

WOODLEY
EQUIPMENT COMPANY LTD.



InSight V3 Plus Quick Reference Guide

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Quick Reference Guide Contents

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1. InSight V3 Plus Functions Buttons

Analyse a sample Review previous results Run QC, enter QC values and review QC Calibrate Main Menu/settings

The screenshot shows the InSight V3 Plus interface with the following components:

- Top Bar:** Test, Data, QC, Cal, Setup, Detergent Empty, and a power button.
- Header:** Cat, Blood Mode: Whole Blood.
- Metadata:** Owner, Species: Cat Whole Blood, Pat. Name, Age, Sample ID: 201023007, Time: 2020-10-23 16:46.
- Data Table:**

Units	Result	Unit	Units	Result	Unit	Units	Result	Unit
WBC	5.5	10 ⁹ /L	RBC	9.42	10 ¹² /L	PLT	396	10 ⁹ /L
LYM%	H 47.1	%	HGB	H 188	g/L	MPV	H 10.5	fL
MID%	6.4	%	HCT	H 51.5	%	PDW	12.7	fL
GRAN%	46.5	%	MCV	H 54.7	fL	PCT	0.41	%
LYM#	2.5	10 ⁹ /L	MCH	19.9	pg	P_LCR	42.2	%
MID#	0.3	10 ⁹ /L	MCHC	365	g/L	P_LCC	167	10 ⁹ /L
GRAN#	2.7	10 ⁹ /L	RDW_CV	L 13.9	%			
			RDW_SD	28.3	fL			
- Plots:** WBC (yellow), RBC (red), and PLT (green) histograms.
- Bottom Bar:** Next Sample, Mode Switch, Audit, Diluent, Species, and navigation arrows.
- Footer:** Operator: admin, Next ID: 201023008, Printer Status: Printer Online, 2021-05-31 08:32.

2. How to Run a Sample Using the InSight V3 Plus

1. Use EDTA K3 anticoagulated blood collection tube
2. Fill 2/3's of the tube with blood
3. Ensure a background count and auto clean has been performed before analysis
4. Use the touch screen to select 'Test' and then select 'Species' to set up the correct species for testing
5. Select 'Next Sample'
6. Enter Patient details, press 'OK' to save
7. Thoroughly mix blood on roller mixer or by slowly inverting the tube 10 times
7. REMOVE SAMPLE CAP and place sample under the probe
8. Push the sampling trigger
9. Remove the sample when the analyser 'beeps'
9. Results will automatically display and print out once analysis is complete



3. How to Enter New QC Normal Ranges

When a new haematology vial is received, please check the control lot number. If it is a new control batch (i.e. it has a different lot number & expiry date to previous vial) the new normal ranges need to be entered into the InSight V3 Plus control file.

1. Select 'QC'
2. Select 'Setup'
3. Select 'New'
4. Using the information supplied on the new QC assay sheet, enter the following information:
 - The new QC batch lot number (i.e. B057)
 - Expiry date (dd/mm/yyyy)
 - Target values and limits

Press 'Return' then 'Ok' to save QC information

5. Return to the QC test interface, ensure the correct file number for the current lot number of QC is selected.
6. Run the QC

NOTE: Keep QC vials refrigerated and allow at least 15 minutes to reach room temperature (18-30°C) before use. After sampling wipe the threads of both vial and cap with a lint free tissue. Replace cap and return to refrigerator for maximum open vial stability which is up to 14-28 days if stored at 2-8°C.

If you require assistance, please contact your Woodley Equipment Sales Representative or Woodley Equipment Company Technical Support on +44 (0)1204 669033 and press option 1.

4. How to Run a QC

Woodley Equipment Company recommends a Quality Control (QC) should be analysed on the InSight V3 Plus at the start of each working day.

Why Run a QC?

- To assess the quality and performance of the practice laboratory.
- To ensure that results generated by the InSight V3 Plus are correct.
- QC monitors staff, equipment, reagents and result reporting.

