

High Alloy *SHEAR-PROOF™ Pins



SPC assures high quality

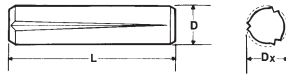
APPLICATION

DRIV-LOK SHEAR-PROOF™ pins replace standard low carbon grooved pins and spring pins in high shear applications. See the Technical Section on page 19 for shear strength comparisons of SHEAR-PROOF™, low carbon, coiled spring pins and slotted spring pins. Notice the much higher shear values provided by SHEAR-PROOF™ pins.

DESCRIPTION

Standard SHEAR-PROOF™ pins have the Type A groove configuration as shown. This groove configuration provides tapered expansion beginning at one end of the pin and expanding to the maximum at the opposite end of the pin. Insertion of the Type A pin is allowed in one direction only.

STANDARD TYPE A



SHEAR-PROOF™ pins are manufactured from 4140 or 6150 alloy steel in the same manner as grooved pins and are heat treated by austempering to a Rockwell “C” 40-48 hardness. Austempering provides a bainitic microstructure which is tougher than a martensitic microstructure produced by standard oil quenches. SHEAR-PROOF™ pins are furnished with a light oil finish for corrosion-resistance.

FUNCTION

SHEAR-PROOF™ pins lock in place in the same manner as grooved pins. The materials and the strength or hardness level to which SHEAR-PROOF™ pins are heat treated provide ideal shear resistance.

STANDARD SIZES FOR SHEAR-PROOF™ PINS (TYPE A)

Lengths	Diameters									
	3/32	1/8	5/32	3/16	1/4	5/16	3/8	7/16	1/2	
1/4	■	■								
3/8	■	■	■	■						
1/2	■	■	■	■	■					
5/8	■	■	■	■	■	■				
3/4	■	■	■	■	■	■	■			
7/8	■	■	■	■	■	■	■	■		
1	■	■	■	■	■	■	■	■	■	
1 1/4	■	■	■	■	■	■	■	■	■	■
1 1/2		■	■	■	■	■	■	■	■	■
1 3/4			■	■	■	■	■	■	■	■
2			■	■	■	■	■	■	■	■
2 1/4				■	■	■	■	■	■	■
2 1/2					■	■	■	■	■	■
2 3/4						■	■	■	■	■
3							■	■	■	■
3 1/4								■	■	■
3 1/2									■	■

Tolerances:

Length: ±.010

Nominal Diameter: +.000/- .0015 up to 7/64" diameter

+ .000/- .002 7/64" diameter and over

Expanded Diameter: See table on page 5.

*NOTE: "SHEAR-PROOF" is a registered trademark of DRIV-LOK, Inc. The name "SHEAR-PROOF" refers only to a product manufactured from alloy steel and heat treated to obtain a higher shear resistance than standard low carbon grooved pins-type A. The name "SHEAR-PROOF" does not imply the pins will not shear. "SHEAR-PROOF" pins will meet the performance (minimum shear) detailed on Page 18 of this catalog when tested in a properly designed test fixture.

Standard Type A—others available

Wide range of diameters and lengths

6150 and 4140 material

Through hardened to R_C 40-48

Optional end configurations

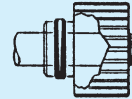
Light oil finish standard

Other finishes available

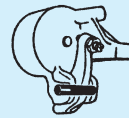
TYPICAL APPLICATIONS



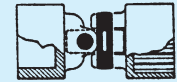
Material Handling Equipment – The Type E pin provides positive locking with a half-length groove in the center of the pin. Extreme shear is exerted in this application, yet the SHEAR-PROOF™ Pin is used with complete safety for both men and materials. Type E SHEAR-PROOF™ is a special pin.



Heavy-Duty Gear and Shaft Assembly – Type A SHEAR-PROOF™ Pin as specified for this application to give maximum locking power over the entire pin and gear hub area. The Type A Pin, with grooves the full length of the pin, is the standard stock pin which meets most application.



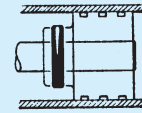
Automatic Transmission in Automobiles – Special Type C SHEAR-PROOF™ was selected as a shaft in this transmission servo to replace a cross drilled shaft with a cross pin for holding shaft in position. This eliminated a costly drilling operation and the cross pin.



Universal Joints in Hand Tools – Special Type E SHEAR-PROOF™ Pin with center grooves eliminates costly staking and grinding operations and improves product appearance. This pin is easily installed, fits flush and permits plating before assembly.



Eye Bolt Hinge Pin – Type C pin, with quarter-length grooves, provides maximum ease of assembly. There is no interference until three-fourths of the pin is in position. The high safety factor inherent in SHEAR-PROOF™ Pins makes them practical and efficient for such constant shear applications. Type C SHEAR-PROOF™ is a special pin.



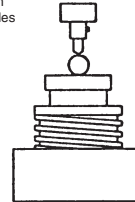
High Pressure Piston and Rod Assembly – Type B Pin was used here because the half-length grooves simplified the job of starting the pin into the hole. Ease of assembly was matched with sufficient locking power even when subjected to continuous, strong reciprocating forces. Type B SHEAR-PROOF™ is a special pin.

HARDNESS TESTING OF SOLID THROUGH-HARDENED PINS

1. Grind two parallel flats each .00015" deep on curved sides of pins.



2. Enter surfaced flat with Penetrator C Brale 150 Kg for pins 3/16" in diameter and above. Smaller pins must be checked with 15 Kg load and N Penetrator.



Note: Parts that are case hardened must be mounted and checked superficially with lighter loads.

SPECIAL ORDERS AND OPTIONS

DRIV-LOK's engineering department will work with customers to provide technical assistance for special orders. SHEAR-PROOF™ pins with special materials, diameters, lengths, groove types, end configurations, and finishes are available by request as special orders. See **ORDERING INFORMATION** on page 20 for options available for special SHEAR-PROOF™ pins.