	M35071519	35071519
M35071500-8	35071500-8	M35071520	35071520
M35071500-15	35071500-15	M35071531	35071531
M35071503	35071503	M35071534	35071534
M35071509	35071509	M35071533	M35071533
M35071512	35071512	M35071549	35071549
M35071512-2	35071512-2	M35071552-2	35071552-2
M35071512-3	35071512-3	M35071574	35071574
M35071513	35071513	-	-

See Figures 1, 2, 3 and 4 for the Temperature Compensated Pressure Switch (TCPS) configurations. Refer to Table 1 for the Technical Properties of the Temperature Compensated Pressure Switch (TCPS).

HYDROSTATIC TEST OF CONTAINER WELDMENT

Removal of the MASS Systems Temperature Compensated Pressure Switch (TCPS) for hydrostatic pressure test is **not** required. The MASS Systems Temperature Compensated Pressure Switch (TCPS) can remain installed in the container weldment for the life of the container weldment.

TEST PARAMETERS

Refer to the Testing and Fault Isolation section of this manual, Table 102, 103, 104, 105, 106, 107, 108, 109, 110 or 111 for the temperature versus pressure requirements of the Temperature Compensated Pressure Switch (TCPS), as applicable.



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REMOVAL PROCEDURE

PACIFIC SCIENTIFIC COMPANY'S TEMPERATURE COMPENSATED PRESSURE SWITCH (TCPS)

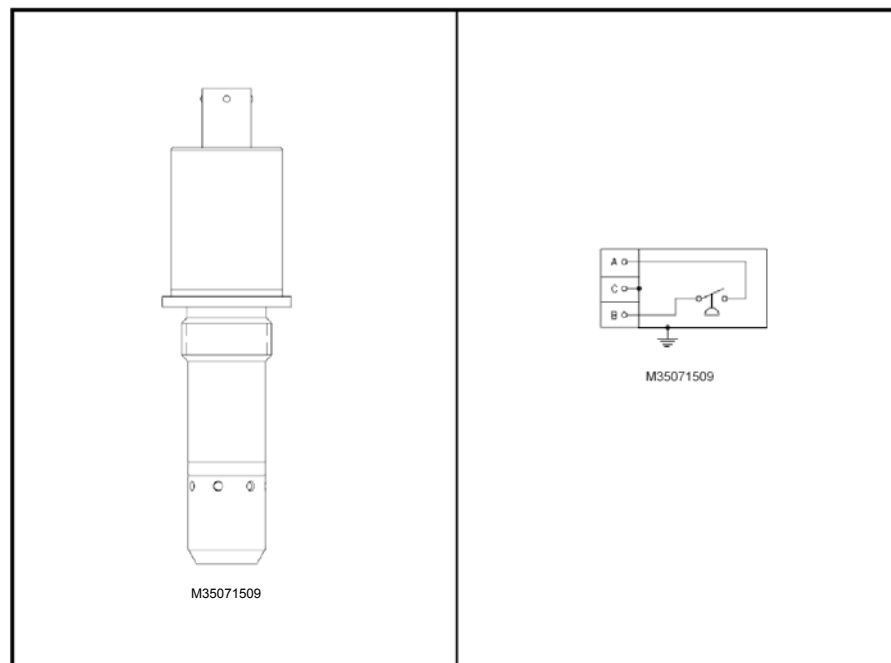
For the disassembly procedure of the Temperature Compensated Pressure Switch (TCPS) manufactured by Pacific Scientific Company, refer to the applicable Pacific Scientific Company fire extinguisher manual.

MASS SYSTEMS TEMPERATURE COMPENSATED PRESSURE SWITCH (TCPS)

If removal of the Temperature Compensated Pressure Switch (TCPS) manufactured by MASS Systems is required, refer to the Disassembly section of this manual.

INSTALLATION PROCEDURE

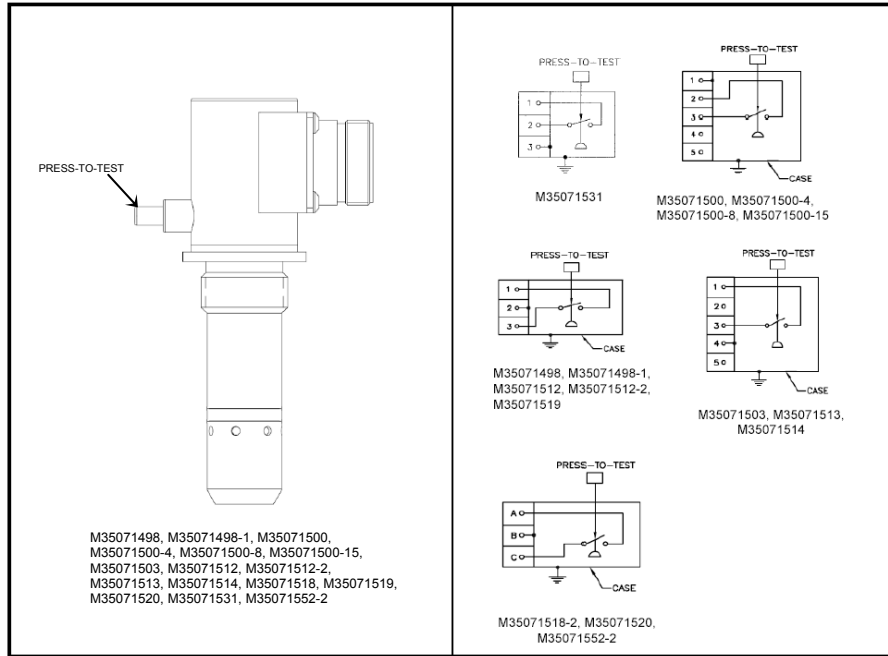
For the assembly procedure of the MASS Systems Temperature Compensated Pressure Switch (TCPS) and the welding schedule, refer to the Assembly section of this manual.



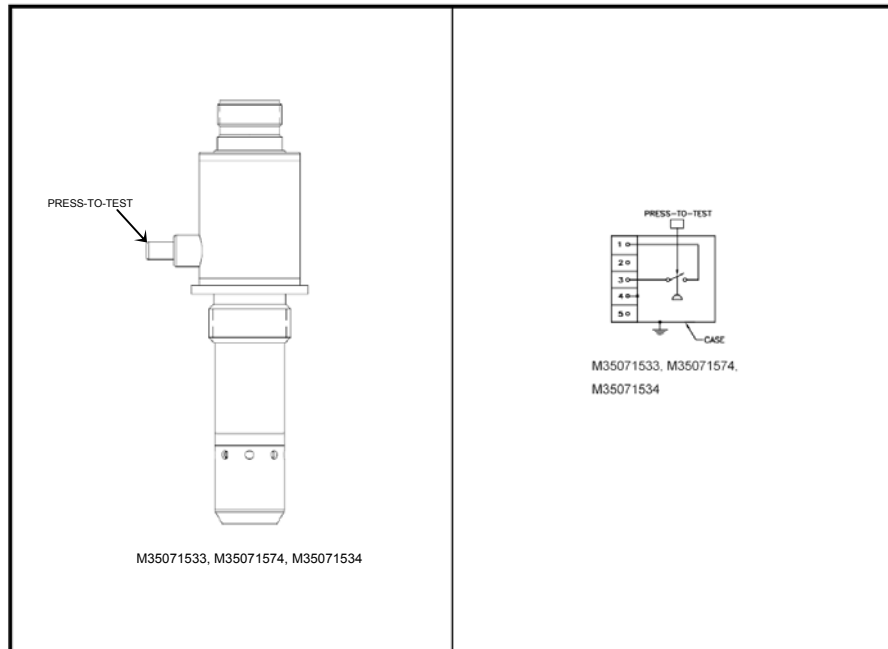
**Temperature Compensated Pressure Switch (TCPS)
Figure 1**



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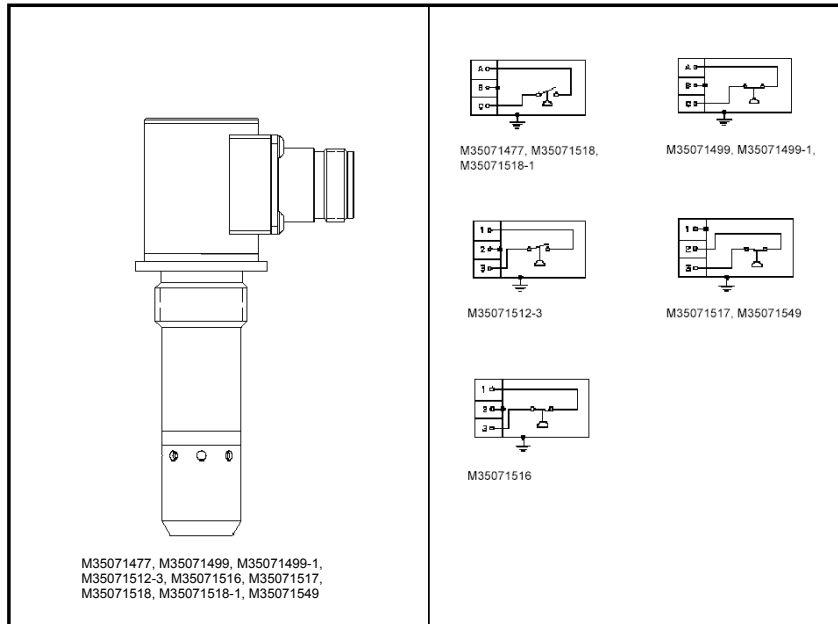
Temperature Compensated Pressure Switch (TCPS)
Figure 2



