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CFT-9200

Sperm and Microorganism Detecting and Analyzing Instrument

Operation Introduction

PIOWAY MEDICAL LAB EQUIPMENT CO., LTD.

FOREWORD

USER NOTICE

- Thanks for you choosing and purchasing the product of Pioway Medical Lab Equipment Co., Ltd. In order to guarantee to operate safety and make the instrument performance long-term stability, It is necessary for us to know the knowledge of instrument function, operation and maintenance through reading this instruction booklet.
- Pay attention to the “WARNING”, the “CAUTION” and the “ATTENTION” in the booklet especially.
- The company is not responsible for the destruction and the injury responsibility which caused by the users’ abnormal operate and ignore the maintenance introduction.
- The following agreements penetrates the entire instruction booklet, expresses the emphasis information.

The “**WARNING**” expresses that if we neglect it, it will cause the serious individual injury, the death or the actual property damage.

The “**CAUTION**” expresses that if we neglect it, it will cause the slight individual injury or the actual property damage.

The “**ATTENTION**” uses in prompting the knowledge of installation, operation and maintenance for user. These information are very important, but there is no danger. The warning of danger does not contain in the attention content.

GENERAL SAFETY INFORMATION

This company considered the security of the operators and the patients and the reliability of instrument when design and manufacture. The following safety precaution must carry out:

1. The equipment is operated by the qualified operator, or uses under its instruction.
2. This product is assigned to I type and the B style according to The IEC60601-1 (Medical Equipment Standard of Security).
3. Do not change the equipment parameters, if really has the necessity, please relate with X Pioway Medical Lab Equipment Co., Ltd.or its agent.
4. The equipment has been adjusted to the optimum performance since ex-work. Do not adjust any control or switch which supposed in advance, unless the booklet designed operation.
5. If the equipment breaks down, please according to the booklet method processing. If you still can not deal with the troubles, please relate Pioway Medical Lab Equipment Co., Ltd. or its agent to solve.
6. If you want to connect the electron or the mechanism of other companies, please relate with Pioway Medical Lab Equipment Co., Ltd. or its agent before connection.

7. Operation, storing and transport environment

- Avoid vibrating the instrument fiercely in the standard operation condition.

Keep the scope of temperature, humidity and atmospheric pressure as follows:

The ambient temperature: 5°C---40°C

The relative humidity: $\leq 85\%$

The atmospheric pressure: 86KPa—106KPa

The scope of the optimum temperature and the relative humidity: 17°C--23°C
40%--60%

- The scope of the temperature, the humidity and the atmospheric pressure in the storing and transportation condition:

Temperature: -40°C--+55°C

The relative humidity: $\leq 85\%$

The atmospheric pressure: 86KPa—106KPa

- The operation and the transportation should avoid the following environment:
 - ★ The instrument exposes in the virulent gas;
 - ★ The instrument exposes under the sunlight;
 - ★ The instrument exposes in the steam environment;
 - ★ The instrument exposes in the mist or the splashy water environment;
 - ★ The instrument exposes in the dust environment;
 - ★ The instrument exposes in the high density petroleum gas;
 - ★ The instrument exposes in the salt-mist environment;
 - ★ The instrument exposes in the explosive gas or dust;
 - ★ The instrument is in the fierce impact or the vibration environment;
 - ★ The instrument laying aside ledger wall gradient is more than 10 degrees;
 - ★ The supply voltage of the alternating current is serious insufficient;
 - ★ The alternating current is fierce undulation when the instrument in operation.
 - ★ The temperature is quite high.

■ Instrument Parameters

Power Voltage: AC220V $\pm 22V$ 50Hz $\pm 1Hz$

Fuse: BGXP-3A 5X20

Input Power: 400VA

■ Warning: This instrument does not install other processes arbitrarily which in order to avoid infecting computer virus, if it is not the responsibility of this company caused the instrument to infect the computer virus, but created the computer damaged, the program error, or other way and mistaking operate caused the instrument damaged, the program error or deletion, this company will take some fee of repairing to a certain degree.

Guarantee Items

● This company guarantees that the new instrument has not any problems in the part of material and technical. The warranty period is 12 months (date from ex-work). During the warranty period, this company will repair or change the breaking part freely for user.

● This guaranty is just for the breakage which caused by the normal operation only, the guarded instrument is just suitable for the scope which the introduction designed only.

● This guaranty is not including the loss or breakage which caused the external reasons, such as thunder-stroke, earthquake, burglary and abnormal use. The damage which caused by the reassemble is not also including.

● The guaranty is invalid to the following situation: the damage which caused by the accident, the abnormal use, attempt to revise, change the part and installation.

● The superficial damage is not repaired or replaced, the training material or supply expense is not including.

● This company is not responsible for the damage which caused by the arbitrarily connection.

● This company is not responsible for the damage, the loss or the injury which caused by the dragging the service request.

● When the instrument is in trouble within the warranty period, please relate with the customer service department of Pioway Medical Lab Equipment Co., Ltd. in time, and express the style, the serial number, the purchase date, the trouble and the nature for us clearly.

● The user must fill in the “User Registration” after approving the instrument, and send back: The customer department of Pioway Medical Lab Equipment Co., Ltd. The user should preserve the “Maintenance Card” properly, in order to record and check when the maintenance. For the instrument which has not the “Maintenance Card”, the serviceman is authorized to refuse to provide the service.

● According to the contract provision or user request, the company can supply the circuit diagram and the detail list of primary device for user.

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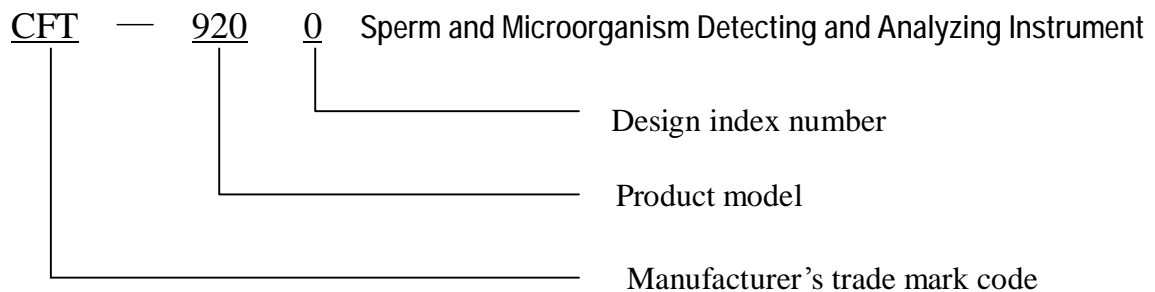
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1. General

1) Features and applications

This product is an examination analysis system for the sperm and the microorganism. The instrument, consisting of a microscope, a pick-up head and a computer, provides a sperm and microorganism detecting and analyzing system. With the help of the microscope camera, the computer can analyze the sperm (or microorganism) speed and motion trajectory rapidly in multi visual fields. Parameters such as sperm density, sperm motility and sperm vigor can also be recorded. The instrument is widely used in urological department, andriatics , department of obstetrics and gynecology(test tube baby), family planning, prenatal and postnatal care and in some other professional domains such as the studies of biology, endangered species of animals, pasturage artificial propagation and artificial insemination.

2) Model and Nomenclature



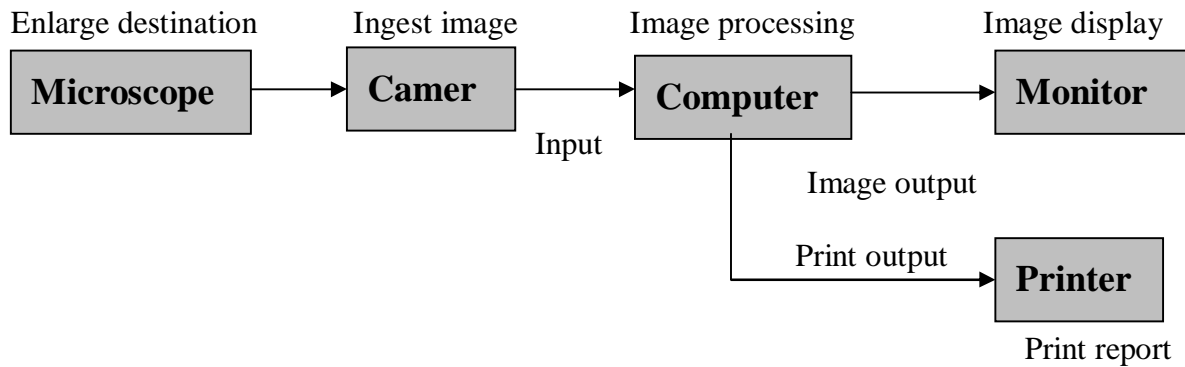
2. Type and Structure

- 1) Type: Cart type.
- 2) Structure: Consists of triple optic biologic microscope, camera, computer, monitor and printer.

3. Overall Dimension and Weight

- 1) As-installed overall dimension: (L×W×H): 1220×760×1270 (mm)
- 2) Net weight: 55kg

4. Working Principle



5. Technical Data

1、 Performance requirement

- (1) System image: The system image formation should be clear, an image may gather sperm, microorganism quantity many in 500, The error is $\pm 5\%$.
- (2) The speed scope of the moving of sample which was measured: Straight line average velocity $0 \sim 100 \mu \text{ m/s}$.
- (3) The diameter of the sample which was measured: not smaller than $2\mu\text{m}$.
- (4) The time of gathering and analysis: The needed time from the start of examination to the demonstration of the result is not bigger than 30s.

