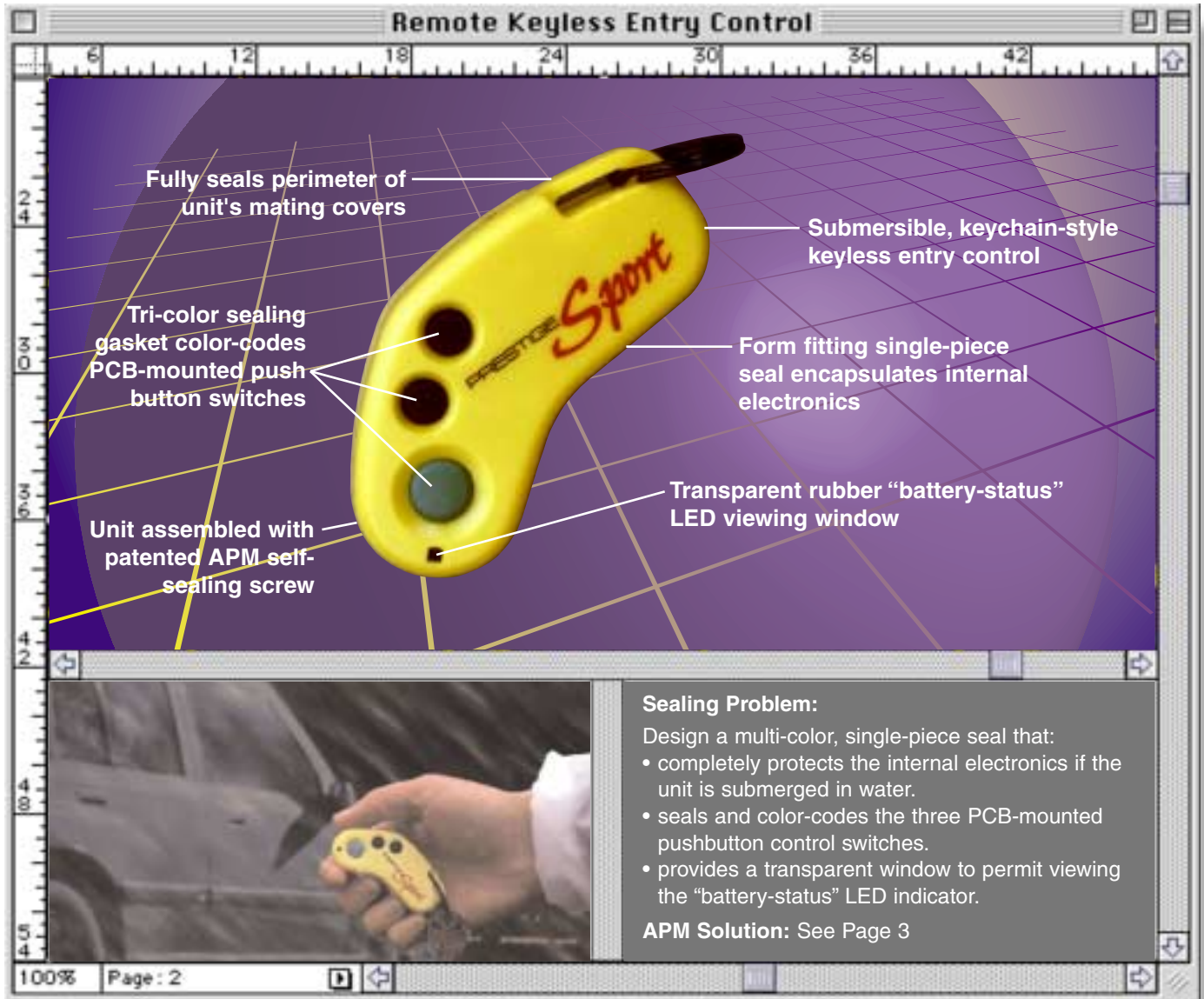


# DESIGN AND MOLDING OF CUSTOM ELASTOMERIC SEALS



## APM HEXSEAL®

Sealing Specialists  
for Commercial, Industrial and Military Applications

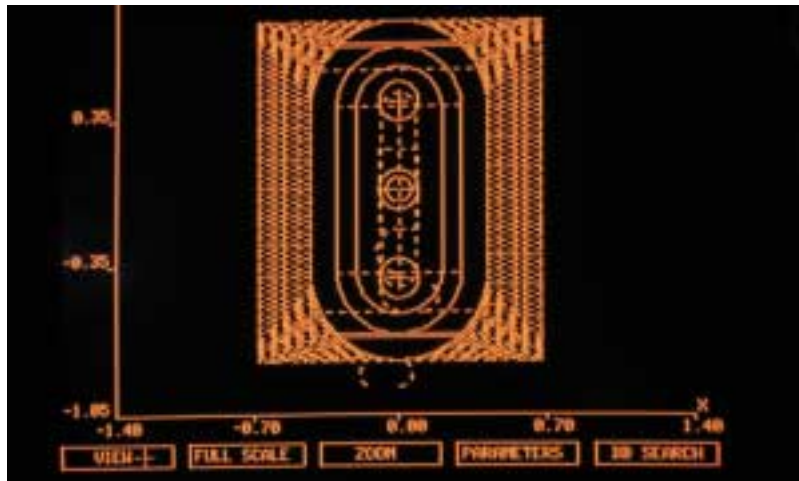
# SPECIAL SEALS FOR SPECIAL NEEDS

Since 1947, APM HEXSEAL has tackled a variety of application-specific sealing challenges. Drawing upon our experience with precision molding and a wide range of elastomers, we have developed many economical custom seals for industrial, commercial and military applications.

