



**01-014C  
2 May, 2007**

**RETROFIT OF PERM TUBE INTO M200A W/NO OPTIONS**

**I. PURPOSE:**

This service note provides instructions on installing a Perm Tube oven into a M200A analyzer.

**II. TOOLS:**

2 Adjustable wrenches  
Flat Blade Screwdriver  
Phillips head screwdriver

**III. PARTS:**

Teledyne API PN# KIT000055

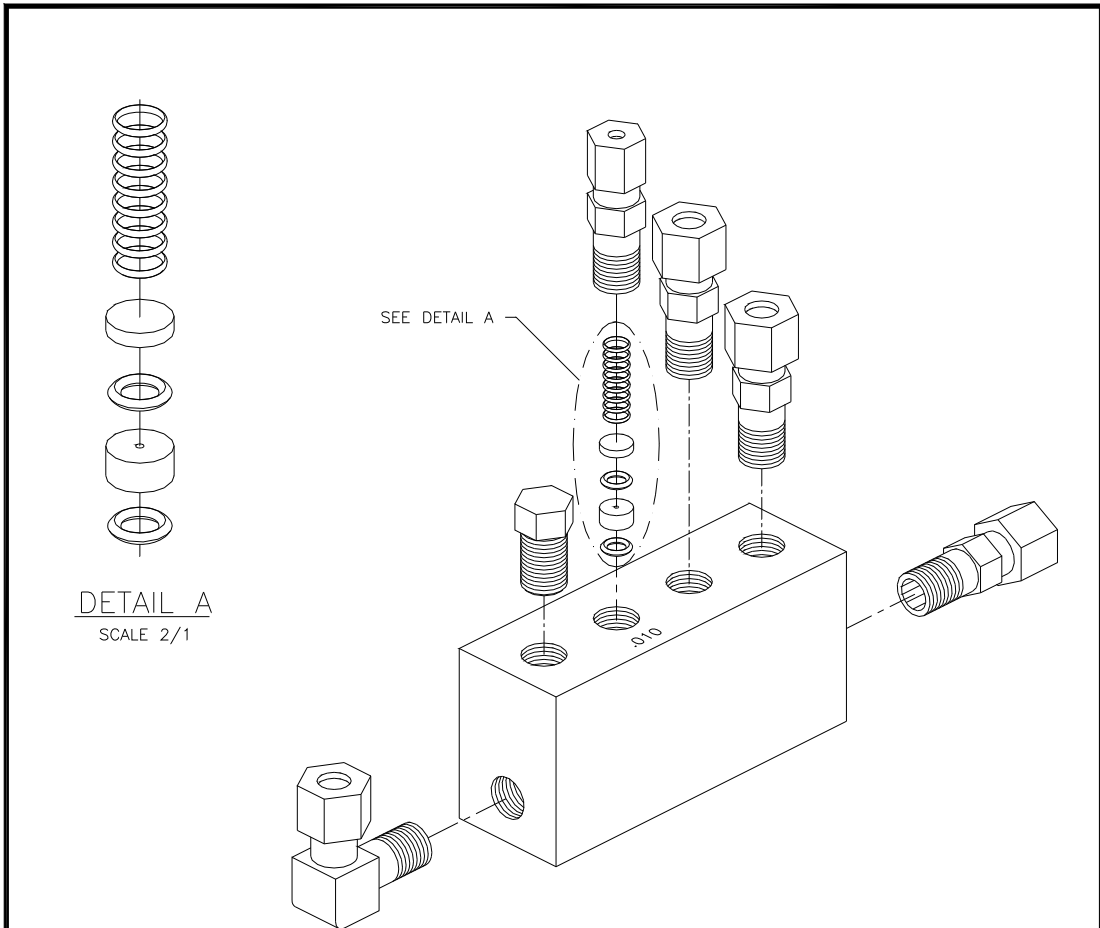
**IV. PROCEDURE:**

1. Remove power and cover from analyzer.
2. Remove the plug from the vacuum manifold on chassis floor just behind rear panel (see drawing 1135 sheet one). Install O-rings, orifice, filter, spring and fitting into vacuum manifold (compare sheet 1 and 2 of drawing #01135, attached).
3. Locate the five (5) pin connector for heater/thermistor. This is lying in the chassis near the **Moly**, with heat shrink over the connector.

