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Title	Specifications of HDT-500 Trolley for Endoscopy System			
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1 Purpose

This document describes the parameters and specifications of the HDT-500 medical trolley. It can be used for users to understand product performance parameters and use and it is intended to complete the product technical material, ensure product quality and for personnel training.

2 Intended Use

This document is applicable for the personnel of the manufacturer, suppliers and users to understand the product specifications of HDT-500 medical trolley manufactured by SonoScape.

3 Design Basis

Non.

4 Item, Definition and Abbreviation

Non.

5 Product Overview

Video endoscopy and minimally invasive surgery are the common clinical diagnosis techniques. Although the video endoscopy systems produced by different companies are not exactly the same, the all systems include: the video endoscope, image processor, light source and monitor. As a compatible device, the medical trolley better designed in delivery performance and operability are benefit to the compatibility of the endoscopy system.

The HDT-500 medical trolley is used with the endoscopy systems provided by the manufacturer.

5.1 Users of the Product

Users of the medical trolley are trained physicians of the endoscopy center and surgical room.

Operation environment: It is used for placing or transporting the endoscopy system and for the common endoscopy finished on the medical trolley.

5.2 Main Operation Flow

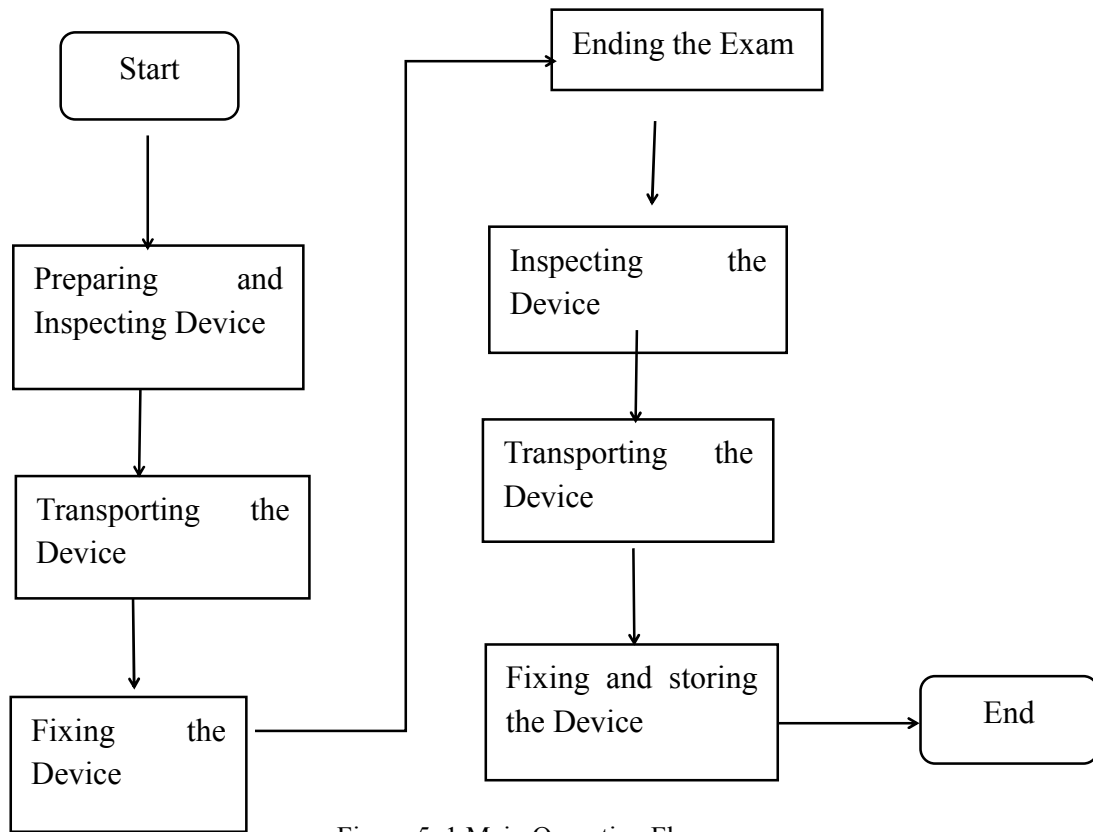


Figure 5- 1 Main Operation Flow

6 Specifications and Functions of the Trolley

6.1 Structure and Functions

Table 6- 1 Specifications for Structure and Functions of HDT-500 Trolley

Functions	Description
Functions of each layer	<p>The devices of the endoscopy system can be placed on different floors of the trolley and the sequence is :</p> <ol style="list-style-type: none"> 1. Top cover: Placing the consumable materials for endoscope processing. (Install the swing arm on the left and the endoscope holder on the right.) 2. Shelf A: Placing the image processor and light source; 3. Keyboard tray: between the Top Cover and Shelf A; 4. Shelf B: electric knife or printer; 5. Chassis (bottom layer): insuffiator/CO₂ pump/water pump; <p>Height of each layer can be adjusted.</p>
Bearing limit of each layer	<p>The top cover can be used to place electrical components and cable. It is higher in periphery and with anti-slip strips. The bearing limit of the top layer is no less than 40KG;</p> <p>The bearing limit of other layers is no less than 40KG; They are higher in periphery and with anti-slip strips; They layer should be even and not easy</p>

