

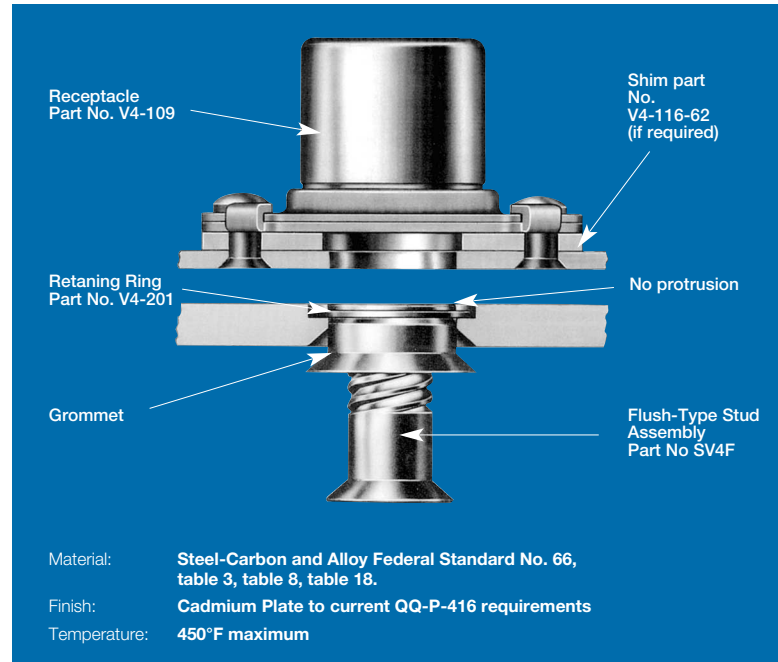
## USH-TYPE FASTENER STANDARD FLUSH-TYPE FASTENER STANDARD FLUSH-TYPE FASTENER, S

From pre-fabricated buildings to space applications, no fastener offers the ease of use, strength and unprecedented performance of Zahodiakin fasteners.

\*These positive-locking fasteners are the most rapidly-threading fastener on the market. This makes them ideal for applications requiring quick and convenient access to panel areas without sacrificing the strength of the connection.

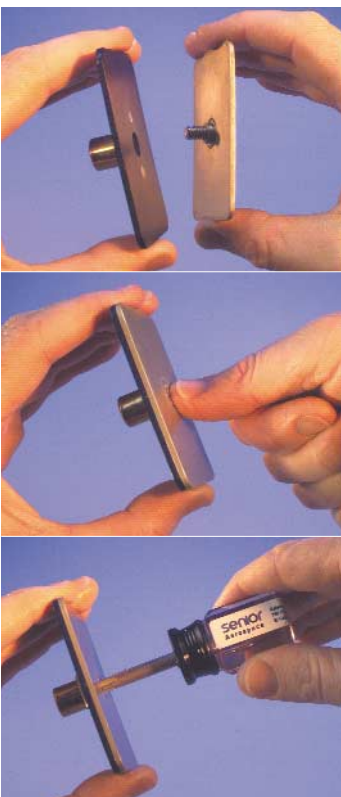
The Zahodiakin fasteners unique foolproof design is characterized by its ability to synchronize the fastener stud with its receptacle. Misalignments are automatically corrected and there's never a cross-threading. Just place the two parts together, push, and give a half-turn with a screwdriver to complete a positive-locking, high-strength connection. In seconds.

Initially designed to secure access doors, panels and structural components under the most critical aerospace conditions, Zahodiakin fasteners have never experienced a field failure in more than 50 years of manufacture. Today, both commercial and military fastener products are available, with the military line designed to meet or exceed Mil-F-22978A (ASG).



### High-Performance Comparative Test & Performance Data

Mechanical Properties	MIL-F-22978A	Measured Performance
Locking Torque (lbs)	30 Max	30 Max
Unlocking Torque (lbs)	35 Max	35 Max
Torque Out (lbs)	100 Min	100 Max
Ultimate Shear Load (lbs)	4650	8300
Rated Shear Load (lbs)	3560	4500
Ultimate Tensile Load (lbs)	2210	4500
Rated Tensile Load (lbs)	1700	1700
Sheet Separation @	.015	.013 1700 lbs(ins)
Sheet Pull-up (in)	1/16	1/16
Stud Push-out (lbs)	150 min	200 min
Receptacle Pus-Out (lbs)	125min	130min
Vibration Requirements	Para 4.6.8	Exceed Spec.
Misalignment Float (in)	=.020	±.020
Elevated Temperature Limit (°F)	450	450
Corrosion resistance (hours)	96	200



1. Align stud threads with receptacle. Unique synchronizing-ring design automatically corrects misalignments.

2. Push threaded stud firmly into receptacle.

3. A half-turn with a screwdriver completes positive-locking connection. Total time: a few seconds.

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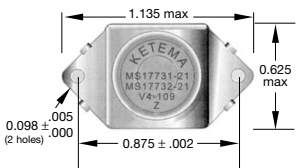
### TO ORDER

Order by part number and description, Stud Assembly SV4F - (Stud number), Receptacle Assembly V4-109, Retaining Ring V4-201 and Shim V4-116-62.

