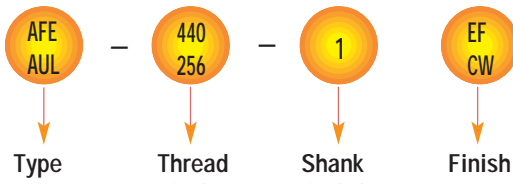


MINIATURE SELF-CLINCHING FASTENERS

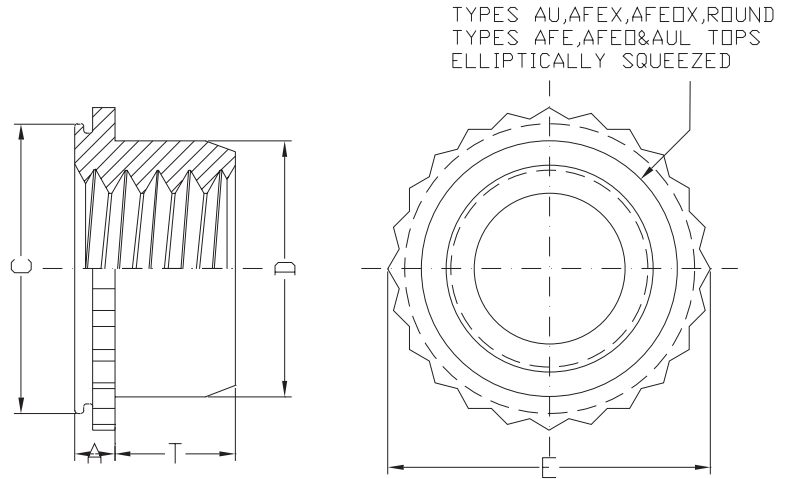
TYPES AU,AUL,AFE,AFEO,AFEOX,AFEX



Part Number Designation



*This suffix applicable only to types AU and AUL fasteners



Part No: AFEO-M5 Sheet Thickness: 0.99-1.14
Description: Miniature Self-Clinching Fasteners
Min. Dist. Hole C/L To Edge: 5.200
Hole Size In Sheet: 7.400 +.08

UNIFIED (Inch)	Thread Size	Type		Thread Code	Shank Code	A Max.	Sheet Thickness (1)	Hole Size In Sheet +.003 -0.000	C +.000 -0.005	D Max.	E ±.005	T +.015 -0.000	Weight Lbs./K	Min. Dist. Hole C/L To Edge	Max. Hole In Attached Parts
		Non-locking(2)	Self-locking												
UNIFIED (Inch)	.060-80 (#0-80)	AU	AUL	080	0	.020	.019-.022	.110	.1095	.076	.125	.050	.068	.09	.080
	.073-64 (#1-64)	AU	AUL	164	0	.020	.019-.022	.110	.1095	.090	.125	.050	.070	.09	.093
	.086-56 (#2-56)	AU	AUL	256	0	.020	.019-.022	.144	.1435	.106	.160	.065	.125	.11	.106
						.031	.030-.036						.184		
	.112-40 (#4-40)	AFEOX	AFEO	440	(4)	.040	.039-.045	.172	.171	.145	.192	.065	.31	.14	.132
						.060	.059-.070						.37		
	.138-32 (#6-32)	AFEOX	AFEO	632	(4)	.040	.039-.045	.213	.212	.180	.244	.075	.47	.17	.158
						.060	.059-.070						.68		
	.164-32 (#8-32)	AFEOX	AFEO	832	(4)	.040	.039-.045	.290	.289	.215	.322	.090	.98	.20	.184
						.060	.059-.070						1.24		
	.190-32 (#10-32)	AFEOX	AFEO	032	(4)	.040	.039-.045	.290	.289	.245	.322	.110	1.04	.20	.210
						.060	.059-.070						1.20		
	1/4-20	AFEX	AFE	0420	(4)	.060	.059-.070	.344	.343	.318	.384	.120	2.08	.28	.270
	1/4-28			0428									1.58		

