

Form B03

## Scheduled Maintenance Work Order



Quantum Medical Solutions sdn bhd  
transcending boundaries, transforming life

Format Ref: - QMS/TSD-022 Rev.01

Work Order No.	PWO366619	Schedule Month	July 2018
Work Order Date	01/07/2018	Completed Date	16.7.18
Clinic Name	Klinik Kesihatan Sungai Rengit	Clinic Code	JHR047
BE No.	JHR008635	Distict	KOTA TINGGI
BE Category	Centrifuges, Tabletop Serofuge	WO Assigned to	KTG BME1
Ownership	<input checked="" type="checkbox"/> Existing Equipment	<input type="checkbox"/> Purchase	<input type="checkbox"/> New
BE Condition	<input checked="" type="checkbox"/> Active	<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

NA

## BE Third Party Calibration / Statutory Certification Details

Company Name	NA	Cal / Cert Date	NA
Contact Number	NA	Cal / Cert Expiry Date	NA

## Action Taken

☒ PM / ~~RI~~ job done as per checklist. Unit tested functioning good & ready to use.

Manufacturer: Hettich

☐ Corrective Maintenance / ☐ Breakdown

Model: EBA 20

BE Sticker Availability: ☒ Yes / ☐ NA

Serial No: 0069905

Remarks:

## Schedule Maintenance Execution Details

SI No	QMS Engineer / Technician Name	Date	Start Time	End Time
1	Shalwana	16.7.18	1000	1030

Customer Remarks

NA

Engineer / Technician Signature

Name

Date

NOORSHALWANA BINTI LATIP  
Biomedical Engineer  
Quantum Medical Solutions Sdn. Bhd.  
012-3962428

Customer Signature

Name

Designation

Date

Seal

DR. MASIK  
Teknologi Makmal Perubatan U29  
Klinik Kesihatan Sungai Rengit  
Pengerang

For Internal Use

MUHD RAMADHAN B. TAMAR JAYA  
Biomedical Engineer  
Technical Service Department  
Quantum Medical Solutions Sdn. Bhd.  
Tel: +60 12-396 1697

First Verification

QMS Circle Incharge

Final Verification

QMS State Incharge



# KEMENTERIAN KESIHATAN MALAYSIA

MEET Planned Preventive Maintenance Checklist  
Centrifuges, Tabletop Serofuge  
BE CODE : ME-014

CHECKLIST NO: CL-038-000  
REV.000

## PART 1 ASSET DETAILS

WORK ORDER NO ▶ FW0366619 BE NO ▶ JHR-08635  
MANUFACTURER ▶ Hettich MODEL ▶ EBA 20  
FREQUENCY ▶ 6 MONTHLY ( ) 12 MONTHLY ( / ) PPM HOURS ▶ 1.00

## 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
1	TEESA 0010	ELECTRICAL SAFETY ANALYZER	3218071	24/8/18
2	TEESA 0049	TACHOMETER	<del>461895</del> 4.310425	10/11/18
-	-	STOP WATCH	-	-

## PART 4 QUALITATIVE TASKS

Tick (✓) where appropriate

	PASS	FAIL	NA		PASS	FAIL	NA
1 Chassis - verify physical integrity, cleanliness and condition	( / )	( )	( )	8 Motor/Rotor Fixing Nuts - check physical condition and proper operation.	( / )	( )	( )
2 Mount/ Fasteners - verify physical integrity	( / )	( )	( )	9 Chamber - Verify physical integrity	( / )	( )	( )
3 Circuit Breaker/ Fuse - verify integrity of external circuit breaker and/or rating of external fuse	( / )	( )	( )	10 Carbon Brush - Verify Integrity	( / )	( )	( )
4 Power Cord / cables - verify proper insulation and integrity	( / )	( )	( )	11 Alarms/Interlocks - verify proper operation; check the lid latching mechanisms	( / )	( )	( )
5 Strain Relief - verify physical integrity at both ends of line cord	( / )	( )	( )	12 Sensor/Transducer - verify operation	( / )	( )	( )
6 Controls/ Switches - verify proper operation of controls	( / )	( )	( )				
7 Indicators/ Displays - verify proper illumination and operation	( / )	( )	( )				

## PART 5 PREVENTIVE MAINTENANCE TASKS

Tick (✓) where appropriate

	DONE	NOT DONE **	NA	Notes:
1 Clean exterior and interior of the equipment	( / )	( )	( )	* For all Parts, NA is defined as NOT APPLICABLE ** If you have ticked 'NOT DONE', then justify in Part 8 *** Choose Whichever Applicable
2 Lubricate rotor and buckets.	( )	( )	( / )	