Temperature Compensated Pressure Switch (TCPS)
Figure 3



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Temperature Compensated Pressure Switch (TCPS)

Figure 4



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TECHNICAL PROPERTIES
Table 1

PROPERTY	SPECIFICATION
Description Part Number Nomenclature	M35071509, M35071531, M35071533, M35071477, M35071498, M35071498-1, M35071499, M35071499-1, M35071500, M35071500-4, M35071500-8, M35071500-15, M35071503, M35071512, M35071512-2, M35071512-3, M35071513, M35071514, M35071516, M35071517, M35071518, M35071518-1, M35071518-2, M35071519, M35071520, M35071534, M35071519, M35071552-2, M35071574 Temperature Compensated Pressure Switch (TCPS)
Temperature Compensated Pressure Switch (TCPS) P/N M35071509 Data Switch Condition – Pressurized Actuates Closed - Decreasing Pressure Connector Pins Electrical Connector, Mates With Temperature Range	Open Refer to Table 102 A to B MS3476L8B33SW -65°F to +165°F (-54°C to +74°C)
Temperature Compensated Pressure Switch (TCPS) P/N M35071531 Data Switch Condition – Pressurized Actuates Closed - Decreasing Pressure Connector Pins Electrical Connector, Mates With Temperature Range	Open Refer to Table 103 1 to 2 MS24266R12T3S6 -65°F to +200°F (-54°C to +93°C)
Temperature Compensated Pressure Switch (TCPS) P/N M35071533 Data Switch Condition – Pressurized Actuates Closed - Decreasing Pressure Connector Pins Electrical Connector, Mates With Temperature Range	Open Refer to Table 104 1 to 3 BACC63BP10C5S7 -65°F to +200°F (-54°C to +93°C)



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<p>Temperature Compensated Pressure Switch (TCPS) P/N M35071477 Data Switch Condition – Pressurized Actuates Closed - Decreasing Pressure Connector Pins Electrical Connector, Mates With Temperature Range</p>	<p>Open Refer to Table 105 A to C MS3116E-8-03S -65°F to +250°F (-54°C to +121°C)</p>
<p>Temperature Compensated Pressure Switch (TCPS) P/N M35071498 Data Switch Condition – Pressurized Actuates Closed - Decreasing Pressure Connector Pins Electrical Connector, Mates With Temperature Range</p>	<p>Open Refer to Table 108 1 & 3 FPK-1212-03S -65°F to +250°F (-54°C to +121°C)</p>
<p>Temperature Compensated Pressure Switch (TCPS) P/N M35071498-1 Data Switch Condition – Pressurized Actuates Closed - Decreasing Pressure Connector Pins Electrical Connector, Mates With Temperature Range</p>	<p>Open Refer to Table 108 1 & 3 FPK-1212-03S -65°F to +250°F (-54°C to +121°C)</p>
<p>Temperature Compensated Pressure Switch (TCPS) P/N M35071499 Data Switch Condition – Pressurized Actuates Closed - Decreasing Pressure Connector Pins Electrical Connector, Mates With Temperature Range</p>	<p>Closed Refer to Table 105 A to C MS3116E-8-03S -65°F to +250°F (-54°C to +121°C)</p>
<p>Temperature Compensated Pressure Switch (TCPS) P/N M35071499-1 Data Switch Condition – Pressurized Actuates Closed - Decreasing Pressure Connector Pins Electrical Connector, Mates With Temperature Range</p>	<p>Closed Refer to Table 105 A to C MS3116E-8-03S -65°F to +250°F (-54°C to +121°C)</p>



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<p>Temperature Compensated Pressure Switch (TCPS) P/N M35071500 Data Switch Condition – Pressurized Actuates Closed - Decreasing Pressure Connector Pins Electrical Connector, Mates With Temperature Range</p>	<p>Open Refer to Table 105 2 & 3 MS24266R10T5S -65°F to +250°F (-54°C to +121°C)</p>
<p>Temperature Compensated Pressure Switch (TCPS) P/N M35071500-4 Data Switch Condition – Pressurized Actuates Closed - Decreasing Pressure Connector Pins Electrical Connector, Mates With Temperature Range</p>	<p>Open Refer to Table 105 2 & 3 MS24266R10T5S -65°F to +250°F (-54°C to +121°C)</p>
<p>Temperature Compensated Pressure Switch (TCPS) P/N M35071500-8 Data Switch Condition – Pressurized Actuates Closed - Decreasing Pressure Connector Pins Electrical Connector, Mates With Temperature Range</p>	<p>Open Refer to Table 106 2 & 3 MS24266R10T5S -65°F to +250°F (-54°C to +121°C)</p>
<p>Temperature Compensated Pressure Switch (TCPS) P/N M35071500-15 Data Switch Condition – Pressurized Actuates Closed - Decreasing Pressure Connector Pins Electrical Connector, Mates With Temperature Range</p>	<p>Open Refer to Table 105 2 & 3 MS24266R10T5S -65°F to +250°F (-54°C to +121°C)</p>
<p>Temperature Compensated Pressure Switch (TCPS) P/N M35071503 Data Switch Condition – Pressurized Actuates Closed - Decreasing Pressure Connector Pins Electrical Connector, Mates With Temperature Range</p>	<p>Open Refer to Table 109 1 & 3 MS24266R10T5S -65°F to +250°F (-54°C to +121°C)</p>



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<p>Temperature Compensated Pressure Switch (TCPS) P/N M35071512 Data Switch Condition – Pressurized Actuates Closed - Decreasing Pressure Connector Pins Electrical Connector, Mates With Temperature Range</p>	<p>Open Refer to Table 108 1 & 3 FPK-1112-03S -65°F to +250°F (-54°C to +121°C)</p>
<p>Temperature Compensated Pressure Switch (TCPS) P/N M35071512-2 Data Switch Condition – Pressurized Actuates Closed - Decreasing Pressure Connector Pins Electrical Connector, Mates With Temperature Range</p>	<p>Open Refer to Table 108 1 & 3 FPK-1112-03S -65°F to +250°F (-54°C to +121°C)</p>
<p>Temperature Compensated Pressure Switch (TCPS) P/N M35071512-3 Data Switch Condition – Pressurized Actuates Closed - Decreasing Pressure Connector Pins Electrical Connector, Mates With Temperature Range</p>	<p>Open Refer to Table 108 1 & 3 FPK-1112-03S -65°F to +250°F (-54°C to +121°C)</p>
<p>Temperature Compensated Pressure Switch (TCPS) P/N M35071513 Data Switch Condition – Pressurized Actuates Closed - Decreasing Pressure Connector Pins Electrical Connector, Mates With Temperature Range</p>	<p>Open Refer to Table 108 1 & 3 MS24266R10T5S7 -65°F to +250°F (-54°C to +121°C)</p>
<p>Temperature Compensated Pressure Switch (TCPS) P/N M35071514 Data Switch Condition – Pressurized Actuates Closed - Decreasing Pressure Connector Pins Electrical Connector, Mates With Temperature Range</p>	<p>Open Refer to Table 110 1 & 3 MS24266R10T5S7 -65°F to +250°F (-54°C to +121°C)</p>



