

SuperVet XP Ligasure Advanced Energy Surgical Platform

Operation Instruction and Precautions



This product comes with Medtronic(Covidien) surgical instrument, which is high-value and consumable tool. After unpacking and confirming the tool can be used normally, then proves the tool has no quality problem. SuperVet does not guarantee aftersales or warranty of Medtronic's instrument. Please pay attention to correct use and maintenance.

Precautions and Warnings

Precautions before use	When connect or disconnect the instruments with the platform generator, it should be inserted or pulled out vertically, do not shake; otherwise the plug pins may be damaged. The power supply socket for the generator should be grounded; to avoid voltage fluctuations burn the generator.	
	Before each use, check the electrodes and cables if have breakages, cracks, scratches, or other damages.	
	Clean the burnt, blood and mucus of the jaws before use. Make sure the jaws are clean before use.	
Clamp correctly	Can turn the rotary wheel on the handle to choose the angle and position you want to clamp. Hold the handle tightly to close the jaw to clamp blood vessels and tissues. Forbid turning the rotating wheel when the jaws are closed, which will damage the tool!	
	<p>1) Clamp the tissue in the middle of the jaw for better seal and cutting of the tissue. The optimal amount of tissue to be clamped is 2/3 of the jaw.</p> <p>2) Do not clamp the tissue beyond the mark line inside the jaws, to avoid damage of the jaw caused by excessive force; large pieces of tissue should be coagulated and cut by several times.</p>	
	Metal instruments should be kept away from the jaws. If the metal hits the upper and lower jaws, it will cause short-circuit damage to the tool jaws. (Especially Pay attention to the haemostatic forceps)	
Contact clamping	<p>During normal use, grasp the handle to bottom that the handle is auto-locked tightly, which is called locking clamping. Do not hold the handle to bottom, keep the jaws closed to clamp the tissue, BUT DO NOT lock the handle, which is called contact clamping.</p> <p>When the blood vessel is thick and the walls are too thin; when the ruptured blood vessel has already bled significantly, should use contact clamping to reduce the blood vessel pressure.</p> <p>Do not give too much force to the blood vessel (do not pull, the tissue tension should be small), or use a haemostatic forceps to clamp and depressurize the proximal and distal ends. After blocking, release the blood in the closed segment of the blood vessel (Wipe it dry), In the non-bleeding area, use jaws to coagulate the blood vessel.</p>	
Activate coagulation	When coagulate the blood vessels in the tissue, no need to separate, directly clamp, and activate the button to perform the coagulation.	
	When under coagulation, observe the tissue whitening status (coagulation status). (Can also open the jaw to observe)Can repeatedly activate coagulation if one time is not enough to achieve a better coagulation effect, then cut.	
Push Forcep	Before operate the push switch, make ensure that the jaw is completely closed, otherwise it will damage the push mechanism.	
Precautions in use	During use, the jaws should be kept clean. Tissue adhesion or char buildup may reduce closure or cutting effectiveness and cause generator alarms (Do not clean instrument jaws with hard rags or other abrasive materials, use sterile gauze pads soaked in water (do not use alcohol) as needed Clean jaws.	
	If there is a lot of fat in the tissue and no blood vessel in the fat, can use scissors to separate the fat firstly, and then perform tissue sealing cutting. In order to prolong the service life of the jaw/forcep, it should be avoided (not recommended) to cut the tissue directly which the tissue without sealing.	
	<p>During in operation, the forceps/jaws should be placed in normal saline to cool down every 10-15 minutes, so as not to form scabs at high temperature and affect performance.</p> <p>Observe the usage : if the cutting tissue is sticky, exudate more, should immediately clean, cool the jaw/ forcep, to avoid sticking;</p> <p>If eschar condensation is found, the jaws/forcep should be cleaned immediately. Do not continue to use, to avoid performance decline affecting surgery and tool damage</p>	

Alarm processing

When alarm occurs, loosen the handle to let the jaw in open. Press activation again which can release the alarm and and return to preparation state.

The alarm reminder is to ensure the safety of the operation and the safety of the equipment. When the alarm appears, process it according to below instruction. The product only can be used continuously after the alarm problem is solved

Most of alarm message are normal reminder during use. It may be caused by following reasons:

- 1) Detects no tissue be clamped.
- 2) Detects too little tissue be clamped.
- 3) Abnormal tissue clamping detected during activation.

Process: Loosen jaws, reposition and grasp proper tissue.

If necessary clean the jaw/forcep then re-activation.

If the alarm still appear after re-positioned several times and the jaw/forcep cleaned, then it is tool failure.

- 1) Check whether the instrument and generator if connected properly.
- 2) Check whether the cable of the instrument is damaged or not;
- 3) Replace a new instrument for confirmation.

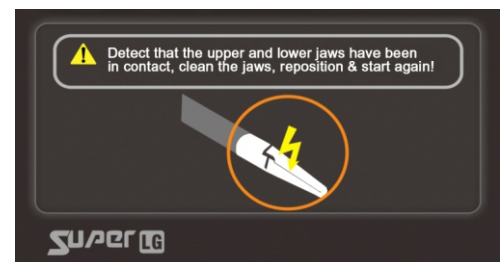


Pay attention If this alarm appear during use. It may be caused by below reasons.

- 1) If there is much mucus in the tissue to seal, it may cause excessive fluid in the jaws/forceps and cause a alarm, wipe clean the jaws and tissue surface with sterile gauze, and try again.
- 2) If alarm when seal a thinner tissue, first wipe and clean the jaws/forcep with sterile gauze, then take contact clamping to carry out seal.
- 3) If alarm occur when the blood vessel is too thick and the blood vessel wall is too thin, and it has obvious bleeding, firstly clean the jaw/forcep with sterile gauze, then use hemostatic forceps to clamp and reduce blood pressure at the proximal and distal ends, then use contact clamping to coagulate on non-bleeding part.

If the alarm still occur after above treatment, it is tool failure.

- 1) Check whether the jaw/forcep has bumps or burrs ;
- 2) Check whether the jaw/forcep has obvious defects or damage ;
- 3) Replace a new instrument for confirmation.



Cleaning and Disinfection and Maintenance

1	Clean the jaws promptly and thoroughly after the operation. (Do not use alcohol, iodophor, etc. to wipe, which will easily cause damage to the jaws / forcep)
2	Clean the jaw/forcep with wet gauze (normal saline can be used) immediately after operation. Complete a general and timely cleaning. Can also clean the jaw/forcep with water (under faucet), but make sure keep the jaw/forcep down and handle up to avoid short-circuit damage caused by water into the handle.
3	Then use multi-enzyme soaking for thorough cleaning (diluted as instruction), soak to decompose protein, then wipe clean.
4	Close the jaw after clean, repeat push & back to push out the residual tissue, can use tweezers to clean the jaw slot. Do not use hard brush or sharp tools to clean the jaw/forcep, it may cause rough, burrs, and then cause short-circuited damage. The system will give alarm that can not work normally.
5	Ultrasonic cleaning equipment can also be used for cleaning. Pay attention: The jaw must be suspended in water, and CAN NOT CONTACT THE METAL SURFACE. During the cleaning process, the jaws CAN NOT touch the bottom or touch other instruments, otherwise it will cause damage.
6	The disinfectant uses o-phthalaldehyde. Soaks the jaw and the rod in the disinfectant, wash out the disinfectant thoroughly with sterile water after soaking. (Attention: DO NOT soak the handle, DO NOT use alcohol disinfect the handle, to avoid short-circuit damage to the tool)