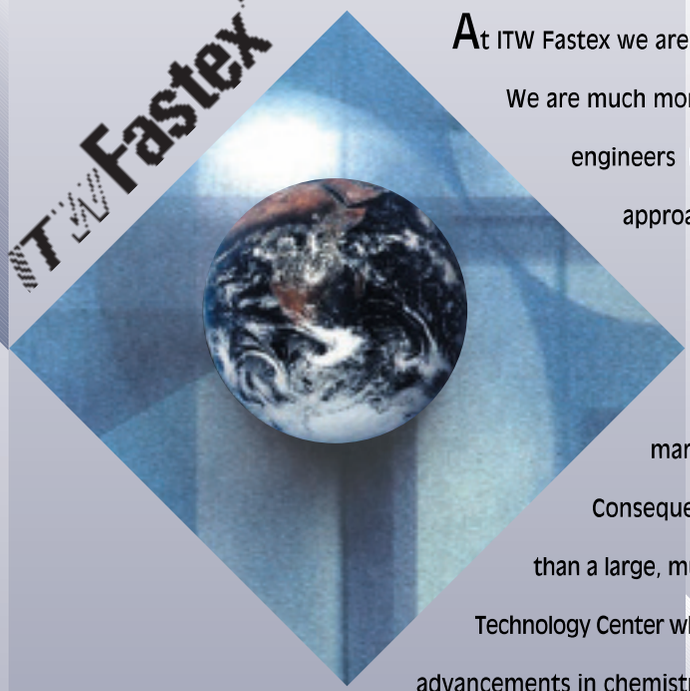

ITW Fastex
ENGINEERED
SOLUTIONS
We're More Than The Sum of Our Parts
Visit Our Web Site At www.itw-fastex.com

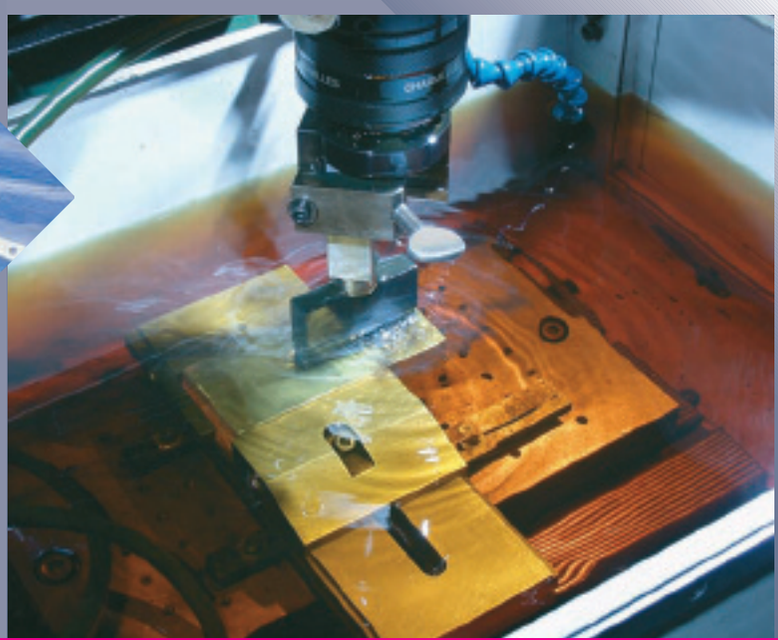
ITW Fastex



At ITW Fastex we are Product Developers. We can help your company find a **solution**. We are much more than the sum of the parts available in this catalog. Our engineers become an extension of your engineering department. They approach problems from every angle to uncover real solutions.

ITW is a Fortune 200 company with over 750 divisions worldwide. Our divisions are intentionally kept small and highly focused on specific market niches, providing value-added products to our customers. Consequently, we operate more like a small entrepreneurial company, rather than a large, multi-billion dollar organization. In addition, we have access to a centralized Technology Center which provides technical support, using the latest scientific and technological advancements in chemistry, physics and material science.

Any way you look at it, Fastex® has the products and experience to fit your needs.



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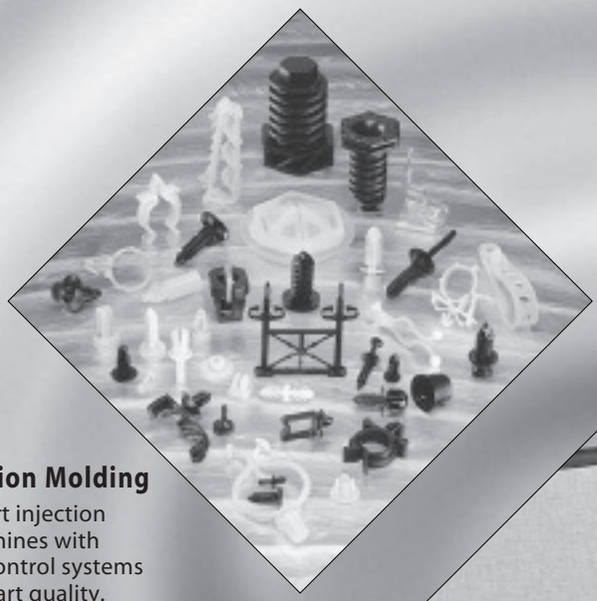
EAGLE Registrations Inc.
SERVICE • INTEGRITY • VALUE

ITW Fastex® Engineered Solutions
195 Algonquin Road
Des Plaines, Illinois 60016
Has been certified by
EAGLE Registration, Inc.
to
ISO 9001:2000

ANAB ACCREDITED

Capabilities

ITW Fastex has the engineering resources and R&D capabilities required to successfully innovate new products. The following depicts our development process from concept to finished product.

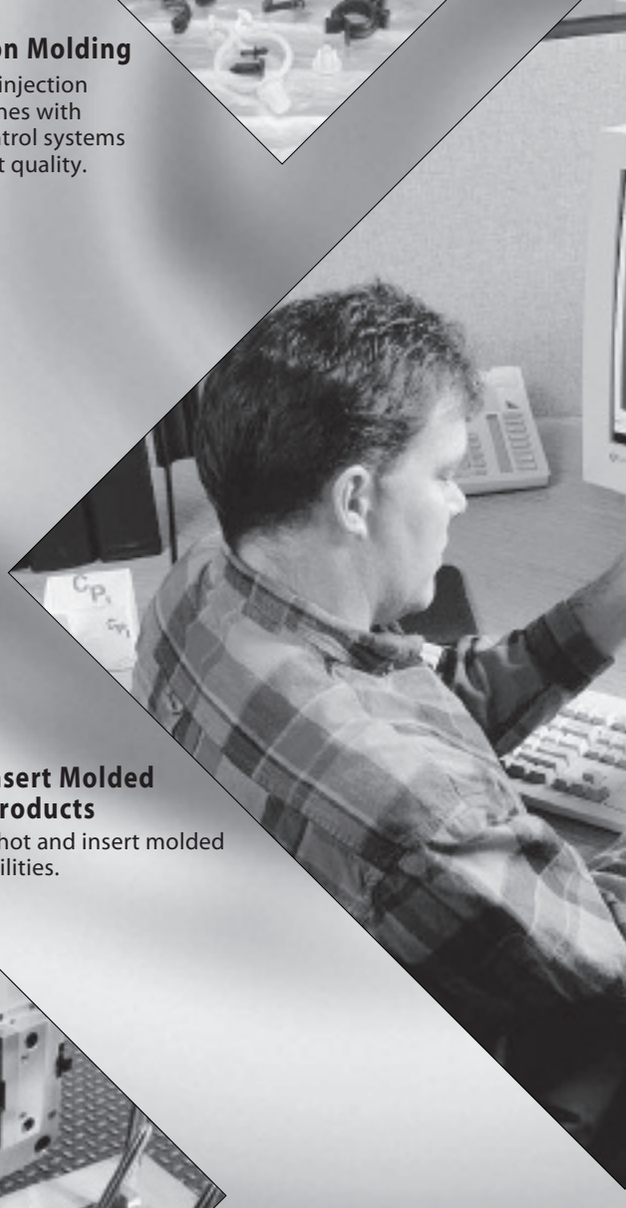


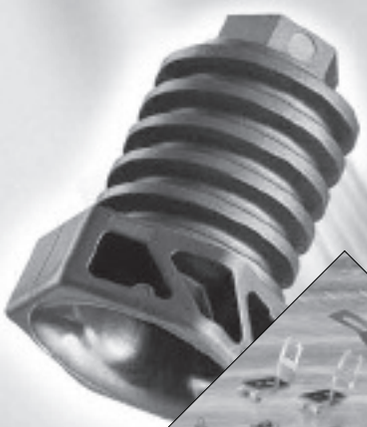
10. Injection Molding

State of the art injection molding machines with closed loop control systems to optimize part quality.

9. Multi-Piece Assembly

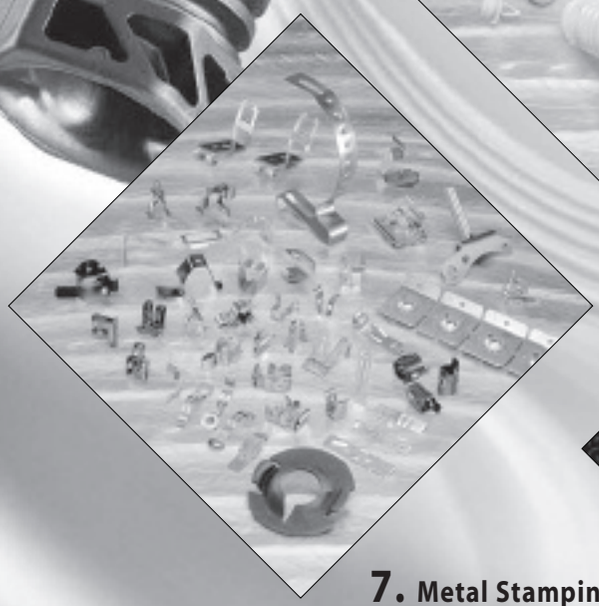
Plastic to metal and plastic to plastic multi-piece assembly capabilities.

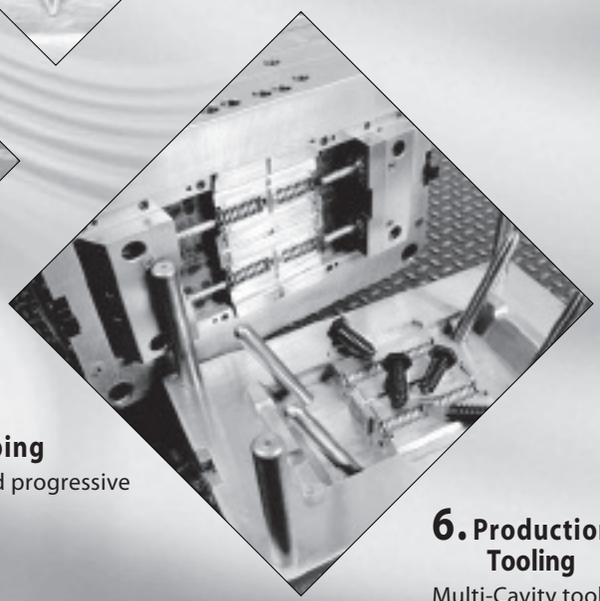




8. Insert Molded Products

Two shot and insert molded capabilities.





7. Metal Stamping

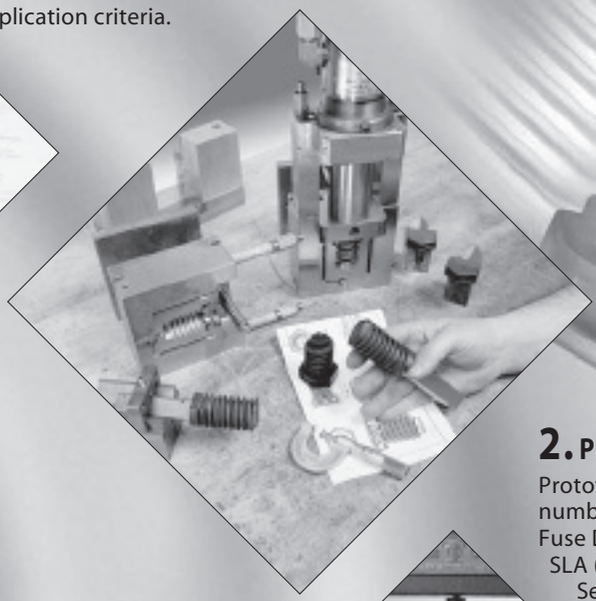
Both multi-slide and progressive die capabilities.

6. Production Tooling

Multi-Cavity tools and stamping dies are built to optimize part design, dimensional stability and high volume production. These tools are constructed to class A industry standards.

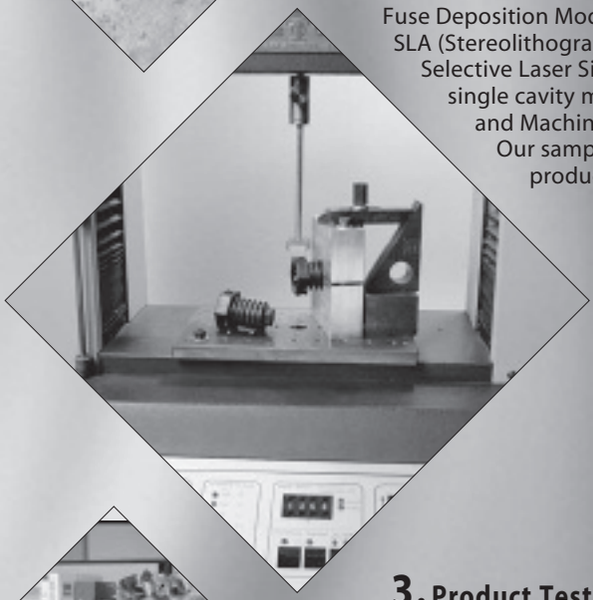
1. Engineering Development

Engineering of new products utilizing CAD and FEA analysis to provide a solution to meet the application criteria.



2. Prototype

Prototypes are fabricated through a number of methods such as: In house Fuse Deposition Modeling (FDM), SLA (Stereolithography), Selective Laser Sintering (SLS) single cavity molds, metal forming, and Machining. Our sample tools can support limited production needs.



3. Product Testing

Testing and performance evaluation of both prototype and finished product.

4. Tool Design

Tools are designed to optimize part geometry. cost and manufactureing efficiency.

5. Quality Control

State of the art equipment is used to accurately measure part dimensions and ensure process stability. ITW Fastex has been Certified by Eagle Registration To **ISO 9001:2000!**

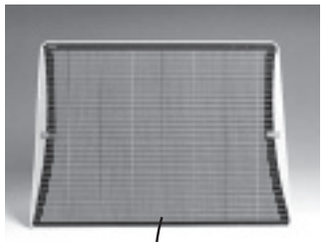
Note: *Parts may or may not be standard product. Specialty items are shown for concept only. Please consult your ITW Fastex Sales Representative for more information.*

Furniture Components and Capabilities

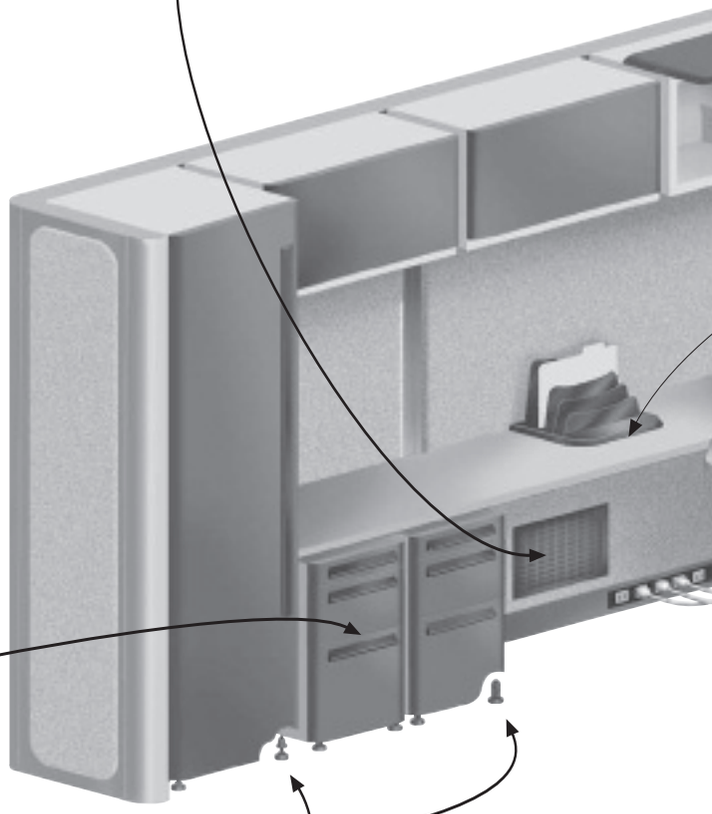
Today's constantly changing work stations require fastening methods and systems that are versatile, functional and cost-effective. ITW (Illinois Tool Works) has been working with office furniture manufacturers for over 40 years, designing both metal and plastic fasteners, components and multi-piece assemblies.

Whether it's to organize space better, manage technology more efficiently or add a new feature to an existing product, we have the solution for you. The examples shown illustrate just a few of the solutions we have provided to our cusotmers.

Space Heater Panel

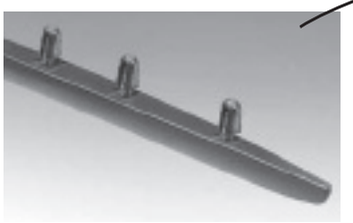


A paper thin space heater is placed behind the fabric of the cubicle wall, allowing for individual environmental control within the work space. The heating element consists of a patented ITW ink which conducts heat and is screen printed onto an acrylic film.



File Retention Clip

Plastic clip design provides an ideal method for holding hang rails in the cabinet drawer during shipment. Eliminates the use of adhesive tape. This unique clip design is easily installed and provides a secure attachment.



Drawer Handle Grommet

Patented drawer handle and fastener are molded and assembled as one component, allowing end-user to self-install handle without tools. The integral grommet eliminates the need for nuts and washers.

Leg Leveling Grommet

Grommet snaps into pre-punched square hole and provides the threads for screwing metal glides. Eliminates costly weld nuts and welding operation. Accepts $^{5}/_{16}$ -18 and $^{3}/_{8}$ -16 threaded glide.

Patented Product

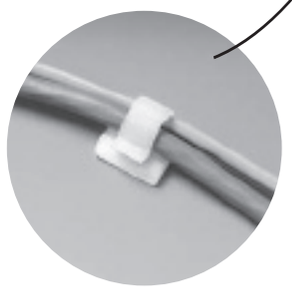
Plastic Leveling Feet

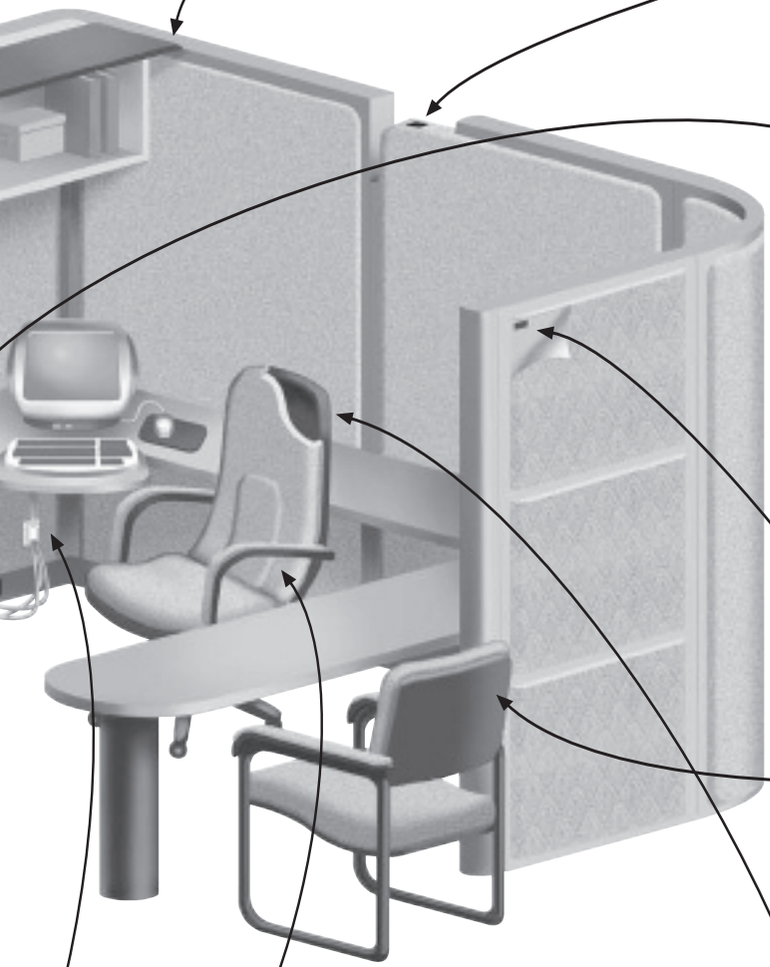
Glass-filled impact modified nylon is an economical replacement for metal glide and weld nut assembly. Designed for use in 16 and 18 gauge steel frames. Coarse thread design reduces the number of turns required for height adjustment.

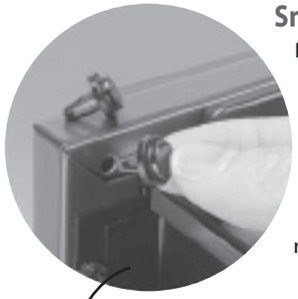
Patented Product

Adhesive-Backed Cord Clip

Fastest, most efficient way to route wires, power cords and cables along a base board or desk surface. These adhesive-backed wire clips adhere to any smooth surface and require no tools.

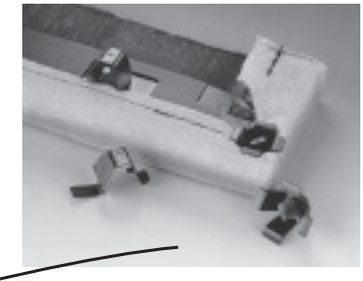






Snap-In Bumper

Provides a noise dampening feature to drawers or overhead storage cabinets. Snap-in fastening feature is ideal for applications which require high shear force and holding strength. Bumpers install quickly and require no tools.



Tile Clips

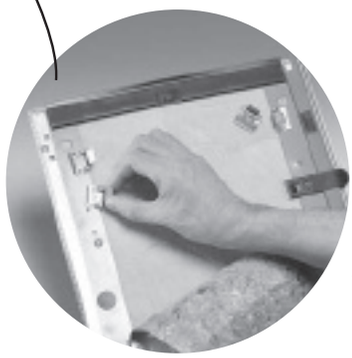
Holds corners of the panel fabric to the frame, eliminating a labor intensive gluing operation. When installed into a square hole, the four prongs of the clip exert outward pressure holding the fabric in place.

Self-Adhesive Bumpers

Ideal for providing skid and mar resistance for desk accessories, telephones and other electronic equipment. Bumpers are provided on a matrix pad. Installation is fast and secure and involves minimal labor.

Christmas Tree™

Christmas Tree ™ fasteners provide a quick and easy method of joining upholstered seating components. The patented fin design ensures fast, easy installation both in wood and MDF substrates. Eliminates the need for glue and screws.



Panel Clips

Snap-in metal clips provide a secure method of attaching decorative panels. Upper and lower clips are color coded for easy identification for field installations and servicing.

