

GENFINE

Transfer 48s

User manual V1.0

GENFINE Biotech (Changzhou) Co., Ltd.

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Chapter 1 Product Introduction

1.1 Product Name

Automatic cup dispensing system

1.2 Specification and model

Transfer 48s

1.3 Intended use

Transfer 48s automatic cup dispensing system (Figure 1-1) is a sample pretreatment workstation that can complete automatic and accurate dispensing of 96 samples from the sample tubes to 96-well plates within 40 minutes by using the air displacement type electric head and integrate a large number of manual pretreatment steps into a closed system to prevent aerosol pollution.

Transfer 48s automatic cup dispensing system is designed for specialized research by specially trained personnel and integrates a large number of manual pretreatment steps into a closed system. It is recommended that good laboratory practice (GLP) should be followed to ensure the reliability of the analysis. Refer to Chapter 6: Technical Parameters.



Figure 1-1 Transfer 48s automatic cup dispensing system

1.4 Working principle

The treatment process of Transfer 48s automatic cup dispensing system can be divided into four independent steps: automatic code scanning, automatic cover opening, automatic liquid aspiration and dispensing, automatic cover closing and sample recovery.

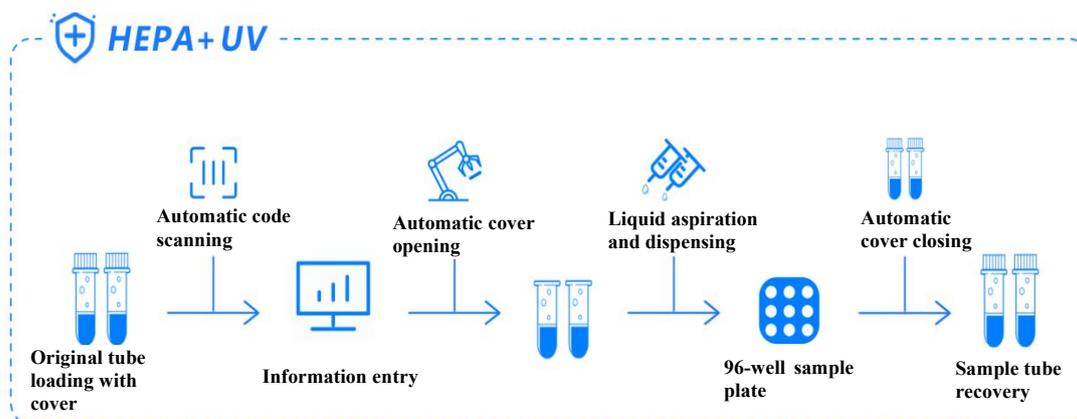


Figure 1-2 Schematic diagram of instrument working principle

1.5 Main structure composition

It usually consists of a mechanical part and an electrical part.

