



SHEREX FASTENING SOLUTIONS

Fastening Systems Engineered for Performance™

Optisert®

The Best Performing Round Body Rivet Nut





Optisert®

The New Standard in Round Body Rivet Nuts

The Optisert® rivet nut is the best performing round body rivet nut in the fastener market

Sherex's Optisert is an innovative round body rivet nut that has superior strength, performance, and spin-out resistance over typical, standard round body rivet nuts.

What's unique about Optisert is the proprietary combination of an engineered knurled body and underhead wedge design, which allows the rivet nut to bite into the material to give it superior spin out resistance over other round body rivet nuts.

The patent-pending closed-end design provides a sealed option that does not compromise the biting effect of the wedges.

Ideal applications for Optisert include use in softer material like aluminum, composite, fiberglass, and plastic. Optiserts are already being used in automotive and heavy truck industries.



Features and Benefits

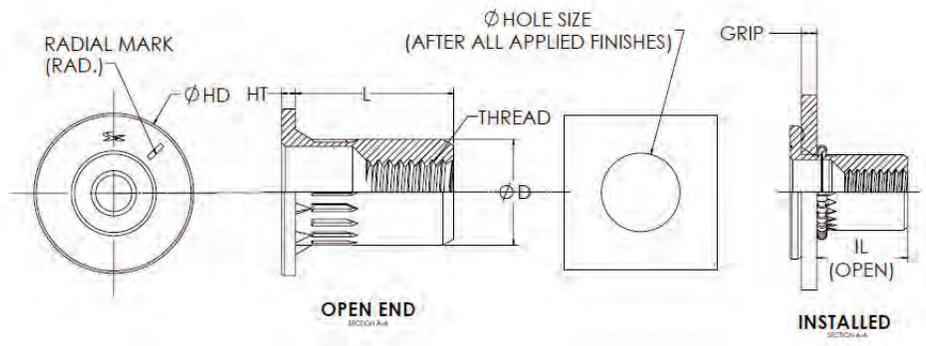
- ◆ Proven to meet Class 8 and Grade 5 thread proof load.
- ◆ Increased spin out resistance over other round body rivet nuts.
- ◆ Provide a strong thread in softer materials like aluminum, plastic, and fiberglass.
- ◆ Closed end available with a seal that doesn't compromise grip.

Styles & Sizes

**Open End and Closed End
Unified Sizes**
#8-32 to 5/16-18

**Open End and Closed End
Metric Sizes**
M4 to M8

Optisert – Open End



Optisert Open End Metric Thread (Unit - Millimeters)

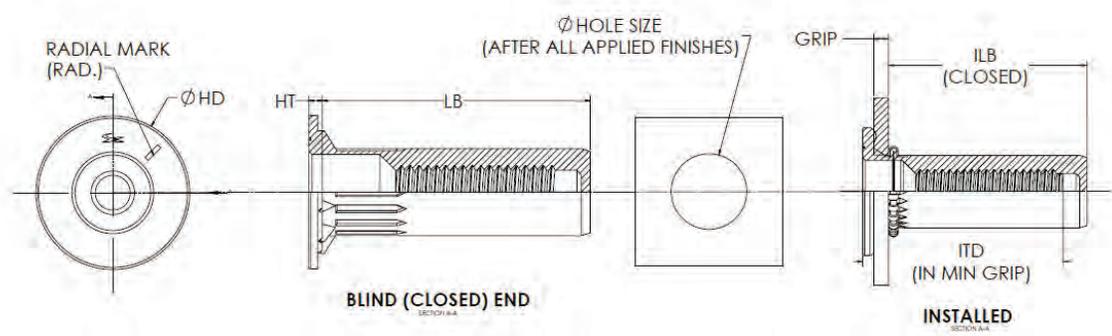
Sherex Part Number Metric	Thread Size	Grip Range		L ± .38	HD ± .38	HT ± .08	D Max.	IL Max.	Hole Size + .15/- .00
		Min	Max						
OPT2-470-3.0	M4x0.7	1.5	3.0	14.50	11.00	0.95	7.58	10.50	7.60
OPT2-470-5.5		3.0	5.5	17.00					
OPT2-470-8.0		5.5	8.0	19.50					
OPT2-580-3.0	M5x0.8	1.5	3.0	14.50	11.00	0.95	7.58	10.50	7.60
OPT2-580-5.5		3.0	5.5	17.00					
OPT2-580-8.0		5.5	8.0	19.50					
OPT2-610-3.5	M6x1.0	1.5	3.5	16.05	15.50	1.28	9.98	11.00	10.00
OPT2-610-6.0		3.5	6.0	18.79					
OPT2-610-8.5		6.0	8.5	21.29					
OPT2-610-11.0		8.5	11.0	23.79					
OPT2-8125-3.5	M8x1.25	1.5	3.5	17.53	21.77	1.58	13.48	12.50	13.50
OPT2-8125-6.0		3.5	6.0	20.45					
OPT2-8125-8.5		6.0	8.5	22.95					