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<p>Temperature Compensated Pressure Switch (TCPS) P/N M35071516 Data Switch Condition – Pressurized Actuates Closed - Decreasing Pressure Connector Pins Electrical Connector, Mates With Temperature Range</p>	<p>Closed Refer to Table 108 1 & 3 FPK-1112-03S -65°F to +250°F (-54°C to +121°C)</p>
<p>Temperature Compensated Pressure Switch (TCPS) P/N M35071517 Data Switch Condition – Pressurized Actuates Closed - Decreasing Pressure Connector Pins Electrical Connector, Mates With Temperature Range</p>	<p>Closed Refer to Table 105 2 & 3 M83723/95K0803N -65°F to +250°F (-54°C to +121°C)</p>
<p>Temperature Compensated Pressure Switch (TCPS) P/N M35071518 Data Switch Condition – Pressurized Actuates Closed - Decreasing Pressure Connector Pins Electrical Connector, Mates With Temperature Range</p>	<p>Open Refer to Table 108 A to C MS3476L8-33SW -65°F to +250°F (-54°C to +121°C)</p>
<p>Temperature Compensated Pressure Switch (TCPS) P/N M35071518-1 Data Switch Condition – Pressurized Actuates Closed - Decreasing Pressure Connector Pins Electrical Connector, Mates With Temperature Range</p>	<p>Open Refer to Table 108 A to C MS3476L8-33SW -65°F to +250°F (-54°C to +121°C)</p>
<p>Temperature Compensated Pressure Switch (TCPS) P/N M35071518-2 Data Switch Condition – Pressurized Actuates Closed - Decreasing Pressure Connector Pins Electrical Connector, Mates With Temperature Range</p>	<p>Open Refer to Table 105 A to C MS3476L8-33SW -65°F to +250°F (-54°C to +121°C)</p>



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<p>Temperature Compensated Pressure Switch (TCPS) P/N M35071519 Data Switch Condition – Pressurized Actuates Closed - Decreasing Pressure Connector Pins Electrical Connector, Mates With Temperature Range</p>	<p>Open Refer to Table 105 1 & 3 FPK-1112-03S -65°F to +250°F (-54°C to +121°C)</p>
<p>Temperature Compensated Pressure Switch (TCPS) P/N M35071520 Data Switch Condition – Pressurized Actuates Closed - Decreasing Pressure Connector Pins Electrical Connector, Mates With Temperature Range</p>	<p>Open Refer to Table 107 A to C MS3476L8-33SW -65°F to +250°F (-54°C to +121°C)</p>
<p>Temperature Compensated Pressure Switch (TCPS) P/N M35071534 Data Switch Condition – Pressurized Actuates Closed - Decreasing Pressure Connector Pins Electrical Connector, Mates With Temperature Range</p>	<p>Open Refer to Table 109 1 & 3 BACC63BP10C5S7 -65°F to +250°F (-54°C to +121°C)</p>
<p>Temperature Compensated Pressure Switch (TCPS) P/N M35071549 Data Switch Condition – Pressurized Actuates Closed - Decreasing Pressure Connector Pins Electrical Connector, Mates With Temperature Range</p>	<p>Closed Refer to Table 105 2 & 3 M83723/95K0803N -65°F to +250°F (-54°C to +121°C)</p>
<p>Temperature Compensated Pressure Switch (TCPS) P/N M35071552-2 Data Switch Condition – Pressurized Actuates Closed - Decreasing Pressure Connector Pins Electrical Connector, Mates With Temperature Range</p>	<p>Open Refer to Table 111 A to C MS3476L8-33SW -65°F to +250°F (-54°C to +121°C)</p>



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Temperature Compensated Pressure Switch (TCPS) P/N M35071574 Data Switch Condition – Pressurized Actuates Closed - Decreasing Pressure Connector Pins Electrical Connector, Mates With Temperature Range	Open Refer to Table 111 1 & 3 BACC63BP10C5S7 -65°F to +250°F (-54°C to +121°C)
Storage and Life Limits Storage Temperature Life Limit	+40°F to +100°F (+4°C to +38°C) Unlimited life

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TESTING AND FAULT ISOLATION

TEST EQUIPMENT AND MATERIALS

Recommended test equipment and materials are listed in Table 101. Equivalent items may be used.

Test Equipment and Materials
Table 101

Nomenclature	Part or Specification Number	Source (CAGE) *
Cradle	Refer to fire extinguisher manufacturer's manual	As applicable
Multimeter	630	Triplett Corp. (60741)
Nitrogen Gas (GN2) or Dry Air	2000-psig (13790 kPag)	Commercially available
Tape, Foam Backed	1-inch (25,4 mm) square 1/4-inch (6,55 mm) thick	The 3M Company (04963)
Test Fixture, Two Piece	TL06650-2	MASS Systems, A Unit of Ameron Global, Inc. (0FRR4)
Thermocouple and Readout	Iron Constantan	Commercially available
Weighing Scale 0- to 100-pounds (0 to 45 kg) \pm 0.01-pound (0,005 kg) Full Scale	3000E (Electronic)	Pennsylvania Scale Co. (03964)

* Refer to Table 902 for the address.

TEMPERATURE COMPENSATED PRESSURE SWITCH (TCPS) FUNCTIONAL TEST

TCPS Installed in the Container Weldment – Charged Fire Extinguisher
See Figure 101 for Test Setup

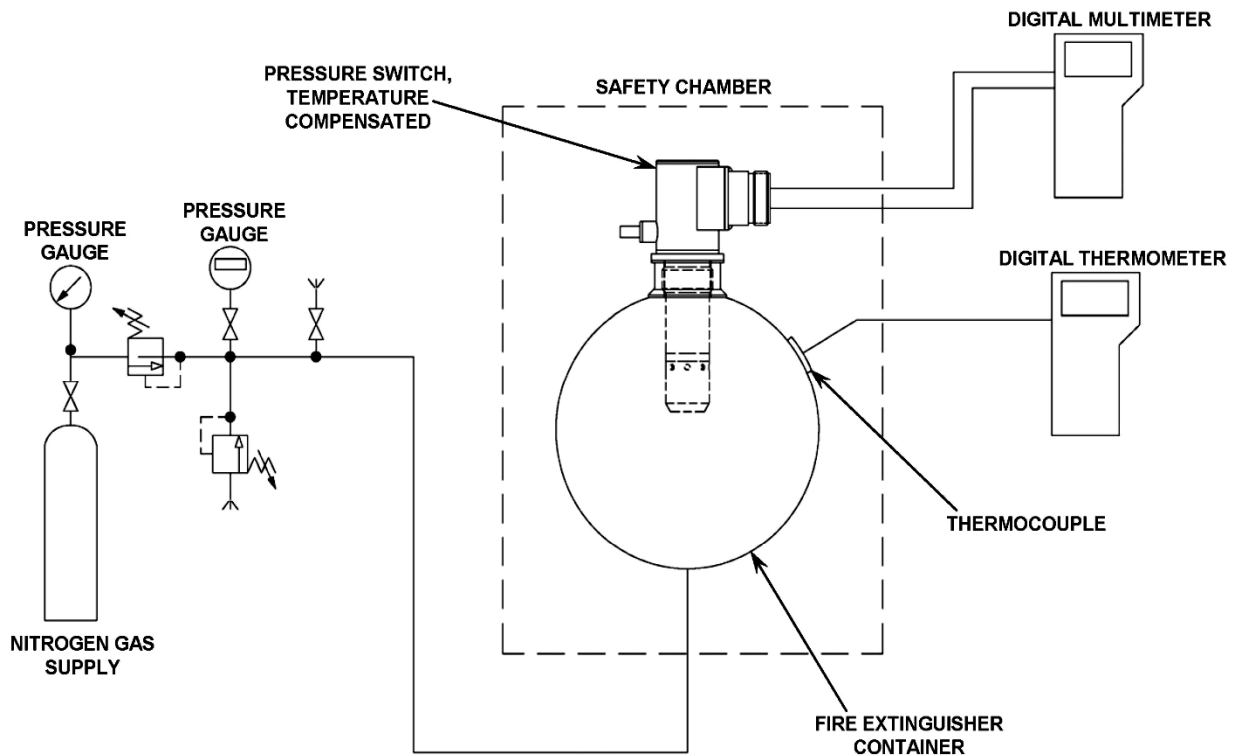
NOTE: For the functional test procedure of the temperature compensated pressure switch (TCPS) manufactured by Pacific Scientific Company, refer to the applicable Pacific Scientific Company fire extinguisher manual.

1. Weigh the fire extinguisher. Compare the weight with the last charge weight marked on the identification plate to verify that the fire extinguisher is fully charged.
2. Connect the temperature compensated pressure switch (TCPS) electrical connector (refer to Table 1 in this manual for the appropriate connector pins) to the multimeter (Table 101). Set the multimeter (Table 101) to read Ohms. The temperature compensated pressure switch (TCPS) will indicate either a Normally Closed (N/C) or Normally Open (N/O) condition depending upon the temperature compensated pressure switch (TCPS) being tested.



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3. Push the Press-to-Test button. The temperature compensated pressure switch (TCPS) indication should change from the normal condition, such as the N/O temperature compensated pressure switch (TCPS) should indicate a closed condition. Refer to Table 1 in this manual.
4. Release the Press-to-Test button, the multimeter (Table 101) indication should revert back to the normal condition; refer to Table 1 in this manual.
5. **FAULT ANALYSIS** – If the multimeter (Table 101) indication did not change conditions with the Press-to-Test button, the temperature compensated pressure switch (TCPS) is not operable.



