

AudiTORX® Drive



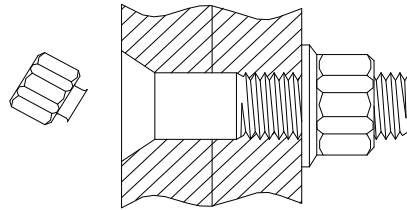
Benefits

- High Tensile Strength
- Tamper Resistant
- Easy access at repair facilities

Industry Applications

- Rail Car Builders
- Bogie Manufacturers
- Mining

Camrail bolts® with an AudiTorx drive are assembled using a special Torx drive tools. The AudiTorx drive will shear off when the proper torque is achieved when installed with the camrail flange lock nut.



1.) Manufacture: Camrail bolts are manufactured in accordance with the latest revision of the following industry standards:

SAE J429	Material and Physical Properties
ASME B1.1	Thread Requirements
SAE J122	Surface Discontinuities
ASME B18.18.1	Inspection and Quality Assurance for General Purpose Fasteners

2.) Threads: Threads are made to the requirements of ANSI B1.1 Unified Threads, 2A Fit. Thread acceptance shall be based on ANSI B1.3, System 21.

3.) Material and Physical Properties: Made from alloy steel as specified by SAE J429 for Grade 8.

Chemical Composition Requirements (with addition of alloying elements)

	Carbon (C)		Phosphorus (P)	Sulfur (S)
	Min	Max	Max	Max
SAE J429 Gr 8	0.28	0.55	0.030	-

Hardness	
Core	Rc 33 – 39

Tensile Strength:	150,000 psi min
Yield Strength:	130,000 psi min
Proof Load Strength:	120,000 psi min

4.) Finish: Plain with Cam Koat® lubricant.

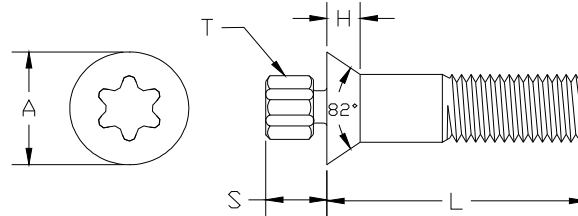
Camrail Bolt, AudiTorx, and CamKoat are registered trademarks of Accument

Camrail Bolts

with AudiTORX Drive Specifications

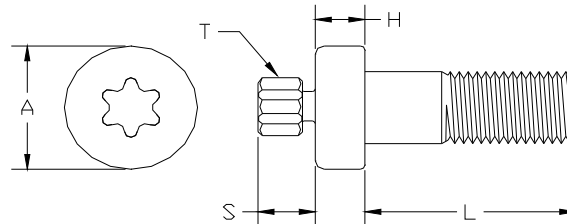
Camrail bolts with an external drive AudiTorx are available on six head styles (Flat, Pan, Truss, Oval, High Oval and Dome).

Flat Head with AudiTorx Drive



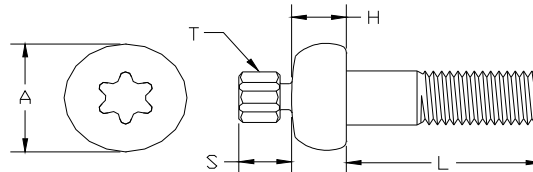
Size	Length L	Head Dia A		Head Height H	AudiTorx Drive Size T	AudiTorx Height S
		max	min	ref		
3/4 – 10	2 3/8	1.285	1.210	.372	E-20	5/8
3/4 – 10	2 5/8	1.285	1.210	.372	E-20	5/8
3/4 – 10	3 1/4	1.285	1.210	.372	E-20	5/8
3/4 – 10	3 3/4	1.285	1.210	.372	E-20	5/8
7/8 – 9	3 1/2	1.420	1.350	.465	E-20	5/8
7/8 – 9	4	1.420	1.350	.465	E-20	5/8

