

## Metal Forming Applications

### WHY K•PRENE®?

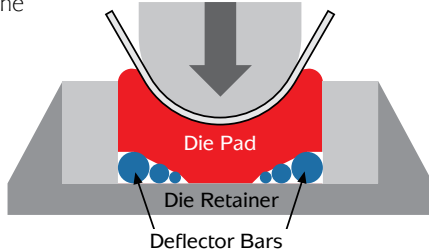
There are several families of urethane elastomers, but not all of them will perform equally well. Even within one grade of a given urethane formulation, cured properties can vary widely. K•Prene® urethane is specifically compounded and processed by Acrotech Inc. to maximize the characteristics desired for optimum tool and die operation. Some of the major advantages of urethane are non-compressibility, resiliency, and the ability to form and hold metal without marring its surface finish. It behaves similar to a solid fluid with a memory; under force it will change its shape, but its volume will remain constant. Urethane will produce high, uniform and continuous counter pressure under load. And, when the load is removed, it quickly returns to its original shape.

For more information on basic principles of metal forming with K•Prene®, contact us for our PTB-90 catalog.

## Typical Applications

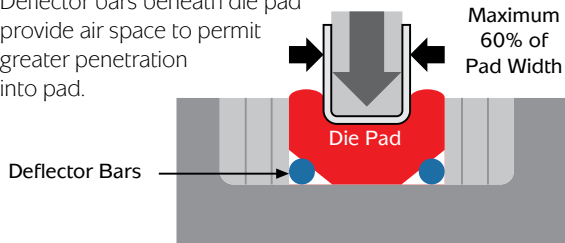
### Radius Forming with Deflector Bars

K•Prene® die with deflector bars positioned under pad. Bars are graduated in size to control deflection of K•Prene®. This helps form the difficult bends.



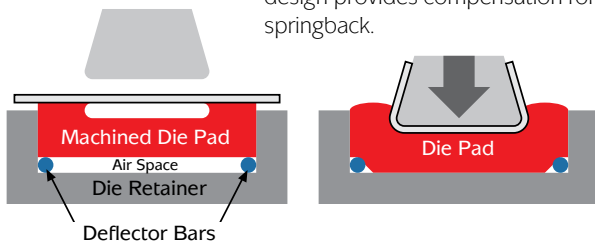
### Compound Bends

Difficult forms like these can be made with a standard K•Prene® die pad (definition is best with lighter gauges). Deflector bars beneath die pad provide air space to permit greater penetration into pad.



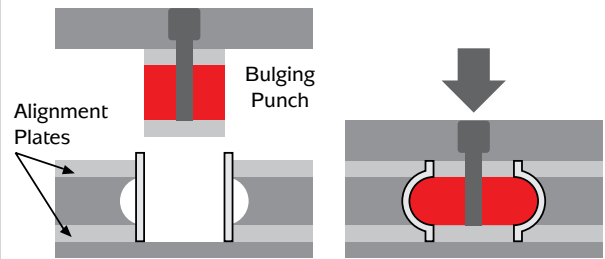
### Over-forming

Unique adaptation of K•Prene® pad to over-form flanges. Here, the pad is cast or machined-to-shape because greater pressures are required. This design provides compensation for springback.



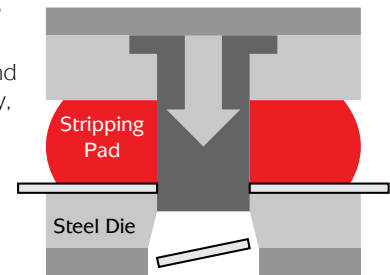
### Bulging Punch

In bulging applications, K•Prene® offers much longer service life than rubber, and is very cost effective compared to expanding/shrinking steel punches. Displacement of K•Prene® punch under compression forces metal outward into desired shape. Amount of bulge is determined by depth of stroke. When ram is raised (after stroke), K•Prene® resumes its normal shape and bulged part can be easily removed.



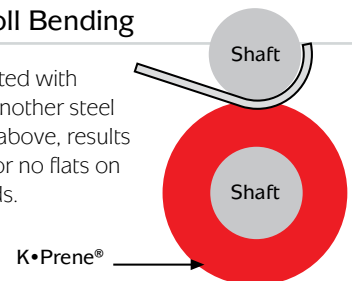
### Stripping Pad for Punching

A standard K•Prene® pressure pad machined to fit around punch. This is an easy, economical method of constructing a durable, oil resistant, high pressure stripping pad.



### Roll Bending

A rotating steel shaft coated with K•Prene® working with another steel shaft positioned directly above, results in round parts with little or no flats on the leading or trailing ends.



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