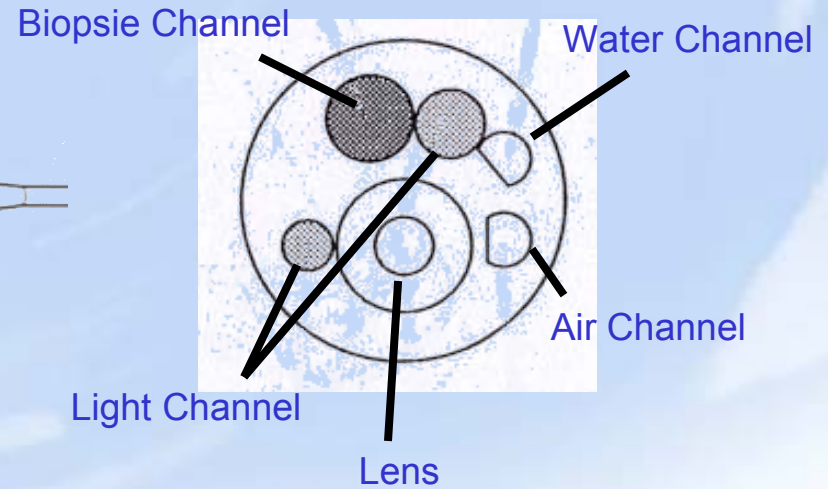
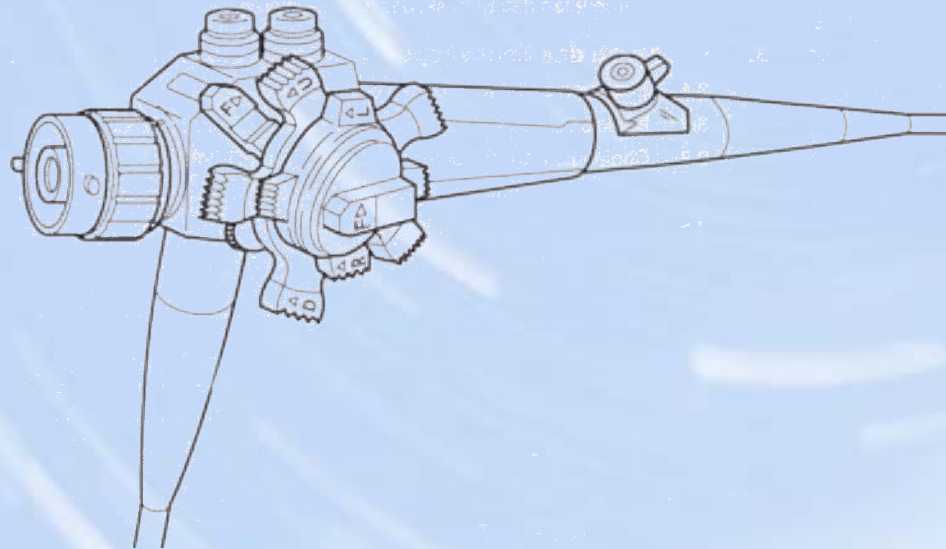




# How to remove all those Bugs after using an Endoscope

# Problems with Endoscopes



## Endoscopes

- penetrate body cavities which could have colonised microbial organisms
- can cause infections for both personal and patients
- are sensitive to temperature and mechanics
- channels are extremely difficult to clean

