TELEDYNE
INSTRUMENTS
Advanced Pollution Instrumentation
A Teledyne Technologies Company
9480 Carroll Park Drive, San Diego, CA 92121-5201
Phone (858) 657-9800 Fax: (858) 657-9818 Toll Free 1800 324-5190
E-mail: api-customerservice@teledyne.com http://www.teledyne-api.com

Service Note

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LEAK CHECKING API ANALYZERS WITH THE VALVE STYLE LEAK CHECKER

I. SCOPE:

To help our customers find leaks in their analyzers. The basic principles of troubleshooting all of the API analyzers are the same so we will cover the M200A, as it is the most complex pneumatically for the API family of analyzers.

II. PARTS:

None

III. TOOLS:

Valve style leak checker (or any leak checker)
Cap for ¼" fitting
Caps for 1/8" fitting (X4)
Cap for DFU style filter
9/16" wrench
7/16" wrench
Leak check solution

IV. PROCEDURE:

NOTE: Any time you are looking for leaks, the most likely causes are fittings that are removed with frequency. Also keep in mind that pumps naturally have large leaks in them. That is why you want the valve in between the pump and the rest of the pneumatic circuit that you are checking.

A. Remove the exhaust tube from vacuum manifold on the floor of the analyzer under the bulkhead fittings and the bulkhead fitting on the rear panel.
B. Connect the side of the leak checker that has the valve to the bulkhead fitting on the rear panel.
C. Connect the gauge side of leak checker to the vacuum manifold.
D. Cap the sample inlet, DFU filter on the dryer, zero air inlet on the scrubber for the IZS.
E. Turn on the pump and allow the unit to draw down to a steady reading on the vacuum gauge and close the valve.
F. The unit should not lose more than one (1) inch of vacuum in five (5) minuets.
G. If the unit fails the leak check, remove the 1/8" purge line from the vacuum manifold that goes to the perm tube oven and put a cap on the vacuum manifold. Repeat the leak check.

H. If the unit still fails the leak check, remove the ¼" fitting from the vacuum manifold that goes to the dryer and remove the 1/8" fitting from the top of the Rcell that goes to the O3 generator. Then cap these fittings on the manifold and the Rcell and repeat the leak check.

I. If the leak check still fails, then remove the tubing from the sample filter that goes to the sample cal valves in the rear of the analyzer. Then put a cap on the sample filter and repeat the leak check.

J. If the leak check still fails, then remove the 1/8" fitting from the vacuum manifold that goes to the auto zero valve and put a cap on the manifold. Also remove the other 1/8" fitting from the Rcell and put a cap on the Rcell and repeat the leak check.

K. If the leak check still fails, then you have a leak in the Rcell. Remove the Rcell and change all of the o-rings and the two sintered filters. Re-assemble all of the fittings that you have removed and recheck the entire analyzer. The leak check should pass. If not repeat this entire process until you find the leak.

L. If you still can't find the leak in the analyzer, then you might try to reverse the flow- through of air through the analyzer. The idea is that you will want to pressurize the analyzer with air and use a leak check solution to find the leak.

M. Remove the vacuum line from the pump and attach it to the pressure port on the pump.

N. Allow the pump to pressurize the analyzer then turn the valve to the closed position. If the analyzer does not have any leaks, the gauge will stay at some value.

CAUTION: DO NOT EXCEED 15 PSI OR DAMAGE COULD OCCURE TO THE ANALYZER

O. If the unit is loosing pressure, then you will want to use the leak check solution to find the leak.

P. Put the leak check solution on all of the connections in the suspect area. When you find a leak, the solution will begin to bubble up. If the leak is in a fitting, tighten the fitting and re-check. Re-introduce pneumatic sections until you have all of the leaks fixed. Once you have all of the pneumatic sections back in the analyzer, you should have all of the leaks fixed.

