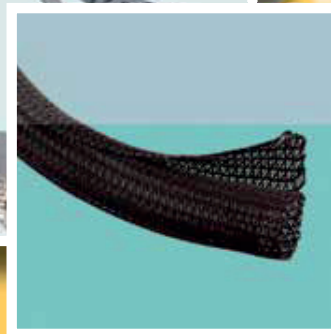
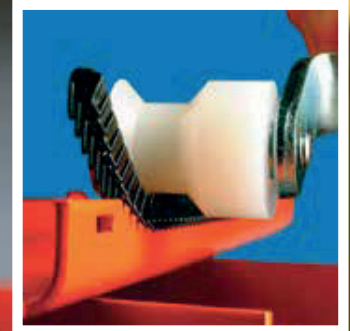
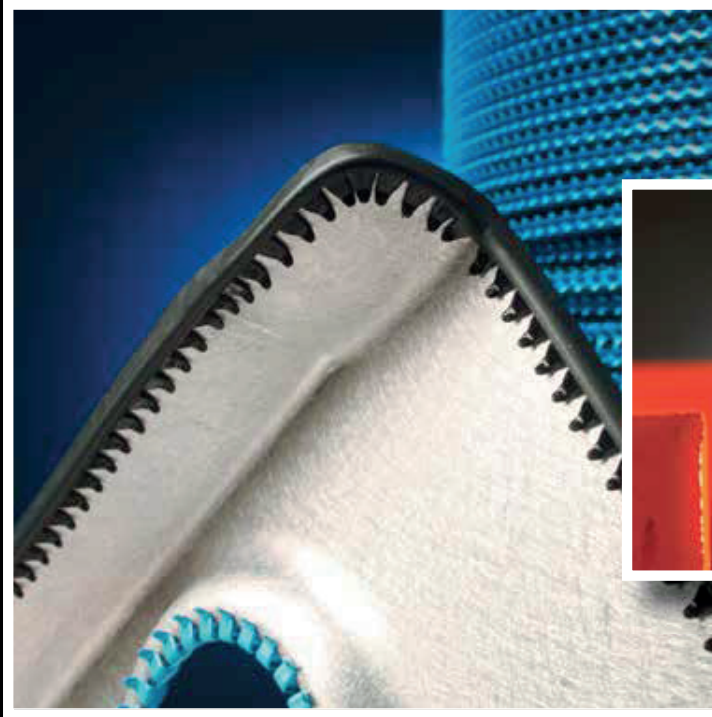


# Device Technologies

Protecting Critical Equipment

# iS Rayfast

## Product Catalog No. 1219



**DTI** device  
technologies, inc.

[devicetech.com](http://devicetech.com)

**DTI** device  
technologies GmbH

[dti-devicetech.eu](http://dti-devicetech.eu)

# DTi Quality Statement

Device Technologies, Inc. considers Quality to be consistent conformance to customer requirements.

- To meet or exceed our customers' requirements for the quality of the products and services we provide.
- To improve the effectiveness of our Quality Management System processes and advance our use of technology continuously so as to enable our customers to become more efficient and profitable.
- To provide our employees with all necessary information, training, tools and support so that they can achieve our quality objectives.
- To treat all customers, employees, suppliers and our community with honesty and integrity.
- To conform to the requirements of ISO 9001 and AS9100 quality standards.

\* See website for latest certificates



**Certificate of Registration  
of Quality Management System  
to AS9100C / ISO 9001:2008**

The National Standards Authority of Ireland is accredited by ANAB under the Aerospace Registrar Management Program and certifies that:

**Device Technologies, Inc.  
155 Northboro Rd.  
Unit 8  
Southborough, MA 01772  
USA**


has been assessed and deemed to comply with the requirements of the above standard(s) in respect of scope of operations given below:

---

**Designs, Develops, Manufactures and Distributes Electronic and Environmental Wire Protection, Enclosure Sealing, Cable Management Materials and Specialty Fastener Products and Assemblies, and Linear Polymer Dielectric Coating Services.**

---

The National Standards Authority of Ireland performed this assessment in accordance with the requirements of AS9104/1:2012. Certification Structure has been determined to be a Single Site.

Approved by: Kevin D. Mullaneey, Chief Executive Officer   
Approved by: Lisa Greenleaf, Operations Manager 

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National Standards Authority of Ireland, 402 Amherst Street, Nashua, New Hampshire, NH 03063, USA T +1 603 882 4412

AS 9100C\_2009-ANABUS (1.2)  
Page 1 of 1



**Certificate of Registration  
of Quality Management System  
to I.S. EN ISO 9001:2008**

The National Standards Authority of Ireland certifies that:

**Device Technologies, Inc.  
155 Northboro Rd.  
Unit 8  
Southborough, MA 01772  
USA**

has been assessed and deemed to comply with the requirements of the above standard in respect of the scope of operations given below:

---

**Designs, Develops, Manufactures and Distributes Electronic and Environmental Wire Protection, Enclosure Sealing, Cable Management Materials and Specialty Fastener Products and Assemblies, and Linear Polymer Dielectric Coating Services.**

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Approved by: Kevin D. Mullaneey, Chief Executive Officer   
Approved by: Lisa Greenleaf, Operations Manager 

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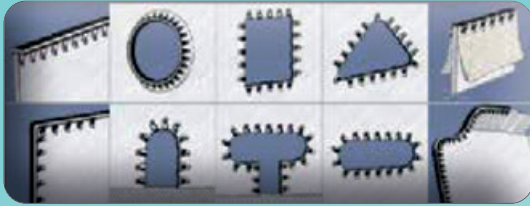
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National Standards Authority of Ireland, 402 Amherst Street, Nashua, New Hampshire, NH 03063, USA T +1 603 882 4412

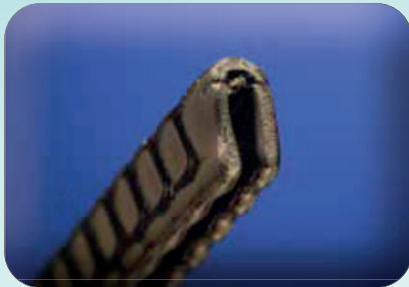
9001:2008-ANABUS (1.8)

# SpringFast®

Wire Protection Grommet Edging and Trim

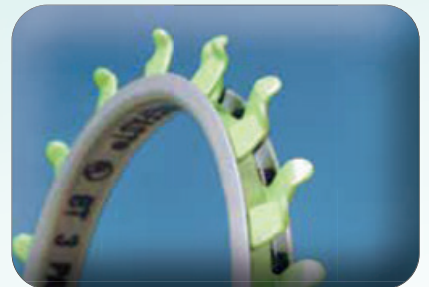


Spring-Fast FM Series



Spring-Fast SL Series

Spring-Fast Mil-Spec  
*FAA Approved*



Trim-Fast™ S Series





AP and BAP Series

Spring-Fast provides 49% cost savings, 950% productivity increase and best in class high performance. The fastest, safest, most reliable way to protect wires, cables, and tubing from abrasion. It locks on with finger pressure in seconds, eliminating solvents, adhesives, ancillary materials and volatile organic compound (VOCs). Spring-Fast installs continuously and is very flexible for use on sharp corners and curved edges, such as flanged holes.

### Features for all Spring-Fast:

- Coated with abrasion resistant nylon thermoplastic
- UL94 V-0 flammability rating
- Compliant to: • RoHS • REACH • EWIS • FAR 25.853
- Eliminates adhesives
- For use on a wide range of panel thicknesses



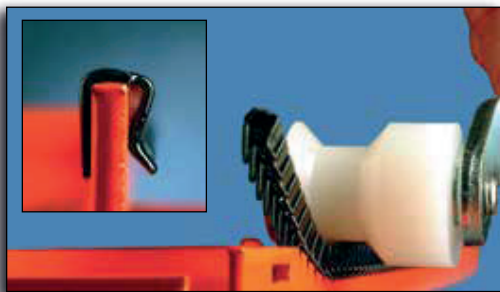
BT Series

### Spring-Fast "T" Series:

- Lowest profile (size) grommet
- Operating temperature range: -40°F to 285°F (-40°C to 140°C)
- For straight edges and inside and sharp outside corners

### Spring-Fast "BT" Series:

- Includes a flexible polymer cushion for added abrasion protection
- Operating temperature range: -40°F to 185°F (-40°C to 85°C)
- For straight edges and inside and sharp outside corners



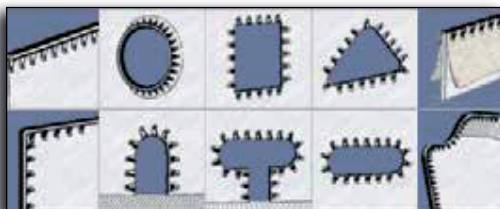
FM Series

### Spring-Fast "AP" Series:

- Greater gripping strength for severe shock and vibration environments
- Operating temperature range: -40°F to 285°F (-40°C to 140°C)
- Multi-axis flexibility for rounded inside and outside corners

### Spring-Fast "BAP" Series:

- Greater gripping strength for severe shock and vibration environments
- Includes a flexible polymer cushion for added abrasion protection
- Operating temperature range: -40°F to 185°F (-40°C to 85°C)
- Multi-axis flexibility for rounded inside and outside corners



### Spring-Fast "SL" Series:

- Completely encapsulated in a flexible UL94 V-0 flame retardant polymer
- Operating temperature range: -67°F to 203°F (-55°C to 95°C)
- Added abrasion protection for wires and hands

### Spring-Fast "FM" Series:

- Same characteristics as "AP" Series plus flush mounting on one side for flat panel surfaces
- Operating temperature range: -40°F to 285°F (-40°C to 140°C)
- Multi-axis flexibility for rounded inside and outside corners

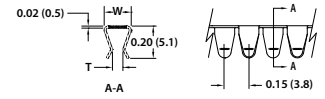
# SpringFast®

## Wire Protection Grommet Edging

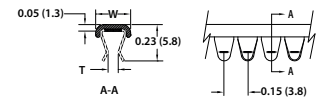
### Qualifications:

| Spring-Fast Product Configurations                     | T  | AP    | FM    | BT                                | BAP                            | SL    |
|--|--|-------|-------|-----------------------------------|--------------------------------|-------|
| Axis Conformity  | Single   | Multi | Multi | Single                            | Multi                          | Multi |
| Vicat Softening Point per ASTM D01525 Rate B           | Substrate Finish: ISO306 356°F (180°C)   |       |       | TPE Cushion: ISO306 230°F (110°C) |                                |       |
| Operating Temperature Range                            | -40°F to 285°F (-40°C to 140°C)  |       |       | -40°F to 185°F (-40°C to 85°C)    | -67°F to 203°F (-55°C to 95°C) |       |
| Dielectric Strength Volts 60Hz NASM22529 Section 3.2.1 | 1000   |       |       | 1500                              | 2000                           |       |
| Substrate  | Stainless Steel  |       |       |                                   |                                |       |
| Taber Abrasion Resistance                              | Nylon per NFT 30-015   |       |       | TPE Cushion per D1044             |                                |       |
| Finish (End Code)                                      | Nylon Black (02) Epoxy Blue (03) FDA White (04) Epoxy Green (06) Epoxy White (07)                                    |       |       | TPE Cushion Black (01) Gray (02)  | TPE Encapsulation Black (01)   |       |
| Salt Spray Hours                                       | 2000   |       |       |                                   | 3000                           |       |
| Immersion  | Per NASM22529 and Skydol Compatible  |       |       |                                   |                                |       |
| Random Shock and Vibration                             | MIL-STD-1344   |       |       |                                   |                                |       |
| Flammability   | UL94 V-0 (File No. E113553 NZMT2) • MIL-STD-202F FAR 25.853A • Telcordia GR-63-CORE                                  |       |       |                                   |                                |       |
| Fabrication Options                                    | Factory pre-cut lengths • Bulk or private branded kits<br>Roll-Fast™ installation tool • Bench mounted cut-off press |       |       |                                   |                                |       |

