



MS50 UFT

Timers:

Four (4) timers (Rough Abort, Gross Test, Gross Leak and Fine Test) will control the UFT test cycle. All timers will be programmed through the MS-50 software, as part of the Test Recipes. When the system is set for UFT operation, the Test Recipe and Settings screens will have an additional display area at the bottom of the screen containing the four timers. All UFT timer settings will be specific for each Test Recipe; fifty different sets of UFT timer settings may be stored, tied to the fifty Test Recipes.

Rough Abort Timer: determines the time allowed from the start of a test and the opening of the rough valve (lid closed) until the start of a test mode (Gross or Fine). This timer provides protection against operating with an improperly sealed test cup. The timer is adjustable from 0.1 to 999.9 seconds, in 0.1 second increments.

If the Rough Open timer expires the test will be terminated and a Process Fault will be posted.

Gross Test Timer: determines the maximum duration of Gross Leak testing if the MS-50 is set for Gross Screening enabled or is set for Manual Ranging in a gross leak range. Gross Testing may be stopped earlier by the Gross Reject Timer (see below). The timer is adjustable from 0.1 to 999.9 seconds, in 0.1 second increments, but must always be set to a value longer than the Gross Reject Timer.

If the Gross Test timer expires the test will be terminated and either a Process Fault or an Accept will be posted, depending upon the circumstance, as outlined below:

<u>MS-50 State when gross test Timer Expires</u>	<u>Posted Result</u>
Gross Testing, on range >Reject range	Process Fault

Gross Testing, on range. Reject range, leak rate Reject Point	Process Fault
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(Gross reject can only be posted by expiration of Gross Reject Timer)

Gross Testing, on range Reject range, leak rate < Reject Point for two (2) secs	Accept
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Gross Reject Timer: The Gross Test timer protects the system from aborting a test as a result of a false reject signal caused by background helium which may be present at the start of a test. The Gross Test timer requires that the leak rate must be greater than the Reject Point for duration of the timer before the UFT system will consider it to be a valid Reject. This allows time for any background which may be causing a false reject to be pumped away before a Reject decision is made. The Gross Reject Timer is adjustable from 0.1 to 999.9 seconds in 0.1 second increments.

The Gross Reject Timer is started whenever the leak detector is in the Gross Test Mode and the leak rate exceeds the Reject Point. If the leak rate drops below the Reject Point, the timer will be reset.

If the leak rate stays above the Reject Point for the duration of the timer, the UFT will consider this to be a valid Reject. The test cycle will be terminated and a Reject signal will be posted.

Fine Test Timer: The Fine Test Timer determines how long the will test in the Fine Test mode (Reverse or Direct flow). At the end of the preset Fine Test time, the UFT will terminate the test and determine if there is a valid Accept or a eject. If there is no valid result, a Process Fault indication will be posted.

The Accept/Reject/Process Fault decision will be made as follows:

<u>Condition</u>	<u>Indication</u>
a.) MS-50 is on range as Reject range and Leak Rate < Reject Point for 2 secs	Accept
b.) Leak Rate > Reject Point for 2 secs	Reject
c.) Neither (a.) nor (b.)	Process Fault

The Fine Test timer may be set from 0.1 to 999.9 seconds in increments of 0.1 seconds. The Fine Test timer should be set long enough to avoid Fault indications, keeping in mind that increasing this timer will lengthen the overall test cycle time.

Indicators

Three (3) test result indicators are used in the MS-50 UFT operation: Accept, Reject and Process Fault. The indicators are on screen, in the normal Accept/Reject location. The additional indicator, Process Fault, will have the same general appearance as the Accept and Reject indicators, but will have a yellow background.

During the test cycle, no Accept or Reject indication will be shown. The appropriate indication will be posted at the end of the test cycle, and will remain illuminated until the start of the next test cycle.

Accept: The Accept indicator (green) is posted if:

The test is terminated during Gross Testing by the expiration of the Gross Test Timer while the MS-50 is on range the Reject range, and the leak rate < Reject Point for two (2) seconds

The test cycle is terminated by the expiration of the Fine Test Timer while the MS-50 is on range. Reject range and the leak rate < Reject Point for two (2) seconds).

Reject: The Reject indicator (red) is posted if:

The test cycle is terminated by the Gross Reject Timer. (The leak detector is in the Gross test mode and a leak greater than or equal to the Reject Point lasts for the duration of the Gross Reject Timer.)

The test cycle is terminated by the expiration of the Fine Test Timer and the leak rate. Reject Point for two (2) seconds.

Process Fault: The Process Fault indicator (yellow) is posted if:

The test cycle is terminated by the Rough Abort Timer.

The test cycle is terminated by the Gross Test Timer and has not met the Accept criteria (on range. Reject range and leak rate < Reject point for two (2) seconds).

Note: A valid Gross Reject may only be obtained through the expiration of the Gross Reject Timer.

The test cycle is terminated by the expiration of the Fine Test Timer and, at the end of the cycle, no valid Accept or Reject conditions exist. This can occur if the leak rate is near the Reject Point and changing such that it has not been either above or below the Reject Point for two (2) seconds.