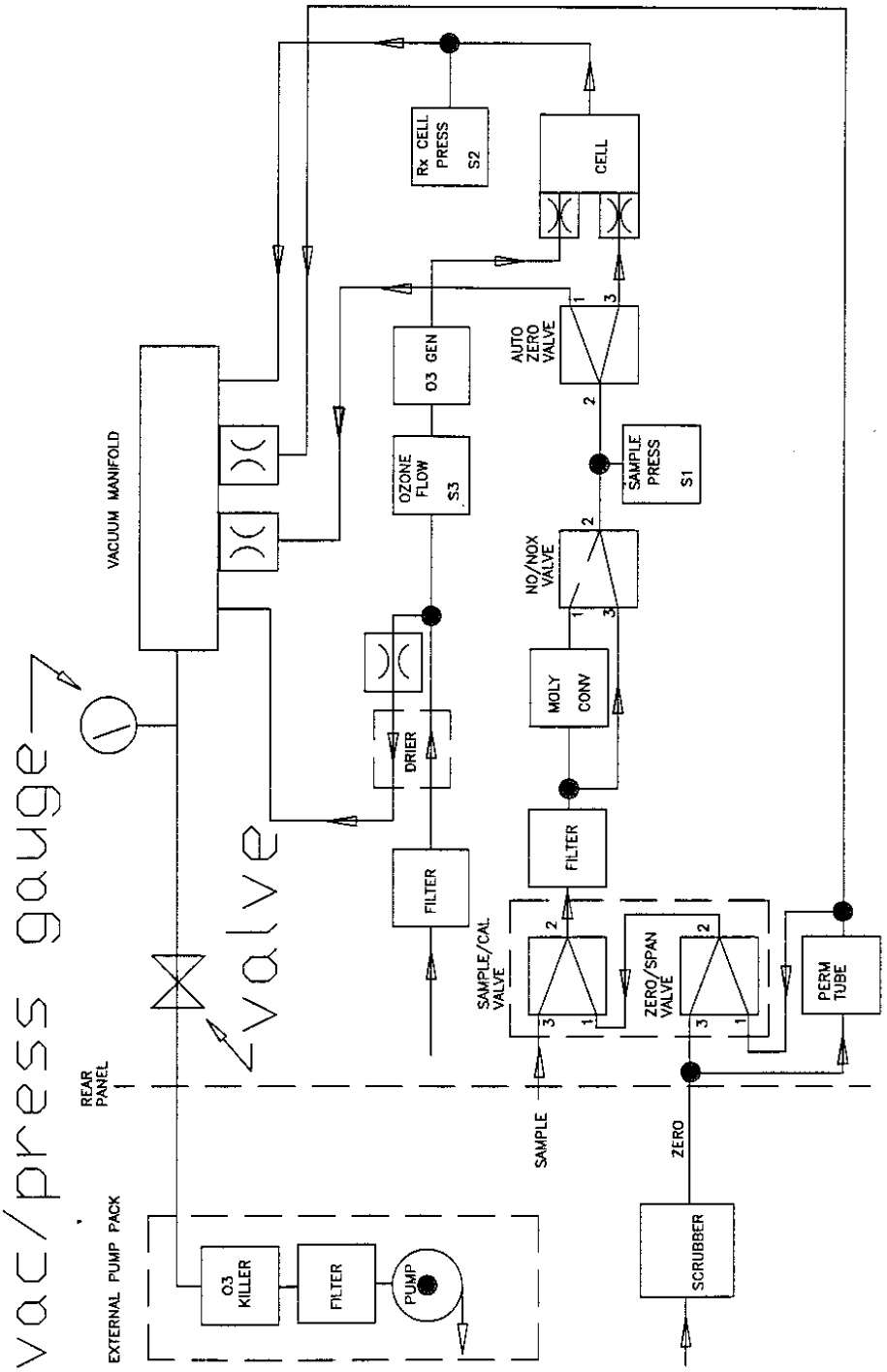
This procedure is specific to the M200A yet can be applied to all of the API analyzers. Follow the diagrams that are included in this procedure and eliminate pneumatic circuits as you did in this procedure to locate the leak in the analyzer you are working on.

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

Phone: (619) 675-9800
Fax: (619) 657-9816
Email: customerservice@advpol.com

M100A with IZS

* INTERNAL PUMP STANDARD (EXTERNAL OPTIONAL)



M200A PNEUMATIC DIAGRAM

WITH IZS OPTION