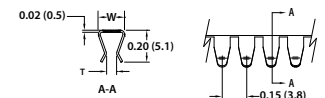
### Spring-Fast Profiles:



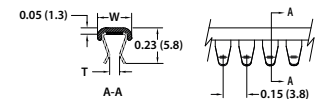
**T SERIES**



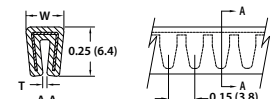
**BT SERIES**



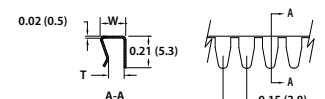
**AP SERIES**



**BAP SERIES**



**SL SERIES**



**FM SERIES**

### Sizes:

| Product Size | T Panel Thickness          |                | Product Color Code | W Width Inches (mm) |            |            |            |             |             |     |
|--------------|----------------------------|----------------|--------------------|---------------------|------------|------------|------------|-------------|-------------|-----|
|              | Inches (mm)                | Gauge          |                    | AP/FM               | AP         | T          | FM         | BT          | BAP         | SL  |
| 0            | 0.020 - 0.030 (0.5 - 0.8)  | 24, 23, 22, 21 | Lt. Purple         | 0.13 (3.3)          | 0.13 (3.3) | N/A        | 0.19 (4.8) | 0.28 (6.8)  | 0.277 (7.0) |     |
| 1            | 0.029 - 0.045 (0.7 - 1.1)  | 20, 19, 18     | White              |                     |            | N/A        |            |             |             |     |
| 2            | 0.044 - 0.056 (1.1 - 1.4)  | 17, 16         | Pink               |                     |            | N/A        |            |             |             |     |
| 3            | 0.055 - 0.069 (1.4 - 1.7)  | 15, 14         | Yellow             | 0.18 (4.6)          | 0.14 (3.6) | 0.23 (5.8) | 0.28 (6.8) | 0.277 (7.0) |             |     |
| 4            | 0.069 - 0.090 (1.7 - 2.3)  | 13, 12         | Blue               |                     |            |            |            |             | N/A         |     |
| 5            | 0.089 - 0.114 (2.3 - 2.9)  | 11, 10, 9      | Green              |                     |            |            |            |             | N/A         |     |
| 6            | 0.113 - 0.130 (2.9 - 3.3)  | 8              | Orange             | N/A                 | 0.25 (6.4) | N/A        | 0.32 (8.1) | N/A         | N/A         |     |
| 7            | 0.180 - 0.204 (4.6 - 5.2)  | 5, 4           | N/A                |                     |            |            |            |             |             | N/A |
| 8            | 0.240 - 0.260 (6.1 - 6.6)t | 2              | N/A                |                     |            |            |            |             |             | N/A |

### Ordering Examples:

#### T Series on Reel

**T1 - 0025 - ER 02**

22 Gage Panel  
25' (7.6m) Reel  
Reel  
Coating: Fusion Bonded Nylon  
Color: Black

#### BT Series Factory Precut

**BT4 - 0053 - EC 0201**

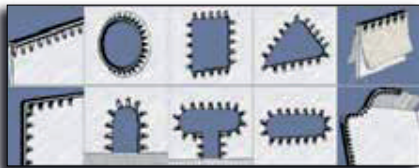
0.08" (2.0mm) Panel  
53 Castles, 53 x 0.15 = 7.95"  
Factory Precut Length  
Coating: Fusion Bonded Nylon with Cushion  
Color: Black



M22529/1



M22529/2



|                               |   |
|-------------------------------|---|
| Temperature Range             | -40°F to 185°F<br>(-40°C to 85°C)         |
| Voltage Breakdown<br>60 Hz    | 1500 V                                    |
| Flammability                  | FAR 25.601,<br>FAR 25.853<br>MIL-STD-202F |
| Random Shock<br>and Vibration | MIL-STD-1344                              |
| Salt Spray Testing            | MIL-STD-202F                              |

Spring-Fast® Mil Spec grommet edging M22529/1 and M22529/2 were designed for the high performance needs of the defense industry. Used widely on airframes, tactical vehicles & ground based electronics.

### Key Benefits:

- 49% reduction in total install costs (@ \$60 labor rate)
- 950% productivity improvement from reduced total process time
- Best-in-class performance

All Spring-Fast variants snap on in seconds for immediate wire routing – no fixturing, adhesive curing, clean up or inspections.

If you use glued in grommets, switch to Spring-Fast for significant savings and productivity gains

### Features and Benefits:

- Spring steel substrate with thermoset polymer coating
- Simple snap-on install with finger pressure or roller
- Eliminates adhesives, safety and environmental concerns
- Holds fast without VOC adhesives
- Superior quality, finish and durability
- Adapts to materials, thicknesses & applications
- For straight edges, corners and holes
- Flexible and installs continuously
- M22529/2 offers cushioned crown wire interface

### Applications:

- Penetrations, Cutouts and Edges
- Aluminum, Titanium, CRES or Composite Structures
- Use on Monolithic Machined, Laminated Composite or Sheet Metal Components, Electronic Pallets and Avionic Racks
- Protecting wire, co-ax, twisted pairs, and wave guides
- Any situation where wires/fluid lines pass thru structure & protection is required

### Qualifications:

- NASM22529 qualified
- FAA approved
- UL94 V-0 compliant
- National stock numbers available (see page 19)
- FAR 25.853, Cage Code: 0HES0
- NAVAIR Per 01-1A-505-1 (./2)
- RoHS compliant



840R Roll-Fast™ Applicator Tool



MFE 100 Full Bypass Shears



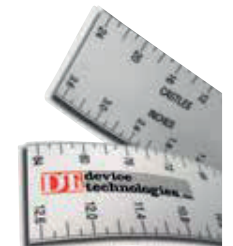
Castle Removal Tool



880G Go No-Go Sheet Thickness Gauge



800TK Tool Kit



Spring-Fast Scale



### Part Numbers

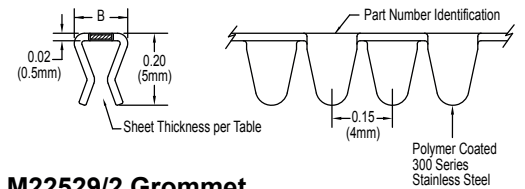
| Military Standard |                | MIL-STD Cross Reference    | Sheet Thickness |        | Unit Length |      | Width B |      |
|-------------------|----------------|----------------------------|-----------------|--------|-------------|------|---------|------|
| Part Number       | Dash Variation |                            | Inches          | mm     | foot        | m    | Inches  | mm   |
| M22529/1          | -1R-25         | MS21266-1<br>0.015"-0.052" | 0.025           | 0.60   | 25          | 7.6  | 0.14    | 3.56 |
|                   | -1R-100        |                            | 0.036           | 0.90   | 100         | 30.5 |         |      |
|                   | -2R-25         | MS21266-2<br>0.052"-0.085" | 0.036           | 0.90   | 25          | 7.6  |         |      |
|                   | -2R-100        |                            | 0.063           | 1.60   | 100         | 30.5 |         |      |
|                   | -3R-25         |                            | 0.059           | 1.50   | 25          | 7.6  |         |      |
|                   | -3R-100        |                            | 0.074           | 1.90   | 100         | 30.5 |         |      |
|                   | -4R-25         | MS21266-3<br>0.085"-0.128" | 0.070           | 1.80   | 25          | 7.6  | 0.19    | 4.83 |
|                   | -4R-100        |                            | 0.093           | 2.40   | 100         | 30.5 |         |      |
|                   | -5R-25         |                            | 0.090           | 2.30   | 25          | 7.6  |         |      |
|                   | -5R-100        |                            | 0.111           | 2.80   | 100         | 30.5 |         |      |
|                   | -6R-25         | MS21266-4<br>0.128"-0.192" | 0.105           | 2.70   | 25          | 7.6  | 0.25    | 6.35 |
|                   | -6R-100        |                            | 0.134           | 3.40   | 100         | 30.5 |         |      |
|                   | -7R-25         | MS21266-5<br>0.192"-0.255" | 0.178           | 4.50   | 25          | 7.6  | 0.32    | 8.13 |
|                   | -7R-100        |                            | 0.198           | 5.00   | 100         | 30.5 |         |      |
|                   | -8R-25         | -                          | 0.240           | 6.10   | 25          | 7.6  | -       | -    |
|                   | -8R-100        |                            | 0.260           | 6.60   | 100         | 30.5 |         |      |
| -nC-85            | -              | -                          | -               | 12.75" | -           | -    | -       |      |
| M22529/2          | -1R-25         | MS21266-1<br>0.015"-0.052" | 0.025           | 0.60   | 25          | 7.6  | 0.20    | 5.10 |
|                   | -1R-100        |                            | 0.036           | 0.90   | 100         | 30.5 |         |      |
|                   | -2R-25         | MS21266-2<br>0.052"-0.085" | 0.036           | 0.90   | 25          | 7.6  |         |      |
|                   | -2R-100        |                            | 0.063           | 1.60   | 100         | 30.5 |         |      |
|                   | -3R-25         |                            | 0.059           | 1.50   | 25          | 7.6  |         |      |
|                   | -3R-100        |                            | 0.074           | 1.90   | 100         | 30.5 |         |      |
|                   | -4R-25         | MS21266-3<br>0.085"-0.128" | 0.070           | 1.80   | 25          | 7.6  | 0.24    | 6.10 |
|                   | -4R-100        |                            | 0.093           | 2.40   | 100         | 30.5 |         |      |
|                   | -5R-25         |                            | 0.090           | 2.30   | 25          | 7.6  |         |      |
|                   | -5R-100        |                            | 0.111           | 2.80   | 100         | 30.5 |         |      |
|                   | -6R-25         | MS21266-4<br>0.128"-0.192" | 0.105           | 2.70   | 25          | 7.6  | 0.32    | 8.10 |
|                   | -6R-100        |                            | 0.134           | 3.40   | 100         | 30.5 |         |      |
|                   | -7R-25         | MS21266-5<br>0.192"-0.255" | 0.178           | 4.50   | 25          | 7.6  | 0.38    | 9.70 |
|                   | -7R-100        |                            | 0.198           | 5.00   | 100         | 30.5 |         |      |
|                   | -8R-25         | -                          | 0.240           | 6.10   | 25          | 7.6  | -       | -    |
|                   | -8R-100        |                            | 0.260           | 6.60   | 100         | 30.5 |         |      |
| -nC-85            | -              | -                          | -               | 12.75" | -           | -    | -       |      |
| MFE-100           |                | Full Bypass Shears         |                 |        |             |      |         |      |

### Cut Lengths

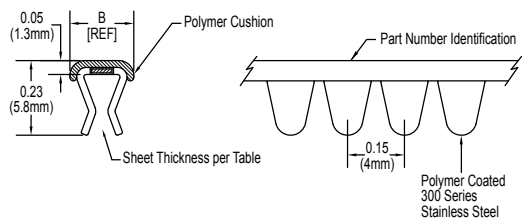
| Nominal Hole Diameter Reference | Cut Lengths |                   |
|---------------------------------|-------------|-------------------|
|                                 | Length      | Number of Castles |
| 2.000                           | 6.00        | 40                |
| 2.250                           | 6.90        | 46                |
| 2.500                           | 7.65        | 51                |
| 2.750                           | 8.40        | 56                |
| 3.000                           | 9.15        | 61                |
| 3.250                           | 10.05       | 67                |
| 3.500                           | 10.80       | 72                |
| 3.750                           | 11.55       | 77                |
| 4.000                           | 12.30       | 82                |
| 4.250                           | 13.20       | 88                |
| 4.500                           | 13.95       | 93                |
| 4.750                           | 14.70       | 98                |
| 5.000                           | 15.45       | 103               |
| 5.250                           | 16.35       | 109               |
| 5.500                           | 17.10       | 114               |
| 5.750                           | 17.85       | 119               |
| 6.000                           | 18.60       | 124               |

Dimensions in inches per NASM22529

#### M22529/1 Grommet



#### M22529/2 Grommet



Due to sheet thickness tolerances and finishes, end user should determine product sizes by trial. When sheet thickness is at the maximum for the grommet chosen, end user may use a rubber mallet to set, or try the next size larger grommet.