Christmas Tree

Christmas Tree™ fasteners provide an ideal method for attaching upholstery to wood frames. The fastener is concealed under the fabric and requires no tools for installation. The unique ribbed shank design ensures fast, easy installation and secure holding.

Spinweld ™ Christmas Tree/Receptacle

A two-piece fastener attaches the inside and outside frames of the chair without any exposed fasteners. Utilizing ITW's patented Spinweld ™ process, the fastener is spun against the frame, causing the two plastic surfaces to melt and molecularly bond. The parts were designed to accommodate misalignment and match-up the mating parts of the chair frame.

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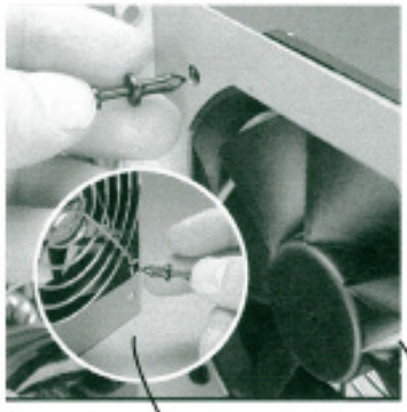
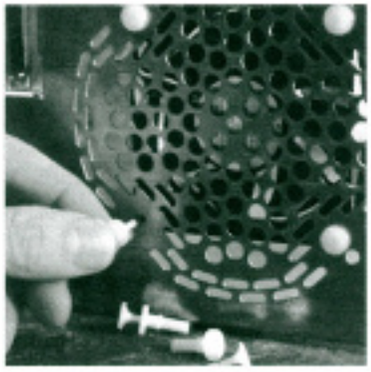
Computer and Electronic Products

The fast-paced demands of the computer/ electronics industry requires a supplier who can rapidly and efficiently respond! ITW Fastex is well positioned to be that supplier. We're fast and responsive...we can give you the edge that will help keep you ahead of the competition.



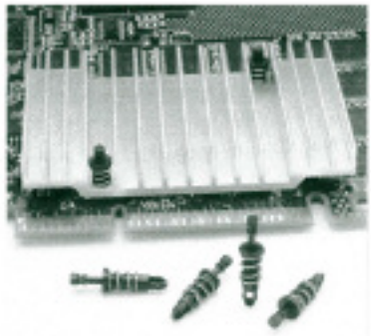
Micro Tuflok (fan to chassis/finger guard to fan)

One-piece fastener with a pre-driven pin that quickly installs by hand or with automatic equipment. This push-type rivet is front-mounted and removable and ideal in high vibration applications such as cooling fans.



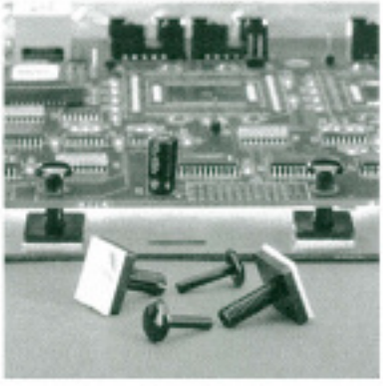
Sound Isolator Rivet Patented

This two piece rivet not only securely holds the cooling fan to the computer chassis but also provides a sound dampening feature. The body is made in a thermoplastic elastomer (TPE) giving it the softness necessary to dampen the vibration caused by the cooling fan. This pin is made from a heat stabilized, impact resistant nylon.



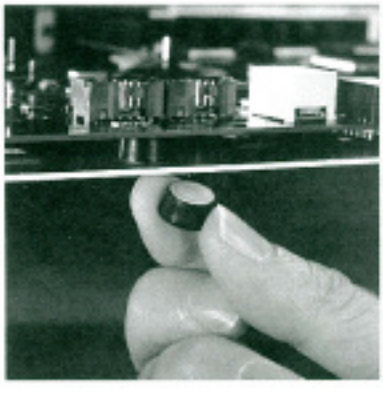
Spring Loaded Tuflok Fastener

This clip securely fastens a heat sink to a printed circuit board. It also provides constant pressure to the heat sink enhancing thermal conductivity.



Adjustable Printed Circuit Board Standoff

This two piece design provides the ability to adjust the height of the P.C. Board before and after installation. Provides support anywhere on the chassis base. No holes are needed to attach standoff to chassis.



Bumper/Spacer

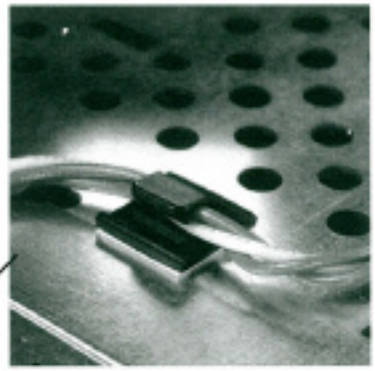
Self-adhesive bumpers made from a specially formulated urethane provide a quick and effective method of providing additional support for circuit boards. The bumper can withstand 50 lbs. of weight with a deflection of less than .020". UL flammability rating of 94V-2.

Printed Circuit Board (PCB) Support

PCB supports and spacers come in a variety of styles and heights and provide quick assembly of printed circuit boards. The variety of styles allows for assembly from top or bottom of board.

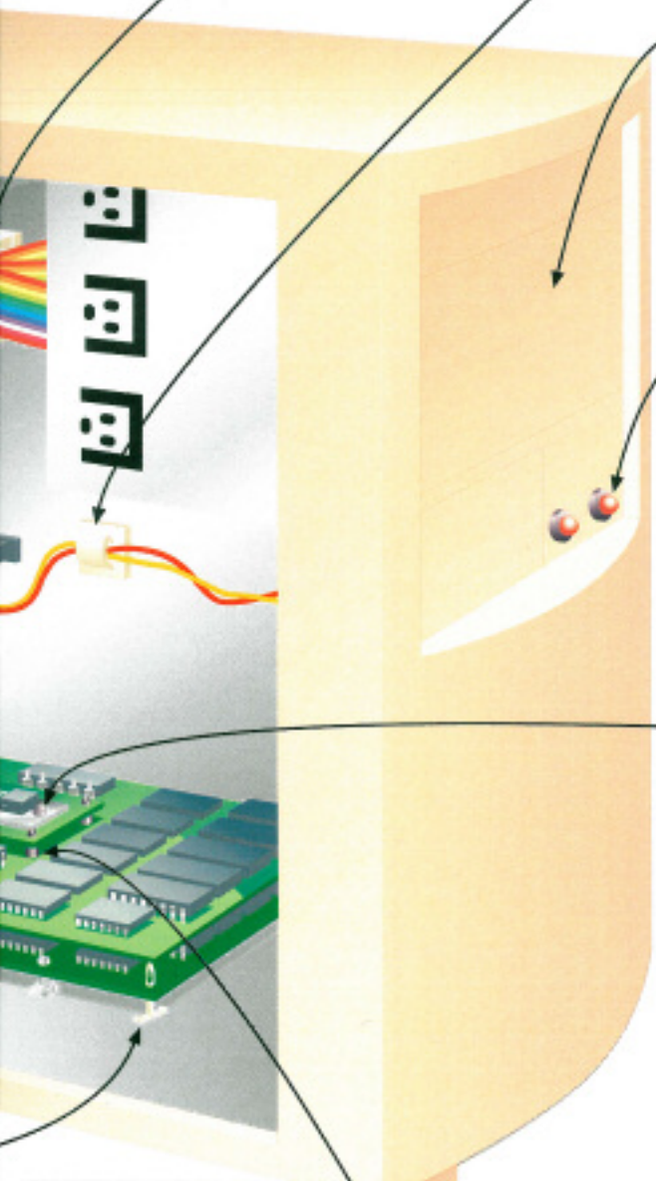
Snap-In Ribbon Clip

Secures and routes ribbon cable away from panels or moving parts. The clip snaps easily into a punched hole providing secure retention. The snaplock feature provides easy removal of cable during servicing.



Adhesive-Backed Cord Clip

Fastest, most efficient way to organize wires and cables. These UL recognized nylon clips adhere to any smooth, clean surface. Smooth, rounded corners protect wires and installers' hands.



Push Lock Panel Fastener

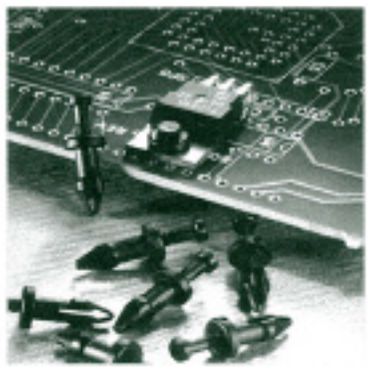
One-piece panel fastening device is ideal for lightweight doors, compartments and control panel covers. Simply push to lock and push to open. Locking tabs secure the part into the punched hole, eliminating the need to screws or rivets.

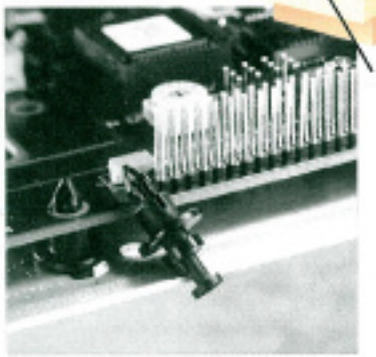
LED Holder

One-piece LED retainers snap in easily to standard panel hole either flush or counterbored. No additional retaining rings or installation tools are required.

Micro Tuflok with Transistor

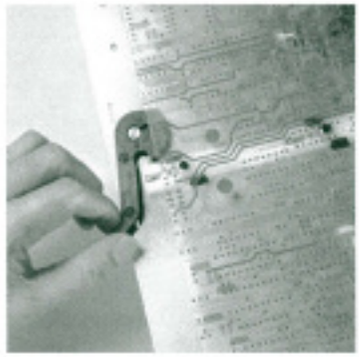
This one piece rivet is ideally suited for fastening electronic components to surface mounted printed circuit boards. Made from a heat stabilized, impact modified nylon, the Tuflok can withstand up to 850°F during the wave solder process.





Key Slot Tuflok

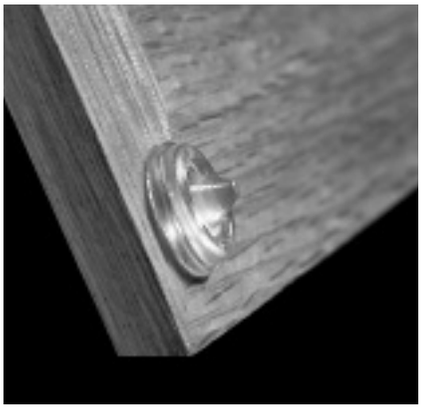
Allows mother boards to be installed in tight spaces. Replaces screws, making boards easy to remove during field servicing.



NLX Motherboard Rail System Patented

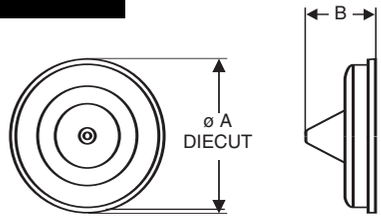
This proprietary rail system incorporates an integral fastener and self-grounding feature allowing for quick installation and EMI grounding of the new NLX motherboards without the use of metal screws. Rail guides snap into the bottom of the chassis and guide the rail and board assembly into place. Meets all NLX Specifications.

Note: *Parts may or may not be standard product. Specialty items are shown for concept only. Please consult your ITW Fastex Sales Representative for more information.*



QUIETEX™ BUMPER

The Quietex™ urethane bumper was developed to significantly reduce the sound of cabinet and vanity doors. Its unique material minimizes sound while its physical design softens the remaining sound by trapping it within the bumper. In laboratory uses the Quietex™ bumper significantly outperformed every other bumper on the market. **Patented Product**



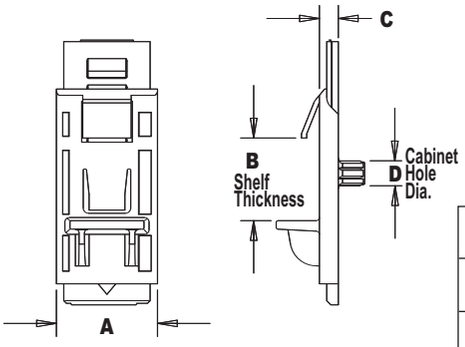
Not designed for use under friction or heavy compression loads.

PART NUMBER	ADHESIVE*	DIECUT DIAMETER (A)	HEIGHT (B)
4066-00-5084A	Acrylic Based	0.500	.197
4066-00-5084	Rubber Based	[12.7]	[5.00]
4067-00-5084A	Acrylic Based	0.400	.100
4067-00-5084	Rubber Based	[10.2]	[2.55]

*It is not recommended to use Acrylic Based adhesive on Melamine.
Primary dimensions in inches.
Secondary dimensions or [ ] dimensions in mm.
All dimensions ±. 02 inches measured without adhesive liner.
Note: Bumper may not be centered on skirt area of die cut.

ADJUSTABLE SHELF CLIP

This clear polycarbonate shelf clip provides 8 vertical positions of adjustment at 1/4" intervals. It allows for easy alignment of shelving to muntin bars. This adjustable clip is supplied as one piece. Simply break off the ratcheting backplate, flip and insert. The height can be easily readjusted. These shelf clips accommodate up to 3/4" thick shelving. **Patented Product**

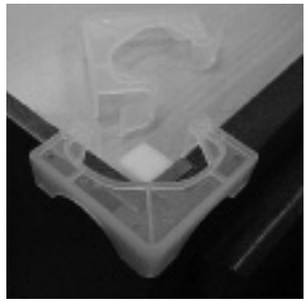


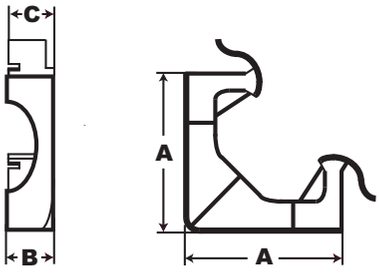
PART NUMBER	DIMENSIONS			
	A	B	C	D
2821-00	0.96" [24.38mm]	0.75" [19.05mm]	0.18" [4.57mm]	0.25" [6.35mm]
2822-00	0.96" [24.38mm]	0.75" [19.05mm]	0.18" [4.57mm]	0.197" [5mm]

Note: Dimensions listed are nominal.

CORNER SHIP CLIP

This clip protects cabinet corners during shipping. The bull nose allows a cabinet, protected with the clip, to slide easily across seamed flooring. It accommodates a material thickness range of 1/2" to 3/4" and can pass a 12" high drop test using a 60 lb. Cabinet. There is a **patent pending** on the Corner Ship Clip.



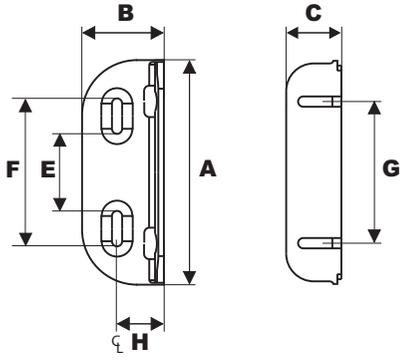


PART NUMBER	DIMENSIONS		
	A	B	C
4300-00	2.42" [61.47mm]	0.715" [18.16mm]	0.58" [14.73mm]

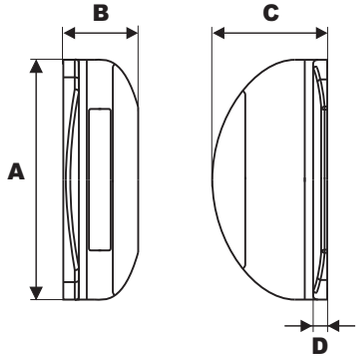
Note: Dimensions listed are nominal.

DRAWER BRACKET & COVER

Function & Style. ITW's Drawer Bracket & Cover offer an easy way to attach a drawer front without any fasteners showing on the drawer face. By using #5-5/8" countersunk Type 17 Screws the bracket can be attached to drawers with wall thicknesses of .370" to .750". The bracket cover gives a slim profile and finished look even when the drawer is open.



Drawer Bracket



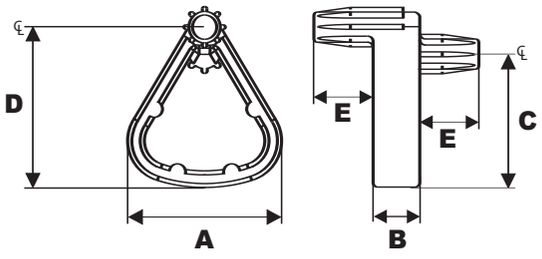
Drawer Bracket Cover

PART NUMBER	DESCRIPTION	DIMENSIONS							
		A	B	C	D	E	F	G	H
4304-00-2629	Drawer Bracket Cover	2.110" [53.59mm]	0.65" [16.51mm]	1.02" [25.96mm]	0.135" [3.43mm]	N/A	N/A	N/A	N/A
4302-00-2629	Drawer Bracket	1.934" [49.12mm]	0.72" [18.29mm]	0.49" [12.45mm]	N/A	0.675" [17.15mm]	1.31" [33.27mm]	1.26" [32.00mm]	0.415" [10.54mm]

Note: Dimensions listed are nominal.

SHELF SHIP CLIP

Easy to install clip pops into existing holes to hold shelves in place during shipping. This simple part eliminates the need for separate shelf packaging and shortens set up time.



PART NUMBER	DIMENSIONS					
	A	B	C	D	E (2 pl)	*Hole Dia.
4301-00	0.73" [18.54mm]	0.23" [5.84mm]	0.65" [16.51mm]	0.77" [19.56mm]	0.30" [7.62mm]	0.20" [5mm]

Note: Dimensions listed are nominal.
*Recommended hole diameter is for wood applications.

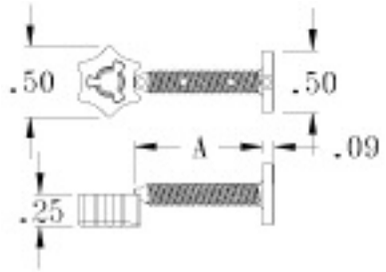
RATCHET/SCREW FASTENER

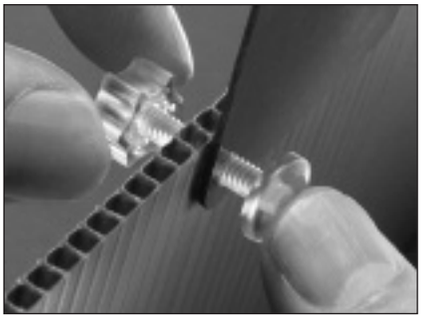
PART NUMBER	HOLE DIAMETER	MAX. PANEL THICKNESS	PRONG LENGTH DIM. A
2705-00	.187	.775	1.00
2706-00	.187	.525	.75

FEATURES:

- Body and nut molded as one piece for easy handling.
- Removable, easy-grip nut ratchets or screws on and realigns with a simple 1/4 turn. Flat face distributes load against backside of Panel.
- Clear UV Stable Polycarbonate allows this part to be used in a wide range of applications.

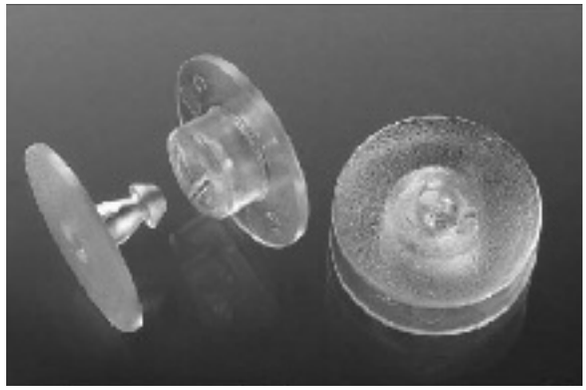
Patented Product



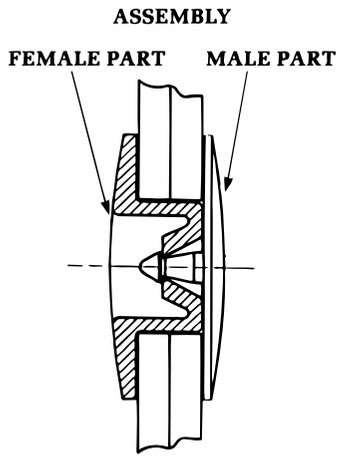


CLEAR SNAP RIVETS

ITW Fastex announces a clear solution to your fastening needs. Our new clear snap rivets offer a secure fastening method that will not block your design! These clear snap rivets are ideal for design elements that must show through the fastener.



ASSEMBLY		PANEL THICKNESS	HEAD DIAMETER AND THICKNESS OF MALE/FEMALE PART
MALE PART NO.	FEMALE PART NO.		
236-220603-00	236-220604-00	.170-.190	.625 DIA./.062
236-220603-02	236-220604-00	.220-.240	.625 DIA./.062
236-220603-05	236-220604-01	.170-.190	.460 DIA./.062
236-220603-10	236-220604-00	.320-.340	.625 DIA./.062



Assembly to fit a .320 diameter hole

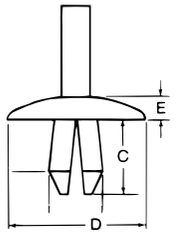
Material: Clear UV Stable Polycarbonate
(For Nylon 66 see page 21)

NOTE: Dimensions listed are nominal.

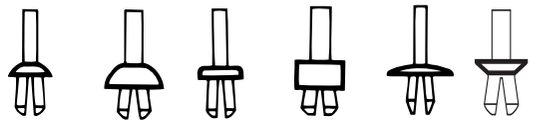
PLASTI-RIVETS®

THREE AND FOUR PRONG, NON PRE-DRIVEN

Wide variety of styles and sizes to accommodate different materials and panel thicknesses. Functional head styles provide panel spacing, flush mounting, load distribution or appearance requirements. Tapered prongs snap positively into fastening hole and expand to hold securely as pin is driven.



HEAD STYLES



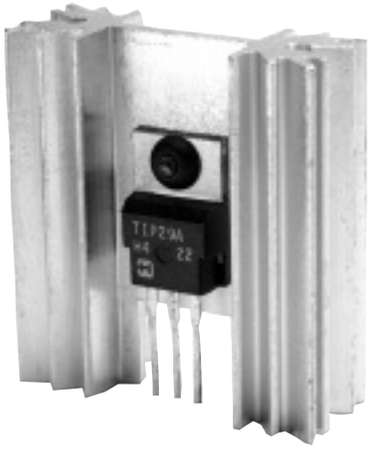
(1) (2) (3) (4) (5) (6)

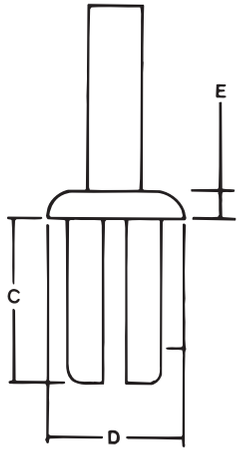
PART NUMBER	NOM. HOLE DIA.	PANEL THICKNESS RANGE	PRONG LENGTH C (REF).	HEAD STYLE	HEAD DIA. D	HEAD HT. E
201-120741-01	.187	.062-.218	.280-.310	(5)	.320	.075
201-120911-00	.19	.126-.191	.306-.336	(6)	.343	.070
201-121041-00	.187	.156-.281	.376-.406	(3)	.437	.075

Hole size may vary with panel range.
NOTE: Dimensions listed are nominal.