**NOTE: This connector may be under the Moly. You may have to loosen four (4) captive screws on Moly base and lift Moly up to locate this connector.)**

4. Remove heat shrink from connector and extend connector to its full length toward rear panel.
5. Place perm tube oven/valve assy into chassis. Tighten 2 captive screws.
6. Connect cable from step 3 to 5 pin connector on valve bracket.
7. Attach two (2) scrubber brackets to rear panel of analyzer.
8. Connect SS bulkhead of scrubber assy into the port marked "ZERO".
9. Place scrubber into brackets.
10. Connect 1/8" tube from scrubber to top of left tee of the left valve (port three).
11. Close rear panel.
12. The sample inlet fitting on the rear panel of the analyzer goes to the particulate filter on the front panel of the analyzer. This is a clear 1/8" tube. Remove it from the bulk head fitting on the rear panel & put it to the common port on the valve assy. See diagram on page 6.
13. Connect a new tube from the bulkhead fitting on the rear panel of the analyzer to the sample in port on the zero valve. See diagram on page 6.
14. Connect the purge line from the span valve to the fitting on the vacuum manifold that you installed in step 2. See diagrams on pages 6 and 4.
15. The rear most printed circuit card on the motherboard is the "status temp card"; locate & remove the jumper that is on JP2. If you do not remove this jumper you will have problems maintaining the temp of the permeation oven.
16. Apply power to analyzer. Press SETUP-MORE-VARS. Change password to 929 and press ENTR. Press the NEXT button until you come to the VAR that is called FACTORY OPTION. Press "EDIT", change the number to "20" press "ENTER" Press EXIT until you are at the main menu.

17. Turn the unit off then back on again.
18. Leak check as follows:
  - A. Place a cap on the sample inlet. Ensure the analyzer is in Sample mode.
  - B. Place a cap over the DFU at the dryer inlet.
  - C. Wait two (2) minutes, then cycle power on analyzer without turning off pump or removing caps.
  - D. Scroll to the Sample Press and R-cell Press TEST functions. Ensure they are reading within 1"-Hg-A of each other. If not, locate and repair leak. This leak will not be in the IZS assembly.
  - E. Remove cap from sample inlet and place cap on end of Zero Air scrubber, (you may have to install a fitting).
  - F. Press CALS. Monitor Sample Pressure until stable, usually 5-10 minutes.
  - G. Compare Sample Pressure to R-cell Pressure. They should be within 1"-Hg-A of each other. If not, there is a leak in the valve/oven or scrubber assy.
19. Perform a factory calibration on the analyzer.



