

# WOODLEY

EQUIPMENT COMPANY LTD.



## InSight V5

# Quick Reference

# Guide

## Quick Reference Guide Contents

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## 1. InSight V5 Functions Buttons

The screenshot shows the InSight V5 software interface. At the top, there are five main function buttons: a Home icon, 'Sample Analysis', 'Review', 'QC', and 'Reagent Management'. Arrows point from text labels to these buttons: 'Main Menu/settings' to the Home icon, 'Analyse a sample' to 'Sample Analysis', 'Review previous results' to 'Review', 'Run QC, enter QC values and review QC' to 'QC', and 'Change Reagent' to 'Reagent Management'. Below these buttons is a 'QC Type' dropdown menu set to 'L-J', with 'Edit' and 'Restore' buttons. Further down are sub-tabs for 'QC Settings', 'QC Analysis' (which is selected), 'QC Graph', and 'QC Table'. The interface displays sample information: File No.: 2, QC Mode: Whole Blood-DIFF, Editor: admin, Level: Normal, Existing / Total: 1/500, Exp. Date: 2016/05/30, Lot No.: QC001, QC Sample ID: QC001, and Run Time: 2015/12/30 11:18:50. A table of test results is shown, and on the right, there are four flow cytometry plots: 'LS DIFF', 'RBC', 'PLT', and 'LS BASO'.

Para.	Result	Unit	Para.	Result	Unit
WBC	7.99	10 <sup>9</sup> /L	MCH	54.2	pg
Neu%	50.1	%	MCHC	432	g/L
Lym%	3.9	%	RDW-CV	26.4	%
Mon%	43.7	%	RDW-SD	140.1	fL
Eos%	2.3	%	PLT	316	10 <sup>9</sup> /L
Bas%	2.5	%	MPV	8.2	fL
Neu#	4.01	10 <sup>9</sup> /L	PDW	15.9	
Lym#	0.31	10 <sup>9</sup> /L	PCT	0.260	%
Mon#	3.49	10 <sup>9</sup> /L			
Eos#	0.18	10 <sup>9</sup> /L			
Bas#	0.20	10 <sup>9</sup> /L			
RBC	5.42	10 <sup>12</sup> /L			
HGB	293	g/L			
HCT	67.9	%			
MCV	125.3	fL			

## 2. How to Run a Sample Using the InSight V5

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 'Sample Analysis' screen
5. Select 'Next Sample'
6. Enter Patient details including sample ID and species, 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 V5 control file.

1. Select 'QUALITY CONTROL'
2. Select 'QC settings'
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 'Save' key to save QC information

5. 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 V5 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 V5 are correct.
- QC monitors staff, equipment, reagents and result reporting.

### Running A QC

1. Navigate to QC test screen by selecting 'QUALITY CONTROL'
2. Select QC Analysis
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. Press 'QC Graph' to open Levey-Jennings graph screen
10. 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's 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' shown

1. Remove the cap from the new reagent and connect reagent tubes from old reagent bottle to the new bottle.
2. Select 'Remove error'
3. Scan RFID card
4. The analyser will automatically prime reagents.

### Changing reagents through the Reagent Management

1. Remove the cap from the new reagent and connect reagent tubes from old reagent bottle to the new bottle.
2. Select 'Reagent Management' tab at the top of the screen
3. Select 'Setup'
4. When indicated place RFID card on the RFID reader on the front of the analyser for each reagent bottle
5. Analyser will indicate that the reagent information has been set successfully
6. The analyser will prime the reagents and the consumption counters will be reset
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 V5 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 V5 needs to be shutdown. Select the 'Off' icon on the main screen. Click 'Yes' 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 V5 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 V5 Haematology Result Flags

Flag Type		Flag information
WBC	Abnormal	Leucocytosis
		Leucopenia
		Neutrophilia
		Neutropenia
		Lymphocytosis
		Lymphopenia
		Monocytosis
		Eosinophilia
		Basophilia
	Suspicious	WBC abnormal
		Abnor. WBC scattergram
		Abnor. WBC histogram
		Left Shift?
		Immature Cell?
		RBC Lyse Resistant?
		Abn./Atypical Lym?
		Abnormal WBC Channel
		Abnormal DIFF Channel
RBC/HGB	Abnormal	Erythrocytosis
		Anisocytosis
		Macrocytosis
		Microcytosis
		Anaemia
		Hypochromia
	Suspicious	Abnor. RBC Distr.
		Dimorphologic

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This document is a quick reference guide. For more comprehensive information please refer to your InSight V5 Operator's Manual

Flag Type		Flag information
		Iron Deficiency?
		HGB Abnor./Interfere?
		RBC Clump?
		Abnormal RBC Channel
		Abnormal HGB Channel
PLT	Abnormal	Thrombocytosis
		Thrombocytopenia
	Suspicious	Abnor. PLT Distr.
		PLT Clump?

