

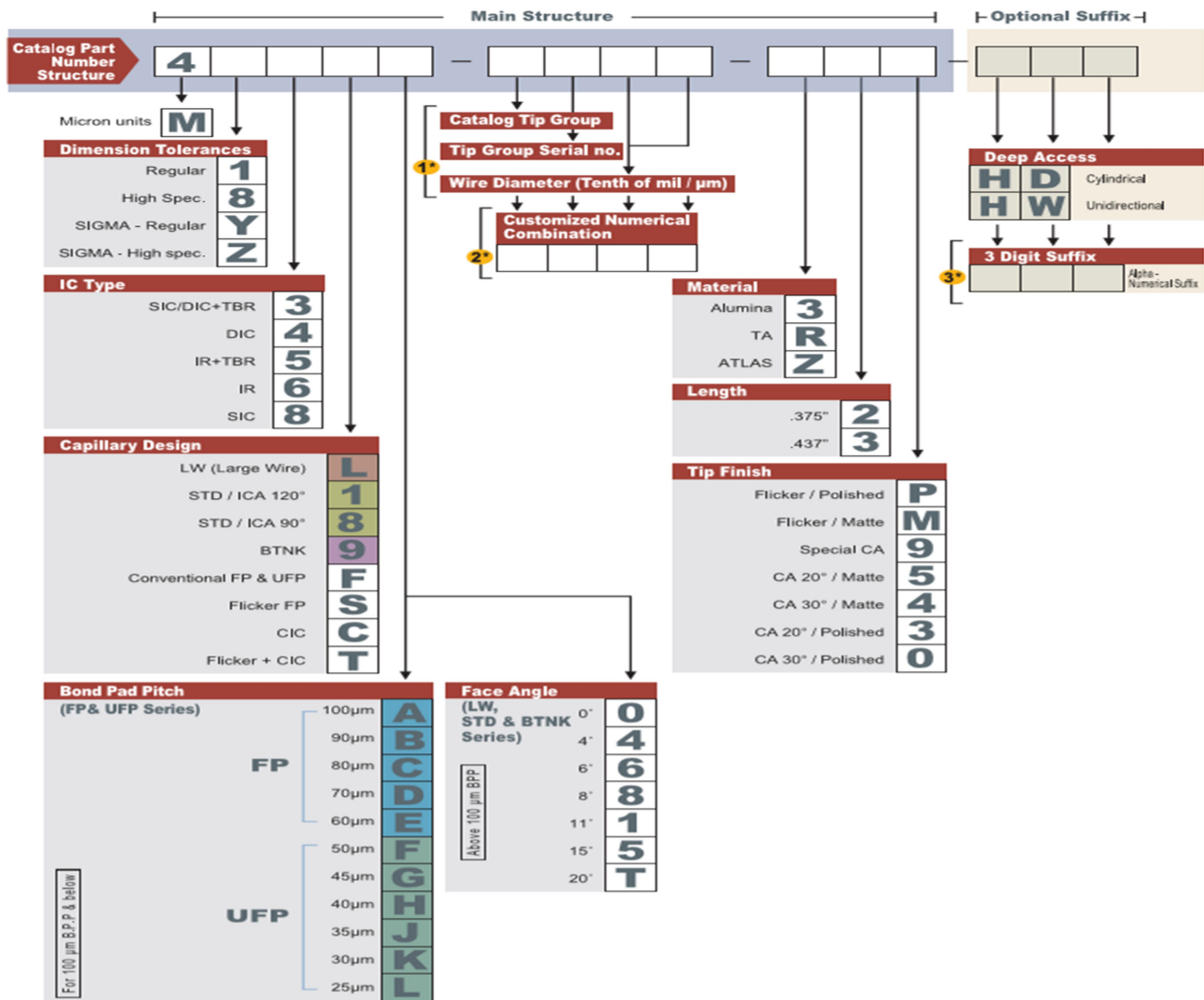
- SCOPE: Explanation of common features and selection criteria for ball bond capillaries from Kulicke & Soffa, along with the key selection criteria to consider when choosing capillaries.

Capillary selection is key to a successful and stable ball bonding process. Capillaries are high precision manufactured, with attributes specific to the wire diameter in use and bonding process parameters.

Capillaries are manufactured from two main materials:

- Toughened Alumina
- ATLAS (very high mechanical strength Alumina)

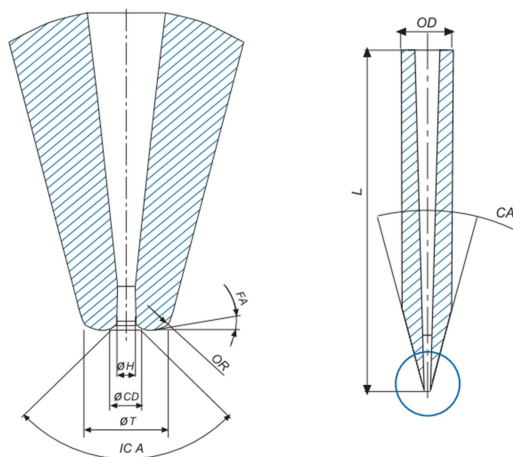
The figure below describes the K&S capillary nomenclature:



There are many factors to consider when selecting the correct capillary. The figure below will show you some of the other considerations that need to be taken into account:

Capillary Dimensions:

FA	- Face Angle
OR	- Outer Radius
H	- Hole Diameter
CD	- Chamfer Diameter
T	- Tip Diameter
ICA	- Inner Chamfer Angle
OD	- Outer Diameter
CA	- Cone Angle
L	- Length



Hole Diameter (H):

This contributes to bond placement accuracy and wire clearance during looping.

Length (L)

This contributes to the need for deeper access in products.

Outer Radius & Face Angle (OR & FA)

This contributes to the formation and finish of the 2nd bond (stitch).

Inner Chamfer Angle (ICA)

This contributes to the housing and formation of the F.A.B (Free Air Ball).

For further information on K&S ball bonding capillaries:

<https://www.inseto.co.uk/consumables/bonding-capillaries-and-hubbed-dicing-blades-by-kulicke-and-soffa/ball-bonding-and-bumping-capillaries/>