When you need a unique sealing solution, you couldn't ask for a more responsive design and manufacturing partner. Our experienced staff can provide product design assistance, tooling and fabrication services from concept to production.

## Engineering Design

APM HEXSEAL's technical staff works with, or as, your design engineering team to develop a reliable, cost-effective seal which meets your unique application needs. Working within the context of your overall system design, our product and manufacturing engineers will create a sealing solution which addresses your performance and cost objectives.



## Tooling and Prototype Development

Our in-house tool designers will fabricate "soft" tooling and provide prototype parts for your evaluation. This intermediate step permits fine-tuning of the seal design to minimize component cost and optimize performance. And eliminates "surprises" upon delivery of production parts.

## Product Manufacturing

Upon your approval of final prototypes, our in-house tooling group will fabricate production molds and economically produce your high-quality custom seal.

APM has solved tough problems with designs proven to work. A sampling of our custom sealing solutions are presented in this brochure. We trust they will provide an overview of our design competence and custom capabilities. We invite your inquiry and look forward to being of service.



## Application: Remote Automotive Keyless Entry Control



### Sealing Problem:

- Seal the perimeter between mating top and bottom component covers.
- Seal and color-code three printed circuit board-mounted pushbutton switches.
- Provide a transparent viewing window for monitoring the PCB-mounted, battery-status LED.
- Render the entire unit submersible.

### APM Design Solution:

A single-piece tri-color (black, green and clear) silicone rubber seal, geometrically-contoured to the control's housing and internal electronic components. The seal, housing and circuit board are held together by one of APM HEXSEAL's patented, reusable self-sealing fasteners.

## Application: Wireless Communication System



### Sealing Problem:

- Protect handset push-to-talk button from weather, salt water, grease, dust, dirt, and most acids.
- Have minimum life of 500,000 actuations.
- Not compromise switch's normal operation.
- Meet stringent test requirements of MIL-B-5423.

### APM Design Solution:

A single-piece, soft, flexible switch boot designed to conform to the dimensions of handset and push-to-talk control button. Boot is secured to handset housing using APM's custom-designed, tamper-resistant, self-sealing fasteners with special black-oxidized heads.

## Application: Security System Access Keypad



### Sealing Problem:

- Geometric compatibility with pushbutton switch array.
- Protect keypad from weather, water, dust, dirt and cleaning solvents.
- Tolerate sunlight and exposure to ozone.
- Provide durable switch identification designations.
- Provide excellent tactile feedback of switch actuation.

### APM Design Solution:

A fitted, single-piece, custom-colored seal molded from a specially-formulated rubber with durable, recessed, high-contrast switch legend markings.

## Application: Programmable Digital Panel Meter



### Sealing Problem:

- Protect DPM's front programming switches from water, oils, grease, dirt and cleaning solvents.
- Permit easy reading of DPM's switch markings.
- Resist discoloring in presence of sunlight.
- Not compromise programming ease.
- Single-piece design.

### APM Design Solution:

A full-bezel soft seal fabricated from a special transparent rubber formulation. Form-fit design seals panel cut-out in which DPM is mounted, while permitting operation of the unit's programming switches through the soft, flexible seal.

## Application: Lighted Pushbuttons for Military Aircraft



### Sealing Problem:

- Prevent penetration of moisture from fog or salt spray.
- Tolerate kerosene, alcohol and light detergents.
- Ensure pushbutton actuator remains attached to switch body under high-impact shock of up to 1,500 G's.
- Permit actuation of pushbutton.
- Permit viewing of lighted indicator and switch legend.

### APM Design Solution:

A snap-on, single-piece bezel seal consisting of a custom stainless steel frame over which is molded a durable, chemically-resistant elastomer.

## Application: Missile Launch Control Circuit Breaker



### Sealing Problem:

- Protect circuit breaker from weather, salt spray, dust and dirt.
- Permit easy resetting of tripped circuit breaker.
- Permit viewing of circuit breaker status.
- Resist yellowing or other discoloration due to aging or exposure to sunlight.
- Meet stringent test requirements of MIL-B-5423.

### APM Design Solution:

A custom-molded boot made of APM's proprietary, transparent elastomer (RubRGlas™) and a painted steel frame featuring filled engraved legends. The boot and frame are secured to the circuit breaker using APM's patented reusable self-sealing fasteners (SEELSKREWS™).

## Application: Food Processing Equipment



### Sealing Problem:

- Meet corrosion-resistant requirements of the food industry.
- Protect pushbutton actuator from frequent washdowns.
- Provide mechanical advantage to actuate the pushbutton control.
- Seal the panel cutout in which the pushbutton is mounted.

### APM Design Solution:

A unitary pushbutton switch seal assembly consisting of a durable, fluorosilicone rubber boot encased in a stainless-steel actuator housing.

## Learn More About APM Standard Products – Ask For These Catalogs



Environmental Switch Boots  
Catalog HEX



Environmental Circuit Breaker Boots  
Catalog CB



Self-Sealing Fasteners  
Catalog SF



Incandescent Lamp Colorizing  
Filters • Catalog SK

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