Optisert Open End Unified Thread (Unit - Inches)

Sherex Part Number Inch	Thread Size	Grip Range		L ± .015	HD ± .015	HT ± .003	D Max.	IL Max.	Hole Size + .006/- .000
		Min	Max						
OPT2-0832-118	#8-32	0.060	0.118	0.571	0.433	0.037	0.298	0.413	0.300
OPT2-0832-217		0.118	0.217	0.669					
OPT2-0832-315		0.217	0.315	0.768					
OPT2-1024-118	#10-24	0.060	0.118	0.571	0.433	0.037	0.298	0.413	0.300
OPT2-1024-217		0.118	0.217	0.669					
OPT2-1024-315		0.217	0.315	0.768					
OPT2-1032-118	#10-32	0.060	0.118	0.571	0.433	0.037	0.298	0.413	0.300
OPT2-1032-217		0.118	0.217	0.669					
OPT2-1032-315		0.217	0.315	0.768					
OPT2-2520-138	1/4-20	0.060	0.138	0.632	0.610	0.050	0.393	0.433	0.394
OPT2-2520-236		0.138	0.236	0.740					
OPT2-2520-335		0.236	0.335	0.838					
OPT2-3118-138	5/16-18	0.060	0.138	0.690	0.857	0.062	0.531	0.492	0.532
OPT2-3118-236		0.138	0.236	0.805					
OPT2-3118-335		0.236	0.335	0.904					

Fourth and Fifth Grip Options Available on Request

Optisert – Closed End Sealed



Optisert Closed End Sealed Metric Thread (Unit - Millimeters)

Sherex Part Number Metric	Thread Size	Grip Range		LB	HD	HT	D	ILB	ITD	Hole Size
		Min	Max	± .38	± .50 ± .64*	± .10	Max.	Max.	Min.	+ .15/- .00
OPT2-470-3.0BS	M4x0.7	1.5	3.0	28.15	13.93	1.50	7.58	24.15	20.00	7.60
OPT2-470-5.5BS		3.0	5.5	28.15				21.65	20.00	
OPT2-470-8.0BS		5.5	8.0	33.15				24.15	25.00	
OPT2-580-3.0BS	M5x0.8	1.5	3.0	28.15	13.93	1.50	7.58	24.15	20.00	7.60
OPT2-580-5.5BS		3.0	5.5	28.15				21.65	20.00	
OPT2-580-8.0BS		5.5	8.0	33.15				24.15	25.00	
OPT2-610-3.5BS	M6x1.0	1.5	3.5	30.23	17.33	1.50	9.98	25.25	19.00	10.00
OPT2-610-6.0BS		3.5	6.0	30.23				22.75	19.00	
OPT2-610-8.5BS		6.0	8.5	35.43				25.25	24.00	
OPT2-610-11.0BS		8.5	11.0	40.43				26.40	29.00	
OPT2-8125-3.5BS	M8x1.25	1.5	3.5	35.31	21.77*	2.08	13.48	30.00	27.00	13.50
OPT2-8125-6.0BS		3.5	6.0	35.31				27.50	27.00	
OPT2-8125-8.5BS		6.0	8.5	40.61				30.00	32.00	

Optisert Closed End Sealed Unified Thread (Unit - Inches)