2. Functional requests

- (1) The sampling image group number: 1~10
- (2) The number of image gathering frames: The scope to each group of sample gathering frame number is 1~50.
- (3) The output content of demonstration is not less than:
 - a) The dynamic distributed map of sperm and microorganism;
 - b) Each main technological data of the sperm and the microorganism (Sperm, microorganism integer, density, live rate, velocity stage and so on);
 - c) The movement trajectory diagram of the sperm, and the microorganism;
 - d) The distributed histogram of moving velocity;
 - e) The medical record management material of patient.

(4) The printout content is less than:

- a) Each main technological data of the sperm and the microorganism;
- b) The movement trajectory diagram of the sperm, and the microorganism;
- c) The distributed histogram of moving velocity;
- d) The medical record management material of patient.

6. Main Configuration

- 1) Computer: CPU2.26G, internal memory 256 M, hard disc80G 1set
- 2) Monitor: 17-inch panel color display 1set
- 3) Printer: Epson or HP Series color jet printer 1set
- 4) Camera: Resolution ≥ 450 TVL, SNR ≥ 50 Db 1set
- 5) Microscope: a triple optical microscope, 1set
eyepiece magnification: 10 \times 、16 \times ;
Objective magnification: 10 \times 、20 \times 、40 \times 、100 \times

7. Installation

1) Unpacking: Check the accessories and document furnished with the equipment. Check the appearance of the equipment and get ready for installation.

2) Understand the machine installation sketches and microscope sketches:

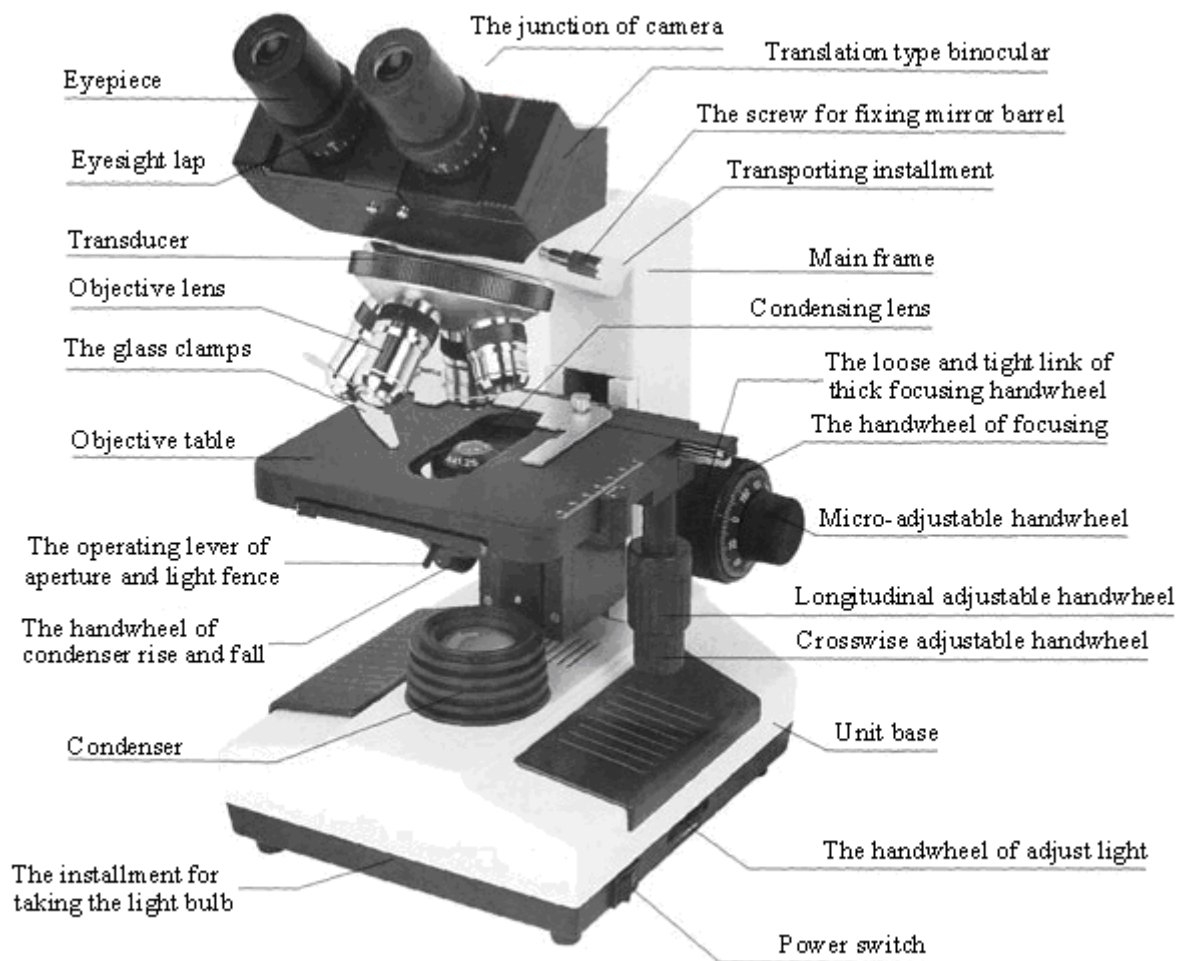
3) Installation

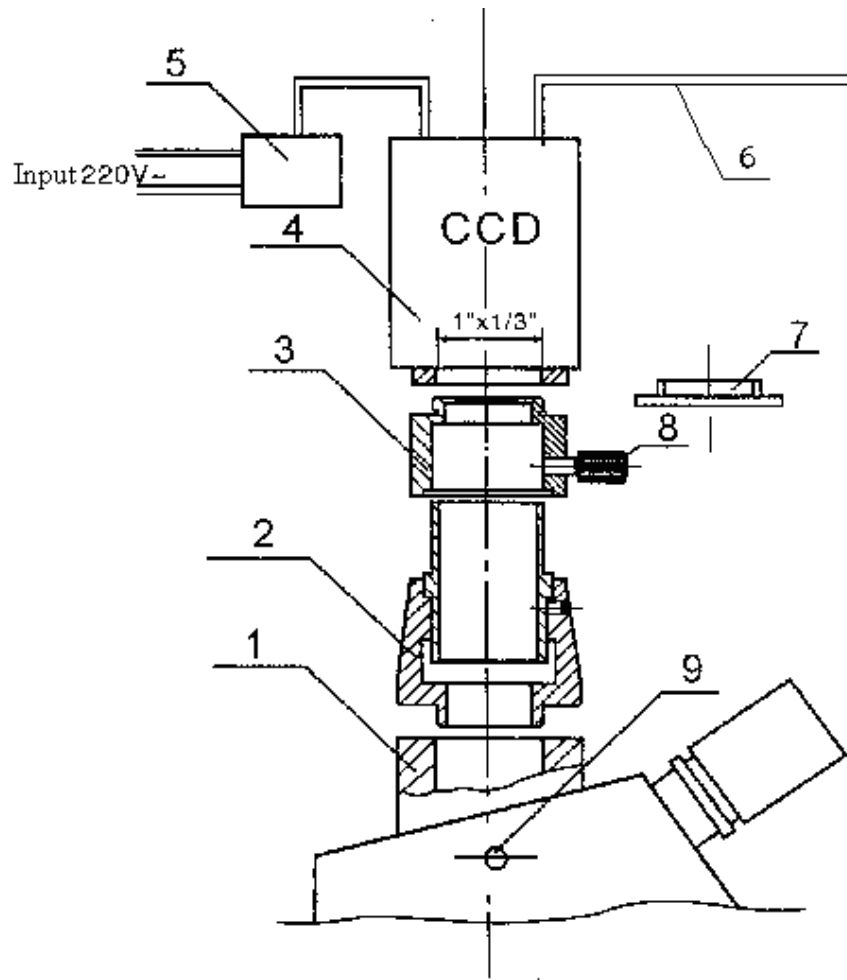
① Mount the ball-type base according to the hole position at the bottom of monitor so that it can rotate freely along both horizontal and vertical directions. Place the base on top of the cart or in the middle of the desk.

② Pulls out the board the printer to extract from the cart, will print machine plants the good power line and behind the electric cable line faces forward to lay aside steadily in pulls out panel.

③ Loosen the screw of line ball card (on the roof of printer's board) with the cross flower screwdriver, make the power line, the electric cable line and the keyboard line pass through the line ball card together, put them through the hole behind the instrument, and tighten the screw of the line ball card.