DETAIL A  
SCALE 2/1

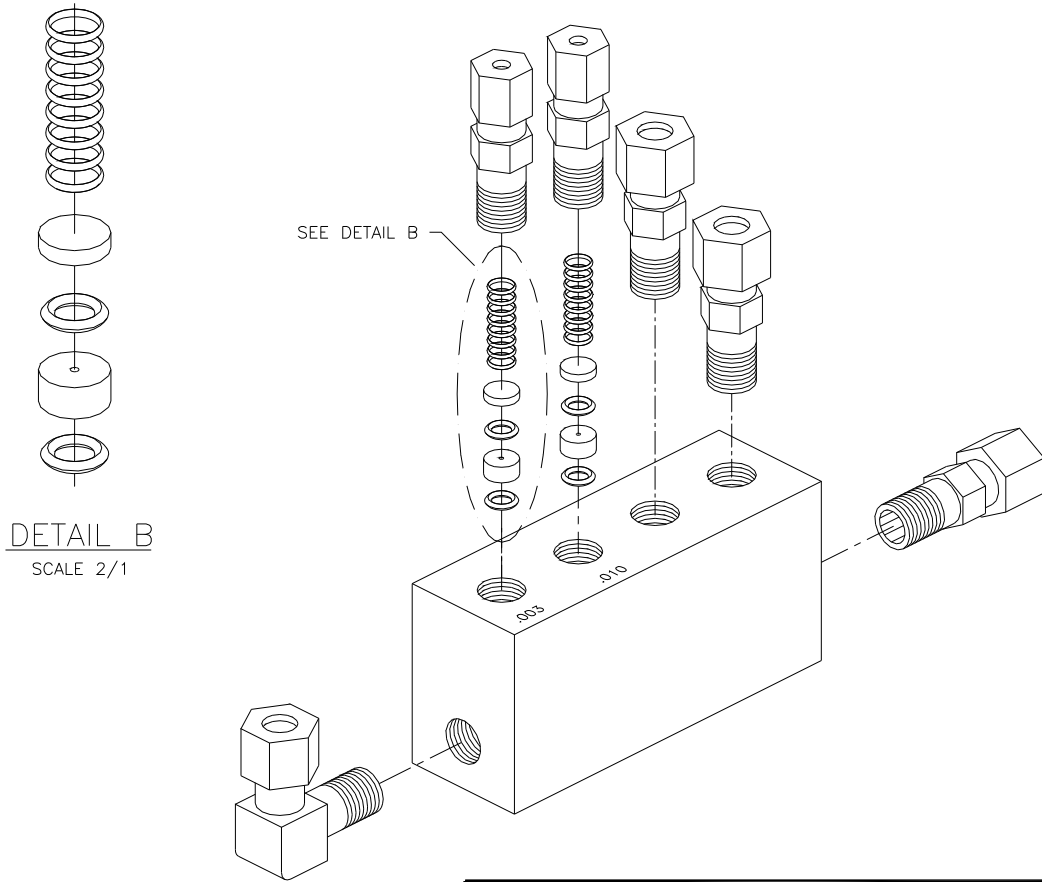
NOTE: LEAK CHECK ASSEMBLY WHEN COMPLETE

⚠ LABEL AS SHOWN

<b>API</b> ADVANCED POLLUTION INSTRUMENTATION INC. SAN DIEGO, CA.			
APPROVALS		DATE	
DRAWN J. HALL		1/95	
CHECKED			
APPROVED			
7/2/97		C: ADDED CALLOUT RH	
6/18/95		B: REDRAW AS ISO	
1/27/95		A: INITIAL RELEASE KL	
DATE	ECR#	DESCRIPTION OF CHANGE	BY
			DO NOT SCALE DRAWING
M200A, VACUUM MANIFOLD ASSY		SIZE A	DRAWING NO. 01135
		SCALE 1/1	REVISION C
			SHEET 1 of 2

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NOTE: LEAK CHECK ASSEMBLY WHEN COMPLETE

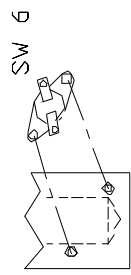


DETAIL B  
SCALE 2/1

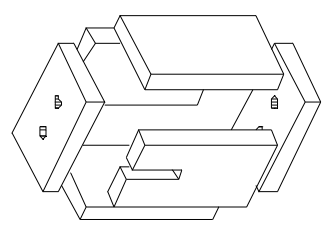
<b>API</b> ADVANCED POLLUTION INSTRUMENTATION INC. SAN DIEGO, CA.			
APPROVALS		DATE	
DRAWN	J. HALL	1/95	
CHECKED			
APPROVED			
DATE	ECR#	DESCRIPTION OF CHANGE	BY
7/2/97		C: CHG CALLOUTS	RH
6/18/95		B: REDRAW AS ISO	KL
1/27/95		A: INITIAL RELEASE	KL
DD NOT SCALE DRAWING		SIZE A	DRAWING NO. 01135
SCALE 1/1		REVISION C	
			SHEET 2 of 2

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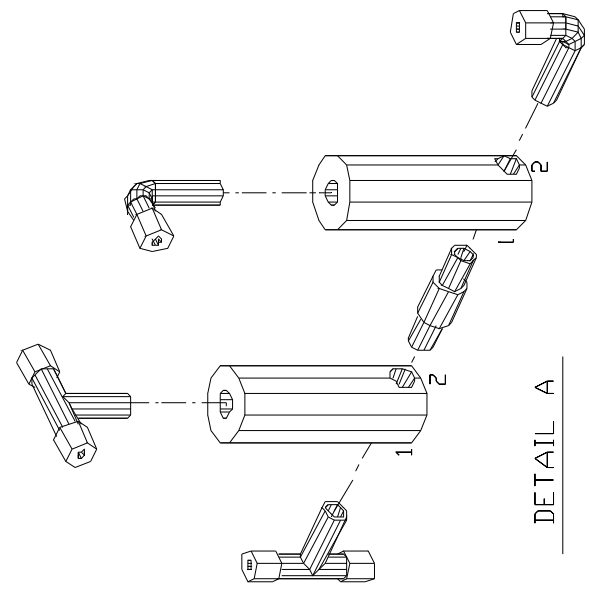
- 1. USE TEFLON TAPE ON ALL PIPE THREAD CONNECTIONS
- 2. LEAK CHECK COMPLETED ASSY TO TP#01075
- 3. MAKE SURE NUT ON TOP OF VALVE IS TIGHT (HAND TIGHT PLUS 1/2 TURN)



