

Overview

Errata for the Tekmar-Dohrmann Apollo 9000 User Manual, Rev. A, Part Number 14-9000-074, Version 05.21.99 (This information is near the bottom on the copyright page, which backs the title page.)

The Apollo 9000 User Manual and online help files you received do not contain information about the latest enhancements made to the instrument and software. We will send you the revised user manual and online help files as soon as possible and apologize for any inconveniences you may experience.

Please refer to the errata for the latest technical documentation. If, in the meantime, you require technical assistance or have any questions regarding documentation, please do not hesitate to contact the Tekmar-Dohrmann Customer Support Center at (800) 874-2004 or (513) 247-7000.

Thank you for your understanding,

The Tekmar-Dohrmann Apollo 9000 Team

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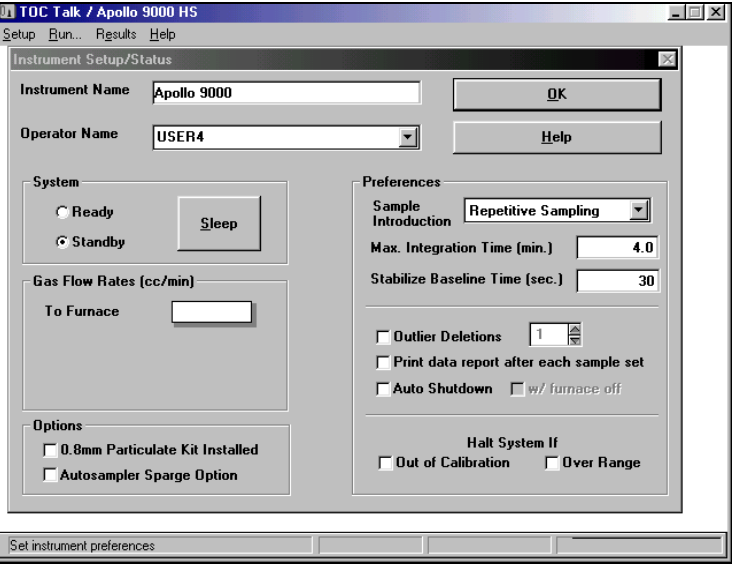
Appendix 11

Apollo 9000—Errata B created on May 24, 2000.

Section/Page	Reference	Description
Chapter 1		
§1.3 Page 1-10	Figure 1.4.6	Replace with new drawing; new injection port design does not have a slider valve.
	Replace last two paragraphs in second column with:	The injection port provides the interface for the sample line and the furnace carrier gas into the combustion furnace. The sample line enters from the top of the injection port and the carrier gas enters from the right of the injection port.
Chapter 2		
§2.4 Page 2-8	Replace last sentence in step 2 of second column with:	For most connections, allow 3mm (1/8") of tubing to extend past the end of the ferrule. For 8-port valve fittings make sure tubing is flush with the end of the ferrule.
Page 2-11	Remove text from step 2 of second column:	1/2" Tygon
§2.5 Page 2-13	Delete step 2a; replace step 2 text with:	2. Place a loosely wadded tuft (approximately 1/2" thick) of quartz wool through the top of the combustion tube to just above the narrow opening. To prevent catalyst from dropping through the quartz wool, gently pack the top of the quartz wool so that there is no space between the perimeter of the quartz wool and the glassware.
	Add new step between steps 3 and 4:	4. Add 0.5" quartz wool on top of catalyst. The added quartz wool will protect and add life to the catalyst.
Page 2-14	Figure 2.5.4	Replace with new image; new injection port design does not have a slider valve.
Page 2-15	Figure 2.5.5	Replace with new image; new injection port design does not have a slider valve.
	Add new sentence to step 6b; add:	Wipe o-ring down with a lint-free wiper to remove excess grease
	Delete steps 8 and 9.	


(Continued...)

