WOODLEY
EQUIPMENT COMPANY LTD.

Spotchem EZ Quick Reference Guide

Quick Reference Guide Contents

Section

This document is a quick reference guide. For more comprehensive information please refer to your Spotchem Operators manual

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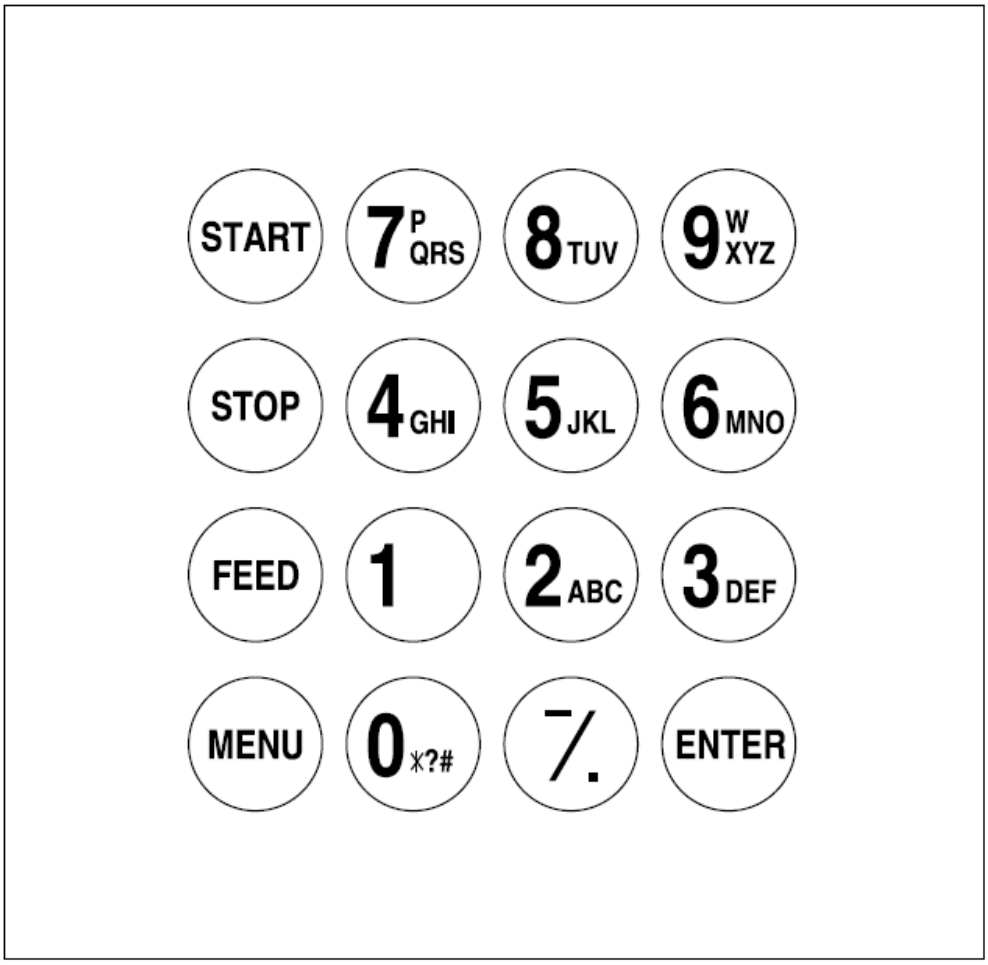
1. Spotchem EZ Function Buttons



START: Starts measurement. Select 'Yes' from the Yes/No option.
STOP: Stops measurement. Select 'No' from the Yes/No option. Cancels entry.
FEED: Feeds the built-in printer with paper while pressed.
MENU: Switches the page on each menu display.
0-9: Selects the menu number. Enter numerical values and ID.
-/. Selects item, moves cursor, switches the page on the display and enters minus sign and decimal point.
ENTER: Determines the entry.

