



Scheduled Maintenance Work Order

| | | | |
|-----------------|---|---|--------------|
| Work Order No | n/a pwo 413163 | Scheduled Month | January 2019 |
| Work Order Date | n/a 01/01/2019 | Completed Date | 22/1/2019 |
| Clinic Name | k.k. TAJUR TINGGI | Clinic Code | PRK 039 |
| BE No | PRK 000443 | District | KINTO |
| BE Category | ITC MATOLOGY ANALYZER (M) | WO Assigned to | NEER ADARUL |
| 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"/> Routine Inspection (RI) | <input type="checkbox"/> Third Party Calibration (TPC) <input type="checkbox"/> Statutory Certification (SC) | |

| | |
|-----------------|--|
| Reschedule Date | |
|-----------------|--|

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

PM completed as per checklist

Manufacturer: SYSMEX
Model: KXAIN
S/N: B4141
Purchase Date: 1/7/2011
Kewpa No: KKM/JKA/PRK/08-03-0514/11/26

Schedule Maintenance Execution Details

| SI No | QMS Engineer / Technician Name | Date | Start Time | End Time |
|-------|--------------------------------|-----------|------------|----------|
| 1 | ADARUL | 22/1/2019 | 13:30 | 15:30 |
| | | | | |
| | | | | |
| | | | | |

| |
|------------------|
| Customer Remarks |
|------------------|

| | |
|--|---|
| Engineer / Technician Signature Name Date 22/1/2019 NOOR AZARUL B AHAMAD PETAK LAB SPECIALIST Quantum Medical Solution Sdn. Bhd No 10 B, Persiaan Greentown 4 Greentown Avenue, 30450 Ipoh, Perak Tel/fax : 05-2461991 Hp : 012-39648013 | Customer Signature Name Designation Date Seal LEEZA BINTI MANSOR RUTEKNOLOGI MAKMA PERUBATAN U29 |
|--|---|

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 ▶ *n/po PWO 413163*

BE NO ▶ *PAKOC0442*

MANUFACTURER ▶ SYSMEX

MODEL ▶ *KX21 N*

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>n/po</i> | ELECTRICAL SAFETY ANALYZER | <i>n/po</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 Vacuum and Pressure Pump -Verify Physical Integrity | (/) | () | () |
| 5 Strain Relief - verify physical integrity at both ends of line cord | (/) | () | () | a. Vacuum =0.0333mpa (actual) Displaying 0.0320mpa | (/) | () | () |
| 6 Fittings/ Connectors - check all fittings/connectors | (/) | () | () | <i>PRESSURE</i> b. Vacuum =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 Chamber - 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



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

WORK ORDER NO ▶ *n/a* *PO0413163*

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 | $\times 10^3/\mu\text{L}$ | <i>0.0</i> | <i>0.0</i> | ≤ 0.3 | <i>(/)</i> | <i>()</i> | <i>()</i> |
| 1.2 | RBC | $\times 10^9/\mu\text{L}$ | <i>0.00</i> | <i>0.00</i> | ≤ 0.02 | <i>(/)</i> | <i>()</i> | <i>()</i> |
| 1.3 | HGB | g/dL | <i>0.0</i> | <i>0.0</i> | ≤ 0.1 | <i>(/)</i> | <i>()</i> | <i>()</i> |
| 1.4 | PLT | $\times 10^3/\mu\text{L}$ | <i>0</i> | <i>0</i> | ≤ 10 | <i>(/)</i> | <i>()</i> | <i>()</i> |
| 2 | Pressure/Vacuum Check | | | | | | | |
| 2.1 | Pressure 0.5kg/cm ² | kg/cm ² | | | 0.4-0.6 | <i>()</i> | <i>()</i> | <i>(/)</i> |
| 2.2 | Vacuum 250mmHg | mmHg | | | 230-270 | <i>()</i> | <i>()</i> | <i>(/)</i> |
| 3 | Run QC Test and attach printout | | | | | | | |
| a | High level | | <i>-REFER ATTACHMENT-</i> | | | <i>(/)</i> | <i>()</i> | <i>()</i> |
| b | Medium Level | | <i>-REFER ATTACHMENT-</i> | | | <i>(/)</i> | <i>()</i> | <i>()</i> |
| c | Low Level | | <i>-REFER ATTACHMENT-</i> | | | <i>(/)</i> | <i>()</i> | <i>()</i> |
| 4 | Run Precision Check | | | | | <i>(/)</i> | <i>()</i> | <i>()</i> |

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

**NOT APPLICABLE FOR ELECTRICAL SAFETY TEST DUE TO UNIT RUNNING UNDER SOFTWARE BASE.*

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/a*

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 3 Avenue, 30450 Ipoh, Perak
Tel/Fax : 05-2461991 Hp : 012-39648013

DATE :

22/1/2019

Date 22/01/2019

Time 15:29

Counter Total 18687

W-Chamber 19

Detector 6

SRV 6

Settings Europe Not Use

Calib. Use

PDW

Control 8check 3WP

QC CV Dis ##

AG Host F3>W>AG

Researchw Not Use

Calib (WB) 103.0

WBC 102.0

RBC 100.0

HGB 100.0

RBC-GAIN 100.0

PLT 100.0

W-SCR 100.0

W-LCR 100.0

RDU-SD 100.0

RDU-CV 100.0

MPV 97.0

PDW 100.0

P-LCR 100.0

(PD) 106.7

WBC 94.7

RBC 107.5

HGB 100.0

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