

# Automated Tissue Processor, Mini-type

TSP-1



## Features



APS-coated, streamline-design, sturdy housing with high resistance to corrosion



Economical, reagent saving, practical design with small footprint and low cost



Two sets of operating programs and two sets of time-extending programs; all built-in programs have memory function



Single-chip computer control technology allows a complete set of functions



Well-sealed plexiglass cover with gas-effluxion mechanism, environmentally friendly and safe



Large-capacity reagent cup: more than 40 tissue specimens can be processed simultaneously



Not affected by short blackouts or power outages during operation



Manual adjustment can be conducted anytime during the programmed automatic operation; afterwards, the system automatically enters the programmed operation



Internal dry heating mechanism with high-precision temperature control



Two-dimensional, flexible transmission system, low noise, wear-resistant



High-precision photoelectric positioning control system to ensure reliable operation and precise positioning



Fully intelligent design, enabling timely determination and recovery from an abnormal event

## Specification

| Model                                | TSP-1   |
|--------------------------------------|---|
| Number of Cups                       | 12 (9 for reagents, 3 for paraffin)   |
| Capacity of Each Cup                 | 700 ml  |
| Length of Processing Time in the Cup | Any length between 0 and 99 hours for the first cup<br>Any length between 0 and 24 hours for the other cups |
| Temperature Range                    | RT - 80 ℃   |
| Dripping Time                        | Approximately 30 s  |
| Frequency of Agitation               | 2 times/minute  |
| Tissue Protection Cup                | at the 7th station  |
| Working Voltage                      | AC220V±10% 50Hz (standard model) AC110V±10% 60Hz  |
| Power Requirements                   | 500 W   |
| Heating Control                      | heating automatically begins when the tissue enters the 2nd cup, thus avoiding unnecessary energy waste     |
| Dimensions                           | 795×435×415 mm (W×D×H)  |
| Weight                               | 50kg  |

# Automated Tissue Processor

TSP-3



## Features



Fully intelligent design, enabling timely automatic determination and recovery from an abnormal event



High-quality blue-colored LCD screen operated with two optional programs offers a clear and reliable display



Green inner-cycling air purification system to efficiently adsorb, and remove, poisonous gas



Manual adjustment can be conducted anytime during the programmed automatic operation; afterwards, the system automatically enters the programmed operation



Imported high-quality parts, smooth operation, low noise, ergonomic design

## Specifications

| Model                             | TSP-3   |
|-----------------------------------|---|
| Number of Cups                    | 12 (nine cups for reagents and three cups for paraffin)   |
| Length of Processing Time         | Adjustable within 0-99 hours for the 1st station and within 0-24 hours for other stations                             |
| Temperature Range of Paraffin Cup | adjustable within RT - 99°; dual protection   |
| Heating Mechanism                 | Internal dry heating automatically begins when the tissue enters the 2nd cup, thus avoiding unnecessary energy waste. |
| Capacity of Single Cup            | 1000ml  |
| Temperature Control Precision     | ±1℃   |
| Dripping Time                     | Adjustable within 10-60 s; shake/drip above cup   |
| Frequency of Agitation            | 2 times/minute  |
| Battery backup                    | more than 6 hours of continual running power  |
| Ambient Conditions                | 0 ~ 40℃   |
| Working Voltage                   | AC 220V±10% 50Hz (standard model); AC110V±10% 60Hz  |
| Power                             | 500W  |
| Dimensions                        | 1010×420×450 mm (W×D×H)   |
| Net weight                        | 67 kg   |

# Automated Tissue Processor

TSP-3A



APS-coated, streamlined-designed, easy-to-clean, sturdy housing with high resistance to corrosion



Imported high-quality parts, smooth operation, low noise, ergonomic design



20 editable programs can be stored in the system



Integrated high-quality LCD screen with intuitive bilingual (Chinese/English) software offers clear display and simple operation; window-scrolling/flipping human-machine conversation interface provides clear instructions for each step (online help)