Running a QC

1. Navigate to QC test screen by selecting 'QC'
2. Ensure the correct file number for the current lot of QC is selected
3. Ensure that the QC has been stored correctly, is in date and check that the vial lot number and expiry date correspond to those on screen. If a new batch, enter the new QC reference ranges.
4. Thoroughly mix blood by slowly inverting tube 10 times. DO NOT use a rotary mixer. Make sure the sample is warmed to room temperature.
5. REMOVE SAMPLE CAP and place QC sample under the probe
6. Press back plate to start analysis
7. Results will automatically display once analysis is complete
8. Check that the QC is within the ranges
9. Sign the QC log sheet under the appropriate date and return QC to the fridge

NOTE: Keep QC vials refrigerated and allow at least 15 minutes to reach room temperature (18-30°C) before use. After sampling wipe the threads of both vial and cap with a lint free tissue. Replace cap and return to refrigerator for maximum open vial stability which is up to 14-28 days if stored at 2-8°C.

In the event of a QC failure 1. Reprocess the sample 2. If it is still out of limits, repeat with a fresh QC 3. Contact your Woodley Sales Representative or Woodley Equipment Company Technical Support on +44 (0)1204 669033 and press option 1.

5. How to Change a Reagent Pack

Changing reagents when error 'Insufficient reagent' or 'Expired reagent' shown

1. Remove the cap from the new reagent and connect reagent tubes from old reagent bottle to the new bottle.
2. Select 'Clear Fault'
3. Select 'Replace' on the Diluent, then 'Activate'
4. Scan RFID card
5. Repeat steps 2-4 for the Lyse
6. Go to Setup- Maintenance- Prime. To prime the new reagents.

Changing reagents through the Reagent settings

1. Remove the cap from the new reagent and connect reagent tubes from old reagent bottle to the new bottle.
2. Select 'Reagents' option
3. Select 'Replace' on the diluent, then 'Activate'
4. Scan RFID card
5. Repeat steps 2-4 for the Lyse
6. Go to Setup- Maintenance- Prime. To prime the new reagents
7. After reagent change, run a Blank measurement to ensure no bubbles remain in the system

****Instrument waste can be safely disposed from the waste container into a sink if accompanied by running water**

6. Standby and Startup

Weekdays

Standby: The InSight V3 Plus is automatically programmed to standby each day and does not need to be switched off manually

Wakeup/Start up cycle: Touch the screen to exit the standby mode and push the back plate to start the startup cycle.

Weekend

Shutdown: At the end of the week the InSight V3 Plus needs to be shutdown. Select 'Exit' in the setup menu. Click 'Ok' to perform shutdown. Analyser will prompt to place cleanser under probe. When prompted the analyser can be switched off at the back.

Startup Cycle: If the InSight V3 Plus is powered off, firstly switch the power on at the back of the analyser. Login as user: admin password: admin
The analyser will automatically complete the startup cycle and a background count. Check that the background measurement is acceptable, then the system is ready to process a QC and then blood samples.

7. InSight V3 Plus Haematology Result Flags

Flag Type	Flag information	
WBC Flag	WBC increase	Leukocytosis
	WBC decrease	Leukocytopenia
RBC Flag	Varied RBC size	Anisocytosis
	Small RBC	Microcytosis
	Large RBC	Macrocytosis
	RBC increase	Erythrocytosis
	Anaemia	
	Hypochromic	Hypochromia
PLT Flag	PLT increase	Thrombocytosis
	PLT decrease	Thrombocytopenia

WBC Alarm for abnormal histogram:

R1

indicates there is an abnormality in the left side of LY wave peak, which is probably caused by incomplete haemolysis of RBC, platelet clump, giant platelet, nucleated RBC, abnormal lymphocyte, proteinic, fat granule, or electrical noise. Review a blood film.