**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.**

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This document is a quick reference guide. For more comprehensive information please refer to your InSight V5 Operator's Manual

## 8. Haematology Sample Handling

Your InSight V5 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 in the sample holder (especially horses). Check the tube for clots prior to sampling, **DO NOT** test a clotted sample- take a repeat sample.

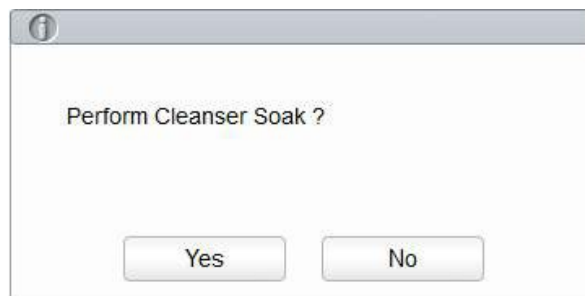
**Time delay:** Blood samples should be processed as soon as possible after collection. Platelets are affected by time delay as they have a short half life and can clump even in the presence of an anti-coagulant. Platelet counts performed after 4-6 hours should be considered suspect. Prolonged sample 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 Cleanser Soak

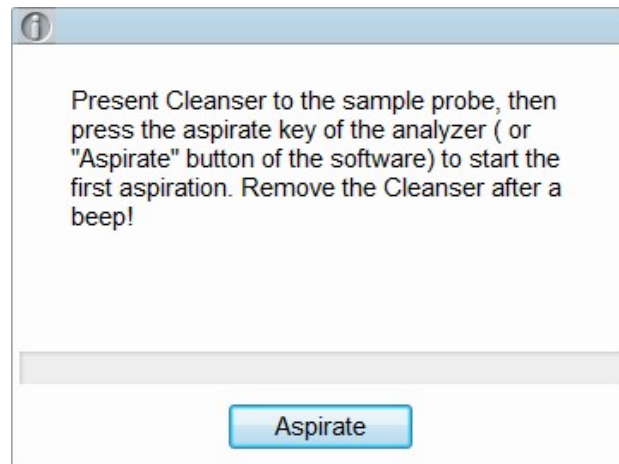
Cleanser Soak should be performed when the background results exceed the range, bad differential and if a clot remains in the system following other maintenance procedures. You may also be instructed to perform this by your Woodley Equipment Representative or by Woodley Equipment Technical Support when troubleshooting.

Select 'Service'

Maintenance- Cleanser Soak.



Select 'Yes' to perform Cleanser Soak



Present the Cleanser under the sample probe and press 'Aspirate'

The cleanser Soak will take 20minutes

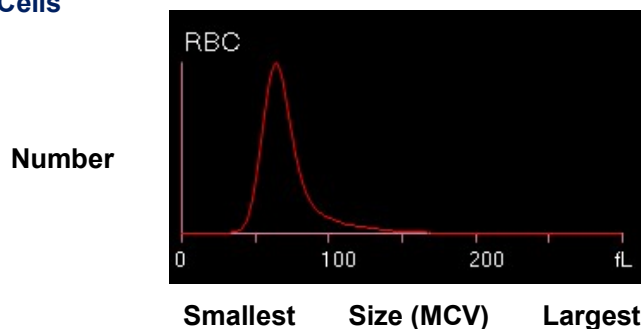
## 10. Interpreting Blood Cell Histograms

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.

As each WBC passes through the flow cell, the laser beam shines through the cell and the light is scattered depending on the contents of the white cell.