Fully intelligent design enables timely determination and automatic recovery from an abnormal event



Real-time visual simulation with icons displays working status dynamically, clearly and intuitively



Green inner-cycling air purification system to efficiently adsorb, remove poisonous gas; gas-effluxion mechanism, environmentally friendly and safe



This system can be automatically started at any time as programmed



Processing duration is automatically calculated and displayed on the screen, allowing user to make a more efficient work plan



Manual adjustment can be conducted anytime during the programmed automatic operation; afterwards, the system automatically enters the programmed operation



Automated fan control: Stays 'on' all the time when the specimens are not submerged in cup and comes on 10 seconds every minute when the specimens are submerged in cup and in processing



Automated light control:

- stays 'on' all the time during programming;
- stays 'off' during the automatic operation and can be automatically turned 'on' anytime by touching the screen or any key and stays 'on' for 2 minutes.



Low-energy-consuming control circuit with power protection function.

- When power outage occurs, the screen displays as normal with a scrolling bar demonstrating the 'on' status of the power protection system.
- Battery backup with more than 30 hours of running power



Approximately 100 tissue specimens can be dehydrated at the same time



Internal dry heating mechanism with high-precision temperature control

## Specifications

| Model                                | TSP-3A   |
|--------------------------------------|--|
| Number of Cups                       | 12 (9 for reagents, and the cups at the 10 <sup>th</sup> , 11 <sup>th</sup> , and 12 <sup>th</sup> stations are used for paraffin melting) |
| Capacity of Each Cup                 | 1500ml   |
| Length of Processing Time in the Cup | Any length for the first cup (Extended Time)<br>Any length between 0 and 24 hours for the other cups                                       |
| Temperature Range                    | RT - 80 °C   |
| Dripping Time                        | Adjustable within 10-60 s; shake/drip above cup  |
| Frequency of Agitation               | Adjustable within 0-6 times/minute   |
| Tissue Protection Station            | any station from the 1st to 7th station as preset  |
| Working Voltage                      | AC220V±10% 50Hz (standard model); AC110V±10% 60Hz  |
| Power                                | 500 W  |
| Dimensions                           | 1055×480×495 mm (W×D×H)  |
| Net weight                           | 75 kg  |

# Automated Tissue Processor

TSP-3C



## Features



Imported high-quality parts, smooth operation, low noise, ergonomic design



Real-time visual simulation with icons displays working status dynamically, clearly and intuitively



Fully intelligent design, enabling timely determination and automatic recovery from an abnormal event



Integrated high-quality LCD screen with intuitive bilingual (Chinese/English) software offers a clear display and simple operation; window-scrolling/flipping human-machine conversation interface provides clear instructions for each step (online help)



Green inner-cycling air purification system to efficiently adsorb and remove poisonous gas; well-sealed gas-effluxion mechanism to effectively improve the operational environment, environmentally-friendly and safe



Manual adjustment can be conducted anytime during the programmed automatic operation; afterwards, the system automatically enters the programmed operation



Processing duration is automatically calculated and displayed on the screen, allowing user to make a more efficient work plan



20 editable programs can be stored in the system



This system can be automatically started at any time as programmed



Automated fan control: Stays 'on' all the time when the specimens are not submerged in cup and 10 seconds every minute when the specimens are submerged in cup and processing



Approximately 150 tissue samples can be processed at the same time



Internal dry heating mechanism with high-precision temperature control

- Automatically determines the time of heating for energy efficiency



Automated light control:

- stays 'on' all the time during programming;
- stays 'off' during the automatic operation and can be automatically turned 'on' anytime by touching the screen or any key and stays 'on' for 2 minutes.



