



Scheduled Maintenance Work Order

Work Order No	n/a pwo465014	Scheduled Month	January 2019
Work Order Date	n/a 01/01/2019	Completed Date	22/1/2019
Clinic Name	K.K TRONOH	Clinic Code	PRK040
BE No	PRK000265	District	KINTA
BE Category	HEMATOCRIT ANALYSER (M)	WO Assigned to	NOOR AZAHAR
Ownership	<input checked="" type="checkbox"/> Existing Equipment	<input type="checkbox"/> MEET Equipment	
BE Condition	<input type="checkbox"/> Under Warranty	<input type="checkbox"/> BER Proposed	
Work Order Type	<input checked="" type="checkbox"/> Preventive Maintenance (PM)	<input type="checkbox"/> Third Party Calibration (TPC)	
	<input type="checkbox"/> Routine Inspection (RI)	<input type="checkbox"/> Statutory Certification (SC)	

Reschedule Date	
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BE Third Party Calibration / Statutory Certification Details

Company Name	n/a	Cal / Cert Date	n/a
Contact Number	n/a	Cal / Cert Expiry Date	n/a

Action Taken

PPM COMPLETED AS PER CHECKLIST

* CONNECTED DISTILLED WATER TO THE MACHINE FOR DILUTANT REPLACEMENT FOR PPM PURPOSE.

Manufacturer: SYSMEX
Model: KX21
S/N: B.1569
Purchase Date: 1/7/2011
Kewpa No: KKM/5KN/PRK/04/08-03-06/11/1/30

Schedule Maintenance Execution Details

SI No	QMS Engineer / Technician Name	Date	Start Time	End Time
1	ADAM	22/1/2019	9:30	11:30

Customer Remarks

* UNIT NOT IN USE DUE TO CELL PACK DILUTANT NOT AVAILABLE AT SITE

* QC MATERIAL NOT AVAILABLE AT SITE.

Engineer / Technician Signature

Name: NOOR AZARUL B AHAMAD
PERAK LAB SPECIALIST
Quantum Medical Solution Sdn. Bhd.
No 10 B, Persiaan Greentown 4,
Greentown Avenue, 30450 Ipoh, Perak
Tel/fax: 05-2461991 Hp: 012-89648013

Date: 22/1/2019

Customer Signature

Name: MUHAMMAD KHIDIR BIN SUANST
Designation: MAJLIS PATOLOGI
KLINIK KESIHATAN TRONOH
Date: 31750 TRONOH
Seal: PERAK

For Internal Use only

First Verification
QMS Circle InchargeFinal Verification
QMS State Incharge



KEMENTERIAN KESIHATAN MALAYSIA
MEET Planned Preventive Maintenance Checklist
Analyzers, Laboratory, Hematology, Cell Counting, Automated (Medium)
BE CODE : ME-009

CHECKLIST NO:CL-015-003
REV.000

PART 1 ASSET DETAILS

WORK ORDER NO ▶ *Info PWO 465014* BE NO ▶ *PRK000265*
MANUFACTURER ▶ SYSMEX MODEL ▶ KX21
FREQUENCY ▶ 6 MONTHLY (/) 12 MONTHLY () PPM HOURS ▶ 2.00

PART 2 SPECIAL PRECAUTION

If there is evidence of body fluid contamination, submit the device for cleaning and decontamination before inspecting it.

Wear appropriate Personnel Protection Equipment (PPE) during work.

Wear grounded electrostatic wristband when handling PCB or electronic components.

Refer to the safety procedure for additional precautions and guidance as per manufacturer guidelines.

Make sure the test equipment used are duly calibrated.

PART 3 TEST APPARATUS

Tick (✓) where appropriate

NO	ASSET NO	DESCRIPTION	SERIAL NO	CALIBRATION DUE ON
<i>Info</i>		ELECTRICAL SAFETY ANALYZER	<i>Info</i>	

PART 4 QUALITATIVE TASKS

Tick (✓) where appropriate

	PASS	FAIL	NA		PASS	FAIL	NA
1 Chassis - verify physical integrity, cleanliness and condition	(/)	()	()	10 Printer - Verify Operation	(/)	()	()
2 Mount/ Fasteners - verify physical integrity	(/)	()	()	11 Rolling Pump tubing -Verify Physical Integrity	(/)	()	()
3 Cables - verify integrity	(/)	()	()	12 Solenoid Valve- Verify Operation	(/)	()	()
4 AC Plug / Power Cord- verify Proper Insulation and integrity	(/)	()	()	13 Vaccum and Pressure Pump -Verify Physical Integrity	(/)	()	()
5 Strain Relief - verify physical integrity at both ends of line cord	(/)	()	()	a. Vaccum =0.0333mpa (actual) Displaying 0.0320mpa	(/)	()	()
6 Fittings/ Connectors - check all fittings/connectors	(/)	()	()	b. Vaccum =0.05mpa (actual) Displaying 0.051mpa	(/)	()	()
7 Controls/Switches - verify proper operation of controls	(/)	()	()	14 Sample Probe - Verify Integrity	(/)	()	()
8 Indicators /Displays - Verify Proper illumination and Operation	(/)	()	()	15 Controller Board - Verify Physical Integrity	(/)	()	()
9 Plunger & Syringe Motor drive - Verify physical integrity and operation	(/)	()	()				