1.5.1 Front view

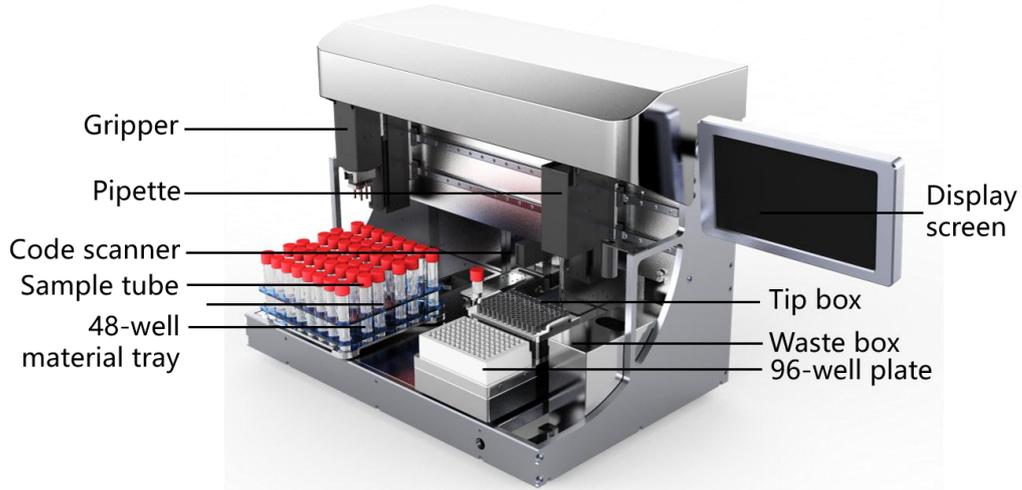


Figure 1-3 Front view of Transfer 48s

1.5.2 Rear view

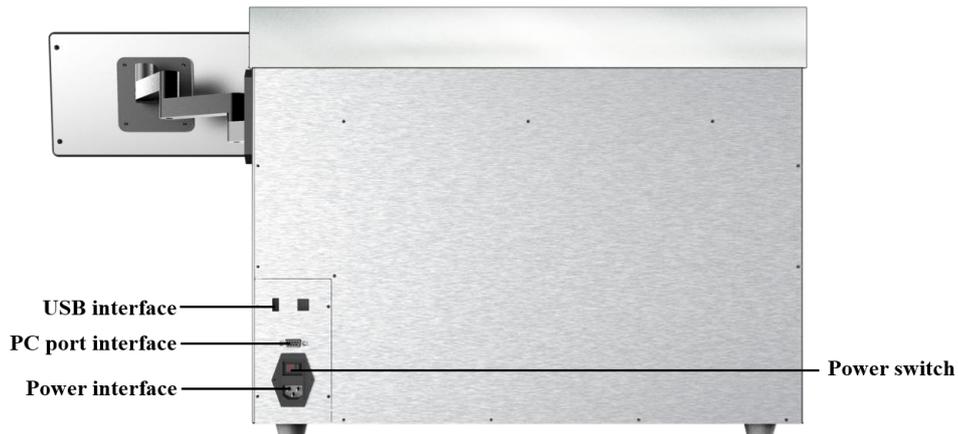


Figure 1-4 Rear view of Transfer 48s

Transfer 48s automatic cup dispensing system (Figure 1-3) comes with a 48-well material tray, which can be customized to match with different specifications of sample tubes. In each step, the mechanical gripper moves vertically with the pipette to complete the cover opening, closing, code scanning, pipetting and dispensing.

Chapter 2 Instrument Installation

This chapter introduces the installation of Transfer 48s automatic cup dispensing system.

2.1 Delivery inspection

2.1.1 Unpacking

This section contains the procedures to be carried out upon receipt of the instrument.

Move the packaged instrument to the operation site. To prevent condensation of water vapor, the instrument should be left in its protective, anti-static plastic packaging until the ambient temperature is reached. Unpack carefully, remove the instrument from the package and place it on a horizontal surface.



Warning Transfer 48s automatic cup dispensing system weights about 28kg. If transporting without package, please handle carefully. It is recommended that two people move the instrument together and take appropriate precautions to avoid injury.

The packing is designed to ensure safe transportation and reduce damage in transit. The use of alternative packaging materials may not achieve the effect. Please keep the original packing materials and retain all instrument related documentation provided by the manufacturer for future use.

2.1.2 Integrity check

Check the packing list attached to the instrument according to the order. Visually check the shipping packages, instruments and accessories for possible transportation damage. If any parts are broken, please contact the manufacturer in time.

2.2 Environmental requirements

When installing Transfer 48s automatic cup dispensing system, please ensure that:

- The working area is flat, dry, clean and secure, with extra space for accessories, cables, reagent bottles, etc.
- At least 10cm of free space is provided for ventilation on the table around the instrument.
- The ambient air is clean, free from corrosive steam, smoke and dust.
- The ambient temperature ranges from 5°C to 40°C.
- Humidity is low and condensation does not occur (relative humidity is below 80%).

2.3 Installation settings

This section describes the installation settings that must be performed before operating or relocating the instrument.

Before the instrument is powered on, the 48-well material tray, 96-well plate, tip box and waste box should be installed in place.

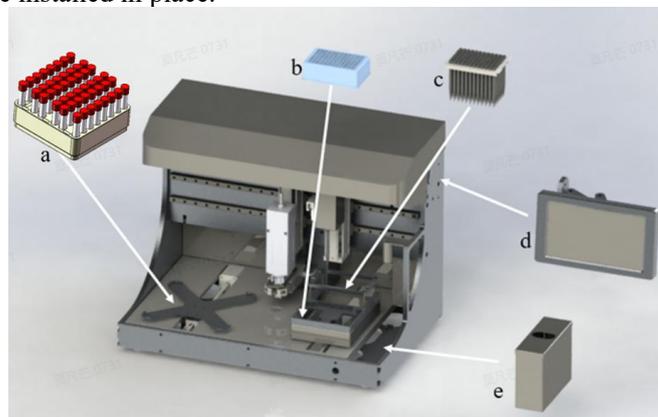


Figure 2-1. Installation diagram of internal parts of dispensing system
a: 48-well material tray; b: 96-well plate; c: tip box; d: display screen; e: waste box

2.4 Connect the power

Connect the power connector:



Warning Make sure that the power switch on the rear panel (Figure 1-4) is in the "O" position. Never connect an ungrounded power outlet. Do not use any power cord other than the one provided by the manufacturer.

- (1) Connect the power cord to the power connector and insert into the instrument.
- (2) Connect the power supply to a properly installed, well-grounded power outlet.

Chapter 3 Instructions for Use

3.1 Startup

Before turning on Transfer 48s automatic cup dispensing system, make sure that the voltage on the label which is on the left bottom of the back panel matches the local voltage.

Attention There is a switch respectively on the front and back Transfer 48s automatic



cup dispensing system. When using the instrument for the first time, it is necessary to turn the power switch at the back to "-". After that, the instrument can be turned on and off by the metal button at the bottom

of the front side of the instrument.

Never operate the instrument on an ungrounded electrical outlet.