Pan Head with AudiTorx Drive

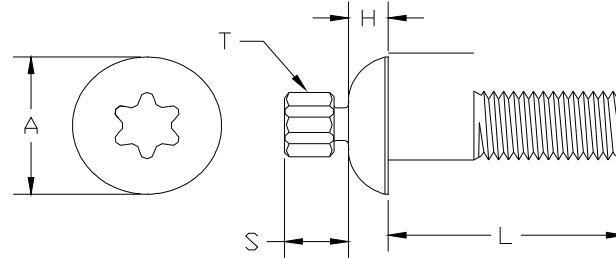


Size	Length L	Head Dia A		Head Height H	AudiTorx Drive Size T	AudiTorx Height S
		max	min	ref		
7/8 – 9	2 1/2	1.475	1.390	.558	E-20	5/8
7/8 – 9	3	1.475	1.390	.558	E-20	5/8
7/8 – 9	3 1/2	1.475	1.390	.558	E-20	5/8
7/8 – 9	4	1.475	1.390	.558	E-20	5/8
7/8 – 9	4 1/2	1.475	1.390	.558	E-20	5/8

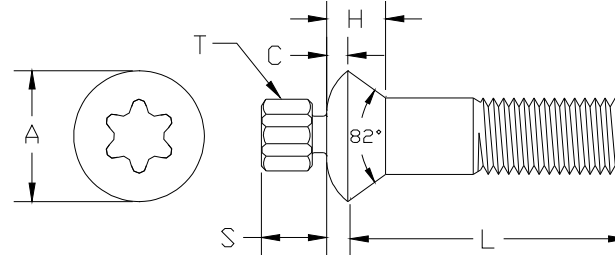
Dome Head with AudiTorx Drive



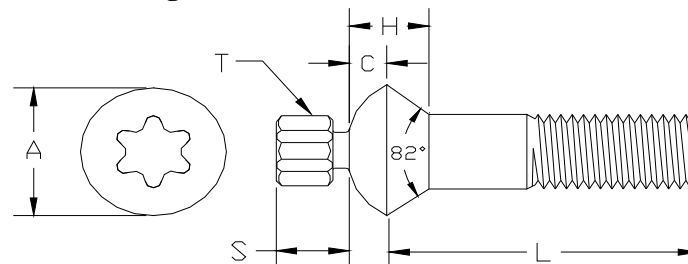
Size	Length L	Head Dia A		Head Height H	AudiTorx Drive Size T	AudiTorx Height S
		max	min	ref		
7/8 - 9	3 1/4	1.425	1.375	.580	E-20	5/8

Truss Head with AudiTorx Drive


Size	Length L	Head Dia A		Head Height H		AudiTorx Drive Size T	AudiTorx Height S
		max	min	ref			
5/8 - 11	2 1/4	1.323	1.269	.345		E-20	5/8
5/8 - 11	3 1/4	1.323	1.269	.345		E-20	5/8
3/4 - 10	2	1.573	1.511	.410		E-20	5/8
3/4 - 10	2 1/4	1.573	1.511	.410		E-20	5/8
3/4 - 10	2 3/4	1.573	1.511	.410		E-20	5/8

Oval Head with AudiTorx Drive


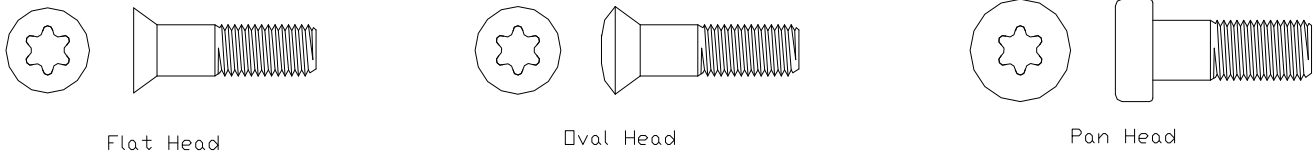
Size	Length L	Head Dia A		Head Height H		AudiTorx Drive Size T	AudiTorx Height S
		max	min	ref	ref		
7/8 - 9	3 1/2	1.568	1.425	.525	.140	E-20	5/8
7/8 - 9	4	1.568	1.425	.525	.140	E-20	5/8

High Oval Head with AudiTorx Drive


Size	Length L	Head Dia A		Head Height H		AudiTorx Drive Size T	AudiTorx Height S
		max	min	ref	ref		
7/8 - 9	3 1/2	1.568	1.425	.525	.220	E-20	5/8

Camrail bolts made with an internal Torx drive are designed for ease of assembly and are available in three head styles – Flat, Pan and Oval.