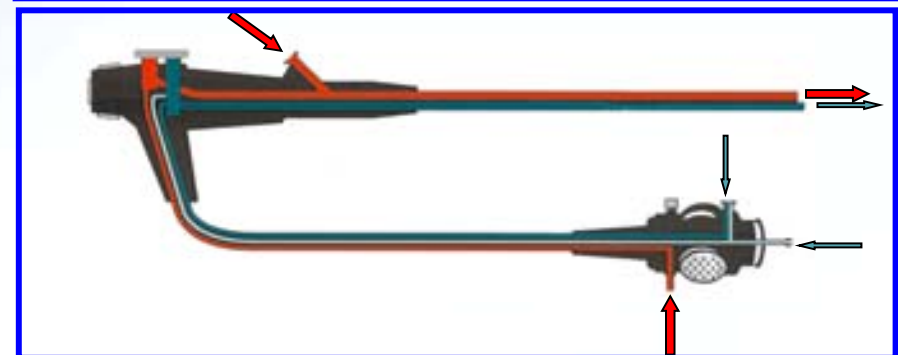
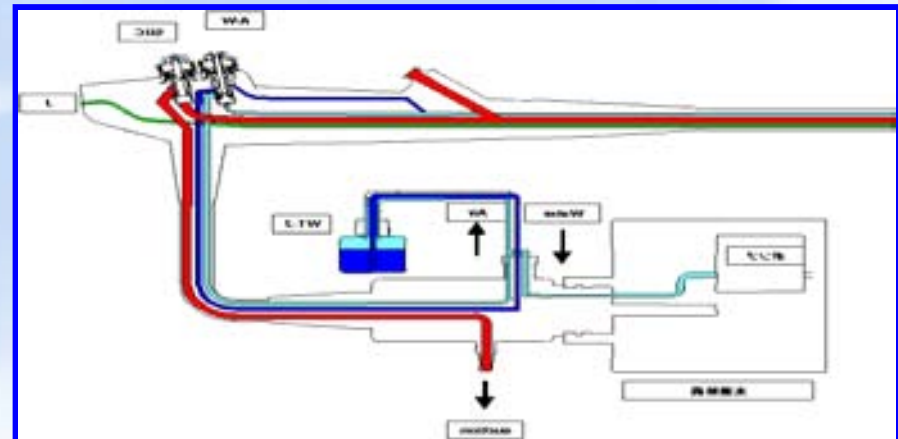
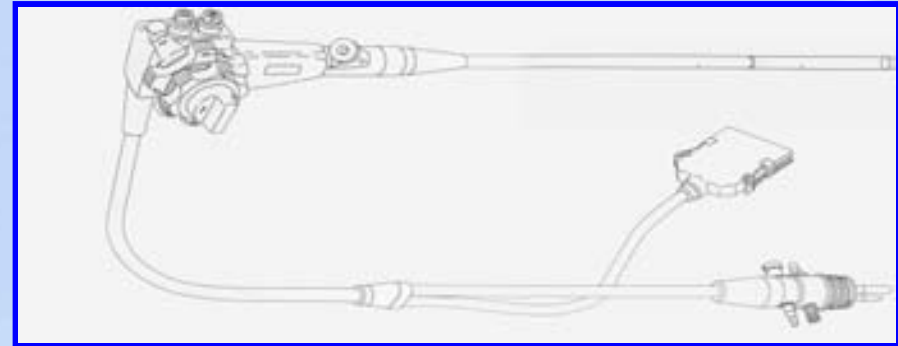
# Considerations

## Technical:

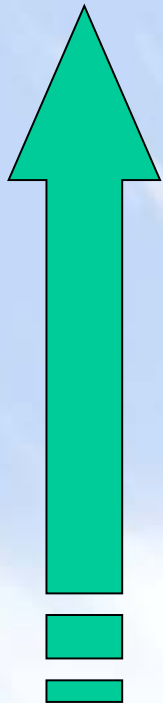
- Number of Channels
- Internal Deviations
- Different Sizes
- Different Connections

## Safety:

- Hazardous Chemicals
- Hazardous Microorganisms



# The Evolution of Channel Cleaning Systems



AER System	Characteristics
<p>Single Channel Adaptation with Channel Check (&lt;10% Blockage)</p>	<ul style="list-style-type: none"> <li>• <b>Individual Connections</b> to each Channel</li> <li>• When required with <b>Channel Separators</b></li> <li>• System accepts (“Go”) endoscope only, if check shows <b>restriction of flow below specified value</b></li> </ul>
<p>Single Channel Adaptation with Simple obstruction test (&gt;80% Blockage)</p>	<ul style="list-style-type: none"> <li>• <b>Individual connections</b> to each channel or group of channels</li> <li>• Most systems <b>without Channel Separation</b></li> <li>• System accepts (“Go”) endoscope even with <b>up to 80% blockage</b> of an endoscope channel</li> </ul>
<p>Single Channel Adaptation</p>	<ul style="list-style-type: none"> <li>• <b>Individual Connections</b> to each channel or group of channels</li> <li>• <b>No checking of restrictions</b></li> </ul>
<p>Pressure Box System</p>	<ul style="list-style-type: none"> <li>• No individual connection of channels</li> <li>• <b>No checking of restrictions</b></li> </ul>

# Manual Pre-Cleaning



Following the intervention, the outer surface of the endoscope is to be wiped with a lint-free cloth.

Most endoscope manufacturers recommend additionally that it is flushed with a pre-cleaning rinsing agent.