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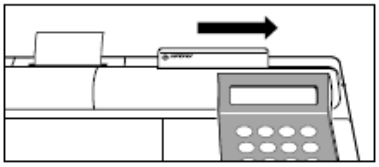
2. How to Calibrate

Each pack of reagent strips is supplied with a calibration card which must be swiped in the magnetic card reader prior to testing. This process only needs to be carried out once for each pack of strips tested.

1. **From the main menu select '3. Calibration' then '1. CARD'.**

2. **Insert the card into the magnetic card reader on any stripe number and swipe to the right. Once read, repeat by swiping the same stripe number a second time.**



3. **Once a stripe has been read twice a ■ icon is displayed on the screen in place of the stripe number.**

4. **Next, swipe the card to read the remaining stripe numbers as instructed on the display (e.g. above, now swipe stripe number 2).**

5. **Once each stripe number has been swiped and read twice by the card reader the calibration procedure is complete.**

6. **Press the stop key 3 times to return to the main menu.**

7. **The calibrated reagent strips can now be used for testing.**

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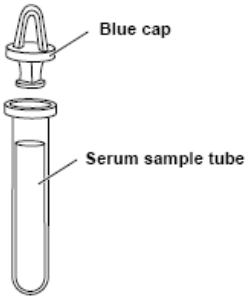
3. Preparing a Sample

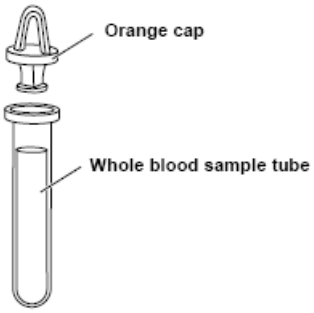
1. **Serum or Plasma Sample (plain serum, serum gel or heparin)**

Pipette serum or plasma into blue top tube.
Cap tube if not performing test immediately.



2. **Whole blood sample**

Transfer whole blood into orange top tube and cap tightly. Invert tube 6 times to mix blood with heparin anticoagulant then centrifuge. *Remove cap before analysis*

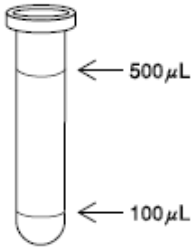


3. **If using the internal centrifuge**

Mix sample then pipette 250µl plain or heparinised whole blood into the centrifugation tube (up to line). Wipe any blood on exterior of the tube then place in the internal centrifuge.

Remove any air bubbles from the top of the sample prior to testing

The serum and whole blood sample tubes have two lines to mark 100µl and 500µl volumes (right)



The required serum/plasma test volume is 38µl + 6µl for each test item.
e.g. a 6 parameter V panel = 38µl + 6 x 6µl = 74µl

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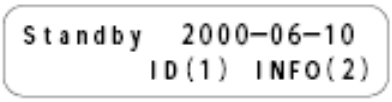
4. Running a Sample

1. **Press no. 1 key 'Measure'. The cover will open and the multi-rack and reagent table will move forward**

2. **Press no. 1 key 'ID'**



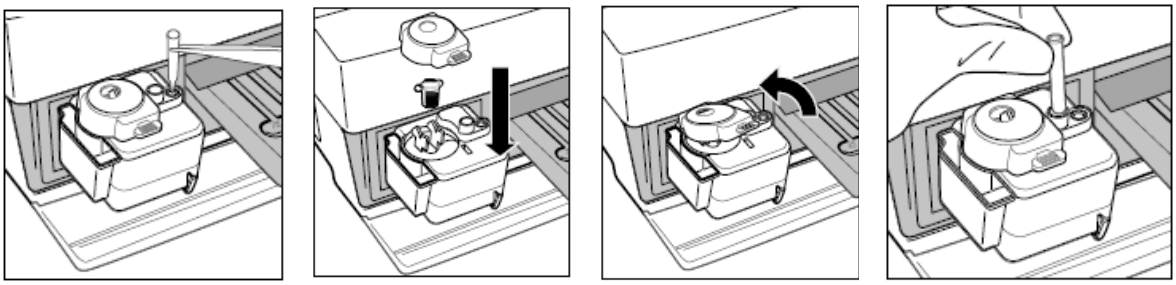
3. **Enter up to 4 digit number ID and press ENTER**

