FAQs on Fastening Exterior Gypsum Sheathing to Steel Studs

What is the difference between a nail and a pin?
A pin is a fastener that is made with a ballistic shaped point and a very specific shank. Special steels and heat treat hardening are used to make pins. Each type of pin is engineered to work properly in a specific range of applications.

What is a ballistic point?
The point of a pin has been engineered to have the shape of a bullet. This design penetrates the steel by displacing the steel laterally during the driving process. Unlike drilling and punching, no steel is removed, so it rebounds to lock the shank of the pin in place.

Do Aerosmith pins hold as well as screws?
Yes. **When a panel is loaded to failure,** In testing, failures with screws and pins typically occur when the gypsum board pulls over the head of the fastener, not by pulling out of the steel stud. VersaPIN pin heads and #6 drywall (S-12) screw heads are the same size and have similar pull over values. Pull-out values of pins from studs are many times greater than the pull-over values.

What is GripShank®?
Gripshank is a special knurling pattern that was developed and patented exclusively by Aerosmith. This enables our fasteners to have higher holding power than others in thinner light gauge steel studs.

When should I choose Gripshank instead of helical?
Generally, standard helical pins are used in 12 ga to 16 ga applications. GripShank is typically used in 16 ga to 22 ga. applications. GripShank can be used in heavier gauges, but the required driving force is higher than for helical which may require higher air pressures.

Why is centering important?
The Aerosmith ST-4100 tool is the only tool in its class that holds each fastener perpendicular to the surface being fastened while driving. Tools without centering can lead to fasteners being inserted on an angle. The head of an angled fastener cannot be flush and will gouge or tear the surface of the gypsum board, substantially diminishing its holding power.

How much air pressure do I need ?
An adequate air supply is vital to consistent driving of the pins. The ST-4100 requires a minimum air pressure of 90 PSI, and some applications require up to 120 PSI. Not only must the compressor provide a consistent, regulated air pressure, it must also deliver an adequate volume of air to the tool. When setting up to drive pins, it is always recommended to use more than adequate pressure, then adjust the tool's depth of drive to fine tune its performance.

How do I adjust the depth of drive on the ST-4100?
The tool can be adjusted to drive deeper or shallower by rotating the thumbscrew on the side of the tool by the nose. An illustration of which direction to turn can be found on the side of the black plastic tool protective cover. If the adjustment is set at the deepest limit and the tool is driving too shallow, increase the air pressure supplied to the tool and adjust the thumbscrew shallower.

How do I determine pin spacing?
Typical pin spacing for exterior gypsum sheathing is 8" on center. However, various wind loads may require different pin spacing. Please refer to the engineering requirements of the job and Aerosmith test reports for additional information.

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How far should the pin penetrate the steel?
Aerosmith pins are designed to be driven so that a minimum of 5/16” from the tip of the pin protrudes through the back side of the steel stud.

If I miss the stud while driving a pin, will it go through the board?
The Aerosmith ST-4100 drives each pin to a certain depth, not necessarily with a certain force. Under normal circumstances, any pin driven into the gypsum board will not penetrate beyond the surface even if there is no stud present. However, for safety reasons, only drive pins into locations supported directly by steel framing members.

The pin head is not driven all the way. Can I finish driving it with a hammer?
The holding power a pin is maximized when it is driven in one, smooth, stroke. If a pin did not seat completely when driven with a tool, it may driven deeper with a hammer. However, the holding power of that fastener will be substantially reduced and the connection cannot be considered reliable. After using a hammer to further set a pin, it is recommended to drive an additional pin 1” - 2” away to assure that the board is reliably fastened as designed.

Can I countersink the pin head in the gypsum sheathing?
Nearly all the strength of gypsum board comes from the surface paper or coating. If the surface is slightly ripped or torn when all or part of the fastener head is driven too deeply, or if the fastener is not driven straight, the resistance of the board to pulling-over the fastener is substantially reduced. If this happens, drive an additional pin 1” - 2” away to assure that the board is fastened securely.

How can I obtain testing and approvals?
Testing and approvals are available online at www.AerosmithFastening.com or from your local Aerosmith representative.