



**95-008 Rev C  
2 May, 2007**

**REMOVAL AND REPLACEMENT OF THERMAL ELECTRIC COOLER (TEC)**

**I. SCOPE:**

We have noticed that after a Thermal Electric Cooler (TEC) has failed one time, and replaced by a second cooler, that the second TEC sometimes fails prematurely. Please follow the procedure below to increase reliability and time between failure of TEC devices.

**II. PARTS:**

016440000

**III. TOOLS:**

Phillips head screwdriver

1/8" wrench

1/4" wrench

**IV. PROCEDURE:**

1. Power off the analyzer and remove the PMT barrel assembly.
2. Remove 4 screws holding end cap to barrel (Step 2 on 00393 print).
3. Pull pre-amp card off PMT. Remove PMT and set in safe place (Step 3 on 00393 print).
4. Remove the two screws holding in the TEC assembly (API part number 00328). See drawing 00393 Sheet 2, STEP 4 - This applies to SO<sub>2</sub> or NO<sub>x</sub> models.
5. Remove block and PMT cooler assembly.
6. Remove the two screws below the PMT saddle allowing removal of the TEC device (Step 6 on 00393 print).
7. Remove the old TEC and clean both surfaces of the PMT saddle and the PMT mounting block surface (Step 7 on 00393 print).

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8. COAT BOTH SIDES OF COOLER, BLOCK AND SADDLE WITH THERMAL GREASE (See note 3 on 00393 print).
9. Follow the notes on the 00393 print, STEP 5, Notes 3 and 7 ASSURING THE SIDE LABELED "HOT" IS FACING THE pmt SADDLE.
10. Add the two screws removed in Step 6.
11. Before inserting the block assembly, coat the round side of the saddle with thermal grease. Insert block assembly and add the two screws removed in Step 4 (See note 5 on 00393 print,).
12. Before tightening the end plate to the PMT barrel, put in NEW DESICCANT (API part number DR002). See Note 2 on drawing (00393 print, step 7).
13. The preceding procedure is very important to follow thoroughly if the TEC device is to last for years of operation with no failures.
14. When ordering coolers, use Part Number 1644 to receive all necessary parts.

If you have questions regarding this procedure or any API equipment, please contact an API Customer Service representative at:

Phone: (858) 657-9800

Email: [customerservice@advpol.com](mailto:customerservice@advpol.com)

Fax: (858) 657-9816

WWW: <http://www.advpol.com>

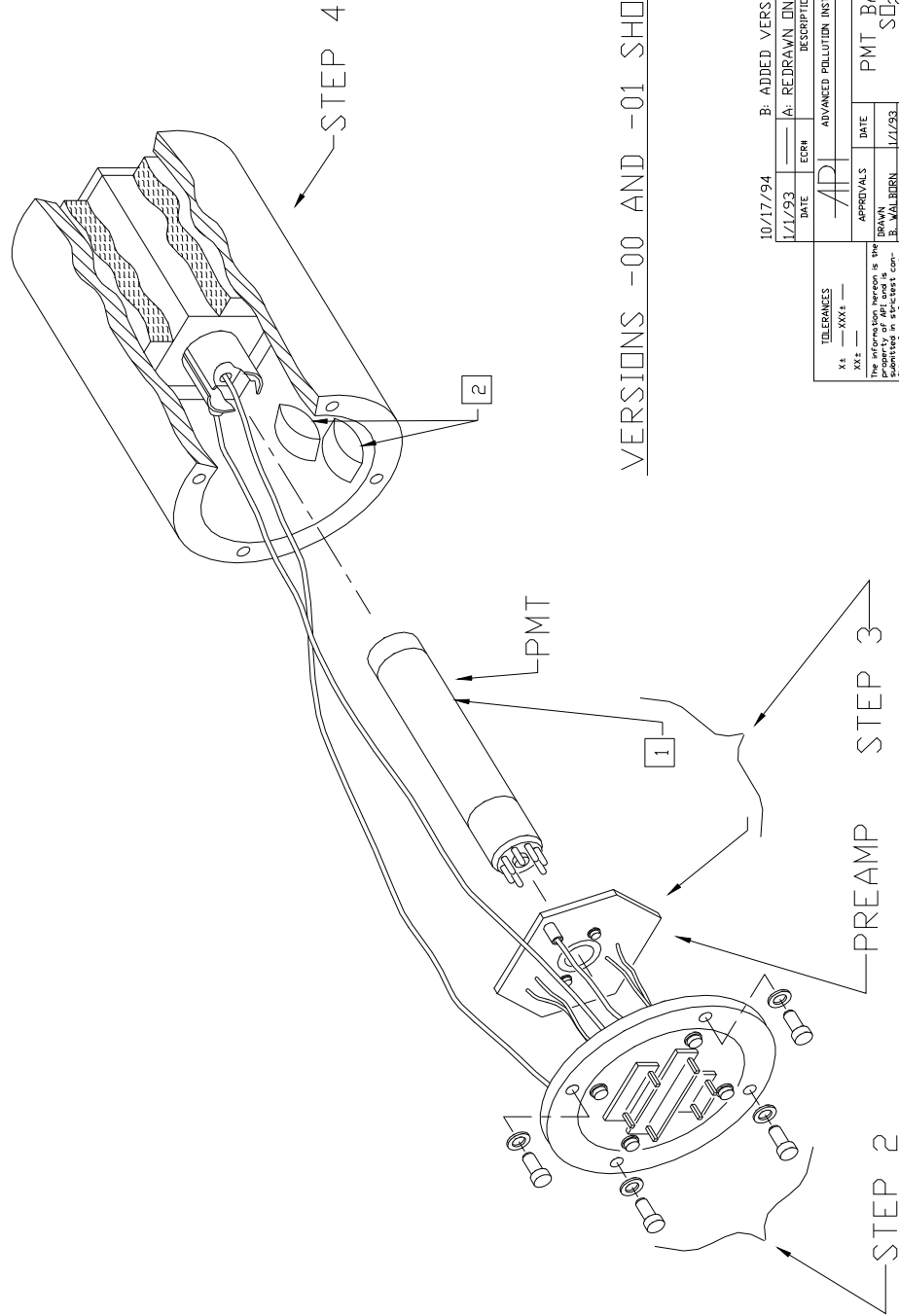
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NOTES: (UNLESS OTHERWISE SPECIFIED)

