

The tolerance-compensating Variable Force Injector/Ejector provides evenly distributed injection/ejection forces in order to ensure uniform mating of a module's critical connection points to its backplane, while simultaneously protecting connector pins and backplane receptacles from over-insertion.

**OPTIMIZED FOR VITA
48.2, 48.4, 48.5, AND 78.0**



US PATENT 10,396,497



MAX INSERTION FORCE

150 lbs

FEATURES

Variable Force Injection
Locking Latch
Universal Mounting
Full Travel Ejection
Vita 78.0 Compliant
Ergonomic Design
3D Models Available

MATERIAL

Body, Cam, Pawl, Catch
Aluminum AL7075-T7351

Teflon Impregnated Hard Coat Anodize
AMS 2482, Type 1

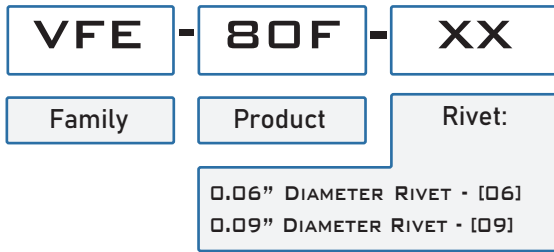
.090" Rivets, Coil Spring
SS300 Series, Passivated

.060" Rivets
SS17-4 Series H900, Passivated

Leaf Spring
SS17-7 Series HT1050, Passivated

OpenCOTS™

PART NUMBER



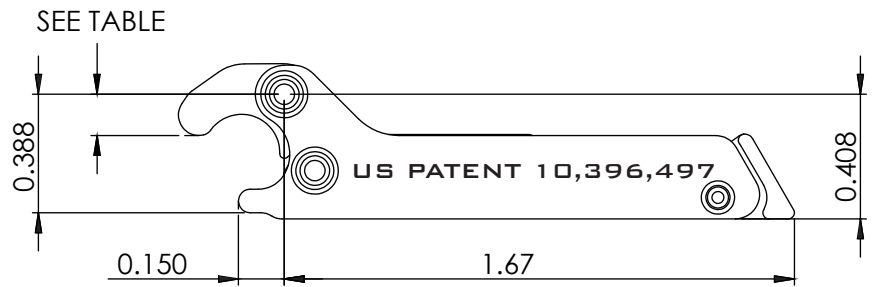
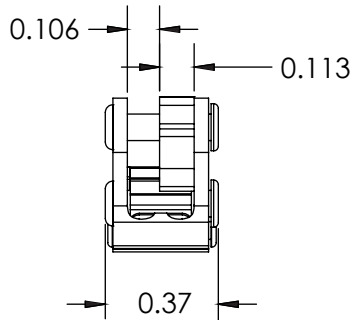
Includes Ejector Body, Pawl, and Rivet

PAWL POSITION	PAWL FORCE (LBS)	INSERTION FORCE (LBS)
< .075	80-120	95-150
.075	70-80	85-105
.100	40-60	50-75
.135	0-10	0-20

