Before operating an endoscope, it should be thoroughly inspected to avoid adverse effects caused by suction cylinder damage. Do not use a damaged endoscope.

The intention of this document is to reduce the cost of repair however; it is not a perfect solution and cannot prevent all circumstances that may damage an endoscope.

1 **Suction Cylinder Wear**

- Cleaning from direction “A” wears the switch side of the cylinder.
- Cleaning in the “B” direction will wear the insertion tube side of the cylinder.
- Suction cylinder wear is caused by friction or abrasion from the coil brush.

### Possible issues caused by suction cylinder wear

- Leaks
- Stomach or bowel cannot expand
- Suction performance reduced

2 **Preventative Action**

- Avoid coil brush contact with the cylinder when cleaning the endoscope.
- Use a cleaning aid for the suction cylinder (MAJ-1453, 3 per pack)
- Use a non-coil type cleaning brush (BW-201 series).  

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1 Please read the instruction manual and the pamphlet that was enclosed with the endoscope.

2 Contact Olympus for more details.

3 Contact Olympus if there are abnormalities found from the inspection.
Potential Damage Areas

Below are the primary inspection areas on the endoscope.

- **General**
  - EL Connector: Fluid invasion
  - Biopsy Channel: Pinhole (puncture, crack)
  - Insertion Tube: Pinhole, ruptured
  - Stopper End (Insertion Tube): Crushed, buckled

- **Fiberscope**
  - Scope Connector: Fluid invasion

- **Control Section**
  - Switch: Pinhole

- **Damage Analysis**
  *Damage indicated in blue lead to fluid invasion*

- **Investigated: Jun 2005 to Dec 2005**

<table>
<thead>
<tr>
<th>Damage Type</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chipped/ Cracked Cover Glass</td>
<td>8.1%</td>
</tr>
<tr>
<td>Fluid Invasion in CCD</td>
<td>6.5%</td>
</tr>
<tr>
<td>Dent/ Crack on Distal End Cap</td>
<td>6.2%</td>
</tr>
<tr>
<td>Water Leak in Control Body</td>
<td>4.7%</td>
</tr>
<tr>
<td>Other</td>
<td>53%</td>
</tr>
<tr>
<td>Water Leak on LG Mount Unit</td>
<td>4.6%</td>
</tr>
<tr>
<td>Chemical Damage on Bending Cover</td>
<td>13.3%</td>
</tr>
<tr>
<td>Damage on Connecting Tube</td>
<td>13.3%</td>
</tr>
<tr>
<td>Electrical Leak on C-body</td>
<td>9.7%</td>
</tr>
<tr>
<td>Pinhole on Bending Cover</td>
<td>12.2%</td>
</tr>
</tbody>
</table>

- **Distal End**
  - Nozzle: Clogged
  - Lens: Crack, scratch, residue

- **Distal End, Bending and Insertion Tube**
  - Crack, dent, swelling, sharp, scratch, metallic projectile, protrusion, deterioration, deformation, buckle, detached part

- **Control unit**
  - Large crack, deformation

- **Inspection Prior to Use**

  This section is an excerpt from the “Inspection of the endoscope” in the instruction manual. Before using an endoscope, inspection should not only include the endoscope but also the scope function, ancillary equipment, and the function as a system when the endoscope and the ancillary equipment are connected as instructed in the instruction manual.

  Do not use the endoscope that is suspect. Any malfunction or abnormality may compromise patient or user safety, and may also result in more severe equipment damage. It is strongly recommended that each part of the endoscope be inspected and in good working order before using an endoscope in a procedure.

- **General**
  - Scope Connector: Large crack, deformation
  - Bond at bending cover and insertion tube
  - Protector end: Crack, kink, swelling
  - Distal End, Bending and Insertion Tube

- **Distal End**
  - Nozzle: Bent, dented, deformation
  - Lens: Scratch, chip, residue

- **Repair & Maintenance Service**

  - Gently hold the insertion tube with one hand.
  - Carefully run the fingertips over the entire length of the insertion tube.
  - Verify that objects or metallic wires are not protruding and that the insertion tube is not abnormally stiff.

  - With both hands, bend the insertion tube.
  - Verify that the entire tube can be bent in a smooth arc and that the insertion tube is pliable.