PART NUMBER	NOM. HOLE DIA.	PANEL THICKNESS RANGE	PRONG LENGTH C (REF).	HEAD STYLE	HEAD DIA. D	HEAD HT. E
231-250603-00	.250	.120-.200	.560	N/A	.700	.100
201-161341-00	.250	.125-.375	.469-.499	(3)	.437	.080
201-180401-00	.272	.031-.109	.175-.205	(4)	.375	.312
226-160501-01	.272	.031-.140	.224	(4)	.406	.046

Push-In/Pull-Out Test Results on page 44.





PLASTI-RIVETS®

TWO PRONG PRE-DRIVEN

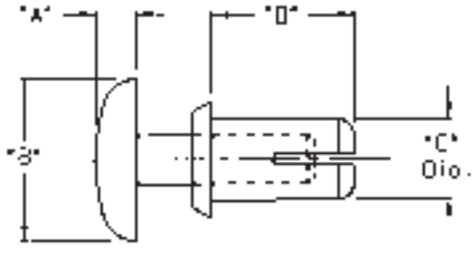
PART NUMBER	NOM. HOLE DIA.	PANEL THICKNESS RANGE	PRONG LENGTH C (REF).	HEAD STYLE	HEAD DIA. D	HEAD HT. E
231-080551-05	.125	.031-.140	.210-.240	(1)	.218	.060
231-090741-00	.136	.040-.218	.266-.296	(3)	.220	.050
231-100841-01	.156	.040-.250	.297-.327	(3)	.230	.050
231-121041-02	.188	.040-.375	.396-.416	(2)	.281	.062
231-141141-01	.218	.040-.400	.422-.452	(3)	.344	.062
231-161341-03	.250	.040-.462	.490-.510	(3)	.437	.080

Hole size may vary with panel range.
NOTE: Dimensions listed are nominal.

Push-In/Pull-Out Test Results on page 44.

MINI PRO-LOK RIVET

The mini Pro-Lok Rivet is ideal for applications in which the rivets' appearance is important. The smooth oversized head has a contoured polished surface giving it a finished look. The Pro-Lok inserts by hand, simply press and lock into place. The rivet can be removed by placing a screwdriver under the head. Due to the streamlined size, Pro-Lok is ideal for restricted areas such as electronic applications.



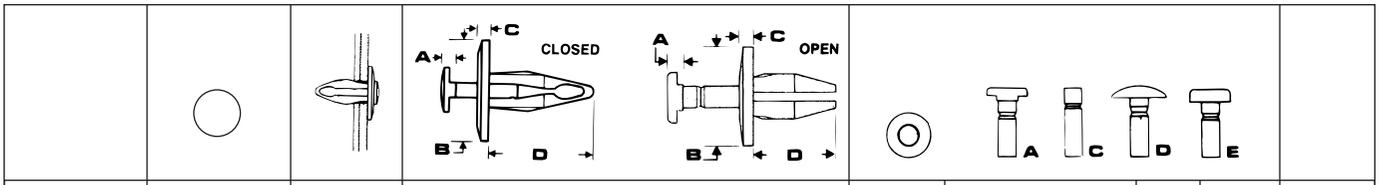
- Material: Black Nylon 66
- UL94V-2 Rating

PART NUMBER	HOLE DIAMETER	PANEL RANGE	PART DIMENSIONS			
			A	B	C	D
1116-17	.161-.169	.177-.217	.082	.315	.155	.278

Push-In/Pull-Out Test Results on page 44.
NOTE: Dimensions listed are nominal.

TUFLOK®

The Tuflok is a one-piece fastener with a pre-driven pin that is quickly installed by hand or with automatic equipment. It is ideally suited for any application requiring a front-mounted, removable, reusable push-type plastic rivet where a dependable vibration-resistant panel fastener is essential.



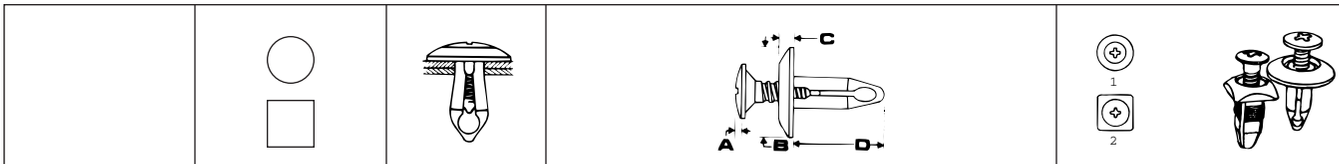
PART NUMBER	HOLE DIAMETER	PANEL RANGE	PART DIMENSIONS A	B	C	D	HEAD STYLE	SPECIAL FEATURES	NO. LEGS	PIN STYLE	PRONG STYLE
31050001	.193-.205	.059-.181	.083	.283	.039	.445	Round	9.5 mm Pin Hd	3	D	CLOSED
30060003	.236-.244	.197-.236	.049	.669	.098	.709	Round	10 mm Shoulder	2	E	CLOSED
30063001	.248-.276	.098-.350	.138	1.000	.098	.898	Round	—	2	A	CLOSED
30063008	.244-.262	.060-.228	.098	.700	.098	.559	Round	—	2	A	OPEN
30063014	.250-.276	.098-.315	.118	.590	.079	.897	Round	—	2	A	CLOSED
30080016	.315-.325	.118-.315	.091	.591	.106	.787	Round	—	2	A	CLOSED

NOTE: Dimensions listed are nominal.

TUFLOK®

SCREW TYPE TUFLOK®

SCREW TYPE TUFLOK®

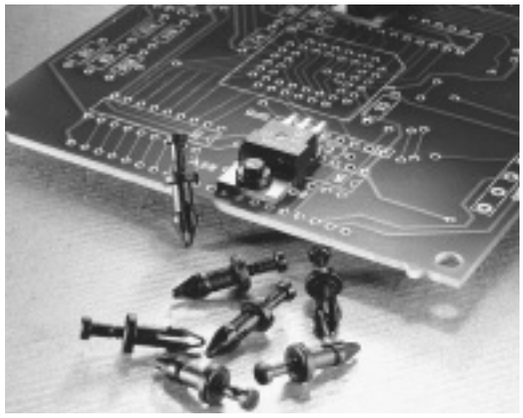


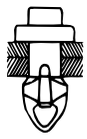
PART NUMBER	HOLE DIAMETER	PANEL RANGE	PART DIMENSIONS A	B	C	D	HEAD STYLE	SPECIAL FEATURES
60018703	.175-.187	.330-.390	– –	.380	.060	.720	1	—
60018707	.181	.380-.440	– –	.380	.060	.720	1	—
60058001	.228-.238	.118-.197	.100	.433	.059	.689	1	Torx T20 Head
60058006	.228	.177-.295	.170	.433	.059	.787	1	–
60063005	.248-.268	.098-.314	.030	.700	.118	.898	1	—
60063006	.248-.268	.098-.314	.030	.610	.118	.898	1	—
60070001	.276	.650-.768	.030	.500	.118	1.213	1	—
61080001	.315-.335	.139-.334	.030	.590	.118	.787	1	—

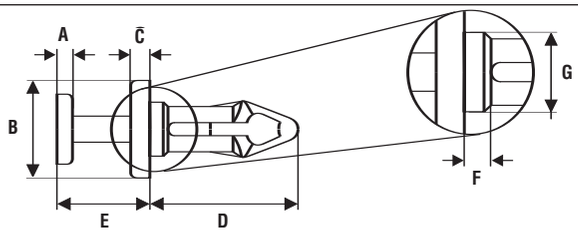
NOTE: Dimensions listed are nominal.

MICRO-TUFLOK®

The Micro-Tuflok is a one-piece fastener that quickly installs by hand or with automatic equipment. It is ideally suited for fastening electronic components to printed circuit boards and is removable and reusable for field serviceable applications. Made from a heat stabilized, impact modified nylon, the Micro-Tuflok can withstand up to 500°F during the wave solder process. See the Appendix for wave solder test conditions and results.







PART NUMBER	HOLE DIAMETER	PANEL RANGE	A	PART DIMENSIONS B	C	D	E	F	G
1700-00	.097-.103	.160-.180	.040	.190	.060	.345			
1702-00	.106-.112	.080-.105	.050	.218	.060	.300			
1711-00	.122-.128	.105-.130	.050	.218	.060	.320			
1707-00	.122-.128	.130-.155	.050	.218	.060	.345			
1703-00	.122-.128	.155-.180	.040	.218	.060	.370			
1704-00	.122-.128	.240-.265	.040	.218	.060	.455			
*1708-00	.144-.154	.265-.290	.050	.300	.060	.470	.290	.045	.165

NOTE: Dimensions listed are nominal.

Push-In/Pull-Out Test Results on page 44.

Push-In/Pull-Out Test Results Before/After Wave Soldering on pages 45 & 46.

*Larger Hole Diameter Required for Shoulder, see Dimension G.

The micro-tuflok fasteners are ideal for mounting fans to a chassis or finger guard to fan. Features include: Fast, single-operation front mounting, by hand or installation tool.

R-LOK® PLASTIC EXPANSION RIVETS

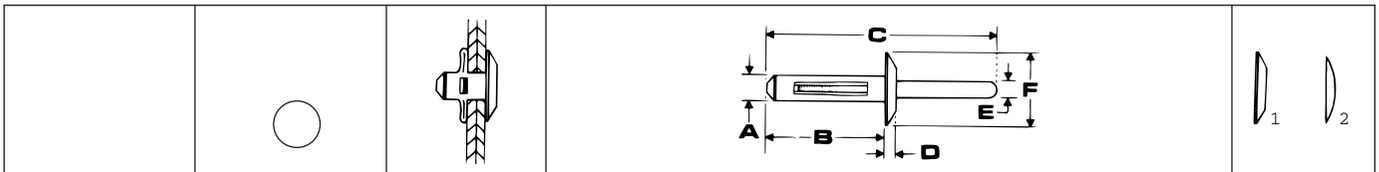
This unique device is a one piece, all plastic expansion rivet designed to securely fasten a wide variety of materials in a broad range of applications.

The R-LOK quickly inserts from either side of the assembly and can be used with most standard pop rivet setting tools. As the tool pulls the pin through the body, it draws the panels together.

When set, the pin breaks off even with the head, leaving an attractive, finished appearance.

The R-LOK will hold panels of a wide variety of materials, metal or plastic. It is particularly effective for soft materials such as rubber, urethane or padded fabrics.

Please contact Fastex regarding the single motion PR-75 setting tool.



PART NUMBER	HOLE DIAMETER	PANEL RANGE	PART DIMENSIONS A	B	C	D	E	F	HEAD STYLE
26039601	.156	.059-.177	.154	.728	1.890	.098	.094	.315	1
26050007	.197	.118-.177	.195	.787	1.890	.071	.114	.472	1
26050012	.197	.177-.236	.195	.650	1.831	.071	.114	.354	1
26050009	.197	.236-.394	.195	.984	2.008	.071	.114	.472	1
26060001	.236	.157-.335	.234	1.102	2.205	.098	.142	.512	1
26063010	.248	.157-.394	.246	1.102	2.205	.098	.154	.669	2
26063003	.248	.157-.236	.246	1.102	2.205	.098	.154	.669	1
26063022	.248	.315-.472	.246	1.228	2.299	.098	.154	.661	1

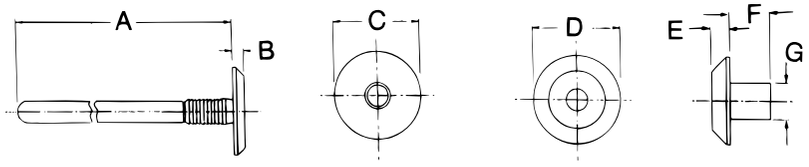
NOTE: Dimensions listed are nominal.

Push-In/Pull-Out Test Results on page 44.

R-TITE RIVETS

The unique, two-piece R-Tite design provides a controlled grip range through a built-in stop on the rivet body. R-Tite rivets can be used with most standard pop-rivet setting tools. The pin breaks off when it is even with the head, providing a finished appearance on both sides of a panel.

MALE PORTION FEMALE PORTION

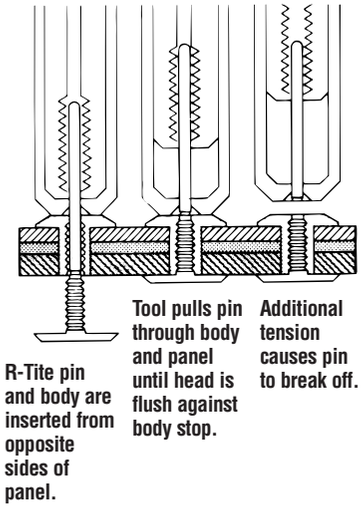


PART NUMBER	HOLE DIAMETER	PANEL RANGE	PART DIMENSIONS A	B	C	D	E	F	G
2702-00 (male)	.197-.209	.236-.256	1.771 Ref.	.059	.472				
2703-00 (female)						.472	.098	.216	.193

NOTE: Dimensions listed are nominal.

Push-In/Pull-Out Test Results on page 44.

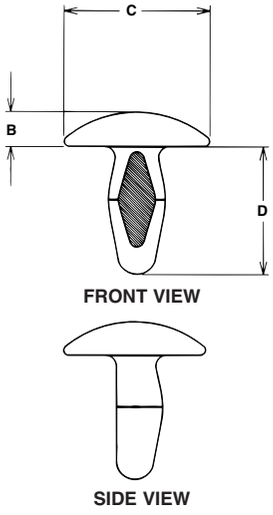
- MATERIAL
  Male – Black Acetal.
  Female – Black Super Tough Nylon 66.

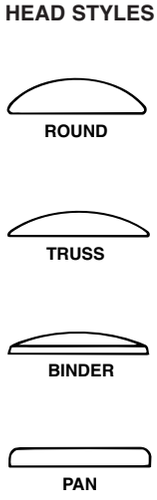


CANOE® CLIPS

Low cost replacement for screws and rivets. Clips snap into round holes securely holding in metal, plastic, and a variety of materials. Ideal for assembling gaskets, name-plates, and lightweight panels to other panels and components.

Installation–Fastener is pushed into hole, hollow prong compresses, returning to its original shape once it passes through hole.





PART NUMBER	HEAD STYLE	PANEL HOLE DIAMETER*	PANEL THICKNESS RANGE A	HEAD HEIGHT B	HEAD DIAMETER C	PRONG LENGTH D
254-080845-00	BINDER	.123-.127	.080-.100	.040	.270	.330
254-090401-00	ROUND	.131-.141	.060-.090	.150	.406	.275
254-090501-00	ROUND	.131-.141	.080-.125	.100	.406	.365
254-090501-01	ROUND	.131-.141	.080-.125	.100	.300	.365
254-090601-00	ROUND	.131-.141	.115-.160	.100	.406	.437
254-090601-01	ROUND	.131-.141	.115-.160	.100	.300	.437
254-090301-00	ROUND	.135-.140	.060-.070	.060	.300	.330
254-120601-00	TRUSS	.182-.192	.100-.160	.060	.375	.437
254-160801-00	TRUSS	.240-.260	.095-.218	.055	.500	.630
254-160801-01	TRUSS	.240-.260	.095-.218	.090	.875	.630
254-160801-03	TRUSS	.240-.260	.095-.218	.055	.750	.630
254-160801-02	PAN	.240-.260	.095-.218	.060	.450	.460

***NOTE**–When installing CANOE CLIPS:

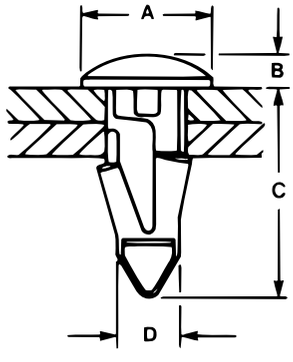
1. It is desirable that the burr side of hole be opposite CANOE CLIP entry.
2. **Dimensions listed are nominal.**
3. The surface condition of the hole edge has a definite bearing on the ease with which a CANOE CLIP can be inserted and how well it will fit and hold. Indicated hole sizes are final, i.e.: after painting, enameling, etc. For hole sizes that will provide the best combination of easy installation and secure fit, the following can serve as a general guide:

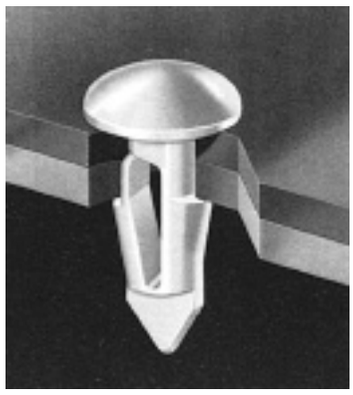
Surface condition	Hole size
Porcelain	Low end of indicated range
Enamel	Slightly below middle of indicated range
Paint	Middle of indicated range
Plastic panel	Middle of indicated range
Raw metal	High end of indicated range

STALOK™ FASTENERS

Securely joins panels without tools. Non-removable from front, removable from back. Several size options are available to accommodate a wide range of panel thicknesses.

Installation–When the fastener is pressed into a hole, the prong arm compresses and then snaps back as it passes through. The two panels are securely retained between fastener head and shoulder.





PART NUMBER	PANEL		HEAD		PRONG	
	HOLE DIAMETER	TOTAL THICKNESS	DIAMETER A	HEIGHT B	LENGTH C	DIAMETER D
215-120106-00	.182-.192	.125-.160	.320-.330	.070-.080	.571-.586	.181-.187
215-120106-02	.182-.192	.125-.160	.427-.447	.138-.158	.576-.596	.177-.187
215-120106-03	.182-.192	.130-.175	.365-.385	.083-.103	.577-.607	.167-.187
3301-00	.250	.230-.260	.400	.080	.700	.235

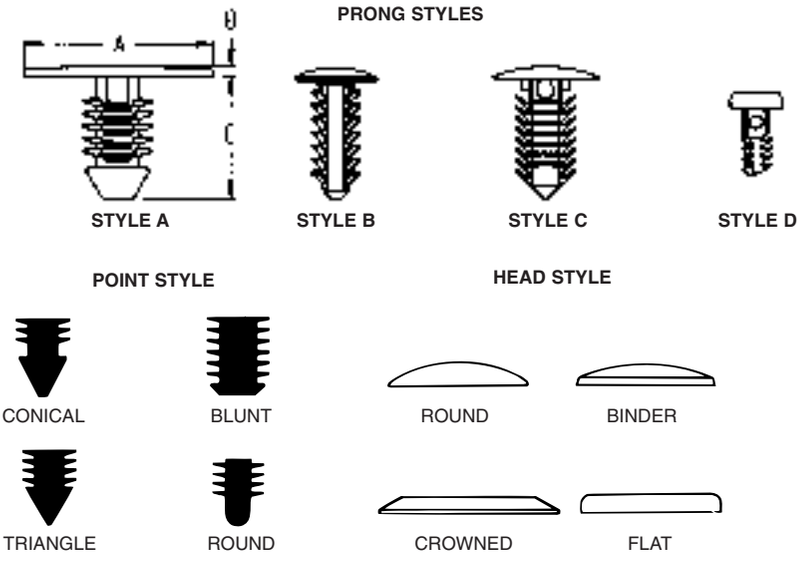
NOTE: Dimensions listed are nominal.

CHRISTMAS TREE™ CLIPS

SINGLE HEAD

Unique ribbed shank design ensures fast, easy installation and secure holding in wide range of materials. Several head, prong and point styles available.

Installation–As clip is pushed into place the ribs deflect and then spring back after they pass through hole. Works effectively in prepared or blind holes.



PART NUMBER	POINT STYLE	HOLE DIAMETER	PANEL THICKNESS*	HEAD DIAMETER A	HEAD STYLES	HEAD HEIGHT B	PRONG LENGTH C	PRONG STYLE
354-125300-00	MOD. BLUNT	.120-.130	.135-.250	.235-.245	FLAT	.070-.090	.298-.318	D
354-156001-00	BLUNT	.151-.161	.035-.312	.360-.390	MOD. FLAT	.080-.100	.511-.551	A
354-120240-00	CONICAL	.182-.192	.035-.210	.427-.447	FLAT	.065-.075	.432-.452	A
354-190001-00	CONICAL	.182-.192	.080-.402	.427-.447	FLAT	.065-.075	.630-.650	A
354-190001-01	CONICAL	.182-.192	.080-.400	.327-.347	ROUND	.040-.060	.560 REF.	A
354-190300-00	ROUND	.182-.192	.200-1.150	.427-.447	FLAT	.070-.090	1.360-1.390	A
354-200102-00	CONICAL	.185-.195	.100-.600	.450-.480	BINDER**	.030-.045	.700 REF.	A
354-200101-00	TRIANGLE	.190-.200	.060-.480	.745-.755	FLAT**	.065-.075	.690-.710	A
354-220000-00	CONICAL	.223-.233	.140-.750	.490-.510	BINDER	.054-.064	.922-.946	C
354-250304-00	ROUND	.240-.260	.075-.185	.610-.625	FLAT	.115-.135	.384-.404	C
354-250103-00	MOD. TRIANGLE	.245-.255	.095-.320	.730-.770	FLAT	.030-.050	.470-.510	A
354-070201-00	CONICAL	.245-.255	.040-.750	.740-.760 SQ.	FLAT	.050-.060	1.050-1.080	A
354-250303-00	CONICAL	.245-.255	.065-1.250	.990-1.010	FLAT	.050-.070	1.415-1.465	A
2601-00	MOD. TRIANGLE	.245-.255	.070-.400	.690-.710	ROUND	.090-.110	.561 REF.	C
2607-00	MOD. TRIANGLE	.245-.255	.070-.400	.490-.510	ROUND	.050-.070	.571 REF.	C
2630-00	CONICAL	.245-.255	.110-.800	.690-.710	ROUND	.065-.085	1.020-1.040	B***
2631-00	CONICAL	.245-.255	.410-1.130	.690-.710	ROUND	.065-.085	1.325-1.345	B***
2620-00	TRIANGLE	.276-.286	.145-.455	.800-.815	CROWNED	.065-.075	.708-.738	A
354-280302-00	CONICAL	.276-.286	.350-.800	1.210-1.230	MOD. FLAT	.085-.095	1.100-1.140	A
354-182740-00	CONICAL	.276-.286	.250-.800	.495-.505	ROUND	.055-.065	.940-.950	C
354-280307-00	TRIANGLE	.276-.286	.050-.900	.750-.770	CROWNED	.100-.120	1.240-1.280	A
354-280308-00	TRIANGLE	.276-.286	.093-.470	.610-.630	FLAT	.035-.045	.720-.770	A
354-280317-00	CONICAL	.276-.286	.100-.870	.580-.620	CROWNED	.050-.070	1.300-1.320	A
354-280318-00	CONICAL	.276-.286	.810-1.580	.580-.620	CROWNED	.050-.070	2.010-2.030	A
354-280319-00	TRIANGLE	.276-.286	1.520-2.290	.580-.620	CROWNED	.050-.070	2.730 REF.	A
354-280305-00	CONICAL	.281-.291	.530-.920	1.240-1.260	BINDER	.085-.095	1.155-1.225	A
354-310101-00	BLUNT	.315-.325	.093-.400	.370-.390 x .490-.510	MODIFIED CROWNED	.075-.105	.520-.540	A
354-310102-00	BLUNT	.312-.325	.130-.500	.490-.510	BINDER	.045-.055	.660 REF.	A
2622-00	CONICAL	.374-.414	.395-.700	.730-.770	BINDER	.105-.145	1.080-1.120	B***

*Due to the unique prong design the recommended panel thickness range can be exceeded in certain applications. Christmas Tree Clips do not have to extend beyond the panel and will hold securely in blind holes if the panel material is softer than the Christmas Tree Clip (i.e., wood, particle board, rigid foam, etc.)