PART 5 PREVENTIVE MAINTENANCE TASKS

Tick (✓) where appropriate

	DONE	NOT DONE **	NA		DONE	NOT DONE **	NA
1 Inspect / Clean exterior and interior of the equipment	(/)	()	()	8 Run Auto Clean	(/)	()	()
2 Transducer Clean and Verify integrity	(/)	()	()	9 SRV -Clean and Check Condition	(/)	()	()
3 PPM Kits - Replace if needed	(/)	()	()	10 Run daily Shutdown	(/)	()	()
4 Power on Self Test (POST) -Verify Operation	(/)	()	()	11 Sample Aspiration Probe - Clean and Check Condition	(/)	()	()
5 Fan Filter -Clean and replace if needed	(/)	()	()	12 Pinch Valve and Lyse pump tubing - Clean and Replace if Necessary	(/)	()	()
6 Aperture Plates - Clean and Check Condition	(/)	()	()	13 Waste Champer - Clean and Check Condition	(/)	()	()
7 Diluent Syringe, Sample Syringe, Sample aspiration Probe- Clean and Check Condition	(/)	()	()	14 Close Sample holder - Clean and Check Condition	()	()	(/)

Notes: * For all Parts, NA is defined as NOT APPLICABLE
** If you have ticked 'NOT DONE', then justify in Part 8
*** Choose Whichever Applicable



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CHECKLIST NO: CL-015-003 REV.000

WORK ORDER NO *n/o* PWO 465014

PART 6 QUANTITATIVE TASKS

Tick (✓) where appropriate

No	Description	Units / UOM	Set Values	Measured Values	Limit/Tolerance	PASS	FAIL	NA
1	Background Check							
1.1	WBC	$\times 10^9/\mu\text{L}$	0-0		≤ 0.3	()	()	(/)
1.2	RBC	$\times 10^6/\mu\text{L}$	0-0		≤ 0.02	()	()	(/)
1.3	HGB	g/dL	0-0		≤ 0.1	()	()	(/)
1.4	PLT	$\times 10^9/\mu\text{L}$	0		≤ 10	()	()	(/)
2	Pressure/Vacuum Check							
2.1	Pressure 0.5kg/cm ²	kg/cm ²	0.50	0.50	0.4-0.6	(/)	()	()
2.2	Vacuum 250mmHg	mmHg	250	256	230-270	(/)	()	()
3	Run QC Test and attach printout							
a	High level					()	()	(/)
b	Medium Level					()	()	(/)
c	Low Level					()	()	(/)
4	Run Precision Check					(/)	()	()

PART 7 ELECTRICAL SAFETY TEST

ELECTRICAL SAFETY TEST, (attach report)

Tick (✓) where appropriate

Standard use :

☐ IEC 60601

☐ IEC 61010

☐ IEC 62353

Result :

☐ PASS

☐ FAIL

☒ NA

PART 8 NOTES

Part 5 : Item 3

As needed Maintenance

Please indicate the part number, description of PPM Kit and any repair work to be carried out (if any) :

1. Clean/Replace air filter - Replace at least once a year (part no. 443 - 2477 - 4)
2. Replace waste tubing (part no. 442 - 5340 - 413)
3. Check/Replace Dirty Tubing - Replace at least once a year (part no. 442-5055-413)
4. Check/Replace shaft fixture no. 60 and shaft no. 276



CORRECTIVE MAINTENANCE REQUIRED



FUNCTIONING



NOT FUNCTIONING

WORK ORDER NO *n/o*

NEXT PPM DATE *JULY 2019*

PPM has been performed in accordance to the checklist and the equipment is functioning to the intended purpose.

COMPLETED BY:

NOOR AZARUL B AHAMAD
PERAK LAB SPECIALIST
Quantum Medical Solution Sdn. Bhd
No 10 B, Persiaran Greentown 4c
Greentown Avenue, 30450 Ipoh, Perak
Tel: 05-2461991 Hn: 012-39648013

DATE:

22/1/2019