

# ForceTec<sup>®</sup> LITE

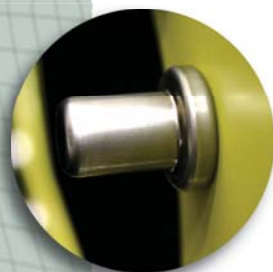
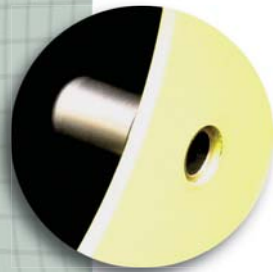
ONE HOLE  
ONE PART  
ONE OPERATION

## FORCETEC LITE RIVETLESS NUT PLATE ADVANTAGES:

- One step installation
- Reduced life cycle cost
- Light weight
- Engineered for high volume applications
- Zero waste stream
- Factory-sealed: No sealant required after installation
- Easily Automated

## AND RECEIVE THE CLASSIC BENEFITS OF FORCETEC:

- Enhanced fatigue life and damage tolerance
- Superior corrosion resistance
- Rivetless and adhesive-free for superior process reliability
- Prevents fuel leaks



## *FASTER INSTALLATION*

ForceTec Lite utilizes FTI's new Accelerated Installation Method (AIM) to cold expand the nut plate into the hole and seal in one precise movement.

# ForceTec® LITE

## INTRODUCING FORCETEC LITE

ForceTec Lite is the newest member in the ForceTec Rivetless Nut Plate family. It has the traditional benefits of ForceTec but offers a factory sealed nut and rapid one-step installation process. ForceTec Lite is designed for high volume applications in lieu of riveted, bonded or gang channel nut plate products to meet overall installed cost, reduced weight, and life cycle targets.

### ForceTec Lite outperforms other nut plate products

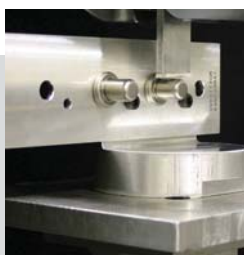
	Adhesively Bonded Nut Plate	Riveted Nut Plate	Gang Channel	ForceTec LITE
Installation Time	Medium	High	High	Low
Installation Components	3	4	Many	1
Installed Weight	Low	Low	High	Low
Waste Stream	Medium	Low	Low	None
Factory Noise Below Workplace Safety Targets	Yes	No	No	Yes
Fatigue Life/Damage Tolerance	No benefit over open hole	Degradation compared with open hole	Degradation compared with open hole	3 to 10 times improvement
Process Reliability	Medium	Medium	Medium	High
Hole Protection	No	No	No	Yes
Potential for Automation	Low	Low	Low	High
Life Cycle Cost	Medium	High	Medium	Low

### Performs well under extreme conditions

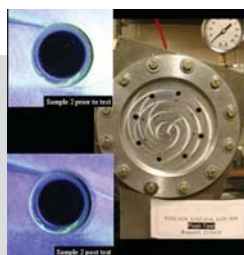
FTI's Test Lab performed extreme abuse and sealing tests on ForceTec Lite, and it more than met the challenge. Here's an example of a test sequence for a 0.25-inch diameter nut plate:

- Cyclic Pressure Leak Test
  - 1000 cycles at 50-55 psi
- Vibration test per NASM1312-7
  - 30,000 cycles at 0.450-inch amplitude/30 Hz
- Application of maximum axial tensile load per NASM25027
  - 1 rep at 4580 lbs min. using threaded fastener
- Application of maximum torque out load per NASM25027
  - 15 reps at 100 in-lb min. applied using a "shanked bolt"
- Application of maximum pushout load per NASM25027
  - 50 reps at 125 lb min. applied using a threaded fastener
- Static Pressure Leak Test
  - 15 one-half hour cycles at 17-22 psi
- Cyclic Pressure Leak Test

Test results: **PASSED**



Side Load Test



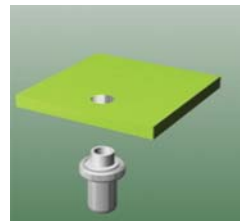
Cyclic Pressure Test

## AIM FOR SPEED AND PERFORMANCE

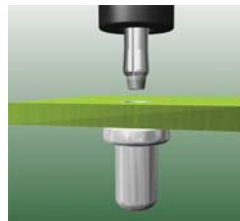
ForceTec Lite uses FTI's new Accelerated Installation Method (AIM). This newly engineered process takes advantage of sound cold expansion principles and proven FTI puller technology to cold expand the nut into the structure in one precise movement.

This method can be easily automated.

### Accelerated Installation Method (AIM) Procedure



Insert and hold the nut plate in the correct size hole



Insert the AIM mandrel into the nut plate



Activate the puller unit to install and seal the nut plate



Repeat the process at the next hole



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