Low-energy-consuming control circuit with power protection function

- When a power outage occurs, the screen displays as normal with a scrolling bar demonstrating the 'on' status of the power protection system
- Battery backup with more than 30 hours of running power

## Specifications

| Model                                | TSP-3C  |
|--------------------------------------|---|
| Number of Cups                       | 12 (The 1st to 9th stations for reagents and the 10th to 12th stations for paraffin melting)              |
| Capacity of Each Cup                 | 2000 ml   |
| Temperature Range                    | RT - 80 °C  |
| Temperature Control Precision        | ±1 °C   |
| Length of Processing Time in the Cup | Any length for the first cup (Extended Time)<br>Any length between 0 and 24 hours for the 2nd to 12th cup |
| Dripping Time                        | Adjustable between 10s and 60s; shake/drip function above cup   |
| Frequency of Agitation               | Adjustable within 0 - 6 times/minute  |
| Tissue Protection Station            | any station from the 1st to 7th station as preset   |
| Working Voltage                      | AC220V±10% 50Hz (standard model) AC110V±10% 60Hz  |
| Power                                | 500 W   |
| Dimensions                           | 1170×465×535mm (W×D×H)  |
| Net weight                           | 85kg  |

# Fully Automated Tissue Processor

TSP-3E



Two sets of operation mechanisms doubles the processing capacity. Tissue specimens can be separately placed into different baskets according to size, texture, and origin, thus improving processing performance

- Optional single-mechanism mode for processing a small number of tissue specimens easing the operation



Flexible transmission system, low noise, wear-resistant



20 editable programs for each of A and B mechanisms can be stored in the system



250 or more specimens can be processed at the same time



High-precision, low-noise, and wear-resistant photoelectric positioning system using imported high-quality elements to ensure stable and smooth operation all within an ideal ergonomic design



Integrated high-quality colored super large LCD touch-screen offers clear display and simple operation; window-scrolling/flip-ping human-machine conversation interface provides clear instructions for each step (online help)



This system can be automatically started at any time as programmed (Setting Rang 0-99 hours and 0-59 minutes)

- Processing duration is automatically calculated and displayed on the screen, allowing the user to make a more efficient work plan



Real-time visual simulation with icons displays working status dynamically, clearly and intuitively



Fully intelligent design, enabling timely determination and automatic recovery from an abnormal event



Power Protection Station: Station 7 for A basket and Station 5 for B basket, ensuring continued operation during a power outage.



Green inner-cycling air purification system to highly efficiently adsorb and remove poisonous gas; well-sealed gas-effluxion mechanism to effectively improve the operation environment, environmentally friendly and safe



Automated fan control: Stays 'on' all the time when the specimens are not submerged in cup and 10 seconds every minute when the specimens are submerged in cup and in processing



Manual operation can be conducted anytime during the programmed automatic operation, allowing user to check or add tissue specimens during the operation



Automated light control:

- stays 'on' all the time during programming;
- stays 'off' during the automatic operation and can be automatically turned 'on' anytime by touching the screen or any key and stays 'on' for 2 minutes.



Internal dry heating mechanism and triple protection channels offer high-precision automatic gradient temperature control

- Automatically determines the time of heating, resulting in energy efficiency



Low-energy-consuming control circuit with power protection function

- When power outage occurs, the screen displays as normal with a scrolling bar demonstrating the 'on' status of the power protection system
- Battery backup with more than 30 hours of running power



Scrolling processing mode multiplies the processing capacity of the system – one device can do the amount of work equal to multiple single-basket machines.

- A processed basket can be continuously used following another basket that is in processing without interruption, thus achieving a continuous cycling operation and maximizing the processing capacity of the system

## Specification

| Model                                | TSP-3E   |
|--------------------------------------|--|
| Number of Cups                       | 14(10 for reagents, and the cups at the 11th, 12th, 13th, and 14thstations are used for paraffin melting)              |
| Baskets                              | 2/three layers   |
| Capacity of Each Cup                 | 2000ml   |
| Temperature range                    | RT - 80 ℃  |
| Temperature Control Precision        | ±1 ℃   |
| Length of Processing Time in the Cup | Any length between 0 and 99 hours for the 1st and 2nd cup<br>Any length between 0 and 24 hours for the 3nd to 14th cup |
| Dripping Time                        | Adjustable within 10s - 60s; shake/drip above cup  |
| Frequency of Agitation               | 0 - 6 times/min adjustable;  |
| Working Voltage                      | AC 220V±10% 50Hz (standard model); AC110V±10% 60Hz   |
| Power                                | 550W   |
| Dimensions                           | 1370×440×525 mm (W×D×H)  |
| Weight                               | 102kg  |
| Package Dimension (W*D*H) (mm)       | 1520*610*770   |
| G.W.(kg)                             | 155Kg  |