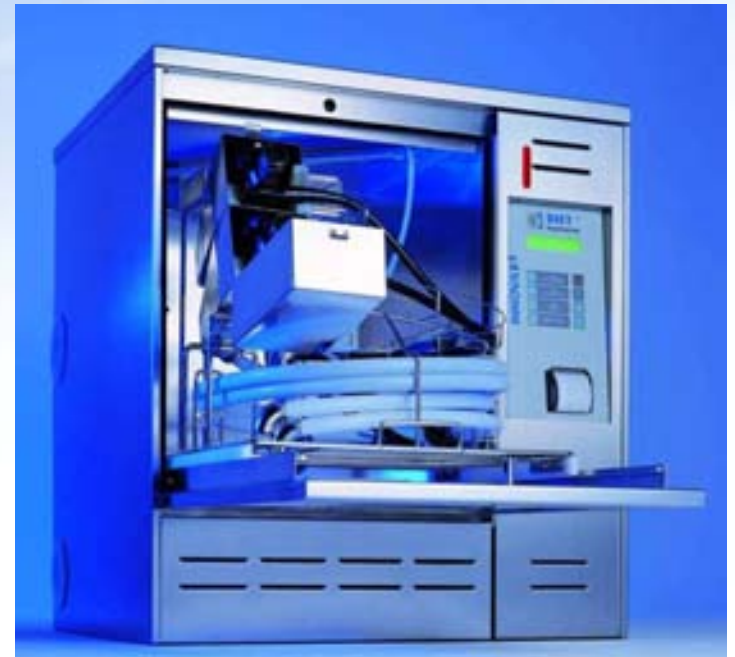
Then it should be transported in a special transport container to the reprocessing area.

# Fully Automatic Washer-Disinfectors for Flexible Endoscopes

## Process Steps:

- **Leak test**
- **Pre-rinse**
- **Cleaning** with chemical solution
- **Disinfection** with chemical solution
- **Final Rinse** with disinfected purified water
- **Drying**
- **Documentation**

# Automatic Endoscope Reprocessors - AER's With pressure box system



Presented by F. Kies / 2007 - sponsored by

# Reprocessing

After the pre-cleaning, the flexible endoscope is to be loaded into the automatic endoscope reprocessor for washing and disinfection.



**Photos show pressure box system**

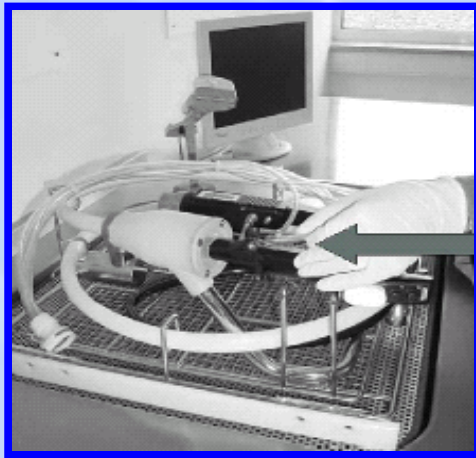


# Endoscope WDs / AERs with individual connections

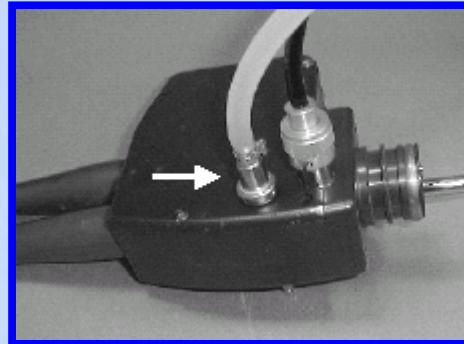


Presented by F. Kies / 2007 - sponsored by

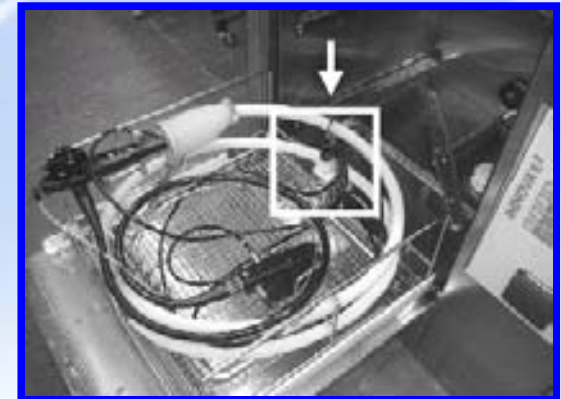
# Endoscope WDs / AERs with individual connections



**1. Place Endoscope in Load Carrier**



**2. Connect individually**



**3. Connect Multi-Connection Plug**



**4. Select and start processing program  
(either manually or using bar-code reader)**

# Documentation

Printer (Standard)  
Paper print-out of  
Charge Data

INNOVA E3

Datum: 30-10-97      Zeit: 14:30  
Maschinennummer: 000000134  
Programmnr.      1  
Chargenr.      113  
Lanzzeit:      25 min

Endoskop 1 Nr.      111111111  
Endoskop 2 Nr.      222222222  
Druckprüfung Endo 1      ok  
Druckprüfung Endo 2      ok

Pumpendruck      0,3 bar

Chemische Desinfektion

Temperatur:      55°C  
Haltezeit:      5 min.  
Dosierer      1  
Dosiermenge      150 ml.