### Ordering Examples

#### Cut Lengths

Uncushioned Grommet

Sheet thickness: 0.025" ~ 0.036"  
(0.6mm ~ 0.9mm)

Factory pre-cut length

Number of castles, 12.75" (32.4mm)

**M22529/1 - 1 C - 85**

#### Reels

Cushioned Grommet

Sheet thickness: 0.070" ~ 0.093"  
(1.8mm ~ 2.4mm)

Reel

Length: 25' (7.6m)

**M22529/2 - 4 R - 25**

### Ordering Options:

- 25' (7.6m) or 100' (152m)
- Factory pre-cut lengths
- Bulk or private branded kits
- 840R Roll-Fast™ installation tool
- MFE-100 Full Bypass Shears
- 860GSB Spring-Fast® Cut to Length Scale
- 890-G Castle Removal Tool



Spring-Fast SL AERO is fully encapsulated in a flexible polymer for added abrasion protection on multi-axial forms and penetrations. Used in high performance applications: aircraft structures/interiors, avionics systems, military vehicles, NASCAR vehicles, supercomputers, medical equipment and rail transit.

### Key Benefits:

- 49% reduction in total install costs (@ \$60 labor rate)
- 950% productivity improvement from reduced total process time
- Best-in-class performance

All Spring-Fast variants snap on in seconds for immediate wire routing – no fixturing, adhesive curing, clean up.

If you use “glued” in grommets, switch to Spring-Fast for significant savings and productivity gains



### Qualifications:

- FST Compliant
- RoHS and DFAR compliant
- Flammability ..... FAR 25.853, ASTM E 162 & UL94 V-0
- Smoke Density ..... ASTM E 662
- Random Vibration ..... MIL-STD-102
- Mechanical Shock ..... MIL-STD-810C
- Salt Spray (Corrosion) ..... MIL-STD-202F
- Humidity ..... MIL-STD-810F
- Immersion ..... NASM22529
- Dielectric Withstanding Voltage NASM22529
- Low Temperature ..... MIL-STD-810E
- Temperature Cycling ..... MIL-STD-202G

### Features and Benefits:

- Multi axis flexibility for flanged holes, inside and outside corners
- Indoor and outdoor use
- Operating temperature range: -67°F to 203°F (-55°C to 95°C)
- Eliminates adhesives, safety and enviro concerns
- Holds fast without VOC adhesives
- Excellent resistance to abrasion, water absorption, and low/high temperatures
- Improves ergonomics during assembly
- Spring steel substrate with polymer coating
- Simple snap-on install with finger pressure
- Superior quality, finish and durability
- Adapts to materials, thicknesses & applications
- Flexible and Installs continuously



### Applications:

- Aerospace
- Military/Tactical
- Automotive
- Telecommunication/IT
- Medical
- General Industrial
- Rail/Transportation

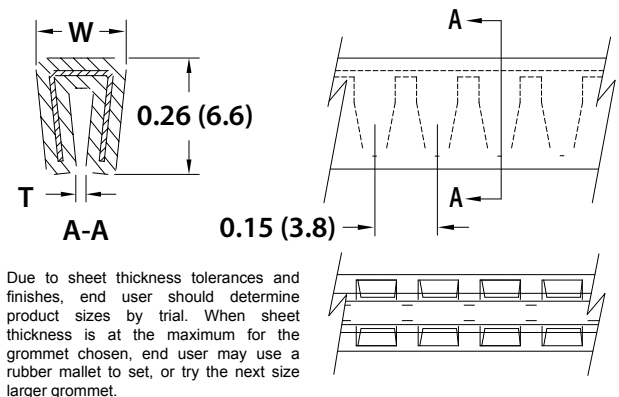


### Spring-Fast™ SL AERO Series Specifications and Ordering Options

| Description                     | Specification  | Test Standard  |
|---------------------------------|--|--|
| Axis Conformity                 | Multi  | -  |
| Substrate                       | Stainless Steel  | ASTM A 666-03  |
| Finish                          | TPE Encapsulation  | -  |
| Vicat Softening Point           | ISO306 230°F (110°C)   | ASTM D01525 Rate B   |
| Operating Temperature Range     | -67°F to 203°F (-55°C to 95°C)   | MIL-STD-202G   |
| Low Temperature Soak            | -40°F (-40°C)  | MIL-STD-810E   |
| Temperature Cycling             | -67°F to 203°F (-55°C to 95°C)   | MIL-STD-202G   |
| Humidity                        | No physical change   | MIL-STD-810  |
| Dielectric Withstanding Voltage | 2000 volts @ 60Hz  | NASM22529  |
| Abrasion Resistance             | 25 mg Loss   | ASTM D1044   |
|                                 | No change in weight or dielectric strength                                 | DTi Abrasion Resistance Test   |
| Salt Spray Hours                | 500  | MIL-STD-202  |
| Immersion                       | No physical change   | NASM22529, MIL-H-5606, MIL-T-5624, MIL-L-7808 and Skydrol Compatible |
| Mechanical Shock                | No movement or physical change   | MIL-STD-810C   |
| Random Vibration                | No movement or physical change   | MIL-STD-202  |
| Flammability                    | No sustained flame front or drips  | ASTM E 162 Tested, FAR 25.853 (A), and UL94 V-0                      |
| Smoke Density                   | Test period 90 sec., 4 min., 20 min. with no flaming, dripping, or running | ASTM E 662 Tested, FAR 25.853 (D)                                    |
| Toxicity                        | 4 min. test within acceptable limits                                       | BSS 7239   |
| Flammability Certifications     | FAR 25.853 (A) UL94 V-0 (File No. E113553 NZMT2)                           |  |

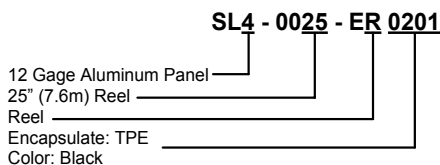
### Sizes:

| Product Size | Sheet Thickness "T" |             | Width "W" |       |
|--------------|---------------------|-------------|-----------|-------|
|              | Inches              | (mm)        | Inches    | mm    |
| 0            | 0.020 - 0.030       | (0.5 - 0.8) | 0.212     | (5.4) |
| 1            | 0.029 - 0.045       | (0.7 - 1.1) |           |       |
| 2            | 0.044 - 0.056       | (1.1 - 1.4) |           |       |
| 3            | 0.055 - 0.069       | (1.4 - 1.7) |           |       |
| 4            | 0.069 - 0.090       | (1.7 - 2.3) | 0.277     | (7.0) |
| 5            | 0.089 - 0.114       | (2.3 - 2.9) |           |       |
| 6            | 0.113 - 0.130       | (2.9 - 3.3) |           |       |
| 6MA          | 0.135 - 0.145       | (3.4 - 3.7) |           |       |

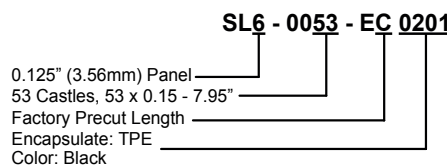


### Ordering Examples

#### SL Series on Reel



#### SL Series Factory Precut



### Additional Ordering Options:

- 25' (7.6m), 100' (30.4m), 500' (152m) reels
- Factory pre-cut lengths
- Bulk or private branded kits
- 840-R Roll-Fast™ installation tool
- 830 Full Bypass Shears
- 860-GSB Cut to Length Scale



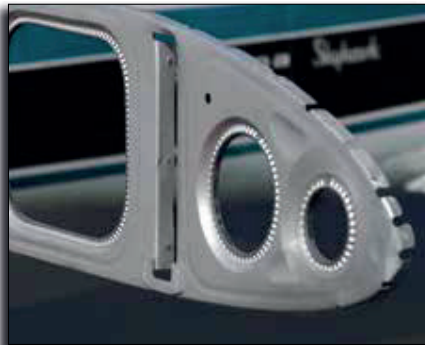
Spring-Fast BAP Series was designed for greater gripping strength to cope with severe shock and vibration applications.

### Key Benefits:

- 49% reduction in total install costs (@ \$60 labor rate)
- 950% productivity improvement from reduced total process time
- Best-in-class performance

All Spring-Fast variants snap on in seconds for immediate wire routing – no fixturing, adhesive curing, clean up or inspections.