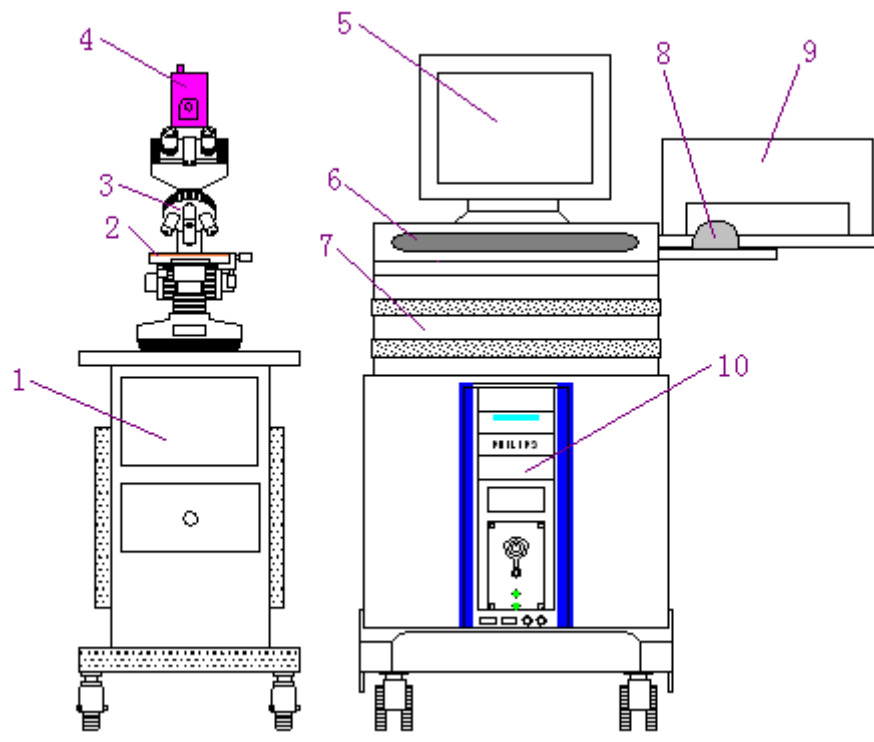
④ Put the microscope on the cart after installed the microscope completely, and then install the camera in the microscope(refer to 《The introduction of microscope》).



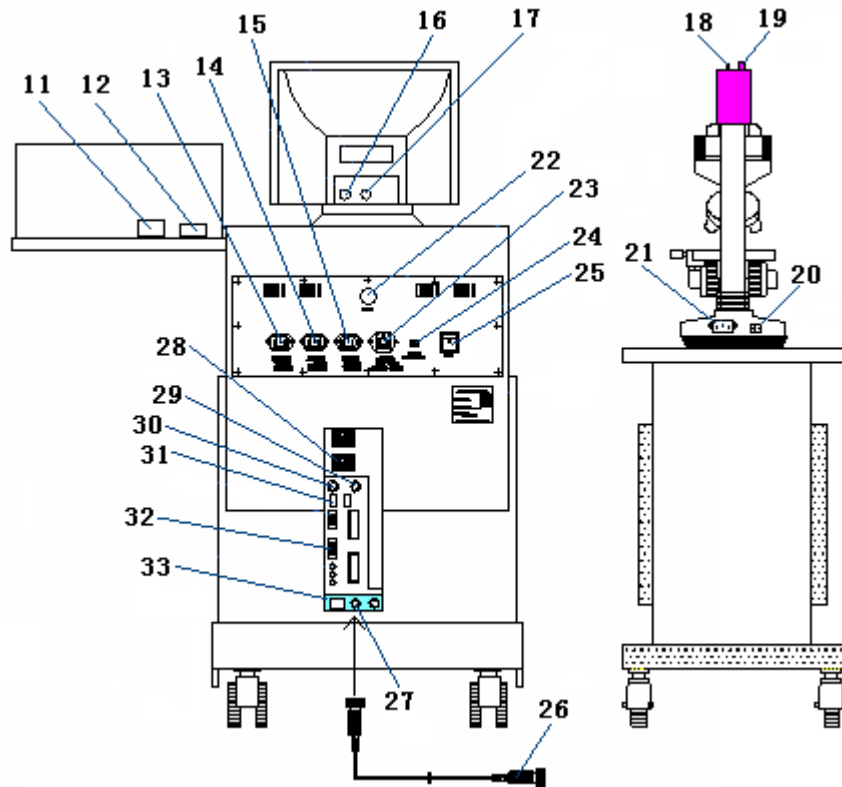


The connection schematic drawing of camera and microscope

- | | | |
|---|---------------------------------|----------------------------|
| 1、 camera connection | 2、 photograph connecting sleeve | |
| 3、 junction | 4、 CCD camera | 5、 The plug of power cable |
| 6、 video line | 7、 the dust cap of camera | 8、 the bolt for fastening |
| 9、 the push-pull rod of the dispersion of light prism | | |



Front view



Back view

| | | | | | |
|--------------------------------------|----------------------------------|---|--------------------------------|--------------------------------------|------------|
| 1、Desk | 2、Counting board | 3、Microscope | 4、Camera | 5、Monitor | 6、Keyboard |
| 7、Cart | 8、Mouse | 9、Printer | 10、Computer | 11、Jack of Printer Transmission line | |
| 12、Jack of Printer Power line | 13、Power Source Plug of Computer | 14、Power Source Plug of Monitor | | | |
| 15、Power Source Plug of Printer | 16、Jack of Monitor Power | 17、Single Line of Monitor | | | |
| 18、AC220V Connection Of Camera | 19、Jack of Camera Single Output | 20、Power Switch of Microscope | | | |
| 21、Socket of Microscope | 22、Jack of keyboard line | 23、General Power Source Plug (Content Fuse) | | | |
| 24、Fuse Plug(3A) | 25、Power Switch | 26、Video Line | 27、Jack of Camera Single Input | | |
| 28、Jack of Computer Power | 29、Jack of Mouse | 30、Jack of Keyboard | | | |
| 31、Jack of Printer Transmission line | 32、Monitor Single Output Jack | 33、Gathering Card | | | |

Part connection table

| Name of Part | Connect Content | Connect Relationship | Name of Part | Connect Content | Connect Relationship |
|--------------|-------------------|----------------------|----------------------|---------------------------|----------------------|
| Computer | Keyboard Line | 22→30 | Camera | Video Line | 19→27 |
| | Power Line | 13→28 | | ~ 220V Power Line | 18→~220V |
| Monitor | Power Line | 14→16 | Mouse | | →30 |
| | Single Line | 17→32 | Power Supply of Unit | Power Supply Line of Unit | 23→~220V Power |
| Printer | Power Line | 12→15 | | | |
| | Transmission Line | 11→31 | | | |

4) Wiring:

Connect the power supply cord, signal wire, cable according to the sketches

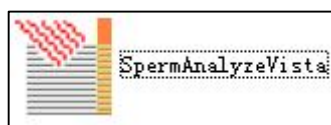
5) Check:

- ① Check the wiring for correct connection without any missing.
- ② Check whether the mains voltage is up to the requirement.
- ③ Check the fuse.

8. Operation

1) Power on: First turn on the main processor unit, then the monitor, computer and printer. The Windows XP will appear soon.

2) Double-click the



icon, the system interface

screen appears. Single click the left key of the mouse to perform desired operation like image acquisition, etc.

3)、 Puts the sample on the counting board and covers the cover glass, puts it in the objective table of microscope and clamps with the glass clamps. Turns on the power switch of microscope, and adjusts the focal distance and the illumination (refer to 《The introduction of microscope》).

4) Do image processing according to the specific situation. See 10. Spermatozoon, Microorganism Examination Analysis Software Operation for detail.

5) Power off: Turn off the computer according to the normal procedures, then turn off the processing unit, monitor, printer and general power supply switch.

6) Cover the main unit and microscope with dust guard.

Warning:

- I The equipment must be well grounded to prevent electric shock to the patients.**
- I Wait for three minute before restart the machine.**

Important:

- I The microscope shall be kept clean and free of mould stain. If necessary, clean the lens with special lens tissue.**
- I The machine shall be used in the clean and ventilating dark room. The equipment shall be moisture and dust free. Disconnect the power supply when it is not in use.**
- I The printer shall be equipped with genuine ink box.**

9. Troubleshooting

When trouble occurs, follow the list below for troubleshooting. If the trouble remains unsolved after following the troubleshooting step listed below, please contact the customer service department of our company soonest (see detailed address on the back cover). Do not open the apparatus enclosure without the consent of the company, or the user shall be responsible for the consequences resulted thereafter.

| Trouble | Cause | Correction |
|--|--|---|
| The quality of displayed image is poor. | The microscope has not been well adjusted or the lens was dirty. | Refer to the troubleshooting list of 《The Introduction Of Microscope》. |
| The computer is running slowly when open the software. | Too many rubbish files in the hard disc. | Delete the useless file. |
| Computer does not function | 1. Fuse broken | 1. Replace |
| | 2. Deterioration or damage of internal memory, collection card or CPU. | 2. Coordinate with computer personnel to open the enclosure, clean and re-plug or replace the related elements. |
| No image | 1. Monitor is not connected | 1. Connect the monitor. |
| | 2. The focal distance of computer has not been well adjusted. | 2. Refer to 《The Introduction Of Microscope》. |
| | 3. Camera video wire broken. | 3. Coordinate with instrument personnel to repair or replace the wire. |
| | 4. No power supply to the camera. | 4. Check the +12V power cable. |
| | 5. Loss of collection card drive. | 5. Setup the drive program or restore the system. |
| Printer does not work or poor quality printing. | 1. No ink; ink box solidified or nozzle blocked due to long time idling. | 1. Replace it with genuine ink box. |
| | 2. No paper | 2. Add printing paper. |
| | 3. Loss of drive | 3. Set up the drive program. |

Note: Monitor and printer enjoy joint warranty service (charge free), see back cover

10. Software Operation

CFT-9200 Sperm and Microorganism Detecting and Analyzing Instrument

Software Operation Instruction

Chapter One: System Installation

An Opened package

1: Box

When opened to the attention of the body may not be inverted hood mainframe and Annex, will be properly preserved packaging materials to prepare for the use of Repair.

