SHEREX FASTENING SOLUTIONS®

# SHEREX FASTENING SOLUTIONS®

**Fastening Systems Engineered for Performance™** 





# WEDGE LOCKING WASHERS





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# **HOW DOES IT WORK?**

TEC-MG

**TEC Series washers** secure joints using tension rather than friction, as with traditional locking fasteners. TEC washers consist of a pair of washers with cams on one side and radial teeth on the other. The cam sides are joined together with a mild adhesive, and installed between the bolt head and/or nut and the joint material.

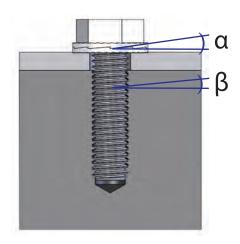
During installation, the radial teeth cause one half of the washer to be seated to the bolt or nut, while the other half is seated to the joint material.

When exposed to load or vibration, the bolt or nut will attempt to loosen. Since the radial teeth are seated to the mating surfaces, any movement in the loosening direction is forced between the cam.

Because the cam angle () of the washers is greater than the thread pitch angle () of the bolt, a wedge effect is created by the cams, preventing the bolt or nut from rotating loose. Clamp load is maintained and the joint remains secure.

TEC-M6





### FEATURES AND BENEFITS

- Maintains clamp load in high vibration and load applications, thereby protecting the security of the joint
- Heavy duty, self-locking design
- For use with bolts up to Class 12.9, Grade 8
- Sizes from #8 (M4) to 1 3/8" (M36) in stock, available for immediate shipment
- Available in SCM435 Alloy Steel, 316L Stainless Steel, and 254 SMO Stainless Steel
- · Provided in preassembled glued pairs
- · Easy to install and remove with standard tools
- No retightening needed after installation
- Reusable will not distort threads on bolt
- Vibration proof according to MIL-STD-1312-7/NASM-1312-7
- Lubrication does not impair the locking function of the washer
- · Can be used reliably for joints with short clamp length
- · Secures joints with high and low preloads





# **INSTALLATION**

- To install the TEC Series washer, place the preassembled pair between the nut and/or bolt and the joint material. See page 4 for application examples.
- As the nut or bolt is tightened, one half of the washer pair will be seated to the joint material and the other half will be seated to the nut or bolt.
- Tighten joints with TEC Series washers using standard tools. Retightening is not needed.
- The use of lubricants is highly recommended when installing TEC Series washers. A high quality lubricant designed to prevent seizing will reduce friction during installation and improve the consistency of clamp load in joints.
- When installing TEC Series washers in a common application, expect an increase in required torque over recommended installation torque to achieve proper clamp load and maximum joint safety. See Torque Guidelines on page 3 for more information.



### **REMOVAL AND REUSE**

Removing TEC Series washers requires no special tools or procedure. Simply loosen the joint in the normal method and check the washer to ensure cam faces disengage.

While TEC Series washers are typically reusable, washers should always be inspected for deformation or excessive wear before reuse. If washers appear deformed or heavily worn, discard and use a new pair.

### QUALITY

Each Sherex manufacturing facility is led by a team of seasoned engineering professionals charged with ensuring all products meet stringent quality requirements. Our facilities are certified to ISO 9001:2015, ISO 14001:2015, IATF 16949:2016, and ISO 17025:2017. The Sherex Quality Management System, and our use of SPC (Statistical Process Control) ensures that all of our products are manufactured using reliable, repeatable, and compliant processes.

TEC Series Washers are manufactured in a facility which strictly adheres to multiple ISO certification standards and are thoroughly tested through the production cycle to ensure a high level of quality. All TEC Series products are fully RoHS compliant.

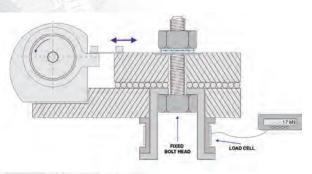


TEC Series Washers are available in a variey of coatings to help mitigate corrosion. Seen above is DELTA-PROTEKT® black.