Unexpected power failure, please clear the sample tube and pipette tips that may be in operation before turning on the instrument again

3.2 Control panel

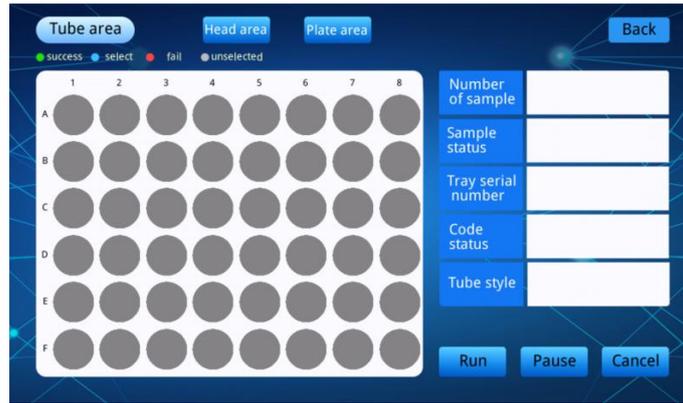
This section describes the control panel and internal software of Transfer 48s automatic cup dispensing system.

3.1.1 Main interface

The main interface of the touch screen is as follows. "Idle" in the main interface is a status bar, which shows the current status of the instrument. "Idle" means that the instrument is idle; "Run" means that the instrument is running a program; "Self-test" means that the instrument is in the POST status.



Click "Start program" to enter the "Tube area" interface. The well positions on the left of the interface represent the running state of the sample tube on the material tray, and the data bar on the right shows the running information of the sample tube. First switch to "Head area" and "Plate area" in the upper left and view the status of pipette consumables and deep-well plate consumables.

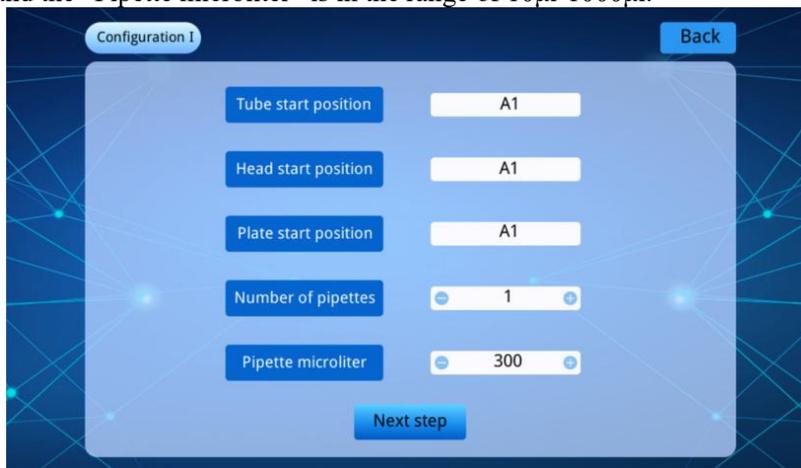


3.1.2 Operating mode

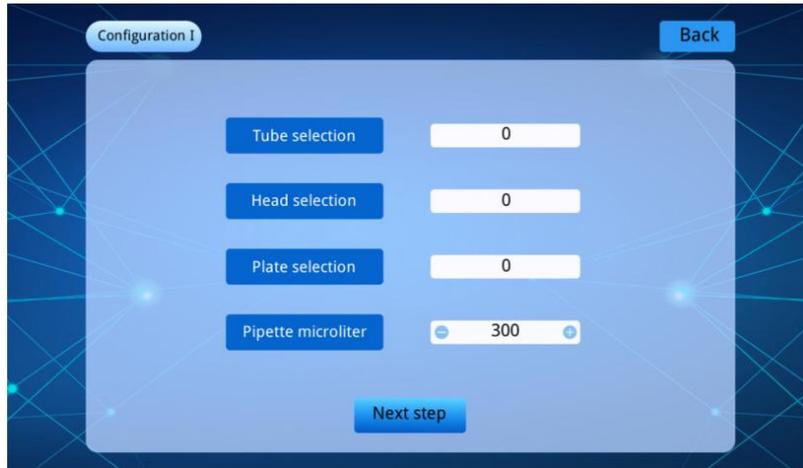
The user can click “Run” to enter the work mode selection interface and can select “Continuous mode” or “Discrete mode” according to the experimental design.



