**CDX Distance Learning**

**Exercise #9**

**Precision Measuring—Valves and Pistons**

**Estimated Completion Time:** 60 mins.

**Student Name:** Click or tap here to enter text.

Click or tap the check box next to the answer choice that best completes the statement or answers the question. Viewing the animations will be required to answer the following question(s) correctly. Read the question and use the link provided to open the animation. Follow the directions in the questions and select the correct answer. When complete, close the animation window and move on to the next question(s).

[**Micrometer Animation (Standard)**](http://d2jw81rkebrcvk.cloudfront.net/assetscdx2/202003%20-%20COVID/Assessments/MS/ANIM/FS/FS_MicStdEx01b_C1/FS_MicStdEx01b_C1/FS_MicStdEx01b_C1.html)

1. What is the valve stem wear limit specification?
   1. 0.235″
   2. 0.236″
   3. 0.0234″
   4. 0.234″
2. What is the smallest diameter on the No. 1 valve stem wear area?
   1. 0.233″
   2. 0.235″
   3. 0.228″
   4. 0.258″
3. How much taper is there from the top of the wear area to the center of the wear area?
   1. 0.05″
   2. 0.5″
   3. 0.005″
   4. 0.0005″

[**Micrometer Animation (Standard)**](http://d2jw81rkebrcvk.cloudfront.net/assetscdx2/202003%20-%20COVID/Assessments/MS/ANIM/FS/FS_MicStdEx01e_C1/FS_MicStdEx01e_C1/FS_MicStdEx01e_C1.html)

1. Which valve is worn below the wear limit specification?
   1. 1
   2. 2
   3. 3
   4. 4
2. What is the smallest diameter on that valve stem’s wear area?
   1. 0.233″
   2. 0.235″
   3. 0.228″
   4. 0.258″
3. How much taper is there from the top of the wear area to the center of the wear area?
   1. 0.05″
   2. 0.5″
   3. 0.0005″
   4. 0.005″

[**Micrometer Animation (Metric)**](http://d2jw81rkebrcvk.cloudfront.net/assetscdx2/202003%20-%20COVID/Assessments/MS/ANIM/FS/FS_MicMeEx01c_C1/FS_MicMeEx01c_C1/FS_MicMeEx01c_C1.html)

1. What is the valve stem wear limit specification?
   1. 5.975 mm
   2. 5.95 mm
   3. 5.995 mm
   4. 5.095 mm
2. Which valve is worn below the wear limit?
   1. 1
   2. 2
   3. 3
   4. 4
3. What is the smallest diameter on that valve stem’s wear area?
   1. 5.043 mm
   2. 5.943 mm
   3. 5.93 mm
   4. 5.43 mm

[**Micrometer Animation (Metric)**](http://www.jblearning.com/navigate/filelookup.ashx?fileid=9cededa3-19cf-444d-98a4-0e05c29e3b35)

1. Which valve is worn below the wear limit?
   1. 3
   2. 4
   3. 5
   4. 6
2. What is the smallest diameter on that valve stem’s wear area?
   1. 5.043 mm
   2. 5.943 mm
   3. 5.93 mm
   4. 5.43 mm

[**Micrometer Animation (Standard)**](http://d2jw81rkebrcvk.cloudfront.net/assetscdx2/202003%20-%20COVID/Assessments/MS/ANIM/FS/FS_MicStdEx02d_C1/FS_MicStdEx02d_C1/FS_MicStdEx02d_C1.html)

1. What is the minimum specified piston diameter?
   1. 3.5506″
   2. 3.5498″
   3. 3.55116″
   4. 0.001″
2. What is the maximum specified piston to bore clearance?
   1. 0.0018″
   2. 0.001″
   3. 3.5506″
   4. 3.55116″
3. What is the diameter of the No. 3 piston?
   1. 3.546″
   2. 3.5498″
   3. 3.521″
   4. 3.541″
4. Using the same animation, calculate the piston to bore clearance.
   1. 0.0516″
   2. 0.5160″
   3. 0.00516″
   4. 0.00541″

[**Micrometer Animation (Standard)**](http://d2jw81rkebrcvk.cloudfront.net/assetscdx2/202003%20-%20COVID/Assessments/MS/ANIM/FS/FS_MicStdEx02e_C1/FS_MicStdEx02e_C1/FS_MicStdEx02e_C1.html)

1. What is the minimum specified piston diameter?
   1. 3.5506″
   2. 3.5498″
   3. 3.55116″
   4. 0.001″
2. Which piston is undersized?
   1. 1
   2. 2
   3. 3
   4. 4
3. What is that piston’s diameter?
   1. 3.546″
   2. 3.5498″
   3. 3.521″
   4. 3.541″
4. Using the same animation, calculate the piston to bore clearance.
   1. 0.0516″
   2. 0.516″
   3. 0.00516″
   4. 0.00541″

[**Micrometer Animation (Metric)**](http://d2jw81rkebrcvk.cloudfront.net/assetscdx2/202003%20-%20COVID/Assessments/MS/ANIM/FS/FS_MicMeEx02f_C1/FS_MicMeEx02f_C1/FS_MicMeEx02f_C1.html)

1. What is the minimum specified piston diameter?
   1. 90.175 mm
   2. 90.2 mm
   3. 0.025 mm
   4. 90.165 mm
2. What is the maximum specified piston to bore clearance?
   1. 0.025 mm
   2. 0.045 mm
   3. 90.165 mm
   4. 90.175 mm
3. Which piston is undersized?
   1. 3
   2. 4
   3. 5
   4. 6
4. What is that piston’s diameter?
   1. 90.13 mm
   2. 15.13 mm
   3. 95.13 mm
   4. 15.63 mm
5. Using the same animation, calculate the piston to bore clearance.
   1. 0.7 mm
   2. 0.73 mm
   3. 0.007 mm
   4. 0.07 mm
6. Using the same animation and specifications, what is the recommended action?
   1. Replace the No. 3 piston.
   2. Replace the No. 5 piston.
   3. Replace the No. 4 piston.
   4. Replace the No. 6 piston.