Section/Page	Reference	Description
<p>§2.9 Page 2-24</p>	<p>Delete all text in §2.9 and replace with:</p>	<p>Fresh catalyst background might be too high for most applications. Before initial Apollo 9000 operation and each time the catalyst is replaced, the catalyst conditioning procedure must be performed.</p> <p>To condition the combustion tube catalyst:</p> <ol style="list-style-type: none"> 1. Make sure DI water vessel contains a minimum 1-liter supply. 2. Set the combustion furnace temperature to 900°C <ul style="list-style-type: none"> ▪ Press and hold the Set button on the Temperature Controller and then press the Up arrow button until the display reads 900°C. ▪ Release both buttons and wait until the furnace reaches 900°C. 3. Run the TOC Talk Cleaning Procedure Method as a sample for 10 replicates overnight in repetitive sampling mode every 5 minutes (the minimum time allowed). 4. The next day, exit the repetitive sampling procedure, return the combustion furnace temperature to 680°C, and run DI water as a TOC Sample. <p>For applications measuring 1 ppmC samples or less, the raw data for this sample should be:</p> <ul style="list-style-type: none"> ▪ Less than 30000 area counts for the standard Apollo 9000. ▪ Less than 375000 area counts for the Apollo 9000 HS. <p>If your results do not approximate these values and you are running samples higher than 1 ppmC, it may be acceptable to run standards and samples. However, if you are running ≥ 1 ppmC samples, then repeat the conditioning procedure to lower the raw data for your DI water and background.</p> <p>NOTE: Some users may not have DI water clean enough to meet these guidelines. If you are running samples ≥ 1 ppmC, your results may be acceptable. If results are not acceptable, then Tekmar-Dohrmann recommends using an improved DI water source.</p>


Section/Page	Reference	Description
Chapter 3		
§ 3.2 Page 3-3	Figure 3.2; update TOC Talk Instrument Setup/Status screen to:	 <p>Figure 3.2 Instrument Setup/Status Screen</p>
Page 3-4	Update all references to "Particulate Kit Installed" to:	0.8 mm Particulate Kit Installed.
	Stabilize Baseline Time (sec.); change last sentence text to:	The recommended time is 15 seconds.
§ 3-3 Page 3-6	Change Gas Input, Permeation Dryer flow to:	200cc/min.
	Change Gas Input, ASM Sparge [Valve 4] to:	[Valve 7]
	Delete second to last bullet point in second column.	
Chapter 4		
Entire chapter.	Replace all range references of "0-100" with:	0-20, 1-400

Section/Page	Reference	Description																				
Chapter 5																						
§5.2 Page 5-3	Figure 5.2.1	Update Instrument Setup/Status screen to show: 0.8 mm particulate option and 15 second Baseline Stabilization time.																				
Page 5-4	Figure 5.2.4	Update Analysis Setup screen to show: Method ID TOC 0-20ppmC																				
Page 5-6	Figure 5.3.1	Update Instrument Setup/Status screen to show: 0.8 mm particulate option and 15 second Baseline Stabilization time.																				
Add new Section	§5.4 Sample Blanks																					
	Add new subtopic: Manually Set the Sample Blank	<p>Tekmar-Dohrmann recommends setting the blank value to the raw data value of your DI water run as a sample. To set this up go to the sample blanks review screen in the Results menu and enter the correct raw data value into for all three blank columns for the desired range of analysis. Press OK to accept the changes.</p> <p>Table 5.4.1 outlines the blank ranges as they correlate to the standard methods:</p> <table border="1"> <thead> <tr> <th>Sample Method ID</th> <th>Blank Type</th> </tr> </thead> <tbody> <tr> <td>TOC, TC 0-20ppmC</td> <td>TOC_TC Rng 1</td> </tr> <tr> <td>TOC, TC 1-400ppmC</td> <td>TOC_TC Rng 1</td> </tr> <tr> <td>TOC, TC 10-750ppmC</td> <td>TOC_TC Rng 2</td> </tr> <tr> <td>TOC, TC 100-4000ppmC</td> <td>TOC_TC Rng 3</td> </tr> <tr> <td>TOC, TC 1000-25000ppmC</td> <td>TOC_TC Rng 3</td> </tr> <tr> <td>IC 0-20ppmC</td> <td>IC Range 1</td> </tr> <tr> <td>IC 1-400ppmC</td> <td>IC Range 1</td> </tr> <tr> <td>IC 10-750ppmC</td> <td>IC Range 2</td> </tr> <tr> <td>IC 100-4000ppmC</td> <td>IC Range 3</td> </tr> </tbody> </table> <p>Table 5.4.1 Blank Ranges</p>	Sample Method ID	Blank Type	TOC, TC 0-20ppmC	TOC_TC Rng 1	TOC, TC 1-400ppmC	TOC_TC Rng 1	TOC, TC 10-750ppmC	TOC_TC Rng 2	TOC, TC 100-4000ppmC	TOC_TC Rng 3	TOC, TC 1000-25000ppmC	TOC_TC Rng 3	IC 0-20ppmC	IC Range 1	IC 1-400ppmC	IC Range 1	IC 10-750ppmC	IC Range 2	IC 100-4000ppmC	IC Range 3
Sample Method ID	Blank Type																					
TOC, TC 0-20ppmC	TOC_TC Rng 1																					
TOC, TC 1-400ppmC	TOC_TC Rng 1																					
TOC, TC 10-750ppmC	TOC_TC Rng 2																					
TOC, TC 100-4000ppmC	TOC_TC Rng 3																					
TOC, TC 1000-25000ppmC	TOC_TC Rng 3																					
IC 0-20ppmC	IC Range 1																					
IC 1-400ppmC	IC Range 1																					
IC 10-750ppmC	IC Range 2																					
IC 100-4000ppmC	IC Range 3																					

