



**99-011 Rev B
2 May, 2007**

RETROFIT OF PERM TUBE INTO M200A WITH VALVES

I. SCOPE:

This service note provides instructions on installing a Perm Tube oven into a M200A analyzer with IZS valves already installed.

II. PARTS:

API PN# KIT000056

III. TOOLS:

2 Adjustable wrenches
Flat Blade Screwdriver
Phillips head screwdriver

IV. PROCEDURE:

1. Remove power and cover from analyzer.
2. Drop rear panel of analyzer. Locate the valves. Remove tube from right bottom fitting of valve on the right. Mark tube with a piece of masking tape as "filter".
3. Remove tube from top fitting of valve on right. Mark tube "sample".
4. Remove tubes from top and bottom fitting of valve on left.
5. Disconnect 4 pin power plug on valve bracket.
6. Loosen 2 captive screws holding valve bracket into chassis. Remove valve/bracket assembly.
7. Remove 4 pin power plug from bracket. Remove screws holding valves to bracket and discard bracket.
8. Remove bottom left and top fittings from left valve (ports one and three).

Note: Do not allow the "collar nut" on the valve to turn more than ½ turn! Hold it with a wrench while removing and installing fittings!

9. Apply Teflon tape to the two ¼" tees included in KIT. Install these fittings onto left valve (see detail A of Drawing 1223, attached).
10. Install valves onto bracket attached to perm tube oven. Push 4 pin power connector into template hole in bracket.
11. Remove bulkhead fittings and tubes on rear panel marked SPAN1 and ZERO. Discard bulkhead fittings and tubes.
12. 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).

13. Locate 5 pin connector for heater/thermistor. This is laying 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 4 captive screws on Moly base and lift Moly up to locate this connector.)

14. Remove heat shrink from connector and extend connector to its full length toward rear panel.

Note: For next 4 steps, please refer to Drawing #1223, page 2 of 2, attached.

15. Connect tubing from top left branch of the tee of the left valve (port three on valve) to the left side of the perm tube oven.
16. Connect tube from the top of the T on the lower side of the left valve (port one on valve) to the right side of the perm tube oven.
17. Place perm tube oven/valve assembly into chassis. Tighten 2 captive screws.
18. Connect cable from step 11 to 5 pin connector on valve bracket.

Note: For the next 3 steps, please refer to drawing #1223, page 2 of 2, attached.

19. Connect 1/8" tube from 3 mil orifice in vacuum manifold, (installed in step 12) to the lower fitting on the T on port one of the left valve.
20. Connect tube marked "filter", from step 2, to right side fitting of right valve (port two).
21. Connect tube marked "sample", from step 3, to top fitting of right valve (port three).

Note: Locate scrubber assembly from KIT. This should have tubing and fittings attached to one end, terminating with a SS Bulkhead.

22. Attach 2 scrubber brackets to rear panel of analyzer.
23. Connect SS bulkhead of scrubber assembly into the port marked "ZERO".
24. Place scrubber into brackets.
25. Connect 1/8" tube from scrubber to top of left tee of the left valve (port three).
26. Close rear panel.
27. The rear most printed circuit card on the motherboard is the "status temp card"; locate and remove the jumper that is on JP2.
28. Apply power to analyzer. Press SETUP-MORE-VARS. Change password to 929 and press ENTR. Press JUMP. Enter 60 and press ENTER press NEXT to "FACTORY_OPT" then press "EDIT" change the number to "20" press "ENTER" Press EXIT until you are at the main menu.
29. Turn the unit off then back on again.

30. 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 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 assembly.
31. Perform a factory calibration on the analyzer.

