

## TAB 4 - BENEFITS

### FEATURES AND BENEFITS

#### Important Advantages of Grooved Pins

- They withstand severe shock and vibration
- They are solid
- They are available in different groove types to suit a wide range of applications
- They require only a straight drilled hole
- They reduce the number of steps in your assembly operation
- They may be driven with a hammer, air cylinder, or hydraulic press
- They may be hopper-fed for automatic installation
- They allow easy installation and quick assembly
- They can be removed and reused

#### Twice the Shear Strength

The Groov-Pin is a solid metal pin with up to twice the shear strength of a spring pin of the same diameter. The shear resistance of steel Grooved Pins can be 40% higher than that of a heavy-duty spring pin. Grooved Pins also provide a smooth surface around the diameter and uniform diameter along the unexpanded length for better cosmetic appearance and superior performance as an axle or hinge pin. The smooth surface along the unexpanded length and at the ends reduces the accumulation of abrasives and other undesirable materials. The strength of the solid pin body is not orientation-dependent, as is the case with some spring pins.

#### Shock and Vibration Resistance

The spring-like locking force created by the Grooved Pin, in a hole the size of the pin nominal diameter, is very resistant to vibration and shock. In fact, forces greater than the maximum insertion force are required to move a fully engaged pin. Even in the case of axial displacement, the Grooved Pin retains holding force until it is fully disengaged.

#### Simple Installation

The Groov-Pin can be driven manually or automatically, by hammer, air cylinder, or hydraulic press. Also, it is a one-piece retainer. Simplicity of installation can speed assembly and save labor cost.

#### Reduced Manufacturing Demands

Since the tolerance requirements on hold accepting Grooved Pins are relatively loose, demands on the manufacturing process are reduced. Grooved Pins require only a straight drilled hole. No reaming, milling, or tapping is necessary.

#### Variety of Applications

Locking depends on the compression of the Grooved Pin itself, rather than the deformation of the base material. Consequently, Grooved Pins are well suited for applications in hardened or unhardened steels, as well as aluminum, brass, and plastics.

#### Wide Range of Design Options

The locking properties of grooves can be used with pins made of many different materials, opening a wide range of design options where other material properties, such as conductivity or corrosion-resistance, may be important.

#### Design Flexibility

A wide variety of groove types is available to suit almost any application. To provide free rotation surfaces, smooth surfaces for handles, or necks for springs, the groove length can be selected and positioned where needed along the pin.

To facilitate automatic insertion or to maximize the holding power of the pin, different shapes may be selected for the groove and the end of the pin.

**Removable and Reusable**

Properly designed assemblies, locked or aligned with Grooved Pins, can be separated without destroying the pins. The same pins can be used again with little or no reduction in performance.