



Cleaning Parameters for Accretech/TSK Probers APM-90, UF-200, and UF-300

1. Purpose/Scope:

The purpose of this document is to define the parameters for using the International Test Solutions' cleaning products on the APM-90, UF-200, and UF-300 Probers. The parameters set forth in this document should be used as guidelines only for establishing basic cleaning routines for "on-line" cleaning methods. Some parameters are specific to prober software version, prober model, and user requirements (*Application Specific* and *Customer Variables*) and should be set based on user intent for optimal performance of cleaning regiments. User parameters may vary with contact surface material (pad), probe tip shape and / or material and may also affect the frequency of cleaning. Misuse of cleaning parameters could potentially cause damage to probe card and/or prober. Please consult appropriate Accretech UF-Prober documentation for parameter functional details.

2. Nomenclature:

- Accretech / TSK: Tokyo Seimitsu Co., Ltd.
- ITS: International Test Solutions, Inc.
- Touchdowns: Iterations of probe tips contacting a surface (pad or cleaning material)
- Cleaning Unit: Cleaning stage onto with the abrasion plate is installed.

3. Materials:

- ITS cleaning product package types
 - i. Wafer (6 inch / 150mm, 8 inch / 200mm, or 12 inch / 300mm)
 - ii. Cleaning unit platen
 - iii. Probe Clean™
 - iv. Probe Polish™
 - v. Probe Scrub™
 - vi. Probe Lap™

4. Probe Cleaning Parameters:

For detailed information on Accretech cleaning parameters, please reference the appropriate documentation in the "USER'S MANUAL ON CONTROL PARAMETERS".

IMPORTANT: Cleaning parameters should be optimized for each particular probe application. In order to minimize the possibility of probe damage due to misapplication of cleaning parameters/options, extra care should be taken to ensure a full understanding of all cleaning parameters. Accretech and ITS Applications Personnel will be able to assist in creation of optimal parameter setup solutions for your given application.

Cleaning parameters are custom to specific probe types and customer configuration requirements. Therefore available options/parameters will vary from customer to customer based mostly on prober

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customer specific software. The following examples are basic so please reference specific documentation concerning each parameter for more details.

This document provides **basic** setup guidelines only and not every parameter and setting will be discussed (for specific information please refer to Accretech documentation or contact an Accretech Applications Engineer).

5. Basic Cleaning Parameters:

a. NEEDLE CLEANING MENU.

NOTE: The prober will automatically clean the probe tips with either the “cleaning unit” or the “cleaning wafer” using the parameters entered on the NEEDLE CLEANING SETTING screen.

- Touch START for MAIN MENU.
- Touch OPERATION SETTINGS button from MAIN MENU.
- Touch PROBER MODE SETTINGS.
- Touch NEXT PAGE TWICE to access page 3/6.
- Touch NEEDLE CLEANING SETTINGS.
- Touch SELECTION OF NEEDLE CLEANING.
 - Touch UNIT ONLY to use the cleaning disc (or abrasion plate).
 - Touch WAFER ONLY to use the cleaning wafer.
 - Touch SETTING END.
- Touch UNIT NEEDLE CLEANING SETTINGS.
- Touch PERFORM NEEDLE CLEANING menu bar.
 - Enter 1 from Keypad to enable cleaning parameters.
- Touch ENT to enable the cleaning routines.

b. On-line Cleaning with the Cleaning Unit (abrasion plate)

- SELECTION OF NEEDLE CLEANING
- Touch UNIT ONLY
- Touch END SETTING
- On UNIT NEEDLE CLEANING SETTINGS
 - Perform Unit Needle Cleaning: 1
 - Needle Cleaning at Contact Height: 0
 - Needle Cleaning Count at Contact Height (1-99): 0
 - Amount of Chuck Movement on X-Axis When Needle Cleaning at Contact Height: Customer Variable
 - Amount of Chuck Movement on Y-Axis When Needle Cleaning at Contact Height: Customer Variable
- On UNIT NEEDLE CLEANING SETTINGS
 - Cleaning Unit Height (um): Use specified value on cleaning material
 - Die Interval for Cleaning (0-9999): Customer Variable
 - Wafer Interval for Cleaning (0-9999): Customer Variable
 - Perform Cleaning Action After first Wafer Probing: Customer Variable
 - Cleaning Contact Interval (0-9999): Customer Variable