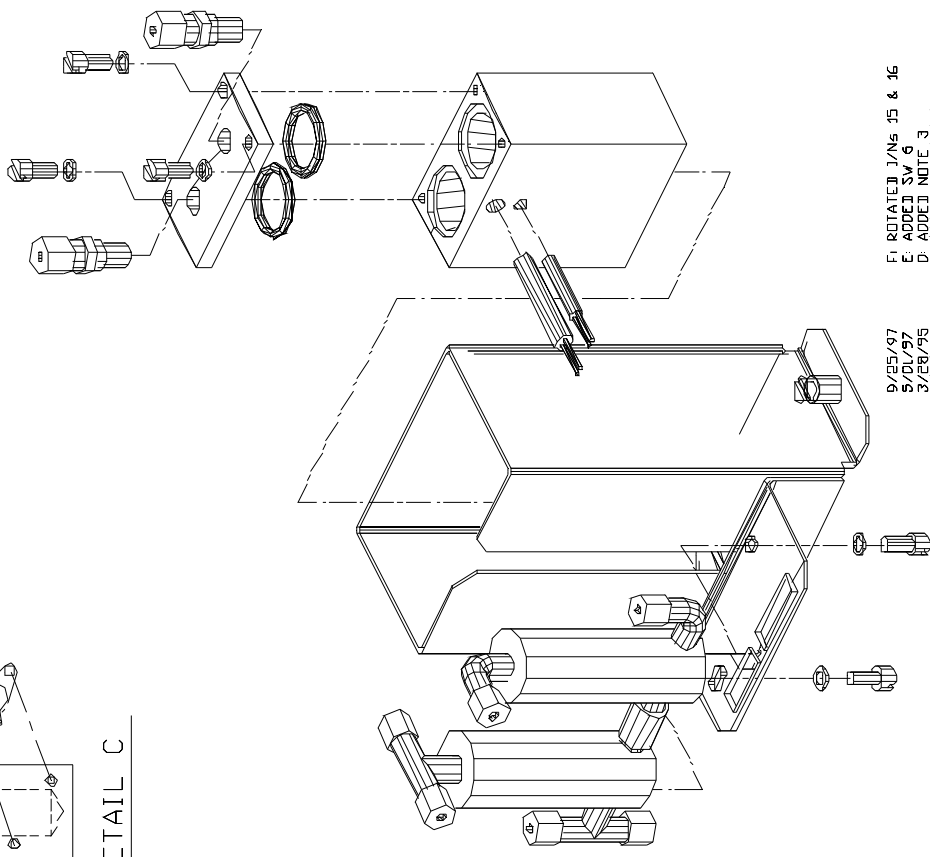
DETAIL C



DETAIL B



DETAIL A



9/15/97	D/15/97	F1	ROTATED 1/4 IN 15 & 16	SSM
5/15/97	5/15/97	E	ADDED SW 6	SSM
3/15/95	3/15/95	D	ADDED NOTES	KL
2/15/95	2/15/95	C	ADDED NOTES #42	KL
12/16/94	12/16/94	B	CHANGED FITTINGS	KL
9/13/94	9/13/94	A1	INITIAL RELEASE	KL
			DESCRIPTION OF CHANGE	BY