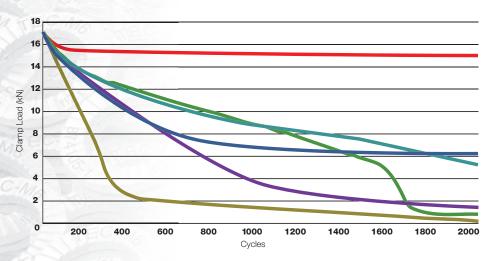


# **PROVEN RESULTS**



TEC Series wedge locking washers have been tested on a Junker Vibration Machine. The Junker test, according to DIN 65151, considered the most severe vibration test for bolted joints, is used to determine the point at which a bolted joint loses its preload when subjected to shear loading due to transverse vibration.

When tested against other product options using the Junker test, TEC Series washers remained secure while all other products loosened significantly.



**TEC SERIES JUNKER TEST** 



- Mechanical Lock Nut
- Nylon Insert Nut
- Hex Nut, No Washer
- Hex Nut, Flat Washer

All options were tested with 1.0 MM amplitude at 12.5 Hz for 2000 cycles See Sherex website for additional testing data.

Our in-house engineering staff can provide specific testing for customer applications. Contact Sherex.

#### TORQUE TEST RESULTS TEC SERIES STEEL M10 WASHERS

		PITCH (MM)	TORQUE (Nm)	CLAMP LOAD (kN)
M10 Class 8.8 Bolt	Lubricated	1.5	52	27.0
Zinc Plated	Dry	1.5	52	19.8
M10 Class 10.9 Bolt	Lubricated	1.5	66	38.5
Zinc Plated	Dry	1.5	66	28.8
M10 Class 10.9 Bolt	Lubricated	1.5	77	38.5
Zinc Flake	Dry	1.5	77	36.7

### **TORQUE GUIDELINES**

The goal of a fastened joint is to maintain clamp load. The chart to the left highlights the effects of lubrication on achieving desired clamp load.

For the lubricated test conditions, bolts were coated with Molykote<sup>®</sup> 1000. Torque data is based on achieving clamp loads at 80% of proof load for both Class 8.8 and Class 10.9 bolts, according to ISO 898-1.

Corresponding Class 8.8 and 10.9 bolts were tightened to the same torque as the previous test, with lubrication omitted from the joint.

Class 10.9 bolts with zinc flake coating were also tested, with and without lubrication, to demonstrate the effect of coating on required installation torque.

Sherex recommends bolt-joint lubrication for consistent joint performance when using TEC Series washers.

Due to varying installation conditions and customer specific applications, additional information and torque recommendations are available by contacting Engineering support at Sherex.



# **TEC**SERIES<sup>®</sup>

# **APPLICATION EXAMPLES**

TEC Series wedge locking washers can be used to protect joint integrity in a wide variety of joint types, including:

**Tapped Hole** 



• Effectively secures bolt head to mating surface.

**Counter Bore** 



- TEC Series washers are designed to fit under the head of socket products in counter bore holes.
- Securely fastens nut in stud bolt applications eliminating the need for adhesives.

or Large Hole

Slotted

**Stud Bolt** 



 TEC Series LD washers are suited for use under flange bolts and nuts and to optimize the clamp load across large or slotted holes and soft mating surfaces.

**Through Hole** 



Not Recommended

• Through hole applications require TEC Series washers under the bolt head and nut to maintain join security.



TEC Series wedge locking washers are not recommended for:

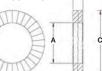
- Mating surfaces together that are free to rotate or move
- Mating surfaces that are harder than the washers
- Use in non-preloaded joints
- Very soft base material, such as wood



