

800-236-2119 (Voice) 920-733-7461 (Fax)

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TUFTHRED - FRACTIONAL & METRIC SIZES



No tapping is required; just drill out the damaged threads using fractional or wire gauge drill bits. Then screw in the TufThred using a bolt and nut as an installation tool.

Standard TufThreds are case hardened carbon steel. They are stronger and more wear-resistant than most OEM threads. During installation they cut their own threads and lock themselves permanently in place.

ALLOY STEEL, USS & SAE SIZES

PART NUMBER	INTERNAL THREAD	LENGTH	PRICE EACH	PKG QTY	PART NUMBER	INTERNAL THREAD	LENGTH	PRICE EACH	PKG QTY
T10-04C	#4 - 40	.236	\$1.78	12	T10-24C	3/8 - 16	.709	\$4.11	12
T10-06C	#6 - 32	.315	1.80	12	T10-24F	3/8 - 24	.709	4.73	12
T10-08C	#8 - 32	.315	1.92	12	T10-28C	7/16 - 14	.866	5.88	12
T10-10C	#10 - 24	.394	2.05	12	T10-28F	7/16 - 20	.866	6.77	12
T10-10F	#10 - 32	.394	2.05	12	T10-32C	1/2 - 13	.945	6.10	12
T10-16C	1/4 - 20	.472	2.56	12	T10-32F	1/2 - 20	.945	7.04	12
T10-16F	1/4 - 28	.472	2.56	12	50-91618-I	9/16 - 18	1.000	11.77	6
T10-20C	5/16 - 18	.551	3.37	12	T10-40C	5/8 - 11	.945	10.89	6
T10-20F	5/16 - 24	.551	3.87	12	T10-40F	5/8 - 18	.945	12.50	6
					50-3410-S	3/4 - 10	1.375	17.82	6
					50-3416-S	3/4-16	1.375	24.44	6

ALLOY STEEL, METRIC SIZES

PART NUMBER	INTERNAL THREAD	LENGTH	PRICE EACH	PKG QTY	PART NUMBER	INTERNAL THREAD	LENGTH	PRICE EACH	PKG QTY
T10-M04	M4 X .7	.315	\$2.57	12	T10-M12	M12 X 1.75	.866	\$12.96	6
T10-M05	M5 X .8	.394	2.75	12	T10-M14	M14 X 2.0	.945	18.80	6
T10-M06	M6 X 1.0	.472	3.41	12	T10-M16	M16 X 2.0	.945	22.17	6
T10-M08	M8 X 1.25	.551	4.60	12	50-M1825-I	M18 X 2.5	.945	27.94	6
T10-M10	M10 X 1.5	.709	5.50	12					



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TUFTHRED - FRACTIONAL & METRIC SIZES

STAINLESS STEEL, USS & SAE SIZES

PART NUMBER	INTERNAL THREAD	LENGTH	PRICE EACH	PKG QTY	PART NUMBER	INTERNAL THREAD	LENGTH	PRICE EACH	PKG QTY
T11-06C	#6 - 32	.315	\$3.06	12	T11-24C	3/8-16	.709	\$8.57	12
52-832-S	#8 - 32	.328	3.89	12	T11-24F	3/8 - 24	.709	8.57	12
T11-10C	#10 - 24	.394	3.74	12	T11-28C	7/16 - 14	.866	11.29	12
T11-10F	#10 - 32	.394	3.74	12	52-71620-S	7/16 - 20	.784	11.29	12
T11-16C	1/4 - 20	.472	4.24	12	T11-32C	1/2 - 13	.945	14.03	12
52-1428-S	1/4 - 28	.484	4.24	12	T11-32F	1/2 - 20	.945	14.03	12
T11-20C	5/16 - 18	.551	5.08	12	T11-40C	5/8 - 11	.945	23.37	6
52-51624-S	5/16 - 24	.565	5.08	12	52-5818-S	5/8 - 18	1.125	23.37	6
					52-3410-S	3/4 - 10	1.125	31.36	6
					52-3416-S	3/4 - 16	1.375	32.30	6