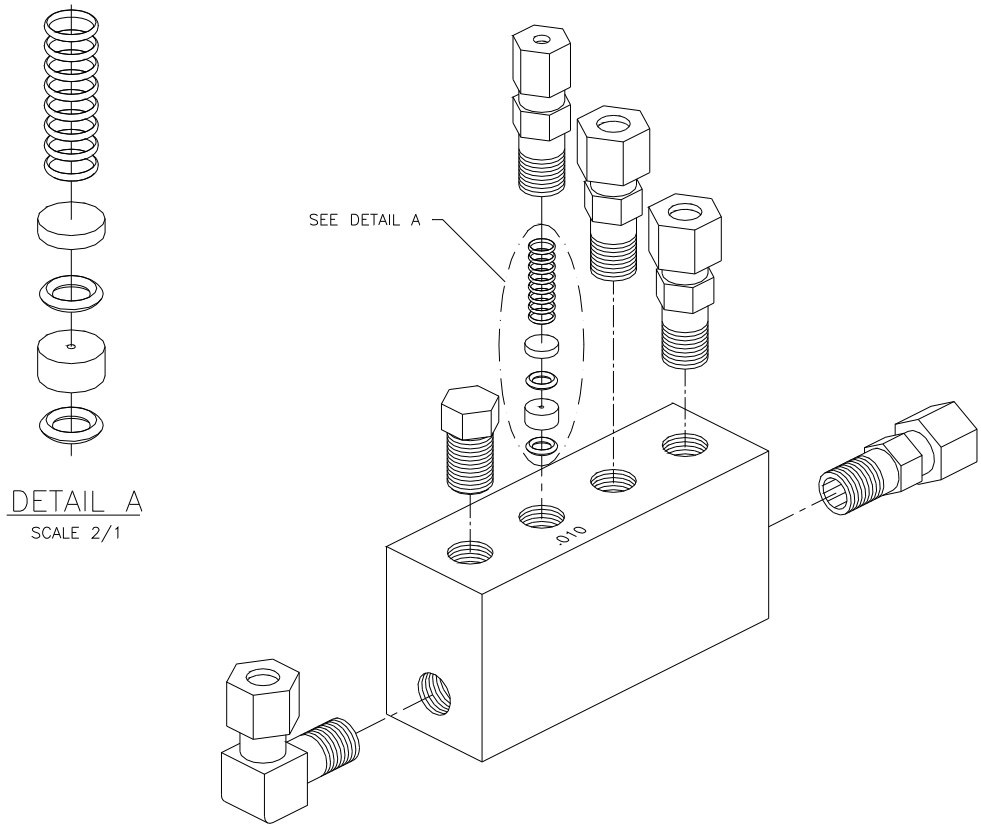
If you have questions regarding this procedure or any API equipment, please contact an API Customer Service representative at:

Phone: (619) 657-9800

Email: customerservice@advpol.com

Fax: (619) 657-9816

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

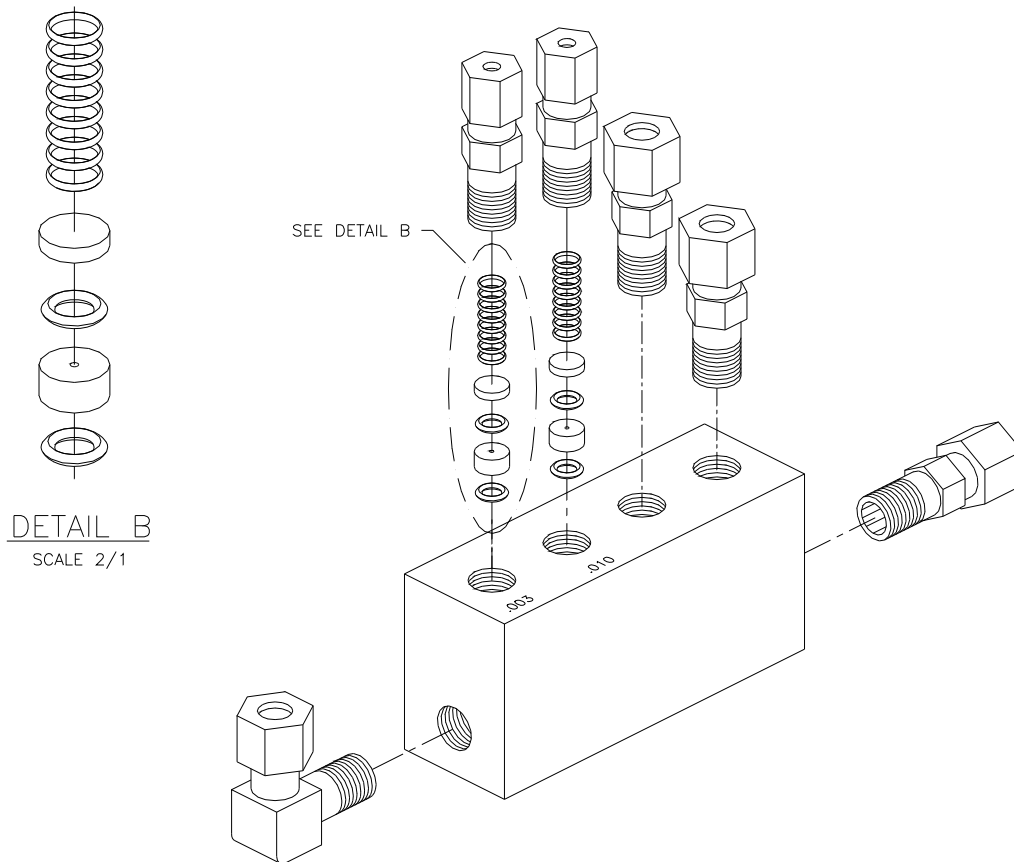


NOTE: LEAK CHECK ASSEMBLY WHEN COMPLETE

LABEL AS SHOWN

		API		ADVANCED POLLUTION INSTRUMENTATION INC. SAN DIEGO, CA.	
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	SCALE 1/1
			APPROVALS	DATE	M200A, VACUUM MANIFOLD ASSY
			DRAWN J. HALL	1/95	
			CHECKED		SIZE A
			APPROVED		DRAWING NO. 01135
					REVISION C
					SHEET 1 of 2

NOTE: LEAK CHECK ASSEMBLY WHEN COMPLETE



DETAIL B
SCALE 2/1

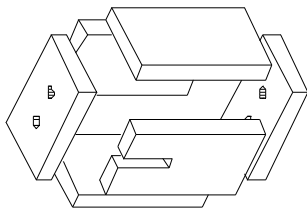
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7/2/97		C: CHG CALLOUTS	RH
6/18/95		B: REDRAW AS ISO	KL
1/27/95		A: INITIAL RELEASE	KL
DATE	ECR#	DESCRIPTION OF CHANGE	BY
		DO NOT SCALE DRAWING	
		APPROVALS	
		DATE	
		DRAWN J. HALL 1/95	
		CHECKED	
		APPROVED	
		M200A, VACUUM MANIFOLD, WITH IZS	
		SIZE A	DRAWING NO. 01135
		SCALE 1/1	REVISION C
		SHEET 2 of 2	