# Automated Tissue Processor

## TSP-6A



TSP-6A Automated Tissue Processor is an advanced microprocessor-controlled tissue-processing device. With an ideal ergonomic design, reasonable structure, easy operation, prompt processing, and high QPR, this device is an ideal choice for human or animal/plant tissue dehydration in the pathology laboratory of hospitals, colleges/universities, and research institutes.

### Features



Entire operation process is controlled by a PLC through a touch screen, easy to operate, reliable and stable



Tissue specimen basket can be placed in a cup at any station by a mechanical arm, flexible and easy to operate



Multiple safety protection mechanisms including power failure alert and operation error protection



Stirring during the dehydration process ensures adequate contact of tissue with reagents and paraffin to improve dehydration performance



Temperature of paraffin cup is precisely controlled by a constant temperature control system and the inner surface of the cup is TEFLON-coated, contamination-resistant, and corrosion-resistant



Nine 2.3L medical glass beakers are used as processing cups, allowing clear observation of tissue changes during the operation

### Specification

| Model                         | TSP-6A  |
|-------------------------------|---|
| Tissue Processing Steps       | 12 steps  |
| Number of Reagent Cups        | 9, with a volume of 2.3L  |
| Number of Paraffin Cups       | 3, with a volume of 1.8L  |
| Temperature Range             | 56-86 C (±1 C)  |
| Dehydration basket capacity   | about 80 dehydration boxes  |
| Duration in each cup          | 0-10 hours ( 10 programs)   |
| Maximal turn-on delay         | 1 month   |
| Minimum time interval setting | 1 min   |
| Frequency of basket stirring  | ≥10 times/hour, 30 sec for each time  |
| Power                         | 1000W ,   |
| Size of Basket                | Φ95×80mm;   |
| Dimensions                    | 670 (Diameter)× 550 (Height, 680 mm at the highest point)                     |
| Package Dimension (W*D*H)(mm) | 1210*920*820mm  |
| Working Voltage               | AC 220V±10% 50Hz (standard model), an additional converter is needed for 110V |
| Net Weight                    | 60kg  |
| G.W.(kg)                      | 175Kg   |

# Automated Tissue Processor

TSP-6B



TSP-6B Automated Tissue Processor is an advanced microprocessor-controlled tissue-processing device. Due to its ideal ergonomic design, reasonable structure, easy operation, prompt processing, and high QPR, this device is an ideal choice for human or animal/plant tissue dehydration in pathology laboratory of hospitals, colleges/universities, and research institutes.

## Features



Entire operation process is controlled by a PLC through a touch screen, easy to operate, reliable and stable



Tissue specimen basket can be placed in a cup at any station by a mechanical arm, flexible and easy to operate



Multiple safety protection mechanisms including power failure alert and operation error protection



Stirring during dehydration process ensures adequate contact of tissue with reagents and paraffin to improve dehydrtn performance



Temperature of paraffin cup is precisely controlled by a constant temperature control system and the inner surface of the cup is TEFLON-coated, contamination-resistant, and corrosion-resistant



There are nine 2.3-L medical glass beakers are used as processing cups, allowing clear observation of tissue changes during the operation



To enhance dehydration strength, this device is equipped with a vacuum pump. Other than paraffin cups, optional vacuum-assisted dehydration of all cups can be individually preset