(Continued...)

Section/Page	Reference	Description																					
[New §5.4 Sample Blanks]	Add new subtopic: Run Recirculating TOC and TC Blanks	If the DI water contribution to your standards is significant to your analysis, you may want to run a recirculating blank method. The blanking procedure for TC and TOC analysis will recycle DI water through the furnace and then sample from the water trap to determine the sample blank value. Make sure to set the number of replicates to, at least, 6 when running a sample blanking procedure. The results for blank methods are in raw data counts and the last 3 replicates are averaged as the sample blank.																					
		 <p>IMPORTANT The raw data value for the sample blank should be less than the raw data for your DI water run as a TOC sample. If it is not, Tekmar-Dohrmann recommends rerunning the sample blank or manually setting the sample blank.</p>																					
		<p>To run a sample blank, select the appropriate sample blank type under the sample setup screen.</p> <p>Table 5.4.2 outlines the correct blank setups for the default TOC and TC methods.</p>																					
		<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="3" style="text-align: center;">TOC, TC</th> </tr> <tr> <th style="text-align: left;"><i>Sample Method ID</i></th> <th style="text-align: left;"><i>Blank Sample ID</i></th> <th style="text-align: left;"><i>Blank Method ID</i></th> </tr> </thead> <tbody> <tr> <td>TOC, TC 0-20ppmC</td> <td>Blank TOC_TC Rng 1</td> <td>Blank TOC_TC Rng 1</td> </tr> <tr> <td>TOC, TC 1-400ppmC</td> <td>Blank TOC_TC Rng 1</td> <td>Blank TOC_TC 1-400ppmC*</td> </tr> <tr> <td>TOC, TC 10-750ppmC</td> <td>Blank TOC_TC Rng 2</td> <td>Blank TOC_TC Rng 2</td> </tr> <tr> <td>TOC, TC 100-4000ppmC</td> <td>Blank TOC_TC Rng 3</td> <td>Blank TOC_TC Rng 3</td> </tr> <tr> <td>TOC, TC 1000-25000ppmC</td> <td>Blank TOC_TC Rng 3</td> <td>Blank TOC_TC Rng 3</td> </tr> </tbody> </table> <p>* When TOC_TC Blank Range 1 is chosen, TOC_TC 0-20ppmC will automatically be set as the Method ID. Make sure to change this to TOC_TC 1-400 ppmC.</p> <p>Table 5.4.2 TOC, TC Sample Blanks</p>	TOC, TC			<i>Sample Method ID</i>	<i>Blank Sample ID</i>	<i>Blank Method ID</i>	TOC, TC 0-20ppmC	Blank TOC_TC Rng 1	Blank TOC_TC Rng 1	TOC, TC 1-400ppmC	Blank TOC_TC Rng 1	Blank TOC_TC 1-400ppmC*	TOC, TC 10-750ppmC	Blank TOC_TC Rng 2	Blank TOC_TC Rng 2	TOC, TC 100-4000ppmC	Blank TOC_TC Rng 3	Blank TOC_TC Rng 3	TOC, TC 1000-25000ppmC	Blank TOC_TC Rng 3	Blank TOC_TC Rng 3
TOC, TC																							
<i>Sample Method ID</i>	<i>Blank Sample ID</i>	<i>Blank Method ID</i>																					
TOC, TC 0-20ppmC	Blank TOC_TC Rng 1	Blank TOC_TC Rng 1																					
TOC, TC 1-400ppmC	Blank TOC_TC Rng 1	Blank TOC_TC 1-400ppmC*																					
TOC, TC 10-750ppmC	Blank TOC_TC Rng 2	Blank TOC_TC Rng 2																					
TOC, TC 100-4000ppmC	Blank TOC_TC Rng 3	Blank TOC_TC Rng 3																					
TOC, TC 1000-25000ppmC	Blank TOC_TC Rng 3	Blank TOC_TC Rng 3																					