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Accretech/TSK Probers

Product Installation

- On UNIT NEEDLE CLEANING SETTINGS
 - Perform Needle Cleaning at Lot End: *Customer Variable*
 - Cleaning Overdrive: *100 μm (Confirm with probe card vendor).*
 - # Touchdowns Per Clean: *Customer Variable*
 - Shift Between Touchdowns: *2X probe diameter*
 - Cleaning Touchdown Limit (Cleaning Limit): *Customer Variable*
- On UNIT NEEDLE CLEANING SETTINGS
 - Perform Unit Needle Cleaning before First Contact of Lot: *Customer Variable*
- Touch DATA STORE/RESTORE button.
- Touch DATA STORE bar.
- Touch EXECUTE button twice.
- Touch EXIT button.
- Touch SETTING END.
- Touch SETTING END.
- Touch ENT to return to MAIN MENU
- Touch CLEANING UNIT CHANGE
- Touch CHANGE START
 - Remove the cleaning unit platen.

CAUTION: Latex gloves should be used at all time when handling the cleaning polymer materials. Polymer working surface contamination due to fingerprints and exposure to unapproved materials and chemicals will void the warranty.

- Remove back cover of ITS Material to expose adhesive.
- Place the ITS Material on abrasion plate and press it into place.
- Ensure the top surface is smooth and all air pockets are removed.
- Use a piece of tape to touch the edge of the front protective cover.
- Peel the front protective cover from the sample.
- Store the protective cover for later installation on the sample, if required.
- Replace the cleaning unit chuck.
- Touch END CHANGE

c. On-line Cleaning with the Cleaning Wafer

- SELECTION OF NEEDLE CLEANING
- Touch WAFER ONLY
- Touch END SETTING
- On UNIT NEEDLE CLEANING SETTINGS
 - Perform Unit Needle Cleaning: *1*
 - Needle Cleaning at Contact Height: *0*
 - Needle Cleaning Count at Contact Height (1-99): *0*
 - Amount of Chuck Movement on X-Axis When Needle Cleaning at Contact Height: *Customer Variable*
 - Amount of Chuck Movement on Y-Axis When Needle Cleaning at Contact Height: *Customer Variable*
 - Perform Needle Cleaning: *1*
 - Needle Cleaning at Contact Height: *0*

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Product Installation

- Cleaning Unit: *1 (wafer)*
 - Cleaning Wafer Size: *6, 8, or 12 inch*
 - Cleaning Wafer Thickness: *If needed, use value on wafer (note - the prober profiles the wafer surface during prealign).*

 - Perform Contact Count Wafer Cleaning: *1 (store TD's)*
 - Use Data for Cleaning WF Flat/Notch Dir.: *Customer Variable*
 - Cleaning Wafer Flat/Notch Setting: *0 (Flat) 1 (Notch)*
 - Wafer Interval for Cleaning: *Customer Variable*
 - Cleaning Overdrive: *100 μm (Confirm with probe card vendor).*

 - Touchdowns Per Cleaning: *Customer Variable*
 - Shift Between Touchdowns: *Customer Variable (typically 2x probe width)*

 - Cleaning Touchdown Limit: *Customer Variable*
 - Recovery at Cleaning Limit Over: *1*
 - Cleaning area margin from wafer edge: *3mm*
 - Usage cleaning wafer thickness: *1 measure thickness*
 - Remeasure Z height before needle cleaning: *Customer Variable (recommended)*
- Touch DATA STORE/RESTORE button.
 - Touch DATA STORE bar.
 - Touch EXECUTE button twice.
 - Touch EXIT button.
 - Touch SETTING END.
 - Touch SETTING END.
 - Touch ENT to return to MAIN MENU
 - Remove the cleaning wafer from the container and place the wafer in the prober inspection tray.

CAUTION: Latex gloves should be used at all time when handling the cleaning polymer materials. Polymer working surface contamination due to fingerprints and exposure to unapproved materials and chemicals will void the warranty.

- Press the yellow NEW CST button to activate elevator.
 - Touch UTILITY menu
 - Touch WAFER HANDLING.
 - Select INSPECTION TRAY to FIXED TRAY as a CLEANING WAFER.
 - Touch ENT
 - Touch TRANSFER START and allow the prober to transfer wafer.
 - Touch EXIT to return to UTILITY menu
- Touch EXIT to return to MAIN menu.

For questions regarding the prober operation and specific cleaning operational settings, contact your local **Accretech/TSK** customer support representative.

For questions regarding the cleaning material, contact **International Test Solutions** at 775-284-9220, or via email at techsupport@inttest.net, to discuss your specific probe card cleaning application and requirements.

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