2: Check mainframe and accessories

According to the manufacturers packing list and double-check the compatibility of the host accessories, and whether the collision damaged, and so on.

3: Complete product warranty cards

Please carefully fill product warranty cards, and the receipt of returned products in China within one month of technical services center.

Second, The system environment

1: Environmental requirements

Indoor temperature:0-40C; Humidity: 30% -60%, and maintain indoor clean. To avoid vibration, noise, interference-electric sources, must avoid direct sunlight.

2: All work must be plugged shut off power

3: Power requirements

AC220 - 230V, system grounding.

4: System support environmental requirements

(1) Hardware: Intel Pentium MMX CPU above 1G; More than 128M of memory; 64MB more memory; More than 60GB hard drive; More than 1.44MB floppy drive; CD-ROM; Windows standard keyboard; Three mouse button or double bond.

(2) System software: Windows 98 (Chinese 2nd edition), 2000 or XP.

Third, Software installation brief

1: Disk partitions, formatting

Drive recommend four points, while at least C:, D: 2 district. The server version of the network should be re-G: disk.

2: Install the operating system

Win2000 strongly recommend the use of the operating system. The typical installation.

3: Installation cards, printers, etc.

Cards do not use the operating system's own drivers, especially ATI Rage graphics card to be used onboard drive.

4: Installation Capture Card Driver

Strongly recommended first installed Windows, plug acquisition card. Find new hardware, the designated driver position, according prompted to install drivers. OK acquisition card, but also runs the oksetup.exe installed DLL.

5: Install encryption locks Driver

Encryption version of the lock should be inserted before running unknown driver folder encryption locks in Setup to install, encryption locks can be inserted into the final.

6: Install other support modules

Wi6 database, plug-in MPEG4 (DivX), NIC drivers, DirectX 9.0.

7: Install and run application software

Prompted be installed.

8: Preferences

System installed and in normal operation, according to the situation of certain parameters for the necessary settings, such as: video channel, video format, shear parameters, and so on.

9: Backup System

After the completion of all work, use Backup to a backup system for future damage to resume use.

Chapter Two: Start-up

1, And activated software startup

Front End for the day-to-day work can start after work. The first step in order Boot, printers and other peripherals to open and display the power to open up mainframe power. After reboot button double-click on the desktop faster, the screen will display software blinking screen, click the Photo Software interface names, different system settings, or it may be a few seconds delay, or not show that the flashing screen interface software names.

2, The creation of new cases

Many operation panel buttons text is gray, that it can not be operated. Click <New > button, new cases pop up dialog, click Name text box to input the patient names. Immediately after the other and then click the text box, where patients input other information.

Single direct input text box, text box combinations may choose option (click Triangle sharp pull scroll, click to the letter. Also click the left of the name, and then pull the scroll, click the selected text box to the left of its breed), the automatic inspection of a Japanese Phase no input.



Click here to input name

Click here start

| | | | | | |
|------------|---|------------|----------------------------------|------------|--|
| Name: | <input type="text" value="Li"/> | Age: | <input type="text" value="Y/O"/> | VisitTime: | <input type="text"/> |
| Number: | <input type="text" value="0000000001"/> | MedRecNo.: | <input type="text"/> | ExamTime: | <input type="text" value="2007-11-28 11:30:22"/> |
| ClinicNo.: | <input type="text"/> | AdmitNo.: | <input type="text"/> | Dept.No.: | <input type="text"/> |
| BedNo.: | <input type="text"/> | Volume: | <input type="text"/> | pH: | <input type="text"/> |
| FluidTime: | <input type="text"/> | Fare: | <input type="text"/> | | <input type="text" value="\$"/> |
| Dept.: | <input type="text"/> | Applicant: | <input type="text"/> | Doctor: | <input type="text"/> |

CREATE MainInfo AllInfo OK

Here is new case

In addition to "check", ultrasound (pathology, smears, CT, etc.), and hospital beds, and because of the need to input letters, or the need to retain the previous "0" is used for character, so these numbers, in order to correctly inquiries, in the future any local input with a median number require the same as the median in front of insufficient to fill 0. If hospitalization, the use of four characters, in the form of similar import: 0005,00 b5, if beds, the use of five characters, in the form of similar import: 00005,000 b5. Similarly, "date" and "time" projects (such as the "appointments") to be similar to the format of the input "2008-08-02" in the form of less than the median compensatory 0, for example, in August for "08."

Click <AllInfo> button dialog will show more detailed information such as the patient's telephone, address, occupation, units, etc., these information will be stored in the database for future reference case. Click <OK> Acquisition to enter the main interface, including video window, and preview window operation panel. Window Display dynamic video images, preview window shows thumbnail images have been collected, the implementation of various operational operation panel. Thus, software startup, and has to build a case.

3, Modify patient information

If it is found that the patient information input errors, click operation panel <_Y/O_0000002> buttons (this button real-time display name, sex, age, examination of the specific value) cases pop up dialog changes, the revised click <OK> can be.

4, in accordance with need to be properly adjust the brightness, contrast

Separately pull brightness, contrast rod on the slider (on its first moved to the mouse and then press and hold the left mouse button mobile, the same below), can adjust the brightness, contrast, in general reduce the brightness, contrast increases. VFW acquisition card software, need to click <Video > pop video conditioning dialog, click the final withdrawal <OK> Video conditioning dialog.

5, shortcuts

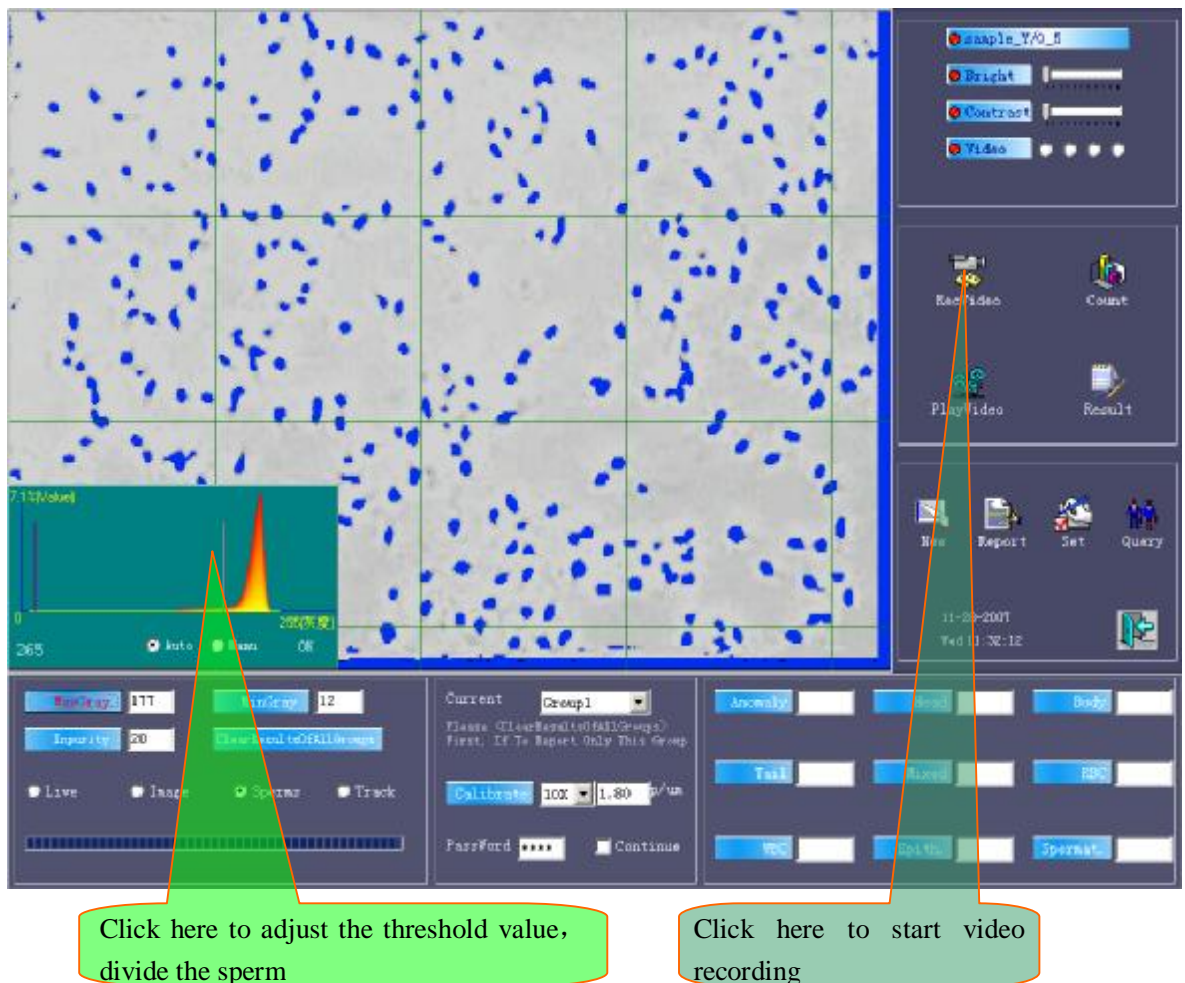
This interface, by the F2 button on the keyboard, modify Case, F6 key to keeping medical records, F7 key to the new construction of a case, F8 keys to enter the single and F9 keys, case management, F10 keys, system settings.