STAINLESS STEEL, METRIC SIZES

PART NUMBER	INTERNAL THREAD	LENGTH	PRICE EACH	PKG QTY	PART NUMBER	INTERNAL THREAD	LENGTH	PRICE EACH	PKG QTY
T11-M04	M4 X .7	.328	\$5.98	12	T11-M10	M10 X 1.5	.678	\$12.38	6
T11-M05	M5 X .8	.394	6.55	12	52-M12175-S	M12 X 1.75	.866	16.20	6
T11-M06	M6 X 1.0	.472	7.44	12	T11-M14	M14 X 2.0	.945	20.18	6
T11-M08	M8 X 1.25	.562	8.92	12	T11-M16	M16 X 2.0	.945	37.49	6

ASSORTMENTS

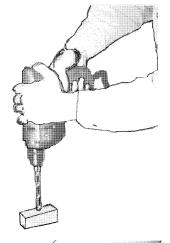
PART NUMBER	DESCRIPTION	PRICE EACH
50-ASCUS	Basic fractional, alloy steel,12 each #6-32 to #10-32, 12 each 1/4" to 1/2" coarse, steel tray.	\$336.32
50-ALCUS	Expanded fractional , alloy steel,12 each #6-32 to #10-32,12 each 1/4" to 1/2" coarse, 6 each 5/8" & 3/4" coarse, steel tray.	485.07
50-ATCUS	Large fractional, alloy steel, 12 each 1/4" to 1/2" coarse, 6 each 5/8" & 3/4" coarse, 3 each 7/8-9 & 1"-8, steel tray.	599.65
50-ALMUS	Expanded metric, alloy steel, 12 each 4mm to 10mm, 6 each 12mm to 16mm, steel tray.	453.61
52-ASCUS	Basic fractional, stainless steel, 12 each #6-32 to #10-32, 12 each 1/4" to 1/2" coarse, steel tray.	523.48
52-ALCUS	Expanded fractional, stainless steel, 12 each #6-32 to #10-32, 12 each 1/4" to 1/2" coarse, 6 each 5/8-11 & 3/4-10 thread, steel tray.	790.76
52-ALMUS	Expanded metric, stainless steel, 12 each 4mm to 8mm, 6 each 10mm to 16mm, steel tray.	654.43



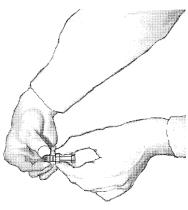
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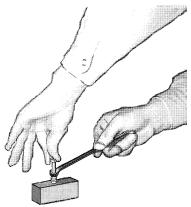
TUFTHRED - INSTALLATION INSTRUCTIONS



STEP 1. Drill out damaged threads with correct size drill bit. See the chart for bit sizes. It is important to counterbore the pilot hole in order to ensure the TUF-THRED starts cutting straight into the parent material. In certain applications, using stainless steel TUF-THREDS, it may be necessary to tap with the appropriate thread size for the external thread of the TUF-THRED being installed.



STEP 2. Select a bolt to use as an installation tool. The diameter and thread size of this bolt will be the same as the original thread size. A grade 8 bolt is preferred. Install a hex nut on the bolt turning it up the bolt until the amount of thread showing below the nut is about 3/4 of the overall length of the TUF-THRED. Now turn the TUF-THRED onto the bolt until it stops against the nut. The small holes in the TUF-THRED face the end of the bolt and must remain open for chip clearance.



STEP 3. Carefully align the TUF-THRED to the drilled hole. It is critical that the TUF-THRED be started straight. For 3/8, 7/16, 1/2, 9/16, 5/8, and 3/4" sizes, the counterbore described in step 1 insures a straight start. Using a wrench on the stop nut, turn the TUF-THRED into the hole until it is flush with the surface of the repaired item. You will feel the TUF-THRED cut its own threads as it goes in. Break the stop nut loose while holding the hex head of the bolt with another wrench. Remove the nut and bolt.