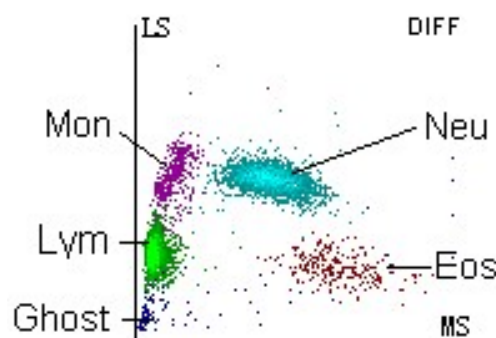
The sizes of the peaks vary depending on the frequency and size of each cell type. Therefore, it is possible to observe microcytic (small red cells) and macrocytic (large red cells) red blood cell populations from the size and position of the peaks.

### Red Blood Cells



### White Blood Cells

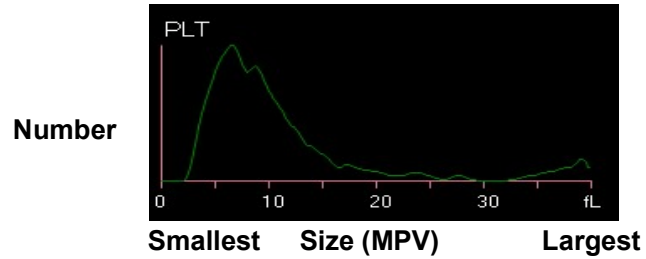
The intensity of scattered light reflects the blood cell size and intracellular density. The low-angle scattered light signal (LS) shows cell size, while the middle-angle (MS) and high-angle scattered light signal show intracellular information (nucleus and cytoplasm information). The optical detector receives this scattered signal and converts it into electrical pulses.



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## 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 V5 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 V5 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																															
Auto Clean																															
Check Reagent levels and waste																															
Clean blood spills																															
Shutdown																															

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

Monthly	Date Performed & Initials
Clean Fluidics	

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 V5 Maintenance Schedule

Maintenance Schedule	Maintenance
<p><b>Daily Maintenance</b> Customer Maintenance</p>	<p><b>Startup/wakeup cycle (Refer to section 6)</b>  <b>Shut down/sleep mode (Refer to section 6)</b></p> <ol style="list-style-type: none"> <li>1. Program for each evening</li> <li>2. Perform manual shutdown at the weekend then switch off InSight V5</li> </ol> <p><b>Visually check reagent levels</b>  <b>Clean cover</b>  <b>Blank Measurement</b>  <b>Auto Cleaning Cycle</b></p>
<p><b>Weekly Maintenance</b> Customer Maintenance</p>	<p><b>Cleanser Soak</b>  <b>Clean Probe</b></p>
<p><b>Monthly Maintenance</b> Customer Maintenance</p>	<p><b>Clean Fluidics</b></p>
<p><b>Yearly Maintenance</b> Woodley Service Maintenance</p> <p>Please contact Woodley Equipment Company Ltd for information about a fully comprehensive service contract</p> <p><b>Tel:</b> +44 (0) 1204 669033  <b>Fax:</b> +44 (0) 1204 669034  <b>Email:</b> <a href="mailto:sales@woodleyequipment.com">sales@woodleyequipment.com</a></p>	<p><b>Full Service</b></p>

**NB:** Refer to InSight V5 User Manual for detailed instructions of maintenance procedures.



**13. WOODLEY EQUIPMENT COMPANY LTD**

**InSight V5 INSTALLATION & TRAINING DOCUMENTATION**

**Name of Practice:**

**Address:**

**Primary Contact:**

**Phone:**

**InSight V5 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:**

		<b>YES ✓</b>
<b>1. Instrument Overview</b>		
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	_____
<b>2. Instrument Operation</b>		
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. Sample Analysis \_\_\_\_\_
- c. Review \_\_\_\_\_
- d. QC \_\_\_\_\_
- e. Reagent Management \_\_\_\_\_
- f. Setup \_\_\_\_\_
- g. Service \_\_\_\_\_
- 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. Cleanser soak \_\_\_\_\_
- c. Clean Sample Probe \_\_\_\_\_
- d. Clean fluidics \_\_\_\_\_

**7. System preparation for Service**

- a. Preparing for shipment \_\_\_\_\_
- b. Pack instrument appropriately in InSight V5 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 V5 tests

Signed Trainer: \_\_\_\_\_ Name in Full: \_\_\_\_\_

Signed Trainee: \_\_\_\_\_ Name in Full: \_\_\_\_\_ Date: \_\_\_\_\_

This completed and signed documentation serves as a certificate of InSight V5 installation and training