Chapter Three: Image Acquisition and Analysis

1 Video sequence

Background and normal sperm head regulation, inspection, "the current calibration" and the actual use of the magnification lens, and if not, please click on the current calibration combination box, and click on the actual lens corresponding rate, the final click <Recvideo> button down image acquisition for the On purpose.

2, Image segmentation and exclude impurities



After the video sequence, the system automatically entered a "division" of state.

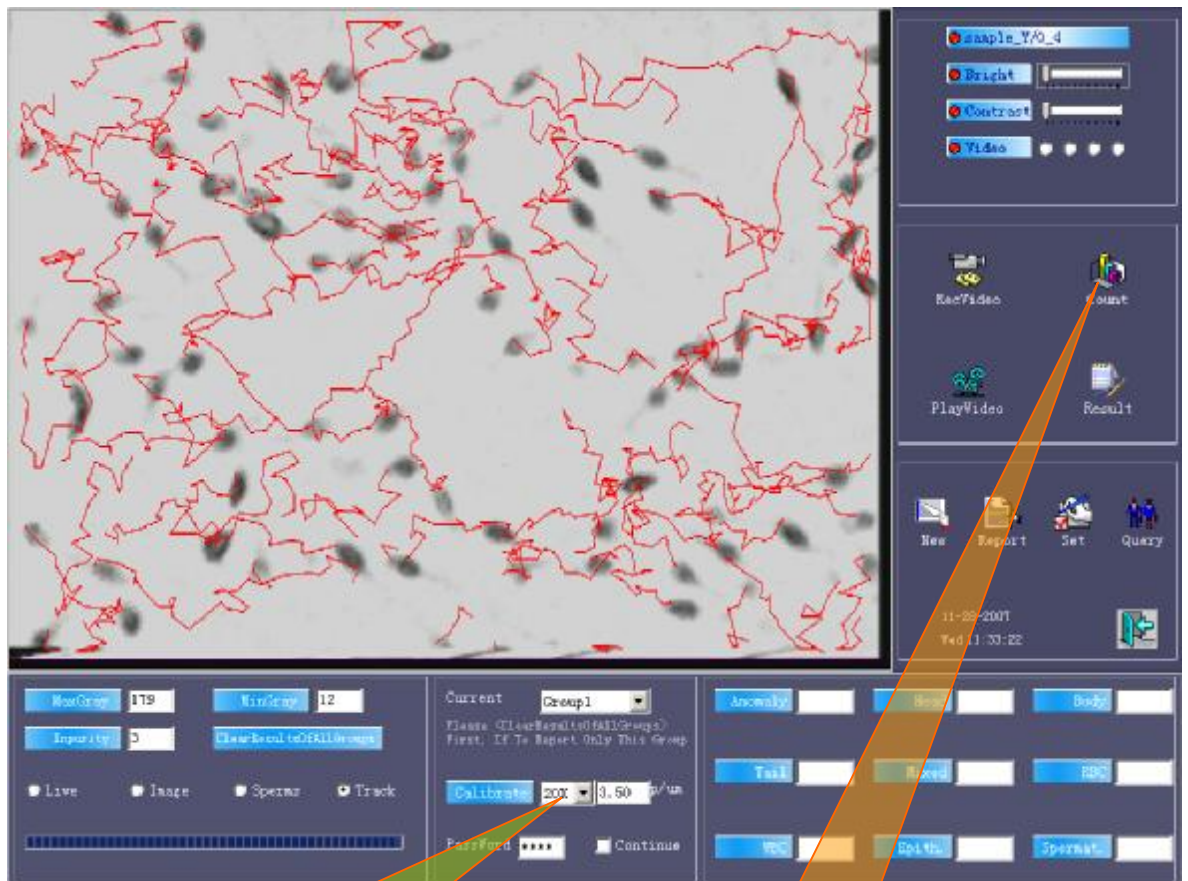
If segmentation is not satisfactory, click <MaxGray> mouse in the histogram on the left side of a sliding, Gray instructions, click of a mouse is set up for the values, right click will resume the original calculations.

According to the actual situation, click on a point in the histogram coordinates, the largest mobile gray threshold segmentation line on the screen segmentation state

also will change. The biggest change in gray threshold until the sperm head on the screen are dyed blue so far. Click <OK> button, from gray threshold adjustment state.

At this point, the inevitable impurities are dyed blue, artificial counting on the screen dyed blue quantity of impurities, it excluded a few impurities text box, enter the quantity.

3, Inspection




Please notice if it is the actual before analysis

Click here to start to analysis

After the work is completed, click <Count>, the system began under the particles were analyzed, counting, tracking path that the final results.

Analysis by the instructions of the state process instructions. State of the instructions of 100% or over, then automatically entered a "path" to state sperm trajectories expressed by the red line.

4, The result will be displayed, re-analysis

Analysis of the end, can click on <Result> to view the results or the importation of some sperm parameters, you can click on <Play video> to view the movement of sperm, click on the left button for two players sharp triangle, click on the right button single-frame two sharp triangle player, a players sequence is another player Reverse Order. If the sequence is again click or Reverse Order <  > button, then stop for players. Click <Exit play> from state video player.

If the analysis results unreasonable, he can re-adjust the largest gray, click < Count > re-analysis, if this group of sperm video is not ideal, and adjust the video can be re-largest gray, re-analysis.

5, Artificial Count

Counting of need, then click on the corresponding button (for example <Head>), then click on the image of a target (for example, the sperm head deformity), plus a counter. After visual inspection can also directly import figures. Click on the button again or right click on the image can be counted out of state.

If not "abnormal" for counting, automatic calculation software malformations (abnormal tail head deformity + + + deformity of mixed malformations), manual counting should be completed after the test analysis. Because the system must meet a basic conditions: the head deformity + + tail malformation of the deformity + mixed malformation <= malformation <= seized total.

Note: If the operation panel was hidden and click on the red button with the current state of the mouse to operate sliding panels original location, can pop up.

6, The vision of (group)

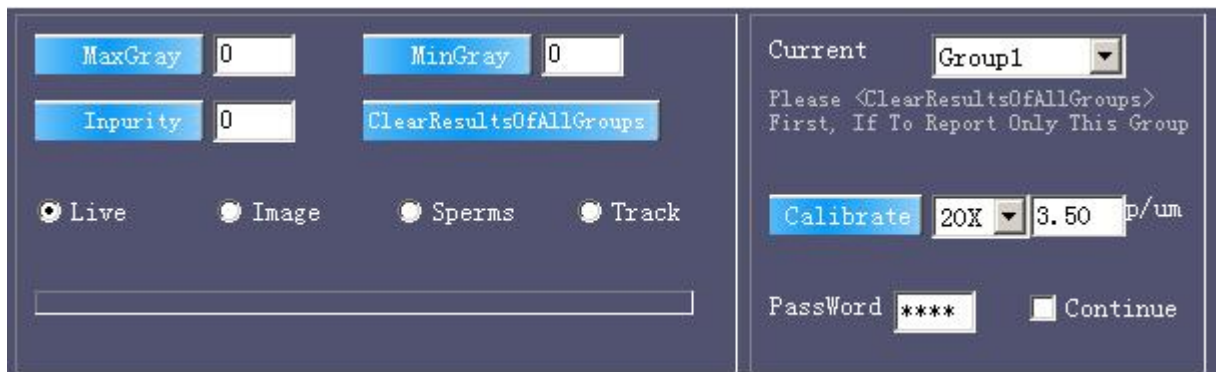
Click on the current outlook portfolio box, pulling rolling, click on the next group of the corresponding group, beginning of the next group. Taiwan mobile carrier, click <Recvideo>, the biggest adjustment of gray, click < Count > analysis.

After the analysis, the results of the analysis showed that the previous analysis of the consolidated results of the group, rather than the group's results. The seizure of a total of the group's accumulated, density, velocity and the group are corresponding numerical average. Equivalent to the portfolio and together, constitute a big vision to improve statistical accuracy.

If the current view of the unsatisfactory results, please do not switch to the next group, while the group should continue to use and re-adjusting the microscope or vision, after re-analyzing the video, so the group was the result of the correct change. Otherwise, if the Group's incorrect results will affect the overall results of the analysis (because of the overall results of the analysis are all integrated group value).

7, The only report of the results of the current vision

If we only report the results of the current outlook, please click on the clear vision of all the results button! ! As the sixth of the truth.



The image shows a software control panel with a dark blue background and light blue text. On the left side, there are four input fields: 'MaxGray' with a value of '0', 'MinGray' with a value of '0', 'Impurity' with a value of '0', and a 'ClearResultsOfAllGroups' button. Below these are four radio buttons labeled 'Live', 'Image', 'Sperms', and 'Track', with 'Live' selected. At the bottom left is an empty text input field. On the right side, there is a 'Current' dropdown menu set to 'Group1'. Below it is a text instruction: 'Please <ClearResultsOfAllGroups> First, If To Report Only This Group'. Further down is a 'Calibrate' button, a '20X' dropdown menu, a '3.50' input field, and a 'p/um' unit label. At the bottom right, there is a 'PassWord' field with '****' and a 'Continue' button.

