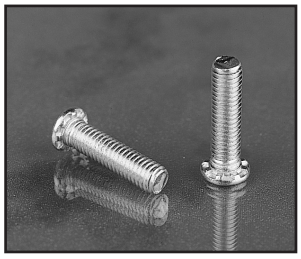
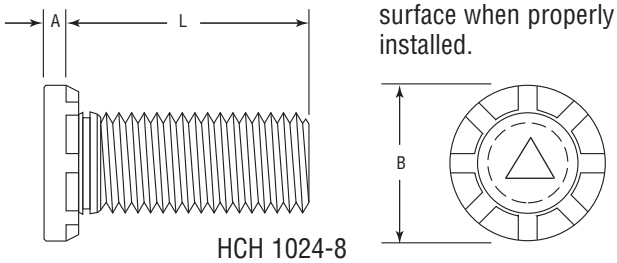
# Self-Clinching Studs

## 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.

Phosphor 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 A967 |
| 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 | .252 | .040 | .300 | .415 |
| #10-32 | 1032 | -8 | -12 | -16 | -20 | -24 | -28† | .050 | .190 | .252 | .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 | .374 | .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 | -35 | -40 | -50 | 1.3 | 5.0 | 6.4 | 1.14 | 7.8 | 10.7 |
| M6x1.0 | M6 | -20 | -25 | -30 | -35 | -40 | -50 | 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 | 10.0 | 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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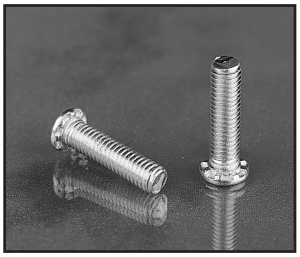

# Self-Clinching Studs

## Series HCH, HCHS & HCHB (High-Torque)

Continued from previous page.

### *Installation & Performance Data*

| | Thread Code | Series | Sheet Thickness & Material | Sheet Hardness HRB | Installation Force (lbs.) | Pushout (lbs.) | Torque-out (ft.-lbs.) | Max. Nut Tightening Torque (ft.-lbs.) |
|---|---|---|---|---|---|---|---|---|
| INCH (in.) | 1024 1032 | HCH | .060 Aluminum | 15 | 3000 | 180 | 4 | 3.25 |
| | | HCH | .060 Steel | 65 | 6000 | 375 | 5 | 3.25 |
| | | HCHS | .050 Aluminum | 38 | 3000 | 180 | 4 | 3.25 |
| | | HCHS | .058 Steel | 52 | 4500 | 325 | 4 | 3.25 |
| | | HCHB | .061 Copper CDA-110 | 28 | 3400 | 150 | 2.9 | 2.56 |
| | 420 | HCH | .060 Aluminum | 43 | 5500 | 285 | 11 | 8 |
| | | HCH | .060 Steel | 59 | 7000 | 480 | 11 | 8 |
| | | HCHS | .064 Aluminum | 32 | 4000 | 285 | 8 | 8 |
| | | HCHS | .072 Steel | 43 | 6500 | 480 | 8 | 8 |
| | | HCHB | .061 Copper CDA-110 | 28 | 6000 | 380 | 5 | 4.35 |
| | 518 | HCH | .091 Aluminum | 39 | 8000 | 380 | 22 | 16 |
| | | HCH | .090 Steel | 58 | 10000 | 590 | 22 | 16 |
| | | HCHS | .087 Aluminum | 41 | 5500 | 380 | 15 | 16 |
| | | HCHS | .099 Steel | 44 | 7500 | 590 | 15 | 16 |
| | | HCHB | .126 Copper CDA-110 | 32 | 7500 | 500 | 11 | 10.55 |
| | 616 | HCH | .091 Aluminum | 39 | 12000 | 550 | 25 | 27 |
| | | HCH | .090 Steel | 58 | 18000 | 780 | 36 | 27 |
| | | HCHS | .123 Aluminum | 44 | 10000 | 560 | 25 | 27 |
| | | HCHS | .099 Steel | 44 | 13000 | 780 | 25 | 27 |
| | | HCHB | .126 Copper CDA-110 | 32 | 12000 | 560 | 18 | 21 |
| | **Thread Code** | **Series** | **Sheet Thickness & Material** | **Sheet Hardness HRB** | **Installation Force (kN)** | **Pushout (N)** | **Torque-out (N • m)** | **Max. Nut Tightening Torque (N • m)** |
| METRIC (mm) | M5 | HCH | 1.5 Aluminum | 15 | 13 | 800 | 5.4 | 4.4 |
| | | HCH | 1.5 Steel | 65 | 26 | 1500 | 7.6 | 4.4 |
| | | HCHS | 1.62 Aluminum | 35 | 12.4 | 800 | 5.4 | 4.4 |
| | | HCHS | 1.47 Steel | 54 | 21.7 | 1500 | 6.4 | 4.4 |
| | | HCHB | 1.5 Copper CDA-110 | 28 | 15.6 | 1115 | 3.4 | 3.47 |
| | M6 | HCH | 1.5 Aluminum | 43 | 29 | 1270 | 14 | 10 |
| | | HCH | 1.5 Steel | 59 | 33 | 1750 | 14 | 10 |
| | | HCHS | 1.62 Aluminum | 35 | 15.4 | 1270 | 11 | 10 |
| | | HCHS | 1.6 Steel | 45 | 24.6 | 1750 | 11 | 10 |
| | | HCHB | 1.5 Copper CDA-110 | 28 | 25.3 | 1600 | 6.7 | 5.9 |
| | M8 | HCH | 2.3 Aluminum | 39 | 35.6 | 1700 | 30 | 21.7 |
| | | HCH | 2.3 Steel | 58 | 44.5 | 2200 | 30 | 21.7 |
| | | HCHS | 2.23 Aluminum | 44 | 24.4 | 1700 | 20 | 21.7 |
| | | HCHS | 2.48 Steel | 43 | 37.8 | 2100 | 20 | 21.7 |
| | | HCHB | 3.2 Copper CDA-110 | 32 | 33 | 2250 | 15.3 | 14.3 |
| | M10 | HCH | 2.3 Aluminum | 39 | 53.3 | 2445 | 36 | 36.6 |
| | | HCH | 2.3 Steel | 58 | 80 | 3470 | 49 | 36.6 |
| | | HCHS | 2.3 Aluminum | 44 | 44.4 | 2445 | 36 | 36.6 |
| | | HCHS | 2.3 Steel | 44 | 57.7 | 3470 | 36 | 36.6 |
| | | HCHB | 3.2 Copper CDA-110 | 32 | 53.3 | 2500 | 25 | 28.5 |