4. **ID screen is displayed. Enter up to 13 digits using numbers or letters and press ENTER**

5. **When on Standby screen no. 6 key then -/. Key to select species type**

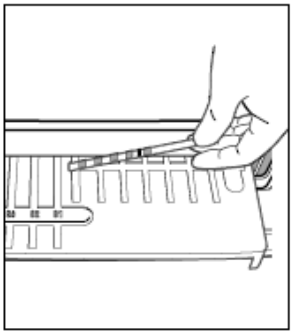
6. **Next, place the pipette tip (a.) and set either the whole blood sample in centrifuge tube (b.) and cap (c.) OR place uncapped serum/plasma sample into position in the multi-rack**

a. **b.** **c.** **d.**



7. **Remove reagent strips from package and place on reagent table (right). Up to 9 parameters can be tested at one time. Calibrate strips if a new lot (section 2)**

8. **Press 'START' key to begin the analysis. The multi-rack and reagent table will move backward. The message 'Measuring…' is displayed with the remaining analysis time. Once analysis is complete the results print out and the standby screen is restored**



5. How to Reconstitute a Biochemistry Control Vial

Reconstitution Procedure:

1. Remove vial from the refrigerator and allow to warm at room temperature for 5 minutes.
2. Remove the stopper and add 5ml DIL SIM diluent to the vial.
3. Replace stopper and swirl vial gently. DO NOT shake.
4. Let the vial stand on bench for 20 minutes then swirl again and gently invert 10 times.
5. The control is now reconstituted and ready to be analysed or frozen for prolonged storage.

QC Storage:

Store at 2-8°C before and after reconstitution. Reconstituted control may be stored at -20°C. Thaw frozen controls quickly using warm water (37°C), invert gently after thawing.

QC Stability:

Open vial reconstituted stability is up to 10 days if stored at 2-8°C, or 2-3 weeks if stored at -20°C once reconstituted. Frozen controls must be used within 8 hours of thawing.

If you require assistance please contact your Woodley Equipment Sales Representative or Woodley Equipment Company Technical Support on 01204 669033 and press option 1.

6. Running a QC

Woodley Equipment Company recommends a Quality Control (QC) should be analysed on the Spotchem EZ at the start of each working week.

Why Run a QC?

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

Running A QC

1. **Reconstitute the control material (refer to section 5)**
2. **Mix QC and place in uncapped blue topped serum/plasma tube**
3. **Select strip parameters to QC and run sample (refer to section 4)**
4. **Once testing is complete, print out and compare your results with those on the control assay sheet supplied with the control vial.**
5. **Sign the QC log sheet under the appropriate date.**

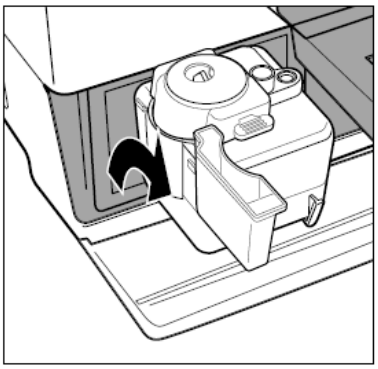
In the event of a QC failure 1. Reprocess the sample 2. If it's still out of limits, repeat with a fresh QC 3. Contact your Woodley Sales Representative or Woodley Equipment Company Technical Support on 01204 669033 and press option 1.

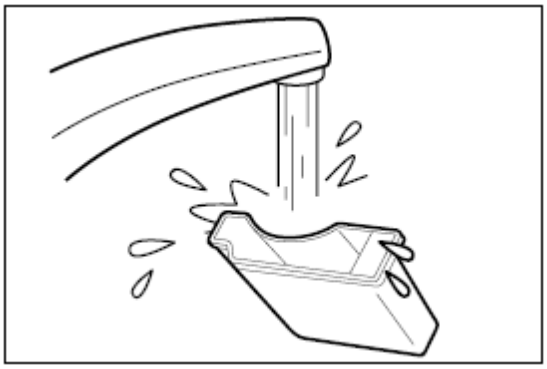
7. Maintenance

Daily Maintenance

Empty & Clean Tip Waste

Remove the tip waste from the mulitrack. Discard tips, rinse under a tap then replace.