Chapter Four: Generate Reports

Click <Report> button to enter the editing interface, the use WYSIWYG interface design style user-friendly and does not need another generation preview. To facilitate the reporting format in setting up good work, print. Also available on the new report definition format to meet operational needs.

1, In the input text messages

Institution

Semen And Sperm Quality Analyze Report

Número: Time:

ID: Edad: SampleDate: Dept.:

Nº Archivo: Dilución:

Vol. (ml): Olor: pH:

D. descanso:

Viscosidad: Apariencia: Extracción:

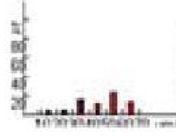
| | | | |
|--------------------------------|-------------------------------------|---------------------------|------------------------------------|
| Total detectados: | <input type="text" value="275"/> | WHO a (progresivo rápido) | <input type="text" value="54.55"/> |
| Densidad(10 ⁶ /ml): | <input type="text" value="104.90"/> | WHO b (progresivo lento) | <input type="text" value="24.00"/> |
| Spz móviles totales: | <input type="text" value="270"/> | WHO c (movimiento loca) | <input type="text" value="19.64"/> |
| % Spz. móviles: | <input type="text" value="98.18"/> | WHO d (inmóvil) | <input type="text" value="1.82"/> |

| | | | |
|---------------------|------------------------------------|-------------------------------------|------------------------------------|
| VAP (µm/s) | <input type="text" value="37.03"/> | Porcentaje de movimiento lineal(%) | <input type="text" value="73.82"/> |
| VCL (µm/s) | <input type="text" value="52.98"/> | LIN (linealidad): | <input type="text" value="36.05"/> |
| VSL (µm/s) | <input type="text" value="19.10"/> | STR (rectitud): | <input type="text" value="51.58"/> |
| ALH | <input type="text" value="2.42"/> | WOB (oscilación): | <input type="text" value="69.90"/> |
| % movimiento lineal | <input type="text" value="4.72"/> | MAD (desplazamiento angular medio): | <input type="text" value="17.19"/> |

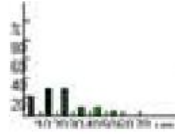
Total en muestra: x10⁶ Normal: F.anorma: Indice de FA(%):

FA de cabeza: FA de Pi: FA de cola: Cél.roja:

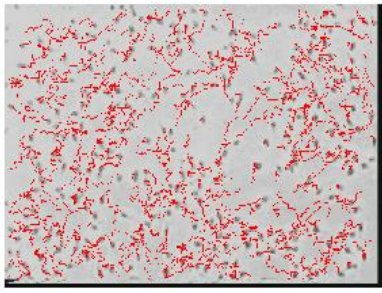
Mezcla de FA: Epithelium: Espermatoцитos: Células blancas:



distr. de VCL



VSL Distribution



In the case of the importation of new patient information will be automatically taken to the report in the single, you can make changes and additions here.

All text frame can directly enter text. Where an inverted triangle sharp combinations text box, click inverted triangle can be sharp, pop-up drop-down options available. Enter the new text by F10 keys will be added to the options, select after the F11 key to delete the corresponding options. Single and multi-line text box can also right click on the text box itself pop template for quick selection.

Multi-line text editor similar to the windows frame the flipchart, with <PageUp> keys on the keyboard and scroll keys <PageDown> turning the pages can also use the mouse wheel rolling turning the pages. <Retreat grid> <Delete> keys and cursor keys were deleted before and after the character. Select a text at a key provider <Ctrl> + + copy or <Ctrl> <X> shear key, and then click another place by adhesive bonding. <Ctrl> + Can also drag and drop directly with the mouse (equivalent <Ctrl> + <X>), if moving in drag <Ctrl> bond equivalent <Ctrl> + provider. Select a text after the right-click, it can set a text font, size, style and color can highlight key part. Click after right-click, pop-up fast template.

2, Fast template

Alone in the report, right-click any single or multi-line text box, a pop-up fast template, click to previous elections text box so that it creates, to the microphone to add text of this article, click Remove hook again, just delete the text added.

Selected click <Modi> intrusion into the front of the state changes may add or delete template options, click again < Modi > can be preserved.

Finally click <OK> closed fast template dialog.

"Speedy template" for the simple and commonly used text description (commonly used terms and difficult to input symbols), through tick, tick can import, delete, or can use an additional way into coverage, content templates can be modified at any time, in addition, it can import templates classification title. The single report template and the text box correspond, each one has its own text box template of speed, which greatly facilitated the operator.

3, Switching reporting format

Click <RepFormat> reporting format that window, the same classification as template, click the left side of the title format <+>, click to choose the format of the report on the single switching to a new format. Not recommended regular handoff, but selected a common format, click <Set As Default Format >, in front of their breed.

4, Print report

Finished editing the report, click <Save> can this record-keeping, click <Print> button to begin printing. If Prior to this, click <prnDialog> check before it will pop


Print dialog box, click <attributes>, and the corresponding parameters can be adjusted (by the content of the dialog box printer models brand). On Print Please read the details of the Windows operating system related books, printer setup and use, read the guidelines for the use of printers in this little reference.

5, A new record, started an inspection

Click <Exit> from the interface to return to the operating panel, click <New> also started an inspection. Construction of new cases, if the preservation of the current cases of photographs, reports, etc., then click <Yes> save the current case, otherwise click <No> If the error click <Cancel> then click <No> not create new record.

From the interface, the system automatically generate the final report rep.jpg single document, a standard JPG file format, does not require any special software to browse in the "My Computer" directly or double-click to open. Due to the compression format to facilitate online exchange in IE browser can be opened.

6, The inspection ended, or withdraw from the shutdown

If the inspection ended, click <  > shutdown or withdrawal. And closed monitors, printers and other peripherals power. At noon break in the afternoon from work must be shutdown.

Chapter Five: Case Management and Backup Defensive

One, The case management interface

System software provides a powerful and convenient case management capabilities, its importation, storage completed by the software directly, has been operating until now, users also fully cases have come to the database concept, but the software has all the information, including images, text there it built cases in the database, you need to do now is just on the past and open cases, the software also provides a very convenient query tool.

Click on the operation panel <Query> button to case management interface. Its upper case for a list of all the search results are listed here. Double-click a list of the location, additional cases to the list display area at the same time indicates that more cases, but this may hide the preview window, double-click again as it is restored.

When the system is only on the new record. View case of need, please inquiries.

Two, Inquiries

The screenshot shows a software interface for case management with several sections and callouts:

- Exam (Diag) Time:** Search filters for time range. Callout: "If we do not inquiry the time, please click here" pointing to the "AllTime" radio button.
- RegTime (ScheduleTime):** Search filters for registration time. Callout: "If we do not inquiry the time, please click here" pointing to the "AllTime" radio button.
- Numbers:** A table with checkboxes and input fields for various numbers. Callouts: "Lower limit, the figure is invariable" pointing to the "Number" field (value 2) and "Upper limit, the figure is invariable" pointing to the "MedRecNo." field (value 00002).
- Information:** Fields for Name (Li), Age, WorkDept., Phone, and Address. Callout: "The record includes 'Li'" pointing to the Name field.
- Others:** Fields for Applicant, Doctor, Auditor, Department, ClinicDiag, Impression, PathoDiag, PostOpDiag, and FollowUp.
- Express:** Filter options like Today, Registered, NotExam, Myself, CalcFare, and Order (DESC).
- Buttons:** Last, Apply, All, and OK.

1: Inquiry dialog

Click < Query > pop-up dialog box on the need to be imported into this case of search (for the conditions), click <Apply> software under these conditions in the database search, will meet all the conditions set out records. These records called for the results.

2: Field inquiries conditions

A condition of a corresponding database field, while the importation of a number of conditions, combined for each condition, called Query.

"Appointments" and "appointment time" always involved in inquiries (select "all the time" substantially equivalent to not participate in inquiries). Other fields, in front of Santa, in inquiries, or not to participate in the inquiry.

The minimum input fields, which means "from ... to ...", or "in between ... and ...". When the left and right text box with the same values that inquiries "are equal ..." conditions, when the left side of the text box is empty, that there is no threshold that inquiries "less than ..." conditions, when the right side of the text box is empty, that there is no ceiling on the "greater than ..." conditions. If the records to search until no input in preserving the field (the field is empty), not on the field, removed its previous hook.

For example, "Li" This record is not generated booking (booking air time), nor the importation of medical records (records of the air), then, if we want to Li for this record, the election must be postponed "at all times", ahead of medical records must be removed hook.

In addition to "check", ultrasound (pathology, smears, CT, etc.), and hospital beds, and because of the need to input letters, or the need to retain the previous "0" is used for character, so these numbers, in order to correctly inquiries, requests and Case information at the input of the same median, the median in front of insufficient to fill 0. If hospitalization, the use of four characters, in the form of conditions similar to those inquiries: from 0005 to 0238. The same should pay attention to "date" and "time" projects (such as the "appointments") to be similar to the format of the input "2008-08-02" in the form of less than the median compensatory 0, for example, in August for "08." See Chapter III "system to activate the" second "to create new cases."

Input fields, meaning that the field includes "..." words, it is called fuzzy inquiries, easily find a certain type of record.