# **SPECIFICATIONS & ORDERING INFORMATION**



CAMS ON INNER SURFACE





# ALLOY STEEL WASHER

PART #	BOLT SIZE		STANDARD DIMENSIONS (INCHES)				IENSIONS (MI	BOX	CARTON	
	INCHES	METRIC	INNER DIAMETER(A)	OUTER DIAMETER(C)	THICKNESS(EE)	INNER DIAMETER(A)	OUTER DIAMETER(C	THICKNESS(EE)	QUANTITY	QUANTITY
TEC-M3	#5	M3	0.134	0.276	0.071	3.4	7.0	1.8	200	9,600
TEC-M3.5	#6	M3.5	0.154	0.299	0.071	3.9	7.6	1.8	200	9,600
TEC-M4	#8	M4	0.173	0.299	0.071	4.4	7.6	1.8	200	9,600
TEC-M5	#10	M5	0.213	0.354	0.071	5.4	9.0	1.8	200	9,600
TEC-M6		M6	0.256	0.425	0.071	6.5	10.8	1.8	200	9,600
TEC-1/4	1/4		0.283	0.453	0.098	7.2	11.5	2.5	200	6,400
TEC-M8	5/16	M8	0.343	0.531	0.098	8.7	13.5	2.5	200	6,400
TEC-3/8	3/8		0.406	0.654	0.098	10.3	16.6	2.5	200	3,200
TEC-M10		M10	0.421	0.654	0.098	10.7	16.6	2.5	200	3,200
TEC-M11	7/16	M11	0.449	0.728	0.098	11.4	18.5	2.5	200	3,200
TEC-M12		M12	0.512	0.768	0.098	13.0	19.5	2.5	200	3,200
TEC-1/2	1/2		0.531	0.768	0.098	13.5	19.5	2.5	200	3,200
TEC-M14	9/16	M14	0.598	0.906	0.134	15.2	23.0	3.4	100	800
TEC-M16	5/8	M16	0.669	1.000	0.134	17.0	25.4	3.4	100	800
TEC-M18		M18	0.768	1.142	0.134	19.5	29.0	3.4	100	800
TEC-3/4	3/4		0.787	1.209	0.134	20.0	30.7	3.4	100	800
TEC-M20		M20	0.843	1.209	0.134	21.4	30.7	3.4	100	800
TEC-M22	7/8	M22	0.921	1.358	0.134	23.4	34.5	3.4	100	400
TEC-M24		M24	0.996	1.535	0.134	25.3	39.0	3.4	100	400
TEC-1	1		1.098	1.535	0.134	27.9	39.0	3.4	100	400
TEC-M27		M27	1.118	1.654	0.228	28.4	42.0	5.8	50	200
TEC-M30	1 1/8	M30	1.236	1.850	0.228	31.4	47.0	5.8	50	200
TEC-M33	1 1/4	M33	1.354	1.909	0.228	34.4	48.5	5.8	25	100
TEC-M36	1 3/8	M36	1.472	2.165	0.228	37.4	55.0	5.8	25	100
TEC-M39	1 1/2	M39	1.591	2.303	0.228	40.4	58.5	5.8	25	100
TEC-M42		M42	1.701	2.480	0.228	43.2	63.0	5.8	25	100
TEC-M45	1 3/4	M45	1.819	2.756	0.276	46.2	70.0	7.0	25	100
TEC-M48		M48	1.953	2.953	0.276	49.6	75.0	7.0	25	100
TEC-M52	2	M52	2.110	3.150	0.276	53.6	80.0	7.0	25	100
TEC-M56	2 1/4	M56	2.327	3.346	0.276	59.1	85.0	7.0	10	40
TEC-M60	2 17 1	M60	2.484	3.543	0.276	63.1	90.0	7.0	10	40
TEC-M64	2 1/2	M64	2.642	3.740	0.276	67.1	95.5	7.0	10	40
TEC-M68	2 1/2	M68	2.799	3.937	0.374	71.1	100.0	9.5	1	32
TEC-M08		M72	2.799	4.134	0.374	75.1	105.0	9.5	1	32
IEG-IVI72		IVI72	2.907	4.134	0.374	75.1	105.0	9.0	I	32

Weight and thickness of pairs will vary slightly with gauge of metal. Made of SCM 435 or 4130 Steel.

**TEC**SERIES<sup>®</sup>

Coated in DELTA-PROTEKT® KL100 and V H302 GZ, protection to 600 hours salt spray. Other coatings available, including DELTA-PROTEKT® Black (TEC-XXbk).
Pease contact Sherex for more information.