If you use “glued” in grommets, switch to Spring-Fast for significant savings and productivity gains



### Features and Benefits:

- Multi-axis flexibility for flanged holes and inside and outside radii.
- Continuous edge protection
- Excellent grip strength
- Holds fast without VOC adhesives
- Excellent resistance to abrasion, shock and vibration, low and high temperatures, and corrosion
- Fast assembly – no adhesives, rivets, or screws
- Operating temp. range: -40°F to 185°F (-40°C to 85°C)
- Eliminates adhesives, safety and enviro concerns
- Improves ergonomics during assembly
- Spring steel substrate with polymer coating
- Simple snap-on install with finger pressure
- Self-locking security
- Superior quality, finish and durability
- Adapts to materials, thicknesses & applications

### Applications:

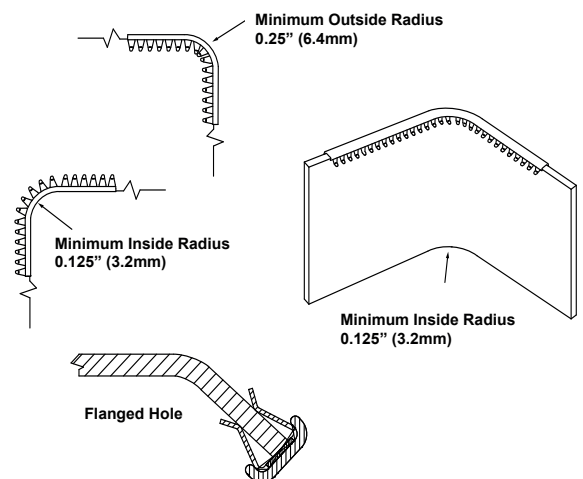
- Avionic instruments
- Auxiliary power units
- Airframe structure
- Bulkheads
- Cowling
- Dashboard
- Electrical avionic units
- Electrical power center
- In-flight entertainment
- Intercostal
- Lightning holes
- Personal safety units
- Seating
- Tail sections
- Wing ribs



### Qualifications:

- RoHS and DFAR compliant
- Flammability per FAR 25.853
- Mil Std 202F
- UL 94 V-0
- Telcordia GR-63-CORE

### Multi-Axis Flexibility:



840R Roll-Fast™  
Applicator Tool



830PS Full Bypass Shears



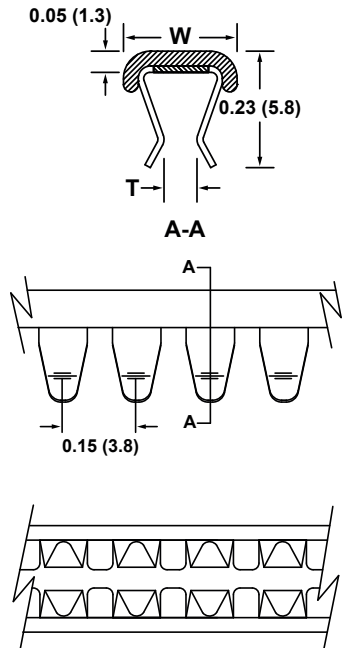
Spring-Fast Scale

## BAP AERO Series Flexi-Grommet™ Wire Protection Grommet Edging

### Qualifications:

| Spring-Fast Specifications                             | BAP Series Flexi-Grommet™   |
|--|---|
| Axis Conformity  | Multi   |
| Vicat Softening Point per ASTM D01525 Rate B           | TPE Cushion: ISO306 Color: Gray 230°F (110°C)   |
| Operating Temperature Range                            | -40°F to 185°F (-40°C to 85°C)  |
| Dielectric Strength per NASM22529, Section 3.2.1       | 1500 Volts at 60Hz  |
| Substrate  | Stainless Steel   |
| Taber Abrasion Resistance                              | TPE Cushion: per D1044 1Kg load, C17 Wheel<br>25mg loss 1000 cycles   |
| Finish   | TPE Cushion   |
| Salt Spray Hours per ASTM B117 MIL-STD-202, Method 301 | 2000 hours  |
| Immersion  | Per NASM22529 and Skydrol Compatible  |
| Random Shock & Vibration                               | MIL-STD-1344, Method 2005.1 Test Condition VI, Letter J<br>Duration 8 hours longitudinal and 8 hours perpendicular. rms G 41.7  |
| Flammability   | FAR 25.601, FAR 25.853 MIL-STD-202F, Method 111A<br>UL94 V-0 File No. E113553 NZMT2   |
| Fabrication Options                                    | Factory pre-cut lengths or private branded kits<br>Roll-Fast™ application tool<br>Full Bypass Shears<br>Spring-Fast Cutter Cart |

### Dimensions:



Due to sheet thickness tolerances and finishes, end user should determine product sizes by trial. When sheet thickness is at the maximum for the grommet chosen, end user may use a rubber mallet to set, or try the next size larger grommet.

### Sizes

| Product Size | T Sheet Thickness Inches (mm) | W Width Inches (mm) |
|--------------|-------------------------------|---------------------|
| 0            | 0.020 - 0.030 (0.5 - 0.8)     | 0.19 (4.8)          |
| 1            | 0.029 - 0.045 (0.7 - 1.1)     |                     |
| 2            | 0.044 - 0.056 (1.1 - 1.4)     |                     |
| 3            | 0.055 - 0.069 (1.4 - 1.7)     |                     |
| 4            | 0.069 - 0.090 (1.7 - 2.3)     | 0.28 (6.8)          |
| 5            | 0.089 - 0.144 (2.3 - 2.9)     |                     |
| 6            | 0.113 - 0.130 (2.9 - 3.3)     |                     |

### Ordering Examples

#### BAP Series Factory Precut

**BAP4 - 0053 - EC 0402**  
 0.080" (2.0mm) ————  
 53 Whole Castles, 53 x 0.15 = 7.95" ————  
 Factory Pre-Cut Length ————  
 Coating: White Fushion Bonded Nylon with Grey Cushion ————

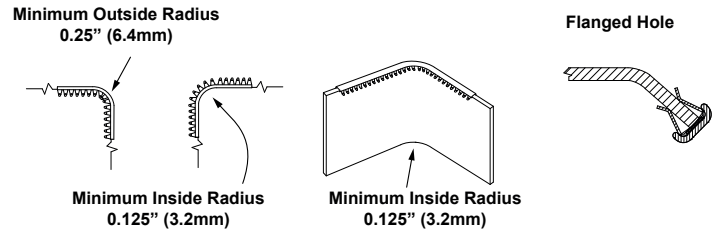
#### BAP Series on Reel

**BAP2 - 0100 - ER 0402**  
 0.050" (1.3mm) ————  
 100' Reel (30.5m) ————  
 Reel ————  
 Coating: White Fushion Bonded Nylon with Grey Cushion ————

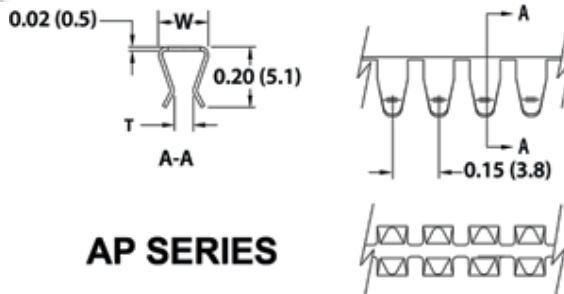
### Features & Benefits for HIGH HEAT Spring-Fast:

- Snap on multi-axial mounting, no adhesive necessary
- Available on 25' or 100' foot reels or pre-cut lengths
- Lowest profile on the market
- Operating temperature up to 800°F
- UL94 V-0
- RoHS compliant
- FAR 25.853

Conformal stainless steel grommet edging

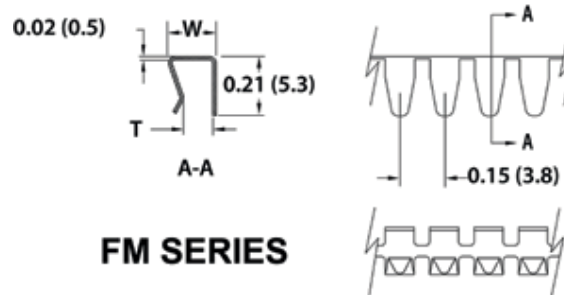


### Spring-Fast "AP" Series: Great gripping strength for severe shock and vibration environments



| Product Size | Panel Thickness (Inches) |
|--------------|--------------------------|
| 0            | 0.020-0.030              |
| 1            | 0.029-0.045              |
| 2            | 0.044-0.056              |
| 3            | 0.055-0.069              |
| 4            | 0.068-0.090              |
| 5            | 0.089-0.114              |
| 6            | 0.113-1.130              |

### Spring-Fast "FM" Series: Flush mounting profile on one side for smooth surface



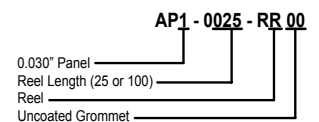
| Product Size | Panel Thickness (Inches) |
|--------------|--------------------------|
| 2            | 0.044-0.056              |
| 3            | 0.055-0.069              |
| 4            | 0.068-0.090              |

| Spring-Fast Specifications  | HIGH HEAT Series Grommet  |
|-----------------------------|---|
| Axis Conformity             | Multi   |
| Operating Temperature Range | -40°F to 800°F (-40°C to 427°C) *Maximum 1,600°F (870°C)  |
| Material                    | 304 Stainless Steel   |
| Finish                      | #2 Finish   |
| Flammability                | Not Applicable  |
| Weldability                 | Weldable - Recommendations: LASER Weld; if filler is required use 308 Stainless Steel             |
| Fabrication Options         | Factory pre-cut lengths; Roll-Fast™ application tool; Full Bypass Shears; Spring-Fast Cutter Cart |

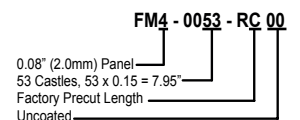
\* Above 800°F 304 Stainless Steel begins to precipitate out chromium carbides. This results in a decrease in corrosive resistance and ductility properties with time.

#### Ordering Examples

##### AP Series on Reel

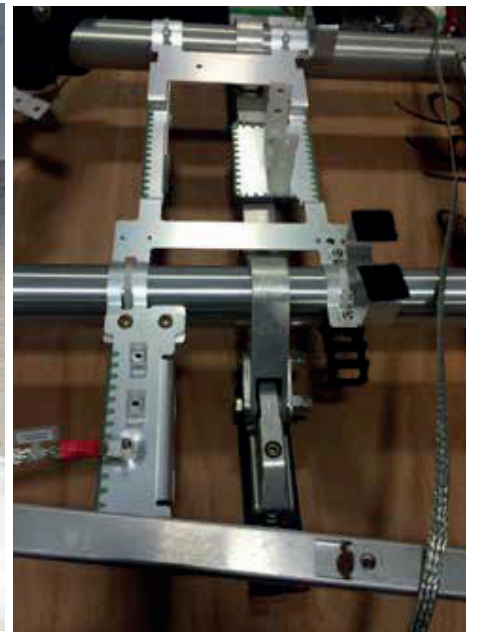


##### FM Series Factory Precut



# SpringFast®

Grommet Application





An economical edge trim solution adding both a finished appearance and protection against abrasion.

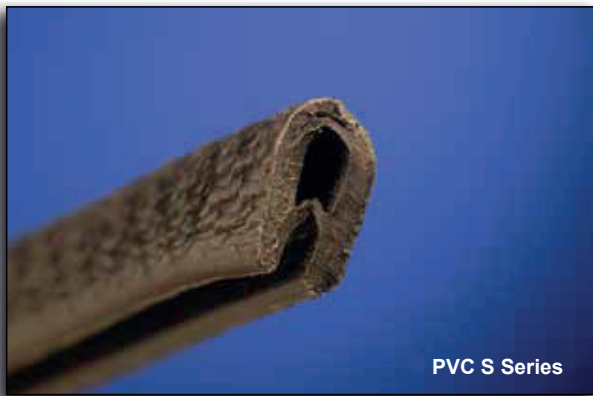
Trim-Fast Edge Trims are available in a flexible steel or stainless steel substrate covered with Silicone, EPDM or PVC, allowing for fast and easy assembly for most environments.