Temperature Compensated Pressure Switch (TCPS) Test Setup
TCPS Installed in Discharged or Empty Fire Extinguisher
Figure 101

TEMPERATURE COMPENSATED PRESSURE SWITCH (TCPS) FUNCTIONAL TEST

TCPS Installed in the Container Weldment – Discharged or Empty Fire Extinguisher
See Figure 101 for Test Setup

NOTE: For the functional test procedure of the temperature compensated pressure switch (TCPS) manufactured by Pacific Scientific Company, refer to the applicable Pacific Scientific Company Component Maintenance Manual.



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NOTE: If the container weldment is being prepared for hydrostatic test, follow the guidelines in the applicable Pacific Scientific Company Component Maintenance Manual. EXCEPT THE MASS SYSTEMS TEMPERATURE COMPENSATED PRESSURE SWITCH (TCPS) DOES NOT NEED TO BE REMOVED FROM THE CONTAINER WELDMENT FOR HYDROSTATIC TESTING.

CAUTION: MASS SYSTEMS RECOMMENDS THE TEMPERATURE COMPENSATED PRESSURE SWITCH (TCPS) ELECTRICAL CONNECTOR BE ADEQUATELY PROTECTED WITH A TIGHT-FITTING COVER TO PREVENT DAMAGE AND WATER EXPOSURE DURING HYDROSTATIC TESTING. IF APPLICABLE PRESS-TO-TEST SWITCH NEEDS TO BE PROTECTED TO PREVENT DAMAGE FROM WATER EXPOSURE DURING HYDROSTATIC TESTING.

CAUTION: THE CONTAINER WELDMENT MUST BE DRIED COMPLETELY WITH THE CONTAINER WELDMENT POSITIONED WITH THE TEMPERATURE COMPENSATED PRESSURE SWITCH (TCPS) IN THE VERTICAL POSITION. THE DRYING TEMPERATURE IS 225°F TO 250°F (107°C TO 121°C) FOR ONE HOUR MINIMUM. FORCED HOT AIR OR PULLING A VACUUM DURING THE DRYING PROCESS IS RECOMMENDED.

1. Connect a Nitrogen gas source (Table 101) to the fill boss. Cap all open ports.

CAUTION: DO **NOT** EXCEED THE CHARGE PRESSURE OF THE FIRE EXTINGUISHER, REFER TO THE APPLICABLE PACIFIC SCIENTIFIC COMPANY FIRE EXTINGUISHER MANUAL. FILLING THE CONTAINER WELDMENT AT A HIGH RATE WITH NITROGEN GAS WILL OVERHEAT THE CONTAINER WELDMENT AND THE TCPS.

2. Connect the temperature compensated pressure switch (TCPS) electrical connector (refer to Table 1 in this manual for the appropriate connector pins) to the multimeter (Table 101). Set the multimeter (Table 101) to read Ohms. The temperature compensated pressure switch (TCPS) will indicate either a Normally Closed (N/C) or Normally Open (N/O) condition depending upon the temperature compensated pressure switch (TCPS) being tested.
3. Attach a thermocouple (Table 101) with foam backed tape (Table 101) to the fire extinguisher. Slowly apply pressure through the fill boss until the applicable charge pressure of the fire extinguisher is reached. Refer to the pressure versus temperature table in the Assembly section of the applicable Pacific Scientific Company's Component Maintenance Manual.
4. Push the Press-to-Test button. The temperature compensated pressure switch (TCPS) indication should change from the normal condition, such as the N/O temperature compensated pressure switch (TCPS) should indicate a closed condition. Refer to Table 1 in this manual.
5. Release the Press-to-Test button, the multimeter (Table 101) indication should revert back to the normal condition. Refer to Table 1 in this manual.



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6. Slowly bleed pressure from the fire extinguisher. Contact reversal should occur between 10 to 20 percent less than the charge pressure at the corresponding temperature. Refer to Tables 102, 103, 104, 105, 106, 107, 108, 109, 110 or 111 in this manual.

FAULT ANALYSIS – If the multimeter (Table 101) indication did not change conditions with the Press-to-Test button, the temperature compensated pressure switch (TCPS) is not operable. Ensure the Press-to-Test button is working properly and is not unusually hard to depress.

TEMPERATURE COMPENSATED PRESSURE SWITCH (TCPS) FUNCTIONAL TEST

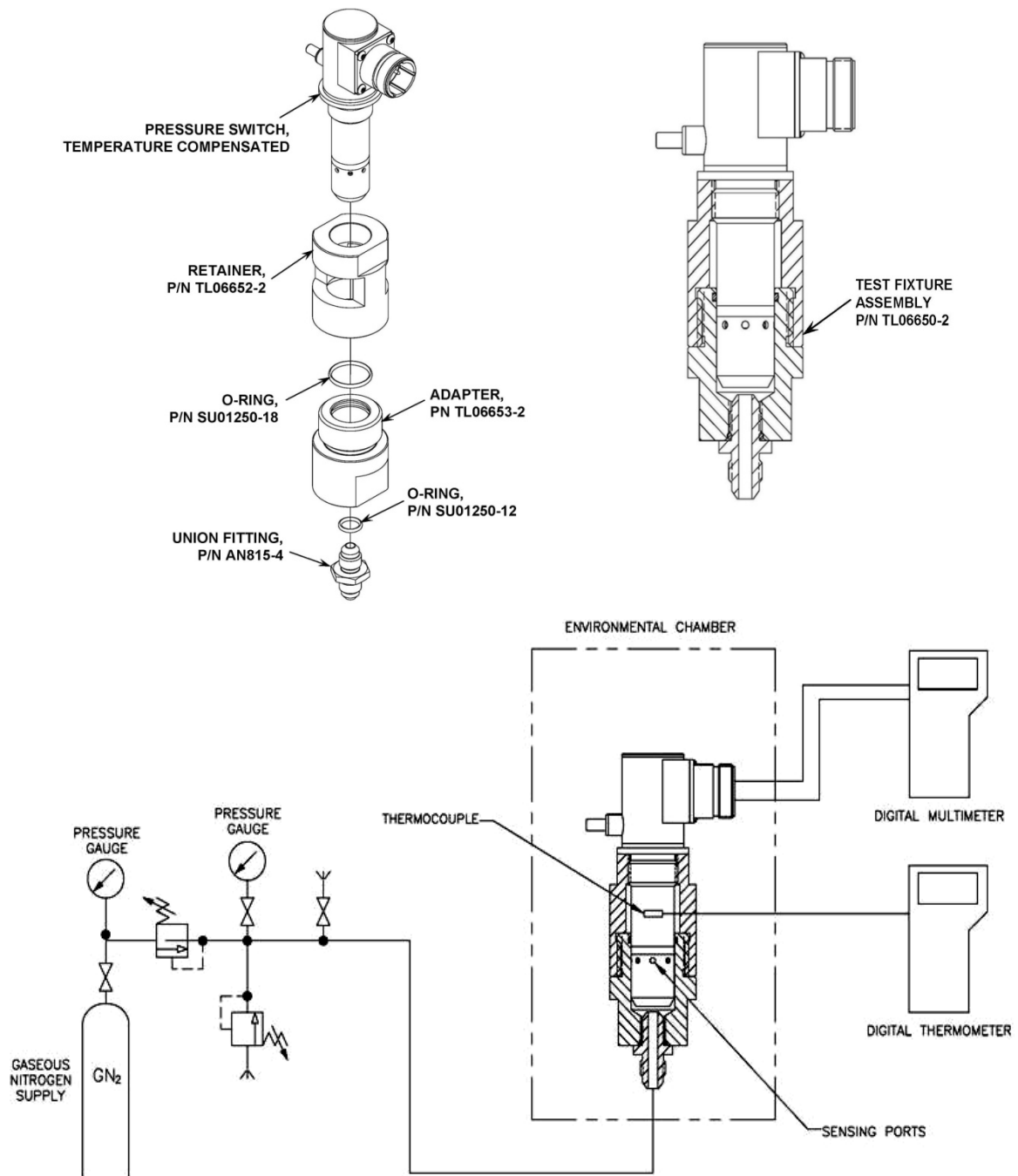
TCPS Out of the Container Weldment
See Figure 102 for Test Setup

NOTE: For the functional test procedure of the temperature compensated pressure switch (TCPS) manufactured by Pacific Scientific Company, refer to the applicable Pacific Scientific Company fire extinguisher manual.