#### DIMENSIONAL TOLERANCES FOR ALL MATERIALS AND STYLES

	STANDARD DIMENSIONS (INCHES)							METRIC DIMENSIONS (MILLIMETERS)								
1	IN	INNER DIAMETER(A) OUTER DIAMETER(C)		THICKNESS(EE)		INNER DIAMETER(A)			OUTER DIAMETER(C)			THICKNESS(EE)				
ч	M3-M8	3/8" & M10-M42	M45-M72	M3-M24 & 1	M27-M42	M45-M72	M3-M42	M45-M72	M3-M8	M10-M42	M45-M72	M3-M24	M27-M42	M45-M72	M3-M42	M45-M72
	± 0.004	± 0.008	+ 0.02 / -0.00	± 0.008	± 0.012	+ 0.000 / -0.080	± 0.010	± 0.030	± 0.1	± 0.2	+ 0.5 / -0.0	± 0.2	± 0.3	+ 0.0 / -2.0	± 0.25	± 0.75
	(		A			с		⊡ ↓ EE	(		<b>A</b>			c		



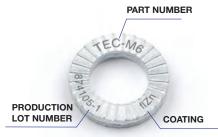
Custom designs available. Contact Sherex for more information.

## **SPECIFICATIONS & ORDERING INFORMATION**

PART #	BOLT SIZE		STANDARD DIMENSIONS (INCHES)			METRIC DI	MENSIONS (MI	BOX	CARTON	
PART #	INCHES	METRIC		OUTER DIAMETER(C		INNER DIAMETER(A)	OUTER DIAMETER(C	) THICKNESS(EE)	QUANTITY	QUANTITY
TEC-M3ss	#5	M3	0.134	0.276	0.087	3.4	7.0	2.2	200	9,600
TEC-M3.5ss	#6	M3.5	0.154	0.299	0.087	3.9	7.6	2.2	200	9,600
TEC-M4ss	#8	M4	0.173	0.299	0.087	4.4	7.6	2.2	200	9,600
TEC-M5ss	#10	M5	0.213	0.354	0.087	5.4	9.0	2.2	200	9,600
TEC-M6ss		M6	0.256	0.425	0.087	6.5	10.8	2.2	200	9,600
TEC-1/4ss	1/4		0.283	0.453	0.087	7.2	11.5	2.2	200	6,400
TEC-M8ss	5/16	M8	0.343	0.531	0.079	8.7	13.5	2.0	200	6,400
TEC-3/8ss	3/8		0.406	0.654	0.079	10.3	16.6	2.0	200	3,200
TEC-M10ss		M10	0.421	0.654	0.079	10.7	16.6	2.0	200	3,200
TEC-M11ss	7/16	M11	0.449	0.728	0.087	11.4	18.5	2.2	200	3,200
TEC-M12ss		M12	0.512	0.768	0.079	13.0	19.5	2.0	200	3,200
TEC-1/2ss	1/2		0.531	0.768	0.079	13.5	19.5	2.0	200	3,200
TEC-M14ss	9/16	M14	0.598	0.906	0.118	15.2	23.0	3.0	100	800
TEC-M16ss	5/8	M16	0.669	1.000	0.118	17.0	25.4	3.0	100	800
TEC-M18ss		M18	0.768	1.142	0.126	19.5	29.0	3.2	100	800
TEC-3/4ss	3/4		0.787	1.209	0.126	20.0	30.7	3.2	100	800
TEC-M20ss		M20	0.843	1.209	0.118	21.4	30.7	3.0	100	800
TEC-M22ss	7/8	M22	0.921	1.358	0.126	23.4	34.5	3.2	100	400
TEC-M24ss		M24	0.996	1.535	0.126	25.3	39.0	3.2	100	400
TEC-1ss	1		1.098	1.535	0.126	27.9	39.0	3.2	100	400
TEC-M27ss		M27	1.118	1.654	0.268	28.4	42.0	6.8	50	400
TEC-M30ss	1 1/8	M30	1.236	1.850	0.268	31.4	47.0	6.8	50	200
TEC-M33ss	1 1/4	M33	1.354	1.909	0.268	34.4	48.5	6.8	25	200
TEC-M36ss	1 3/8	M36	1.472	2.165	0.268	37.4	55.0	6.8	25	100
TEC-M39ss	1 1/2	M39	1.591	2.303	0.268	40.4	58.5	6.8	25	100
TEC-M42ss		M42	1.701	2.480	0.268	43.2	63.0	6.8	25	100
TEC-M45ss	1 3/4	M45	1.819	2.756	0.268	46.2	70.0	6.8	25	100
TEC-M48ss		M48	1.953	2.953	0.268	49.6	75.0	6.8	25	100
TEC-M52ss	2	M52	2.110	3.150	0.354	53.6	80.0	9.0	1	40
TEC-M56ss	2 1/4	M56	2.327	3.346	0.354	59.1	85.0	9.0	1	40
TEC-M60ss		M60	2.484	3.543	0.354	63.1	90.0	9.0	1	40
TEC-M64ss	2 1/2	M64	2.642	3.740	0.354	67.1	95.5	9.0	1	40
TEC-M68ss		M68	2.799	3.937	0.354	71.1	100.0	9.0	1	32
TEC-M72ss		M72	2.957	4.134	0.354	75.1	105.0	9.0	1	32