Warranty: All Heritage products are guaranteed to be free from defects. Our obligation to the user shall be to replace any items proven to be defective. User assumes responsibility for selecting the appropriate product for use and for complying with safety regulations set by OSHA and ANSI safety code B7.1, and assumes all other risks



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TUFTHRED - INSTALLATION INSTRUCTIONS

ALLOYSTEEL/USS & SAE SIZES

PART NUMBER	SIZES, INTERNAL THREAD	SIZES, EXTERNAL THREAD	INSERT LENGTH	DRILL SIZE MILD STEEL, CAST IRON	DRILL SIZE ALUMINUM, NON-FERROUS	DRILL SIZE COUNTERBORE
T10-04C	4-40	5x0.6MM	.236	3/16" (.188)	#13 (.185)	#9
T10-06C	6-32	6x0.8MM	.315	#2 (.221)	7/32" (.219)	"A"
T10-08C	8-32	6.5x0.8MM	.315	"C" (.242)	"B" (.238)	"F"
T10-10C	10-24	8x1.0MM	.394	"N" (.302)	19/64" (.297)	5/16"
T10-10F	10-32	8x1.0MM	.394	"N" (.302)	19/64" (.297)	5/16"
T10-16C	1/4-20	10x1.25MM	.472	"V" (.377)	"U" (.368)	25/64"
T10-16F	1/4-28	10x1.25MM	.472	"V" (.377)	"U" (.368)	25/64"
T10-20C	5/16-18	12x1.5MM	.551	29/64" (.453)	7/16" (.438)	31/64"
T10-20F	5/16-24	12x1.5MM	.551	29/64" (.453)	7/16" (.438)	31/64"
T10-24C	3/8-16	14x1.5MM	.709	17/32" (.531)	33/64" (.516)	9/16"
T10-24F	3/8-24	14x1.5MM	.709	17/32" (.531)	33/64" (.516)	9/16"
T10-28C	7/16-14	16x1.75MM	.866	39/64" (.609)	19/32" (.594)	41/64"
T10-28F	7/16-20	16x1.75MM	.866	39/64" (.609)	19/32" (.594)	41/64"
T10-32C	1/2-13	18x2.0MM	.945	11/16" (.688)	43/64" (.672)	23/32"
T10-32F	1/2-20	18x2.0MM	.945	11/16" (.688)	43/64" (.672)	23/32"
50-91612-I	9/16-12	13/16-12	1.000	25/32" (.781)	49/64" (.766)	13/16"
50-91618-I	9/16-18	13/16-12	1.000	25/32" (.781)	49/64" (.766)	13/16"
T10-40C	5/8-11	20x2.0MM	.945	49/64" (.766)	3/4" (.750)	51/64"
T10-40F	5/8-18	20x2.0MM	.945	49/64" (.766)	3/4" (.750)	51/64"
50-3410-S	3/4-10	1-5/64 - 10	1.375	1-1/32" (1.031)	1-1/64" (1.016)	1-5/64"
50-3416-S	3/4-16	1-5/64 - 10	1.125	1-1/32" (1.031)	1-1/64" (1.016)	1-5/64"

ALLOY STEEL / METRIC SIZES

T10-M04	M4 x .7	6.5x.08MM	.315	"C" (.242)	"B" (.238)	"F"
T10-M05	M5 x .8	8x1.0MM	.394	"N" (.302)	19/64" (.297)	5/16"
T10-M06	M6 x 1.0	10x1.25MM	.472	"V" (.377)	"U" (.368)	25/64"
T10-M08	M8 x 1.25	12x1.5MM	.551	29/64" (.453)	7/16" (.437)	31/64"
T10-M10	M10 x 1.5	14x1.5MM	.709	17/32" (.531)	33/64" (.516)	9/16"
T10-M12	M12 x 1.75	16x1.75MM	.866	39/64" (.609)	19/32" (.594)	41/64"
T10-M14	M14 x 2.0	18x2.0MM	.945	11/16" (.688)	43/64" (.672)	23/32"
T10-M16	M16 x 2.0	20x2.0MM	.945	49/64" (.766)	3/4" (.750)	51/64"
50-M1825-I	M18 x 2.5	1-5/64 - 10	1.375	1-1/32" (1.031)	1-1/64" (1.016)	1-5/64"

Notes:

Check with factory for correct pilot and counterbore hole sizes for unlisted part numbers (800-236-2119).