### Features and Benefits:

- Excellent grip strength
- Excellent resistance to abrasion
- Low and high temperature use
- Indoor and outdoor use
- Fast assembly without the use of adhesives, rivets, or screws
- Multi-axis flexibility
- Sheet thickness ranges up to 3/4" (19mm)

### Applications:

- Automotive
- Railway
- Aerospace
- Food service (FDA white)
- Telecommunications
- Construction
- Marine
- General industrial



### “S” Silicone Series

- FDA approved (White Silicone Material)
- Flame, Smoke and Toxicity compliant
- ASTM E 662 (Smoke Density)
- ASTM C 542 & ASTM C 1166 (Flame Propagation)
- BSS 7293 (Toxicity)

### “S” EPDM Series

- FMVSS 302 (Flammability of Interior Materials)
- SAE J1885 (Interior Weatherometer)
- SAE J1960 (Exterior Weatherometer)
- SAE 200 M8BA 708 B13 21-6 (Low Temperature Flexibility)
- UL 50 and 50E Compliant, File Number JMST2.MH60351



### “S” PVC Series

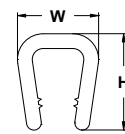
- Greater flexibility for small corner radii
- Smaller profile

### Trim-Fast™ High Performance Edge Protection Solutions

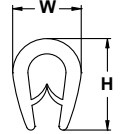
#### Qualifications:

| Trim-Fast™ Seal Product Configurations                            |           | PVC/EPDM   | EPDM   | Silicone                                       |                       |
|---|-----------|--|--|--|-----------------------|
| Substrate (Base Material)   |           | Steel Clip   | Steel Wire<br>(Optional: Stainless Steel Wire) | Steel Wire<br>(Optional: Stainless Steel Wire) |                       |
| Gasket Material   | Type      | PVC  | EPDM   | Silicone                                       | FDA Approved Silicone |
|   | Durometer | Shore A 65   | Shore A 70<br>(Optional: 50 and 90)            | Shore A 75<br>(Optional: 45 and 60)            |                       |
|   | Color     | Black  | Black  | Black  | White                 |
| Continuous Operating Temperature Range                            |           | Up to 212°F<br>(100°C)                                 | -40°F to 250°F<br>(-40°C to 121°C)             | -50°F to 250°F<br>(-45°C to 121°C)             |                       |
| Interior Weatherometer  |           |  | SAE J1885                                      |  |                       |
| Exterior Weatherometer  |           |  | SAE J1960                                      |  |                       |
| Low Temperature Flexibility                                       |           |  | SAE J200 M8BA 708 B13 Z1-6                     |  |                       |
| Flame Propagation - Rail & Aero                                   |           |  |  | ASTM C 542, ASTM C1166                         |                       |
| Flammability of Interior Materials (Burn Resistance) - Automotive |           |  | FMVSS 302                                      |  |                       |
| Toxicity - Rail & Aero  |           |  |  | BSS 7239, ATS 100/ABD0031<br>ASTM E 662        |                       |
| Food Service Equipment  |           |  |  | FDA Approved White                             |                       |
| Fabrications Options  |           | Factory pre-cut lengths, bulk, or private branded kits |  |  |                       |
| Compression and Recompression                                     |           |  | UL 50E   |  |                       |
| RoHS Compliant  |           | YES  | YES  | YES  |                       |

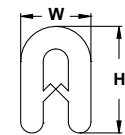
#### Trim-Fast™ Standard Profiles



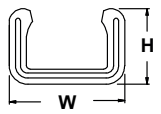
Profile "A"



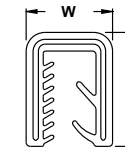
Profile "B"



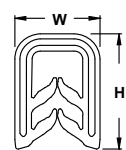
Profile "C"



Profile "D"



Profile "E"



Profile "F"

#### Sizes:

| Part Number | Substrate Material | Gasket Material       | Profile | Gasket Width "W" inches (mm) | Gasket Height "H" inches (mm) | Application Thickness inches (mm) |
|-------------|--------------------|-----------------------|---------|------------------------------|-------------------------------|-----------------------------------|
| S6-009-S02  | Steel              | Flexible PVC          | A       | 0.512 (13.0)                 | 0.591 (15.0)                  | 0.312 (8.0) Nom.                  |
| S2-003-S02  | Steel              | Flexible PVC          | B       | 0.256 (6.5)                  | 0.374 (9.5)                   | 0.080 (2.0) Nom.                  |
| S3-005-S02  | Steel              | Flexible PVC          | B       | 0.354 (9.0)                  | 0.472 (12.0)                  | 0.039-0.118 (1.0-3.0)             |
| S1-004-S02  | Steel              | Flexible PVC          | C       | 0.220 (5.6)                  | 0.335 (8.5)                   | 0.063 (1.6) Nom.                  |
| S3-053-T24  | Stainless          | FDA Approved Silicone | F       | 0.394 (10.0)                 | 0.560 (14.2)                  | 0.040-0.125 (1.0-3.2)             |
| S7-014-S01  | Steel              | EPDM                  | D       | 0.732 (18.6)                 | 0.618 (15.7)                  | 0.375 (9.5) Nom.                  |
| S3-101-S01  | Steel              | EPDM                  | F       | 0.400 (10.2)                 | 0.410 (10.4)                  | 0.125 (3.2) Nom.                  |
| S4-107-S01  | Steel              | EPDM                  | E       | 0.394 (10.0)                 | 0.533 (13.5)                  | 0.187 (4.8) Nom.                  |
| S7-061-001  | Steel              | EPDM                  | D       | 0.649 (16.5)                 | 1.00 (25.4)                   | 0.375 (9.5) Nom.                  |
| S9-006-S01  | Steel              | EPDM                  | D       | 0.926 (23.5)                 | 0.607 (15.4)                  | 0.625 (15.9) Nom.                 |
| S6-010-S01  | Steel              | EPDM                  | E       | 0.539 (13.74)                | 0.716 (18.2)                  | 0.250 (6.4) Nom.                  |
| S3-001-S04  | Steel              | Silicone              | F       | 0.394 (10.0)                 | 0.560 (14.2)                  | 0.040-0.125 (1.0-3.2) Nom.        |
| S3-002-S01  | Steel              | EPDM                  | F       | 0.394 (10.0)                 | 0.560 (14.2)                  | 0.040-0.125 (1.0-3.2) Nom.        |
| S3-054-001  | None               | EPDM                  | A       | 0.400 (10.2)                 | 0.490 (12.4)                  | 0.125 (3.18) Nom.                 |
| S1-011-001  | None               | EPDM                  | A       | 0.180 (4.6)                  | 0.434 (11.0)                  | 0.062 (1.6) Nom.                  |
| S5-055-001  | None               | EPDM                  | A       | 0.450 (11.4)                 | 0.500 (12.7)                  | 0.250 (6.35) Nom.                 |
| S5-008-S02  | Steel              | Flexible PVC          | F       | 0.453 (11.5)                 | 0.669 (17.0)                  | 0.250 (6.4) Nom.                  |

Additional and custom sizes available, please consult website, factory or DTI Tech Rep for details or evaluation samples.

# SpringFast® Installation Tool Kit



**Tool Kit**

Part Number: 800TK includes all of the above

Spring-Fast Wire Protection Grommet Edging Installation Tool Kit combines all the installation tools you need to get the job done right when installing the NAS M22529/1 and NAS M22529/2 Composite Grommet Edging.

From measuring the chassis with the 'Go/No-Go' gauge to finishing the grommet to accommodate a nearby interference point with the Castle Removal Tool, this tool kit will improve productivity and quality compared to adhesive-applied grommets.

Packaged in a '5S' style Shadowbox for easy monitoring and control on the shop floor, the kit includes:

## Sheet Thickness 'Go/No-Go' Gauge

Part Number 880 G

- Go/No Go gauge for all Spring-Fast sizes
- For sheet thicknesses from 0.020" to 0.260" (0.5mm - 6.6mm)
- Made from stainless steel



'Go/No-Go' Sheet  
Thickness Gauge  
p/n 880 G



Full Bypass Cut  
Off Shears  
p/n 830 PS (or MFE 100)

## Adhesive Backed Bench Top Mount Measuring Scale

Part Number 860 GSB

- Adhesive backed for applying to work bench
- Measures in inches and castles
- 24" long (154 castles)

## Full Bypass Cut Off Shears

Part Number 830 PS (or MFE 100)

- Quickly cuts Spring-Fast grommet and Trim-Fast™ edge trim, assuring a clean, burr-free cut.
- Prevents distortion of adjacent castles

## Roll Fast™ Installation and Application Roller Tool

Part Number 840 R

- Quickly installs Spring-Fast grommet edging
- 1/2" (12.7mm) outside groove diameter



Roll Fast™ Installation/  
Application Roller  
p/n 840 R



Castle Removal Tool  
p/n 890 G

## Castle Removal Tool

Part Number 890 G

- Fast and easy operation for removing single castles
- Polished, forged steel cutting edge provides excellent longevity
- Ergonomic handles for comfortable operation
- Tool Weight: 0.22 lbs



Spring-Fast Scale

**Tool Kit Part Number: 800TK includes all of the above**



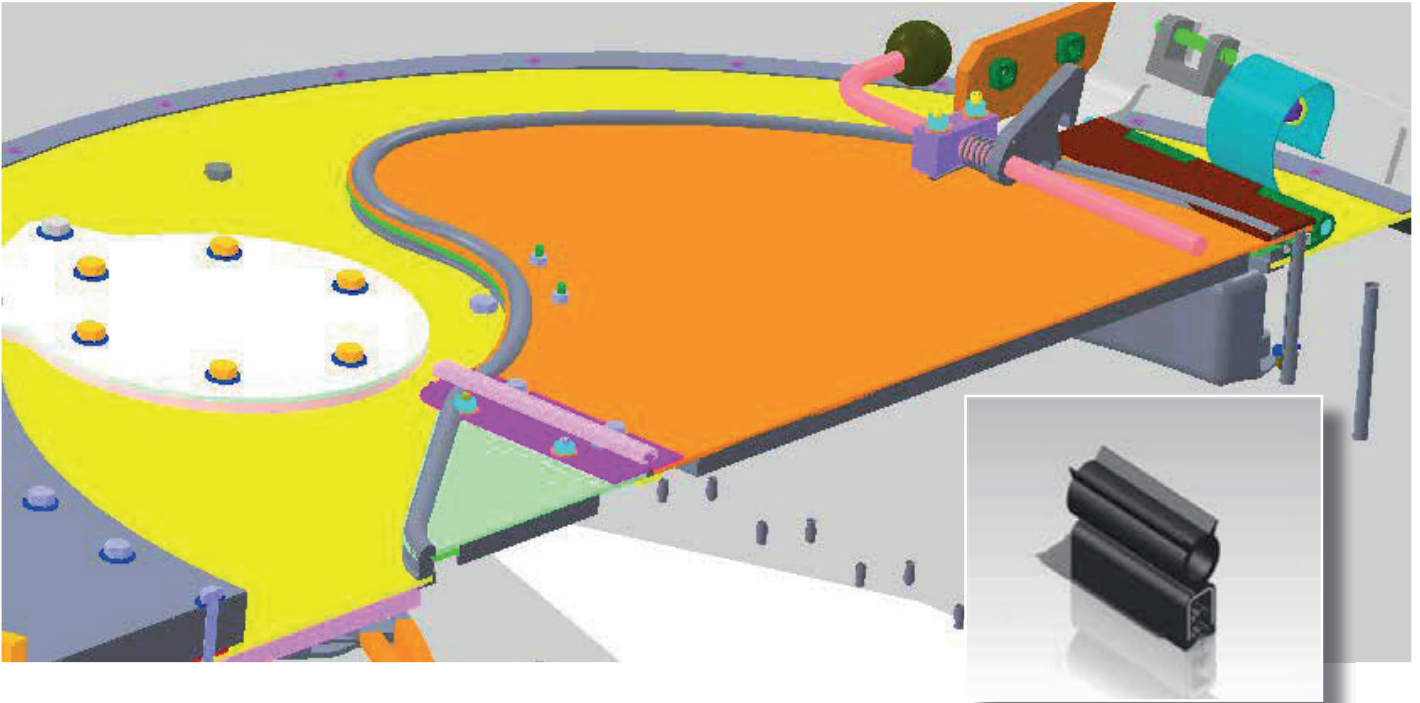
## Device Technologies' Cross Reference Chart for National Stock Numbers & NATO Part Numbers

