**Abstract**- This procedure is for acid etching any of C-50 five cell pair components. It assumes that all indium has been removed from the flanges and the flanges have been de-greased.

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| **Document #**  C50-CPR-CHEM-SUBC | **Revision:**  R1-0 | **Date Released:**  2/14/06 | **Technical Custodian:**  R. Afanador |

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| **Step No.** | **Instructions** | **Data Input** |
|  | Procedure used for training or production? | [[Procedure Use]] {{Training,  Production}} <<Radio>> |
|  | Operators login : | [[Cavity Pair Label]] <<Text>> [[Operator1]] <<CavUsers>> [[Operator2]] <<CavUsers>>  [[BeginDate]] <<Timestamp>> |
| 1 | **BCP of inner adapter, elbows and top hats after being mechanically polished** |  |
| 2 | After inner adapter, elbows and top hats have been degreased and rinsed; blow off with nitrogen gun to dry components. Place components in HDPE baskets, put only one  component per basket to prevent any chance of damaging seal surfaces |  |
| 3 | Measure etch rate of BCP, if less then 3 microns per min replace acid. Keep acid temp  under 30 C, record etch rate | [[Etch rate]] <<Float>>  [[Completed]] <<CavUsers>> |
| 4 | Rinse out one 5 gallon HDPE container, and fill with enough BCP to cover  components that are going to be etched. |  |
| 5 | Rinse out 3 more containers and fill with DI water for rinsing. |  |

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| **Step**  **No.** | **Instructions** | **Data Input** |
| 6 | Place basket and component into container containing BCP for 2 minutes, component  should be completely covered with BCP |  |
| 7 | Slowly agitate component in BCP for entire 2 minutes. |  |
| 8 | After 2 minutes remove component from BCP and place into1st container of DI water.  Agitate component in DI water. Repeat step in 2nd and 3rd container |  |
| 9 | Remove component from last container and use DI hose to rinse component |  |
| 10 | Take component from acid side of flow hood and move to rinsing side and let  component soak in clean DI water for 5 minutes |  |
| 11 | Place components into filled 13 qt. container of DI water, if more than one component is cleaned, make sure sealing surfaces do not come in contact with any hard surface.  Place lid on container. Label container, containing information on cavity # and that container has DI water in it. |  |
| 12 | Place sealed container in Pass through. | [[Completed]] <<CavUser>> [[Timestamp12]]  <<Timestamp>> [[Comment]] <<Comment>> |

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| **Step**  **No.** | **Instructions** | **Data Input** |
| 13 | **BCP of inner adapter, elbows and top hats that have not been mechanically**  **polished** |  |
| 14 | After inner adapter, elbows and top hats have been degreased and rinsed, blow off with nitrogen gun to dry components. Place components in HDPE baskets, put only one  component in each basket to prevent any chance of damaging seal surfaces |  |
| 15 | Take etch rate of BCP, if less then 3 microns per min replace acid. Keep acid temp  under 30 C. Record etch rate | [[Etch Rate]] <<Float>>  [[Completed]] <<CavUsers >> |
| 16 | Rinse out one 5 gallon HDPE container, and fill with enough BCP to cover  components that are going to get dipped |  |
| 17 | Rinse out 3 more containers and fill with DI water. |  |

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| **Step**  **No.** | **Instructions** | **Data Input** |
| 18 | Place basket and component into container containing BCP for 1 minute, component  should be completely covered with BCP. |  |
| 19 | Slowly agitate component in BCP for entire 1 minute. |  |
| 20 | After 1 minute remove component from BCP and place into1st container of DI water.  Agitate component in DI water. Repeat step in 2nd and 3rd container. |  |
| 21 | Remove component from last container and use DI hose to rinse component. |  |
| 22 | Take component from acid side of flow hood and move to rinsing side and let  component soak in clean DI water for 5 minutes. |  |
| 23 | Place components into filled 13 qt. container of DI water, if more than one component, make sure sealing surfaces does not come in contact with any hard surface. Place lid on container. Label container, containing information on cavity # and that container has  DI water in it. |  |
| 24 | Place sealed container in Pass through | [[Completed]] <<CavUser>> [[Timestamp24]]  <<Timestamp>> [[Comment]] <<Comment>> |

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| **Step**  **No.** | **Instructions** | **Data Input** |
| 25 | **Etching of Top Hat Adapter Tee** |  |
| 26 | After top hat adapter tee has been degreased and rinsed, blow off with nitrogen gun to  dry. |  |
| 27 | Rinse out one small HDPE container, Stand the Top hat adapter tee vertically on the indium seal flange in the container, and fill with enough Stainless Steel Etch to cover  only the indium seal flange. Leave the Tee in the Acid for ten minutes. |  |
| 28 | Rinse out 3 more containers and fill with DI water. |  |
| 29 | After 10 minutes remove component from Stainless Steel Etch and place into1st  container of DI water. Agitate component in DI water. Repeat step in 2nd and 3rd container. |  |
| 30 | Remove component from last container and use DI hose to rinse component. |  |
| 31 | Take component from acid side of flow hood and move to rinsing side and let  component soak in clean DI water for 5 minutes. |  |
| 32 | Place components into small filled container of DI water, if more than one component, make sure sealing surfaces do not come in contact with any hard surface. Place lid on  container. Label container, containing information on cavity # and that container has DI water in it. |  |
| 33 | Place sealed container in Pass through | [[Completed]] <<CavUser>> [[Timestamp33]]  <<Timestamp>> [[Comment]] <<Comment>> |

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| **Step**  **No.** | **Instructions** | **Data Input** |
| 34 | **Etching of End Dish** |  |
| 35 | After end dish has been degreased and rinsed, blow off with nitrogen gun to dry. |  |
| 36 | Invert the end dish on a small container in the acid flow hood and place it so that the  indium sealing surface is facing up and the sealing surface is level. |  |
| 37 | Plug the beam line opening with a Teflon wrapped rubber stopper. |  |
| 38 | Carefully fill the recessed sealing surface area with Stainless Steel Etch making sure  not to allow the Stainless Steel Etch to flow through the bolt holes or onto the bellows. |  |
| 39 | Allow the Stainless Steel Etch to soak on the sealing surface for 10 minutes. |  |
| 40 | Rinse out 3 more containers and fill with DI water. |  |
| 41 | After ten minutes of etching time, carefully remove the cork allowing the acid to drain  into the container. Place the end dish into1st container of DI water. Agitate component in DI water. Repeat step in 2nd and 3rd container. |  |
| 42 | Remove component from last container and use DI hose to rinse component. |  |
| 43 | Take component from acid side of flow hood and move to rinsing side and let  component soak in clean DI water for 5 minutes. |  |
| 44 | Remove the end dish from the DI water and blow it dry with ionized nitrogen. |  |
| 45 | Bag the dried end dish and place it in the pass through. | [[Completed]] <<CavUser>> [[Timestamp45]]  <<Timestamp>> [[Comment]] <<Comment>> |