3: Enter the query and application

Click on the field to the text box, enter the upper and lower limits or content, click < Apply > inquiries. For example, inspection of the left click the text box, enter "5", click the right side of the text box, enter "10", then click Name text box, type "Wang Hong," Finally click < Apply >, the list of cases to be listed in "all time attendance, all the time the appointment, inspection, in between 5-10 and Wang Hong names containing the word "all cases.

Special attention: a tick in inquiries, not a tick in inquiries, many users have noted, but "appointments" and "appointment time" always involved in inquiries, often overlooked, if not for them, click <Alltime>, especially "pre - about time, "If a reservation is not the case, then it does not make an appointment (appointments is empty), then if chosen," then "(meaning" in that time booking "), then it certainly Center.

4: Click <CalcFare> to breed earlier, while in the statistics for all the costs of search results. Click <Order> combination box, select a field, and then click <Desc> to breed earlier, the field will be chosen to prevail in descending list, or list of ascending. This will facilitate the recording of a particular focus out together, such as names of prospective scheduling, and family cases will be listed together.

5: The first results of inquiries and all cases

Click <last> inquiries can be quickly set out to change the conditions before the last click <Apply> inquiries case when (if conditions remain the same inquiry, click on < Apply > no equivalent to inquiries). This function mainly for reexamination patients, for a few days before the case opened one of the review concluded, to enter the case management and do not need to repeat the conditions for the importation, direct click <last>, another case can be opened. Secondly, the software is emptied after the Browns, for example, on certain conditions first case, the backup E: set to withdraw from the case interface Browns, and then return to the carved-End Case interface, then click to <last> backup just to list E: set of search results, finally emptied it.

Click <all> can quickly detect cases stored in all cases.

6: Because space is limited visual forms, you may not check the records of the list, please pull scroll, or click form, by <PageUp>, <PageDown> roller list records.

Three, And print reports of single, open case

If only to observe single report, or print reports directly to revise the orders, there was no need to open the case.

1: Observation: Click to view the case, the case that the election was a case. Pop lower right corner of this case will preview the report (if this record has generated a single report). Double-click the report will enable the enlarged single, double-click again to narrow.

2: Print: Click <Print>, <No> Print can be the single case report.

3: Open: If you need mining maps, edit the report and so, for example, referral or appointment after the first diagnosis, the need to open the case to make it the case. Double click this case, click <Yes> or < No > (preservation or not to save the current cases), patients can be transferred to the procedure see, modify, print.

Four, Delete

Click <delete>, and then to take extra precautions, see the tips click <yes> delete all search results, click < No > only delete selected cases.

Delete the equivalent backup emptied + delete the list of data or information.

Five, Print

Click <Print>, click <Yes> Print all the search results, click < No > print only selected cases. If a record of the previous generation did not report, there is no information here readable, not print.

Six, Statement

Click <Report> choose to print the field, heading statements, physician statements, click <OK>, the result will be for (Case list of all records) in the form of statements by listed and the print preview, if satisfied, click <Print> (Printer icon) Print. Finally click <Close> end.

Seven, Appointment

Booking in advance is the creation of the database records, input information later opened from the database, image acquisition and print reports, appointment does not change the current record. The main focus for the appointment booking (bulk booking), and then concentrated Print (for Print) of this situation, or online, registration workstations first appointment booking, and then Acquisition Workstation (another machine) open after collecting images, generate reports, the final workstations to Print (another machine), Print (network printers).

Click <Register>, similar to the creation of a new record, input information and click <Next>, and then inputs information on a case, then click the importation <Next >, until the appointment End all records, click <OK> concluded. Note: even booking a case to click < Next >, and then click <OK> concluded.

Inquiry result, this sample has three records

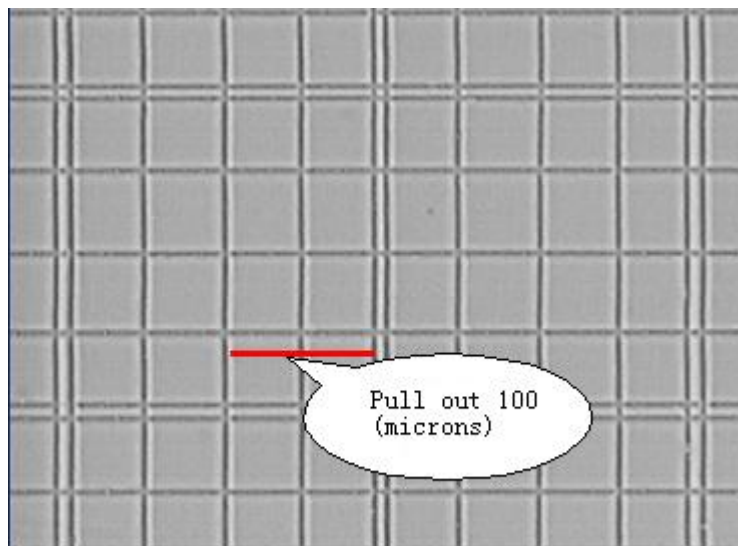
Click here after inputting condition

Right click here to recomputation the size of data

Chapter Six: Attention

Semen analysis recommends 128MB or more of memory and fast hard drives, or video will skip, causing erroneous analysis.

One, calibration



1: For new equipment, a variety of microscope and camera, the optical characteristics are not the same, it is necessary for system calibration. Recommend the use of calibration with the sperm count board (usually 100um grid, while others had pin grid) or to micrometer scale calibration. If the use of blood cell count plate calibration, with the medium and small grid of points, respectively 250um, 200um (two-lane lattice) and the pin. Blood counts plate with two small general grid to the edge of 50um×2 calibration (see document "calibration. Jpg "). Calibration values (pixels p/um-- / micron) and the specific rate counterparts. Each of the lens must be paid accordingly calibration. Common rate should "install" is set to the default rate.

2: After scaling the following characteristics:

(1) in the current calibration values (ie after calibration), the Green Line Drawing software grid (virtual grid) with the size of the actual objects (such as calibration plate with the count) 100um×100um box the same size.

(2) objective lens magnification and calibration values are basically proportional relationship, such as the 2.0 10X, 20X about 4.0

(3) the current value of the calibration measurement sperm head (positive), a long 3 - 5um wide 2 - 3.5um (aspect ratio of 1.5 - 2)

Two, analysis

1: After collecting the semen must be fully liquefaction (usually placed inside temperature 30 - 60 minutes).

2: must use specialized computer analysis of sperm count plate, or the sperm under the microscope is not a layer, but not multi-aliasing correct count.

10 drop in the sperm count up around the pool, filling, covered with glass coverslips, ensuring uniform sperm count pools, only one sperm through.

3: lens is generally used in the calibration value ratio 3---4p/um around (most of the 110,000 or 20X). "Analysis of" musts before choosing software, "the current calibration" objective rate and the actual agreement. Switching the correct rate, the corresponding calibration value (p/um-- pixels / micron) will automatically switch. Only software and the actual rate is to be the correct analysis of the size, velocity, density, etc.. New case of the default rate in the "system settings" in the set.

4: microscope CCD target surface and interface with a corresponding relations:

0.5XC Interface ----- 1 / 2 target surface (if dubbed in 1 / 3 CCD target surface, the vision has become smaller, larger objects)

0.3TVPC interface ----- 1 / 3 target surface (if dubbed 1 / 2 CCD target surface, the larger vision, objects smaller)

5: Adjustment of Taiwan set, lighting, aperture, and / or software brightness, contrast, screen "dynamic" map image visible activities sperm, the sperm head was black, not a bright spot (with a level of sperm is not easily lead to some bright spots is the sperm head). And with gray background. Recommend the use of black-and-white camera, if it is color, it is recommended that the software color, saturation transferred to the activities until the black-and-white images. Note: The difference between the version of the software should be in the background in black and white sperm head.

6: "start video", the screen automatically adjusts to the "segmentation" map, then should see the sperm head was dyed blue, it should go to "the largest gray" button on the mouse instructions, click on a gray value, adjusting segmentation map, the blue cover part of the sperm head, with 1:00 prefer more nor too few (too few will be as noises filtering), of course, can not be too much coverage.

7: If there are impurities, such as lecithin, and other blood cells of her blue, "should be ruled out impurities in a few" text box to fill in the corresponding number of follow-up in this calculation will remove these impurities. Sometimes two steps, first "examination" by the results, marked with red "trajectory" objects were actually recorded as "sperm." If it is the impurities in the "exclusion of impurities" text box to fill in the corresponding number of re-analysis.

8: all the work done before the beginning "of inspection." If the "continuous analysis" before ticking, the inspection group after analyzing the current system automatically switches to the next group, or by the user to choose the next group, the former ("Continuous analysis" before ticking) can reduce the number of keystrokes (only for compatibility with other software habits), the latter ("row Analysis of "not before ticking), freedom of choice, more flexible and convenient. Recommend the use of "continuous analysis", ie not before ticking.

9: Each analysis completed, the results of the analysis are that the analysis of all the group's consolidated results (for the cumulative numerical terms, the other for the average), and not the result of a group.

Within the same group or re-re-video analysis, the results were updated, and different groups of videos, analysis, cumulative count, density, the average speed. Recommendations choose a representative "typical" vision testing, several more groups can improve accuracy, equivalent to several groups together with the vision that the expansion of the testing area. For a uniformly coated samples in the system parameters unchanged, different horizons, different even under the lens of the density and velocity reached basically the same.