| NAS<br>M22529   | National<br>Stock<br>Number | NATO<br>Stock<br>Number | Sheet Thickness     |              | Description |             |                 |
|-----------------|-----------------------------|-------------------------|---------------------|--------------|-------------|-------------|-----------------|
|                 |                             |                         | English<br>Inches   | Metric<br>mm | Length      |             | Package<br>Type |
|                 |                             |                         |                     |              | English     | Metric      |                 |
| M22529/1-1C-85  | 5325-01-386-9027            | N/A                     | 0.025 - 0.036       | 0.6 - 0.9    | 12.75 in.   | 324 mm      | cut length      |
| M22529/1-1R-100 | 5325-01-324-4907            | N/A                     | 0.025 - 0.036       | 0.6 - 0.9    | 100 feet    | 30.5 meters | reel            |
| M22529/1-2C-40  | 5325-01-435-3690            | N/A                     | 0.036 - 0.063       | 0.9 - 1.6    | 6 in.       | 152.4 mm    | cut length      |
| M22529/1-2R-100 | 5325-01-324-4906            | N/A                     | 0.036 - .0063       | 0.9 - 1.6    | 100 feet    | 30.5 meters | reel            |
| M22529/1-2R-100 | 5325-01-515-9242            | N/A                     | 0.036 - 0.063       | 0.9 - 1.6    | 100 feet    | 30.5 meters | reel            |
| M22529/1-3C-53  | 5325-01-469-9271            | N/A                     | 0.059 - 0.074       | 1.5 - 1.9    | 7.9 in.     | 201.9 mm    | cut length      |
| M22529/1-3R-100 | 5325-01-371-0714            | N/A                     | 0.059 - 0.074       | 1.5 - 1.9    | 100 feet    | 30.5 meters | reel            |
| M22529/1-4C-28  | 5325-01-468-3087            | N/A                     | 0.070 - 0.093       | 1.8 - 2.4    | 4.2 in.     | 106.6 mm    | cut length      |
| M22529/1-4C-53  | 5325-01-547-3931            | N/A                     | 0.070 - 0.093       | 1.8 - 2.4    | 7.9 in.     | 201.9 mm    | cut length      |
| M22529/1-4C-66  | 5325-01-547-3932            | N/A                     | 0.070 - 0.093       | 1.8 - 2.4    | 9.9 in.     | 251.4 mm    | cut length      |
| M22529/1-4R-25  | 5325-01-456-9366            | N/A                     | 0.070 - 0.093       | 1.8 - 2.4    | 25 feet     | 7.6 meters  | reel            |
| M22529/1-4R-25  | 5325-01-472-8500            | N/A                     | 0.070 - 0.093       | 1.8 - 2.4    | 25 feet     | 7.6 meters  | reel            |
| M22529/1-4R-100 | 5325-01-371-0713            | N/A                     | 0.070 - 0.093       | 1.8 - 2.4    | 100 feet    | 30.5 meters | reel            |
| M22529/1-5R-100 | 5325-01-333-6362            | N/A                     | 0.090 - 0.111       | 2.3 - 2.8    | 100 feet    | 30.5 meters | reel            |
| M22529/1-6C-85  | 5325-01-338-3952            | N/A                     | 0.105 - 0.134       | 2.7 - 3.4    | 12.75 in.   | 324 mm      | cut length      |
| M22529/1-6C-118 | 5325-01-445-0281            | N/A                     | 0.105 - 0.134       | 2.7 - 3.4    | 17.7 in.    | 449.5 mm    | cut length      |
| M22529/1-6R-25  | 5325-01-472-8522            | N/A                     | 0.105 - 0.134       | 2.7 - 3.4    | 25 feet     | 7.6 meters  | reel            |
| M22529/1-6R-25  | 5325-01-473-9939            | N/A                     | 0.105 - 0.134       | 2.7 - 3.4    | 25 feet     | 7.6 meters  | reel            |
| M22529/1-7C-53  | 5325-01-445-0277            | N/A                     | 0.178 - 0.198       | 4.5 - 5.0    | 7.9 in.     | 201.9 mm    | cut length      |
| M22529/1-7C-115 | 5325-01-445-0273            | N/A                     | 0.178 - 0.198       | 4.5 - 5.0    | 17.2 in.    | 438.1 mm    | cut length      |
| M22529/1-7R-25  | 5325-01-472-8537            | N/A                     | 0.178 - 0.198       | 4.5 - 5.0    | 25 feet     | 7.6 meters  | reel            |
| M22529/2-1R-25  | 5325-01-487-4578            | 5325-99-867-8238        | 0.025 - 0.036       | 0.6 - 0.9    | 25 feet     | 7.6 meters  | reel            |
| M22529/2-1R-100 | 5325-01-503-5018            | N/A                     | 0.025 - 0.036       | 0.6 - 0.9    | 100 feet    | 30.5 meters | reel            |
| M22529/2-2C-17  | 5325-01-475-5398            | N/A                     | 0.036 - 0.063       | 0.9 - 1.6    | 2.5 in.     | 64.7 mm     | cut length      |
| M22529/2-2C-28  | 5325-01-517-4805            | N/A                     | 0.036 - 0.063       | 0.9 - 1.6    | 4.2 in.     | 106.6 mm    | cut length      |
| M22529/2-2R-25  | 5325-01-527-9534            | N/A                     | 0.036 - 0.063       | 0.9 - 1.6    | 25 feet     | 7.6 meters  | reel            |
| M22529/2-2R-25  | 5325-01-450-0401            | N/A                     | 0.036 - 0.063       | 0.9 - 1.6    | 25 feet     | 7.6 meters  | reel            |
| M22529/2-2R-100 | 5325-01-468-0649            | N/A                     | 0.036 - 0.063       | 0.9 - 1.6    | 100 feet    | 30.5 meters | reel            |
| M22529/2-2R-100 | 5325-01-524-8550            | N/A                     | 0.036 - 0.063       | 0.9 - 1.6    | 100 feet    | 30.5 meters | reel            |
| M22529/2-3C-125 | 5325-01-527-1100            | N/A                     | 0.059 - 0.074       | 1.5 - 1.9    | 18.7 in.    | 476.2 mm    | cut length      |
| M22529/2-3R-25  | 5325-01-470-8849            | 5325-99-172-1367        | 0.059 - 0.074       | 1.5 - 1.9    | 25 feet     | 7.6 meters  | reel            |
| M22529/2-3R-100 | 5325-01-468-0650            | N/A                     | 0.059 - 0.074       | 1.5 - 1.9    | 100 feet    | 30.5 meters | reel            |
| M22529/2-4C-85  | 5325-01-501-6710            | N/A                     | 0.070 - 0.093       | 1.8 - 2.4    | 12.7 in.    | 324 mm      | cut length      |
| M22529/2-4C-90  | 5325-01-496-6303            | N/A                     | 0.070 - 0.093       | 1.8 - 2.4    | 13.5 in.    | 342.9 mm    | cut length      |
| M22529/2-4R-25  | 5325-01-487-4585            | 5325-99-337-6079        | 0.070 - 0.093       | 1.8 - 2.4    | 25 feet     | 7.6 meters  | reel            |
| M22529/2-4R-100 | 5325-01-468-0651            | N/A                     | 0.070 - 0.093       | 1.8 - 2.4    | 100 feet    | 30.5 meters | reel            |
| M22529/2-5R-25  | 5325-01-487-4613            | 5325-99-365-4308        | 0.090 - 0.111       | 2.3 - 2.8    | 25 feet     | 7.6 meters  | reel            |
| M22529/2-5R-100 | 5325-01-510-6279            | 5325-99-365-4308        | 0.090 - 0.111       | 2.3 - 2.8    | 100 feet    | 30.5 meters | reel            |
| M22529/2-6C-85  | 5325-01-495-4088            | N/A                     | 0.105 - 0.134       | 2.7 - 3.4    | 12.75 in.   | 324 mm      | cut length      |
| M22529/2-6R-25  | 5325-01-487-4621            | 5325-99-997-5731        | 0.105 - 0.134       | 2.7 - 3.4    | 25 feet     | 7.6 meters  | reel            |
| M22529/2-6R-100 | 5325-01-496-0156            | 5325-99-997-5731        | 0.105 - 0.134       | 2.7 - 3.4    | 100 feet    | 30.5 meters | reel            |
| M22529/2-7C-85  | 5325-01-456-7001            | N/A                     | 0.178 - 0.198       | 4.5 - 5.0    | 12.75 in.   | 324 mm      | cut length      |
| M22529/2-7C-85  | 5325-01-501-5915            | N/A                     | 0.178 - 0.198       | 4.5 - 5.0    | 12.75 in.   | 324 mm      | cut length      |
| M22529/2-7C-27  | 5325-01-496-6309            | N/A                     | 0.178 - 0.198       | 4.5 - 5.0    | 4.0 in.     | 102.8 mm    | cut length      |
| M22529/2-7C-30  | 5325-01-456-7001            | N/A                     | 0.178 - 0.198       | 4.5 - 5.0    | 4.5 in.     | 114.3 mm    | cut length      |
| M22529/2-7C-50  | 5325-01-501-5915            | N/A                     | 0.178 - 0.198       | 4.5 - 5.0    | 7.5 in.     | 190.5 mm    | cut length      |
| M22529/2-7R-25  | 5325-01-487-4623            | 5325-99-483-2068        | 0.178 - 0.198       | 4.5 - 5.0    | 25 feet     | 7.6 meters  | reel            |
| M22529/2-7R-100 | 5325-01-510-7945            | N/A                     | 0.178 - 0.198       | 4.5 - 5.0    | 100 feet    | 30.5 meters | reel            |
| M22529/2-8C-85  | 5325-01-499-1992            | N/A                     | 0.240 - 0.260       | 6.1 - 6.6    | 12.75 in.   | 324 mm      | cut length      |
| M22529/2-8C-54  | 5325-01-495-9800            | N/A                     | 0.240 - 0.260       | 6.1 - 6.6    | 8.1 in.     | 205.7 mm    | cut length      |
| M22529/2-8C-60  | 5325-01-495-9801            | N/A                     | 0.240 - 0.260       | 6.1 - 6.6    | 9 in.       | 228.6 mm    | cut length      |
| M22529/2-8R-25  | 5325-01-487-4624            | 5325-99-488-6519        | 0.240 - 0.260       | 6.1 - 6.6    | 25 feet     | 7.6 meters  | reel            |
| MFE100          | 5325-01-371-0712            |                         | Full By-Pass Shears |              |             |             |                 |