TORX Drive



Benefits

- High Tensile Strength
- Approved for use at freight car repair facilities

Industry Applications

- Rail Car Builders
- Bogie Manufacturers
- Mining

1.) Manufacture: Camrail bolts are manufactured in accordance with the latest revision of the following industry standards:

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ASME B1.1	Thread Requirements
SAE J122	Surface Discontinuities
ASME B18.18.1	Inspection and Quality Assurance for General Purpose Fasteners

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3.) Material and Physical Properties: Made from alloy steel as specified by SAE J429 for Grade 8.

Chemical Composition Requirements (with addition of alloying elements)

	Carbon (C)		Phosphorus (P)	Sulfur (S)
	Min	Max	Max	Max
SAE J429 Gr 8	0.28	0.55	0.030	-

Hardness

	Hardness
Core	Rc 33 – 39

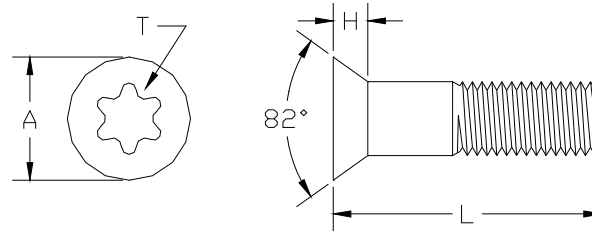
Tensile Strength: 150,000 psi min

Yield Strength: 130,000 psi min

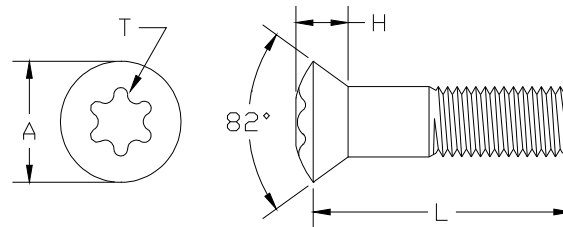
Proof Load Strength: 120,000 psi min

4.) Finish: Plain with Cam Coat® lubricant.

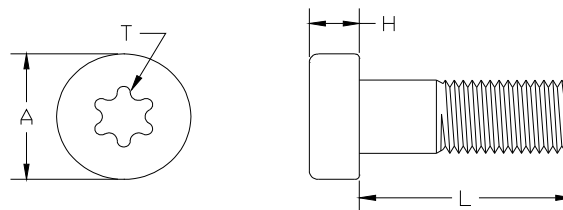
Camrail Bolts with an internal drive Torx drive are available on three head styles (Flat, Oval, and Pan).

Flat Head with Torx Drive


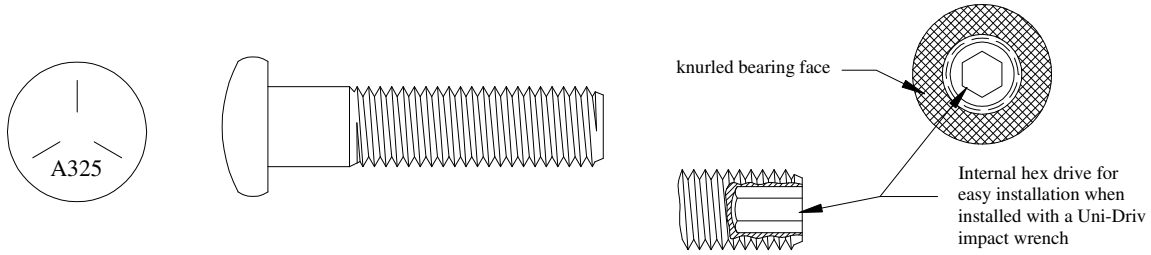
Size	Length L	Head Dia A		Head Height H	Torx Drive Size T
		max	min	ref	
3/4 - 10	2 5/8	1.285	1.210	.372	TX-70
3/4 - 10	3	1.285	1.210	.372	TX-70
3/4 - 10	3 1/4	1.285	1.210	.372	TX-70
3/4 - 10	3 3/4	1.285	1.210	.372	TX-70
3/4 - 10	4 1/2	1.285	1.210	.372	TX-70