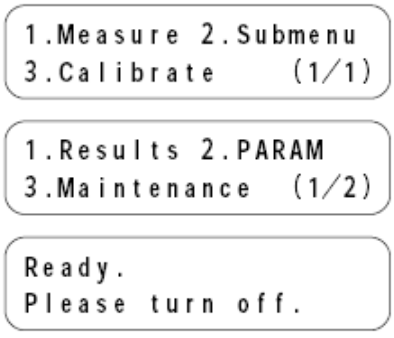


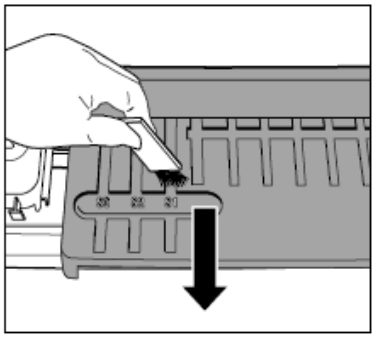
Weekly Maintenance

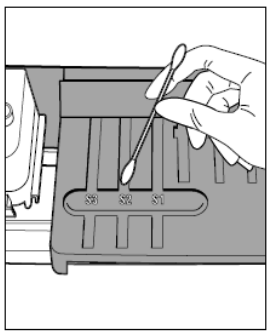
1. Clean Reagent Table

Select '2. Submenu' from the main menu then press '3. maintenance' to open the cover. The reagent table will slide forward. Switch power OFF.

Brush off any dust using the cleaning brush. Use a cotton bud moistened with distilled water to clean any residue. If the table is wet, wipe with a dry cotton bud.



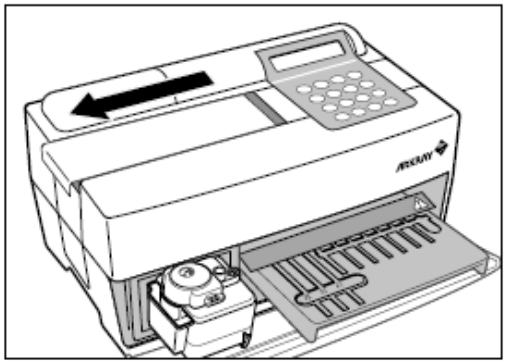


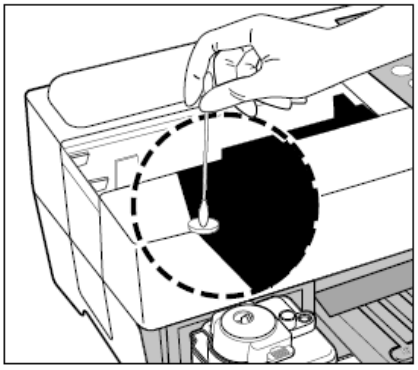


Weekly Maintenance continued

2. Clean Rubber Plate

Remove the top cover, moisten a cotton bud with distilled water and wipe stains or dust from the rubber plate then replace cover.





3. Clean Centrifuge Cover

Remove the centrifuge cover, disinfect then rinse under the tap and replace.

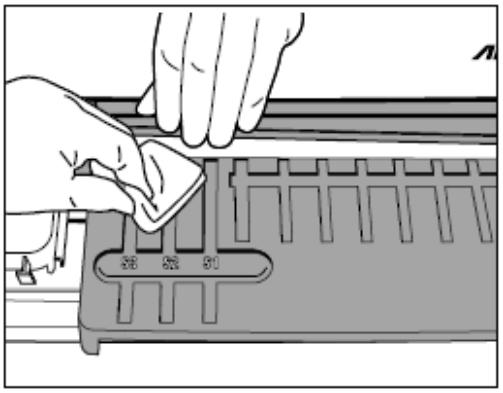
Once cleaning is complete turn the power ON.

4. Clean black and white plates

Remove stains or dust by wiping plates using a soft cloth.

Do not touch plates with bare hands.