(Continued...)

Section/Page	Reference	Description																		
[New §5.4 Sample Blanks]	Add new subtopic: Run an IC Blank	The blanking procedure for IC analysis will measure the background of the DI water and acid used in an IC measurement to determine the sample blank value. Make sure to set the number of replicates to, at least, 6 when running a sample blanking procedure. The results for blank methods are in raw data counts and the last 3 replicates are averaged as the sample blank.																		
		 <p>IMPORTANT The raw data value for the sample blank should be less than the raw data for your DI water run as an IC sample. If it is not, Tekmar-Dohrmann recommends rerunning the sample blank or manually setting the sample blank.</p>																		
		<p>To run a sample blank, simply choose the appropriate sample blank type under the sample setup screen.</p> <p>Table 5.4.3 outlines the correct blank setups for the default IC methods.</p>																		
		<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="3" style="text-align: center;">IC</th> </tr> <tr> <th style="text-align: left;"><i>Sample Method ID</i></th> <th style="text-align: left;"><i>Blank Sample ID</i></th> <th style="text-align: left;"><i>Blank Method ID</i></th> </tr> </thead> <tbody> <tr> <td>IC 0-20ppmC</td> <td>Blank IC Rng 1</td> <td>Blank IC Rng 1</td> </tr> <tr> <td>IC 1-400ppmC</td> <td>Blank IC Rng 1</td> <td>Blank IC 1-400ppmC*</td> </tr> <tr> <td>IC 10-750ppmC</td> <td>Blank IC Rng 2</td> <td>Blank IC Rng 2</td> </tr> <tr> <td>IC 100-4000ppmC</td> <td>Blank IC Rng 3</td> <td>Blank IC Rng 3</td> </tr> </tbody> </table> <p>*When IC Blank Range 1 is chosen, IC 0-20ppmC will automatically be set as the Method ID. Make sure to change this to IC 1-400 ppmC.</p> <p>Table 5.4.3 IC Sample Blanks</p>	IC			<i>Sample Method ID</i>	<i>Blank Sample ID</i>	<i>Blank Method ID</i>	IC 0-20ppmC	Blank IC Rng 1	Blank IC Rng 1	IC 1-400ppmC	Blank IC Rng 1	Blank IC 1-400ppmC*	IC 10-750ppmC	Blank IC Rng 2	Blank IC Rng 2	IC 100-4000ppmC	Blank IC Rng 3	Blank IC Rng 3
IC																				
<i>Sample Method ID</i>	<i>Blank Sample ID</i>	<i>Blank Method ID</i>																		
IC 0-20ppmC	Blank IC Rng 1	Blank IC Rng 1																		
IC 1-400ppmC	Blank IC Rng 1	Blank IC 1-400ppmC*																		
IC 10-750ppmC	Blank IC Rng 2	Blank IC Rng 2																		
IC 100-4000ppmC	Blank IC Rng 3	Blank IC Rng 3																		