#### STAINLESS STEEL WASHER

Made of 316L Stainless Steel.



#### PRODUCT LASER ETCHING CODE

WASHER TYPE	CODE
STEEL, DELTA PROTEKT®	flZn
STAINLESS STEEL	SS

**TEC**SERIES<sup>®</sup>

# **TRACEABILITY**

TEC Series washers are produced in fully documented production lots, and are laser etched with the production lot number to provide full traceability.

To allow for easy identification, each part also has the part number (and size) and coating or material etched onto it.



Custom designs available. Contact Sherex for more information.

info@sherex.com | 866.474.3739 | sherex.com/tec-series

# **SPECIFICATIONS & ORDERING INFORMATION**



STANDARD OUTER DIAMETER

LARGE OUTER DIAMETER (LD)

TEC Series LD washers have a larger outer diameter, and are ideal for use in large or slotted hole applications, with soft or painted mating surfaces, and with flanged bolts and nuts.

#### LARGE DIAMETER ALLOY STEEL WASHER

PART #	BOL1 INCHES	SIZE	STANDARD	DIMENSION	- (	METRIC DIN	IENSIONS (MI		BOX QUANTITY	CARTON QUANTITY
TEC-M3.5LD	#6	M3.5	0.154	0.354	0.071	3.9	9.0	1.8	200	9,600
TEC-M4LD	#8	M4	0.173	0.354	0.071	4.4	9.0	1.8	200	9,600
TEC-M5LD	#10	M5	0.213	0.425	0.071	5.4	10.8	1.8	200	9,600
TEC-M6LD		M6	0.256	0.531	0.098	6.5	13.5	2.5	200	9,600
TEC-1/4LD	1/4		0.283	0.531	0.098	7.2	13.5	2.5	200	6,400
TEC-M8LD	5/16	M8	0.343	0.654	0.098	8.7	16.6	2.5	200	6,400
TEC-3/8LD	3/8		0.406	0.827	0.098	10.3	21.0	2.5	200	3,200
TEC-M10LD		M10	0.421	0.827	0.098	10.7	21.0	2.5	200	3,200
TEC-M12LD		M12	0.512	1.000	0.134	13.0	25.4	3.4	200	1,600
TEC-1/2LD	1/2		0.531	1.000	0.134	13.5	25.4	3.4	200	1,600
TEC-M14LD	9/16	M14	0.598	1.209	0.134	15.2	30.7	3.4	200	800
TEC-M16LD	5/8	M16	0.669	1.209	0.134	17.0	30.7	3.4	100	800
TEC-M18LD		M18	0.768	1.358	0.134	19.5	34.5	3.4	100	800
TEC-3/4LD	3/4		0.787	1.535	0.134	20.0	39.0	3.4	100	800
TEC-M20LD		M20	0.843	1.535	0.134	21.4	39.0	3.4	100	800
TEC-M22LD	7/8	M22	0.921	1.654	0.181	23.4	42.0	4.6	100	400
TEC-M24LD		M24	0.996	1.909	0.181	25.3	48.5	4.6	100	400
TEC-1LD	1		1.098	1.909	0.181	27.9	48.5	4.6	100	400
TEC-M27LD		M27	1.118	1.909	0.228	28.4	48.5	5.8	100	200
TEC-M30LD	1 1/8	M30	1.236	2.303	0.260	31.4	58.5	6.6	50	200
TEC-M33LD	1 1/4	M33	1.354	2.303	0.260	34.4	58.5	6.6	50	100
TEC-M36LD	1 1/2	M36	1.472	2.480	0.260	37.4	63.0	6.6	25	100

Weight and thickness of pairs will vary slightly with gauge of metal. Made of SCM 435 or 4130 Steel.