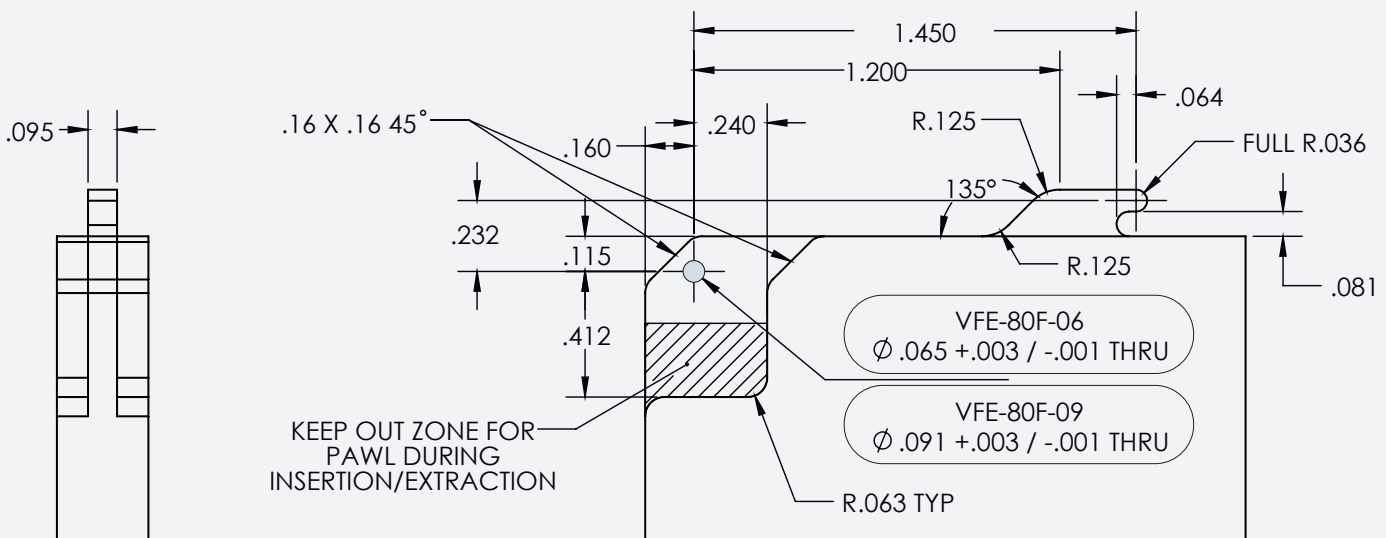
PER VITA 48.4, 78.0 - See Page 3



CUSTOMIZE FRONT FACE
W/ LASER ETCH



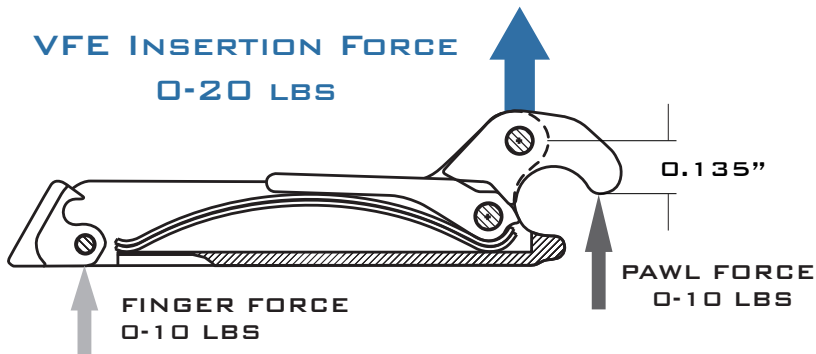
RECOMMENDED HEAT FRAME SPECS FOR 48.2, 48.4, 48.5, 78.0



ALL DIMS +/- .005" UNLESS SPECIFIED

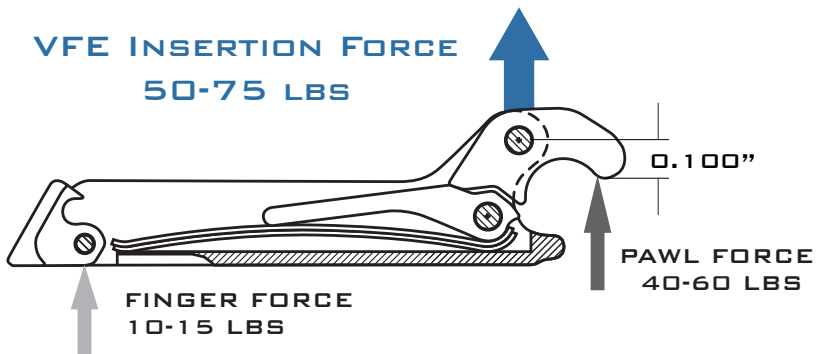
The OpenCOTS Variable Force Injector-Ejector employs a double-pivot, force-multiplying design. This method utilizes a mechanical advantage that is created by a longer spring which is less prone to setting and is capable of generating a higher injection force than previous designs. This design is a mechanical breakthrough for next generation VPX cards.

VARIABLE FORCE



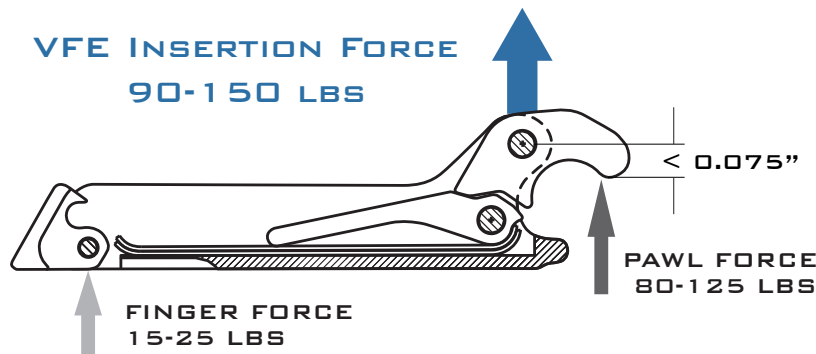
PRE-ENGAGEMENT

Pawl begins engaging coldwall at 0.135" with initial finger force. Pawl will travel to 0.120" with ~10 lbs finger force and generate ~10 lbs of pawl force, yielding an insertion force of ~20 lbs. Finger forces are assumed to be applied approximately as shown near the tip.



