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## **Functional Check vs Operational Check Task Selection Criteria**

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# Issue

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- Operational Check (OPC) and Functional Check (FNC) have apparent misalignment between their glossary definitions and the task selection table criteria.
- Same task could be defined as a FNC for one WG and as an OPC for another WG despite the failure cause and procedural steps being identical.
  - This is due to different interpretations of the same language.
- Resolving the issue will require less vague language or a re-evaluation of how to define a FNC and an OPC.

# Definitions

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- Glossary

- Operational Check
  - An operational check is a task to determine that an item is fulfilling its intended purpose. Does not require quantitative tolerances. This is a failure finding task.
- Functional Check
  - A quantitative check to determine if one or more functions of an item performs within specified limits.

- Applicability Criteria

- Operational Check
    - Confirmation that an item is fulfilling its intended purpose must be possible
    - Note: not applicable for an evident failure.
  - Functional Check
    - Reduced resistance to failure must be detectable and there exists a reasonably consistent interval between a deterioration condition and functional failure.
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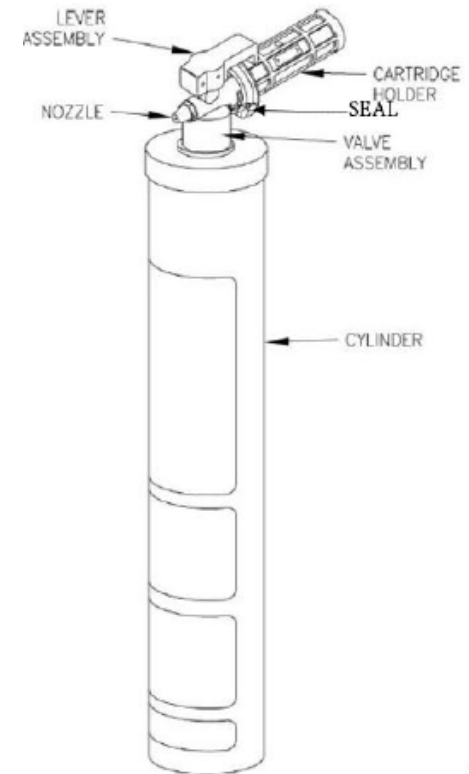
# Quantitative Tolerances

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- Glossary refers to quantitative assessments which are not present in the applicability criteria. This is the main disconnect that leads to different interpretations.
  - Functional Check is clear – a quantitative tolerance is needed to be defined as a Functional Check.
  - Operational Check is less clear
- Does “Does not require quantitative tolerances” mean:
  - No measurements allowed, i.e., if a measurement is needed it cannot be defined as an Operational Check
  - A measurement is not *required* but can be used if needed.

# Example

- Portable Water Fire Extinguisher
  - Pressurized by piercing a disposable CO2 cartridge when needed.
  - Puncture/leak (and subsequent release of CO2) of cartridge will lead to functional failure of being unable to pressurize and then use the fire extinguisher when required.
  - Any leak will rapidly deplete the entire cartridge. No gradual depressurization
  - CO2 cartridge is lightweight (<100g) and failure (empty cartridge) is detected by weighing.



# Which is it?

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- Functional Check
  - Measurement is required to detect failure.
- Operational Check
  - This is a failure finding task.
  - Reduced resistance to failure is not detectable (period of time between start of leak and depletion is effectively instantaneous)
- If measurement is disallowed as part of an Operational Check and failure finding cannot be part of a Functional Check, this task effectively cannot be classified.

# Related Questions

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- Does Operational Check mean the component/system has to be used as you would in-service? If yes:
  - CO2 cartridge weight check would not be applicable – only using the Fire Extinguisher as designed would, which is not applicable as it is a destructive task.
- Does Operational Check need to be performed in-situ?
  - Removing a valve to verify flappers move then re-installing.
  - Tasks requiring component to be sent to the shop/supplier.

# Possible Solutions

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- Functional Check
  - Modify definition to allow failure finding.
- Operational Check
  - Modify definition to allow measurements if necessary.



# Thoughts?

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