METRIC (mm)	Thread Size x Pitch	Type		Thread Code	Shank Code	A Max.	Sheet Thickness (1)	Hole Size In Sheet +0.08	C -0.13	D Max.	E ±0.13	T +0.4	Weight Kg./K	Min. Dist. Hole C/L To Edge	Max. Hole In Attached Parts
		Non-locking(3)	Self-locking												
METRIC (mm)	M2 X 0.4	AU	AUL	M2	1	0.76	0.76-0.91	3.61	3.6	2.5	4.07	1.65	0.08	2.8	2.5
		1.02	0.99-1.14			0.13									
	M3 X 0.5	AFEOX	AFEO	M3	(4)	1.53	1.5-1.78	4.39	4.37	3.96	4.88	1.9	0.17	3.6	3.5
		1.02	0.99-1.14			0.5									
	M4 X 0.7	AFEX	AFE	M4	(4)	1.53	1.5-1.78	7.39	7.37	5.23	8.17	2.55	0.54	5.2	4.5
		1.02	0.99-1.14			0.55									
	M5 X 0.8	AFEOX	AFEO	M5	(4)	1.53	1.5-1.78	7.39	7.37	6.48	8.17	3.05	0.59	5.2	5.5
		1.53	1.5-1.78			0.59									
	M6 X 1	AFEX	AFE	M6	(4)	1.53	1.5-1.78	8.74	8.72	7.72	9.74	3.3	0.95	7.1	6.5

- (1) In applications between the sheet thicknesses for your thread size, see last paragraph of installation data .
- (2) 2B Go Gauge may stop at barrel end but class 3A screw will pass thru with finger torque.
- (3) 6H Gauge may stop at barrel but 4h screw will pass thru with finger torque.
- (4) Not Applicable.

MINIATURE SELF-CLINCHING FASTENERS



TYPES AU,AUL,AFE,AFE0,AFE0X,AFEX

PERFORMANCE DATA ⁽¹⁾

UNIFIED (inch)	Type	Thread Code	Shank Code	Max. Rec. Tightening Torque (in. lbs.) ⁽²⁾	Type UL Locking Torque (in. oz.) ⁽³⁾	Test Sheet Material					
						5052-H34 Aluminum			Cold-rolled Steel		
						Installation (lbs.)	Pushout (lbs.)	Torque-out (in. lbs.)	Installation (lbs.)	Pushout (lbs.)	Torque-out (in. lbs.)
	AU & AUL	080	0	1	1 To 12	750	20	2	1000	30	2
		164	0	1.1	2 To 16	750	20	3	1000	30	3
	256	0	1.8	3 To 24	1000	20	4	1300	30	4	
		1	3								

METRIC (mm)	Type	Thread Code	Shank Code	Max. Rec. Tightening Torque (N•m) ⁽²⁾	Type UL Locking Torque (N•m) ⁽³⁾	Test Sheet Material					
						5052-H34 Aluminum			Cold-rolled Steel		
						Installation (kN)	Pushout (N)	Torque-out (N•m)	Installation (kN)	Pushout (N)	Torque-out (N•m)
	AU & AUL	M2	1	.3	0.02-0.2	4	89	0.45	5.8	133	0.45

- (1) The values above are representative of pushout and torque-out resistance between the shank of the fastener and the sheet. The installation, pushout and torque-out values reported are averages when all installation specifications and procedures are followed. Variations in mounting hole size, sheet material and installation procedure will affect this data. These torques will ensure that induced preload will not exceed shear strength of knurled collar. Performance testing of this product in your application is recommended. We will be happy to provide samples for this purpose.
- (2) These torques consider nut strength only. User must consider screw strength also. When type AU/AUL is installed in sheets thicker than .025" / 0.64 mm, tightening torque must be controlled so that induced preload does not exceed these values.
- (3) The maximum locking torque and the minimum breakaway will fall within these values for five cycles when tested in accordance with the locking torque test procedure specified in NASM25027.
- (4) Consult our Engineering department or visit our web site for details on EF and MD finish specifications.