**Textured surface.

Push-In/Pull-Out Test Results on page 47.

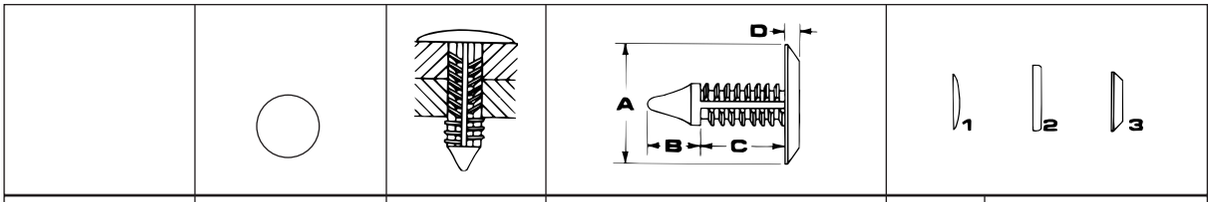
NOTE: Dimensions listed are nominal.

***Patented Product.

PINE-TREE CLIP® REMOVABLE, REUSABLE PANEL RETAINER

The PINE TREE CLIP features a patented ribbed shaft and self-centering construction that assure its insertion and removal without damage or distortion of its retaining fins.

The unique construction permits its use as a reusable fastener under conditions where other fin-type fasteners would become distorted and unusable, particularly where removal is required in the field.

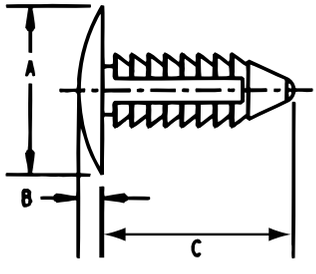


PART NUMBER	HOLE DIAMETER	PANEL RANGE	PART DIMENSIONS A	B	C	D	HEAD STYLE	SPECIAL FEATURES
36030001	.118	.069-.197	.216	.091	.295	.060	2	—
36030002	.118	.160-.472	.216	.091	.570	.060	2	—
2605-00	.125	.045-.070	.187	.080	.140	.040	1	—
36050001	.197	.067-.315	.433	.134	.362	.040	2	—
36050003	.197	.060-.430	.433	.130	.570	.040	2	—
2619-00	.236	.079-.236	.472	.143	.329	.098	1	—
36063007	.250	.028-.510	.728	.142	.607	.100	1	—
36063009	.250	.173-.394	.625	.079	.570	.060	1	—
2617-01	.250	.173-.571	.625	.082	.709	.060	1	—
36063022	.250	.030-.291	.728	.148	.285	.090	1	—
36070015	.276	.063-1.000	.748	.311	1.000	.060	1	—
36070005	.276	.080-.532	1.000	.177	.610	.118	1	Textured Head
36070007	.276	.080-1.260	1.000	.177	1.280	.118	1	Textured Head
2633-00	.276	.138-.710	.748	.177	.900	.060	1	—
36079005	.311	.040-.472	1.000	.335	.610	.118	1	—
36079004	.311	.025-.512	.752	.335	.560	.106	3	—

NOTE: Dimensions listed are nominal.

Push-In/Pull-Out Test Results on page 47.

PINE-TREE CLIP® NON-REMOVABLE CIRCULAR FIN CLIP

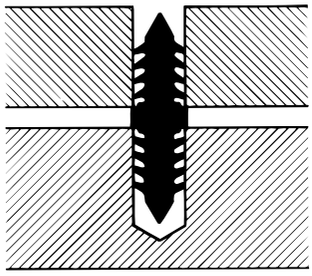


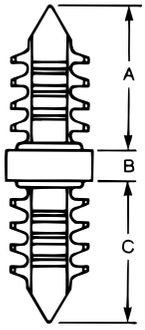
PART NUMBER	HOLE DIAMETER	PANEL RANGE	A	B	C	HEAD STYLE
39050001	.197	.063-.252	.394	.040	.472	BINDER
39050006	.197	.090-.400	.395	.040	.620	BINDER
39063010	.250	.098-.472	.700	.100	.802	BINDER
39063016	.248	.079-.236	.700	.098	.571	BINDER
39065005	.250	.078-.236	.700	.100	.610	BINDER
39088501	.340	.055-.395	.630	.098	.748	BINDER
39100001	.394	.060-.787	.846	.157	1.102	BINDER

NOTE: Dimensions listed are nominal.

CHRISTMAS TREE™ CLIPS DOUBLE END

Installation–One end of clip is pressed into hole in primary panel. Assembly is completed by pressing second panel onto projecting ribbed shank.





PART NUMBER	"A" PRONG				HEAD THICKNESS B	"C" PRONG			
	POINT STYLE	HOLE DIAMETER	PANEL THICKNESS*	PRONG LENGTH A		POINT STYLE	HOLE DIAMETER	PANEL THICKNESS	PRONG LENGTH C
354-201960-00	ROUND	.312-.328	.125-.375	.440-.470	.025-.055	ROUND	.312-.328	.140-.750	.840-.870
354-162200-00	CONICAL	.150-.162	.105-.250	.293-.317	.063-.071	CONICAL	.150-.162	.105-.250	.293-.317
***2610-00	BLUNT	.250	.020-.270	.450	.110	BLUNT	.250	.020-.270	.450
2627-00	BLUNT	.312-.328	.095-.300	.345	.040	BLUNT	.312-.328	.095-.300	.345

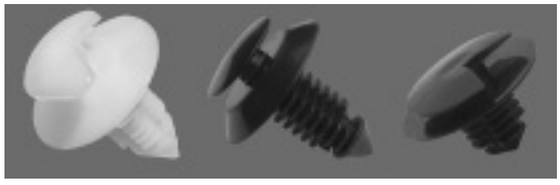
NOTE: Dimensions listed are nominal.

See page 15 for point style descriptions.

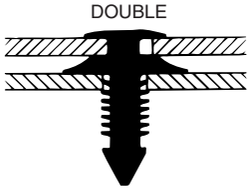
***Patented Product.

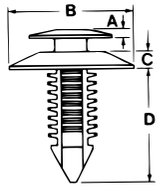
CHRISTMAS TREE™ CLIPS DOUBLE HEAD

Installation–Simple twist secures clip in primary panel. Second panel is then pushed onto ribbed shank.



354-280103-00 2625-00 354-280113-00





PART NUMBER	POINT STYLE	PRONG HOLE DIA.	PANEL THICK-NESS*	SPIN-IN HEAD					SECONDARY HEAD			PRONG LENGTH D
				HOLE DIAMETER	PANEL THICKNESS	HEAD DIAMETER	HEAD HEIGHT A	HEAD STYLE	HEAD DIAMETER B	HEAD HEIGHT C	HEAD STYLE	
354-280113-00	TRIANGLE	.276-.286	.030-.220	.384-.404	.050-.080	(1)	.045-.055	FLAT	.740-.760	.010-.030	FLAT	.399-.419
354-280103-00	CONICAL	.276-.286	.030-.470	.360-.380	.080-.110	(2)	.045-.055	FLAT	.740-.760	.100-.110	CROWNED	.660-.700
2625-00	CONICAL	.276-.286	.031-.400	(3)	.070-.080	(3)	0.07 Ref.	FLAT	0.77 Ref.	.125 Ref.	CROWNED	.700 Ref.

(1) Head rotates into a .394 diameter hole in a .070 panel.

(2) Head rotates into a .360.380 diameter hole or a .260 x .500 oval slot in a .080 thick panel.

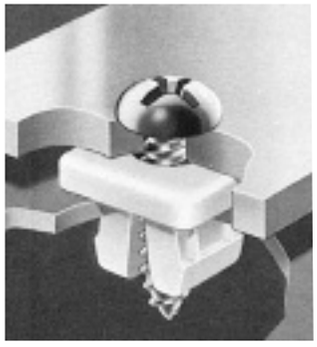
(3) Head slides into a doghouse with neck dimension of 0.18" and a diameter of 0.225". Contact ITW Fastex for a detailed doghouse design.

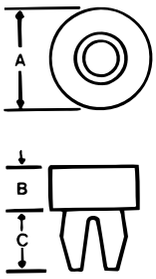
*See note on page 15.

NOTE: Dimensions listed are nominal.

PLASTI-GROMMETS™

One-piece, non-corrosive nylon, self-retaining blind screw receptacles that spreads the load over a wide area for strength and high load bearing capacity. Front snap in. Insulate at fastening points, protects against electrolytic action, eliminate cross threading.





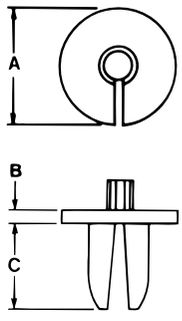
PART NUMBER	PANEL HOLE SIZE	PANEL THICKNESS RANGE	SCREW SIZE	HEAD SIZE A	HEAD HEIGHT B	PRONG LENGTH C
242-160502-70	.245-.255 SQ.	.031-.125	6 or 8	.365-.385 SQ.	.028-.033	.266-.296
242-170602-80	.265-.281 SQ.	.031-.156	8	.365-.385 SQ.	.030-.035	.310-.340
242-170602-83	.265-.286 SQ.	.031-.140	6 or 8	.365-.385 SQ.	.030-.040	.315-.335
242-180602-90	.275-.290 SQ.	.031-.156	8 or 10	.396-.416 SQ.	.028-.038	.310-.340
242-180602-91	.275-.290 SQ.	.031-.156	8 or 10	.396-.416 SQ.	.057-.067	.310-.340
242-180602-92	.275-.290 SQ.	.031-.156	8 or 10	.490-.510 DIA.	.093-.103	.310-.340
242-180602-93	.275-.290 SQ.	.031-.156	8 or 10	.490-.510 DIA.	.125-.135	.310-.340
242-210602-10	.330-.343 SQ.	.031-.156	1/4"	.552-.572 DIA.	.057-.067	.310-.340
212-110302-00	.173-.178 SQ.	.031-.078	4	.208-.228 SQ.	.045-.055	.208-.228
212-160404-08	.250-.255 SQ.	.031-.109	6	.360-.390 SQ.	.183-.193	.271-.291
212-170602-05	.270-.275 SQ.	.031-.109	8 or 10	.485-.515 DIA.	1.360-1.390	.266-.296
212-180402-66	.270-.275 SQ.	.031-.109	8 or 10	.485-.515 DIA.	.245-.255	.266-.296
212-180402-91	.270-.275 SQ.	.031-.109	6	.365-.385 SQ.	.302-.307	.266-.296
212-180602-10	.281-.286 SQ.	.031-.156	8 or 10	.360-.390 SQ.	.040-.050	.329-.359
212-180602-13	.275-.290 SQ.	.031-.156	8 or 10	.485-.515 DIA.	.360-.390	.310-.340
212-180402-15	.281-.286 SQ.	.031-.109	8 or 10	.485-.515 DIA.	.240-.260	.266-.296
212-180402-40	.281-.286 SQ.	.031-.109	8 or 10	.485-.500 DIA.	.360-.390	.266-.296
212-180402-38	.281-.286 SQ.	.031-.109	8 or 10	.485-.500 DIA.	.485-.515	.266-.296
212-180402-37	.281-.286 SQ.	.031-.093	8 or 10	.485-.500 DIA.	.610-.640	.266-.296
212-180402-51	.281-.286 SQ.	.031-.109	8 or 10	.485-.500 DIA.	.672-.702	.266-.296
212-240602-04	.370-.380 SQ.	.031-.156	1/4"	.610-.640 SQ.	.073-.083	.329-.359
212-240602-00	.375-.380 SQ.	.031-.156	1/4"	.672-.702 DIA.	.454-.484	.329-.359
212-240402-04	.375-.390 SQ.	.031-.156	10	.610-.640 SQ.	.063-.093	.310-.340

For torque data and hole preparation see page 48.

NOTE: Dimensions listed are nominal.

ROUND HOLE SCREW GROMMET

Ideal for applications with a drilled or punched hole. A pin, part of the grommet, expands the prongs of the grommet as it is driven into the hole. This provides friction between the grommet and the inside of the hole, retains the grommet in the hole and prevents the screw from rotating in the hole after it's been driven. As the screw is driven, it pushes the pin ahead of it, expanding the prongs still further and locking the grommet securely in the hole.



PART NUMBER	PANEL HOLE SIZE*	PANEL THICKNESS RANGE	SCREW SIZE	HEAD SIZE A	HEAD HEIGHT B	PRONG LENGTH C
212-250301-00	.248-.265 DIA.	.020-.250	8	.490-.510	.050-.070	.370-.390

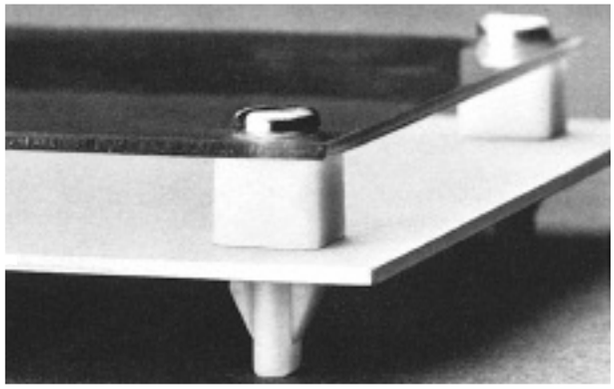
*Panel hole size varies dependent upon panel thickness.

NOTE: Dimensions listed are nominal.

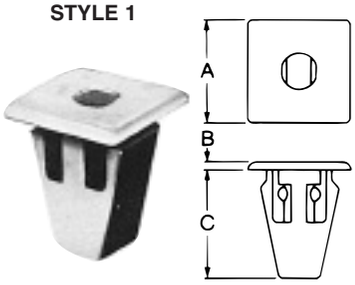
ENCLOZ® SCREW GROMMETS

Front mounted grommets provide added thread engagement, increased bearing area. Non-conductive parts that fully encapsulate metal screws, providing electrical insulation and protection against temperature/moisture transfer and exposed screw points.

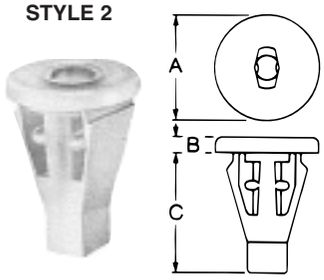
Accommodates variations in hole size and panel thicknesses. Available in three basic styles. Styles 1, 2 and 3 function in panels ranging from .020 inch to .140 inch thick, and all accept a No. 8 screw. Style 3 accepts either a No. 8 or No. 10 screw.



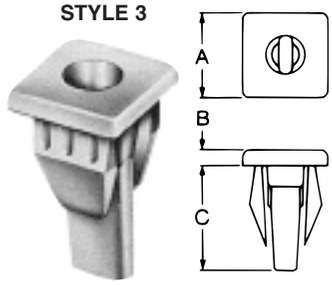
STYLE 1



STYLE 2



STYLE 3

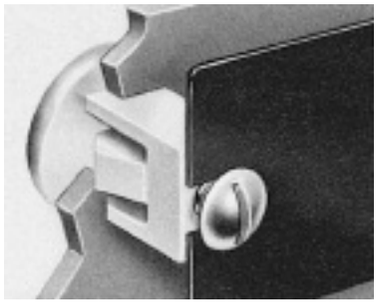


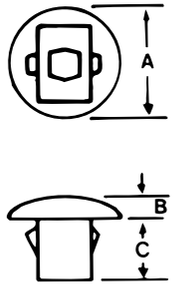
PART NUMBER	STYLE	PANEL HOLE SIZE*	PANEL THICKNESS RANGE	SCREW SIZE	HEAD SIZE A	HEAD HEIGHT B	PRONG LENGTH C
217-180502-24	3	.265-.280 SQ.	.020-.140	8 or 10	.370-.390 SQ.	.240-.260	.460-.480
217-180502-35	3	.270-.272 SQ.	.020-.140	8 or 10	.370-.390 SQ.	.021-.040	.450-.490
217-180502-04	3	.275-.290 SQ.	.020-.140	8 or 10	.370-.390 SQ.	.240-.260	.450-.490
217-180502-10	2	.275-.290 SQ.	.020-.140	8 or 10	.427-.447 DIA.	.740-.760	.450-.490
217-200502-08	3	.309-.315 SQ.	.020-.140	8 or 10	.370-.390 SQ.	.490-.510	.460-.480
217-200502-00	3	.312-.317 SQ.	.020-.140	8 or 10	.865-.885 SQ.	.052-.072	.610-.640

NOTE: Dimensions listed are nominal.

ENCLOZ® REVERSE SCREW GROMMETS

Ideal when components are fastened from the opposite side of the panel. Snap-in grommet covers the screw point with an attractive, decorative head.





PART NUMBER	TYPE	PANEL HOLE SIZE*	PANEL THICKNESS RANGE	SCREW SIZE	HEAD SIZE A	HEAD HEIGHT B	PRONG LENGTH C
212-320602-01	R	.250 x .343	.040-.060	8	.485-.515	.085-.105	.377-.397
212-320334-00	R	.312 x .343	.062-.092	8	.485-.515	.095-.105	.505-.525

NOTE: Dimensions listed are nominal.

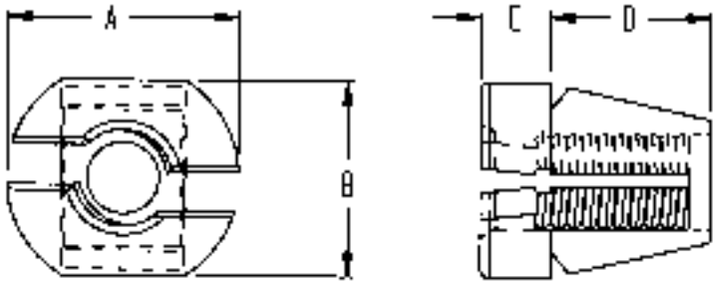
LEG LEVELING GROMMET

Grommet snaps into pre-punched square hole and provides the threads for screwing metal glides. Eliminates costly weld nuts and welding operation. Accepts a 3/8-16 threaded glide. **Patented product.**

PART NUMBER	HOLE SIZE	PANEL THK. RANGE	A	B	C	D	THREAD SIZE
212-260401-00	.550	.057-.063	.880	.750	.260	.640	3/8-16

MATERIAL: Black High Impact Nylon 66

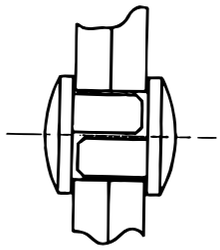
NOTE: Dimensions listed are nominal.



RATCHET RIVETS

Two mating parts that securely connect flat panels. Ideal for both rigid and compressible material.

ASSEMBLY



PART NUMBER	ASSEMBLED PANEL THICKNESS RANGE	HEAD DIAMETER AND THICKNESS
236-170406-00	.235-.297	.750/.093
236-170406-02	.346-.500	.750/.093
236-170406-03	.500-.812	.750/.093
236-170406-04	.780-1.15	.750/.093
236-170406-05	.235-.297	.406/.062
236-170406-07	.346-.500	.406/.062
236-170406-08	.500-.812	.406/.062
236-170406-09	.780-1.15	.406/.062

Assembly to fit a .281 diameter hole

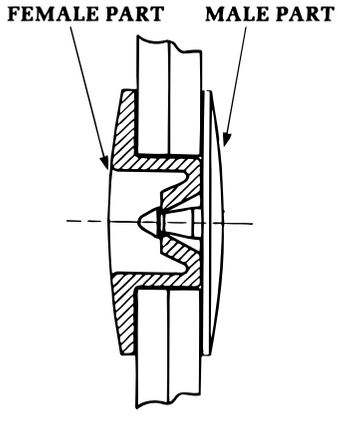
Material: Nylon 66

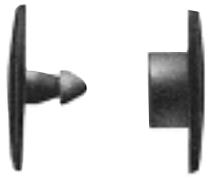
NOTE: Dimensions listed are nominal.

SNAP RIVETS

Two mating parts that securely connect flat panels together. Ideal for both rigid and compressible materials.

ASSEMBLY





ASSEMBLY		PANEL THICKNESS	HEAD DIAMETER AND THICKNESS OF MALE/FEMALE PART
MALE PART NO.	FEMALE PART NO.		
236-220603-00	236-220604-00	.170-.190	.625 DIA./.062
236-220603-02	236-220604-00	.220-.240	.625 DIA./.062
236-220603-05	236-220604-01	.170-.190	.460 DIA./.062
236-220603-10	236-220604-00	.320-.340	.625 DIA./.062
236-220603-10	2700-00	.740-.770	.625 DIA./.062

Assembly to fit a .320 diameter hole

Material: Nylon 66 (for Clear Polycarbonate, see page 9)

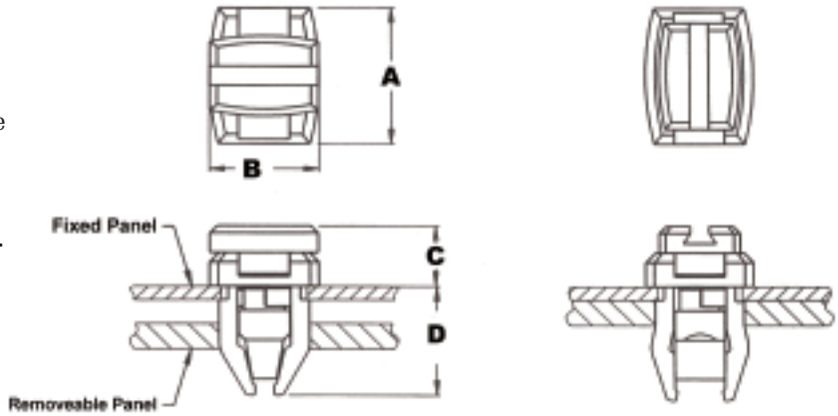
Minimum Pull Out Force: 40 lbs, dry as molded

NOTE: Dimensions listed are nominal.

1/4 TURN CAPTIVE PANEL LATCH

FEATURES:
- Molded as a one-piece design – reduces number of inventoried parts
- Captive latch assembly prevents misplaced parts during installation and usage
- Low cost alternative to metal latches
- Low profile design
- Features of material: non-corrosive, non-conductive, toughened and UV stabilized.

APPLICATIONS:
- Metal Enclosures
- Computer Servers
- Medical Equipment
- Telecommunication Cabinets
- Copiers

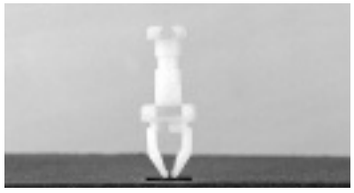


PART NUMBER	PART DESCRIPTION	MATERIAL	DIMENSIONS			
			A	B	C	D
1009-00	1/4 Turn Fastener	Nylon 6/6	.580	.450	.250	.500
1027-00	1/4 Turn Fastener	Nylon 6/6	.570	.450	.250	.600

APPLICATION SPECIFICATIONS:

PART NUMBER	FIXED PANEL		REMOVABLE PANEL	
	HOLE SIZE	PANEL THICKNESS	HOLE SIZE	PANEL THICKNESS
1009-00	(.377 to .375) Square	.040-.110	(.358 to .353) Square	.040-.057
1027-00	(.377 to .375) Square	.020-.109	(.358 to .353) Square	.162 max

❶



The Fastex 1/4-Turn Captive Fastener's grommet and plunger are molded as one-piece.

