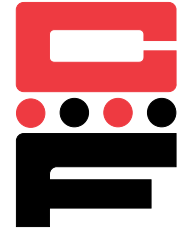
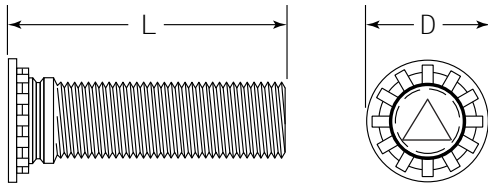


# Self-Clinching Studs

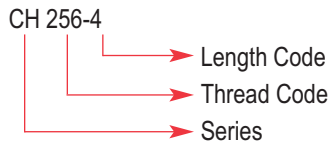
## Series CH, CHS & CHA



CH studs provide a strong flush-head assembly in material as thin as .040 in. (1.0 mm) with high torque-out and pushout performance.



Part Number Structure:



Series	Material	Finish
CH	Heat-treated Carbon Steel	Zinc* Clear
CHS	300 Series Stainless Steel	Passivated ASTM A967
CHA	2024-T4 Aluminum	None

\*See Finish Spec. on Page 6.

Thread: External 2A, ANSI B1.1 (6g ANSI/ASME B1.13M).\*\*

Use in: CH- Materials with HRB-80 or less.

CHS- Materials with HRB-70 or less.

CHA- Materials with HRB-50 or less.

\*\*See Note 3 on Page 6 for Gauging Spec.

### Dimensions & Specifications

INCH (in.)	Thread Size	Thread Code	L Length $\pm 0.015$ in.										D $\pm 0.015$	Max. Hole in Attached Part +0.003 -0.000	Min.	Min.	
			.250	.312	.375	.500	.625	.750	.875	1.00	1.25	1.50					
	#2-56	256	-4	-5	-6	-8	-10	-12 <sup>†</sup>					.144	.085	.105	.187	.040
	#4-40	440	-4	-5	-6	-8	-10	-12	-14	-16 <sup>†</sup>	-20		.176	.111	.135	.219	.040
	#6-32	632	-4	-5	-6	-8	-10	-12	-14	-16	-20	-24 <sup>†</sup>	.206	.137	.160	.250	.040
	#8-32	832	-4	-5	-6	-8	-10	-12	-14	-16	-20	-24 <sup>†</sup>	.237	.163	.185	.281	.040
	#10-24	1024		-5 <sup>†</sup>	-6	-8	-10	-12	-14	-16	-20	-24 <sup>†</sup>	.256	.189	.210	.281	.040
	#10-32	1032		-5 <sup>†</sup>	-6	-8	-10	-12	-14	-16	-20	-24	.256	.189	.210	.281	.040
	1/4-20	420			-6	-8	-10	-12	-14	-16	-20	-24	.337	.249	.270	.312	.062
	5/16-18	518				-8	-10	-12	-14	-16	-20	-24	.376	.311	.333	.375	.093

† Not stocked, available on special order.

†† For aluminum studs, values are 60% of those listed.

### Dimensions & Specifications

METRIC (mm)	Thread Size	Thread Code	L Length $\pm 0.4$ mm													D $\pm 0.4$	Max. Hole in Attached Part +0.08 -0.00	Min.	Min.		
			6	8	10	12	15	18	20	22	25	28	30	35	38						
	M2.5x0.45	M2.5	-6 <sup>†</sup>	-8 <sup>†</sup>	-10 <sup>†</sup>	-12 <sup>†</sup>	-15 <sup>†</sup>	-18 <sup>†</sup>									4.1	2.5	3.1	5.4	1.0
	M3x0.5	M3	-6 <sup>†</sup>	-8	-10	-12	-15	-18	-20	-22	-25						4.6	3.0	3.6	5.6	1.0
	M3.5x0.6	M3.5	-6	-8	-10	-12	-15	-18	-20	-22	-25	-28	-30				5.3	3.5	4.1	6.4	1.0
	M4x0.7	M4	-6 <sup>†</sup>	-8	-10	-12	-15	-18	-20	-22	-25	-28	-30	-35	-38		5.9	4.0	4.6	7.2	1.0
	M5x0.8	M5		-8 <sup>†</sup>	-10	-12	-15	-18	-20	-22	-25	-28	-30	-35	-38		6.5	5.0	5.6	7.2	1.0
	M6x1.0	M6			-10	-12	-15	-18	-20	-22	-25	-28	-30	-35	-38		8.2	6.0	6.6	7.9	1.6
	M8x1.25	M8				-12 <sup>†</sup>	-15	-18	-20	-22	-25	-28	-30	-35	-38		9.6	8.0	8.6	9.6	2.4

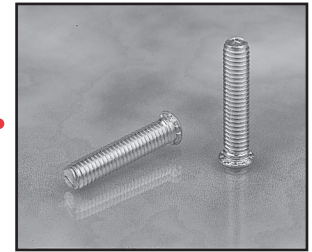
Note: Studs are available in lengths up to 3 in. (76.2 mm) upon special order for 1/4-20/M6 and larger.