Operator:.....



# Documentation

## Bar-code Reading (Option)

### Identification of Endoscopes



# Storage

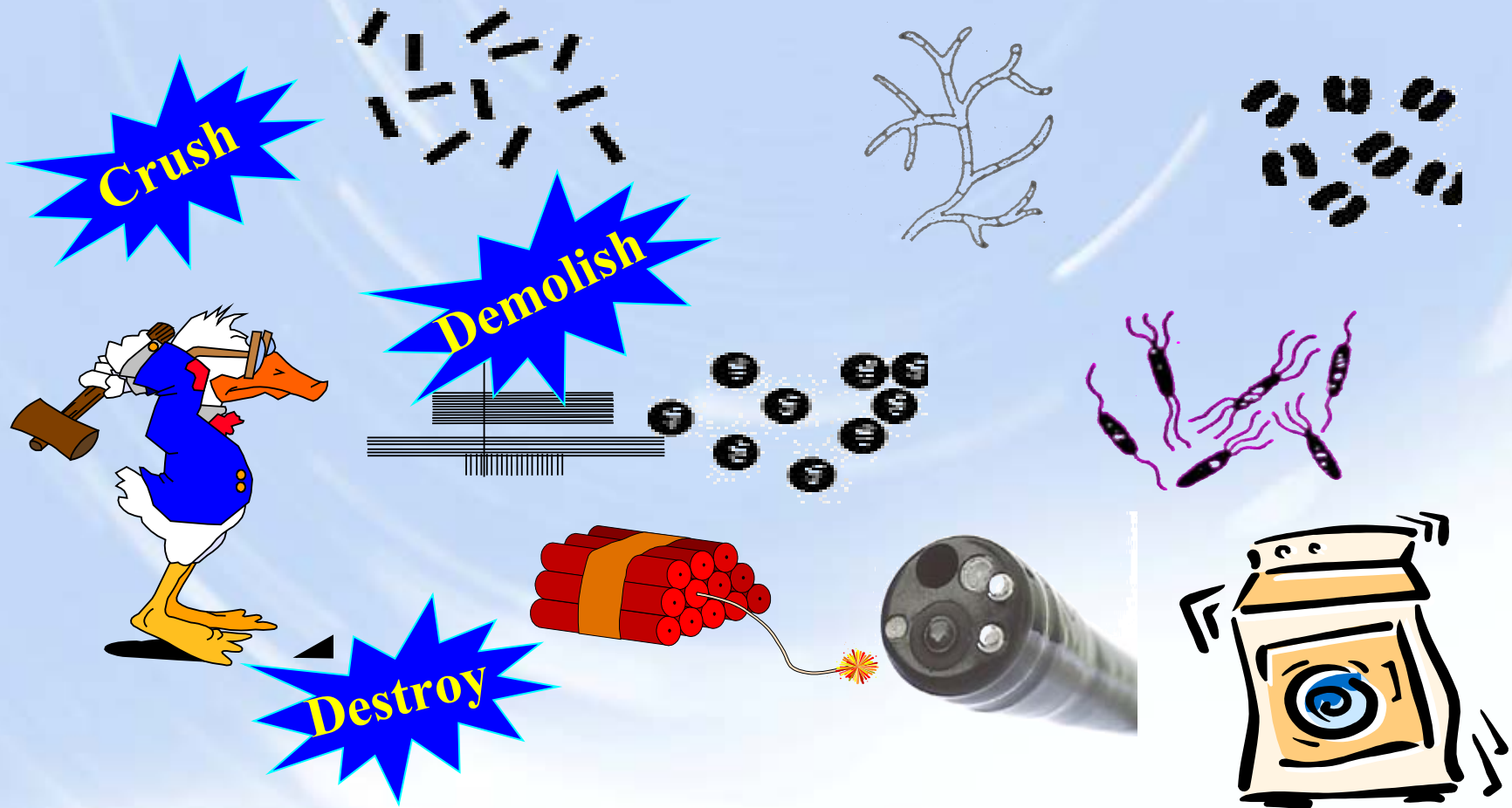
When the cycle is completed without any errors, the endoscope can be used for the next patient. If the endoscope is not directly re-used after the reprocessing, it should be stored in a special endoscope (drying) cabinet.

```
=====
BHT-E2 (V3.05c)
=====
19.12.03 / 13:45
Operating hours: 8
Batch number: 54
Ser. number: 1234567
Endo 1 E 108156
Test pressure: 200mb
Program-No.: 1 T
Chem.Disinf. 55 C
Holding time: 5min
Dosing No.: 3
Dosing amount: 10/L
Laufzeit: 48min

Program end

Operator: .....
```





**Thank you for your attention!  
Now let's get rid of those bugs . .**