#### Running Whole Blood Specimens on the XN-3100 Hematology Analyzer

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| Background | This procedure describes how to analyze patient specimens using the Sysmex XN-3100 Hematology Analyzer |

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| Policy | * Samples should not be run until the instrument is in the Ready State and commercial QC is acceptable
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| Procedure A | Follow the steps below to run samples in the closed sampler mode

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| Step | Action |
| 1 | Check the status of the transportation units, verify that the start yard is in READY state - the Status indicator LED is green |
| 2 | Load sample rack into the feeder section of the Start Yard. Verify that the rack is properly seated in the feeder; the groove on the bottom of the rack should fit into the guide in the feeder section |
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|  | **If** | **Then** |  |
| Normal Tube | * Load tube into regular sample rack
* Proceed to step 3
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| Raised bottom tube (RBT) | * Load RBT into designated Yellow RBT rack
* Proceed to step 3
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| 3 | * The system will recognize the rack and automatically proceed to transport the rack to the appropriate analyzer
* The XN automatically mixes the sample 10 times, aspirates, and analyzes the sample according to barcode discrete order
* Samples will run, results will be displayed in the IPU.
* On-Board rules will initiate the analyzer to perform repeat or reflex testing. If smear is required, rack will be transported to SP-50.
* Once testing (and/or smear making) is complete, rack will be transported to the Stock Yard.
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| 4 | Remove the rack from the Stock Yard |
| 5 | Store samples in Freezerworks when analysis is complete and results released in the LIS |

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| Procedure B | Follow the steps below to run samples in the manual (open) sampler mode

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| Step | Action |
| 1 | On the individual XN unit, press the Mode Switch button to eject the tube holder. Wait for the sample tube holder to slide out and a solid green analyzer status light |
| 2 | Click the Change Analysis Mode button on the control menu |
| 3 | Click the desired analysis mode from the dialog box: |
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|  | **If** | **Then** |  |
| Whole blood | * Whole blood
* Click OK then proceed to step 4
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| Whole blood with WBC <0.5 | * Low WBC
* Click OK then proceed to step 4
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| 4 | Click on the Manual Analysis button on the control menu. A dialog box corresponding to the selected mode appears. |
| 5 | Select desired parameter for each field below: |
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|  | Read ID | * Check box for barcode ID read (Sample No. input not necessary, analyzer will read barcode), or
* Uncheck box and enter sample ID manually, or use hand-held barcode reader, in the Sample No. field.
* Microtainers must be pre-programmed (i.e. manually or hand-held barcode reader) as there is no barcode reader in the back position.
* Manual dilutions must be programmed with a "/" in order to prevent auto-verification of the result and include dilution factor when programming. For example, Sample No.: "/L123456789x5"
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| Procedure B, cont |

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| Step | Action |
| 6 | Select desired parameter for each field below |
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|  | Patient ID | Enter Patient ID (MRN and/or Name) as needed (i.e. downtime or LIS offline) |  |
| Discrete | * The analyzer will query the host for test select when LIS is available and when Read ID is checked.
* To select additional tests to be performed as needed, uncheck Read ID and ensure Query to Host is unchecked.
* Default is CBC+DIFF

Select other discrete tests as needed (i.e. RET, PLT-F) |
| Cap Open | Select if testing without a cap on the specimen tube (minimizes dead volume). Note: Must always remove cap when running microtainers in the back position. |
| Aspiration sensor | Ensure Blood Aspiration Sensor is checkedNote: Only uncheck if you know in advance that the blood sample has a very low hemoglobin (i.e. <4.0 g/dL), which disables the Blood Aspiration Sensor. Caution: Positive judgment will not be performed. |
| Raised Bottom tube (RBT) | Select the check mark to perform RBT analysis. |
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| Procedure B, cont |

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| Step | Action |
| 6 | Click OK |
| 7 | Mix the sample tube |
| 8 | Place the sample tube in one of the two sample tube holders.* Regular sample tubes and RBT samples are placed in the front tube holder, cap may be on or off as programed in Step 6.
* Microtainers are placed in the rear tube holder - REMOVE CAP!
 |
| 9 | Press the blue start switch. The tube holder slides in. After analysis is finished, the tube holder slides out. |
| 10 | Remove sample, repeat steps for additional samples or press mode switch to return to Sampler Mode. |
| 11 | CLS will review results to determine whether repeat or reflex testing is required. |
| 12 | Repeat steps 2-12 to test next specimen in Manual mode, or press Mode Switch to return to Auto Sampler mode |

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| Procedural Notes | * For CAP specimens: Refer to kit instructions provided with survey material. An Administrator logon for the IPU may be needed.
* If the CID was not populated on the report (i.e. barcode read errors), reposition/reprint the label as needed and rerun the specimen. A specimen rack number is not a patient identifier. ID numbers may **not** be edited in the data log and retransmitted.
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| Troubleshooting | * For Error Messages, refer to the XN-3100 Operator’s manual for the causes and appropriate actions. If the error persists after taking the suggested action, or if a malfunction or any other damage occurs, contact Sysmex Technical Service.
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Running Whole Blood Specimens on the XN-3100 Hematology Analyzer, Continued

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| References | * Sysmex XN-3100 Operator’s manual, March 2017
* Sysmex XN series Automated Hematology systems, Flagging Interpretation Guide, March 2018
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