Do not blow on plates to remove dust.

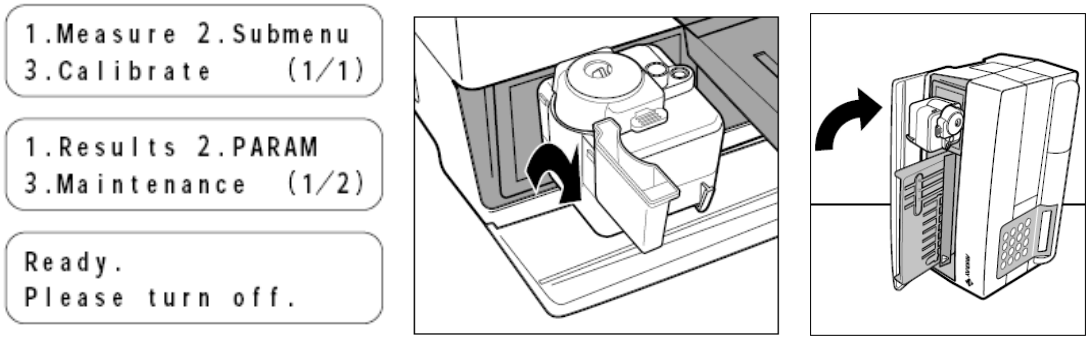


Annual Maintenance

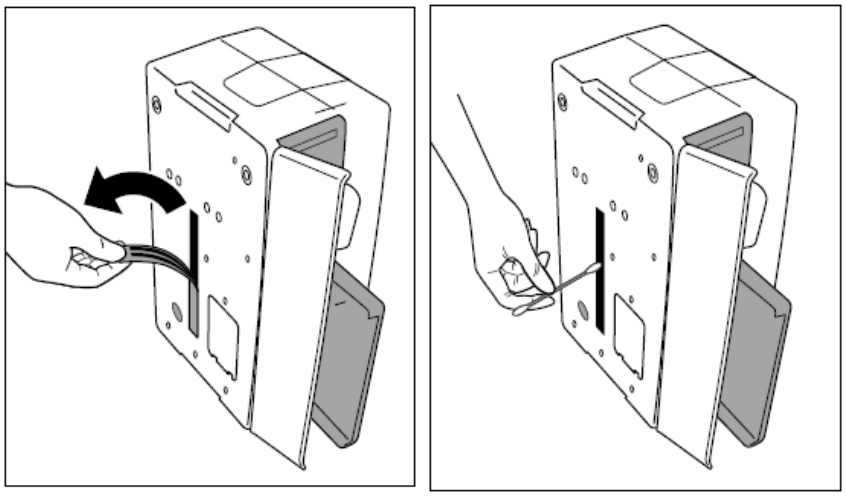
1. Cleaning the Optical Window

Select '2. Submenu' from the main menu then press '3. maintenance' to open the cover. The reagent table will slide forward. Switch power OFF.

Then remove tip waste case and lay analyser on its right side.



Remove the rubber cap from the bottom of the analyser. Use a cotton bud moistened with distilled water to clean any residue. If the wet, wipe with a dry cotton bud. Reattach rubber, turn analyser to original position and replace tip waste case.



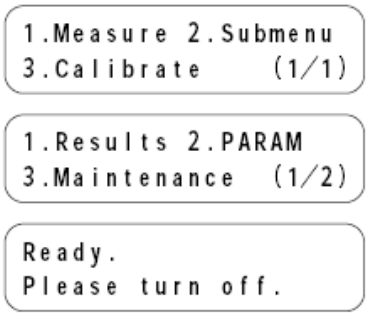
Once cleaning is complete turn the power on.