#### LARGE DIAMETER STAINLESS STEEL WASHER

PART #	BOL	BOLT SIZE		STANDARD DIMENSIONS (INCHES)			MENSIONS (MI	BOX	CARTON	
FANT #	INCHES	METRIC	INNER DIAMETER(A)	OUTER DIAMETER(C	) THICKNESS(EE)	INNER DIAMETER(A)	OUTER DIAMETER(C	THICKNESS(EE)	QUANTITY	QUANTITY
TEC-M3.5LDss	#6	M3.5	0.154	0.354	0.087	3.9	9.0	2.2	200	9,600
TEC-M4LDss	#8	M4	0.173	0.354	0.087	4.4	9.0	2.2	200	9,600
TEC-M5LDss	#10	M5	0.213	0.425	0.087	5.4	10.8	2.2	200	9,600
TEC-M6LDss		M6	0.256	0.531	0.079	6.5	13.5	2.0	200	9,600
TEC-1/4LDss	1/4		0.283	0.531	0.087	7.2	13.5	2.2	200	6,400
TEC-M8LDss	5/16	M8	0.343	0.654	0.079	8.7	16.6	2.0	200	6,400
TEC-3/8LDss	3/8		0.406	0.827	0.079	10.3	21.0	2.0	200	3,200
TEC-M10LDss		M10	0.421	0.827	0.079	10.7	21.0	2.0	200	3,200
TEC-M12LDss		M12	0.512	1.000	0.118	13.0	25.4	3.0	100	1,600
TEC-1/2LDss	1/2		0.531	1.000	0.126	13.5	25.4	3.2	100	1,600
TEC-M14LDss	9/16	M14	0.598	1.209	0.126	15.2	30.7	3.2	100	800
TEC-M16LDss	5/8	M16	0.669	1.209	0.126	17.0	30.7	3.2	100	800
TEC-M18LDss		M18	0.768	1.358	0.126	19.5	34.5	3.2	100	800
TEC-3/4LDss	3/4		0.787	1.535	0.126	20.0	39.0	3.2	100	800
TEC-M20LDss		M20	0.843	1.535	0.126	21.4	39.0	3.2	100	800
TEC-M22LDss	7/8	M22	0.921	1.654	0.126	23.4	42.0	3.2	100	400
TEC-M24LDss		M24	0.996	1.909	0.126	25.3	48.5	3.2	100	400
TEC-1LDss	1		1.098	1.909	0.126	27.9	48.5	3.2	100	400
TEC-M27LDss		M27	1.118	1.909	0.268	28.4	48.5	6.8	25	100
TEC-M30LDss	1 1/8	M30	1.236	2.303	0.268	31.4	58.5	6.8	25	100

Made of 316L Stainless Steel.





# **PROVEN APPLICATIONS**



#### **Agriculture & Construction Equipment**

Challenge: When joints fail, performing corrective maintenance in the field - often requiring disassembling and reassembling complex machinery - is difficult and time consuming.

TEC Series Washers withstand the vibration and load associated with the agriculture and construction conditions, and hold joints secure.



#### **Power Generation**

Challenge: Due to windy conditions, bolted joints in these applications can experience severe vibration, causing joint failure in remote, hard-to-reach locations. Getting maintenance resources to remote locations to fix joints can be costly and dangerous.

TEC Series Washers withstand vibration due to windy conditions, eliminating the need for costly and dangerous repairs.



#### Gas & Oil

Challenge: Keeping joints secure in safety critical and harsh operating environments such as oil rigs can be dangerous, and joints are often found in hard-to-reach locations.

TEC Series Washers are created to withstand harsh operating environments, and will keep joints secure without needing replacements or extensive maintenance.



#### Mining

Challenge: In this harsh work environment, where equipment is subjected to extreme vibration, joints can fail, causing costly equipment downtime in remote locations.

TEC Series Washers' proven wedge locking technology protects joints under severe vibration, and can eliminate machine downtime.



#### **General Machinery Manufacturing**

Challenge: In safety-critical environments such as roller-coasters, guaranteeing that joints do not fail is paramount; performing extensive maintenance and performance checks can be costly and inconvenient.