RETROFIT OF PERM TUBE INTO M200A WITH VALVES

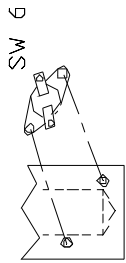
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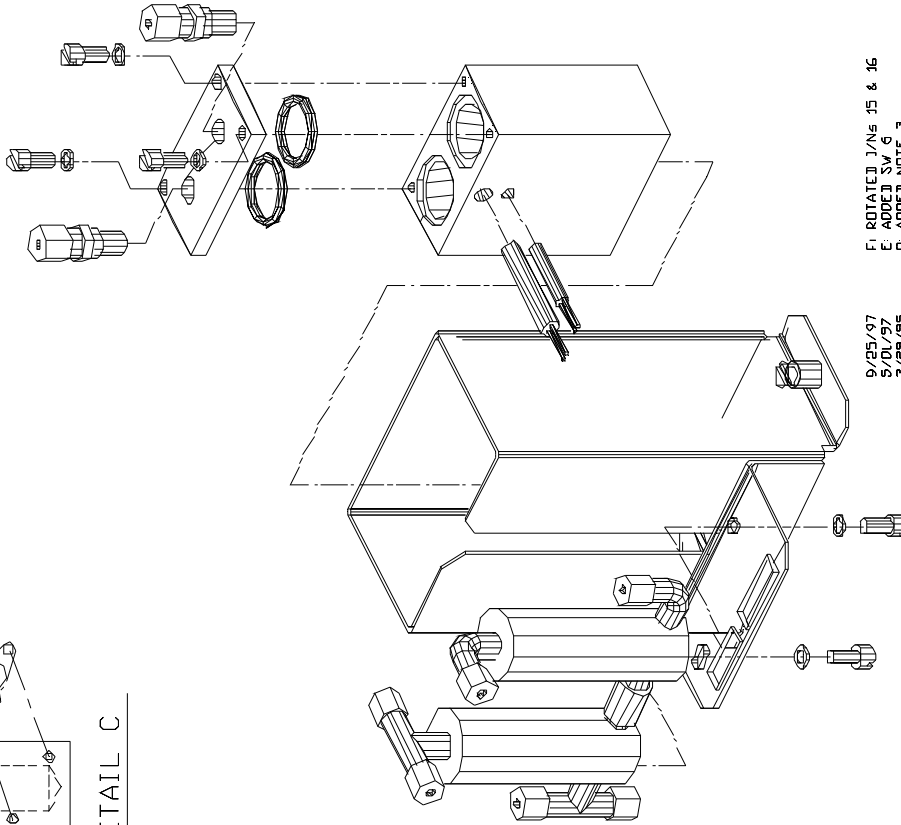
1. USE TEFLON TAPE ON ALL PIPE THREAD CONNECTIONS
2. LEAK CHECK COMPLETED ASSY TO TF#00075
3. MAKE SURE NUT ON TOP OF VALVE IS TIGHT (HAND TIGHT PLUS 1/2 TURN)