If the current group unsatisfactory results of the analysis should be re-video and / or re-adjustment of parameters (such as the largest gray out impurities few), further analysis until after the results are satisfactory switch to the next group, and then replaced after repeated vision of the steps in front of (video analysis) until that group until sufficient number (generally 3-4).

If the current outlook poor image quality, it is difficult to normal analysis, the same should not switch to the next group, while the group should continue to use and re-adjusting the microscope or vision, after re-analyzing the video, so the

group was the result of the correct change. Otherwise, the group is not proper image caused by the incorrect results will affect the overall results of the analysis (because of the overall results of the analysis are all integrated group value).

10: "The total number of sperm seizure" means the screen vision was observed in dyed blue, from software to identify sperm sum, it can be said that all of the sperm vision cumulative (all built a big vision or vision). "Total sperm samples" semen volume and density (samples) product. At the same time, "the total number of sperm was seized" should mean "a few normal" and "abnormal number" and ("abnormal number" less than "the total number of sperm were seized", it should first conduct "examination", after clicking on the "abnormal", "head deformity" Counting be effective, Otherwise automatically adjusted to 0), "abnormal number" is greater than or equal to "head deformity", "deformed body" and of, and with "total sperm samples" irrelevant. If the manual wrong "abnormal number" count, the value calculated automatically by the software, he is "head deformity", "body deformity" and the.

D-class "very slow or inactive sperm," not all "dead sperm," to distinguish between dead sperm must be stained.

Three, Common Problems

1: Sperm video segmentation, with the blue after not normal, common causes are: Dynamic Image no-good (the sperm should be black, gray background), background too many impurities. Then can click on "minimum Gray," "The largest gray" button appropriate adjustments gray threshold. Note: The difference between the version of the software should be in the background in black and white sperm head.

2: sometimes with blue normal sperm, but the number of abnormal trajectory, common reasons: improper use of lens magnification software in the set and the actual rate was not set in the software calibration values inconsistent with the actual speed threshold is wrong, wrong diameter threshold. If sperm density is too small or too large will result in decreased accuracy, speed sperm too small or too large would lead to decreased accuracy, can be appropriate at this time to amend the system parameters to improve the speed threshold accuracy. Likewise, some

sperm under the microscope imaging too big or too small, resulting in pixels too much or too little, when appropriate changes to the system parameters can be the greatest diameter, the smallest diameter threshold to improve accuracy.

No trajectory of common factors: calibration, rate, the largest gray, the largest (small) in diameter and velocity threshold set improperly.

3: duplicate of fixed vision, 1-2 difference is a normal phenomenon, if it is live sperm, the sperm are constantly coming and sperm are constantly out well understood. If the sperm is dead, not difficult to understand, the so-called "fixed Vision", or VCD actually camera constantly flashing, a gray and location are constantly changing, Gray will make some changes linked to the two sperm "If access if from", ie sometimes separately, when linked, it sometimes more "analysis" of a sometimes less "of the" one. Position changes will make some 10% of the sperm were "living sperm."

One should also pay attention to the problem, this software is for the environmental analysis of sperm, could not be with a "target" of the test.

4: If all dead sperm into camera, and "living rate" is 0, the following points should be noted:

(1) must be in accordance with the above do all the work, such as scaling, and special plate count, brightness and contrast of the light source, and so on.

(2) adjusting the "largest Gray," to maximize adhesion of sperm close to the stained blue separately far more, or close to the sperm of different intra be mistaken that the same sperm different locations, thereby misjudgment "activities sperm."

(3) If, at this time "living rate" is still not 0, enter "set up" modify C-threshold velocity and linear threshold, the "slow movement" (actually caused by the video jitter) all were included in the sperm-D.

NOTE: Video jitter caused by "speed" small, dead sperm speed of 0, it is of a greater impact on sperm death, and for the activity of sperm, the sperm activity greater speed, so this tiny "speed" can be compared in terms negligible, and also does not affect the video jitter under normal circumstances, the detection of sperm.

(4) Finally, "the rate of living" is 0, still depends on the specific numerical extent, a 5% error is allowed, two sperm depends on the total number of measured, a total

of four, for example, even as high as 50% live, in fact only two sperm was misjudgment by the above method adjustments can do to solve this problem.

(5) See also below 5: (2), (3) Note 2.

5: Regular people right gauze, Tissues and video analysis, the results have "sperm", and may also have "sperm."

(1) The analysis software environment should be "semen", the adoption of the unique environmental features of the shape and gray identification sperm, so gauze, Tissues and video analysis itself is wrong.

(2) Although the stationary object, but because of acquisition card are each frame location error (jitter), so seemingly static objects of the "sperm" is a normal, but should be measured by the speed is low, A, B and C low-level, high-level D, Wood rates are not necessarily low. In other words, there are many "sperm", "activities", but of a very slow, almost static.

(3) In fact, these are avoidable, because under different circumstances of different parameters, if the objective of the gauze, Tissues, they are essentially background and impurities, so it should be adjusted. "The largest gray", "Minimum Gray," and by removing impurities in a few so that they were not infected blue, if the objective is dead sperm, the overall rate down, so can reduce the speed threshold, and to raise A, B, C-class speed and linear threshold, so that they be included on the "dead sperm."

6: If the above steps strictly enforced, the result of a, b-low, c, d high level, mainly because of the video frames, a solution or replacement of high-speed hard disk, CPU and memory expansion, and to use high-speed OK card (for example, OK Card Series C30, C20 and not, C21, C12), or adjustments "semen analysis parameters" of a, b, c-class classification threshold, raising thresholds corresponding reduction in the number, but rather increased.

Four, the analytical parameters

1: <system settings> "sperm parameters," the note:

Above a group used to determine the main parameters of a particle Excluding sperm, these parameters do not recommend changes to the use of default values. When segmentation analysis was dyed blue if the diameter than the largest particle

diameter or smaller than the smallest diameter of all impurities as if the instantaneous velocity exceeds the speed threshold does not count each count refers to a group of the number of video frames, frames should not be too many, calibration coefficients and counting pool depth consistent calibration coefficient the greater the density calculation will be smaller, the default rate is that each new record, the system will automatically main interface under the "current calibration" switching into the rate, pay attention to the actual use of the lens in line with the rate. These values can be based on actual accordingly.

Now with a group of Grade A, B, C and D classification related to the text box to the left side of the speed threshold, the right box for the linear threshold, top to bottom corresponding Grade A, B, C, average speed over a threshold level and linearity over Class A linear threshold of the particles were included in Grade A sperm, or faster than the B-class speed threshold and linearity over B-linear particle threshold was included in Class B sperm, or faster than the C-class speed threshold and linearity over C-class linear particle threshold was included in Grade C sperm, and the rest all the D-sperm. For example, numerical grade of B, B would reduce the number of sperm, the sperm few C-class will increase, other analogy.

Linear faster (also showed that the longer the locus), the greater linearity (that is the straight path map), the closer the A-class, but rather more like D.

2: software interface of the main parameters of the specification:

The main interface, "the largest gray" for the particles will separate from the background, the software will separate after their contracted blue, or if infected with the blue, that was separate, and if they meet the "maximum diameter" and "minimum diameter" and the instantaneous velocity below the "speed threshold" was the total sperm. "Minimal gray" to remove the black-and image.

"Removal of impurities" for the above method is difficult to rule out the impurities, the software will be the lowest-speed particles from the corresponding quantity of impurities excluded because impurities are generally immobile. Sometimes in order to know what is being misused and impurities are calculated, need to <examination>, red "Track" is certainly misuse of impurities, and then the number of imported "remove impurities few" re-Click <examination> will be the second time.

"The current calibration" before the inspection of the need to "current outlook," the same as the actual situation, and each corresponding to the correct rate should be superscript. All terms are established on the "current calibration" basis.

Five Common normal range: (see also single report)

Density:> 20 (1 million / ml) pH: 7.2 - 8.0 Temperature: 35 ± 1 (degrees)
colors: white / yellow Activity: A + B> A 50% or> 25%
of semen: 2 --- 5 (ml) liquefaction time: <60 (minutes)

Six, part of the explanation of the term

VCL (um / s): sperm head along its actual deployment curve (trajectory) velocity.

VAP (um / s): sperm head space along its path of the average velocity. Different instruments trajectory calculation of the average differences in the method, the result is also different.

Viable (um / s): linear movement along the sperm head distance velocity.

LIN (%): sperm motility curve line of separation, the greater value that the trajectory straight.

ALH (um): The sperm head of the average path curves right side facing amplitude (from the level), different instruments may average calculation, calculation of the maximum possible, between direct comparison difficult.

STR (%): sometimes also called linear. Average sperm separation linear path, the greater value that the path back to the smaller the risk of (the move).

Active (%): sperm head walking along the curve relative to its actual average path of the swing space scales. Numerical bigger, more smooth trajectory.

BCF (Hz): sperm head average path across its space frequencies.

MAD (degrees / s): sperm head walking along its trajectory actual moment of time turning point average.

Density: divided by the number of corresponding size.

Live: that the activity rate, the corresponding amount divided by the total number.

Sports: internal rate of sperm movement, the corresponding amount divided by the number of sperm movement.