



SIMPLESTAKE

Impulse Staking Design







SimpleStake is a revolutionary form of heat staking that utilizes impulse welding technology to achieve clean and repeatable welds



Heat - The tip is heated to 400F in less than two seconds. The controller pulses power at the interface of the boss and the tip which allows for a highly controlled “top-down” weld



Cool - The formed boss is cooled under pressure to ensure a tight mechanical bond – this step prevents elastic recovery since the boss is cool before release

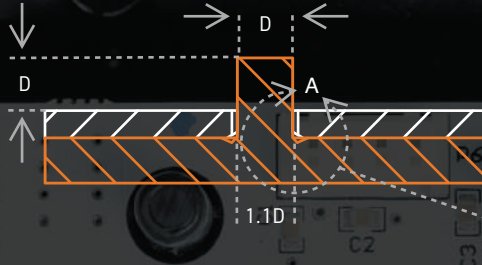


Release - A quick flash of heat excites the surface of the boss and allows the tip to cleanly release from the plastic. This step prevents stringing





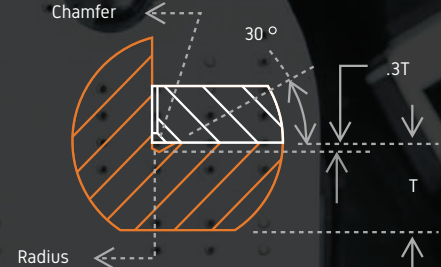
Solid Round Boss Design



- The recommended clearance hole diameter is 1.1D (1.25D is the maximum diameter)
- The maximum recommended boss height above the mating surface is 1.5D

- Add radius and chamfer to prevent A-surface sink and improve stake strength
- Simple Stake works well with most plastic materials that are 30% glass fill or below. Simple Stake tips can weld clear, painted, and metalized bosses

Detail Section A



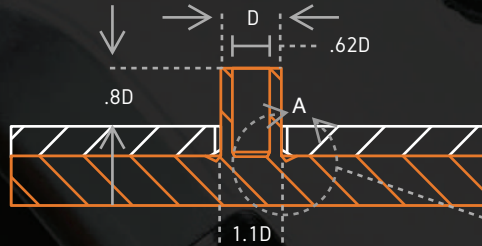
TIP SIZE	MINIMUM DIAMETER	MAXIMUM DIAMETER	MAX THROUGH HOLE SIZE
Small	1mm (0.039")	3mm (0.118")	3.75mm (0.147")
Large	3mm (0.118")	6mm (0.236")	7.5mm (0.295")
Custom	For anything below/above, min/max please call 614-539-3222 for application review		

PC6035009
Stop(SAE)

13300 Rev D



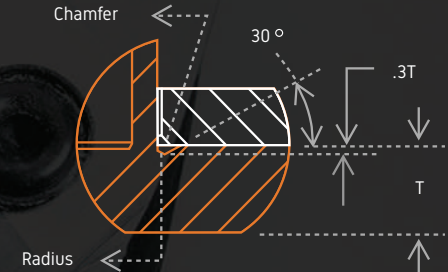
Hollow Round Boss Design



- The recommended clearance hole diameter is 1.1D (1.25D is the maximum diameter)
- The maximum recommended boss height above the mating surface is 1.5D

- Add radius and chamfer to prevent A-surface sink and improve stake strength
- Simple Stake works well with most plastic materials that are 30% glass fill or below. Simple Stake tips can weld clear, painted, and metalized bosses

Detail Section A A

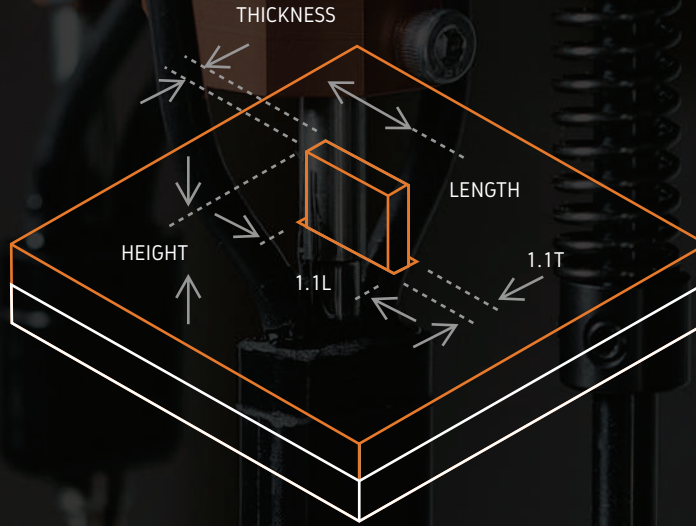


TIP SIZE	MINIMUM DIAMETER	MAXIMUM DIAMETER	MAX THROUGH HOLE SIZE
Small	2mm (0.079")	5mm (0.197")	6.25mm (0.246")
Large	5mm (0.197")	8mm (0.315")	10mm (0.394")
Custom	For anything below/above, min/max please call 614-539-3222 for application review		





Blade Style Boss Design



Please consult our
Process Development Center
for further guidance on
rectangular boss geometries

TIP SIZE	MAXIMUM HEIGHT	MAXIMUM THICKNESS	MAXIMUM LENGTH
Small	5mm (0.197")	2.5mm (0.10")	5mm (0.197")
Large	10mm (0.394")	4mm (0.157")	10mm (0.394")
Custom	For anything below/above, min/max please call 614-539-3222 for application review		

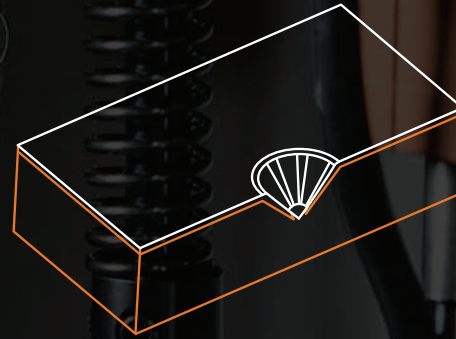




Film Staking

Attaching thin polycarbonate films
to all types of plastic housings

*Consult with us for a free application review



The first in the world to implement this technology



1 A specially designed tip pierces the polycarbonate film, creating a pinhole

2 The tip melts the housing material which flows up through the pinhole and onto the film

3 Displaced housing material is cooled along with film, creating a semi-homogenous/mechanical bond

4 Even without a boss, SimpleStake can create long lasting bonds using precise control



SIMPLESTAKE

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