1. Install the temperature compensated pressure switch (TCPS) into the test fixture (Table 101). Connect a Nitrogen gas source (Table 101) to the Nitrogen Inlet port.
2. Connect the temperature compensated pressure switch (TCPS) electrical connector (refer to Table 1 in this manual for the appropriate connector pins) to the multimeter (Table 101). Set the multimeter (Table 101) to read Ohms. The temperature compensated pressure switch (TCPS) will indicate either a Normally Closed (N/C) or Normally Open (N/O) condition depending upon the temperature compensated pressure switch (TCPS) being tested.
3. Slowly apply pressure through the fill boss until the normal charge pressure of the fire extinguisher is reached. Refer to the pressure versus temperature table in the Assembly section of the applicable Pacific Scientific Company's Component Maintenance Manual.
4. Push the Press-to-Test button. The temperature compensated pressure switch (TCPS) indication should change to the normal condition, such as the N/O temperature compensated pressure switch should indicate a closed condition. Refer to Table 1 in this manual.
5. Release the Press-to-Test button, the multimeter (Table 101) indication should revert back to the normal condition. Refer to Table 1 in this manual.
6. Slowly bleed pressure from the test fixture (Table 101). Contact reversal should occur between 10 to 20 percent less than the charge pressure at the corresponding temperature. Refer to Table 102, 103, 104, 105, 106, 107, 108, 109, 110 or 111 in this manual.
7. FAULT ANALYSIS – If the multimeter (Table 101) indication did not change conditions with the Press-to-Test button, the temperature compensated pressure switch (TCPS) is not operable. Ensure the Press-to-Test button is working properly and is not unusually hard to depress.



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Temperature Compensated Pressure Switch (TCPS) Test Setup
TCPS Out of Fire Extinguisher
Figure 102



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Contact Reversal Min/Max Pressures
Temperature Versus Pressure
For P/N M35071509

Table 102

TEMP °F	PRESSURE – PSIG		TEMP °C	PRESSURE – KPAG	
	MIN	MAX		MIN	MAX
50	200	240	10,0	1379	1655
51 to 52	205	245	10,6 to 11,1	1413	1689
53 to 54	210	250	11,7 to 12,2	1448	1724
55 to 56	214	254	12,8 to 13,3	1476	1751
57 to 58	219	259	13,8 to 14,4	1510	1786
59 to 60	223	263	15,0 to 15,6	1538	1813
61 to 62	228	268	16,1 to 16,7	1572	1848
63 to 64	233	273	17,2 to 17,8	1607	1882
65 to 66	238	278	18,3 to 18,9	1641	1917
67 to 68	243	283	19,4 to 20,0	1676	1951
69 to 70	248	288	20,6 to 21,1	1710	1986
71 to 72	253	293	21,7 to 22,2	1744	2020
73 to 74	258	298	22,8 to 23,3	1779	2055
75 to 76	263	303	23,9 to 24,4	1813	2089
77 to 78	269	309	25,0 to 25,6	1855	2131
79 to 80	274	314	26,1 to 26,7	1889	2165
81 to 82	280	320	27,2 to 27,8	1931	2206
83 to 84	286	326	28,3 to 28,9	1972	2248
85 to 86	291	331	29,4 to 30,0	2007	2282
87 to 88	297	337	30,6 to 31,1	2048	2324
89 to 90	303	343	31,7 to 32,2	2089	2365
91 to 92	309	349	32,8 to 33,3	2131	2406
93 to 94	316	356	33,9 to 34,4	2179	2455
95 to 96	322	362	35,0 to 35,6	2220	2496
97 to 98	328	368	36,1 to 36,7	2262	2537
99 to 100	334	374	37,2 to 37,8	2303	2579



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Contact Reversal Min/Max Pressures
Temperature Versus Pressure
For P/N M35071531

Table 103

TEMP °F	PRESSURE – PSIG		TEMP °C	PRESSURE – KPAG	
	MIN	MAX		MIN	MAX
50	420	480	10,0	2896	3310
51 to 52	425	485	10,6 to 11,1	2930	3344
53 to 54	431	491	11,7 to 12,2	2972	3385
55 to 56	437	497	12,8 to 13,3	3013	3427
57 to 58	442	502	13,8 to 14,4	3048	3461
59 to 60	448	508	15,0 to 15,6	3089	3503
61 to 62	454	514	16,1 to 16,7	3130	3544
63 to 64	461	521	17,2 to 17,8	3179	3592
65 to 66	467	527	18,3 to 18,9	3220	3634
67 to 68	473	533	19,4 to 20,0	3261	3675
69 to 70	480	540	20,6 to 21,1	3310	3723
71 to 72	486	546	21,7 to 22,2	3351	3745
73 to 74	493	553	22,8 to 23,3	3399	3813
75 to 76	500	560	23,9 to 24,4	3448	3861
77 to 78	506	566	25,0 to 25,6	3489	3903
79 to 80	513	573	26,1 to 26,7	3537	3951
81 to 82	521	581	27,2 to 27,8	3592	4006
83 to 84	528	588	28,3 to 28,9	3641	4054
85 to 86	535	595	29,4 to 30,0	3689	4103
87 to 88	543	603	30,6 to 31,1	3744	4158
89 to 90	550	610	31,7 to 32,2	3792	4206
91 to 92	558	618	32,8 to 33,3	3847	4261
93 to 94	565	625	33,9 to 34,4	3896	4309
95 to 96	573	633	35,0 to 35,6	3951	4365
97 to 98	580	640	36,1 to 36,7	3999	4413
99 to 100	588	648	37,2 to 37,8	4054	4468



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Contact Reversal Min/Max Pressures
Temperature Versus Pressure
For P/N M35071533

Table 104

TEMP °F	PRESSURE – PSIG		TEMP °C	PRESSURE – KPAG	
	MIN	MAX		MIN	MAX
50	649	709	10,0	4475	4889
51 to 52	656	716	10,6 to 11,1	4523	4937
53 to 54	663	723	11,7 to 12,2	4571	4985
55 to 56	670	730	12,8 to 13,3	4620	5033
57 to 58	678	738	13,8 to 14,4	4675	5089
59 to 60	685	745	15,0 to 15,6	4723	5137
61 to 62	693	753	16,1 to 16,7	4778	5192
63 to 64	700	760	17,2 to 17,8	4827	5240
65 to 66	708	768	18,3 to 18,9	4882	5295
67 to 68	716	776	19,4 to 20,0	4937	5351
69 to 70	723	783	20,6 to 21,1	4985	5399
71 to 72	732	792	21,7 to 22,2	5047	5461
73 to 74	740	800	22,8 to 23,3	5102	5516
75 to 76	748	808	23,9 to 24,4	5158	5571
77 to 78	756	816	25,0 to 25,6	5213	5626
79 to 80	764	824	26,1 to 26,7	5268	5682
81 to 82	773	833	27,2 to 27,8	5330	5744
83 to 84	782	842	28,3 to 28,9	5392	5806
85 to 86	791	851	29,4 to 30,0	5454	5868
87 to 88	800	860	30,6 to 31,1	5516	5930
89 to 90	809	869	31,7 to 32,2	5578	5992
91 to 92	818	878	32,8 to 33,3	5640	6054
93 to 94	828	888	33,9 to 34,4	5709	6123
95 to 96	837	897	35,0 to 35,6	5771	6185
97 to 98	847	907	36,1 to 36,7	5840	6254
99 to 100	856	916	37,2 to 37,8	5902	6316



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Contact Reversal Min/Max Pressures

Temperature Versus Pressure

For P/N M35071477, M35071499, M35071499-1, M35071500, M35071500-4,
M35071500-15, M35071517, M35071518-2, M35071519, M35071549

Table 105

TEMP °F	PRESSURE – PSIG		TEMP °C	PRESSURE – KPAG	
	MIN	MAX		MIN	MAX
50	215	275	10,0	1483	1896
51 to 52	220	280	10,6 to 11,1	1518	1932
53 to 54	225	285	11,7 to 12,2	1553	1967
55 to 56	230	290	12,8 to 13,3	1588	2002
57 to 58	235	295	13,8 to 14,4	1624	2037
59 to 60	241	301	15,0 to 15,6	1659	2073
61 to 62	246	306	16,1 to 16,7	1699	2113
63 to 64	252	312	17,2 to 17,8	1740	2154
65 to 66	258	318	18,3 to 18,9	1781	2194
67 to 68	264	324	19,4 to 20,0	1821	2235
69 to 70	270	330	20,6 to 21,1	1862	2275
71 to 72	276	336	21,7 to 22,2	1906	2320
73 to 74	283	343	22,8 to 23,3	1950	2364
75 to 76	289	349	23,9 to 24,4	1994	2408
77 to 78	296	356	25,0 to 25,6	2039	2452
79 to 80	302	362	26,1 to 26,7	2083	2497
81 to 82	309	369	27,2 to 27,8	2133	2547
83 to 84	317	377	28,3 to 28,9	2184	2598
85 to 86	324	384	29,4 to 30,0	2234	2648
87 to 88	331	391	30,6 to 31,1	2285	2698
89 to 90	339	399	31,7 to 32,2	2335	2749
91 to 92	346	406	32,8 to 33,3	2386	2799
93 to 94	353	413	33,9 to 34,4	2436	2850
95 to 96	361	421	35,0 to 35,6	2487	2900
97 to 98	368	428	36,1 to 36,7	2537	2951
99 to 100	375	435	37,2 to 37,8	2588	3001