Oval Head with Torx Drive


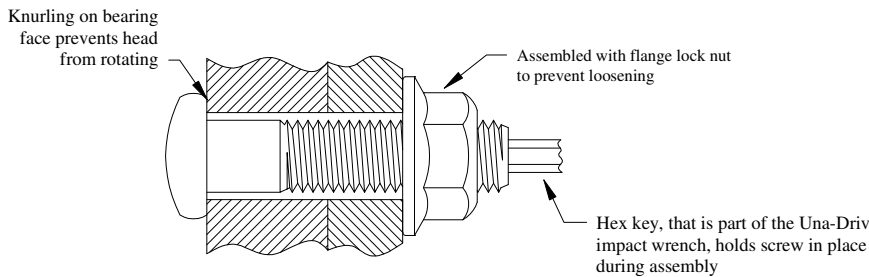
Size	Length L	Head Dia A		Head Height H	Torx Drive Size T
		max	min	ref	
7/8 - 9	3 1/2	1.450	1.350	.690	TX-90
7/8 - 9	4	1.450	1.350	.690	TX-90
7/8 - 9	4 1/2	1.450	1.350	.690	TX-90

Pan Head with Torx Drive


Size	Length L	Head Dia A		Head Height H	Torx Drive Size T
		max	min	ref	
7/8 - 9	3 1/4	1.475	1.390	.558	TX-90



Una-Driv™ bolts are manufactured with an internal hex socket drive in the threaded end to permit tightening on one side of the assembly. The Una-Driv fastener assembly is commonly used in the locomotive industry for maintenance and repair on rail cars. The serrations under the head also ensure easy assembly. The regular button head design distributes the load over a large area for added joint strength. The Una-Driv impact wrench is designed to hold the bolt in place while tightening with the Una-Driv Flange Lock Nut.

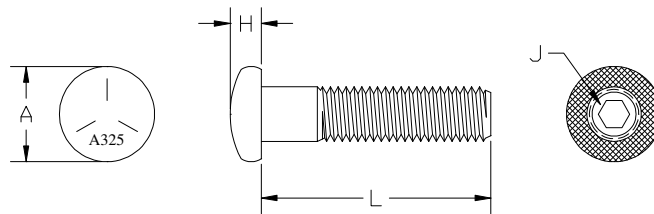


Una-Driv Impact Wrench

Made from carbon or alloy steel meeting the requirements of ASTM A325 and SAE J429 for Grade 5.

Tensile Strength: 120,000 psi min
 Yield Strength: 92,000 psi min
 Proof Load Strength: 85,000 psi min
 Core Hardness Rc 25 – 34

Finish: Phos and Oil



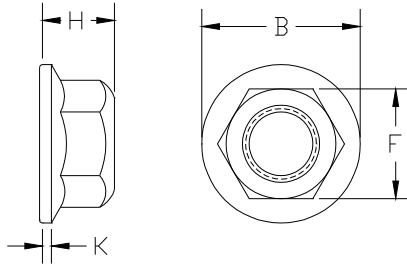
Size	Length L	Head Dia A		Head Height H	Hex Drive Size T
		max	min	ref	
5/8 – 11	1 1/2	1.125	1.050	.360	5/16
5/8 – 11	1 3/4	1.125	1.050	.360	5/16
5/8 – 11	2	1.125	1.050	.360	5/16
5/8 – 11	2 1/4	1.125	1.050	.360	5/16
5/8 – 11	2 1/2	1.125	1.050	.360	5/16
5/8 – 11	3	1.125	1.050	.360	5/16
3/4 – 10	2 1/2	1.350	1.275	.410	3/8
3/4 – 10	3	1.350	1.275	.410	3/8
7/8 – 9	2 1/2	1.600	1.500	.490	3/8
7/8 – 9	3	1.600	1.500	.490	3/8

Una-Driv Flange Lock Nuts are designed to be used with Una Driv bolts to ensure proper clamp load is achieved.

The locking feature in the top section of the nut resists loosening.

Una-Driv flange lock nuts are made to exceed the strength of the Una Driv bolts they are designed to be used with.

Proof Load Strength: 120,000 psi min
 Hardness: Rc 36 max



Size	WAF F	Flange Dia B		Head Height H	Flange Thickness K
		max	min	ref	min
5/8 – 11	15/16	1.330	1.250	.650	.100
3/4 – 10	1 1/8	1.585	1.460	.775	.110
7/8 – 9	1 5/16	1.900	1.750	.910	.130

Una-Driv is a registered trademark of BBC Fasteners