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OS/TUFTHRED - LARGE THREADS



Easy to install

Requires no special tooling

Repaired thread is better than original

Heritage manufacturers a wide variety of Oversize TufThreds. They are an efficient, effective way to repair large threads in heavy equipment. Made chromiumfrom molybdenum alloy steel they are hardened throughout maximum strength and load distribution. Exterior threads are rolled for superior strength. They are as hard, or harder, than even premium grade fasteners. Properly installed, they will last indefinitely. They are installed by

drilling out the old threads using standard fractional drill bits. Tap the resulting hole with a standard tap. (See chart for correct tap sizes.) Then screw in **Tuf-Thred** using a common bolt and nut as an installation tool. **Tuf-Threds** are designed to be locked in place mechanically (pinning) or with an anaerobic sealant such as Loctite #271.

Standard sizes listed work best for most applications. Heavier versions are intended to repair major damage or to replace other manufacturers soft inserts. **Thinwall TufThreds** are designed to repair threads with minimum removal of the parent metal.

Strength: Assuming proper installation, the tensile pull-out strength of TufThred inserts depends on: (1) the size of the outside thread, (2) the length of the insert, and (3) the shear strength of the parent material. All Heritage Oversize TufThred inserts are designed to provide a theoretical pull-out strength greater than a grade 8 fastener of the size of the inside thread when the insert is installed in any material with a shear strength greater than cast aluminum (26,000 psi).

Sizes other than those listed are available with with short lead times at reasonable cost.



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OS/TUFTHRED - FRACTIONAL & METRIC

