



MEDIMAC GR

Automatic Blood Group Testing System

Medical Equipment Approval Certificate Number 11BZ5050



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Decades of experience evolved further blood group testing

Accuracy First

Comparison of the control-sample with the sample results, reagent dispense checking function and machine self-checking function realize the high accuracy of detection results.

High performance

- ◆ Handle the sample at high speeds
The interval between start checking and the completion of the first microplate plate is shorter than 12 min.
- ◆ Multifunctional systemic combination
Blood Grouping apparatus is the combination of Coombs reagent dispense unit and test-tube decapper machine, improving the blood group testing efficacy and ensuring the safety of operators

Management of test results

- ◆ Management of test results
The sample results and reactions-images can be saved simultaneously.
- ◆ EMU information
The records system automatically manages the sample number, consumable parts supplement and accumulate operation time of the system in detail
- ◆ The major parts of the system all have self-checking functions
- ◆ Automatic sterilizing waste fluid unit

Quality management

- ◆ Management of reagent batch number
Management of reagent batch number and validate period
- ◆ Management of reagent dispense volume
Check the reagent volume in the microplate well. Ensure the accuracy and stability of the sample's volume and reagent dispense's volume.
- ◆ Microplate management
Management of the used times of microplate ID ensures the traceability of repeated utilization
- ◆ Management of data precision of the control-sample
The system manages the control-sample by its ID, enhancing the stability of sample-checking results.

Satisfy the demands of operators

Realize the high speed and safety of blood group testing



Reliability of blood group testing

Self-checking functions

Position checking of all the units

Color sensor for blood cell suspension

Ultrasonic sensor for the volume of sample and the reagent dispense in microplate well



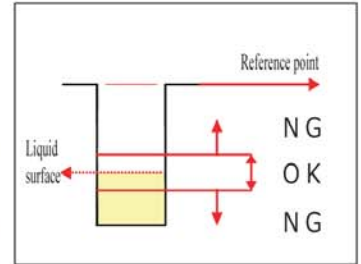
Checking blood cell suspension



Checking moving position of the unit



Checking the volume of reagent dispense



Microplate well

Use the bar code to manage the moving position of the sample, ensuring the stability of automatic checking



Checking sample ID

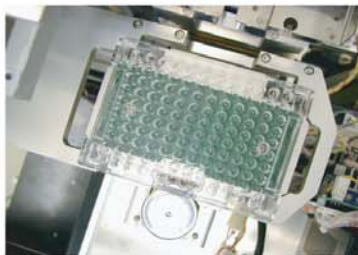
Stable formation of agglutination reaction

Automatic control of the forming-speed of agglutination reaction's formation

◆ Reagent stirring unit

Effective stirring functions for the sample and reagent

Automatic control of the rotation rates of stirring unit and centrifuge unit, ensuring the optimum state



Reagent stirring unit



Centrifuge unit

◆ Centrifuge unit

After the sample and the reagent are stirred, the agglutination reaction's formation is formed stable at the centrifuge rate of up to 2000 rpm

◆ Vibration/Rotation unit

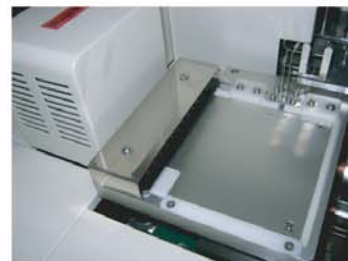
Automatic control of the rate, stabilizing the form of agglutination reaction's formation



Vibration/Rotation unit

Automatic temperature control of the forming of agglutination reaction's formation

1. Microplate auto-supply unit can supplement the microplate at any time
2. Thermostatic unit with cooling functions is installed in reagent tank



Reagent tank cooler



Microplate supply unit

Quality management support

Software support

- ◆ Reagent batch number and validate period management
Data management of the control-sample
- ◆ Management of the microplate's used times
- ◆ Management of the consumable parts' usage time and replacement time

Reagent batch number management

名前	試薬名	管理番号(Lot No.)	有効期限
1	PTC		
2	日字付D		
3	PLA		
4	PLA(希)		
5	PLB		
6	PLB(希)		
7	Acet		
8	Boat		
9	ABS		
10	ADF		
11	都心付D		
12	FSH		

品名	管理番号	使用回数	交換時期
...

Management of the consumable parts' usage time and replacement time

プレートID	使用回数
...	...

Management of microplate used times

Management of microplate's used times



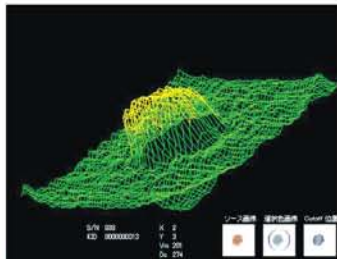
Management with visually numbered bar code

Test results

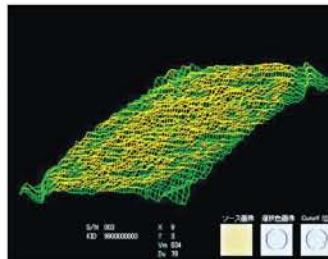
Using High-resolution CCD camera, which can accurately read and check the agglutination reaction's formation, display the pseudo-3D, and store the sample's test results and reaction-images



Test results (drawings)



Positive drawing



Negative drawing

Enhanced Security

Operator management by password, preventing unauthorized access. Authorized operator can manage the logs about running hours and number of samples.