DETAIL B

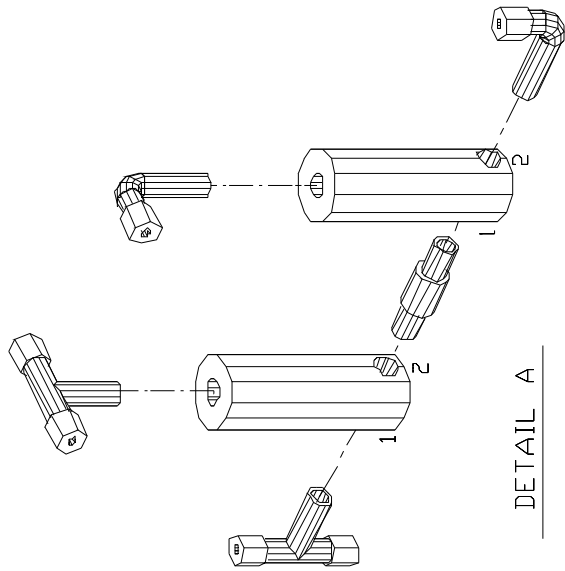


DETAIL C

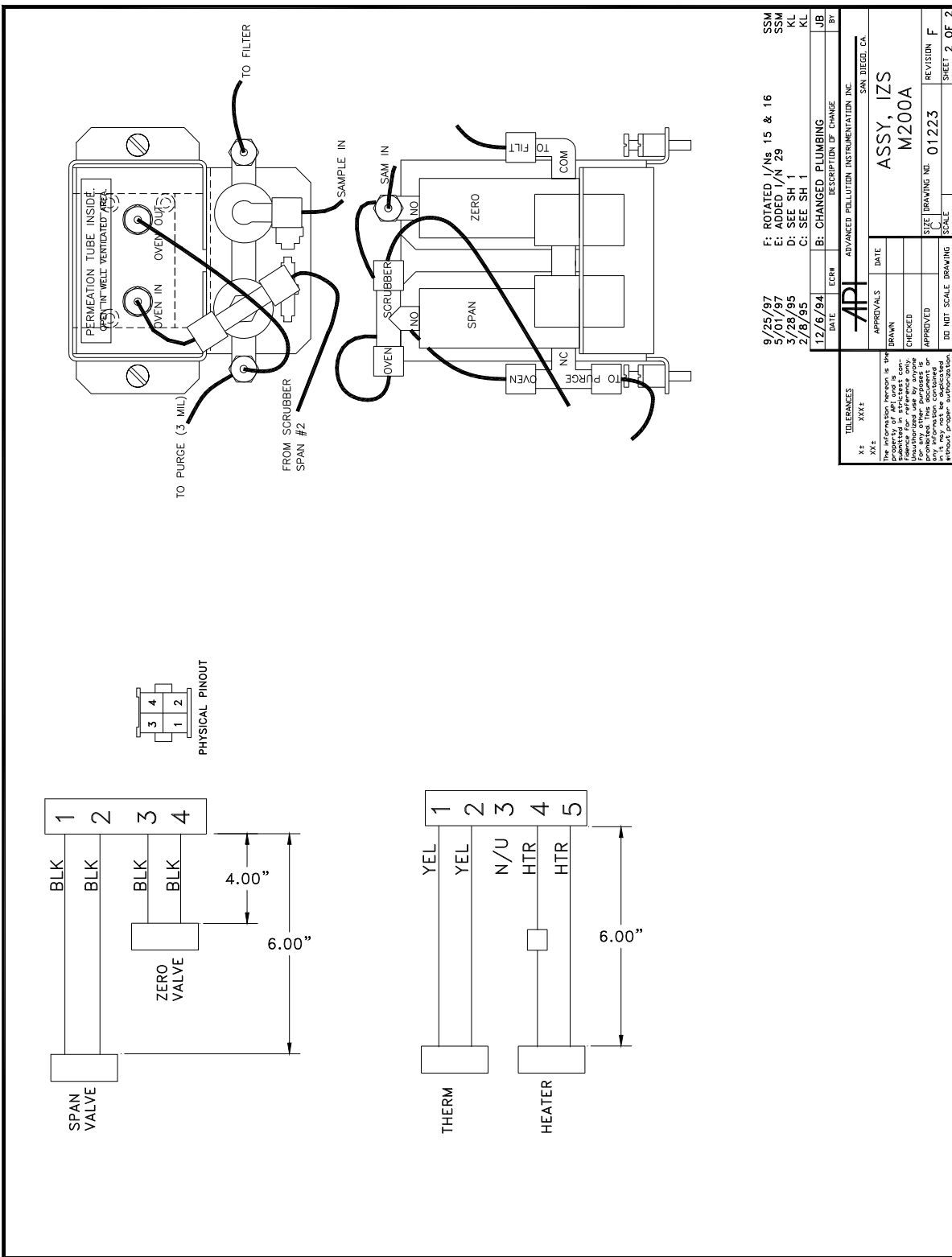


9/25/97	F: ROTATED 1/16 IN & 16	SSM
5/01/97	E: ADDED SW 6	SSM
2/28/95	D: ADDED NOTE 3	KL
2/18/95	C: ADDED NOTES 1&2	KL
12/6/94	B: CHANGED FITTINGS	KL
9/13/94	A: INITIAL RELEASE	KL
DATE	DESCRIPTION OF CHANGE	BY
DATE	DESCRIPTION OF CHANGE	BY
ADVANCED POLLUTION INSTRUMENTATION, INC.		
SPRINGFIELD, MA		
APPROVALS	DATE	
DRAYN	MAY 6/94	
REVISED	J. HALL	11/94
APPROVED		
SIZE	ISSUES NO	REVISED
00	01223	F
DO NOT SCALE DRAWING	SCALE NONE	SHEET 1 OF 2

TOLERANCES
 XXX
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 PROPERTY OF AP&E and its
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 prepared for the customer's
 information. THE CUSTOMER OF
 THIS DRAWING SHALL BE RESPONSIBLE
 FOR THE PROPER INTERPRETATION.



DETAIL A



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
	A: CHANGED PLUMBING	JB
		BY
DATE ECR DESCRIPTION OF CHANGE		
ADVANCED POLLUTION INSTRUMENTATION, INC. SAN DIEGO, CA		
TOLERANCES XXX±		
XX±		
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APPROVALS	DATE	
DRAWN		
CHECKED		
APPROVED		
ASSY, IZS M200A		SCALE
SIZE DRAWING NO. 01223		REVISION F
DO NOT SCALE DRAWING		SHEET 2 OF 2

RETROFIT OF PERM TUBE INTO M200A WITH VALVES
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