Section/Page	Reference	Description
Chapter 6		
§6.1 Page 6.3	Correct misspelling in fourth paragraph of first column; change text to:	pinch
	Add seventh bullet to Daily Maintenance Checks; text to read:	<ul style="list-style-type: none"> ▪ Inspect and clean syringe if appropriate.
	Add third bullet to Weekly Maintenance Checks; text to read:	<ul style="list-style-type: none"> ▪ Clean syringe (see section 6.2.8).
	Add procedure for Cleaning Syringe.	<p>Add following section on how to remove and clean syringe: "Cleaning Syringe"</p> <p>[Copy from section 6.2.8 Syringe on page 6-11 but add after step 7]:</p> <ol style="list-style-type: none"> 8. Pull plunger out of syringe. Clean both plunger face and syringe with DI water until both are free of debris. <p>[Modify and increment previous step 8 to]:</p> <ol style="list-style-type: none"> 9. Reinstall the syringe making sure the Teflon washer is still in the 8-port valve. <p>Increment and add subsequent steps for installing the syringe.</p>
§6.2.4 pp., 6-6-7	Delete entire section.	Increment subsequent §s and delete all references to Combustion Furnace Air Cylinder in Table of Contents and Index.
§6.2.5	Renumber §6.2.5 to §6.2.4.	Increment subsequent §s.
Page 6-7	Change text in step 3 to:	Remove the 1/16" sample line entering the top of the injection port.
Page 6-8	Delete steps 4,5,12, and 14.	Increment subsequent steps.
	Change text in step 15 to:	Reattach the 1/16" sample line to the top of the injection port. Make sure fitting is hand tight but do not overtighten.
	Delete step 16.	Increment subsequent steps.
	Step 17	Delete last sentence.
	Delete steps 18 and 19.	Increment subsequent steps.
	Change text in step 20 to:	Reinstall right cover to the instrument.

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Section/Page	Reference	Description
§6.2.6 Page 6-9	Delete entire section.	Increment subsequent §§.
§6.2.8 Page 6-11	Change section title text to:	Replace/Clean Syringe
		[Copy from section 6.2.8 Syringe on page 6-11 but add after step 7]: 8. Pull plunger out of syringe. Clean both plunger face and syringe with DI water until both are free of debris. [Modify and increment previous step 8 to]: 9. Reinstall the syringe making sure the Teflon washer is still in the 8-port valve. Increment and add subsequent steps for installing the syringe.
§6.2.16 Page 6-19	Figures 6.2.16.2–3	Update images to show new injection port.
Page 6-20	Delete step 2a; Replace step 2 text with:	2. Place a loosely wadded tuft (approximately 1/2" thick) of quartz wool through the top of the combustion tube to just above the narrow opening. To prevent catalyst from dropping through the quartz wool, gently pack the top of the quartz wool so that there is no space between the perimeter of the quartz wool and the glassware.
Page 6-21	Delete steps 4 and 5.	Increment subsequent steps.
Page 6-25	Step 5d	Change reference to "...section X.X" in the second sentence to "section 6.2.1."
Page 6-26	Step 6	Delete the third and fourth sentences.
	Delete step 7.	Increment subsequent steps.
Diagrams		
Mode Diagrams	p. ii Ready Mode	See second to last page of this erratum for current Ready Mode diagram.
	p. iii TOC w/ ASM Needle Sparge	Update to current design.
	p. iv TOC w/ IC Sparger Sparge	Update to current design.
	p. v TC Analysis Mode	Update to current design.
	p. vi IC Analysis Mode	Update to current design.
Wiring Diagram	p. vii Wiring Diagram	See last page of this erratum for current Wiring diagram.

Section/Page	Reference	Description
Spare Parts		
Entire section.	Remove.	Delete entire spare parts section in all subsequent user manual revisions. A current parts list will be included separately in the unit kit box.
Please note following changes:	Furnace Area and Supplies	Remove following part #'s: 14-7731-068, 14-7620-079, 100-425 Change part #14-7604-080 to #14-8072-080 and modify description to "Injection block, top half". Modify description of #14-7698-000 to "Injection port assembly for Apollo 9000." Remove #14-7605-080, #14-7606-080, and #14-7641-043.
	Plumbing Area	Remove #14-7631-150.
Index		
Entire Index	Remove.	References to the air cylinder, Clippard 3-way valve, Air Cylinder under the Combustion Furnace, Injection slider and Injection slider under injection port, slider, sliding valve, and under Valves, valve 6.
Appendix		
Page A-3	Daily Maintenance Checks	Add: "Inspect and clean syringe if appropriate."
	Weekly Maintenance Checks	Add: "Clean Syringe". Reference Errata page 9 of 11 under "Cleaning Syringe" on how to remove and clean syringe.