Sherex Part Number Inch	Thread Size	Grip Range		LB	HD	HT	D	ILB	ITD	Hole Size
		Min	Max	± .015	± .020 ± .025*	± .004	Max.	Max.	Min.	+ .006/- .000
OPT2-0832-118BS	#8-32	0.060	0.118	1.108	0.548	0.059	0.298	0.951	0.787	0.300
OPT2-0832-217BS		0.118	0.217	1.108				0.852	0.787	
OPT2-0832-315BS		0.217	0.315	1.305				0.951	0.984	
OPT2-1024-118BS	#10-24	0.060	0.118	1.108	0.548	0.059	0.298	0.951	0.787	0.300
OPT2-1024-217BS		0.118	0.217	1.108				0.852	0.787	
OPT2-1024-315BS		0.217	0.315	1.305				0.951	0.984	
OPT2-1032-118BS	#10-32	0.060	0.118	1.108	0.548	0.059	0.298	0.951	0.787	0.300
OPT2-1032-217BS		0.118	0.217	1.108				0.852	0.787	
OPT2-1032-315BS		0.217	0.315	1.305				0.951	0.984	
OPT2-2520-138BS	1/4-20	0.060	0.138	1.190	0.682	0.059	0.393	0.994	0.748	0.394
OPT2-2520-236BS		0.138	0.236	1.190				0.896	0.748	
OPT2-2520-335BS		0.236	0.335	1.395				0.994	0.945	
OPT2-3118-138BS	5/16-18	0.060	0.138	1.390	0.857*	0.082	0.531	1.181	1.063	0.531
OPT2-3118-236BS		0.138	0.236	1.390				1.083	1.063	
OPT2-3118-335BS		0.236	0.335	1.599				1.181	1.260	

- Non-Sealed Closed End Options Available on Request -
 Fourth and Fifth Grip Options Available on Request

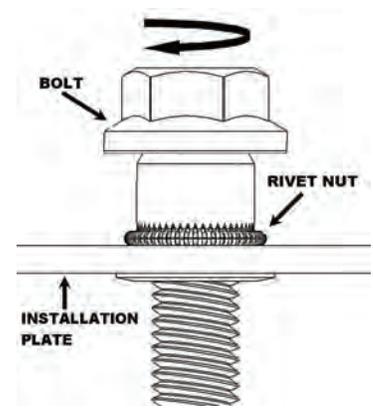
Sherex performs rigorous testing on all its fastening products so end users can be confident in their performance.

SPIN OUT

Rivet nuts were installed with the Sherex FLEX-5P tool, calibrated with the use of the Sherex Hand Tool Calibration unit, into supplied material types and thicknesses (6061-T6 aluminum, GPO-3 fiberglass, and G10-FR4 fiberglass), as well as using Sherex's recommended installation force settings on the FLEX-5P for each of the three thread sizes installed.

Test plates with installed rivet nuts were clamped to prevent any movement during testing. The results are an average of the three materials.

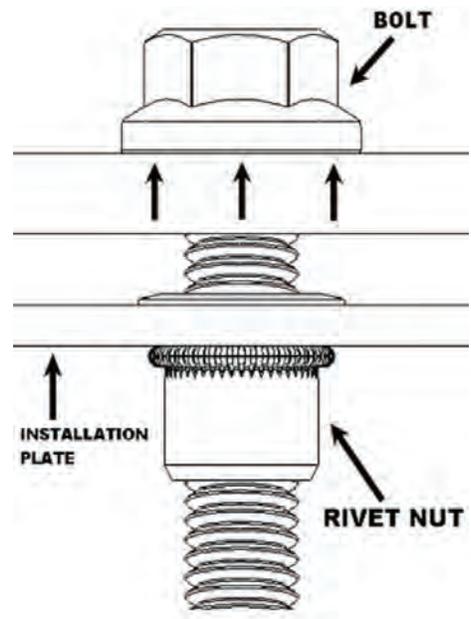
Optisert Spin Out		
Thread Size	Spin Out**	Failure Mode
M5 / #10-32	>6N*m	Rivet Nut Spun
M6 / 1/4"-20 and 1/4"-28	>20N*m	Rivet Nut Spun
M8 / 5/16"-18 and 5/16"-24	>30N*m	Thread Failure



**These results are only averages and variations should be expected in actual use. Variations include finishes on the nut, screw, or mating materials, and operator repeatability.

PULL OUT

Pull out testing is performed to determine the amount of axial load required to cause failure of the threads, insert feature (head) failure, or base material failure where the insert is pulled through the base material.