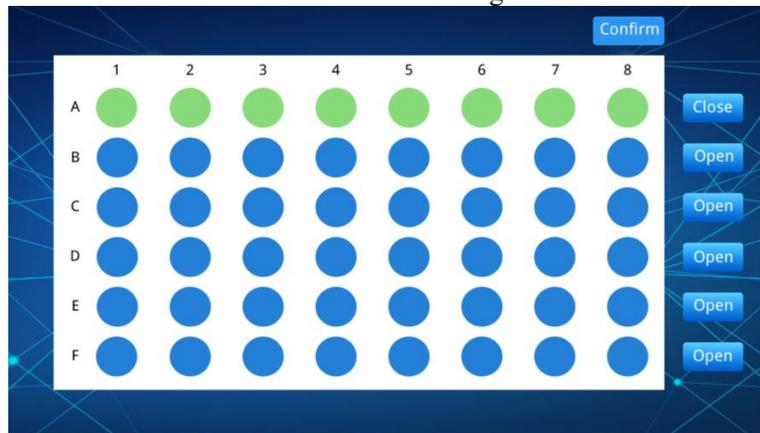
Select “Continuous mode” to jump to “Configuration I”. On “Configuration I” in “Continuous mode”, the user may set “Tube start position”, “Head start position”, “Plate start position”, “Number of pipettes” and “Pipette microliter”, in which, the maximum “Number of pipettes” is 96 and the “Pipette microliter” is in the range of 10 μ l-1000 μ l.



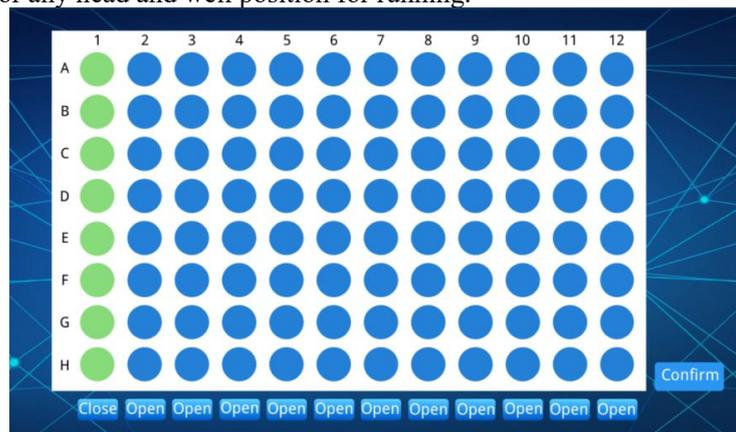
Select “Discrete mode” to jump to “Configuration I”. On “Configuration I” in “Discrete mode”, the user may select the “Tube selection”, “Head selection”, “Plate selection” and set “Pipette microliter”.



Click “Tube selection” to jump to the graphic selection interface of 48-well sample tube area. The user can press the switch button on the right to select the corresponding sample freely or click any well position to run. Click “Confirm” to return to “Configuration I”.

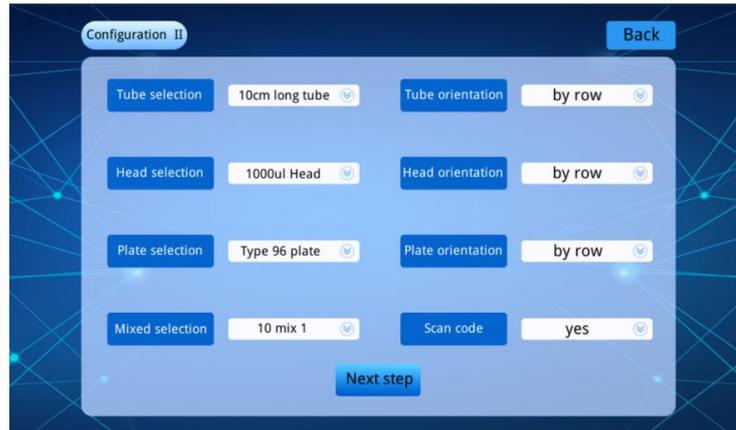


The setting methods of “Head selection” and “Plate selection” are the same as those of "Tube Selection". Through the graphic interface of the 96-well head area, the user can select the head column, well row or any head and well position for running.



3.1.3 Interface configuration

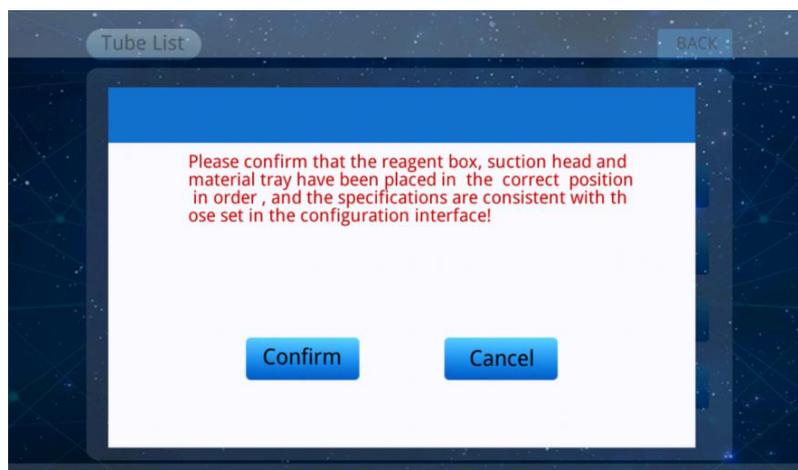
Click “Next step” to enter “Configuration II”. The user can set the selection and orientation of tube, head and plate, the “Mixed selection and “Scan code” according to the actual situation, where, the tube selection options include “10ml long tube” and “5ml short tube”; the head selection options include “1000 μ l head” and “200 μ l head”; “Orientation” options include by row and by column; “Mixed selection” options include “10 mix 1” and “1 mix 1”, through these two types of selection, the common "5 mixed 1" sample cup can also be met.