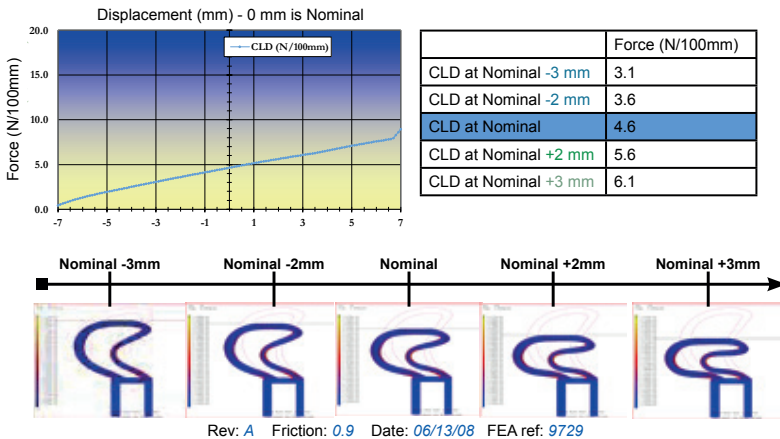
See new and additional tools at [www.devicetech.com](http://www.devicetech.com) and search for "Spring-Fast Tools"

### Cage Code 0HES0

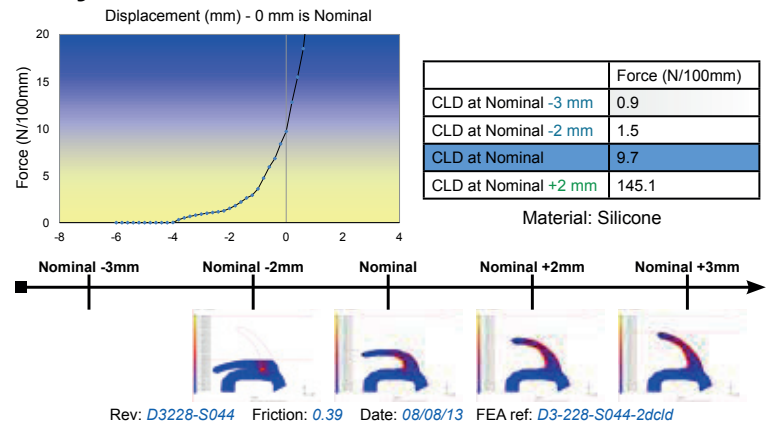
# Rubber Extrusion Application



## Body Seal 1

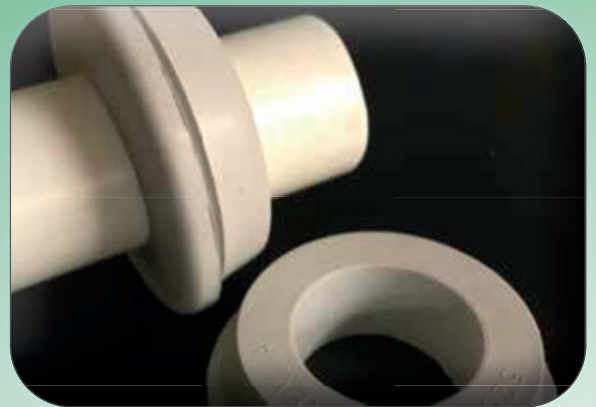


## Body Seal CLD (Compression Load Displacement)



# Seal-Fast™

High Performance Enclosures and Door Seals





The Seal-Fast High Performance Edge Seal protects vital equipment from damage from environmental conditions by meeting critical industry standards, improves efficiency with high, long-term performance and a multi-axis, flexible fit. Fast Customization of profiles, mitering and vulcanizing of corners and film bonding of ends are also available.

A better, cleaner, and faster way to protect your equipment from environmental conditions; dust, low and high temperatures, and moisture.

Seal-Fast D Series Edge Seals are available in a variety of materials, which include a flexible steel or stainless steel substrate, Silicone, EPDM, or PVC gasket and seal assembly allowing for fast and easy assembly.

### Features and Benefits:

- Excellent grip strength
- Excellent resistance to abrasion, water absorption, and low and high temperatures
- Indoor or outdoor use
- Fast assembly without the use of adhesives, rivets, or screws
- Multi-axis flexibility for small inside and outside radius corners

### Applications:

- Automotive
- Railway
- Aerospace
- Food service (FDA white)
- Telecommunication
- Construction, mining, and forestry
- General industrial



### “D” Silicone Series

- Flame, Smoke and Toxicity Compliant per:
  - ASTM E1354 (Cone Calorimeter), EN 45545-2
  - ASTM E662 (Smoke Density), EN 45545-2
  - ASTM C542 & C 1166 (Flame Propagation), EN 45545-2
  - BSS 7239 and SMP800C (Toxicity), EN 45545-2
- FDA Approved (White Silicone)

### “D” EPDM Series

- FMVSS 302 (Flammability of Interior Materials)
- SAE J1885 (Interior Weatherometer)
- SAE J1960 (Exterior Weatherometer)
- SAE 200 M8BA 708 B13 21-6 (Low Temperature Flexibility)
- UL 50E Compliant, File Number JMST2.MH60351



### “D” PVC/EPDM Series

- Greater flexibility for small corner radii
- Smaller profile

**\*Ask about our custom solutions and finite element analysis (FEA) capabilities**

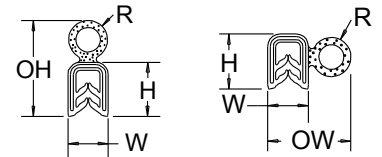
# Seal-Fast™

## Enclosure & Door Seals High Performance Edge Seal Solutions

### Seal-Fast™ Enclosure and Door Seal Qualifications

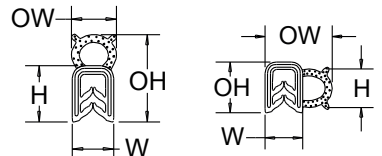
| Seal-Fast™ Seal Product Configurations                               |           | PVC/EPDM  | EPDM   | Silicone   |                                    |
|--|-----------|---|--|--|------------------------------------|
| Substrate (Base Material)  |           | Steel Clip  | Steel Wire<br>(Optional: Stainless Steel Wire) | Steel Wire<br>(Optional: Stainless Steel Wire)   |                                    |
| Gasket Material  | Type      | PVC   | EPDM   | Silicone   | FDA Approved Silicone              |
|  | Durometer | Shore A 65  | Shore A 70<br>(Optional: 50)                   | Shore A 75<br>(Optional: 50 and 60)  | Shore A 60                         |
|  | Color     | Black   | Black  | Black, Grey  | White                              |
| Seal Material<br>(Top or Side Bulb)                                  | Type      | EPDM  | EPDM   | Silicone   | FDA Approved Silicone              |
|  | Durometer | Sponge  | Sponge   | Shore A 75   | Shore A 60                         |
|  | Color     | Black   | Black  | Black  | White                              |
| Continuous Operating Temperature Range                               |           | Up to 212°F<br>(100°C)  | -40°F to 250°F<br>(-40°C to 121°C)             | -50°F to 250°F<br>(-45°C to 121°C)<br>Up to 450°F (232°C)<br>Silicone Available Upon Request | -50°F to 250°F<br>(-45°C to 121°C) |
| Interior Weatherometer   |           | SAE J1885   |  |  |                                    |
| Exterior Weatherometer   |           | SAE J1960   |  |  |                                    |
| Low Temperature Flexibility  |           | SAE J200 M8BA 708 B13 Z1-6  |  |  |                                    |
| Flame Propagation - Rail & Aero                                      |           | ASTM C 542, ASTM C1166, EN 45545-2                                  |  |  |                                    |
| Flammability of Interior Materials<br>(Burn Resistance) - Automotive |           | FMVSS 302   |  |  |                                    |
| Toxicity - Rail & Aero   |           | BSS 7239, ATS 100/ABD0031 ASTM E 662 & METHOD D 2036-91, EN 45545-2 |  |  |                                    |
| Food Service Equipment   |           | FDA Approved White  |  |  |                                    |
| Fabrications Options   |           | Factory pre-cut lengths, bulk, or private branded kits              |  |  |                                    |
| Compression and Recompression  |           | UL 50 and 50E   |  |  |                                    |
| RoHS Compliant   |           | YES   | YES  | YES  |                                    |

#### Seal-Fast™ Standard Profiles



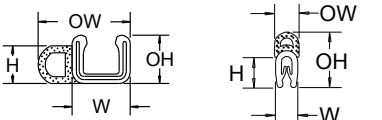
Profile A

Profile B



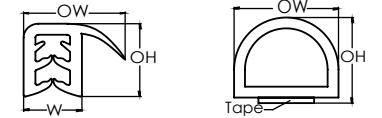
Profile C

Profile D



Profile E

Profile F



Profile "Wing"

Profile G

| DTi Part #  | Substrate Material | Gasket Material | Seal Material  | Seal Config. | Profile | Grommet Width (inches) | Grommet Height (inches) | Overall Width (inches) | Overall Height (inches) | Seal Radius (inches) | Seal Width (inches) | Application Thickness (inches) |
|-------------|--------------------|-----------------|----------------|--------------|---------|------------------------|-------------------------|------------------------|-------------------------|----------------------|---------------------|--------------------------------|
| D3-001-S011 | Steel              | EPDM            | EPDM           | Top          | A       | 0.394                  | 0.532                   | 0.394                  | 0.942                   | 0.19                 | 0.38                | 0.040-0.125                    |
| D3-002-S011 | Steel              | EPDM            | EPDM           | Top          | A       | 0.394                  | 0.532                   | 0.59                   | 1.162                   | 0.295                | 0.59                | 0.040-0.125                    |
| D3-003-S011 | Steel              | EPDM            | EPDM           | Top          | A       | 0.394                  | 0.532                   | 0.72                   | 1.292                   | 0.36                 | 0.72                | 0.040-0.125                    |
| D3-004-S011 | Steel              | EPDM            | EPDM           | Side         | B       | 0.394                  | 0.532                   | 0.806                  | 0.532                   | 0.19                 | 0.38                | 0.040-0.125                    |
| D3-005-S011 | Steel              | EPDM            | EPDM           | Side         | B       | 0.394                  | 0.532                   | 1.058                  | 0.623                   | 0.312                | 0.623               | 0.040-0.125                    |
| D4-033-T244 | Stainless          | Silicone White  | Silicone White | Side         | B       | 0.394                  | 0.532                   | 0.92                   | 0.523                   | 0.28                 | 0.525               | 0.187 Nom.                     |
| D3-056-T044 | Stainless          | Silicone        | Silicone Black | Top          | C       | 0.394                  | 0.532                   | 0.43                   | 0.83                    | 0.215                | 0.43                | 0.040-0.125"                   |
| D3-009-S011 | Steel              | EPDM            | EPDM           | Top          | C       | 0.394                  | 0.532                   | 0.430                  | 0.830                   | 0.215                | 0.430               | 0.040-0.125                    |
| D3-022-S044 | Steel              | Silicone        | Silicone       | Top          | A       | 0.394                  | 0.532                   | 0.55                   | 1.562                   | 0.275                | 1.03                | 0.040 - 0.125"                 |
| D3-024-S044 | Steel              | Silicone        | Silicone       | Side         | B       | 0.394                  | 0.532                   | 1.15                   | 0.69                    | 0.265                | 0.756               | 0.040 - 0.125"                 |
| D3-028-S044 | Steel              | Silicone        | Silicone       | Top          | C       | 0.394                  | 0.532                   | 0.55                   | 1.06                    | 0.25                 | 0.5                 | 0.040-0.125                    |
| D3-008-S044 | Steel              | Silicone        | Silicone       | Top          | C       | 0.394                  | 0.532                   | 0.424                  | 0.847                   | 0.212                | 0.424               | 0.040-0.125                    |
| D3-059-S144 | Steel              | Silicone        | Silicone Gray  | Side         | D       | 0.394                  | 0.532                   | 0.656-                 | 0.529                   | 0.262                | 0.262               | 0.040-0.125"                   |
| D3-094-S144 | Steel              | Silicone        | Silicone       | Side         | Wing    | 0.394                  | 0.532                   | 0.697                  | 0.532                   | 0.303                | 0.303               | 0.040-0.125                    |
| D3-010-S011 | Steel              | EPDM            | EPDM           | Side         | D       | 0.394                  | 0.532                   | 0.701                  | 0.532                   | --                   | 0.307               | 0.040-0.125                    |
| D8-012-S011 | Steel              | EPDM            | EPDM           | Side         | E       | 0.732                  | 0.608                   | 1.161                  | 0.608                   | --                   | 0.429               | 0.500 Nom                      |
| D9-027-S011 | Steel              | EPDM            | EPDM           | Side         | E       | 0.926                  | 0.607                   | 1.324                  | 0.607                   | --                   | 0.398               | 0.531-0.625                    |
| D2-016-S021 | Steel              | Flexible PVC    | EPDM           | Top          | F       | 0.256                  | 0.311                   | 0.256                  | 0.571                   | --                   | 0.256               | 0.029-0.082                    |
| D3-015-S021 | Steel              | Flexible PVC    | EPDM           | Top          | F       | 0.433                  | 0.484                   | 0.433                  | 0.846                   | --                   | 0.433               | 0.040-0.125                    |
| D10-120-001 | None               | None            | EPDM           | Top          | G       | -                      | -                       | 0.75                   | 0.562                   | 0.375                | 0.562               | 0.750 Nom                      |

Additional and custom sizes available, please consult website, factory or DTi Tech Rep for details or evaluation samples.