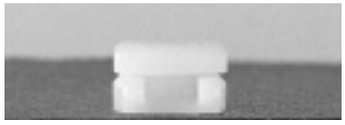
❷

The Fastex 1/4-Turn Captive Fastener's installs quickly and easily by inserting the grommet end into prepared, punched square holes in both the removable panel and the fixed structure. The plunger is driven into the grommet by striking the head of the fastener with a hammer.

❸

As the plunger enters the grommet, the two prongs spread, securely locking the two panels together. To separate the panels, insert a screw driver or coin into the slot on the top of the plunger.

❹



By rotating the plunger head a 1/4 turn, the grommet compresses to its original size. The removable panel can then be separated from the fixed structure. The 1/4 turn fastener is held captive in the panel ready for reuse.

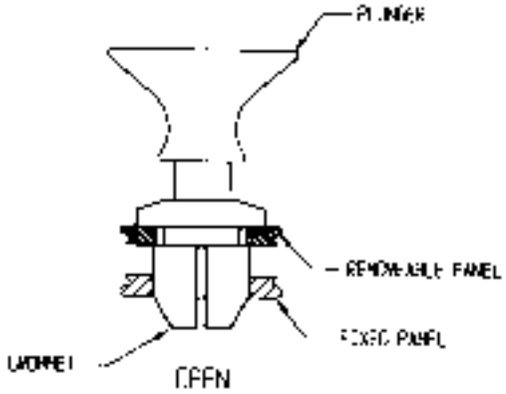
PLUNGER CAPTIVE PANEL LATCH

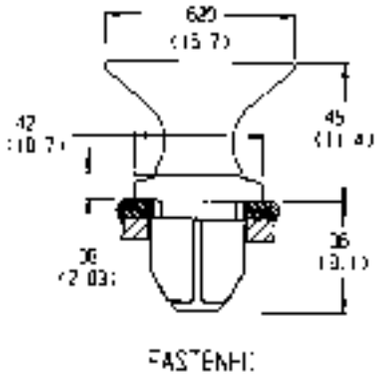
Plunger Part Number: 3955-00
Grommet Part Number: 3956-00

FEATURES:
- Captive latch assembly prevents misplaced parts during installation and usage;
- Low cost alternative to metal latches;
- No tools required for installation;
- Plunger and grommet components supplied separately.

DIMENSIONS OF PREPARED PANEL/STRUCTURE:

	REMOVABLE PANEL (R)	FIXED STRUCTURE (F)
Panel Thickness	.040"-.065"	.044"-.108"
Punched Hole	.294"-.299"	.316"-.323"





TYPICAL APPLICATIONS:
- Metal Enclosures
- Computer Servers
- Medical Equipment
- Telecommunication Cabinets
- Copiers

1. Insert grommet into removable panel and insert plunger into grommet.

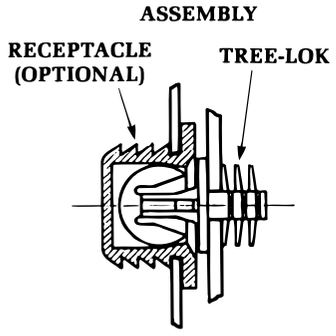
2. To fasten the removable panel to the fixed structure, push the plunger into the grommet, forcing the prongs to expand and locking the removable panel and the fixed structure together.

3. To separate the panel from the fixed structure, pull the plunger up, allowing the grommet to compress.

4. The latch remains captive in the separated panel. The latch is held captive by the slightly smaller hole in the removable panel.

TREE-LOK FASTENER

Ball head fits neatly into plain bored hole or optional mating receptacle to securely lock access panels. Permits easy panel opening with moderate pressure.



PART NUMBER	HOLE SIZE PANEL THICKNESS (PRONG)	RECEPTACLE PART NO.	HOLE SIZE PANEL THICKNESS
320-322880-00 STD. BALL	.437 DIA.	320-221401-00	.562 DIA. HOLE MIN. .468 PANEL
320-322880-01 STANDOFF/ 1/4" BALL	.437 DIA.	320-221401-00	.562 DIA. HOLE MIN. .468 PANEL
320-322880-03 MINI BALL	.312 DIA.	320-221401-01	.406 DIA. HOLE MIN. .137 PANEL
320-322880-06	.250 DIA. .040-.375 PANEL	320-221401-00	.562 DIA. HOLE MIN. .468 PANEL

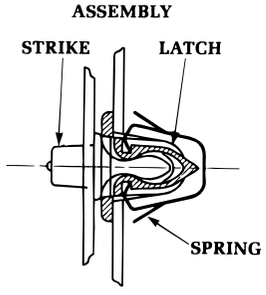
Material: Black Nylon 66

TREE-LOK can be used without receptacle. Mating panel hole size will change to .437 dia. or .312 dia.

NOTE: Dimensions listed are nominal.

STRIKE AND LATCH

Easily installed, rugged latching device for metal cabinet doors and access panels. Snaps in place through panel front.



PART NUMBER	SPRING THICKNESS	HOLE SIZE (LATCH) PANEL RANGE	AVERAGE PUSH-IN PULL-OUT FORCES*
7800-02	.020	.515 x .656 RECT. HOLE .035 TO .060 THK. PANEL	10 LBS.

Strike now available in plastic or metal.

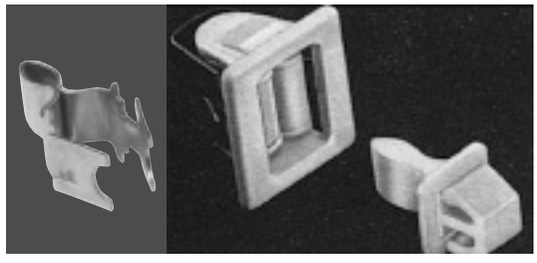
Plastic: Part No. 263-000006-00, designed to fit a .286-291 sq. hole in a .032-052 inch thick panel.

Metal: Part No. 6521-00-0551YT, designed to fit in a .264 x .290 rectangular hole in a .035-.047 inch thick panel.

Latch: Material: Body–Nylon 66, Spring–Metal

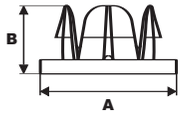
*Pull-out force given as a guide line only. User should evaluate for specific applications.

NOTE: Dimensions listed are nominal.

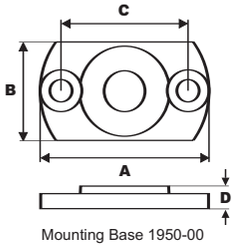


BALL & CATCH PANEL MOUNT
LATCH, MOUNTING BASE & STRIKER

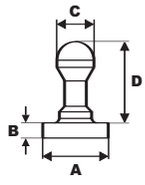
The Ball Catch Latch offers a simple self-locating way to attach an access panel. The pin plate allows the male pin to be secured without a fastener showing on the panel face.



Latch 1949-00



Mounting Base 1950-00

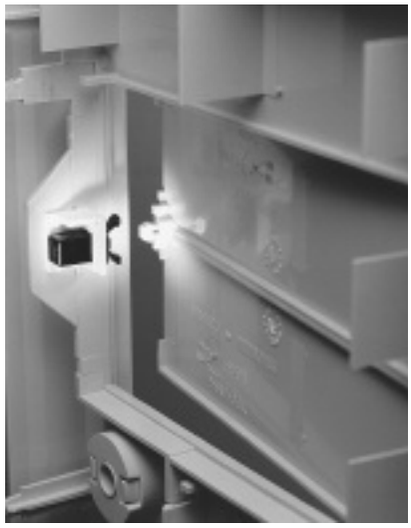


Striker 1948-00

PART NUMBER	PART DESCRIPTION	MATERIAL	DIMENSIONS			
			A	B	C	D
1948-00	Ball Catch Striker	Nylon 6/6	.39	.09	.22	.48
1949-00	Ball Catch Striker	Nylon 6/6	.79	.39	n/a	n/a
1950-00	Mounting Base	Acetal	1.13	.66	.83	.15

PUSH-LOCK

Part Number: 1V60-3-9-999-9



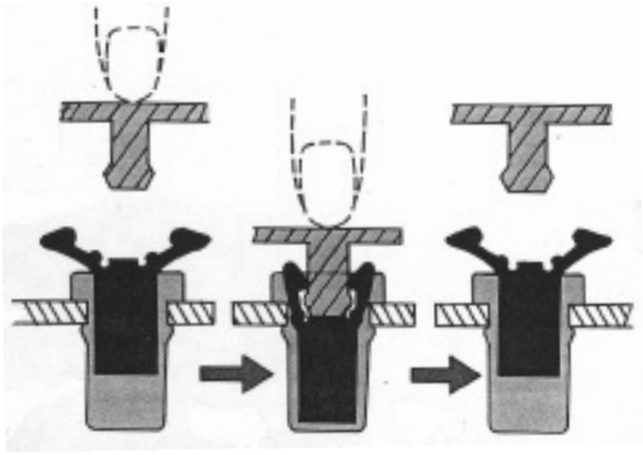
The Push-Lock panel fastener is a labor-saving, cost-effective latching device, ideal for lightweight doors, compartments and control panel covers. Snaps easily in from the front and locks securely in place. All that is necessary is a punched hole – no screws, bolts, rivets or other fasteners are required, dramatically reducing installation time. This one-piece assembly is small in comparison to similar latching devices, making it ideal for low profile applications.

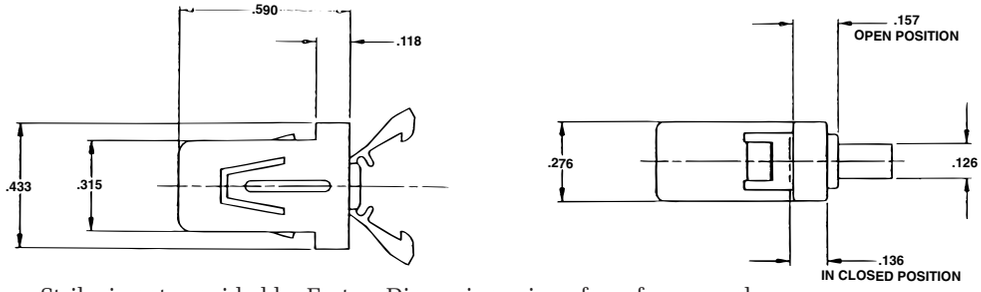
- Fast, easy installation from front panel;
- Economical;
- Reliable long-life closure (cycled at 30,000 times).

Specifications:

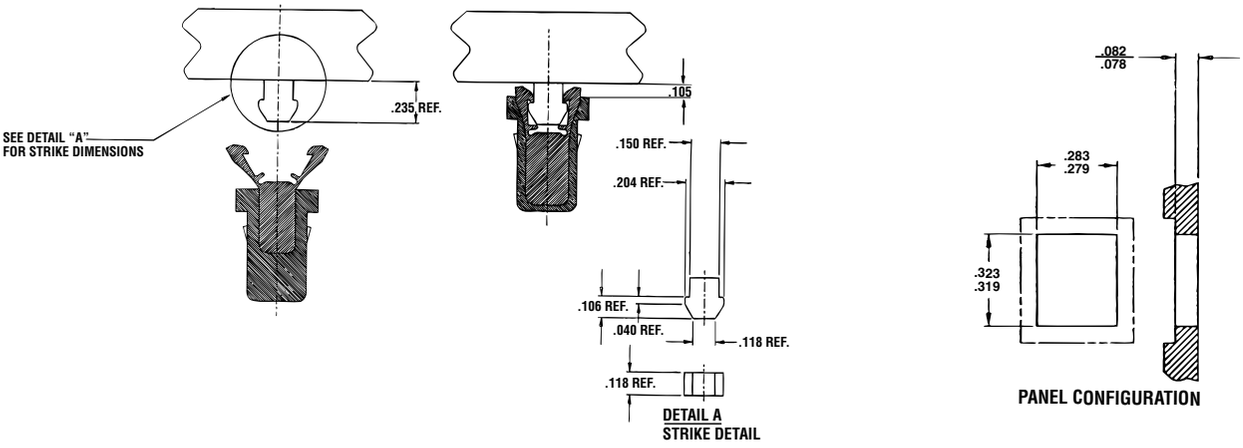
Push-In Force: 2.6 lbs.
Pull-Out Force: 3.6 lbs.
Operating Temperature: 14°F – 140°F (–10°C – +60°C)

Note: These push-in pull-out forces are given only as a guideline. User should evaluate for specific applications.





Strike is not provided by Fastex. Dimensions given for reference only.



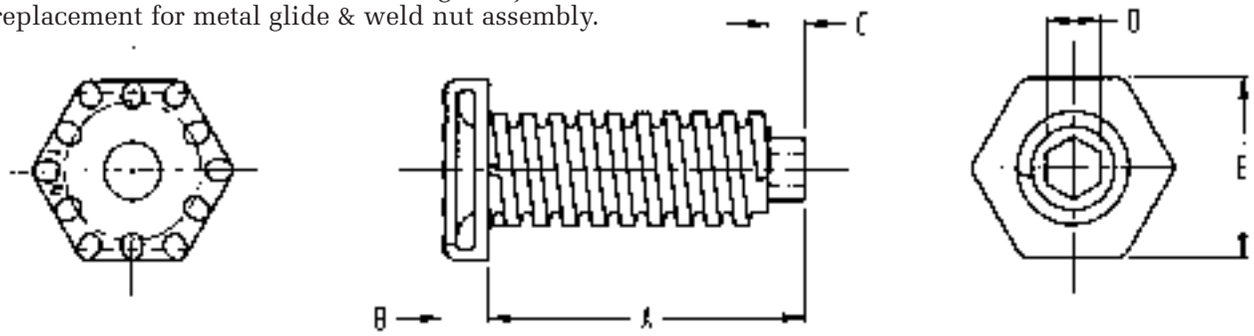
Note: Dimensions listed are nominal.

PLASTIC LEVELING FEET

(Patented Product)

FEATURES:

- Unique head design acts as a shock absorber, preventing the shock load from being transmitted to the threads and/or helix.
- Nibs on the top of the head help in reducing friction between surfaces.
- Coarse thread design reduces the number of thread turns required for height adjustment.
- Standard hex size on both ends for height adjustment.
- A replacement for metal glide & weld nut assembly.



PART NUMBER	A	B	C	D	E
4109-01	2.210	.330	.250	.374	1.240
4110-00	1.650	.330	.190	.374	1.240

NOTE: Dimensions listed are nominal.

TECHNICAL DATA:

Material	Glass filled impact modified Nylon
Drop Test	Passed 10" drop test per ANSI/BIFMA X 5.5
Static Load (4 leg levelers)	Sustained a static load of 1250 lbs. without any fracture in the part. Threads and helix were functional.
Gauge	16 and 18 gauge steel
Helix	Dimensions available upon request
Compressive Load (Per leg)	Web on head fractured at a load of 1000 lbs. Threads were functional.
Shear Test (Per leg)	Sustained a shear load of 250 lbs.

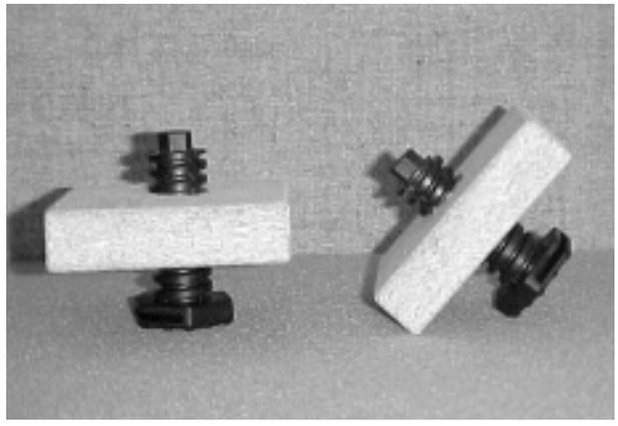
NOTE: For helix drawing/specification please contact Fastex Engineering Group.

PLASTIC LEVELING FOOT assembled directly into MDF material.

Part Number: 4109-01

FEATURES:

- Assembles easily into threaded MDF. No need for metal glides, nuts, inserts or plates. Simply drill a hole into the MDF base, .625-.635 dia., and tap, using a .780-5 ACME tap, then screw the foot directly into the MDF base.
- Shock Resistant
- Height can be easily adjusted from either the top hex or the base of the foot.



TEST RESULTS:

Compression Testing:
MDF board secured and weight applied to the bottom of the foot. At 773 lbs. the MDF Board failed.

Impact Load Testing:
A 26 lb. weight was dropped from varying heights onto the bottom surface of the foot. At a height of 12" the load caused the MDF Board to fail.

Shear Load Testing:
The Block was secured on its side and a weight applied to the side of the foot bottom. The foot failed at a weight of 235 lbs.

SNAP-IN BUMPER

Part Number: 8202-00-9909

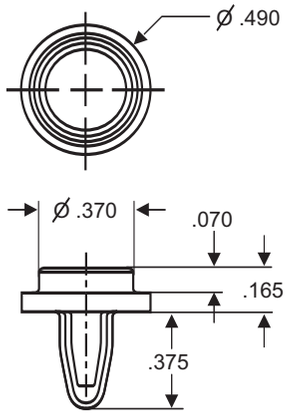
FEATURES:
- Quick installation, no tools required;
- High shear force and holding strength;
- Ideal for applications where a mechanical fastening method is required, such as: applications exposed to moisture, uneven surfaces or surfaces which cannot be cleaned properly and surfaces with low surface energy (i.e., polypropylene/polyethylene)

TECHNICAL DATA:

Material-Bumper	Urethane Black
Durometer	55-65, Shore A
Material-Clip	Nylon 6/6, Black
Hole Diameter	.184"/.190"
Panel Range	.030"-.090"

Insertion/Pull-Out/Shear Forces (Averages in Lbs)

Steel Panel Thickness	.030"
Insertion Force	27
Pull Out Force	27
Shear Force	47
Steel Panel Thickness	.090"
Insertion Force	26
Pull Out Force	19
Shear Force	40

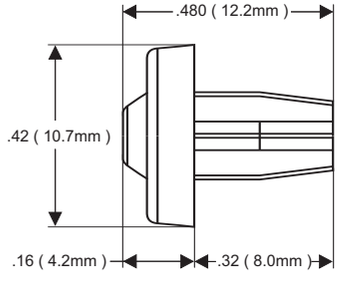


QUIETEX™ STEM BUMPER

Part Number: 8208-00-9909

The Quietex™ Stem Bumper adds a mechanical hold to the patented sound dampening properties of our Quietex™ Bumper. This one piece, easy push in part will grip in a 0.197 inch [5mm] Diameter Hole that is at least .375 inch [9.525mm] deep.

FEATURES:
- Patented Quietex™ Bumper Design provides the best sound dampening in the industry.
- New push in stem offers a mechanical hold for increased retention.



ITW Fastex offers a complete line of high quality, self-adhesive bumpers. Fastex bumpers are available in both Urethane and PVC materials and are sold on a matrix pad and kiss-cut for easy removal and application. Bumpers apply with only thumb pressure and adhere without screws rivets or other fastening devices. Fastex bumpers are an ideal way to protect surfaces from scratches, skidding and vibration absorption.

SHAPES

Cylindrical

Square

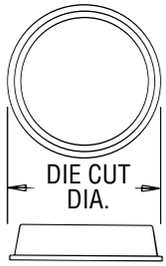
Tapered Square

Hemisphere

Urethane Self-Adhesive Bumpers

- Excellent skid-resistance and high coefficient of friction;
- Non-marring and non-staining material;
- Rubber-based adhesive for high initial adhesion;
- 3 Standard Colors: White, black and transparent clear; (Note: Not all parts available in each color)
- Bumper material hardness 55-65 shore A.
- UL Flammability recognition on the urethane material. UL Flame Class Rating: 94HB
- See page 50 for adhesive specifications.

Die Cut Diameter



UL File Number E83785

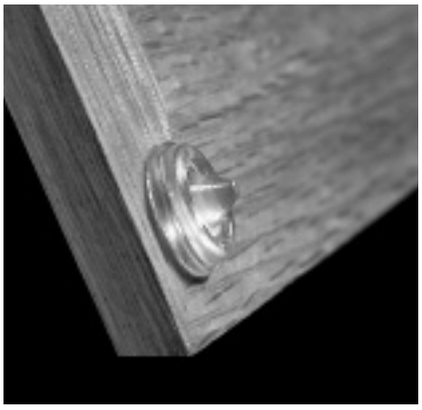
SHAPE/DESCRIPTION	STYLE NUMBER	PART NUMBER	SIZE*	STANDARD COLOR(S)**
CYLINDRICAL	U-1	4001-00	HGT. .140" DIA. .500"	WHITE/BLACK/TRANSPARENT
	U-6	4006-00	HGT. .250" DIA. .500"	BLACK
	U-23	4023-00	HGT. .160" DIA. .750"	BLACK
	U-29	4029-00	HGT. .325" DIA. .500"	BLACK
	U-47	4047-00	HGT. .470" DIA. .685"	BLACK (ACRYLIC ADHESIVE)
	U-52	4052-00	HGT. .140" DIA. .495" MAX.	BLACK
	U-53	4053-00	HGT. .125" DIA. .400"	BLACK (STRIP OF 4)
SQUARE	U-7	4007-00	HGT. .100" SQ. .400"	TRANSPARENT
	U-32	4032-00	HGT. .120" SQ. .500"	BLACK
TAPERED SQUARE	U-9	4009-00	HGT. .230" SQ. .500"	BLACK
	U-19	4019-00	HGT. .300" SQ. .800"	BLACK
HEMISPHERE	U-2	4002-00	HGT. .200" DIA. .437"	BLACK/TRANSPARENT
	U-41	4041-00	HGT. .085" DIA. .312"	TRANSPARENT
	U-42	4042-00	HGT. .150" DIA. .375"	TRANSPARENT

*All dimensions ± .02 inches measured without adhesive liner.

**Other colors available.

NOTE: Bumper may not be centered on skirt area of die cut.

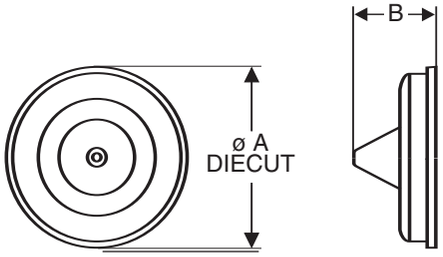
NOTE: Dimensions listed are nominal.



QUIETEX™ BUMPER

The Quietex™ urethane bumper was developed to significantly reduce the sound of cabinet and vanity doors. Its unique material minimizes sound while its physical design softens the remaining sound by trapping it within the bumper. In laboratory uses the Quietex™ bumper significantly outperformed every other bumper on the market.