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Contact Reversal Min/Max Pressures
Temperature Versus Pressure
 For P/N M35071500-8

Table 106

TEMP °F	PRESSURE – PSIG		TEMP °C	PRESSURE – KPAG	
	MIN	MAX		MIN	MAX
50	187	247	10,0	1286	1700
51 to 52	192	252	10,6 to 11,1	1321	1734
53 to 54	196	256	11,7 to 12,2	1355	1768
55 to 56	201	261	12,8 to 13,3	1389	1803
57 to 58	206	266	13,8 to 14,4	1423	1837
59 to 60	211	271	15,0 to 15,6	1457	1871
61 to 62	217	277	16,1 to 16,7	1497	1910
63 to 64	223	283	17,2 to 17,8	1536	1950
65 to 66	229	289	18,3 to 18,9	1576	1989
67 to 68	234	294	19,4 to 20,0	1615	2029
69 to 70	240	300	20,6 to 21,1	1655	2068
71 to 72	246	306	21,7 to 22,2	1698	2112
73 to 74	253	313	22,8 to 23,3	1741	2155
75 to 76	259	319	23,9 to 24,4	1785	2198
77 to 78	265	325	25,0 to 25,6	1828	2242
79 to 80	271	331	26,1 to 26,7	1871	2285
81 to 82	279	339	27,2 to 27,8	1921	2335
83 to 84	286	346	28,3 to 28,9	1971	2384
85 to 86	293	353	29,4 to 30,0	2020	2434
87 to 88	300	360	30,6 to 31,1	2070	2484
89 to 90	307	367	31,7 to 32,2	2120	2533
91 to 92	315	375	32,8 to 33,3	2169	2583
93 to 94	322	382	33,9 to 34,4	2219	2632
95 to 96	329	389	35,0 to 35,6	2268	2682
97 to 98	336	396	36,1 to 36,7	2318	2732
99 to 100	343	403	37,2 to 37,8	2368	2781



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Contact Reversal Min/Max Pressures
Temperature Versus Pressure
 For P/N M35071520

Table 107

TEMP °F	PRESSURE – PSIG		TEMP °C	PRESSURE – KPAG	
	MIN	MAX		MIN	MAX
50	196	256	10,0	1349	1763
51 to 52	201	261	10,6 to 11,1	1384	1798
53 to 54	206	266	11,7 to 12,2	1419	1833
55 to 56	211	271	12,8 to 13,3	1454	1868
57 to 58	216	276	13,8 to 14,4	1489	1902
59 to 60	221	281	15,0 to 15,6	1523	1937
61 to 62	227	287	16,1 to 16,7	1564	1977
63 to 64	233	293	17,2 to 17,8	1604	2017
65 to 66	238	298	18,3 to 18,9	1644	2057
67 to 68	244	304	19,4 to 20,0	1684	2097
69 to 70	250	310	20,6 to 21,1	1724	2137
71 to 72	256	316	21,7 to 22,2	1768	2181
73 to 74	263	323	22,8 to 23,3	1812	2225
75 to 76	269	329	23,9 to 24,4	1856	2269
77 to 78	276	336	25,0 to 25,6	1900	2313
79 to 80	282	342	26,1 to 26,7	1943	2357
81 to 82	289	349	27,2 to 27,8	1994	2407
83 to 84	296	356	28,3 to 28,9	2044	2457
85 to 86	304	364	29,4 to 30,0	2094	2508
87 to 88	311	371	30,6 to 31,1	2144	2558
89 to 90	318	378	31,7 to 32,2	2194	2608
91 to 92	326	386	32,8 to 33,3	2244	2658
93 to 94	333	393	33,9 to 34,4	2295	2708
95 to 96	340	400	35,0 to 35,6	2345	2758
97 to 98	347	407	36,1 to 36,7	2395	2809
99 to 100	355	415	37,2 to 37,8	2445	2859



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Contact Reversal Min/Max Pressures
Temperature Versus Pressure

For P/N M35071498, M35071498-1, M35071512, M35071512-2, M35071512-3,
 M35071513, M35071516, M35071518, M35071518-1

Table 108

TEMP °F	PRESSURE – PSIG		TEMP °C	PRESSURE – KPAG	
	MIN	MAX		MIN	MAX
50	412	472	10,0	2841	3254
51 to 52	417	477	10,6 to 11,1	2877	3291
53 to 54	423	483	11,7 to 12,2	2914	3328
55 to 56	428	488	12,8 to 13,3	2950	3364
57 to 58	433	493	13,8 to 14,4	2987	3401
59 to 60	439	499	15,0 to 15,6	3024	3437
61 to 62	444	504	16,1 to 16,7	3064	3478
63 to 64	450	510	17,2 to 17,8	3105	3519
65 to 66	456	516	18,3 to 18,9	3145	3559
67 to 68	462	522	19,4 to 20,0	3186	3600
69 to 70	468	528	20,6 to 21,1	3227	3640
71 to 72	474	534	21,7 to 22,2	3270	3684
73 to 74	481	541	22,8 to 23,3	3314	3728
75 to 76	487	547	23,9 to 24,4	3358	3771
77 to 78	493	553	25,0 to 25,6	3401	3815
79 to 80	500	560	26,1 to 26,7	3445	3859
81 to 82	507	567	27,2 to 27,8	3494	3907
83 to 84	514	574	28,3 to 28,9	3542	3956
85 to 86	521	581	29,4 to 30,0	3591	4005
87 to 88	528	588	30,6 to 31,1	3640	4053
89 to 90	535	595	31,7 to 32,2	3689	4102
91 to 92	542	602	32,8 to 33,3	3737	4151
93 to 94	549	609	33,9 to 34,4	3786	4200
95 to 96	556	616	35,0 to 35,6	3835	4249
97 to 98	563	623	36,1 to 36,7	3884	4297
99 to 100	570	630	37,2 to 37,8	3932	4346



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Contact Reversal Min/Max Pressures
Temperature Versus Pressure
For P/N M35071503, M35071534

Table 109

TEMP °F	PRESSURE – PSIG		TEMP °C	PRESSURE – KPAG	
	MIN	MAX		MIN	MAX
50	433	493	10,0	2988	3401
51 to 52	438	498	10,6 to 11,1	3023	3437
53 to 54	444	504	11,7 to 12,2	3058	3472
55 to 56	449	509	12,8 to 13,3	3094	3507
57 to 58	454	514	13,8 to 14,4	3129	3543
59 to 60	459	519	15,0 to 15,6	3165	3578
61 to 62	465	525	16,1 to 16,7	3206	3619
63 to 64	471	531	17,2 to 17,8	3247	3660
65 to 66	477	537	18,3 to 18,9	3288	3701
67 to 68	483	543	19,4 to 20,0	3329	3742
69 to 70	489	549	20,6 to 21,1	3370	3783
71 to 72	495	555	21,7 to 22,2	3412	3826
73 to 74	501	561	22,8 to 23,3	3455	3869
75 to 76	507	567	23,9 to 24,4	3498	3911
77 to 78	513	573	25,0 to 25,6	3540	3954
79 to 80	520	580	26,1 to 26,7	3583	3997
81 to 82	526	586	27,2 to 27,8	3630	4044
83 to 84	533	593	28,3 to 28,9	3677	4091
85 to 86	540	600	29,4 to 30,0	3724	4138
87 to 88	547	607	30,6 to 31,1	3771	4185
89 to 90	554	614	31,7 to 32,2	3818	4232
91 to 92	561	621	32,8 to 33,3	3865	4279
93 to 94	567	627	33,9 to 34,4	3912	4326
95 to 96	574	634	35,0 to 35,6	3959	4373
97 to 98	581	641	36,1 to 36,7	4006	4420
99 to 100	588	648	37,2 to 37,8	4053	4467



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Contact Reversal Min/Max Pressures
Temperature Versus Pressure
For P/N M35071514