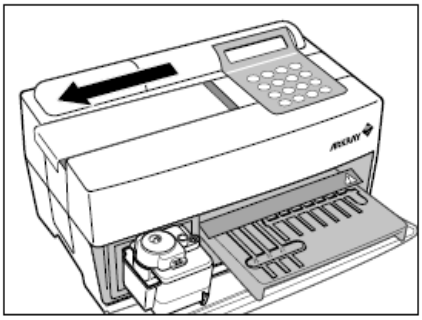
Annual Maintenance Continued

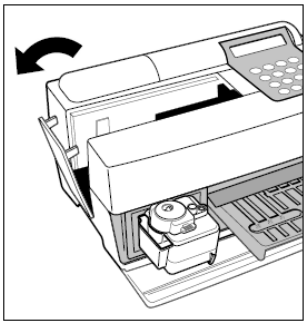
2. Cleaning the Nozzle

Select '2. Submenu' from the main menu then press '3. Maintenance' to open the cover. The reagent table will slide forward. Switch power OFF.

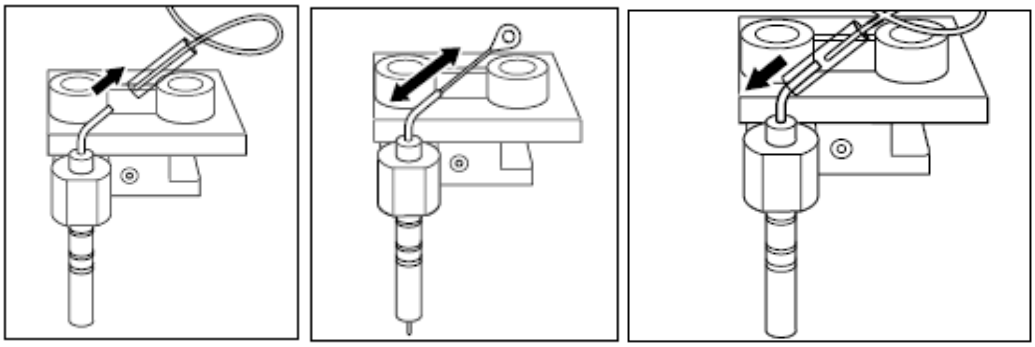
Remove the top cover and then the side cover.





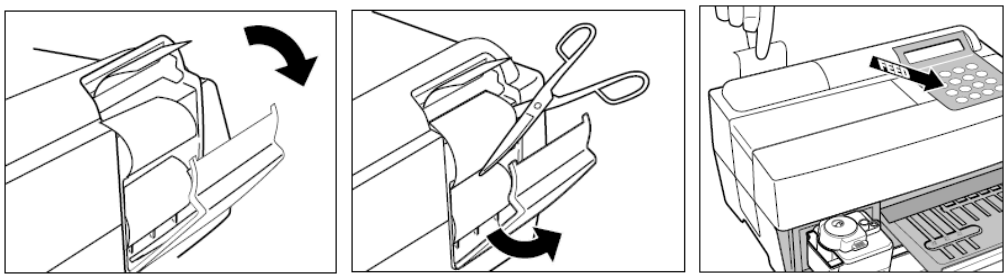


Remove nozzle from tube using tweezers. Insert cleaning wire then move up and down. Clean residue with tissue paper. Reattach nozzle, replace covers and then switch analyser ON.

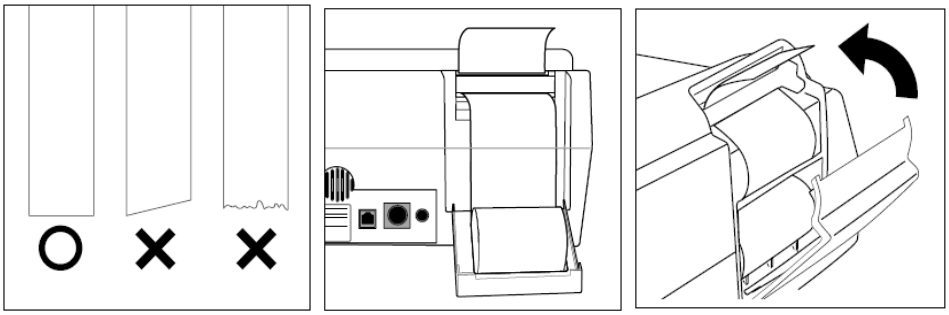


8. How to change printer paper

Open the printer cover. If paper remains, cut it with scissors and press FEED to remove.