TEC Series Washers have been proven in Junker's tests to hold joints under severe vibration.





# **ABOUT SHEREX**

Sherex Fastening Solutions has a proven history of providing innovative, engineered solutions for securing joints. Sherex Industries was founded in 1979 in Buffalo, NY, primarily serving the Automotive and Fluid Power markets. In 2004, the rivet nut division was spun off, and became Sherex Fastening Solutions. Throughout our 40 year history, we've remained steadfast in our mission to deliver high quality fastening solutions at the lowest total installed cost. We've expanded and improved our offerings and services by creating proprietary products, forming strategic alliances, and establishing world-class production facilities and customer support centers in Taiwan, Mexico, and Akron, Ohio.

Sherex's comprehensive product offering includes: Standard Rivet Nuts, Custom Rivet nuts, MS/NAS Rivet Nuts, Rivet Nut Installation Tools, Compression Limiters, Clinch Nuts, Brass Inserts, Fastener automation equipment, and Disc-Lock Wedge Locking Washers and Nuts.

Our engineering-focused team is comprised of manufacturing engineers, application engineers, and technical sales professionals that are dedicated to exceeding our customers' needs by collaborating to create customized, application-specific solutions.

### **GLOBAL PRESENCE**

Sherex provides service and support to our customers around the world through a network of sales offices, technical support centers, distribution hubs, and manufacturing facilities. Our facilities bring us closer to our customers to offer more dedicated service and faster lead times.









Sherex offers a wide range of products that help companies assembly products more efficiently, from fasteners to the installation tools used to install them, to vibration loosening prevention to help joints stay secure.

WHY BLIND RIVET NUTS?

SHEREX FASTENING SOLUTIONS®

Sherex blind rivet nuts provide load bearing threads in thin sheet materials that are too thin for a tapped thread. They are called "blind" because they can be installed from one side of the work piece. Once the rivet nut is installed, additional components can be attached using threaded fasteners.

### FULL HEX RIVET NUTS



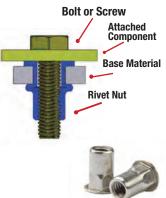
Sherex full hex rivet nuts provide increased spin out resistance over round or half hex body styles. These products are compatible with Class 8, Grade 5 hardware, and are available in sizes 1/4-20 to 1/2-13 and M6 to M12 in small flange and large flange styles.

### **OPTISERT® RIVET NUTS**

Optisert<sup>®</sup> is Sherex's best performing round

rivet nut. Its combination of knurled body design and underhead wedges gives it superior strength, performance, and spin-out resistance over typical round body rivet nuts. Ideal applications for Optisert include use in softer material like aluminum, composite, fiberglass, and plastic.





#### HALF HEX RIVET NUTS

Sherex half hex rivet nuts offers a semi hex body for excellent spin out resistance over round body styles. Available in sealed head or closed end designs, and are steel, stainless, and aluminum materials.

### **RIV-FLOAT® RIVET NUTS**



RIV-FLOAT® rivet nuts provide easy, accurate, and fast attachment of components in off-center applications. RIV-FLOAT®-SHORT rivet nuts provide the same benefits with a shorter body for increased back-side clearance.



### LARGE SIZE RIVET NUTS

Sherex large size rivet nuts are offered from 1/2-13 through 3/4-10, and M12 to M16 sizes. These rivet nuts were developed for applications where critical joint performance and high tensile loads are required.

### FASTENER INSTALLATION SYSTEMS

Sherex offers a broad line of installation tools, from hand tools ideal for prototyping and small volumes to hydro-pneumatic, process monitoring, and robotic installation systems ideal for large production runs.













DLHT Hand Tool SSG Spin-Spin Tool Flex-5 Spin-Pull Tool Flex-18 Spin-Pull Tool

- Calibration Unit

Process Monitoring Automated Systems



VIBRATIONAL LOOSENING PREVENTION

Department of Defense.

TEC Series® washers and Disc-Lock® washers and nuts are heavy duty.

Available in standard and large outer diameter carbon and stainless steel M3-M72, #5-3".

Please contact Sherex for more information on any of these product lines.

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### Ask About Our MADE IN THE U.S.A. Product Line

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