Table 110

TEMP °F	PRESSURE – PSIG		TEMP °C	PRESSURE – KPAG	
	MIN	MAX		MIN	MAX
50	605	665	10,0	4173	4586
51 to 52	611	671	10,6 to 11,1	4216	4629
53 to 54	618	678	11,7 to 12,2	4258	4672
55 to 56	624	684	12,8 to 13,3	4301	4715
57 to 58	630	690	13,8 to 14,4	4344	4758
59 to 60	636	696	15,0 to 15,6	4387	4800
61 to 62	643	703	16,1 to 16,7	4433	4847
63 to 64	650	710	17,2 to 17,8	4480	4893
65 to 66	656	716	18,3 to 18,9	4526	4940
67 to 68	663	723	19,4 to 20,0	4573	4987
69 to 70	670	730	20,6 to 21,1	4619	5033
71 to 72	677	737	21,7 to 22,2	4669	5083
73 to 74	684	744	22,8 to 23,3	4718	5132
75 to 76	692	752	23,9 to 24,4	4768	5182
77 to 78	699	759	25,0 to 25,6	4817	5231
79 to 80	706	766	26,1 to 26,7	4867	5281
81 to 82	714	774	27,2 to 27,8	4921	5335
83 to 84	722	782	28,3 to 28,9	4975	5389
85 to 86	730	790	29,4 to 30,0	5030	5443
87 to 88	737	797	30,6 to 31,1	5084	5498
89 to 90	745	805	31,7 to 32,2	5138	5552
91 to 92	753	813	32,8 to 33,3	5193	5606
93 to 94	761	821	33,9 to 34,4	5247	5661
95 to 96	769	829	35,0 to 35,6	5301	5715
97 to 98	777	837	36,1 to 36,7	5356	5769
99 to 100	785	845	37,2 to 37,8	5410	5823



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Contact Reversal Min/Max Pressures
Temperature Versus Pressure
 For P/N M35071552-2, M35071574

Table 111

TEMP °F	PRESSURE – PSIG		TEMP °C	PRESSURE – KPAG	
	MIN	MAX		MIN	MAX
50	651	711	10,0	4486	4899
51 to 52	657	717	10,6 to 11,1	4531	4945
53 to 54	664	724	11,7 to 12,2	4577	4991
55 to 56	671	731	12,8 to 13,3	4623	5037
57 to 58	677	737	13,8 to 14,4	4669	5083
59 to 60	684	744	15,0 to 15,6	4715	5128
61 to 62	691	751	16,1 to 16,7	4765	5178
63 to 64	698	758	17,2 to 17,8	4815	5228
65 to 66	706	766	18,3 to 18,9	4864	5278
67 to 68	713	773	19,4 to 20,0	4914	5328
69 to 70	720	780	20,6 to 21,1	4964	5378
71 to 72	728	788	21,7 to 22,2	5017	5431
73 to 74	735	795	22,8 to 23,3	5070	5484
75 to 76	743	803	23,9 to 24,4	5123	5537
77 to 78	751	811	25,0 to 25,6	5176	5590
79 to 80	758	818	26,1 to 26,7	5229	5643
81 to 82	767	827	27,2 to 27,8	5287	5701
83 to 84	775	835	28,3 to 28,9	5346	5759
85 to 86	784	844	29,4 to 30,0	5404	5817
87 to 88	792	852	30,6 to 31,1	5462	5876
89 to 90	801	861	31,7 to 32,2	5520	5934
91 to 92	809	869	32,8 to 33,3	5578	5992
93 to 94	818	878	33,9 to 34,4	5636	6050
95 to 96	826	886	35,0 to 35,6	5695	6108
97 to 98	834	894	36,1 to 36,7	5753	6166
99 to 100	843	903	37,2 to 37,8	5811	6225



DISASSEMBLY

DISASSEMBLY TOOLS AND MATERIALS

Recommended disassembly tools and materials are listed in Table 301. Equivalent items may be used.

Disassembly Tools and Materials
Table 301

Nomenclature	Part or Specification Number	Source (CAGE) *
Cradle	Refer to fire extinguisher manufacturer's manual	As applicable
Flat File Mill Smooth Second Cut	---	Commercially available
Rotary Table, 80-rpm	---	Commercially available
Saw Cutter	0.020-inch (0,51 mm) Thick	Commercially available

* Refer to Table 902 for the address.

TEMPERATURE COMPENSATED PRESSURE SWITCH (TCPS)

NOTE: This procedure is only required if the temperature compensated pressure switch (TCPS) is not operable or damaged.

Reference: Fire extinguisher manufacturer's Component Maintenance Manual.

1. Discharge the fire extinguishing agent following the applicable Pacific Scientific Company's Component Maintenance Manual
2. Securely fasten a cradle (Table 301) to the rotary table (Table 301).
3. Install the container weldment in the cradle (Table 301) and orient the body of the temperature compensated pressure switch (TCPS) perpendicular to the work surface. Securely fasten the container weldment to the cradle (Table 301).



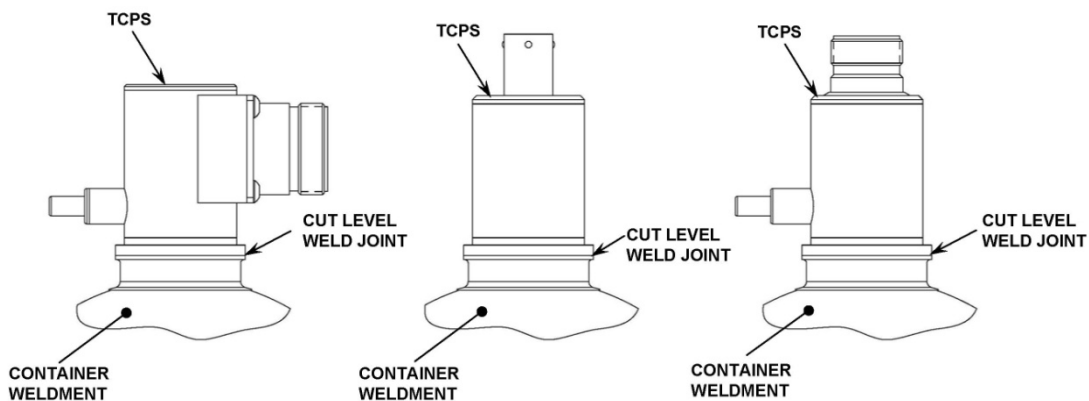
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CAUTION: DO NOT REMOVE EXCESS MATERIAL FROM THE SWITCH BOSS WHEN CUTTING INTO THE WELD JOINT. DOING SO WILL REDUCE THE NUMBER OF TIMES THE FIRE EXTINGUISHER CAN BE REFILLED OR THE TEMPERATURE COMPENSATED PRESSURE SWITCH (TCPS) CAN BE REPLACED. THE MINIMUM HEIGHT FOR THE SWITCH BOSS IS SHOWN IN THE FIRE EXTINGUISHER MANUFACTURER'S COMPONENT MAINTENANCE MANUAL.

4. Use the 0.020-inch (0,51 mm) saw cutter (Table 301) and align along the circumference of the weld between the temperature compensated pressure switch (TCPS) and the switch boss. Cut the weld until the saw cutter breaks through the weld (approximately 0.060-inch or 1,52 mm).
5. Unthread the temperature compensated pressure switch (TCPS) from the switch boss.
6. Remove all excess material from the outer surface and machined surface of the switch boss. If required, use emery paper wrapped around a flat metal block or flat file (Table 301) to smooth the machined surface. Refer to the applicable Pacific Scientific Company's Component Maintenance Manual

NOTE: Limited surface roughness or chatter marks on the switch boss are acceptable.

7. Clean the container weldment per the Cleaning instructions in the applicable Pacific Scientific Company's Component Maintenance Manual to remove chips and cutting oil.



Temperature Compensated Pressure Switch (TCPS) Removal Setup
Figure 301



CLEANING

CLEANING MATERIALS

Recommended cleaning materials are listed in Table 401. Equivalent items may be used.

Cleaning Materials
Table 401

Nomenclature	Part or Specification Number	Source (CAGE)*
Alcohol, Isopropyl	Federal Specification TT-I-735	Commercially available
Cloth, Lint-Free	---	Commercially available
Cradle	Refer to fire extinguisher manufacturer's manual	As applicable
Detergent Solution	---	Commercially available
Light Probe	---	Commercially available
Oven or Heater	250°F (121°C)	Commercially available
Tape, Duct	---	Commercially available

* Refer to Table 902 for the address.

METAL PARTS

WARNING: IMPROPER HANDLING OF A CHARGED FIRE EXTINGUISHER CAN CAUSE INJURY. DO NOT APPLY PRESSURE TO OR INSERT ANYTHING INTO THE FILLER VALVE OR OUTLET VALVE.

WARNING: USE CLEANING SOLVENT IN A WELL-VENTILATED AREA. AVOID PROLONGED INHALATION OF FUMES. KEEP THE CLEANING SOLVENT AWAY FROM OPEN FLAMES.

CAUTION: ANY SCRATCHES OR DENTS ON THE SURFACE OF AN OUTLET DISC WILL CHANGE ITS CALIBRATION, MAKING IT UNUSABLE.

1. Clean all metal parts (except the outlet disc) by wiping parts with a lint-free cloth moistened with a detergent solution.
2. Dry the parts thoroughly using a clean, lint-free cloth.