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# Self-Clinching Studs

## Series CH, CHS & CHA

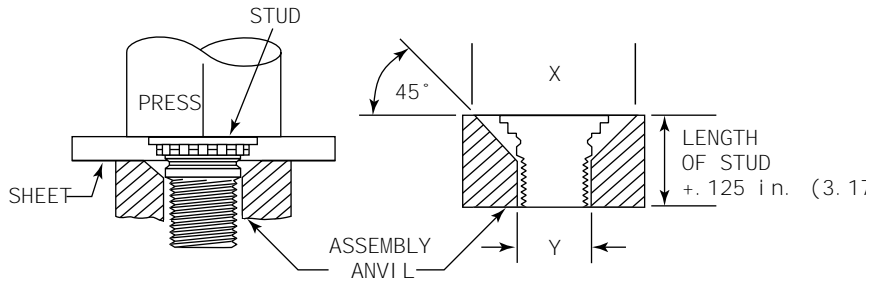


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### TOOLING

#### Note 1.

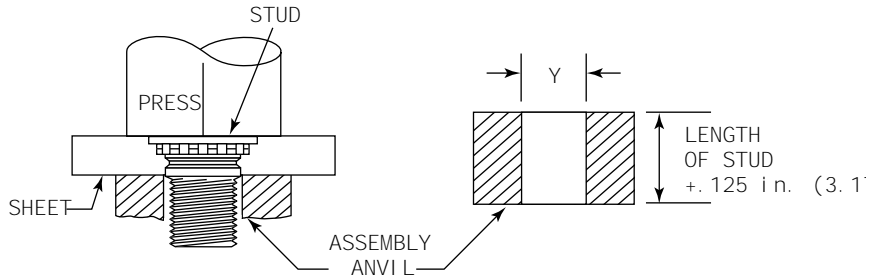
For material thickness of .059 in. or less, a countersunk hole is needed in the anvil.



Tooling for sheet thickness .059 in. (1.51mm) and less with #10 (M5) thread sizes and less than .093 in. (2.3mm) for 1/4

#### Note 2.

For material thickness of .060 in. or more, a through-hole is needed in the anvil.

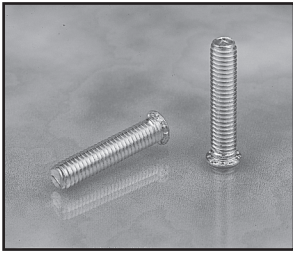


Tooling for sheet thickness .060 in. (1.51mm) minimum and greater with #2 (M2.5) thru #10 (M5) thread sizes and .092 in. (2.3mm) and greater for 1/4 in. (M6) and 5/16 in. (M8) threads.

Thread Code	Anvil Dimensions (in.)	
	X +.004	Y +.003
256	.110	.087
	.114	.090
440	.136	.113
	.140	.116
632	.162	.139
	.166	.142
832	.188	.165
	.192	.168
1024	.216	.191
	.220	.194
1032	.216	.191
	.220	.194
420	.295	.250
	.300	.253
518	—	.3125
	—	.3155

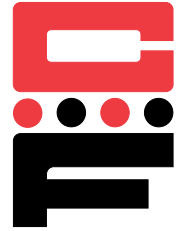
Thread Code	Anvil Dimensions (mm)	
	X +.1	Y +.08
M2.5	3.1	2.50
M3	3.6	3.00
M3.5	4.1	3.50
M4	4.6	4.00
M5	5.6	5.00
M6	6.6	6.00
M8	—	8.00

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# Self-Clinching Studs













## Series CH, CHS & CHA



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Note: Values based on stainless steel studs (steel studs values may be higher).

### Installation & Performance Data

							
	Thread Code	Rec. Nut Tightening (in.-lbs)	Sheet Thickness & Material	Installation Force (lbs.)	Pushout (lbs.)	Torque out (in.-lbs.)	Pull Thru (lbs)
INCH (in.)	256	4.4	.062 Aluminum	2000	100	5	425
		4.4	.060 Steel	2500	180	5	425
	440	8.7	.064 Aluminum	3800	170	10	650
		8.7	.060 Steel	4300	275	10	650
	632	14	.064 Aluminum	3800	180	17	850
		14	.060 Steel	4700	300	20	850
	832	20	.064 Aluminum	4800	220	28	1000
		25	.060 Steel	6800	375	40	1270
	1024 1032	28	.064 Aluminum	5588	270	30	1220
		32	.060 Steel	6800	440	60	1410
420	69	.093 Aluminum	6500	310	65	2300	
	77	.088 Steel	9500	585	100	2550	
518	85	.093 Aluminum	6500	430	100	2260	
	130	.093 Steel	10000	650	175	3475	
							
	Thread Code	Rec. Nut Tightening (N·m)	Sheet Thickness & Material	Installation Force (kN)	Pushout (N)	Torque-out (N·m)	Pull Thru (N)
METRIC (mm)	M2.5	0.78	1.6 Aluminum	8.9	465	1	2600
		0.84	1.5 Steel	11.1	740	1	2800
	M3	1.1	1.6 Aluminum	12.9	600	1.7	3150
		1.4	1.5 Steel	14.7	820	1.7	3840
	M3.5	1.6	1.6 Aluminum	15.6	800	1.7	3780
		1.6	1.5 Steel	22.3	1335	2.8	3780
	M4	2.1	1.6 Aluminum	20	975	2.9	4448
		2.7	1.5 Steel	28.9	1780	4.2	5650
	M5	3.1	1.6 Aluminum	24.5	1070	3.5	5170
		3.8	1.5 Steel	33.4	2000	6.5	6270
	M6	7.3	2.4 Aluminum	28.9	1660	7.3	10200
		8.1	2.2 Steel	44.5	2560	11.3	11300
	M8	10	2.4 Aluminum	29.8	1910	11.3	10500
		15	2.2 Steel	44.5	2890	19.2	15450