R2

indicates there is an abnormality in the area between LY wave peak and MO wave, which is probably caused by pathologic lymphocyte, atypical lymphocyte, an increase in original cell, eosinophilia or basophilia. Review a blood film

R3

indicates there is an abnormality in the area between MO wave and GR wave peak, which is probably caused by immature granulocyte, abnormal cell subpopulation or eosinophilia. Review a blood film

R4

indicates there is an abnormality in the right side of GR wave peak, which is probably caused by an increase in granulocytes. Review a blood film.

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This document is a quick reference guide. For more comprehensive information, please refer to your InSight V3 Plus Operator's Manual

?EOS

Indicates that there is an increase in eosinophils, review a blood film.

PLT Abnormal histogram:

PM

indicates there is a defined boundary between PLT and RBC, which probably caused by the presence of giant platelet, platelet clump, small RBC, cell debris or fibrin. Review a blood film

If you require assistance or are unsure of any result or flags, please contact your Woodley Equipment Account Manager or Woodley Equipment Company Technical Support on 0044 (0)1204 669033 and press option 1.

8. Haematology Sample Handling

Your InSight V3 Plus haematology analyser can only produce results as good as the sample provided. Sample handling can be the limiting factor in producing accurate results. Check QC's regularly, if results are within range then any aberrant results often indicate improper sample handling.

Venipuncture: A quick non-traumatic venipuncture is critical. Use a 22 gauge needle or larger to minimise the likelihood of cell damage (haemolysis) and formation of clots. Avoid repositioning of the needle and/or excessive suction on the syringe. Fractious cats are likely to have platelet aggregates. If in doubt **consult a blood film**.

Sample transfer: Immediately transfer the blood sample into an EDTA tube. Remove needle and slowly express the sample down the side of the tube to prevent haemolysis and clots. **DO NOT** use heparin tubes.

Sample volume: Fill the tube adequately (at least ½ full). Under filled blood tubes (incorrect ratio EDTA: Blood) will increase the EDTA concentration and can cause cell shrinkage leading to falsely decreased MCV and HCT.

Sample mixing: Thoroughly mix sample either on a mixer or 8-10 inversions by hand up until placing the tube under the sample probe (especially horses). Check the tube for clots prior to sampling, **DO NOT** test a clotted sample- take a repeat sample.

Time delay: Blood samples should be processed as soon as possible after collection. Platelets are affected by time delay as they have a short half-life and can clump even in the presence of an anti-coagulant. Platelet counts performed after 4-6 hours should be considered suspect. Prolonged sample storage before processing especially when not refrigerated can lead to swelling of the RBC leading to a falsely elevated MCV. If there is a time delay between sample collection and testing store the sample 2-8°C. Excessive temperature can lead to cell autolysis (self breakdown).

9. How to Perform a Clean

A clean should be performed daily or when the background results exceed the range, bad differential and if a clot remains in the system following other maintenance procedures. The analyser will prompt when the Clean is due. You may also be instructed to perform this by your Woodley Equipment Representative or by Woodley Equipment Technical Support when troubleshooting.

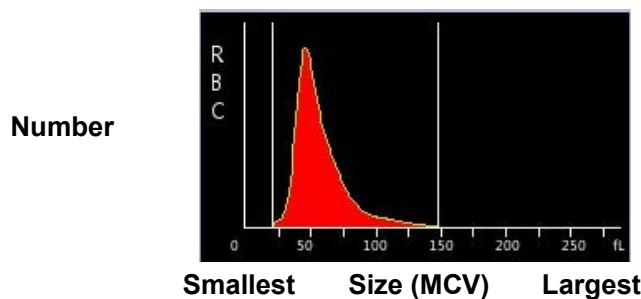
- Select 'Setup'
- Maintenance- Rinsing Cups.
- Select 'Yes' to perform Clean
- Present the Cleanser under the sample probe and press 'Aspirate'
- The clean will take 10minutes

10. Interpreting Blood Cell Histograms

Histograms demonstrate the distribution of blood cell populations providing a graphic representation of cell size versus cell number. As cells pass through the aperture the different sized pulses generated by impedance changes are sorted and stored in the analyser memory. The memory creates a volumetric distribution histogram for each blood cell population (red blood cells, white blood cells and platelets). Histograms give a visual representation of cell size and number and although not considered to be diagnostic for any particular condition, they can be used to identify abnormal cell populations or sampling problems. They also work as a quality check when flags are produced to provide a useful tool to determine if further investigations, such as the viewing of a blood film are required. The user must be familiar with the appearance of normal histograms to make a useful assessment.