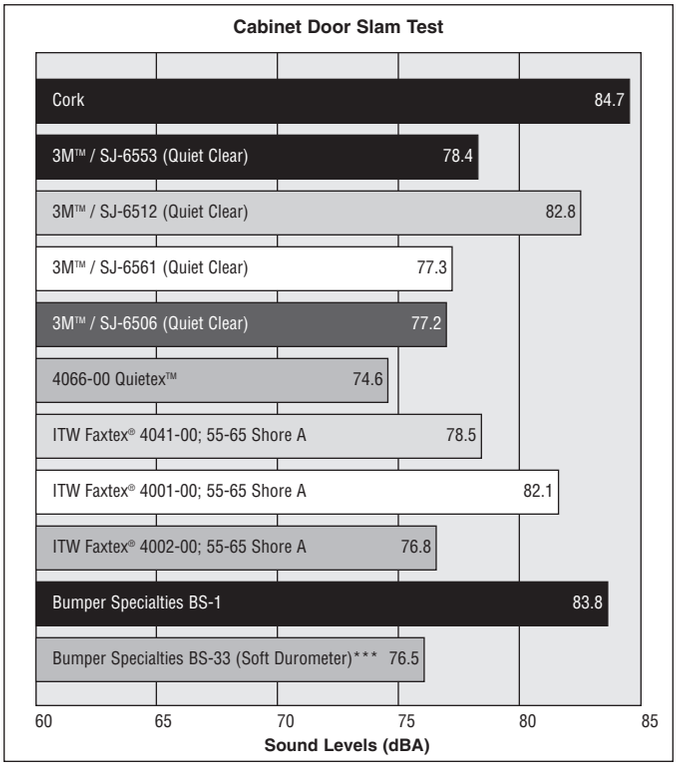
Patented Product

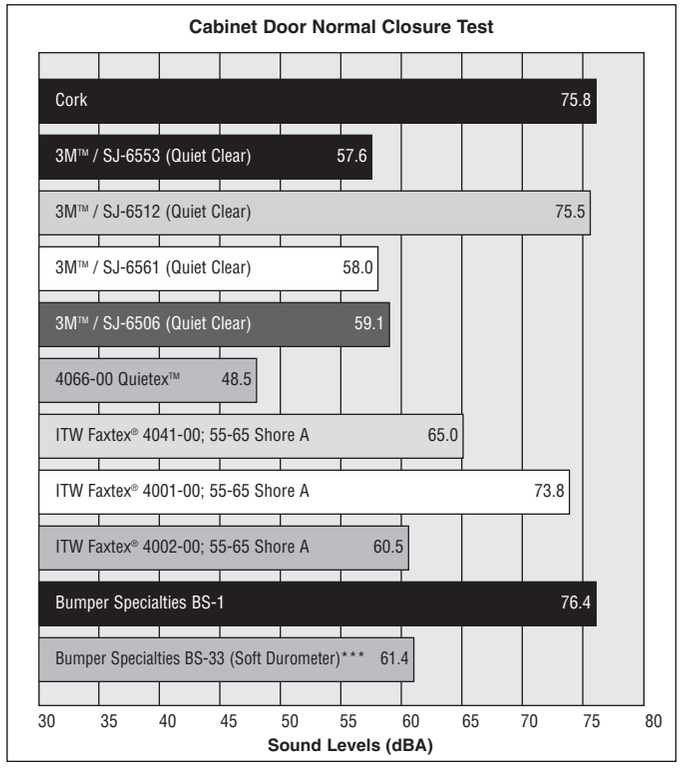


Not designed for use under friction or heavy compression loads.

PART NUMBER	ADHESIVE*	DIECUT DIAMETER (A)	HEIGHT (B)
4066-00-5084A	Acrylic Based	0.500	.197
4066-00-5084	Rubber Based	[12.7]	[5.00]
4067-00-5084A	Acrylic Based	0.400	.100
4067-00-5084	Rubber Based	[10.2]	[2.55]

*It is not recommended to use Acrylic Based adhesive on Melamine.
Primary dimensions in inches.
Secondary dimensions or [ ] dimensions in mm.
All dimensions ±. 02 inches measured without adhesive liner.
Note: Bumper may not be centered on skirt area of die cut.





NVLAP Accredited Independent Testing Lab Results Project Number 08-02-016 Test Date 5-29-03

*3M is a registered trademark of 3M Company.

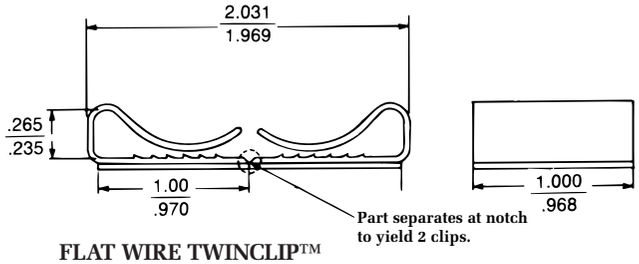
**The stated performance values represent typical values only. They are designed as a guideline for end users and are not specification values.

***Testing performed in-house in a mei-anechoic chamber, previous data showed good correlation between in-house testing and testing performed at the NVLAP accredited independent lab. (Test Date 9-8-03)

Sound Testing

ADHESIVE BACKED FLAT WIRE CLIPS

NOTE: Part not UL recognized.
NOTE: Tape may extend beyond edge of part.



FLAT WIRE TWINCLIP™
PART NO. 8511-81-30-9909

See page 49 for adhesive specifications.

NOTE: Dimensions listed are nominal.

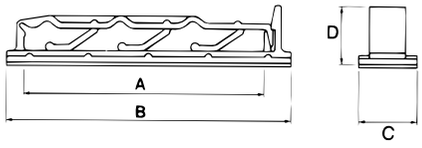
ADHESIVE BACKED FLAT CABLE CLIPS

PART NUMBER	STYLE	A	B	C	D	MAXIMUM NO. OF CONDUCTORS	DESCRIPTION
8511-67-00	C34	2.040	2.426	.625	.495	40	HINGED TYPE

NOTE: Hinged type has 3 flexible fingers.

NOTE: See page 49 for adhesive specifications.

NOTE: Dimensions listed are nominal.

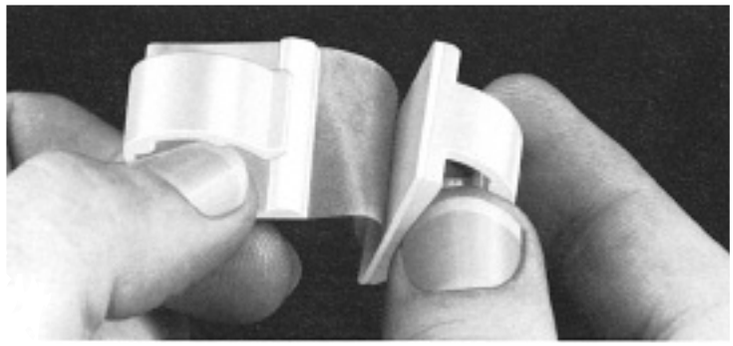


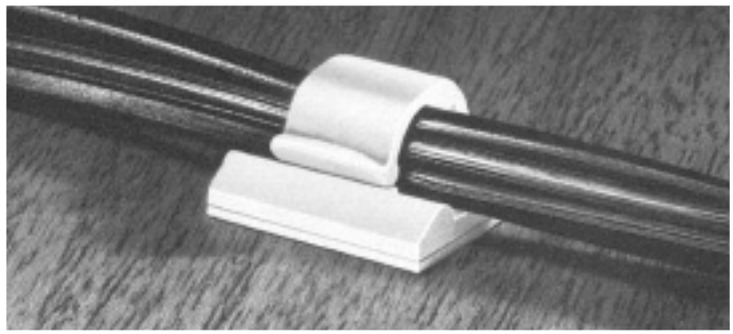
HINGED TYPE

ADHESIVE BACKED CORD CLIPS

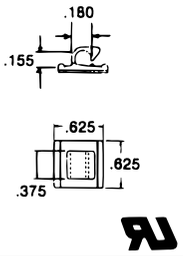
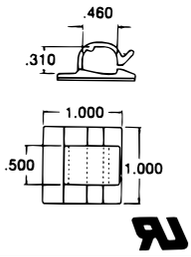
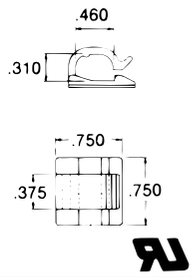
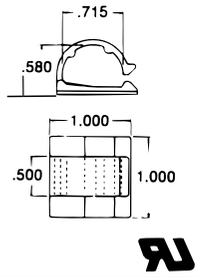
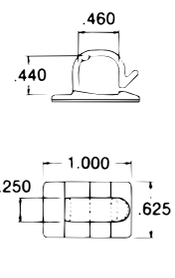
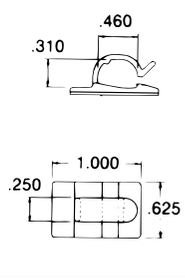
Fastest, most efficient way available to organize wires, cords and cables. Just remove clips from adhesive strip of two and stick into place. UL recognized nylon clips adhere to any smooth, clean, hard surface including wood, plastic and metal. Wires, cords or cables slip in or out easily, yet are retained securely. Smooth, rounded corners and edges protect wires and installers' hands. High adhesion, aggressive rubber-based adhesive. Works in a service temperature range 0°F-120°F continuous.

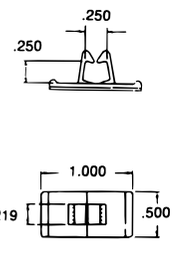
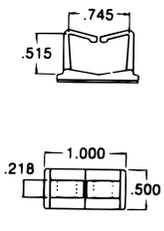
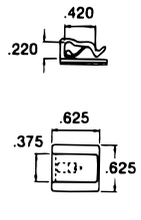
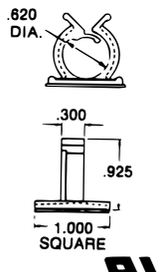
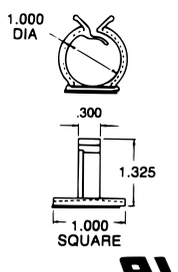
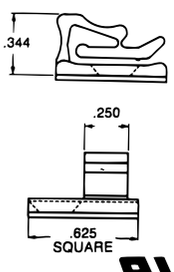
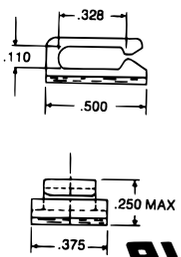
See page 49 for Adhesive Specifications, Application Techniques and General guidelines.





UL File Number E53159
(not all cord clips are UL Recognized)

PART NO. 8511-28-00**	PART NO. 8511-29-00**	PART NO. 8511-30-00	PART NO. 8511-31-00**	PART NO. 8511-34-00	PART NO. 8511-36-00
					
STYLE NO. C1	**STYLE NO.** C2	**STYLE NO.** C2A	**STYLE NO.** C3A	**STYLE NO.** C5	**STYLE NO.** C6
.156 BUNDLE DIAMETER*	.375 BUNDLE DIAMETER*	.375 BUNDLE DIAMETER*	.625 BUNDLE DIAMETER*	.450 BUNDLE DIAMETER*	.375 BUNDLE DIAMETER*

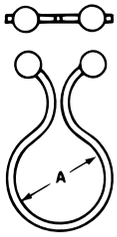
PART NO. 8511-37-00	PART NO. 8511-38-00	PART NO. 8511-54-00	PART NO. 8511-55-00	PART NO. 8511-55-01†	PART NO. 8511-56-00	PART NO. 8511-46-00
						
STYLE NO. C8	**STYLE NO.** C9	**STYLE NO.** C10	**STYLE NO.** C11	**STYLE NO.** C11	**STYLE NO.** C13	**STYLE NO.** C40
.250 BUNDLE DIAMETER*	.625 BUNDLE DIAMETER*	.156 BUNDLE DIAMETER*	.620 BUNDLE DIAMETER*	1.000 BUNDLE DIAMETER*	COUNTERSUNK HOLE ACCOMMODATES OPTIONAL NO. 6 SCREW	

*Approximate maximum bundle diameter.
**Available in black
†Available as single parts only. All others supplied two pieces per adhesive backed strip.
Contact Fastex for material specifications.
NOTE: Dimensions listed are nominal.

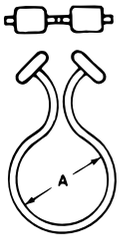
PURSE LOCK™ WIRE TIES

Retains wires with a simple twist that interlocks tie ends. Holds bundle diameters up to 2.4". Won't cut or abrade wires. Can be opened for addition or removal of wires and reclosed.

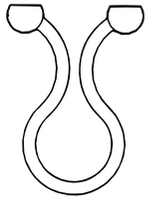
STYLE 1
BALL ENDS



STYLE 2
RECTANGULAR ENDS
Provide added security
for larger bundle diameters.



STYLE 3
BALL ENDS



STYLE 1 PART NUMBER	APPROXIMATE BUNDLE DIAMETER A
232-353509-02	.200-.250
232-353509-03	.300-.350
232-353509-04	.400-.480
232-353509-07	.700-.799

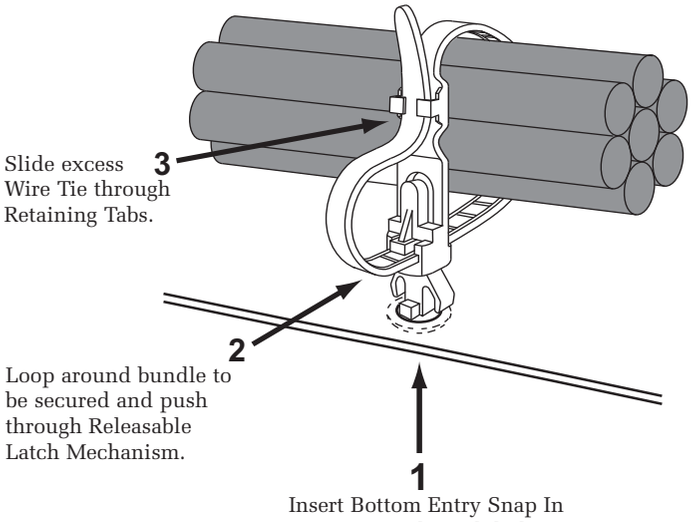
Other sizes available if volume warrants.
NOTE: Dimensions listed are nominal.

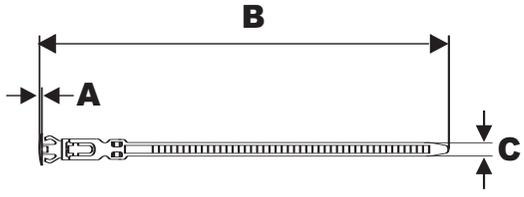
STYLE 2 PART NUMBER	APPROXIMATE BUNDLE DIAMETER A
232-353509-09	.900-1.000
232-353509-11	1.000-1.190
232-353509-23	2.250-2.350

STYLE 3 PART NUMBER	APPROXIMATE BUNDLE DIAMETER A
1935-00	.550-.650

BOTTOM ENTRY SNAP-IN WIRE TIE

The Bottom Entry Snap In Wire Tie was designed to snap in from the front side of a panel. It provides both a smooth finished look to the front of the panel and a secure, adjustable, reusable wire tie on the back.



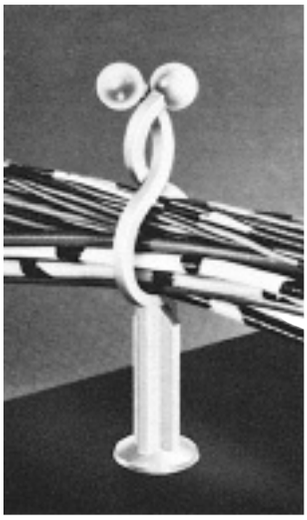


PART NUMBER	DIMENSIONS			W-PRONG	
	A	B	C	HOLE SIZE	PANEL THICKNESS
1955-00	0.04" [1.02mm]	6.62" [168.15mm]	0.20" [5mm]	.375" [9.53mm]	.045"-0.100" [1.1mm-2.5mm]

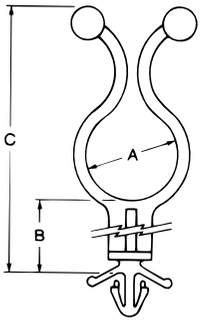
Note: Dimensions listed are nominal.

STANDOFF PURSE LOCK™

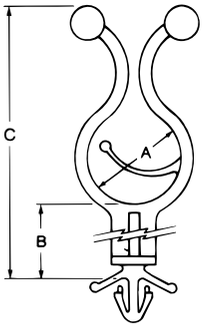
Securely bundle and route wires and cords. Snap easily into panel holes. Insulates wires and holds them away from panels or moving parts. Can be color coded.



STYLE 1



STYLE 2
Flexible arm holds single wires, small bundles, or large bundles.



STYLE 1 PART NUMBER	MAXIMUM BUNDLE DIAMETER A	STANDOFF DISTANCE B	MAXIMUM INSTALLED HEIGHT C
232-120207-00*	.400-.480	.187	1.287
232-120207-10		.500	1.600
232-120207-20		.750	1.850
232-120209-00*	.565-.600	.187	1.437
232-120209-15		.625	1.900
1937-00	.730-.830	.630	2.078
1940-00	.580-.680	2.375	3.735
1933-00	.200-.300	1.240	1.985
1934-00	.200-.300	.200	.945

STYLE 2 PART NUMBER	MAXIMUM BUNDLE DIAMETER A	STANDOFF DISTANCE B	MAXIMUM INSTALLED HEIGHT C
232-120211-00*	.400-.700	.187	1.637

Panel Hole Diameter .182-.192

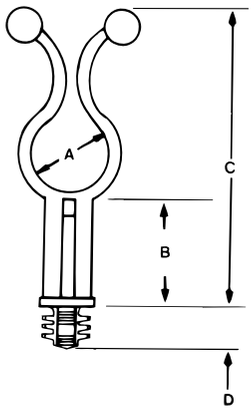
Panel Thickness Range .025-.090

*Modified Ball Ends. Reference Page 32, Purse Lock Wire Ties, Style 3.

NOTE: Dimensions listed are nominal.

STANDOFF PURSE LOCK™ WITH CHRISTMAS TREE™ MOUNT

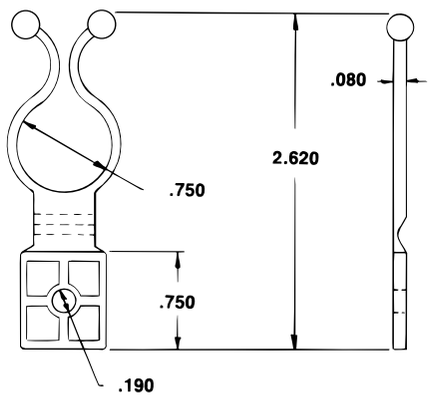
Secures and routes bundles of wires, cables or tubing in particle board, wood, plastic, metal or compressible materials. Can be color coded.



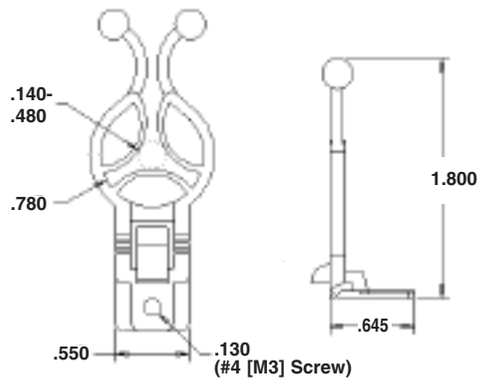
PART NUMBER	MAXIMUM BUNDLE DIAMETER A	STANDOFF DISTANCE B	MAXIMUM INSTALLED HEIGHT C	PRONG LENGTH D	HOLE DIAMETER
232-160607-00	.400-.480	.125	1.226	.435-.460	.245-.255
232-160609-00	.565-.600	.125	1.403	.435-.460	.245-.255
232-160609-30	.565-.600	.937	2.215	.435-.460	.245-.255
1918-00*	1.000-1.200	.250	2.153	.530 Ref.	.312-.325
1945-00	.800	.250	1.60	.335	.305-.315

Minimum Panel Thickness .055
*Rectangular Ends. Reference Page 32, Purse Lock Wire Ties, Style 2.
NOTE: Dimensions listed are nominal.

STANDOFF PURSE LOCK™ HINGED SCREW MOUNT



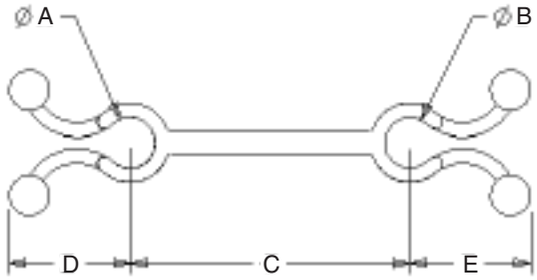
Part Number 232-454600-02



Part Number 1939-00

NOTE: Dimensions listed are nominal.

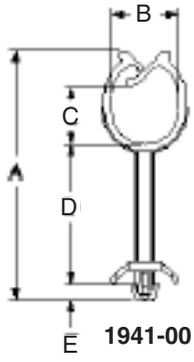
DOUBLE ENDED PURSE LOCK™



PART NUMBER	BUNDLE DIAMETER (A)	BUNDLE DIAMETER (B)	STANDOFF DISTANCE (C)	PURSE LOCK HEIGHT (D)	PURSE LOCK HEIGHT (E)
1932-00	.283 [7.2]	.283 [7.2]	1.575 [40]	.685 [17.4]	.685 [17.4]

Primary Dimensions in Inches. Secondary Dimensions or [ ] Dimensions in mm. Material: Nylon 66.

STANDOFF WIRE ROUTING CLIP

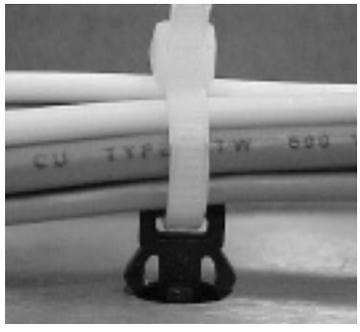


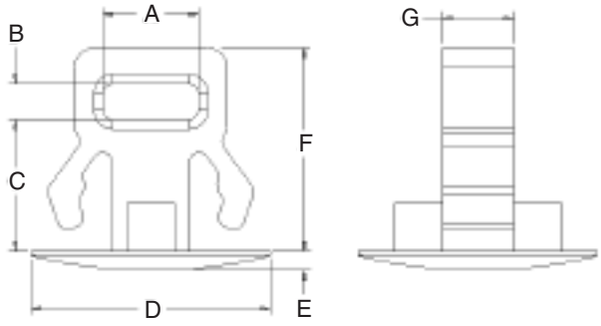
*UL File Number E53159

PART NUMBER	HOLE DIAMETER	PANEL THICKNESS	TOTAL HEIGHT (A)	BUNDLE WIDTH (B)	BUNDLE HEIGHT (C)	STANDOFF DISTANCE (D)	PRONG HEIGHT (E)
*1941-00	.187 [4.75]	.025-.090 [.6-2.3]	2.070 [52.6]	.560 [14.2]	.550 [14]	1.165 [29.6]	.130 [3.3]

Primary Dimensions in Inches. Secondary Dimensions or [ ] Dimensions in mm. Material: Nylon 66.