To prevent jams prepare the paper by cutting the top off the roll to make a straight edge. Place a new roll of paper in the holder. Insert edge into slot and paper roll will feed automatically. Press FEED to prepare the paper for printing. Close the cover.



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9. Spotchem EZ Parameters

Multi Parameter Strips

Vet Health Panel: BUN, CREA, ALT, ALP, GLU, TP

Kidney: CREA, ALB, TP, UA, BUN

Liver: ALB, GOT/AST, GPT/ALT, LDH, TBIL, TP

Heart: BUN, CHOL, CK, GOT/AST, LDH, TBIL, TP

Panel 1: GPT/ALT, GOT/AST, BUN, GLU, CHOL, TBIL

Panel 2: LDH, ALB, TP, UA, CA, TG

STAT: LDH, CK, GPT/ALT, GOT/AST, BUN, TBIL

Single Parameter Strips

ALP, Amylase, Creatinine, Calcium

GGT, Glucose, BUN, Magnesium

AST/GOT, Fructosamine, CPK, Phosphorus

ALT/GPT, Albumin, Triglyceride, Total Cholesterol

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Total Bilirubin, Total Protein, Uric Acid, HDL, LDH

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10. Spotchem EZ Quality Control & Maintenance Log

MONTH:……..

REVIEWED BY:……
DATE:……

Quality Control

Weekly Procedures	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5
QC tested by:					

NOTE: Process a QC at least once a week, compare your results with results printed on the Spotchem 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. Inform your Woodley Sales Representative or Woodley Equipment Company Technical Support on 01204 669033 and press option 1.

Maintenance

Daily procedures	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
Empty/clean tip waste																															

Weekly Procedures	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5
Clean reagent table					
Clean rubber plate					
Clean centrifuge cover					
Clean black and white plates					

Annual Procedures	Date Performed
Clean optical window	
Clean nozzle	

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 and press option 1.

11. Spotchem EZ Maintenance Schedule

Maintenance Schedule	Maintenance
Daily Maintenance Customer Maintenance	**Empty and clean tip waste**
Weekly Maintenance Customer Maintenance	**1. Clean reagent table** **2. Clean rubber plate** **3. Clean centrifuge cover** **4. Clean black and white plates**
Annual Maintenance Customer Maintenance	**1. Clean optical window** **2. Clean nozzle**

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12. Spotchem Normal Veterinary Reference Ranges EZ / EL