ALLOY STEEL / USS & SAE SIZES

PART NUMBER	DESCRIPTION	I.D. THREAD	O.D. THREAD	LENGTH	PRICE (EACH)
231-C48A	3/4-10 (UNC) STANDARD	3/4-10	1-8	1-7/16	
231-C48B	3/4-10 (UNC) HEAVY WALL	3/4-10	1-1/4 - 7	1-7/16	
231-C48C	3/4-10 (UNC) E-Z LOCK REPLACEMENT	3/4-10	1-8	3/4	
231-C48D	3/4-10 (UNC) KEY LOCK REPLACEMENT	3/4-10	1-1/8 - 12	1-1/8	
231-C48E	3/4-10 (UNC) THINWALL	3/4-10	7/8-14	1-7/16	
231-F48A	3/4-16 (UNF) STANDARD	3/4-16	1-8	1-7/16	
231-F48B	3/4-16 (UNF) HEAVY WALL	3/4-16	1-1/4 - 7	1-7/16	
231-F48C	3/4-16 (UNF) E-Z LOCK REPLACEMENT	3/4-16	1-8	3/4	
231-F48D	3/4-16 (UNF) KEY LOCK REPLACEMENT	3/4-16	1-1/8 - 12	1-1/8	
231-F48E	3/4-16 (UNF) THINWALL	3/4-16	7/8-14	1-7/16	
231-C56A	7/8-9 (UNC) STANDARD	7/8-9	1-1/4 - 7	1-1/2	С
231-C56B	7/8-9 (UNC) THINWALL	7/8-9	1-14	1-1/2	Α
231-F56A	7/8-14 (UNF) STANDARD	7/8-14	1-1/4 - 7	1-1/2	L
231-F56B	7/8-14 (UNF) THINWALL	7/8-14	1-14	1-1/2	L
231-C64A	1-8 (UNC) STANDARD	1-8	1-3/8 - 6	2	
231-C64B	1-8 (UNC) THINWALL	1-8	1-1/4 - 12	2	
231-F64A	1-12 (UNF) STANDARD	1-12	1-3/8 - 6	2	F
231-F64B	1-12 (UNF) THINWALL	1-12	1-1/4 - 12	2	0
231-FF64A	1-14 (UNF-OLD) STANDARD	1-14	1-3/8 - 6	2	R
231-FF64B	1-14 (UNF-OLD) THINWALL	1-14	1-1/4 - 12	2	
231-C72A	1-1/8 - 7 (UNC) STANDARD	1-1/8 - 7	1-1/2 - 6	2	
231-C72B	1-1/8 - 7 (UNC) THINWALL	1-1/8 - 7	1-3/8 - 12	2	Р
231-F72A	1-1/8 - 12 (UNF) STANDARD	1-1/8 - 12	1-1/2 - 6	2	R
231-F72B	1-1/8 - 12 (UNF) THINWALL	1-1/8 - 12	1-3/8 - 12	2	C
231-C80A	1-1/4 - 7 (UNC) STANDARD	1-1/4 - 7	1-3/4 - 5	2	Ĭ
231-F80A	1-1/4 - 12 (UNÉ) STANDARD	1-1/4 - 12	1-3/4 - 5	2	N G
231-C88A	1-3/8 - 6 (UNC) STANDARD	1-3/8 - 6	1-3/4 - 5	2	G
231-C88B	1-3/8 - 6 (UNC) HEAVY WALL	1-3/8 - 6	2 - 4-1/2	2	
231-F88A	1-3/8 - 12 (UNF) STANDARD	1-3/8 - 12	1-3/4 - 5	2	
231-C96A	1-1/2 - 6 (UNC) STANDARD	1-1/2 - 6	2 - 4-1/4	3	
231-F96A	1-1/2 - 12 (UNF) STANDARD	1-1/2 - 12	2 - 4-1/4	3	
231-MC20A	20 x 2.5 MM METRIC	20 x 2.5	1-8	1-1/2	
231-MF20A	20 x 1.5 MM METRIC	20 x 1.5	1-8	1-1/2	
231-MC24A	24 x 3 MM METRIC	24 x 3	1-3/8 - 6	1-1/2	
231-MF24A	24 x 2 MM METRIC	24 x 2	1-3/8 - 6	1-1/2	
231-MFF24A	24 x 1.5 MM METRIC	24 x 1.5	1-3/6 - 6	1-1/2	



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OS/TUFTHRED - INSTALLATION INSTRUCTIONS

STEP 1. Drill out damaged threads with correct size drill bit. See the following chart for bit sizes.

STEP 2. Tap the drilled hole with a standard tap of the correct diameter (See chart following page). Clean the resulting tapped hole with a non-residue degreasing cleaner.

STEP 3. Select a bolt to use as an installation tool. The diameter and thread size of this bolt will be the same as the original thread. A grade 8 bolt is preferred. Install a hex nut on the bolt turning it up the bolt until the amount of thread showing on the bolt is about equal to the overall length of the **Tuf-Thred**. Now turn the **Tuf-Thred** onto the bolt until it stops against the nut.

STEP 4. If you plan to use an anaerobic sealant (such as Loctite #271) as a locking device, clean the outside threads of the **Tuf-Thred** with a non-residue degreasing cleaner and coat these threads with sealer now. Be careful that none of the sealer gets on the inside threads now or during insertion.

STEP 5. Using a wrench on the hex nut, turn the **Tuf-Thred** into the hole until it is flush with the surface of the repaired item. Break the nut loose while holding the hex head of the bolt with another wrench. Remove the nut and bolt. If an anaerobic sealant has been used as a locking device, allow 24 hours at room temperature for curing before reassembling.



