ENDOEYE FLEX video laparoscope

PREVENTING POTENTIAL DAMAGE

DAMAGE DURING AN OPERATION

**Tear caused by trocar’s distal end**

Damage can be caused by not straightening the distal end of the laparoscope prior to withdrawal from the trocar.

**YES**

When introducing the laparoscope, always use the included trocar introducer (only for LTF-VP, LTF-VP-S, and LTF-5190-5). Before withdrawing the laparoscope from the trocar, be sure to release the angulation release lever and straighten the bending section.

**NO**

**Tear or puncture caused by instrument**

An instrument such as scissors or a grasper may come into contact with or grasp the bending section and damage the cover sheath.

**YES**

When using laparoscopic instrumentation, observe the laparoscopic image closely to make sure that the scope and laparoscopic instrument are correctly positioned relative to one another.

**NO**

**Tear caused by grasper**

Grasping the bending section to adjust the position of the scope.

**NO**

Do not grasp the bending section with the grasper, etc. Always use the positioning lever.

**YES**

**Tear caused by surgical needle**

A sharp device such as a surgical needle may come into contact with the bending section and damage the cover sheath.

**YES**

When inserting or withdrawing a sharp device such as a surgical needle, be careful not to catch the needle tip in the bending section cover sheath.

**NO**

**Tear caused by ultrasonic coagulation/cutting scissors**

The ultrasonic instrument may come into contact with the bending section during output mode.

**NO**

Do not grasp the bending section. Check the laparoscopic image during output so that the probe does not come into contact with the laparoscope’s bending section.

**YES**

**Slack, sag, or rollup of bending section cover sheath**

Slack, sag, or rollup of bending section cover sheath can cause an increase in the external diameter at the localized area.

**NO**

The bending section was withdrawn from the trocar without straightening, resulting in damage to the bending section.

**YES**

The laparoscope was inserted into the trocar with a valve that was not open.

**NO**

**Reduction in the angulation of the bending section**

Insufficient angulation of the bending section.

**YES**

**Angulation was attempted while the bending section was inside the trocar.**

Be sure that the bending section is completely inserted through the trocar before performing angulation. Insertion Length Index indicates how far the insertion section is inserted into the trocar tube.

**NO**

**Insertion Length Index**

- Turn the angulation lock to the free position and maneuver the bending section until it is straight.
- Carefully withdraw the laparoscope while observing the laparoscopic image.
- When using a trocar with a valve, keep the valve open during withdrawal.
- Never use the laparoscope when its cover sheath is turned over.
- When using a trocar introducer with a valve, keep the valve open while inserting or withdrawing the laparoscope. Neglecting to do so may damage the bending section of the laparoscope.
**INSPECTING THE LAPAROSCOPE BEFORE USE**

Below each case, prepare and inspect the laparoscope as instructed in the instruction manual. Inspect other equipment to be used with the laparoscope as instructed in their respective instruction manuals. Should any irregularity be observed, do not use the laparoscopes.

**Inspection of components**

1. Inspect the objective lens and light guide connector cover glass of the distal end of the laparoscope's universal cord for scratching, cracks, stains, or foreign matter around the lens or other irregularities.
2. Inspect the surface of the universal cord for cracks, dents, bulges, or other irregularities.
3. Inspect the cover shear of the bending section for sagging, swelling, cuts, holes, dirt, or other irregularities.
4. Inspect the control section, light guide connector, and video connector for excessive scratching, which may allow debris to accumulate.
5. Inspect the boot and the universal cord for cracks, dents, bulges, or other irregularities.
6. Inspect the cover shear of the bending section at a point 10 cm from the distal end of the laparoscope.
7. Confirm that the pressure release lever is closed, the laparoscope is in a carrying case, and the insertion section at the distal end of the laparoscope is properly aligned with the venting connector.

**Precautions**

Below sterilization, remove the trocar introducer from the laparoscope. Attaching the trocar introducer to the laparoscope inhibits sterilization. Do not discard the trocar introducer.

Follow product instruction manuals for proper sterilization instructions and the use of proper sterilization methods.

If the laparoscope is dropped or the distal end of the laparoscope receives an impact, the laparoscope may be damaged even if a crack or chip of the lens on the distal end of the laparoscope is not noticed. In such cases, do not use the laparoscope. Contact Olympus.

**WATER LEAKAGE TEST PROCEDURES**

After pre-cleaning, perform a leakage test on the laparoscope to ensure that it is waterproof. Follow the procedures below to perform a leakage test.

1. Fill a basin with clean water. Use a basin that is at least 70 cm by 70 cm (28" by 28") in size and deep enough to allow the laparoscope to be completely immersed.
2. Align the leakage tester adapter's slit with the testing connector's pin on the light guide connector and push the adapter clockwise until it stops.
3. Confirm that the pressure release lever is closed.
4. Press the hand pump until a pressure between 19 and 27 kPa is indicated on the pressure display. The pointer must be within the green area on the pressure display.
5. Confirm that the pointer is stable. With the leakage tester connected, immerse the laparoscope in the water and observe for approximately 30 seconds while angulating the bending section.
6. Confirm that there is no area from which a continuous series of bubbles escapes.
7. Remove the laparoscope from the basin.
8. Press the pressure release lever to let the air escape from the laparoscope.
9. Detach the leakage tester from the laparoscope's venting connector by turning the adapter counterclockwise.
10. Thoroughly dry the leakage tester.

**SENSITIVE AREAS**

**Light guide connector**

- The insertion section at the distal end of the laparoscope may be damaged even if a crack or chip of the lens on the distal end of the laparoscope is not noticed. In such cases, do not use the laparoscope. Contact Olympus.

**Universal cord**

- Always attach the sterilization cap before sterilization.

**Bending section**

- The sterilization cap was not attached prior to sterilization.

**Light guide connector cap**

- An instrument such as a grasper or scissors may grasp or come into contact with the bending section and damage the cover sheath if stored/handled incorrectly.

**Light guide connector adapter**

- Do not stack the laparoscope and instruments during transport or washing. When carrying the scope by hand, wind the universal cord and use one hand to hold the cord and control section, and use the other hand to hold the video connector.

**WATER LEAKAGE TEST PROCEDURES**

After pre-cleaning, perform a leakage test on the laparoscope to ensure that it is waterproof. The leakage tester may be damaged. Stop the test immediately if there is no pressure inside the laparoscope. A slight increase in force is required to operate the angulation control lever.

**NO**

**YES**

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