BUTTON HEAD WIRE TIE HOLDER

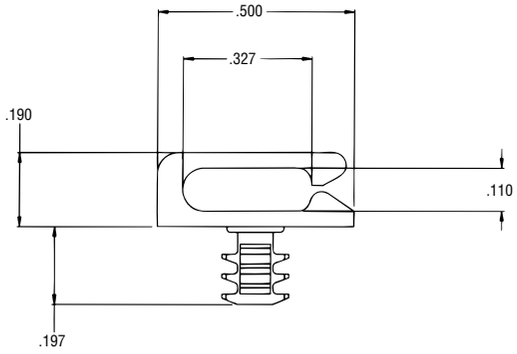




PART NUMBER	PANEL HOLE DIAMETER	PANEL THICKNESS	MAXIMUM WIRE TIE WIDTH (A)	MAXIMUM WIRE TIE THICKNESS (B)	STANDOFF HEIGHT (C)	HEAD DIAMETER (D)	HEAD HEIGHT (E)	PART HEIGHT (F)	PART WIDTH (G)
3310-00	.375 [9.53]	.045-.100 [1.1-2.5]	.210 [5.3]	.075 [1.9]	.275 [7]	.500 [12.7]	.040 [1]	.425 [10.8]	.150 [3.8]

Primary Dimensions in Inches. Secondary Dimensions or [ ] Dimensions in mm. Material: Nylon 66.

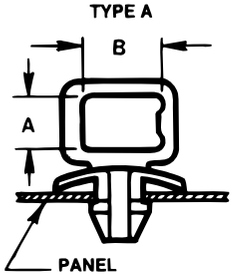
SIDE ENTRY SNAP-IN CLIP

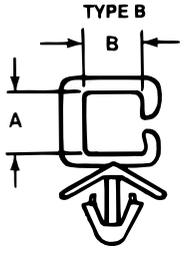


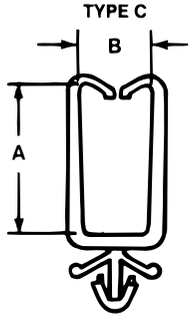
PART NUMBER	HOLE DIAMETER	PANEL THICKNESS
354-156009-00	.156	.040-.160

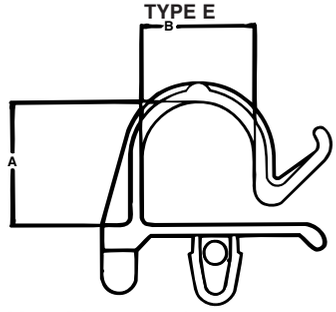
NOTE: Dimensions listed are nominal.

SNAP-IN CLIPS









Note: Illustration is a representation of the general shape of the clip and not an actual shape. Contact Fastex for a blueprint.

PRONG STYLES

Canoe-Prong

E-Prong

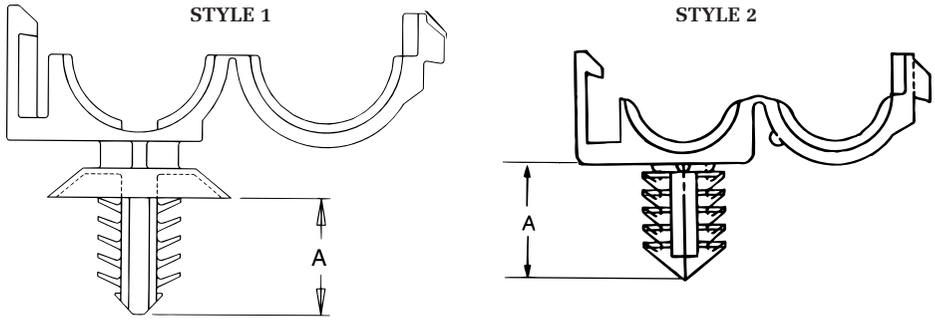
PART NUMBER	TYPE	A	B	PANEL HOLE DIAMETER	PANEL THICKNESS
220-161213-00	A	.095 MIN	.390 MIN	.296	.068-.114
220-121200-00	Modified E w/Canoe Clip	.280	.400	.250	.125-.180
220-031212-02	B	.281	.287	.187	.015-.070
220-041600-00	Type C/ Canoe Prong	.255	.430	.187	.040-.060
220-031212-03	Type A/ Top Load	.515	.437	.187	.015-.070
220-120212-00	C	.515	.432	.187	.015-.094
220-031212-06	Type C/ E-Prong	.515	.750	.187	.015-.070
220-120216-00	C	.875	.385	.187	.015-.094
220-031212-05	Type C/ E-Prong	1.186	.478	.187	.015-.070
1946-00	C	.402	.200	.175	.085-.105

***Pilot hole required in panel to keep clip from shifting. (Request drawing for pilot hole size.)**

NOTE: Dimensions listed are nominal.

SNAP-IN CLIPS

FEATURES:
- Fast installation – X-mas tree prong presses easily into prepared hole with a wide panel range.
- Locks securely and easily. Reopens for routing changes.

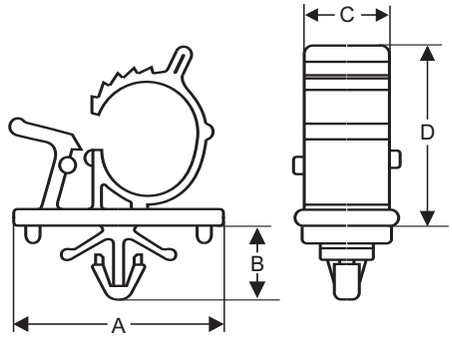


PART NUMBER	BUNDLE SIZE	NOMINAL HOLE DIAMETER	A PRONG LENGTH	PANEL THICKNESS	PRONG STYLE
1908-00	.472	.250	.410 REF.	.020-.197	1
1903-00	.350	.256	.433 REF.	.022-.200	2

MATERIAL: Nylon 66 COLOR: Black **NOTE: Dimensions listed are nominal.**

SNAP-IN ADJUSTABLE WIRE CLIPS

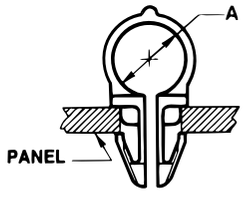
FEATURES:
- Fast installation – wire clip snaps easily into prepared hole;
- Locks securely and easily, reopens for routing changes;
- Adjustable/ratcheting clip minimizes the number of inventoried parts;
- Ideal for high vibration areas – when closed the clip will not open until tab is released.



PART NUMBER	BUNDLE DIAMETER RANGE (MIN/MAX)	PANEL HOLE SIZE	PANEL THICKNESS	A	B	C	D
1925-00	.313"-.406"	.187"	.030"-.060"	1.00"	.368"	.400"	.872"
1927-00	.475"-.575"	.250"	.030"-.060"	1.02"	.370"	.400"	.990"

MATERIAL: Nylon 66 **NOTE: Dimensions listed are nominal.**

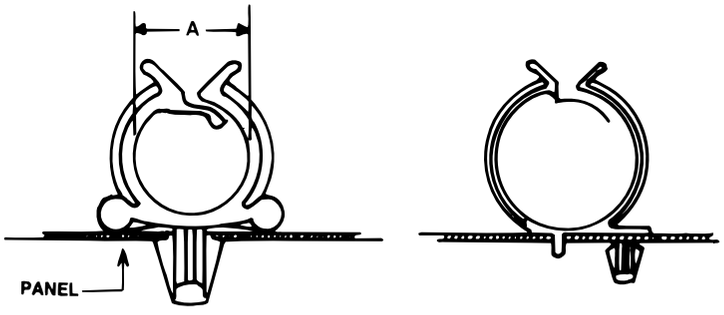
CAPTIVE SNAP-IN CLIP



PART NUMBER	A	PANEL HOLE DIAMETER	PANEL THICKNESS
220-242400-09	.250	.250	.030-.125
220-242400-04	.375	.250	.030-.125
220-242400-06	.500	.250	.030-.125
220-242400-11*	.750	.250	.030-.125
220-242400-07	.750	.250	.030-.125

*Has reinforcing rib around circumference and an interlock in prong section. Request drawing.
NOTE: Dimensions listed are nominal.

TOP ENTRY SNAP-IN CLIPS

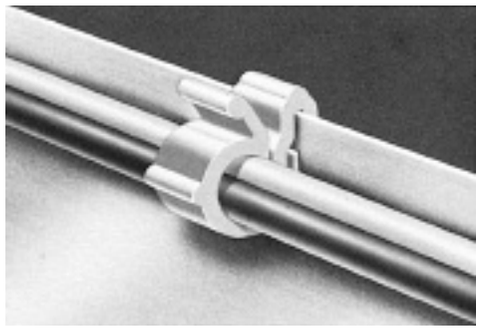


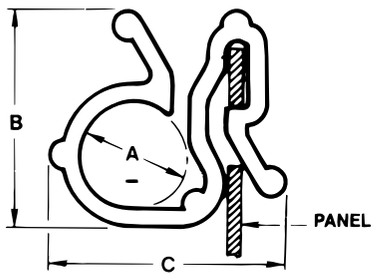
PART NUMBER	A	PANEL HOLE SIZE	PANEL THICKNESS
220-404000-01	.620	.250	.030-.060
220-646400-02	1.000	.250	.030-.060
220-646400-03*	1.380	.250	.075
220-646400-04	1.500	.250	.075
220-011005-00**	1.000	.250	.030-.125
220-011008-00	.500	.250	.030-.125

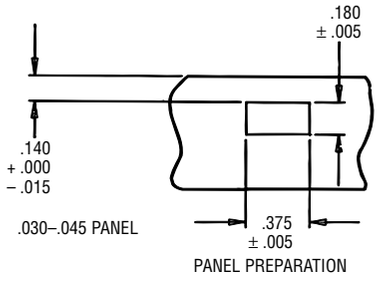
*Prong off center.
**Different prong style than shown.
NOTE: Dimensions listed are nominal.

CLIP-ON CLIPS

These easy-to-use clips slip over a panel edge and snap securely into prepared hole near panel edge. They require minimal clearance. Wires and cords slip in or out easily, yet retain securely.





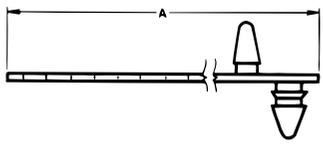


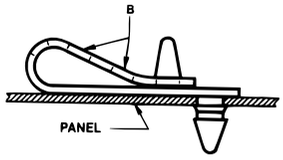
PART NUMBER	BUNDLE DIAMETER (REFERENCE) A	HEIGHT B	WIDTH C	PANEL THICKNESS
220-340802-00	.250	.520	.530 REF.	.030-.045

NOTE: Dimensions listed are nominal.

ADJUSTABLE STRAPS

These plastic straps easily adjust to wire or cord bundle diameters.





PART NUMBER	A	STRAP WIDTH	NUMBER OF HOLE B	PANEL HOLE DIAMETER	PANEL THICKNESS
220-245620-01	3.685	.442	4	.250-.265	.031-.140
220-248020-00	4.900	.442	7	.250-.265	.031-.140

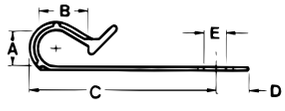
NOTE: Dimensions listed are nominal.

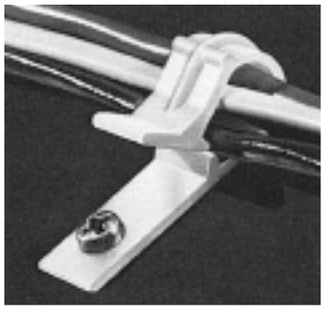
SCREW-DOWN CLIPS

STYLE 2A

Fastens to panel with a screw, Plasti-Rivet® or Canoe Clip®. Clip snaps open to easily insert or remove wires and cables. Clip snaps shut to secure wires and cables of varying bundle sizes.

STYLE 2A





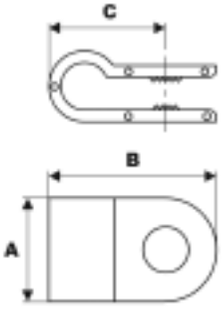
PART NUMBER	STYLE	A	B	C	D	HOLE DIAMETER E
220-242400-02	2A	.375	.500	1.320	.300	.210

NOTE: Dimensions listed are nominal.

CABLE CLAMP

FEATURES:

- Cables may be inserted either axially or radially into clamp.
- Anti-Slip serrations on inner body of clip assist in mounting hole alignment.
- Mounts with screw or rivet up to 1/4" (6.3mm) diameter.
- Fits single or multiple cables up to .27" (6.8mm) in overall diameter.
- Black nylon 6/6 UL942V2 material blends well with most cables.
- Low Profile.



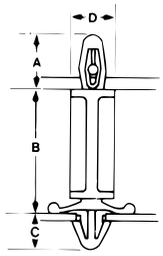
PART NUMBER	PART DESCRIPTION	MATERIAL	DIMENSIONS A	B	C
1952-00	Cable Clamp	Nylon 6/6	.56	.92	.64 REF

NOTE: Dimensions listed are nominal.

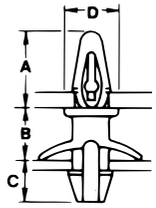
PC BOARD SUPPORTS/ SPACERS

Wide variety of styles accommodate all your serviceability and mounting requirements. Many standoff heights and fastening options available. Various styles either assemble from top or bottom of board for greatest convenience.

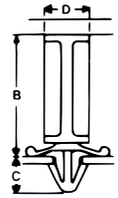
STYLE 1



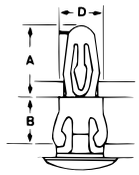
STYLE 1C



STYLE 2

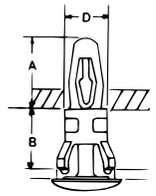


STYLE 3A



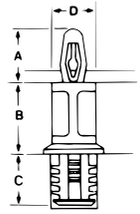
SQUARE CHASSIS HOLE

STYLE 3B

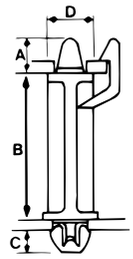


ROUND CHASSIS HOLE

STYLE 4



STYLE 5



PART NUMBER	STYLE	A	BOARD CLEARANCE B*	C	D	CIRCUIT BOARD		CHASSIS		HEAD HEIGHT
						THICK-NESS	HOLE DIA.	THICK-NESS	HOLE SIZE	
215-150912-00	1	.375 REF.	.187	.290 REF.	.312	.062	.156	.015-.080	.187 DIA.	—
215-150912-01	1	.375 REF.	.250	.290 REF.	.312	.062	.156	.015-.080	.187 DIA.	—
215-150912-02	1	.375 REF.	.375	.290 REF.	.312	.062	.156	.015-.080	.187 DIA.	—
215-150912-03	1	.375 REF.	.500	.290 REF.	.312	.062	.156	.015-.080	.187 DIA.	—
215-150912-04	1	.375 REF.	.750	.290 REF.	.312	.062	.156	.015-.080	.187 DIA.	—
215-150912-05	1	.375 REF.	1.000	.290 REF.	.312	.062	.156	.015-.080	.187 DIA.	—
215-150909-05	1C	.375	.250	.156	.281	.057-.067	.156	.031-.080	.190 DIA.	—
215-150914-01	2	—	.250	.290 REF.	.312	—	—	.015-.080	.187 DIA.	—
215-150913-00	3A	.375	.250	—	.230	.062	.156	.062	.250 SQ.	.060
215-150913-01	3A	.375	.312	—	.230	.062	.156	.062	.250 SQ.	.060
275-160210-03	3B	.375	.188	—	.230	.062	.156	.062	.250 DIA.	.060
275-160210-04	3B	.375	.250	—	.230	.062	.156	.062	.250 DIA.	.060
275-160210-06	3B	.375	.375	—	.230	.062	.156	.062	.250 DIA.	.060
275-160210-08	3B	.375	.500	—	.230	.062	.156	.062	.250 DIA.	.060
215-150915-00	4	.375 REF.	.187	.363 REF.	.312	.062	.156	.250 MIN.	.312 DIA.	—
215-150915-01	4	.375 REF.	.250	.363 REF.	.312	.062	.156	.250 MIN.	.312 DIA.	—
215-150915-03	4	.375 REF.	.500	.363 REF.	.312	.062	.156	.250 MIN.	.312 DIA.	—
275-120206-03†	5	.200	.750	.172	.250	.058	.157	.058	.187 DIA.	—

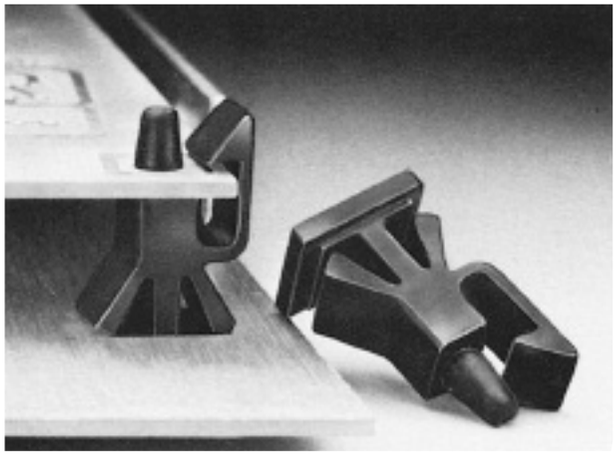
*Board clearance may vary depending on chassis thickness. Dimensions shown are nominal.

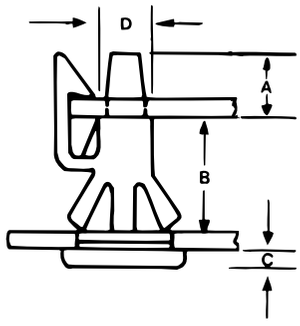
†Contact Fastex for hole configuration in circuit board.

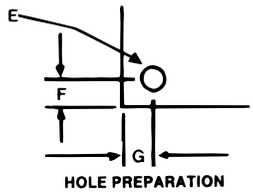
NOTE: Dimensions listed are nominal.

HEAVY DUTY/ HIGH LOAD/ HIGH VIBRATION STANDOFF

Snaps into PC board from bottom. Support does not rotate in chassis and positioning holes. Locking arm clips to the side of board making removal and replacement of PC boards easy. Helps decrease service time. Available in a wide variety of UL recognized materials.







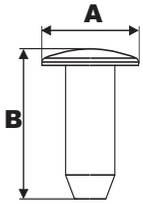
PART NUMBER	A	BOARD CLEARANCE B*	C	D	CIRCUIT BOARD		CHASSIS		HOLE PREPARATION	
					THICKNESS	HOLE DIA. E	THICKNESS	HOLE SIZE	F	G
275-100423-00	.235	.292-.322	.070	.200	.062	.156	.050-.060	.312 x .375	.200	.200
275-100423-01	.230	.430-.460	.070	.200	.062	.157	.050-.060	.312 x .375	.200	.200

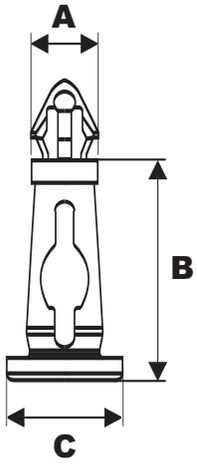
*Board clearance may vary depending on chassis thickness.

NOTE: Dimensions listed are nominal.

CBS TUFLOK®

This heavy duty PCB Standoff is inserted from the underside of the chassis, first the body, then the pin. The two-piece assembly offers a robust part that can withstand high shear loads while still providing a low profile finished look on the backside of the chassis.





PART NUMBER	PART DESCRIPTION	MATERIAL	DIMENSIONS		
			A	B	C
1720-00-2099	CBS Tuflok Body	Nylon 6/6 Black	.197	.595	.347
1719-00-2099	CBS Tuflok Pin	Nylon 6/6 Black	.240	.380	N/A

Chassis Hole Diameter .213 in. – Chassis Panel Thickness .025-.062 in.

PC Board Hole Diameter .157 in. – PC Board Panel Thickness .062 in.

GROUNDING CLIPS
STRANDED WIRE

UL and CSA recognized clips attach easily over panel or hole edge top to achieve positive ground wire contact with panel, plate or frame. Wire contact is achieved by either quick connect terminals or insulation displacement. Wire stripping, soldering and termination not required. For 18 to 12 gauge stranded wire.

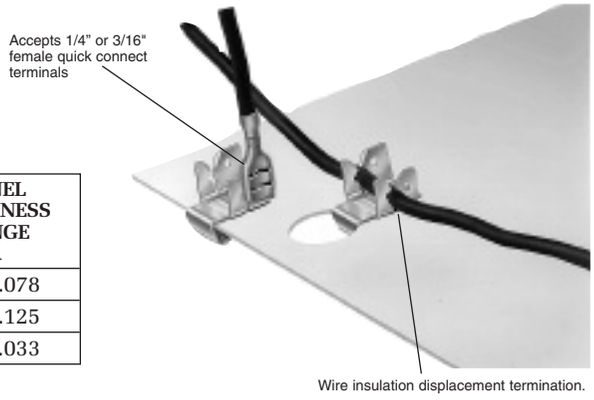
UL File Number E54730

CSA File Number LR34995

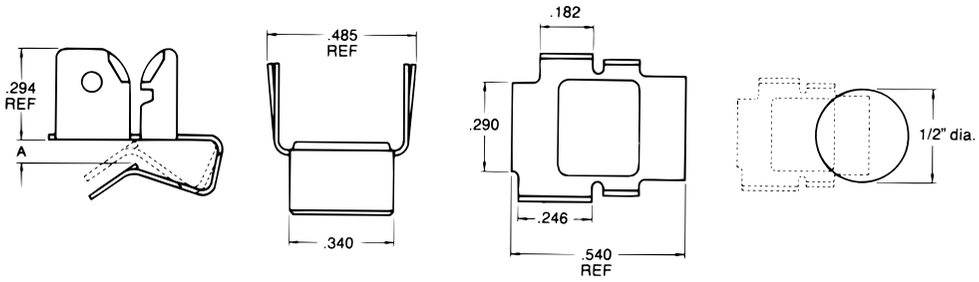
PART NO.	STYLE	PANEL THICKNESS RANGE A
8182-84-00	1A	.020-.078
8182-84-01	1A	.078-.125
8182-84-02*	1B	.028-.033

*Note: UL Recognized Only.

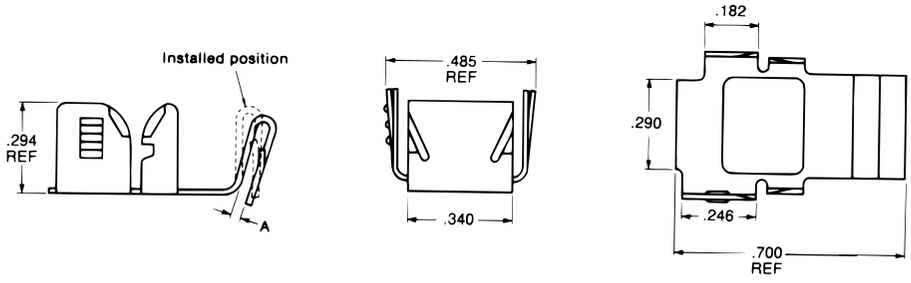
NOTE: Dimensions listed are nominal.