Functions	Description
	to cave in.
Functions of handles	The U handles with anti-slip rubber are on the front and rear parts of the top cover.
Moving and fixing of the trolley	<p>Moving the trolley:</p> <ul style="list-style-type: none"> ● Release the wheels to enable the moving function; ● Ensure that the trolley placed with the endoscopy system and other peripherals can be moved easily; ● When moving the trolley, ensure that items on the trolley do not fall off or collapse; ● Ensure that directions can be adjusted easily and the wheel can move at any direction <p>Fixing the trolley:</p> <ol style="list-style-type: none"> 1. Lock the wheel to fix the trolley; 2. Place the trolley in the destination and fix the trolley. Ensure that the trolley cannot be moved easily.
Keyboard tray	The keyboard tray is between the top cover and the Shelf A and near to bottom of the top cover. The keyboard tray can be pulled and pushed. Ensure that it can be moved easily.
Logo	<ol style="list-style-type: none"> 1. Logo shall be clear to show our corporate image. 2. Logo can be changed according to OEM requirement.
Dimensions	<p>Depth $\geq 700\text{mm}$</p> <p>Width $\geq 550\text{mm}$</p> <p>Height $\geq 1100\text{mm}$</p>

6.2 Specifications and Functions of Accessories

Table 6- 2 Accessory Specifications and Function Description

Name	Description
Swing arm	<ol style="list-style-type: none"> 1. The swing arm is on the left side of the top cover and its raising/lowering range is equal to or higher than 50 mm. Its bearing limit is less than or equal to 15 kg (or supports the 21 - 26- inch monitors); 2. Range of rotation angle of the monitor from forwards to backwards is $\geq \pm 90^\circ$; range of slope angle adjustment of the monitor from upwards to downwards is $\geq 45^\circ$;
Endoscope hanger	<ol style="list-style-type: none"> 1. The endoscope hanger is on the right side of the top cover and its raising/lowering range is equal to or higher than 200 mm; 2. Two endoscope sliders are installed steadily to prevent from scrapes. 3. Different endoscope hangers are used for different endoscopes and it is easy to adjust the endoscope hanger directions and to change to the hanger.

Name	Description
Connector section holder	The connector section holder is installed on the right side of the top cover and two connector sections can be placed in the holder steadily to prevent from scrapes,
White balance cap holder	The white balance cap holder is installed on the right side of the medical trolley properly. It is near to the image processor and the direction of the white balance cap opening can be adjusted.
Water bottle hook	The water bottle hook is installed on the left side of the medical trolley properly. It is near to the light source and the bearing limit of the water bottle hook is equal to or higher than 10 kg. At most two water bottles can be hanged on the hook.
Wheels	<ol style="list-style-type: none"> 1. The trolley is equipped with 4 universal low-noise wheels. The bearing limit of each wheel is more than 140 kg. 2. Brake of wheels are designed as double pedal. When both pedals are pushed down the wheels are locked. When push down the front pedal only, the wheels are unlocked.

6.3 Performance of the Trolley

The trolley is designed with dark color, and the metal materials shall not have strong light-reflecting effect. The logo shall be highlighted, with rub resistance and corrosion resistance, without color fading. Edge of trolley must be obtuse angle. Anti-slip rubber in each floors also have the function of buffering, they can be replaced when aging.

When the trolley is locked, it shall not slide, shale or incline. The trolley shall move smoothly and stable, without side-slipping or inclining.

The keyboard tray can be pushed out or pushed in. It has baffle board in the front. Movement of the keyboard tray shall be smooth and not goes out of the track. There shall be no deformation in the track after several movements.

The wheels are non-inflatable. Both sides of the wheels are closed to prevent from water and dust. The wheels are universal and low-noise, with high resilience and abrasive resistance. The brake pedal of the wheels can bear certain load, with quick response of lock and unlock.

6.4 Serviceability of the Trolley

Table 6- 3 Serviceability of the HDT-500 Trolley

Items	Requirements
Package	1. Package shall be tight and can bear certain load;

	<ol style="list-style-type: none"> 2. Fragile items shall be packed separately; 3. The trolley shall be disassembled and packaged separately.
Installation	<ol style="list-style-type: none"> 1. The installation shall be easy and convenient; 2. After installation, check the functions and performances of the trolley.
Transportation	Package of trolley shall be suitable for shipment by land, sea or air without effect on the performance of trolley.
Maintenance	<ol style="list-style-type: none"> 1. All components of trolley shall be easy for performance testing, and easy for repair if it is damaged. 2. Supply of spare components for the trolley shall meet the requirement of maintenance. 3. Power supply and circuit are involved in the trolley. Only well- trained professional staff can maintain the trolley.

6.5 Reliability of the Trolley

Table 6- 4 Reliability of the HDT-500 Trolley

Items	Requirements
Insulativity	The trolley should be insulated to ensure the safety use of trolley and devices on it.
Waterproofness	The chassis shall be sealed to prevent electrical component damage caused by water inflow.
Corrosion resistance	It can be cleaned and disinfected by hypochlorous acid, ethyl alcohol and Pasteurized disinfectant.
Lifespan	The lifespan of trolley is more than 5 years.

6.6 Compatibility of the Trolley

Table 6- 5 Compatibility of the HDT-500 Trolley

Compatibility	Requirements
Device placing requirements	<ol style="list-style-type: none"> 1. The trolley can be used to place the image processor and light sources manufactured by the manufacturer; 2. The electric knife or printer; insuffiator, CO2 pump and water pump can be placed on the last two layers of the trolley; 3. The endoscope hanger and camera head holder can be used to place the video endoscope manufactured by the manufacturer, including colonoscope, gastroscope, duodenoscope, bronchoscope and rhinolaryngoscope.

Applicable Department	The trolley can be used in different departments, including Gastroenterology Department, Endoscopy Center, E.N.T. Department, Pneumology Department and Operation Room.
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7 References

Necessary if it is applicable.

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