UNIFIED (inch)	Type	Thread Code	Max. Rec. Tightening Torque (in. lbs.) ⁽²⁾	Test Sheet Material					
				5052-H34 Aluminum			Cold-rolled Steel		
				Installation (lbs.)	Pushout (lbs.)	Torque-out (in. lbs.)	Installation (lbs.)	Pushout (lbs.)	Torque-out (in. lbs.)
	AFE0, AFE0X	440	6.3	900	88	12	1500	140	12
			10		135	12		210	12
	AFE0, AFE0X	632	10	1200	105	20	2100	185	20
			15	1300	175	255	2500	260	48
	AFE0, AFE0X	832	16	1500	155	48	2500	360	48
			25		255	48		360	48
	AFE0, AFE0X	032	19	1500	155	48	2500	260	48
			30		255	48		360	48
	AFE, AFEX	0420	45	2100	320	110	3500	420	110

METRIC (mm)	Type	Thread Code	Max. Rec. Tightening Torque (N•m) ⁽²⁾	Test Sheet Material					
				5052-H34 Aluminum			Cold-rolled Steel		
				Installation (kN)	Pushout (N)	Torque-out (N•m)	Installation (kN)	Pushout (N)	Torque-out (N•m)
	AFE0, AFE0X	M3	.76	4	391	1.35	6.7	622	1.35
			1.13		600	934			
	AFE0, AFE0X	M4	1.8	6.7	689	5.42	11.1	1156	5.42
			2.8		1134	1601			
	AFE0, AFE0X	M5	2.2	6.7	689	5.42	11.1	1156	5.42
			3.5		1134	1601			
AFE, AFEX	M6	4.8	9.4	1423	12.43	15.6	1868	12.43	

- (1) The values above are representative of pushout and torque-out resistance between the shank of the fastener and the sheet. The installation, pushout and torque-out values reported are averages when all installation specifications and procedures are followed. Variations in mounting hole size, sheet material and installation procedure will affect this data. Performance testing of this product in your application is recommended. We will be happy to provide samples for this purpose.
- (2) These torques will ensure that induced preload will not exceed shear strength of knurled collar. These torques consider nut strength only. User must consider screw strength also. When type AFE/AFEX is installed in sheets thicker than .070" / 1.78 mm or when type AFE0/AFE0X is installed in sheets thicker than .045" / 1.14 mm, tightening torque must be controlled so that induced preload does not exceed these values.

MINIATURE SELF-CLINCHING FASTENERS



MATERIAL & FINISH SPECIFICATIONS

Type	Threads		Thread Locking Performance	Fastener Material	Standard Finishes			Optional Finish	For Use In Sheet Hardness:
	Internal, ANSI B1.1, 2B / ANSI / ASME B1.13M, 6H	Internal, MIL-S-8879, UNJ-3B, ANSI B1.21M, MJ 4H6H 4H5H (M6 thread)	NASM25027 (as applicable)	303 Stainless Steel	Passivated and/or Tested Per ASTM A380	Passivated Plus Clear Dy-film Lubricant	Black Dy-film Lubricant Per MIL-L-0046010, Over Cadmium Chromate Prime	Black Dry-film Lubricant	70 or Less on the Rockwell "B" Scale
AU	•			•	•				•
AUL		•		•		•			•
AFE		•	•	•			•	•	•
AFEX	•			•	•				•
AFEO		•	•	•			•	•	•
AFE0X	•			•	•				•
Part number codes for finishes					None	CW	EF ⁽⁴⁾	MD ⁽⁴⁾	

INSTALLATION

1. Punch or drill properly sized mounting hole in sheet. Do not perform any secondary operations such as deburring.
2. Place shank of fastener into mounting hole, preferably the punch side.
3. With punch and anvil surfaces parallel, apply squeezing force until knurled collar is flush with top of the sheet for sheets .060" / 1.5 mm thick and up, or until shank is flush with the bottom of the sheet for sheets .040" / 1 mm to .060" / 1.5 mm thick for type AFE/AFEO.