- 1 PLUG ITEM NO. 8 TUBE INTO THE SOCKET ON THE CIRCUIT BOARD BEFORE INSERTING INTO THE SHIELD.
- 2 IMMEDIATELY PRIOR TO FASTENING THE ENDPLATE ASSEMBLY TO THE BARREL ASSEMBLY, PLACE DESSICANT BAGS INSIDE THE BARREL AS ILLUSTRATED.



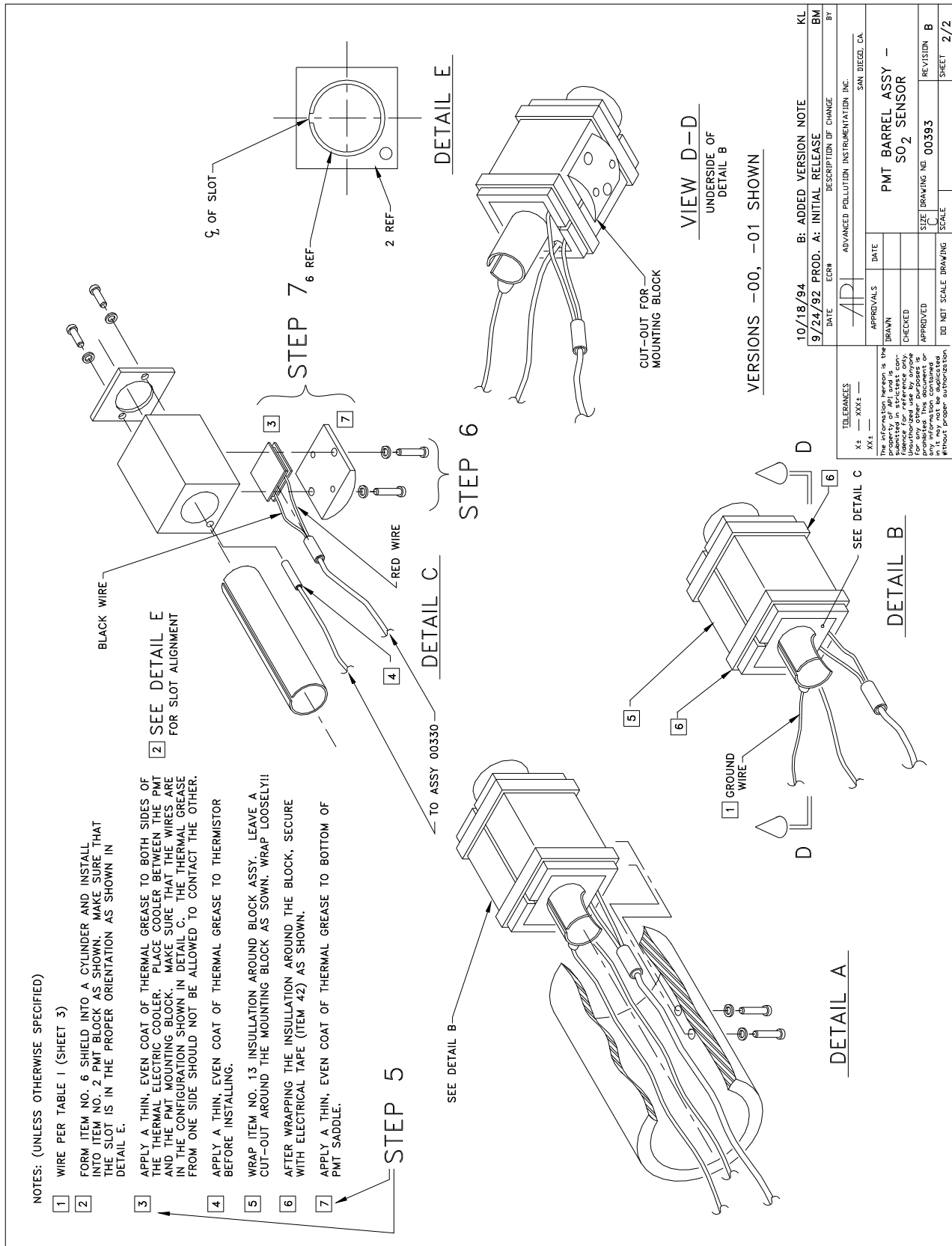
VERSIONS -00 AND -01 SHOWN

10/17/94	B: ADDED VERSION NOTE	KL
1/1/93	A: REDRAWN ON AUTOCAD	BW
	DESCRIPTION OF CHANGE	BT
APPROVALS DATE: 1/1/93 BY: B. WALBYEN CHECKED:		
TOLERANCES XX ± .XXX The information herein is the property of APJ and is loaned to you for reference only. For any other purposes or for any other parts or materials, you must be advised that they may not be substituted without proper authorization.		
ADVANCED POLLUTION INSTRUMENTATION, INC. SAN DIEGO, CA		PMT BARREL ASSY - SO <sub>2</sub> SENSOR
DATE	SIZE	REVISION
10/17/94	SCALE: NONE	B
	DRAWING NO. 00393	SHEET 1 OF 2

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