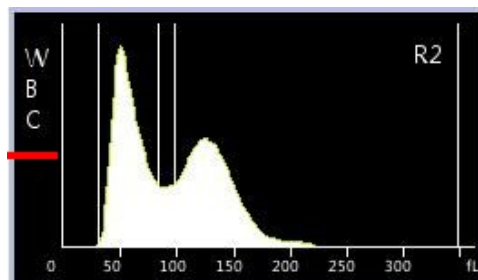
Red Blood Cells

The sizes of the peaks vary depending on the frequency and size of each cell type. Therefore, it is possible to observe microcytic (small red cells) and macrocytic (large red cells) red blood cell populations from the size and position of the peaks.

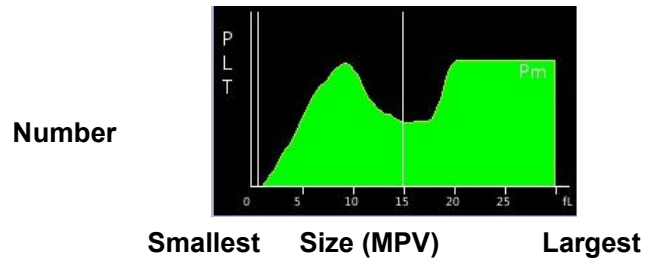


White Blood Cells

Nucleated RBC's are represented in the histograms as lymphocytes; therefore, if the lymphocyte peak is abnormally high it would be advantageous to consult a blood film. Although unpredictable in leukaemic samples, the appearance of the histogram can be a useful tool to aid the diagnosis of leukaemia. Depending on the condition, some cells may form large peaks in either the lymphocyte or granulocyte area, or form into one large peak which can span all 3 differential areas. Note that cell lineage cannot be determined by the appearance of the histogram.



Platelets



Platelet histograms can be used to determine the volume distribution of platelet populations. Thrombocytopenia is caused by either the failure of production or by increased consumption. Platelet distribution width (PDW) is increased in the latter group producing large platelets which are depicted on the right side of the histogram. Platelet histograms are also useful to assess if a thrombocytopenia is genuine or due to a sample quality problem such as aggregates. If platelets are aggregated an atypical picture is seen with uneven distribution.

11. InSight V3 Plus Quality Control and Maintenance Log

MONTH:.....

REVIEWED BY:.....

DATE:.....

Quality Control

Daily QC Test	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Normal QC tested by:																															

NOTE: Process a QC at the start of each working day , compare your results with results printed on the InSight V3 Plus control data sheet.
In the event of a QC failure 1. Reprocess the sample 2. If still out of limits, repeat with a fresh QC 3. Contact your Woodley Sales Representative or Woodley Equipment Company Technical Support on 0044 (0) 1204 669033

Maintenance

Daily procedure	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Start up																															
Run background measurement																															
Clean																															
Check Reagent levels and waste																															
Clean blood spills																															
Shutdown																															

Weekly Procedures	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5
Clean the probe					

Monthly	Date Performed & Initials
Clean cups and clean rear chamber	

This maintenance log is not intended to indicate when a procedure should be undertaken; it is a record of when it has been undertaken. To confirm that a procedure has been completed please initial the appropriate box. **If you require assistance with any of the above procedures, please contact your Woodley Equipment Company Sales Representative or Woodley Equipment Company Technical Support on 01204 669033.**