Parameters	Dog	Cat	Rabbit	Ferret	Horse	Cow	Pig	Sheep	Linear Range	Units
ALT/GPT	10-120	10-100	< 100	< 380			< 37	< 10	10 -1000	U/L
Albumin	23 – 37	23 – 34	39 – 53	22 – 37	27 – 37		28 – 52	26 – 38	10 – 60	g/L
ALP	< 140	< 90	< 220	< 70	70 – 290	< 332			50 – 1500	U/L
Amylase	300-1100	500-1100	< 1000	< 18					10 – 4000	U/L
AST/GOT	10-40	10-40	< 100	< 106	185-340	< 112	< 57	21 – 216	10-1000	U/L
Urea (BUN)	3.6 – 10.4	5.4 – 12.5	4.0 – 8.0	3.6 – 12.3	3.6 – 8.9	< 9	< 6	< 12	1.8 – 71.4	mmol/L
CK/CPK	80-375	80-500	< 1100		50-470	< 170			50 – 2000	U/L
Phosphate	0.84 – 1.94	1.13 – 2.26	0.50 – 1.50	0.84 – 2.22	0.60 – 1.50	1.36 - 2.74	2.30 – 4.10		0.16 – 6.46	mmol/L
Fructosamine	200-375	165-240	275 - 450						50 - 1000	µmol/L
GGT	< 10	< 10	< 15		10-37	< 65	13.2 – 96	76 – 156	10 – 1500	U/L
Glucose	3.6 – 6.6	3.9 – 6.9	5.4 – 9.0	4.5 – 8.0	4.4 – 6.6	2.5 – 4.1		2.0 – 4.4	1.1 – 25.0	mmol/L
Calcium	2.10 – 2.80	2.15 – 2.80	2.50 – 4.25	1.81 -3.06	2.70 – 3.50	2.43 – 3.10	2.62 – 3.40	2.40 – 3.20	0.75 – 4.99	mmol/L
Cholesterol	3.1 – 7.7	1.8 – 6.2	< 2.0	2.7 – 7.2	1.7 – 2.5	2.1 – 3.1			1.3 – 10.3	mmol/L
Creatinine	53 - 141	53 - 177	48 – 188	18 -92	62 - 177		118 – 217	37 - 105	27 – 3536	µmol/L
LDH	< 624	< 498	< 100	< 546	162 – 414	690 – 1446	< 2652	186 – 1386	100 – 4000	U/L
Magnesium	0.70 – 1.01	0.82 – 1.11	0.70 – 1.07			0.66 – 1.07		0.64 – 1.40	0.08 – 2.47	mmol/L
Tot. Bilirubin	< 8	< 8	< 15	< 12	< 42	< 8	< 11	< 10	2 – 428	µmol/L
Total Protein	55-75	58-80	50 -76	50 - 79	58-80	73 – 101	59 – 87	44 – 68	20 – 110	g/L
Triglyceride	0.3 - 1.7	0.3- 1.8	< 3.0						0.28 – 5.65	mmol/L
Uric Acid	< 59	< 59							59 – 1190	µmol/L
Sodium	136 – 156	144 - 162	129 – 150		132 – 146	132 – 153	139 – 152	136 – 154	50 – 250	mmol/L
Potassium	3.4 – 5.4	3.0 – 5.0	3.5 – 5.6		2.4 – 4.7	3.9 – 5.8	4.9 – 7.1	4 – 6	1.0 – 15.0	mmol/L
Chloride	110 - 115	117 - 123	90 - 120		99 - 109	97 - 111	100 - 105	98 - 115	50 – 200	mmol/L

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13. WOODLEY EQUIPMENT COMPANY LTD

Spotchem EZ INSTALLATION & TRAINING DOCUMENTATION

Name of Practice:

Address:

Primary Contact: **Phone:**

Spotchem EZ Instrument

Serial Number:

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.	Internal printer	_____
f.	External connection ports	_____
g.	Reagent table and multirack	_____
h.	Card reader	_____
i.	Accessories	_____
2. Instrument Menu		
a.	Measure	_____
b.	Submenu	_____
c.	Calibrate	_____

3. Strips

a.	Panels	_____
b.	Single strips	_____
c.	Calibration card	_____
d.	Expiry dates	_____
e.	Storage temperature (2-8oC)	_____
f.	Warm to room temperature before use (20 minutes)	_____
g.	Strip handling	_____

4. Sample processing

a.	Calibration	_____
b.	Correct sample material & sample volume	_____
c.	Multirack preparation	_____
d.	Reagent table preparation	_____
e.	Define Sample & assign species	_____
f.	Process a sample	_____
g.	Access, review and print results internally	_____
h.	Identify sampling errors & take appropriate action	_____
i.	Sample dilutions	_____

5. Control processing

a.	Correct control material and assay sheet	_____
b.	Correct control reconstitution	_____
c.	Correct control storage	_____
d.	If refrigerated, remove 20 minutes before processing	_____
e.	If frozen, thaw appropriately	_____
f.	Expiry date	_____
g.	Open-vial stability time	_____
h.	QC recommendations	_____
i.	Correct procedure in the event of a control failure	_____
j.	Importance of keeping control records	_____

6. System Maintenance

a.	Empty and clean tip waste	_____
b.	Clean reagent table	_____
c.	Clean rubber plate	_____
d.	Clean centrifuge cover	_____
e.	Clean optical window	_____
f.	Clean black and white plates	_____
g.	Clean nozzle	_____

7. **Troubleshooting**
   a. Demonstrate adequate 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 spotchem EZ tests

Signed Trainer: **Name in Full:**

Signed Trainee: **Name in Full:** **Date:**

This completed and signed documentation serves as a certificate of Spotchem EZ installation and training