## Specifications

| Model                          | TSP-6B  |
|--------------------------------|---|
| Tissue Processing Steps        | 12 steps  |
| Number of Reagent Cups         | 9, with a volume of 2.3L  |
| Number of Paraffin Cups        | 3, with a volume of 1.8L  |
| Temperature Range              | 56-86℃ (±1℃)  |
| Dehydration basket capacity    | about 80 dehydration boxes  |
| Program                        | 0-10 hours (10 programs)  |
| Maximal turn-on delay          | 1 month   |
| Minimum time interval setting  | 1 min   |
| Vacuum Degree                  | 0.053MPa  |
| Frequency of basket stirring   | ≥10 times/hour, 30 sec for each time  |
| Size of Basket                 | Φ95×80mm;   |
| Dimensions                     | 670 (Diameter)× 550 (Height, 680 mm at the highest point)                     |
| Working Voltage                | AC 220V±10% 50Hz (standard model), an additional converter is needed for 110V |
| Power                          | 1000W   |
| Net weight                     | 60kg  |
| Package Dimension (W*D*H) (mm) | 1210*910*820mm  |
| G.W.(kg)                       | G.W.(kg):174Kg  |

# Fully Automatic Enclosed Tissue Processor

## TSP-CV1

### Features



Operator Interface of 15 inch color LCD touch screen



Enclosed Tissue treatment system with no pollution of gas leakage, to meet requirement of environmental protection.



Mode of Sample processing: Sample not move, Reagent move.



It can avoid the risk of power failure of machine, or other mechanical failure.



Timing Mode: Finishing time of tissue processing any day in the week can be set



10 Set of Programmers stored in the system and can be set for purpose.



Function of Protection System of Power Failure. Once main power restored, the previous protocols is automatically resumed and continue to work in order.



Special design of Reagent Station makes the liquid totally back-flow to avoid any mixture and to extend using time of reagent.



Patented design of cassette holder makes reagent and samples thoroughly contact with each other, it improves effecton of tissue processing and reduce working time.



- Dual Purpose of processing: one key switch normal processing motion and Rapid processing motion
- Rapid Processing motion stirred in day time finished in 3 hours, Normal Processing Motion stirred in the evening.
- Device for Air pressure transfer: Formal air pressure transfer of several solenoid valves replaced by one single mechanical structure replace formal in order to avoid high fault error.
- Function for changing wax automatically:
- Wax in No.1 Container wash into waste container, then, wax in NO.2 container goes into No.1 Container, then, No.3 goes into No.2, and so on
- Function of over temperature protection occurred by accidental heating
- Function for magnetic stirring which shorten time of tissue processing and make good processing effecton.
- Alarm and Screen display when finishing work.
- Capacity of tissue processing: 300pcs cassette at most.

### Specifications

| Model                          | TSP-CV1                 |
|--------------------------------|-------------------------|
| Numbers of Reagent Station     | 12                      |
| Tissue Processing Station      | NO.1 to No.9 Station    |
| Washing Station                | No.14 to No.16 Station  |
| Numbers of Wax Tank            | 3(No.10,12 and 13)      |
| Numbers of Working Station     | 1                       |
| Capacity of Processing Station | 9Liters                 |
| Capacity of Reagent Station    | 6L                      |
| Medium is the solvent          | ≤45℃                    |
| Medium is the Wax              | 58℃-70℃                 |
| Operation pressure             | <0.1Mpa                 |
| Wax temperature                | 58℃-70℃                 |
| Wax melt time                  | not more than 3 hours   |
| Power input                    | <1500VA+10%             |
| Time for immerse               | 0 - 99 hours 59 minutes |
| Working Voltage                | 220VAC±10%,50/60HZ      |
| Time for Inflow Liquid         | no more than 5Min       |
| Time for Exclude Liquid        | no more than 5Min       |
| Stirring time                  | set randomly            |
| Interval time for Stirring     | set randomly            |
| Operation mode                 | manual and automatic    |
| Overall Dimension              | 650×650×1350mm(W×D×H)   |
| Net Weight                     | 145kg                   |