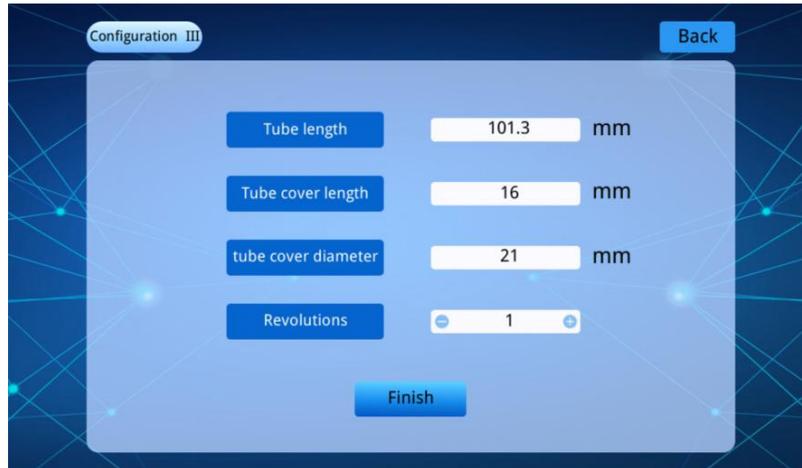
Click “Next step” to enter “Tube list” interface. This interface contains two default sample tube types “GENFINE 10 mix 1” and “GENFINE 1 mix 1”, which cannot be deleted.



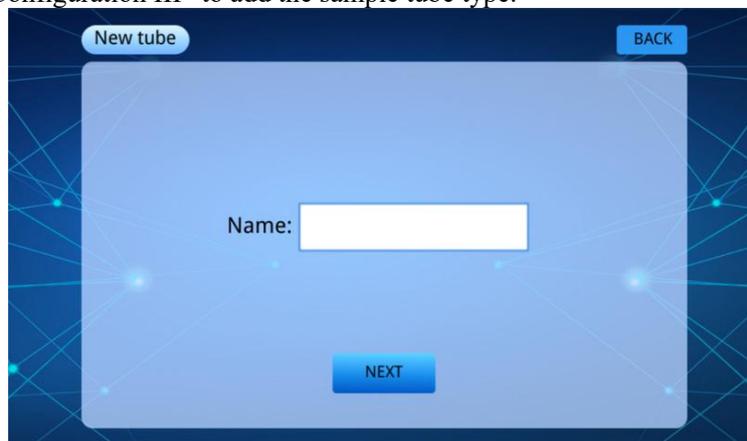
Select the corresponding sample tube and click “Run”. A dialog box pops up. Confirm that the reagent box, suction head and material tray have been placed in the correct position in order, and the specifications are consistent with those set in the configuration interface. Click “Confirm” to run the program.



Click “Edit” to enter “Configuration III”. The user may edit the custom sample tube parameters except the default sample tube, including tube length, tube cover length, tube cover diameter and revolutions, where, the maximum number of revolutions is 2.



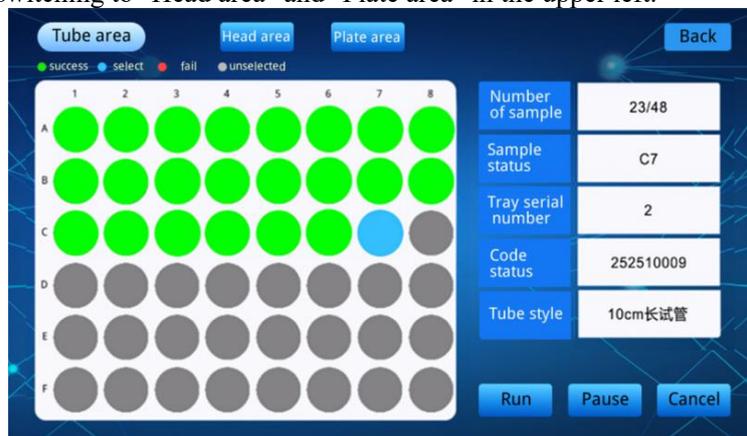
Click “New” button to jump to “New tube”. The user may name the new sample tube and then jump to “Configuration III” to add the sample tube type.