# Seal-Fast™

## Plate-Seal Protection System



Plate Seals protect against chafing and abrasion while sealing out fumes, heat, dust moisture and other contaminants. Used to manage and support cables, hoses, hydraulic, fuel and oil lines, as they are routed through bulkheads and openings and isolate from sharp edges. Typically mounts with screws and rivets or with adhesives, by special order. Available in standard off the shelf (COTS) and custom trim rings to fit myriad of applications.

### Features and Benefits:

- Fast and easy to install with use of screw, rivets, or optional PSA
- Encapsulated to keep unwanted contaminants from entering through hole or cutout area
- Enhances appearance
- No need for extended cure time adhesives or other auxiliary material
- Accepts a wide range of cable diameters
- UV and ozone resistant
- Excellent resistance to abrasion, compression set, flex cracking, impact, tear, and vibration

### Applications:

- Aircraft galley equipment
- Avionics
- Bulkhead
- Automotive
- Railway
- Telecommunications
- Marine
- Trailers and motor homes
- General industrial



### Performance:

- Resistant to fluids (solvents, fuels, and oils) per MIL-R-3065D, MIL-R-6855, and MIL-R-2765
- Continuous operating temperature: -50°F to 320°F (-45°C to 160°C)
- Intermittent operating temperature: -70°F to 400°F (-57°C to 204°C)
- Flame retardant rubber also available.

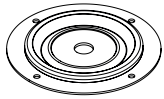
### Product Sizes per Product Type:

- For hole diameters and cutouts from 1" to 5" (25.4mm to 127mm)
- For standard cable bundles or hose diameters from 0.25" to 1.5" (6.4mm to 38.1mm)
- Choose seal inside diameter that is 1/16" to 1/8" (1.59mm to 3.18mm) smaller than bundle/hose diameter.
- Largest bundle/hose diameter should be at least 3/8" (9.53mm) less than seal outside diameter.
- Custom solutions per application

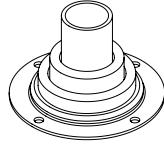


### Plate-Seal Specifications and Ordering Options

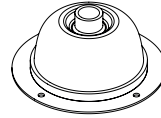
#### Seal Types



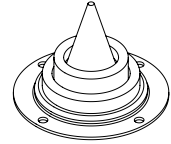
"A" Single Seal



"B" Bellow Seal

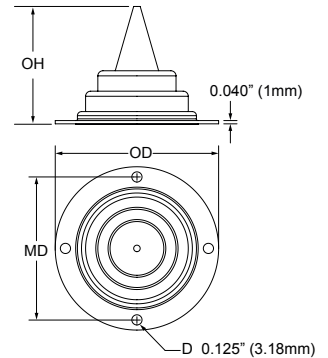
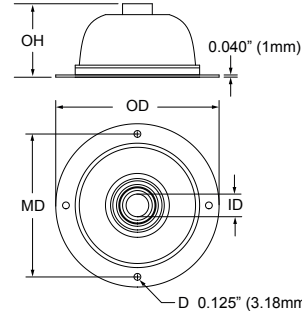
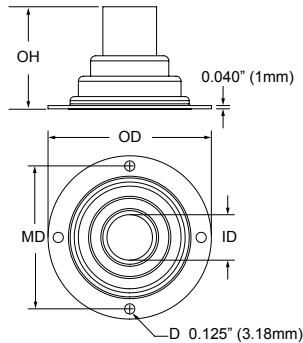
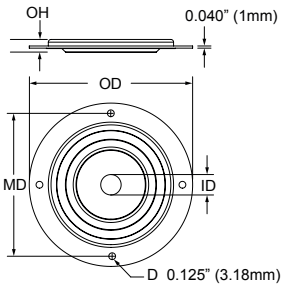


"C" Dome Seal



"D" Pointed Bellow Seal

#### Standard Dimensions



#### Part Numbers

| DTi Part Number  | Seal Type | "OD" Overall Diameter |       | "OH" Overall Height |      | "ID" Seal Inside Diameter |      | Seal Outside Diameter |      | Seal Height |      | "MD" Mounting Hole Distance |       |
|------------------|-----------|-----------------------|-------|---------------------|------|---------------------------|------|-----------------------|------|-------------|------|-----------------------------|-------|
|                  |           | inches                | mm    | inches              | mm   | inches                    | mm   | inches                | mm   | inches      | mm   | inches                      | mm    |
| PS-1.5-A-BL      | A         | 1.5                   | 38.1  | 0.16                | 4.1  | N/A                       | N/A  | 1.00                  | 25.4 | 0.12        | 3.0  | 1.25                        | 31.8  |
| PS-2.0-A-BL      |           | 2.0                   | 50.8  | 0.16                | 4.1  | N/A                       | N/A  | 1.55                  | 39.4 | 0.12        | 3.0  | 1.75                        | 44.5  |
| PS-3.0-A-BL      |           | 3.0                   | 76.2  | 0.16                | 4.1  | N/A                       | N/A  | 2.25                  | 57.2 | 0.12        | 3.0  | 2.625                       | 66.7  |
| PS-3.0-A-25      |           | 3.0                   | 76.2  | 0.16                | 4.1  | 0.25                      | 6.4  | 2.25                  | 57.2 | 0.12        | 3.0  | 2.625                       | 66.7  |
| PS-3.0-A-38      |           | 3.0                   | 76.2  | 0.16                | 4.1  | 0.375                     | 9.5  | 2.25                  | 57.2 | 0.12        | 3.0  | 2.625                       | 66.7  |
| PS-3.0-A-50      |           | 3.0                   | 76.2  | 0.16                | 4.1  | 0.50                      | 12.7 | 2.25                  | 57.2 | 0.12        | 3.0  | 2.625                       | 66.7  |
| PS-3.0-A-63      |           | 3.0                   | 76.2  | 0.16                | 4.1  | 0.625                     | 15.9 | 2.25                  | 57.2 | 0.12        | 3.0  | 2.625                       | 66.7  |
| PS-3.0-A-75      |           | 3.0                   | 76.2  | 0.16                | 4.1  | 0.75                      | 19.1 | 2.25                  | 57.2 | 0.12        | 3.0  | 2.625                       | 66.7  |
| PS-3.0-A-95      |           | 3.0                   | 76.2  | 0.16                | 4.1  | 0.95                      | 24.1 | 2.25                  | 57.2 | 0.12        | 3.0  | 2.625                       | 66.7  |
| PS-3.0-A-118     |           | 3.0                   | 76.2  | 0.21                | 5.3  | 1.18                      | 30.0 | 2.385                 | 60.6 | 0.17        | 4.3  | 2.625                       | 66.7  |
| PS-4.0-A-BL      |           | 4.0                   | 101.6 | 0.10                | 2.5  | N/A                       | N/A  | 3.0                   | 76.2 | 0.06        | 1.5  | 3.625                       | 92.1  |
| PS-4.0-A-100     |           | 4.0                   | 101.6 | 0.10                | 2.5  | 1.0                       | 25.4 | 3.0                   | 76.2 | 0.06        | 1.5  | 3.625                       | 92.1  |
| PS-4.0-A-180     |           | 4.0                   | 101.6 | 0.10                | 2.5  | 1.8                       | 45.7 | 3.0                   | 76.2 | 0.06        | 1.5  | 3.625                       | 92.1  |
| PS-4.5-A-150     |           | 4.5                   | 114.3 | 0.29                | 7.4  | 1.5                       | 38.1 | 3.4                   | 86.4 | 0.25        | 6.4  | 4.0                         | 101.6 |
| PS-4.5-A-211     |           | 4.5                   | 114.3 | 0.29                | 7.4  | 2.11                      | 53.6 | 3.4                   | 86.4 | 0.25        | 6.4  | 4.0                         | 101.6 |
| PS-6.0-A-BL      |           | 6.0                   | 152.4 | 0.10                | 2.5  | N/A                       | N/A  | 5.0                   | 127  | 0.06        | 1.5  | 5.5                         | 139.7 |
| PS-2.0-B-42      | B         | 2.0                   | 50.8  | 1.15                | 29.2 | 0.416                     | 10.6 | 1.2                   | 30.5 | 1.11        | 28.2 | 1.75                        | 44.5  |
| PS-3.0-C-42      | C         | 3.0                   | 76.2  | 1.35                | 34.3 | 0.416                     | 10.6 | 2.062                 | 52.4 | 1.31        | 33.3 | 2.625                       | 66.7  |
| PS-1.5-D-BL      | D         | 1.5                   | 38.1  | 0.64                | 16.3 | N/A                       | N/A  | 0.50                  | 12.7 | 0.60        | 15.2 | 1.25                        | 31.8  |
| PS-2.0-D-BL      |           | 2.0                   | 50.8  | 0.50                | 12.7 | N/A                       | N/A  | 0.8                   | 20.3 | 0.46        | 11.7 | 1.75                        | 44.5  |
| PS-3.0-5.25-F-BL | F         | 3.0                   | 76.2  | 0.160               | 4.1  | N/A                       | N/A  | 2.24                  | 56.9 | 0.120       | 3.0  | 1.310                       | 33.3  |



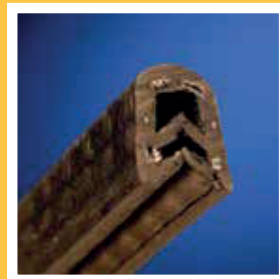
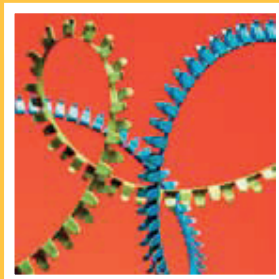
For further information contact us today:

[www.is-rayfast.com](http://www.is-rayfast.com)  
+44 (0)1793 616700  
[sales@is-rayfast.com](mailto:sales@is-rayfast.com)

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