

Avdel® Fasteners for the Solar Energy Marketplace

High Strength Breakstem and Lockbolt Systems

Avdel® blind fastening systems are designed for high strength, secure assembly. Quick and simple to place, durable and long lasting, they are the ideal solution where spot welding is not practical or possible and other methods like bolts and nuts are costly, time consuming or not feasible. Avdel® systems have been widely used for many years in demanding engineering applications throughout the world.

Especially in the solar energy marketplace they provide the following benefits:

- **High speed assembly with robust tools**
Designed for use in demanding engineering environments, these tools have a record of reliability and ruggedness able to provide accurate and secure installation within seconds.
- **Elimination of torque issues**
The fasteners are mechanically locked, eliminating possible over/under torquing causing stripping or loose joints
- **Consistent high clamp**
Elimination of loosening due to variations in temperature, no need for periodic tightening
- **Vibration resistant**
- **Simple to install**
No need for special operator skills
- **Tamper-proof joints**

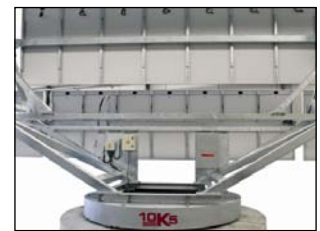
Assembly Applications for Solar Power Plants



Thermosolar plant



Photovoltaic solar plant



Largest thermosolar plant in the world

The Andasol I thermoelectric plant's solar field measures 1500 x 1300 metres (195 ha.). A total of 7,488 collectors have to be installed on site. Diameters of 5/16", 1/2" and 1" Avdel® lockbolts and collars are being used. In all, about 3.4 million fastening elements are being used to assemble the system.

10K5 double-axis tracker

This tracker captures maximum solar radiation from dawn until dusk and is capable of exceeding systems without a tracker by more than 40 %. Key benefits for using Monobolt® and Avdelok® fasteners were theft deterrence, unauthorized handling of solar modules, assembly cost savings and to ensure life of clamping force of the fasteners.



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Monobolt® Breakstem Rivet

Multi-grip structural breakstem fasteners providing a fully sealed joint and visible lock.

- High speed, blind sided assembly
- Excellent hole fill via radially expanded body
- Strong, vibration resistant joints
- Large gap closing capability
- Stem mechanically locked into body



Sizes: 3/16", 1/4" and 3/8"
(4.8 mm, 6.4 mm and 10 mm)

Materials: Aluminium, steel, stainless steel

Avbolt® Structural Blind Fastener

Structural blind fastener offering high tensile and shear strength normally only possible with non blind lockbolts.

- High tensile and shear strength
- High grip capability suits a wide variety of material thicknesses
- Ideal for areas with restricted access



Sizes: 3/16" to 5/8"
(4.8 mm to 16 mm)

Materials: Steel

Avdelok® & Infalok® Lockbolts

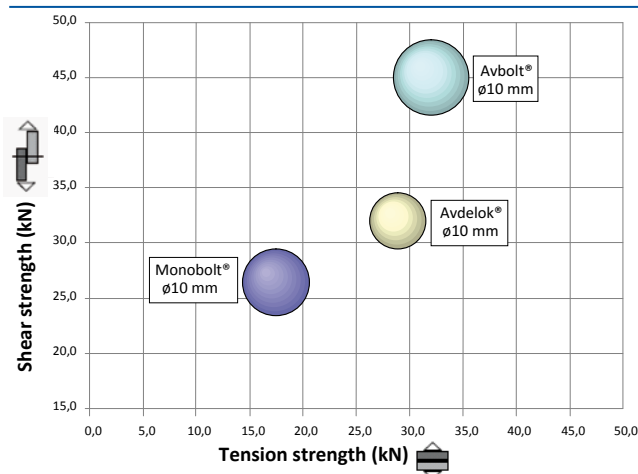
High strength, vibration resistant lockbolts with high, controlled clamp.

- Access required from both sides of the application
- Wide choice of materials, sizes, headforms and collar options to suit a wide variety of applications
- High, controlled clamp provides excellent vibration resistance
- Quick to install
- Easy to inspect for tampering



Sizes: 3/16" to 1-1/8" (4.8 mm to 28.6 mm)
Materials: Aluminium, steel, stainless steel

Strength Comparison of ø 10 mm Steel Fasteners



Installation Tools

A comprehensive range of purpose-designed installation tools is available.



73200 model



734 AV™ series