NOMINAL ENGAGEMENT

Pawl is in mid range of spring compression and requires 10-15 lbs of finger force to generate 40-60 lbs of pawl force resulting in a module insertion force of 50-75 lbs. More finger force can be applied to the ejector, but the forces will not be multiplied by the mechanical advantage of the ejector.



MAX ENGAGEMENT

At 0.075", pawl bottoms out at approximately 80 lbs with a 15-20 lb finger force. Beyond 0.075", all forces are multiplied by 5 and summed as module insertion forces. For example, a 25 lb input yields a 125lb pawl force and a 150 lb module insertion force.

RIVET DIES

Part Number	Tube Side Rivet Die	Head Side Rivet Die
VFE-80F-06 (0.06" Rivet)	1/16" Tubular Roll Die (ex. CA2005-01)	1/8" Oval Head Die (ex. CA2004-01)
VFE-80F-09 (0.09" Rivet)	3/32" Tubular Roll Die (ex. CA2005-1)	5/32" Oval Head Die (ex. CA2004-1)

EQUIPMENT

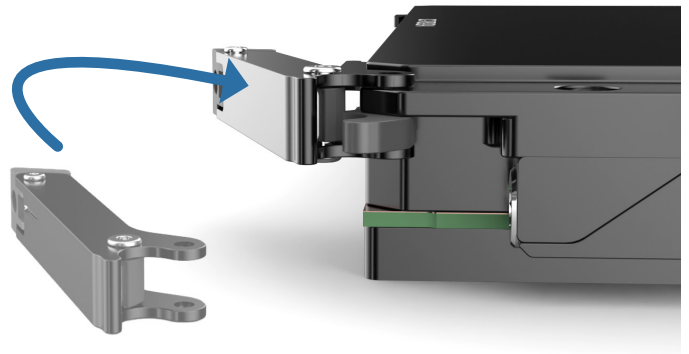
Tool	Note
Manual Bench Riveter (ex. HR-141)	Bolt or clamp down
Squeezer Die Adapter x2 (ex. HT-800)	Requires 1 for upper and 1 for lower die

1



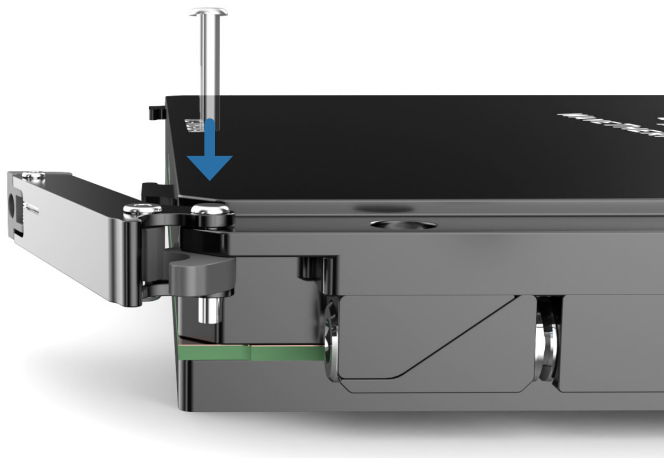
Align pawl to heat frame

2



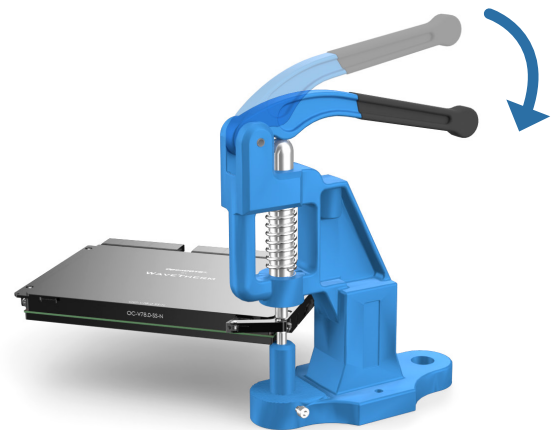
Position ejector body around pawl and heat frame

3



Insert rivet (may be installed either direction)

4



Swage rivet
(ensure tubular roll die is on tube side of rivet)