3.1.4 Run interface

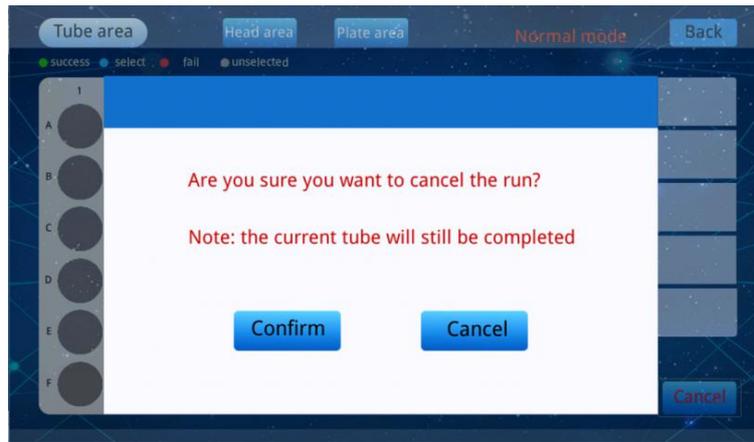
Click “Confirm” to run the program and enter the program run interface.

The 48 circles evenly distributed on the left interface of the tube area correspond to the well positions of the material tray one by one. The color information is used to represent different running states of the sample tube, wherein green represents successful dispensing, blue represents selected dispensing with open cover, red represents dispensing failure, and gray represents waiting for dispensing. Meanwhile, the state of pipette consumables and deep-well plate consumables can be checked by switching to "Head area" and "Plate area" in the upper left.



When the program is running, the text information on the right interface displays the number of samples, sample status, tray serial number and code status during the operation of the

instrument. Click "Pause" to suspend the program or click "Cancel" and a pop-up dialog box prompts whether to cancel the run. Please use this function with caution.



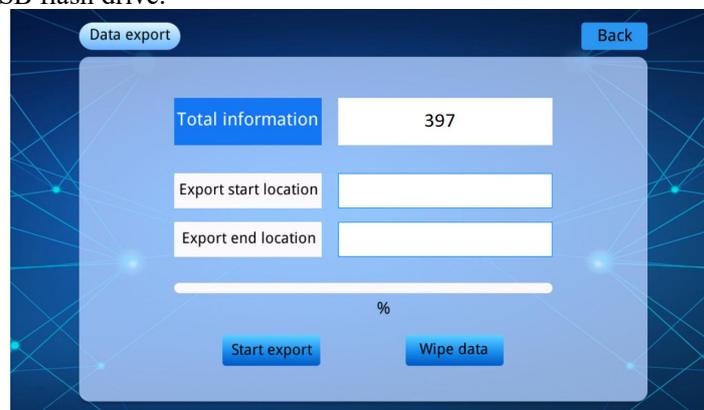
3.3 Settings

The user can select "System settings" in the main interface to set other parameters of Transfer 48s automatic cup dispensing system. On this interface, the user can set the language and voice. "Factory setting" is not open to the user. Contact the manufacturer if required.



3.4 Code scanning information export interface

Click "Export" in the lower right corner of the system settings interface to enter the "Data export" interface. Select "Export start location" and "Export end location" and click "Start export". The exported information will be automatically generated in a text file named after the export time and stored in a USB flash drive.



Attention Transfer 48s automatic cup dispensing system can save more than 1000 × groups of data. For easy export, the data generated at the end of each run is

saved as the first group, so the export start position is usually set to 1.
The export file is in TXT format and named after the program running
time,
so that you can query the export history



文件(F)	编辑(E)	格式(O)	查看(V)	帮助(H)
2	A2	NJSJ10800718		
3	A3	NJSJ10800727		
4	A4	NJSJ10800704		
5	A5	NJSJ10800734		
6	A6	NJSJ10800713		
7	A7	NJSJ10800702		
8	A8	NJSJ10800726		
9	B1			
10	B2	NJSJ10800717		
11	B3	NJSJ10800701		
12	B4	NJSJ10800712		
13	B5	NJSJ10800707		

3.5 Shutdown

Turn off Transfer 48s automatic cup dispensing system:

- (1) Turn off Transfer 48s automatic cup dispensing system by pressing the switch button on the front of the instrument or power switch on the rear panel. It is recommended to turn off the instrument at night and on weekends.
- (2) Wipe the surface of the platform and adjacent instrument with a soft cloth or paper towel with distilled water, mild detergent (SDS, sodium lauryl sulfate) or soap solution.
- (3) If contaminated reagents have been spilled on the workbench, please clean them with 75% ethanol or other disinfectants (see "Decontamination Procedure" on Page 13).

3.6 Emergency

If an abnormal situation occurs during operation, such as sample tube liquid spilling into the instrument, please follow the steps below:

- (1) Turn off the instrument;
- (2) Unplug the power plug immediately;
- (3) Implement appropriate corrective measures, but do not disassemble the instrument;
- (4) If the corrective measures taken do not help, please contact authorized technical service or your local agent.

Chapter 4 Care and Maintenance

4.1 Instrument Maintenance

In order to ensure the reliability of daily operations, please clean up the dust in time to prevent liquid leakage.

Do not use abrasive cleaners, as they may damage the paint surface.

It is recommended that you regularly clean the case of the instrument with a soft cloth dampened with warm water or neutral detergent to maintain its good appearance.

Although Transfer 48s is made of high-quality materials, you must remove the spilled salt solution, chemical solvent, acid or alkaline solution from the surface immediately to prevent damage to the instrument.



