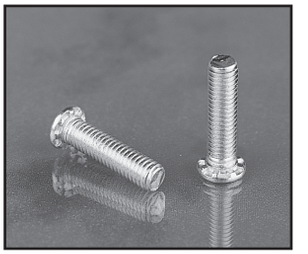
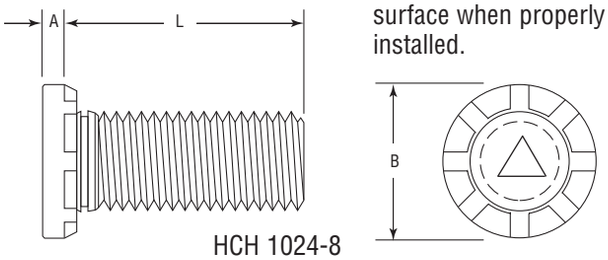
Self-Clinching Studs

Series HCH, HCHS & HCHB (High-Torque)



HCH high-torque studs offer advantages over weld studs and other fasteners. The heavy head configuration provides greater torque-out and improved pull-through resistance.

Phospher Bronze studs provide excellent electrical conductivity and mechanical attachment in copper. The head of the stud will remain above the surface when properly installed.



Part Number Structure:

HCH 1024-8

- Length Code
- Thread Code
- Series

Series	Material	Finish
HCH	Heat-treated Medium Carbon Steel	Zinc* Clear
HCHS	300 Series Stainless Steel	Passivated ASTM A380
HCHB	Phosphor Bronze CDA-510	None

*See Finish Spec. on Page 6.

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

Use in: Cold-rolled Steel or 5052-H34 Aluminum with Rockwell Hardness as follows:

HCH- Materials with HRB-85 or less.
HCHS- Materials with HRB-70 or less.
HCHB- Materials with HRB-55 or less.

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

Dimensions & Specifications

INCH (in.)	Thread Size	Thread Code	L Length ± .015 in. .500	.750	1.00	1.25	1.50	1.75	Min.	+.005 –.000	Max. Hole in Attach. Parts	A Max.	B ± .01	Min.
	#10-24	1024	-8	-12	-16	-20	-24	-28	.050	.190	.250	.040	.300	.415
	#10-32	1032	-8	-12	-16	-20	-24	-28†	.050	.190	.250	.040	.300	.415
	1/4-20	420	-8	-12	-16	-20	-24	-28†	.060	.250	.312	.050	.380	.460
	5/16-18	518	-8†	-12	-16	-20	-24	-28†	.075	.312	.375	.070	.480	.500
	3/8-16	616		-12	-16	-20	-24	-28†	.090	.375	.437	.085	.580	.530

Thread Strength: HCH = 120 ksi / HCHS = 75 ksi / HCHB = 60 ksi.

† Not stocked, available on special order.

Dimensions & Specifications

METRIC (mm)	Thread Size	Thread Code	L Length ± .4 mm 20	25	30	35	40	50	Min.	+.13 –.00	Max. Hole In Attach. Parts	A Max.	B ± .25	Min.
	M5x0.8	M5	-20	-25	-30				1.3	5.0	6.5	1.14	7.8	10.7
	M6x1.0	M6	-20	-25	-30	-35			1.5	6.0	7.5	1.27	9.4	11.5
	M8x1.25	M8	-20	-25	-30	-35	-40	-50	2.0	8.0	9.5	1.78	12.5	12.7
	M10x1.5	M10	-20	-25	-30	-35	-40	-50	2.3	10	11.5	2.29	15.7	13.7

Thread Strength: HCH = 900 MPa / HCHS = 515 MPa / HCHB = 415 MPa.
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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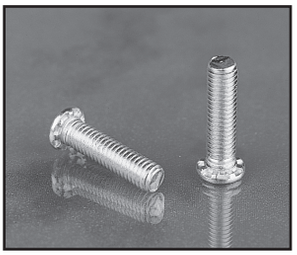


Self-Clinching Studs

Series HCH, HCHS & HCHB (High-Torque)

Continued from previous page.

Installation & Performance Data

	Thread Code	Sheet Thickness & Material	Sheet Hardness HRB	Installation Force (lbs.)	Pushout (lbs.)	Torque-out (ft.-lbs.)	Torque-thru (ft.-lbs.)
INCH (in.)	1024	.060 Aluminum	15	3000	175	4	5
	1032	.060 Steel	65	6000	370	5.5	5
	420	.065 Aluminum	43	5500	280	11.5	11
		.059 Steel	59	7000	475	11.5	13
	518	.091 Aluminum	39	8000	375	22.5	32
		.090 Steel	58	10000	585	22.5	32
	616	.091 Aluminum	39	9000	545	25	44
		.090 Steel	58	12000	775	36	48

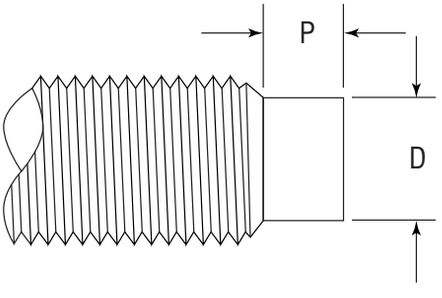
	Thread Code	Sheet Thickness & Material	Sheet Hardness HRB	Installation Force (kN)	Pushout (N)	Torque-out (N•m)	Torque-thru (N•m)
METRIC (mm)	M5	1.5 Aluminum	15	13	778	5.4	6.8
		1.5 Steel	65	26	1556	7.5	6.8
	M6	1.5 Aluminum	43	29	1620	13.9	17.9
		1.5 Steel	59	33	2020	13.9	23.7
	M8	2.3 Aluminum	39	35.6	1780	30	43.4
		2.3 Steel	58	44.5	2200	30	43.4
	M10	2.3 Aluminum	39	40	2445	35.5	59.7
		2.3 Steel	58	54	3465	48	65.1

CAPTIVE® Dog-Point Studs

CAPTIVE studs are available with a dog-point end to assist the attachment of mating nuts, which is especially useful in high-speed production assembly, using motorized nut drivers. Dog-points may be specified on all CH, TCH and HCH style studs as a special order, using the following Part Number Structure:

Example: HCHS 1032-8 DP

- Dog-Point
- Length Code
- Thread Code
- Series



INCH (in.)	D ±.005	P ±.010	METRIC (mm)	D ±.13	P ±.25
6-32	.086	.050	M3.5 x 0.6	2.4	1.27
8-32	.111	.055	M4 x 0.7	2.79	1.4
10-24	.124	.065	M5 x 0.8	3.66	1.78
10-32	.138	.065	M6 x 1	4.37	2.03
1/4 x 20	.173	.085	M8 x 1.25	6.05	2.67
1/4 x 28	.192	.085			
5/16 x 18	.228	.105			

Note: Maximum dog-point diameter is .003 in. (.08 mm) less than the minimum minor diameter of 2B or 6g mating nut threads.