STYLE 1A



STYLE 1B



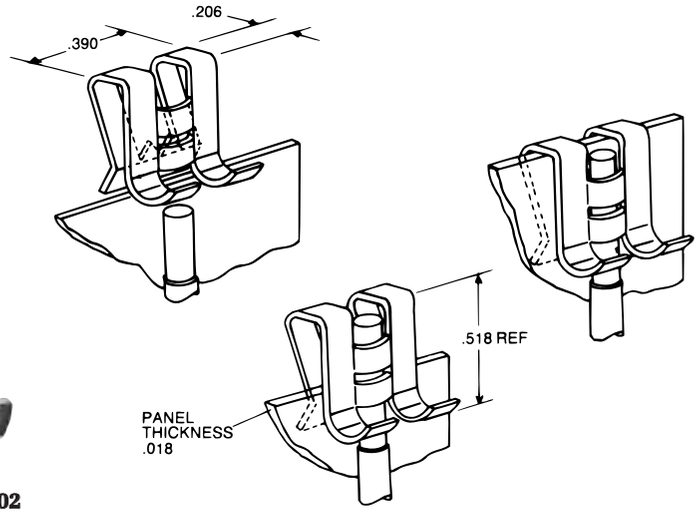
GROUNDING CLIPS
SOLID CONDUCTOR

Blades cut through paint coating to provide metal to metal contact with plate.

Installation– Attached with a screwdriver. Soldering screw mounting and special termination not required. UL recognized clips accommodate 14 to 12 gauge solid core wire.

STYLE 2

PART NUMBER 8182-85-02

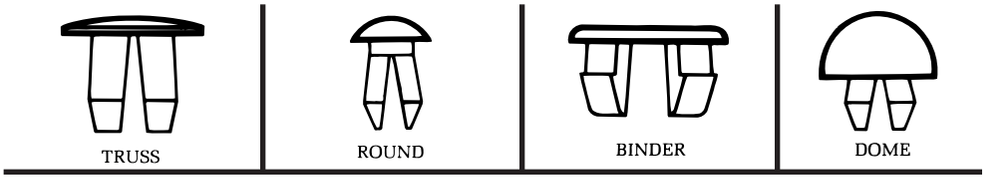


NOTE: Dimensions listed are nominal.

PLASTI-PLUGS™

Durable, attractive, non-conductive plugs match all your needs. Choose from many shapes, sizes and styles, for temporary, permanent, functional, or cosmetic hole filling. Provides excellent dust protection for electronic equipment.

HEAD STYLES

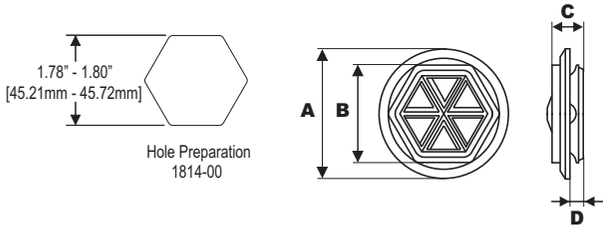


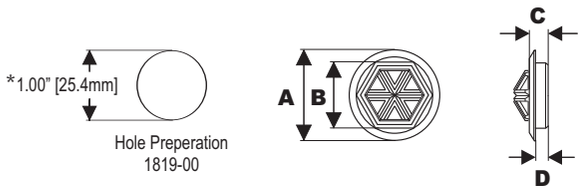
PART NUMBER	HOLE SIZE	PANEL THICKNESS	HEAD SIZE	HEAD HEIGHT	HEAD STYLE	PRONG LENGTH
207-080501-01	.125-.130D	.031-.140	.235-.265D	.057-.067	TRUSS	.182-.207
207-080531-00	.125-.130D	.031-.140	.280-.300D	.178-.188	DOME	.187-.207
207-110440-00	.185-.200D	.130-.140	.490-.510D	.020-.040	BINDER	.210-.230
207-110440-01	.187-.202D	.130-.140	.740-.760D	.030-.040	BINDER	.210-.230
207-120241-00	.187-.192D	.032-.062	.328-.358D	.063-.093	BINDER	.136-.156
207-120241-03	.187-.192D	.032-.062	.360-.390D	.141-.171	BINDER	.136-.156
207-120241-04	.187-.192D	.055-.075	.422-.452D	.073-.083	BINDER	.143-.163
207-120241-05	.187-.192D	.031-.062	.328-.358D	.025-.035	BINDER	.136-.156
207-120241-06	.187-.192D	.055-.065	.329-.359D	.040-.050	BINDER	.143-.163
207-140201-00	.218-.223D	.031-.062	.391-.421D	.047-.077	TRUSS	.157-.187
2315-00	.242-.257D	.031-.075	.391-.421D	.047-.077	TRUSS	.165-.185
207-160351-00	.247-.252D	.031-.078	.391-.421D	.095-.105	ROUND	.184-.204
207-180201-01	.274-.280D	.031-.062	.672-.702D	.075-.085	TRUSS	.165-.185
207-200201-00	.312D	.053	.485-.515D	.047-.077	TRUSS	.160-.180
207-200601-03	.313-.318D	.047-.156	.485-.515D	.070-.080	TRUSS	.297-.327
207-241141-00	.375-.380D	.093-.312	.480-.510D	.070-.080	BINDER	.453-.483
207-250201-00	.385-.395D	.040-.055	.520-.540D	.025-.035	BINDER	.150-.160
207-290641-00	.442-.447D	.062-.171	.547-.577D	.110-.140	BINDER	.297-.327
207-320401-00	.495-.505D	.050-.125	.672-.702D	.083-.103	TRUSS	.235-.265
207-480401-00	.755-.765D	.031-.109	.985-1.015D	.078-.108	TRUSS	.204-.234
207-560401-00	.870-.875D	.031-.109	1.109-1.140D	.078-.109	TRUSS	.203-.234

NOTE: Dimensions listed are nominal.

FOAM FILL HOLE PLUG

Excellent filling and sealing plug for foam injection applications. Pie-Wedge design allows filling tool to be inserted after hole plug is put in place. Removing filling tool causes the interlocking wedges to close and seal trapping foam. No clean-up or secondary operation is necessary.





PART NUMBER	PART DESCRIPTION	MATERIAL	DIMENSIONS			
			A	B	C	D
1814-00	Large Foam Fill Plug	LDPE, Natural	2.35	1.76	0.580	0.340
1819-00	Small Foam Fill Plug	LDPE, Natural	1.20	0.94	0.347	0.287

NOTE: Dimensions listed are nominal.

*Hole Tolerance: ±.002" [0.050mm]

MATERIAL	FASTEX END CODE	COLOR	TENSILE STRENGTH (PSI)	FLEXURAL MODULUS (PSI)	UL94 FLAMMABILITY RATING	UL TEMP. INDEX	IZOD IMPACT (FT-LB/IN)
NYLON 6 (HEAT STAB.)	0075	BLACK	11,800	395,000	V2	221°F	1.1
NYLON 66 (MED. IMPACT)	0078	NATURAL	9,000	285,000	HB	167°F	4.3
NYLON 66	0101	NATURAL	12,000	410,000	V2	167°F	1.0
NYLON 66	0103	WHITE	12,000	410,000	V2	167°F	1.0
NYLON 66 (FLAME RETARDANT)	2030	NATURAL	11,000	493,000	V0	185°F	.937
NYLON 66 (HIGH IMPACT)	2063	BLACK	7,900	278,000	HB	149°F	11.0
NYLON 66 (HEAT STAB.)	2099	BLACK	12,000	410,000	V2	221°F	1.0
NYLON 66 (HEAT STAB. MED. IMPACT)	3835	BLACK	9,000	285,000	HB	200°F	4.3
NYLON 66 (SUPER TOUGH)	5801 5814	NATURAL BLACK,	7,500	245,000	HB	167°F	17.0
CELCON/ ACETAL	0017	NATURAL	8,800	375,000	HB	194°F	1.3
NYLON 66 (UV, SUPER TOUGH)	5869	BLACK	7,500	245,000	HB	167°F	17.0

NOTE: All values are dry as molded. Parts in this catalog are not available in all materials listed. Consult your Fastex Representative.

PANEL FASTENERS/PLASTIC RIVETS PUSH-IN AND PULL-OUT TESTING

Testing Procedure: Performed on a Tinius Olsen 5000 Tensile Tester. The anvil arm which pushed and pulled each part traveled at a constant rate of 2.5 inches/minute. Tests performed at room temperature. Each test value represents the average of 10 pieces. Parts are dry as molded.

Note: The stated performance values represent typical values only. They are designed as a guideline for end users and are not specification values. Values stated will vary depending on the hole diameter, panel thickness, temperature, material and application. Users should conduct their own tests under specific actual conditions to determine the suitability of the fastener for a specific application.

Plasti-Rivet (2 prong)
Part Number: 231-080551-05-2099

Total Panel Thickness: .110"
Hole Diameter: .130"

PANEL TYPE	PUSH-IN	PULL-OUT
Metal Panels	17.5 lbs.	37.0 lbs.
Plastic Panels	10.5 lbs.	30.0 lbs.

Micro-Tuflok
Part Number: 1708-00-3835

Total Panel Thickness: .270"
Hole Diameter: .168"

PANEL TYPE	PUSH-IN	PULL-OUT
Metal Panels	11.5 lbs.	52.0 lbs.
Plastic Panels	9.5 lbs.	40.0 lbs.

Note: See page 45 for Pull-Out Testing Before/After Wave Solder.

Mini Pro-Lok Rivet (4 prong)
Part Number: 1116-17-2099

Total Panel Thickness: .195"
Hole Diameter: .168"

PANEL TYPE	PUSH-IN	PULL-OUT
Metal Panels	11.0 lbs.	68.0 lbs.
Plastic Panels	10.0 lbs.	58.0 lbs.

R-Lok Plastic Expansion Rivet
Part Number: M26-0396-01

Total Panel Thickness: .118"
Hole Diameter: .156"

PANEL TYPE	PULL-OUT	SHEAR
Metal Panels	50 lbs.	78 lbs.

R-Lok Plastic Expansion Rivet
Part Number: M26-0500-18

Total Panel Thickness: .118"
Hole Diameter: .197"

PANEL TYPE	PULL-OUT	SHEAR
Metal Panels	75 lbs.	100 lbs.

R-Lok Plastic Expansion Rivet
Part Number: M26-0630-02

Total Panel Thickness: .131"
Hole Diameter: .248"

PANEL TYPE	PULL-OUT	SHEAR
Metal Panels	110 lbs.	190 lbs.

R-TITE RIVET PULL-APART TESTING

PULL-APART TESTING

R-Tite Rivet
Part Numbers: P69-0500-02 and P69-0500-02

Testing Procedure: Straight pull apart test on Tinius Olsen Tensile Tester. Fully assembled.

Pull Apart Speed: 2.51 ipm
Average Pull-Apart Force: 80.22 lbs.

WAVE SOLDER TEST & RESULTS FOR MICRO-TUFLOKS AND PLASTI-RIVETS

OBJECTIVE:

The purpose of the test was to demonstrate the capabilities of ITW Fastex Micro-Tufloks and Plasti-Rivets in the harsh environment of a wave soldering process.

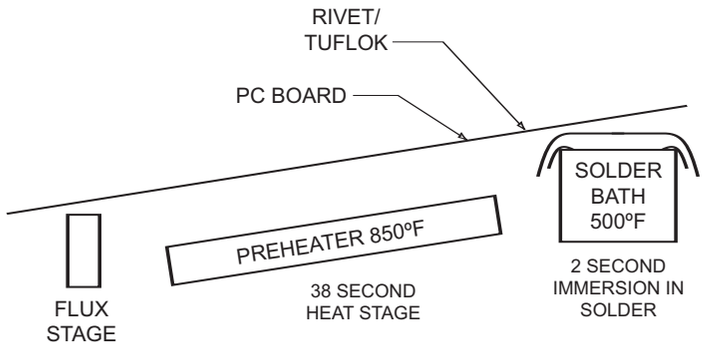
PROCESS:

The wave solder process involves three stages. The first stage is the fluxing operation where flux is applied to the underside of the PC board. The second stage is the preheat. The PC board passes over heating elements at a temperature of 850°F. The length of time a PC board remains in this section depends on the geometry of the PC board. This test varied the cycle time from 27 seconds to 38 seconds. After the PC board exits the preheat stage, it enters the solder bath. The bottom face of the PC board is immersed in 500°F molten solder. This stage exposed the prongs of the Micro-Tuflok and Plasti-Rivet to 500°F solder for a period of 1½ to 2 seconds.

RESULTS:

The results of this test are favorable. The prongs of the fasteners that were immersed in solder showed signs of deformation but no failures occurred. One PC board was even sent through the process a second time without part failure.

WAVE SOLDER PROCESS		
STAGE	**TEMPERATURE (°F)**	**TIME (sec)**
Preheat	850°	38 sec
Solder	500°	2 sec



Call the Fastex Sample Department for a free sample of a Micro-Tuflok holding a transistor onto a PC Board which has gone through the wave solder process twice.

MICRO-TUFLOK PULL-OUT TESTING BEFORE/AFTER WAVE SOLDERING

Testing Procedure: Performed on a Tinius Olsen 5000 Tensile Tester with a 5000 lbf transducer. The component leads are cut so that they will not be a factor. A two inch machinist clamp is attached to the component directly above the Micro-Tuflok. The PC Board is then placed on a block while the clamp slides onto a hook on the Tinius Olsen. The PC Board is secured to the block. Tension force is then applied at a rate of 1.50 inch/minute. The peak force and the conditions at which the peak force was encountered are recorded. The data listed below determines that the pull-out force of the Micro-Tuflok is approximately 50 to 60 lbs. and does not degrade after exposure to the wave soldering process.

Micro-Tufloks *not* wave soldered.

Board 1	53 lbs.	Component Broke
Board 2	54 lbs.	Clamp released board re-tested
	56 lbs.	Micro-Tuflok pulled-out

Micro-Tufloks wave soldered twice.

Board 1	60 lbs.	Micro-Tuflok pulled-out
Board 2	50 lbs.	Clamp released
Board 3	45 lbs.	Part bent up then clamp released
Board 4	43 lbs.	Clamp released part re-tested
	44 lbs.	Component broke
Board 5	46 lbs.	Clamp released part re-tested
	49 lbs.	Micro-Tuflok pulled-out
Board 6	60 lbs.	Micro-Tuflok pulled-out

CHRISTMAS TREE/PINE TREE PUSH-IN/PULL-OUT TESTING

Testing Procedure: Performed on a Tinius Olsen 5000 Tensile Tester. The anvil arm which pushed the pulled each part traveled at a constant rate of 2.5 inches/minute. Tests performed at room temperature. Each test value represents the average of 15 pieces. Parts are dry as molded.

Note: The stated performance values represent typical values only. They are designed as a guideline for end users and are not specification values. Values stated will vary depending on the hole diameter, panel thickness, temperature, material and application. Users should conduct their own tests under specific actual conditions to determine the suitability of the fastener for a specific application.

Part Number	Hole Diameter	Panel Range	Panel Type	Push-In	Push-Out
354-190001-00-0101	.197"	.080-.402"	Particle Board High Density Polyethylene	20.4 15.0	28.9 31.0
M36-0500-03 Nylon 66 (Super Tough)	.197"	.060-.430"	Particle Board High Density Polyethylene	18.5 12.6	37.0 5.2
354-250103-00-0101	.250"	.095-.320"	Particle Board High Density Polyethylene	24.6 25.0	35.7 29.2
M39-0630-10 Nylon 66 (Med. Impact)	.250"	.098-.472"	Particle Board High Density Polyethylene	27.5 22.6	57.7 10.6
M36-0700-15 Nylon 66 (Med. Impact)	.276"	.063-1.000"	Particle Board High Density Polyethylene	52.1 29.2	158.4 17.2
354-280307-00-0101	.281"	.050-.900"	Particle Board High Density Polyethylene	72.6 37.3	175.1 31.7

SCREW GROMMETS

TEST DATA (REPRESENTATIVE SAMPLES)

PART NUMBER	SCREW SIZE	DRIVING TORQUE†	STRIPPING TORQUE†
242-160502-70	6	2-4 in.-lb.	10-15 in.-lb.
	8	4-6 in.-lb.	14-21 in.-lb.
242-170602-80	8	3-5 in.-lb.	11-17 in.-lb.
242-180602-90	8	3-5 in.-lb.	10-18 in.-lb.
	10	5-8 in.-lb.	16-28 in.-lb.
242-180602-91	8	4-6 in.-lb.	13-21 in.-lb.
	10	6-9 in.-lb.	20-30 in.-lb.
242-180602-92	8	5-7 in.-lb.	15-22 in.-lb.
	10	8-10 in.-lb.	25-30 in.-lb.
242-180602-93	8	7-9 in.-lb.	22-28 in.-lb.
	10	9-14 in.-lb.	30-45 in.-lb.
242-210602-10	1/4"	12-17 in.-lb.	30-45 in.-lb.

NOTE: †Driving and stripping torques will vary depending on panel hole size, panel thickness, and screw type used. In all cases, however, the stripping torque is at least 250% of the driving torque.

NOTE: Dimensions listed are nominal.

***NOTE–WHEN INSTALLING GROMMETS:**

1. It is desirable that the burr side of the hole be opposite the grommet entry.
2. The surface condition of the hole edge has a definite bearing on the ease with which a grommet can be inserted and how well it will fit and hold until the screw is driven. For instance, the smaller end of the hole size range, when used with a porcelainized surface, can provide a leak proof fit. Indicated hole sizes are final, i.e.: after painting, enameling, etc. For hole sizes that will provide the best combinations of easy installation and secure fit, the following can serve as a general guide:

SURFACE CONDITION	HOLE SIZE
Porcelain	Small end of indicated range
Enamel	Slightly below mid range
Paint	Middle of indicated range
Plastic Panel	Middle of indicated range
Raw Metal	Large end of indicated range

3. Driving torque and stripping torque will generally increase with decreasing hole sizes and increasing panel thickness.

ADHESIVE FOAM TAPE SPECIFICATIONS, APPLICATION TECHNIQUES AND GENERAL GUIDELINES

PHYSICAL PROPERTIES

Adhesive Type:	Rubber-based pressure sensitive foam tape
Clip Material:	Nylon 66
Operating Temperature Range:	Continuous – 0°F (–18.0°C) to 120°F (49°C)
Peel Adhesion: (Adhesive Only)	(PSTC-1) 180 (5 min. Dwell, 12 inches per min.) 30 min. 100 + oz./in. width 24 hrs. 100 + oz./in. width 168 hrs. 100 + oz./in. width
Shear Adhesion: (Adhesive Only)	(PSTC-7) 72°F at 50% R.H. 100 + hours 72°F with intermittent aqueous wetting 100 + hours
UL Information:	All cord clip part numbers listed in the catalog with the following symbol are recognized under UL Wire Positioning Devices. UL File No. E53159.

APPLICATION TECHNIQUES

1. The recommended cord clip tape surface application temperature range is 70°F (21°C) to 100°F (38°C).

2. When applying cord clip tape to the substrate surface, it is important that a sufficient amount of pressure is applied to assure optimum adhesion. Avoid adhesive contamination with foreign material.

3. To obtain maximum adhesion, the substrate surface must be clean, dry, free of grease and oil and well unified. Clean surfaces with low strength solvents, isopropyl alcohol or haptene.

4. The recommended set-up time of the cord clip tape to substrate surface is 30 minutes.

GENERAL INFORMATION

The cord clip tape is resistant to water, detergent and alcohol. This tape is not recommend for use in contact with aliphatic or aromatic hydrocarbons.

Recommended Storage Guidelines:	Optimal: 72°F (22°C) at 50% R.H. Temperature Ranges: 40°F (4°C) to 75°F (24°C) Humidity: 40 to 60%
Shelf Life:	One year if stored at recommended storage guidelines.

Bonding Surface Guidelines:

Polystyrene	Painted Surfaces	Glass
Polycarbonates	Rigid Vinyl	Steel
ABS	Rubber	Nylon
Aluminum	Acrylics	

User should evaluate product suitability for a specific application under actual use conditions.

Note: All statements, technical information and recommendation herein is believed to be reliable. ITW assumes no responsibility for end-use applications, and no performance warranty is expressed or implied.

URETHANE BUMPER ADHESIVE SPECIFICATIONS

PHYSICAL PROPERTIES:

Rubber – Based

Color:	Clear
Thickness:	1.3-1.6 mils
Service Temperature Range:	–40°F/200°F
Minimum Dwell Time to Application Substrate:	15 minutes

Peel Adhesion:

Test method PSTC-1 (5 min. dwell, 12 in/min)
Substrate: Stainless Steel
Typical Value: 70 oz/in

Shear Adhesion:

Test method PSTC-7 (Load 500g at 72°F)
Substrate: Stainless Steel
Typical Value: >240 minutes to failure

The adhesive has very high tack strength properties. Provides excellent adhesion to a variety of high surface energy substrates such as metal, glass, acrylic and polycarbonate. It also has good adhesion to low surface energy substrates such as polypropylene, polyethylene and powder coated paints.

Acrylic – Based

Color:	Clear
Thickness:	1.3-1.6 mils
Service Temperature Range:	–40°F/200°F
Intermittent exposure	up to 200°F (93°C)
Minimum Dwell Time to Application Substrate:	24 hours

Peel Adhesions:

Test method PSTC-1 (20 min. dwell, 12 in/min.)
Substrate: Stainless Steel
Typical Value: 34 oz/in

Shear Adhesions:

Test method PSTC-7 (Load 1000g at 72°F)
Substrate: Stainless Steel
Typical Value: >1440 minutes to failure

The adhesive has excellent shear and long term strength properties. Provides excellent adhesion to high surface energy substrates such as metal, glass, acrylic and polycarbonate. Acrylic adhesives do not perform well on low surface energy substrates (polypropylene and polyethylene). It is important to keep in mind that the acrylic adhesive needs time to build its adhesion strength to the substrate. We recommend a minimum of 24 hrs of dwell time before actual application uses.

APPLICATION TECHNIQUES:

- To obtain maximum adhesion, surfaces must be uniform, clean and dry, as well as free of grease, wax, oil, dust and other foreign material which might affect adhesion.
- Clean surfaces with low strength solvents such as Isopropyl Alcohol (rubbing alcohol) or Heptane.
- Application Temperature Range: +50°F (10°C) to 100°F (38°C)
- When applying the Fastex Bumper to surfaces, it is important that a sufficient amount of pressure is applied to obtain optimum adhesion.
- Avoid adhesive contamination with foreign material.

STORAGE GUIDELINES:

- Temperature Range: +40°F (4°C) to 75°F (24°C)
- Humidity Range: 40 to 60% R.H.

SHELF LIFE:

- Adhesive properties should not change for one year if stored at recommended storage guidelines.

ITW FASTEX SAMPLE & LITERATURE REQUEST

ITW Fastex® Engineered Solutions

DATE:_____

CONTACT: _____

COMPANY: _____

STREET ADDRESS: _____

P.O. BOX:_____

CITY:_____ STATE:_____ ZIP:_____

PHONE:_____ FAX:_____

QTY **PART NUMBER(S) / DESCRIPTION**

_____ _____

_____ _____

_____ _____

_____ _____

_____ _____

_____ _____

_____ _____

This section must be filled out!

➢ WHAT DOES YOUR COMPANY MAKE? _____

➢ APPLICATION:_____

➢ POTENTIAL ANNUAL VOLUMES: _____

➢ HOW DID YOU FIND OUT ABOUT FASTEX?_____

_____

➢ WHICH FASTEX AUTHORIZED DISTRIBUTOR ARE YOU CURRENTLY USING? _____

_____

SAMPLES ARE SENT VIA FIRST CLASS MAIL UNLESS OTHERWISE SPECIFIED.

E-MAIL REQUEST TO SAMPLES@ITWFASTEX.COM

OR

FAX REQUEST TO FASTEX SAMPLE DEPARTMENT (847) 299-4169.

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4 / 2007