Caution The painted surface can be cleaned with most laboratory cleaners. Do not expose the surface to concentrated acid or ethanol for a long time to avoid damage. The display, plastic housing and surface can be cleaned with mild laboratory cleaners or alcohol.



Warning If any surface is contaminated with biologically hazardous materials, it should be cleaned immediately with a mild disinfectant solution.

4.1.1 Decontamination Reagent Types

- 75% ethanol
- 1%-3% Virkon™ solution
- 4% glutaraldehyde solution
- Chloramine T
- Microcide SQT™ 1:64
- 4% Decon™ 90min

4.1.2 Decontamination Procedure

- a) Wear disposable gloves to protect yourself.
- b) Prepare the cleaning agent: 200ml 4% glutaraldehyde solution (or other reagents recommended by the security officer).
- c) Empty the turntable.
- d) Turn off the power switch and disconnect the power cord.
- e) Use a cloth moistened with 75% ethanol to disinfect the outside of the instrument.
- f) Put the instrument in a big plastic bag. Make sure the front housing is open.
- g) Put a piece of cloth soaked in glutaraldehyde solution in the plastic bag. Make sure that the cloth does not touch the instrument.
- h) Seal the instrument in a plastic bag for at least 24 hours.
- i) Take the instrument out of the plastic bag.
- j) Clean the instrument with mild detergent.
- k) Use 75% ethanol to remove stains.
- l) After performing the decontamination procedure, attach a signed and dated decontamination certificate on the transport package and attach it to the outside of the package (see Appendix A: "Certificate of Decontamination").

4.2 Waste disposal

Follow the specific regulations of laboratories and the country for handling biological waste. For the disposal of contaminants, please refer to the relevant local regulations.



Warning The sample may be potentially contaminated. Dispose of disposable deep-well plates, parafilm, magnetic tip comb, disposable gloves, syringes, and disposable pipette tips as biohazardous waste.

4.3 Decontamination Procedure

If you have spilled out contaminant reagents, please perform a decontamination procedure.



Warning The decontamination procedure should be carried out by authorized trained personnel in a well-ventilated room, wearing disposable gloves, protective glasses and clothing.

Follow regular laboratory procedures for decontamination. The decontamination instructions provided with the reagents used should be followed. It is strongly recommended to perform a complete decontamination procedure before transferring the instrument from one laboratory to another, or before sending it to a repair service department.

4.4 Packaging for repair

If you need repair the instrument, Please package it following the guidelines below.



Caution Before removing the instrument from the laboratory or performing any repair on it, it must be thoroughly cleaned.

When sending the instrument for repair, please remember:

- Inform the reason for repair.
- Decontaminate the instrument before hand.
- Pack the instrument according to its state before disassembly.
- Use the original packaging to ensure that the instrument will not be damaged during transportation. Any damage will incur additional service charges.
- Return the instrument (or other items) with a signed and dated decontamination certificate (see Appendix A: "Certificate of Decontamination"). And attach it to the outside of the package.
- After you contact the local agent or the manufacturer's technical service department, please specify the disfunction.
- Please refer to page 14 for more information on storage and transportation temperatures.

4.5 Service Contract

It is recommended that a service engineer trained by the manufacturer conduct a regular maintenance and repair of the instrument every 12 months. This ensures that the product is properly maintained and used without any problems.

4.6 Fill in the system log

System logs, including operation summary, maintenance procedures, error messages and other useful information about system. These is very useful for proper maintenance of the system. Please refer to Appendix B: "System Log". You can copy the form as many times as you need, but keep the original blank form in the user manual.

4.7 Disposal of the instrument

If Transfer 48s must be discarded, please follow the specific regulations of the laboratory and the country for the treatment of biological waste. The disposal of the instrument is carried out in accordance with the laws and regulations of the local authorities on the recycle of electronic equipment and waste. Disposal procedures vary from country to country. For the original packaging and packaging materials recycle, please cooperate with a recycler you are familiar with.



Warning Disinfect the instrument before disposing of it. Please refer to Decontamination Procedures on page 13.

Chapter 5 Technical Parameters

As part of our continuous product development plan, the manufacturer reserves the right to change any parameters without prior notice.

5.1 General Parameters

General parameter		
Model	Transfer 48s	
Size	600mm×400mm×450mm (±10mm)	
Weight	28kg (±0.5kg)	
Power supply	Voltage	AC110-240V
	Frequency	50-60Hz
Operating environment	Voltage	AC110-240V
	temperature	50-60Hz
Tube type	Suitable for 5-10ml conventional spiral sampling tubes	
Plate type	48-well material tray (ANSISLAS size), Customizable	
Control interface	10-inch, 1024×600 color screen, switching between Chinese and English	
Noise	< 50db	