High performance test

High speed processing

The first test plate results are obtained within 12 min, and the next results will be obtained respectively by every 2 minutes and 30 seconds.

Fully automatic check, saving the operator's time.

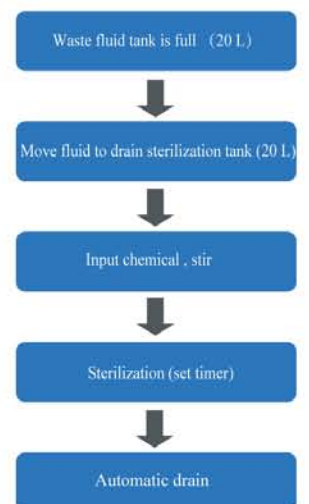
Reagent tip liquid head dispense

Using tip liquid head, it is easy to replace and clear the dispense head.

The reagent tank can be stirred under a matched cap, avoiding contamination.



Waste fluid automatic sterilization system



For high speed and performance of blood group testing and data collection

MEDIMAC GR



MEDIMAC GR

Automatic blood group testing system

MEDIMAC GR adopts centrifuge method
Realizes high speed and performance of
blood sample processing and data collection

W2670 × H1610 × D850, approximately 550kg
Power, approximately 1500VA



MEDIMAC GR + AGT-300GR

Automatic blood group testing system +
Coombs test Unit

Adoption of GR plus AGT can complete high speed
blood grouping more efficiently

W3670 × H1700 × D850, approximately 700kg
Power, approximately 1850VA



MEDIMAC GR+AGT-300GR+MCO-300GR

Automatic blood group testing system + Automatic test-tube decapper +
Coombs test unit

The capped test-tube can be directly filled by adopting
automatic test-tube decapper.
It can improve the safety of medical staffs

W3970 × H1700 × D850, approximately 800kg
Power, approximately 2000VA

MEDIMAC GR

Product specifications

Name: Automatic Blood Group Testing System	Morphological size	EMU : H1610×W1300×D850mm
Pattern type: MEDIMAC GR		STU1: H1030×W360×D750mm
Mass: approximately 550 kg		STU2: H1030×W360×D750mm
Power supply: AC100V 50/60Hz, approximately 1500VA (EMU)		DPU : H1150×W650×D650mm
AC100V 50/60Hz, approximately 500VA (DPU)		
AC100V 50/60Hz, approximately 1100VA (laser printer)		

Structure and performance

Microplate	MEDICATEC Pattern U 120-well semi-permanent plate
Test measure	Centrifuge and agglomeration
Speed	250-300 sample/h (determined by operating parameters)
Test channel	Optimal 12 channel/each sample
Blood type	High-resolution CCD camera image processing
Management of sample	Sample's Test-tube Bar code (13 digit) Microplate Bar code (11 digit)
Blood cell dilution	Double-needle structure Two blood cell dilutions
Blood cell dilution needle	Two parallel needles
Plasma dispense	Stainless steel needle
Blood cell dispense	Two parallel needles
Reagent dispense1	12-well disposable probe
Reagent dispense2	2-well disposable probe (alternatively)
Reagent tank 1	2 tanks • 15mL/tank • Non-contact microplate agitation
Reagent tank 2	12-tank, two of them can be chosen freely • 15 mL/tank • Non-contact microplate agitation
Stir	Stir sample and reagent after dispensed • Servo motor control • Display of rotation speed
Microplate centrifuge	Accelerate reaction rate • Servo motor control • Display of rotation speed
Microplate vibration & rotation	Re-suspend after centrifuge, and agglomeration and vibration to the microplate bottom center • Servo motor's rotation speed control • Display of rotation speed Rotation • Servo motor's rotation speed control • Display of rotation speed • 2-phase rotation speed
Detecting functions of the sensor	Liquid surface of sample Blockage of dispense needle, sample's low level detection Detection of the blood coagulation by microplate Liquid surface of reagent tank Test-tube rack of sample

Self-checking functions of the system	Standby • Detection of microplate and sample's test-tube rack Dispense detection • Detect with dispense from both sample and reagent Blood cell suspension detection • Detection of blood cell suspension Sample's test-tube rack transfer detection • Position checking of sample's test-tube rack Microplate transfer detection • Position checking of Microplate Self-checking of liquid head • Position checking of liquid head
Temperature management	Thermostatic microplate automatic supplier unit Thermostatic microplate transfer pathway Reagent tank cooling
Sample	Test-tube rack: 10 sample/rack • Up to 25 racks at a time
Microplate	Automatic supply/recover: up to 20 plates at a time • Add freely during the operating procedure
Water supply	Dewatering of Chlorine 5-30 L/h Saline solution 1-5 L/h
Water drainage	Automatic drainage
Control panel	Solution prefilling at all parts Wash all parts Set all the parameters Detection of all the operations
D P U	OS Windows XP Color laser printer
Data management	Agglomeration image management Management of control-data diagrams EMU operating management Microplate management
Data upload	LAN

Approval certificate number

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Precautions Notes

For safety, the operators should be trained in advance and know well about the product instructions.

■ Specification change induced by product design will not be informed in advance.

Windows XP is a trade mark of Microsoft.

 **MedicaTec Japan Corp.**



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