M5 Pull-Out Performance Summary		
Thickness (mm)	Pull Out (N)	Failure Mode
1	2,741	Plate Deformed
2	7,992	Plate Deformed
3	8,991	Plate Deformed
M6 Pull-Out Performance Summary		
Thickness (mm)	Pull Out (N)	Failure Mode
1	3,861	Plate Deformed
2	10,842	Plate Deformed
3	12,288	Plate Deformed
4	19,488	Plate Deformed
5	21,602	Plate Deformed
M8 Pull-Out Performance Summary		
Thickness (mm)	Pull Out (N)	Failure Mode
1	4,030	Plate Deformed
2	10,671	Plate Deformed
3	13,176	Plate Deformed
4	26,522*	Plate Deformed and Bubble Breaking
5	28,352*	Plate Deformed and Bubble Breaking

All tests conducted in 6061-T6 aluminum.

Recommended Installation Force

The upset load setting was gradually increased on the installation tool, Sherex's FLEX-5P, until the resultant installed length (the length from the underside of the flange to the end of the shank of the rivet nut) met print specifications.

The tool was calibrated using Sherex's Hand Tool Calibration Unit.

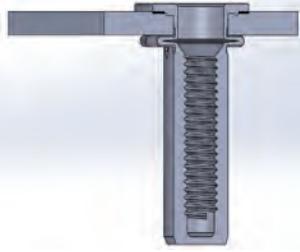


Sherex Flex-5P



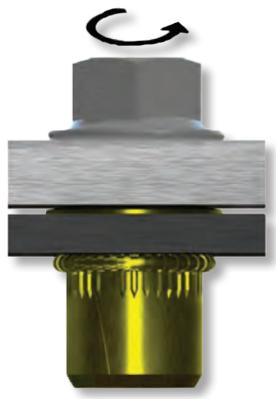
Hand Tool Calibration Unit

M5, #10 Recommended Installation Force (min)		
Material Thickness	Force Setting (kN)	Force Setting (lbsF)
Min Grip - Mid Grip	4.5 - 6.5	1,010 - 1,460
Mid Grip - Max Grip	6.5 - 8.5	1,460 - 1,910
M6, 1/4" Recommended Installation Force (min)		
Material Thickness	Force Setting (kN)	Force Setting (lbsF)
Min Grip - Mid Grip	8 - 12	1,800 - 2,700
Mid Grip - Max Grip	12 - 16	2,700 - 3,600
M8, 5/16" Recommended Installation Force (min)		
Material Thickness	Force Setting (kN)	Force Setting (lbsF)
Min - Mid Grip	11.5 - 15.5	2,600 - 3,500
Mid Grip - Max Grip	15.5 - 20	3,500 - 4,500



Suggested Assembly Torque

Thread Size	Suggested Assembly Torque	
	Inch Lbs. - Nm	
	Plated Screw Grade 5/Class 8.8	
# 6-32 UNC	12	
# 8-32 UNC	22	
# 10-24 UNC	32	
# 10-32 UNF	36	
1/4-20 UNC	75	
1/4-28 UNF	86	
5/16-18 UNC	156	
5/16-24 UNF	173	
3/8-16 UNC	276	
3/8-24 UNF	312	
M4x0.7 ISO	2.5	
M5x0.8 ISO	5.0	
M6x1.0 ISO	8.6	
M8x1.25 ISO	21.0	
M10x1.5 ISO	42.0	
M12x1.75 ISO	72.0	



Definition:

- Recommended torque for assembling a rivet nut joint with Grade 5/Class 8.8 hardware.

Contact Sherex should you require Grade 8, Class 10, or higher joint strength.

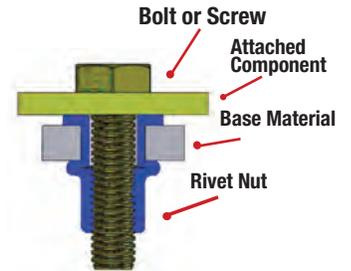
Sherex offers a wide range of products that help companies assembly products more efficiently, from fasteners to the installation tools used to install them, to vibration loosening prevention to help joints stay secure.

WHY BLIND RIVET NUTS?

Sherex 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.



Roof Rack Attachment



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.



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.



OPTISERT® RIVET NUTS

Optisert® 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.



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.



VIBRATIONAL LOOSENING PREVENTION

TEC Series® washers and Disc-Lock® washers and nuts are heavy duty, reusable, self locking fasteners designed to secure safety-critical applications against vibrational loosening.

Disc-Lock's M22 Safety Wheel Nut is used by many trucking fleets and the Department of Defense.

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

DISC-LOCK®



TECSERIES®





SHEREX FASTENING SOLUTIONS®

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