5.2 Performance parameter

Performance parameter	
Throughput	1-48 any number of sample tubes
Processing speed	24 seconds/1 sample
Pipetting principle	Air displacement
Pipetting range	10-1000ul
Pipetting accuracy	10ul ≤ ± 8%; 50ul ≤ ± 3%; 100ul ≤ ± 2%; 500ul ≤ ± 1%; 1000ul ≤ ± 1%
Positioning accuracy	X-Y-Z positioning ±0.1mm
Barcode scanning	Universal for barcode and QR code
Data interface	USB interface, RS232 interface
Pollution control	Use in a safety cabinet

5.3 Safety parameters

The safety parameters include the following environmental conditions, please avoid exceeding the regulations stated in the following operating conditions

Altitude	maximum 2000m
Temperature	+5°C to 40°C
Humidity	The maximum relative humidity is 80% when the temperature is lower than 31°C, and the humidity drops linearly to 50% at 40°C
AC power fluctuation	Not more than $\pm 10\%$ of the marked voltage

5.4 Compliance

Transfer 48s meets the following compliance

YY 0505-2012

GB 4793.1-2007/IEC 61010-2:2001

YY/T 0316-2016

Chapter 6 Other information

6.1 Production Date

See the label for details.

6.2 Service life

The recommended service life should not exceed 5 years.

6.3 Components List

Transfer 48s Packing List			
Number	Item Name	Quantity	Unit
1	Transfer 48s automatic cup dispensing system	1	pcs
2	10-inch display screen	1	pcs
3	Allen wrench	1	pcs
4	Screws	2	pcs
5	Power cable	1	pcs
6	Manual	1	pcs
7	Quality inspection report	1	pcs
8	Warranty Card	1	pcs
9	Certificate of quality	1	pcs
10	48-well material tray	2	pcs
11	Waste box	1	pcs
12	1000ul tips	1	pcs
13	10ml sample tube	8	pcs
14	96-well plate	1	pcs
15	Packing List	1	pcs

6.4 Interpretation of Graphics

	Start		Warning for safety
	Close		Warning electric shock
	WEEE		Attention
	Warning against biohazard		

6.5 Manual revision date

2021.12.20

6.6 Target customers

This instruction is for end-users, such as scientific researchers and laboratory technicians; it provides basic information about the 48-channel automatic cup dispensing system (referred to as Transfer 48s), including the installation and operation of the instrument.

6.7 More information

Please visit our website: <http://www.genfine.com/>, for the latest information on products and services. We strive to provide you with suitable and helpful documents. If you have any comments on this user manual, please tell your local agent. We will be very grateful.

7.8 Safety and User Guide

(1) To reduce the risk of injury or biohazard contamination, and to avoid fire or electric shock, always follow basic safety precautions when using Transfer 48s.

(2) Before operating the instrument, please read this instruction manual completely. Failure to read, understand or follow this manual may cause damage to the instrument and laboratory, injury to the operator, or poor performance of the instrument.

(3) Comply with all "Warning", "Caution" statements, safety symbols and markings on the instrument and documentation.

(4) Transfer 48s is for laboratory research use only. Please comply with appropriate laboratory safety precautions, such as wearing protective clothing and following certified laboratory safety procedures.

(5) Strictly follow the preventive maintenance instructions to keep the instrument in its best condition and ensure maximum reliability. Poorly maintained instruments may cause abnormal test results.



Chapter 7 Manufacturer and Medical Device Information

Manufacturer: GENFINE BIOTECH (CHANGZHOU) CO., LTD.

Medical device production record number: NMPA Reg. No.: 20220033

Manufacturer Address: E4, Changyang Road, West Taihu Science and
Technology
Industrial Park, Changzhou City, Jiangsu Province

Contact: 0519-83761557

Chapter 8 Order Information

If you need to order, please contact your local agent for ordering and service information. The ordering information codes are shown in Table 8-1 to Table 8-2 below.

8.1 Transfer 48s configuration

Table 8-1 Product Item List

Item No.	Device/System
T48s -01	Transfer 48s (Chinese version)
T48s -02	Transfer 48s (English version)
T48s -03	Transfer 48s (Custom version)

8.2 List of accessories and consumables

Table 8-2 List of accessories and consumables used with Transfer 48s

Name	PS
Transfer 48s UV lamp	48 channels
48-well material tray	48 channels
1000ul tips	48 channels
96-well plate	48 channels

Appendix A: Certificate of Decontamination

Name: _____

Address: _____

Telephone /Fax: _____

Device: _____ No.: _____

A) I confirm that the returned items are not contaminated with liquid, toxic, carcinogenic or radioactive substances or any other harmful substances.

B) I confirm that the returned items have been decontaminated and can be processed without affecting the health of the personnel.

Materials used: Chemistry + Biology · Radioactivity*

Contamination specific information: _____

Decontamination procedure¹: _____

Date and place: _____

Signature: _____

Name (Capital): _____

*) When the device is used with radioactive materials, the signature of a radiation safety officer is also required.

This device has been certified by the following signatory to be free of radioactive contamination.

Date and place: _____

Signature: _____

Name (Capital): _____

This page can be copied.

¹ Including the decontamination reagent used.

GENFINE Biotech (Changzhou) Co., Ltd.



www.genfine.com
marketing@genfine.com