12. InSight V3 Plus Maintenance Schedule

Maintenance Schedule	Maintenance
<p>Daily Maintenance Customer Maintenance</p>	<p>Startup/wakeup cycle (Refer to section 6) Shut down/sleep mode (Refer to section 6)</p> <ol style="list-style-type: none"> 1. Program for each evening 2. Perform manual shutdown at the weekend then switch off InSight V3 Plus <p>Visually check reagent levels Clean cover Blank Measurement Clean</p>
<p>Weekly Maintenance Customer Maintenance</p>	<p>Clean Probe</p>
<p>Monthly Maintenance Customer Maintenance</p>	<p>Clean Cups and Rear Chamber</p>
<p>Yearly Maintenance Woodley Service Maintenance</p> <p>Please contact Woodley Equipment Company Ltd for information about a fully comprehensive service contract</p> <p>Tel: +44 (0) 1204 669033 Fax: +44 (0) 1204 669034 Email: sales@woodleyequipment.com</p>	<p>Full Service</p>

NB: Refer to InSight V3 Plus User Manual for detailed instructions of maintenance procedures.

13. WOODLEY EQUIPMENT COMPANY LTD

InSight V3 Plus INSTALLATION & TRAINING DOCUMENTATION

Name of Practice:

Address:

Primary Contact:

Phone:

InSight V3 Plus Instrument

Serial Number:

Software Version:

Installation and Training Topics

Name of Installer/Trainer:

Name of Trainee:

Date of Installation and Training:

The above mentioned trainee has undergone a period of formal training and has demonstrated competence in the following areas:

		YES ✓
1. Instrument Overview		
a.	Power supply	_____
b.	Power switch	_____
c.	LCD display screen	_____
d.	Function buttons	_____
e.	External connection ports	_____
f.	Open side panel	_____
g.	Reagent bottles	_____
h.	Fluidic connections	_____
i.	Waste	_____
j.	Built in printer	_____
2. Instrument Operation		
a.	Correct positioning & working temperature	_____
b.	Startup/wakeup	_____
c.	Shutdown	_____
d.	Background Measurement	_____

- e. Reagents/RFID card _____
- f. Reagent levels _____
- g. Reagent expiry _____
- h. Priming _____
- i. Waste _____
- j. Print results _____

3. Instrument Menu

- a. Home _____
- b. Test _____
- c. Data _____
- d. QC _____
- e. Reagent Management _____
- f. Setup _____
- g. Maintenance _____
- h. Calibration _____

4. Sample processing

- a. Basic understanding of sampling process _____
- b. Correct sample material and volume _____
- c. Define species _____
- d. Define sample ID _____
- e. Sample mixing _____
- f. Remove the sample cap prior to processing _____
- g. Process a sample _____
- h. Access, review and print results _____
- i. Process a 'background' measurement _____
- j. Can identify testing errors & take appropriate action _____

5. Control processing

- a. Correct control material and assay sheet _____
- b. Run control samples in correct control bank _____
- c. Input reference ranges into control files _____
- d. Correct procedure in the event of a control failure _____
- e. Correct control storage (2-8°C, middle shelf) _____
- f. Take from fridge 20 minutes before processing _____
- g. Expiry date _____
- h. Open-vial stability time (14-28 days) _____
- i. Correct control preparation technique _____
- j. Wipe vial _____
- k. QC recommendations _____
- l. Importance of keeping control records _____

6. System Maintenance

- a. Auto clean _____
- b. Clean Cups _____
- c. Clean rear chamber _____
- d. Zap Aperture _____

7. System preparation for Service

- a. Preparing for shipment _____
- b. Pack instrument appropriately in InSight V3 Plus box _____

8. Troubleshooting

- a. Demonstrate basic knowledge of potential sampling problems and system errors _____
- b. Troubleshooting accordingly _____

The trainee named above is deemed to be fully competent in the procedures described and able to complete InSight V3 Plus tests

Signed Trainer: _____ Name in Full: _____

Signed Trainee: _____ Name in Full: _____ Date: _____

This completed and signed documentation serves as a certificate of InSight V3 Plus installation and training