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CONTAINER WELDMENT

1. Clean the interior of the container weldment as follows:
2. Pour a small amount of detergent solution (1/4-to 1/2-cup) into the container weldment.
3. Shake the container weldment in a circular motion, and drain into a disposal container.
4. Repeat steps 1 and 2 using isopropyl alcohol until no further metal chips or filings are evident in the drained alcohol. Use a light probe; inspect the interior of the container weldment.
5. Glass bead hone the exterior of the container weldment, if necessary.
6. Plug and protect all boss threads. Cover the identification plate and caution plate with duct plate.
7. Glass bead hone the exterior of the container weldment (wet or dry glass bead), except the threads on the fill, discharge, and switch bosses.
8. Remove the plugs, the duct tape, and thoroughly clean the container weldment.

CAUTION: THE CONTAINER WELDMENT MUST BE DRIED COMPLETELY WITH THE CONTAINER WELDMENT POSITIONED WITH THE TEMPERATURE COMPENSATED PRESSURE SWITCH (TCPS) IN THE VERTICAL POSITION. THE DRYING TEMPERATURE IS 225°F TO 250°F (107°C TO 121°C) FOR ONE HOUR MINIMUM. FORCED HOT AIR OR PULLING A VACUUM DURING THE DRYING PROCESS IS RECOMMENDED.

9. Insert a vacuum line in the container weldment, place the container weldment in an oven or dryer heated at 225°F to 250°F (107°C to 121°C), with forced hot air or pulling a vacuum, for one hour or until completely dry and all traces of moisture are removed.



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CHECK

CHECK TOOLS AND EQUIPMENT

Recommended check tools and equipment are listed in Table 501. Equivalent items may be used.

**Check Tools and Equipment
Table 501**

Nomenclature	Part or Specification Number	Source (CAGE) *
Cradle	Refer to fire extinguisher manufacturer's manual	As applicable
Micrometer or Depth Gauge	---	Commercially available
Weighing Scale 0- to 100-pounds (0 to 45 kg) \pm 0.01-pound (0,005 kg) Full Scale	3000E (Electronic)	Pennsylvania Scale Co. (03964)

* Refer to Table 902 for the address.

MINIMUM MEASUREMENTS

1. Measure the temperature compensated pressure switch (TCPS) flange thickness. The required minimum flange thickness is 0.050-inch (1,3 mm).
2. Refer to the applicable Pacific Scientific Company's Component Maintenance Manual for the switch boss minimum height dimension and measure.



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REPAIR

NOT APPLICABLE

**TEMPERATURE COMPENSATED PRESSURE SWITCH
(TCPS)
IS NOT REPAIRABLE**

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ASSEMBLY (INCLUDING STORAGE)

ASSEMBLY TOOLS AND MATERIALS

The recommended assembly tools and materials are listed in Table 701. Equivalent items may be used.

**Assembly Tools and Materials
Table 701**

Nomenclature	Part or Specification Number	Source (CAGE) *
Cradle	Refer to fire extinguisher manufacturer's manual	As applicable
Nitrogen Gas (GN ₂)	2000-psig (13790 kPag)	Commercially available
Rotary Table, 80-rpm	---	Customer supply
Shims	M53100578-1/-2/-3/-5/-6	MASS Systems, A Unit of Ameron Global, Inc. (0FRR4)
Welding Torch	---	Commercially available

* Refer to Table 902 for the address.

WELDING SCHEDULE

Specifications for welding the temperature compensated pressure switch (TCPS) are listed in Table 702.

**Welding Schedule
Table 702**

Item	Characteristics
Argon Cup Size	1/4-inch (6,35 mm) ID
Argon Flow Rate	10- to 15-cfh (0,3 to 0,4 m ³ /hour)
Current Setting, Minimum	30-amperes
Electrode	1/16-inch (1,59 mm) OD, tungsten (2 % thoriated), ground to a sharp, tapered point
Electrode Gap	0.125-inch (3,17 mm)
Position of Electrode	Protrudes 3/16-inch (4,76 mm) from torch holder and points 0.005- to 0.008-inch (0,13 to 0,20 mm) above seam line between flange and boss, with torch pointing upward away from seam at 5- to 10-degree angle.



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TEMPERATURE COMPENSATED PRESSURE SWITCH (TCPS)

Reference: The applicable Pacific Scientific Company's Component Maintenance Manual.

1. Thread the temperature compensated pressure switch (TCPS) into the switch boss until hand tight. Orient the electrical connector of the temperature compensated pressure switch (TCPS) as described in the applicable Pacific Scientific Company's Component Maintenance Manual. If the electrical connector does not orient as required, use shims (Table 701).

NOTE: Addition of a 0.005-inch (0,13 mm) shim changes the orientation of the electrical connector by 25-degrees approximately.

CAUTION: OVERHEATING THE TEMPERATURE COMPENSATED PRESSURE SWITCH (TCPS) DURING WELDING WILL DESTROY THE SENSITIVE COMPONENTS, RENDERING THE TEMPERATURE COMPENSATED PRESSURE SWITCH (TCPS) INOPERABLE. CONTINUE BLOWING THE PURGE GAS FROM THE ELECTRODE AND IN ADDITION BLOW AIR FROM AN AIR HOSE NOZZLE TO COOL THE WELD JOINT.

2. Hold the electrode and manually weld the temperature compensated pressure switch (TCPS) to the switch boss in six rapid pass sections, minimum. Refer to Table 702 in this manual for the welding schedule. Use an air hose for extra cooling in addition to the purge gas from the electrode between each rapid pass.
3. Test the temperature compensated pressure switch (TCPS) per the Temperature versus Pressure Table 102, 103, 104, 105, 106, 107, 108, 109, 110 or 111 in the Testing section of this manual, as applicable to proper part number of the temperature compensated pressure switch (TCPS).



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FITS AND CLEARANCES

NOT APPLICABLE

**TEMPERATURE COMPENSATED PRESSURE SWITCH
(TCPS)
IS NOT REPAIRABLE**



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SPECIAL TOOLS, FIXTURES, AND EQUIPMENT

Special tools, fixtures, and test equipment required for test, removal, and installation of the temperature compensated pressure switch are listed in Table 901. Equivalent items may be used.

Special Tools, Fixtures, and Equipment
Table 901

Nomenclature	Part or Specification Number	Source (CAGE)*
Alcohol, Isopropyl	Federal Specification TT-I-735	Commercially available
Cloth, Lint-Free	---	Commercially available
Cradle	Refer to fire extinguisher manufacturer's manual	MASS Systems, A Unit of Ameron Global, Inc. (0FRR4)
Detergent Solution	---	Commercially available
Flat File Mill Smooth Second Cut	---	Commercially available
Light Probe	---	Commercially available
Micrometer or Depth Gauge	---	Commercially available
Multimeter	630	Triplett Corp. (60741)
Nitrogen Gas (GN ₂)	2000-psig (13790 kPag)	Commercially available
Oven or Heater	250°F (121°C)	Commercially available
Pressure Gauge, Master	0- to 1000-psig (6895 kPag)	Commercially available
Rotary Table, 80-rpm	---	Customer supply
Saw Cutter	0.020-inch (0,51 mm) Thick	Commercially available
Shims	M53100578-1/-2/-3/-5/-6	MASS Systems, A unit of Ameron Global, Inc. (0FRR4)
Tape, Duct	---	Commercially available
Tape, Foam Backed	1-inch (25,4 mm) square, 1/ 4- inch (6,35 mm) thick	The 3M Company (04963)
Test Fixture, Two Piece	TL06650-2	MASS Systems, A unit of Ameron Global, Inc. (0FRR4)
Thermocouple and Readout	Iron Constantan	Commercially available



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Nomenclature	Part or Specification Number	Source (CAGE)*
Weighing Scale, 0- to 100-pounds (0 to 45 kg), ± 0.01-pound (0,005 kg) Full Scale	3000E (Electronic)	Pennsylvania Scale Co. (03964)
Welding Torch	---	Commercially available

* Refer to Table 902 for the address.

Manufacturer Name and Address
Table 902

Cage Code	Name and Address	Telephone TeleFAX
0FRR4	MASS Systems A Unit of Ameron Global, Inc. 4601 Littlejohn Street Baldwin Park, CA 91706-2285 U.S.A.	626-337-4640 FAX 626-337-1641 service@mass-systems.com
03964	Pennsylvania Scale Company 21 Graybill Road Leola, Pennsylvania 17540-1910 U.S.A.	717-656-2653 FAX 717-656-3216
04963	The 3M Company Adhesives Coatings and Sealers Division 3M Center St. Paul, Minnesota 55144-1000 U.S.A.	612-737-4114 FAX 612-737-4380
60741	Triplett Corporation One Triplett Drive Bluffton, Ohio 45817-1055 U.S.A.	419-358-5015 FAX 419-358-7956



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ILLUSTRATED PARTS LIST

NOT APPLICABLE

**TEMPERATURE COMPENSATED PRESSURE SWITCH
(TCPS)
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