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<i>TUFTH</i>	RED - INSTALLATIO	ON IN	STRL	CTIONS
	ALLOY STEEL / USS & SA	AE SIZES		
PART NUMBER	DESCRIPTION	DRILL	SIZE	TAP SIZES
231-C48A	3/4-10 (UNC) STANDARD	7/8 (.8	59)	1-8
231-C48B	3/4-10 (UNC) HEAVY WALL	1-7/64 (1	.109)	1-1/4 - 7
231-C48C	3/4-10 (UNC) E-Z LOCK REPLACEMENT	7/8 (.8		1-8
231-C48D	3/4-10 (UNC) KEY LOCK REPLACEMENT	1-3/64 (1	,	-1/8 - 12
231-C48E	3/4-10 (UNC) THINWALL	13/16 (.8		7/8-14
231-C48G	3/4-10 (UNC) HEAVY WALL	1-11/32 (1		1-1/2 - 6
231-F48A 231-F48B	3/4-16 (UNF) STANDARD 3/4-16 (UNF) HEAVY WALL	7/8 (.8! 1-7/64 (1		1-8 1-1/4 - 7
231-F48C	3/4-16 (UNF) E-Z LOCK REPLACEMENT	7/8 (.8		1-1/4 - 7
231-F48D	3/4-16 (UNF) KEY LOCK REPLACEMENT	1-3/64 (1		-1/8 - 12
231-F48E	3/4-16 (UNF) THINWALL	13/16 (.8		7/8-14
231-C56A	7/8-9 (UNC) STANDARD	1-7/64 (1	.109)	1-1/4 - 7
231-C56B	7/8-9 (UNC) THINWALL	15/16 (.9	938)	1-14
231-F56A	7/8-14 (UNF) STANDARD	1-7/64 (1		1-1/4 - 7
231-F56B	7/8-14 (UNF) THINWALL	15/16 (.9	938)	1-14
231-C64A	1-8 (UNC) STANDARD	1-7/32 (1		1-3/8 - 6
231-C64B	1-8 (UNC) THINWALL	1-11/16 (1		-1/4 - 12
231-F64A	1-12 (UNF) STANDARD	1-7/32 (1	,	1-3/8 - 6
231-F64B	1-12 (UNF) THINWALL	1-11/64 (1		-1/4 - 12
231-FF64A	1-14 (UNF-OLD) STANDARD	1-7/32 (1		1-3/8 - 6
231-FF64B	1-14 (UNF-OLD) THINWALL	1-11/64 (1	1.172) 1	-1/4 - 12
231-C72A	1-1/8 - 7 (UNC) STANDARD	1-11/32 (1		1-1/2 - 6
231-C72B	1-1/8 - 7 (UNC) THINWALL	1-5/16 (1		-3/8 - 12
231-F72A	1-1/8 - 12 (UNF) STANDARD	1-11/32 (1		1-1/2 - 6
231-F72B	1-1/8 - 12 (UNF) THINWALL	1-5/16 (1	.313) 1	-3/8 - 12
231-C80A	1-1/4 - 7 (UNC) STANDARD	1-9/16 (1	.563)	1-3/4 - 5
231-F80A	1-1/4 - 12 (UNF) STANDARD	1-9/16 (1	.563)	1-3/4 - 5
231-C88A	1-3/8 - 6 (UNC) STANDARD	1-9/16 (1	.563)	1-3/4 - 5
231-C88B	1-3/8 - 6 (UNC) HEAVY WALL	1-13/16 (1		2 - 4-1/2
231-F88A	1-3/8 - 12 (UNF) STANDARD	1-9/16 (1	.563)	1-3/4 - 5
231-C96A	1-1/2 - 6 (UNC) STANDARD	1-13/16 (1		2 - 4-1/4
231-F96A	1-1/2 - 12 (UNF) STANDARD	1-13/16 (1	1.813)	2 - 4-1/4
231-MC20A	20 x 2.5 MM METRIC	7/8 (.8	59)	1-8
		:	:	
231-MF20A	20 x 1.5 MM METRIC	7/8 (.8	59)	1-8
231-MF20A 231-MC24A	20 x 1.5 MM METRIC 24 x 3 MM METRIC	•	·	1-8 1-3/8 - 6
		7/8 (.89 1-7/32 (1 1-7/32 (1	.219)	