# KEMENTERIAN KESIHATAN MALAYSIA

MEET Planned Preventive Maintenance Checklist

Centrifuges, Tabletop Serofuge

BE CODE ME-014

CHECKLIST NO: CL-038-  
REV.000

WORK ORDER NO

PWD366619

## PART 6 QUANTITATIVE TASKS

Tick (✓) where appropriate

No	Description	Units / UOM	Set Values	Measured Values	Limit/Tolerance	PASS FAIL NA
	Rotating speed	rpm	2500	2000	±10%	( / ) ( ) ( )
						( ) ( / ) ( )
	Timer Accuracy	min	2	2		( / )

## 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



CORRECTIVE MAINTENANCE REQUIRED



FUNCTIONING



NOT FUNCTIONING

WORK ORDER NO

PWD

NEXT PPM DATE

7/11/18

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

COMPLETED BY:

dm

NOORSHALWANA BINTI LATIP

Biomedical Engineer

Quantum Medical Solutions Sdn. Bhd.

012-3962428

DATE:

10.7.18



Date :7/10/2018

### Test Setup

Operator ID :  
Calibration Tech : MOHANA  
Calibration Date : 8/11/2017  
Firmware Version : 2.08.01  
Serial Number : 3218071  
Date & Time : 08/15/2018 & 09:48am  
JOB Name :

### DUT Information

Equipment Number : JHR008635  
Serial Number :  
Manufacturer :  
Model :  
Location : KK Sungai Rengit  
Other :

### Template Information

Template Name : 60601 3rd Ultrasound  
Pause after Power ON: NO  
Power ON delay: 2  
Test Speed: NORMAL  
Halt on Test Failure: YES  
Include Time: YES  
Insulation Resistance \ 500V  
Multi Enclosure Test : NO

Standard : IEC60601-1-3rd Ed  
Pause before Power O YES  
Power OFF delay: 0  
Test Mode: AUTO  
Multi PE Test: NO  
Multi Resstore: WORST/LAST  
Reverse Polarity: YES  
Classification: I

### PLC Configuration-Applied part setup

AP Name AP Type AP Num

Probe BF 1

### ESA615 Test Results

Test Name	Value	High Limits	Low Limits	Status
Protective Earth Resistance	0.006 Ohm	0.2 -		P
Insulation Resistance				P
Mains to Protective Earth	999 MOhm -	-		P
Mains to Non-Earth Accessible Conductive Part	999 MOhm -	-		P
Mains to Applied Parts	999 MOhm -	-		P
Applied Parts to Non-Earth Accessible Conduct	999 MOhm -	-		P
Mains Voltage				P
Live to Neutral	248.8 V	-	-	P
Neutral to Earth	1.7 V	-	-	P
Live to Earth	248.0 V	-	-	P

Equipment Current	0.1 A	-	-	P
Earth Leakage Current				P
Normal Condition	312 uA-OP	5000	-	P
Open Neutral	648 uA-OP	10000	-	P
Open Neutral- Reversed Mains	647 uA-OP	10000	-	P
Normal Condition- Reversed Mains	334 uA-OP	5000	-	P
Enclosure Leakage Current				P
Normal Condition	0.3 uA-OPI	100	-	P
Open Earth	312 uA-OP	500	-	P
Open Neutral	0.4 uA-OPI	500	-	P
Open Neutral- Reversed Mains	0.4 uA-OPI	500	-	P
Normal Condition- Reversed Mains	0.2 uA-OPI	100	-	P
Open Earth- Reversed Mains	334 uA-OP	500	-	P
Patient Leakage Current				P
Normal Condition				P
Probe	0.5 uAAC-(	100	-	P
Open Earth				P
Probe	0.6 uAAC-(	500	-	P
Open Neutral				P
Probe	0.7 uAAC-(	500	-	P
Open Neutral- Reversed Mains				P
Probe	0.7 uAAC-(	500	-	P
Normal Condition- Reversed Mains				P
Probe	0.5 uAAC-(	100	-	P
Open Earth- Reversed Mains				P
Probe	0.6 uAAC-(	500	-	P
Patient Leakage Current				P
Normal Condition				P
Probe	0.2 uADC-(	10	-	P
Open Earth				P
Probe	0.2 uADC-(	50	-	P
Open Neutral				P
Probe	0.2 uADC-(	50	-	P
Open Neutral- Reversed Mains				P
Probe	0.2 uADC-(	50	-	P
Normal Condition- Reversed Mains				P
Probe	0.1 uADC-(	10	-	P
Open Earth- Reversed Mains				P
Probe	0.2 uADC-(	50	-	P
Mains on Applied Parts				P
Single Fault Condition				P
Probe	1.7 uA-OPI	5000	-	P
Single Fault Condition- Reversed Mains				P
Probe	1.6 uA-OPI	5000	-	P

signature