X1: TOLERANCES		X2: 3/16"	
APPROVALS			
DATE	BY	DATE	BY
9/13/94	EEBB	6/7/94	DRAWN
		11/7/94	J. HALL
			J. HALL

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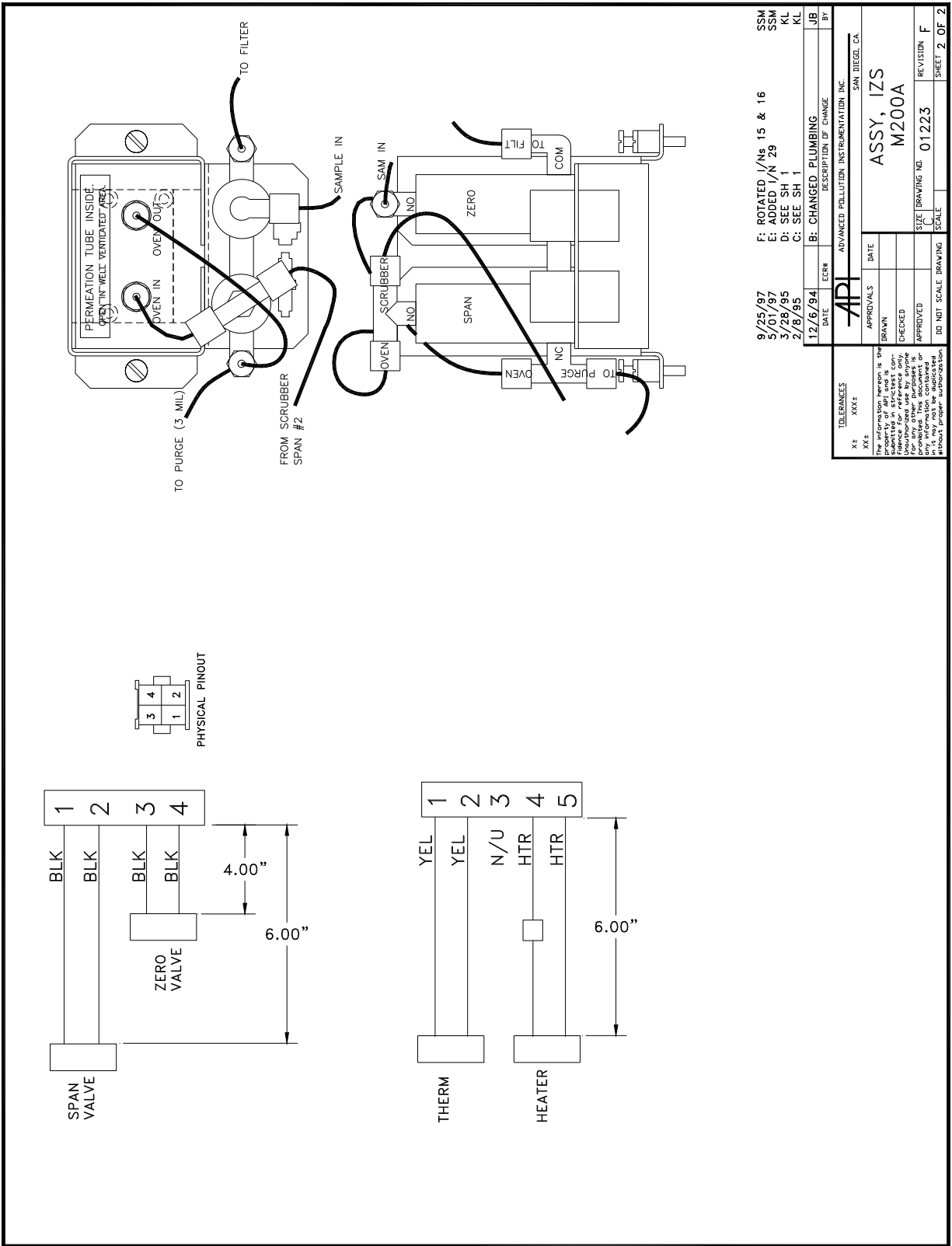
ASSY, IZS M200A

REV. 01223

NO. 1 SCALE DRAWING

REVISION F

SHEET 1 OF 2



9/25/97	F: ROTATED I/Ns 15 & 16	SSM
5/01/97	E: ADDED I/N 29	SSM
3/28/95	D: SEE SH 1	KL
2/8/95	C: SEE SH 1	KL
12/6/94	B: CHANGED PLUMBING	JB
DATE	DESCRIPTION OF CHANGE	BY
<b>API</b> ADVANCED POLLUTION INSTRUMENTATION INC. SAN DIEGO, CA.		
TOLERANCES	APPROVALS	DATE
X± XXX±	BRANN	
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	APPROVED	
DO NOT SCALE DRAWING	SIZE	REVISION
	C	F
	01223	
	SCALE	SHEET 2 OF 2

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