Part Number	Weight (lbs)	Part Number	Weight (lbs)	Part Number	Grip Range	Total Weight (lbs)	Part Number	Weight (lbs)	Grommet Length			
<b>Ketema Stud ① Assy.</b>	<b>Ketema Retainer Ring</b>	<b>MS Stud Assy.</b>	<b>Stud Assy.</b>	<b>Ketema Receptacle</b>	<b>MS Receptacle Assy.</b>	<b>Receptacle Assy.</b>	<b>MS ② Fastener Assy</b>	<b>T<sub>1</sub> + T<sub>2</sub></b>	<b>Fastener Assy.</b>	<b>Shim (if required)</b>	<b>Shim</b>	<b>Total Length ± .010</b>
SV4F-1	V4-201	MS 17731-1A	.011	V4-109	MS17731-21	.028	MS 17731-1	.150 - .220	.039	V4-116-62	.0026	.200
SVAF-2	V4-201	MS 17731-2A	.012	V4-109	MS17731-21	.028	MS 17731-2	.221 - .290	.040	NOT REQUIRED (if part number V4-116-62 9 (shim) is used, deduct .062 from min and max. grip range dimension)		.200
SVAF-3	V4-201	MS 17731-3A	.013	V4-109	MS17731-21	.028	MS 17731-3	.291 - .360	.041		.275	
SVAF-4	V4-201	MS 17731-4A	.016	V4-109	MS17731-21	.028	MS 17731-4	.361 - .430	.044		.350	
SVAF-5	V4-201	MS 17731-5A	.017	V4-109	MS17731-21	.028	MS 17731-5	.431 - .500	.045		.425	
SVAF-6	V4-201	MS 17731-6A	.020	V4-109	MS17731-21	.028	MS 17731-6	.501 - .570	.048		.500	
SVAF-7	V4-201	MS 17731-7A	.022	V4-109	MS17731-21	.028	MS17731-7	.571 - .640	.050		.575	
SVAF-8	V4-201	MS 17731-8A	.024	V4-109	MS17731-21	.028	MS 17731-8	.641 - .710	.052		.650	
SVAF-9	V4-201	MS 17731-9A	.025	V4-109	MS17731-21	.028	MS 17731-9	.771 - .780	.053		.725	

### MS ① Stud, grommet and retainer ring

### MS ② Stud, grommet, retainer ring and receptacle



### Code

T<sub>1</sub> = Outer Panel  
 T<sub>2</sub> = Inner Panel  
 H = Total Length of Grommet (see table)  
 C = H - T<sub>1</sub> = Shear VALUE in Sheet 2  
 A = Head of Grommet - Constant at .060

### Formula

When (T<sub>1</sub> - A/2) greater than C, c' bore T<sub>1</sub>  
 When (T<sub>1</sub> - A/2) greater than C, c' bore T<sub>2</sub>

### Example No.1

Assume Stud Assembly SV4F-2 is being used, with T<sub>1</sub> being 0.102 in. and T<sub>2</sub> being used 0.158 in., "A" is .060 in.

1. Compute Value of (T<sub>1</sub> - A/2):  
 (T<sub>1</sub> - A/2) = .102 - .060/2 = .072

2. Compute Value of "C":  
 C = H - T<sub>1</sub> = .237 - .102 = .135

Referring to the formula above: (T<sub>1</sub> - A/2) is less than C; therefore, Sheet T<sub>2</sub> is to be counterbored.

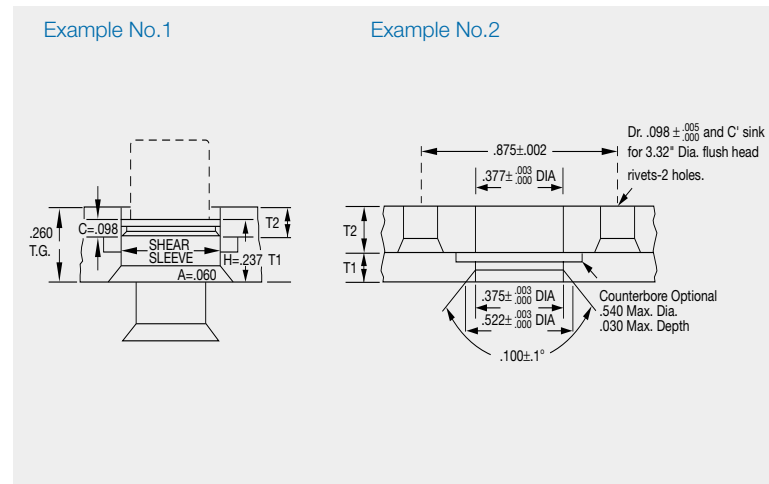
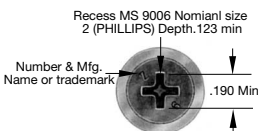
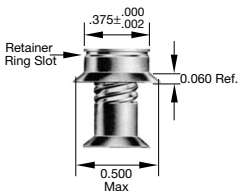
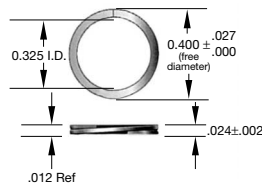
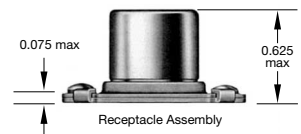
### Example No.2

Assume Stud Assembly SV4F-2 is being used, with T<sub>1</sub> being 0.125 in. and T<sub>2</sub> being used 0.135 in., "A" is .060 in.

1. Compute Value of (T<sub>1</sub> - A/2):  
 (T<sub>1</sub> - A/2) = .125 - .030 = .095

2. Compute Value of "C":  
 C = H - T<sub>1</sub> = .237 - .125 = .112

Referring to the formula above: (T<sub>1</sub> - A/2) is greater than "C"; therefore, Sheet T<sub>1</sub> is to be counterbored.



- Notes:
- Float of receptacle shall not be less than .020 in any direction from the center position.
  - Dimensioning and gaging of the above recess shall be in accordance with Military Standard Drawing MS 9006, Cross Recess and Gage Dimensions.
  - For complete assembly of Stud Assembly, Receptacle Assembly and Retaining Ring No. V4-201.

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