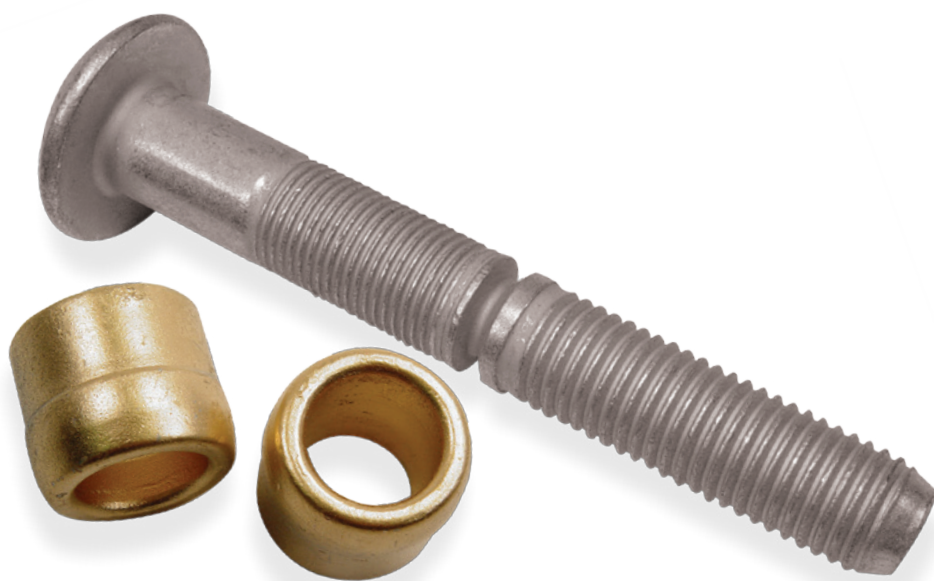




## C50L<sup>®</sup> HuckBolt<sup>®</sup>

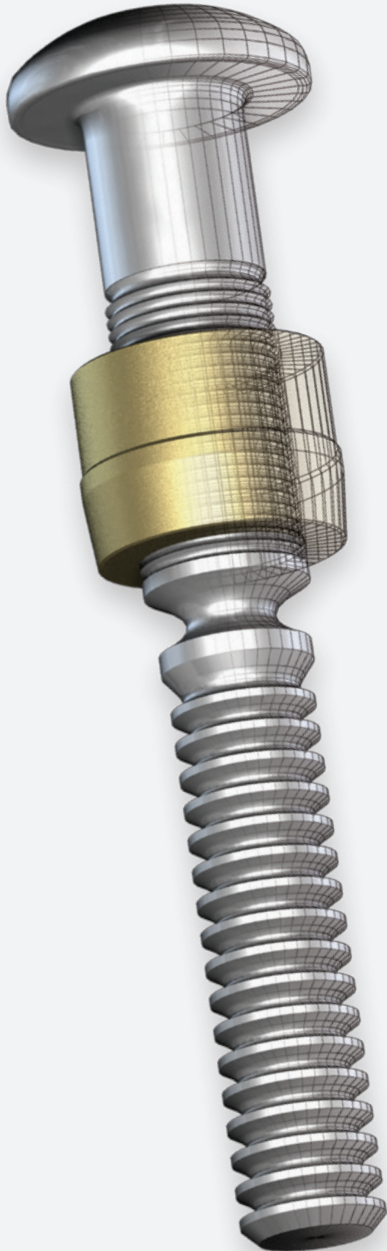
Huck-engineered lockbolts  
for the most challenging  
applications

Vibration resistant  
Longer fatigue life  
Consistent installations

1/2" - 1-3/8"

## C50L<sup>®</sup> HuckBolt<sup>®</sup>

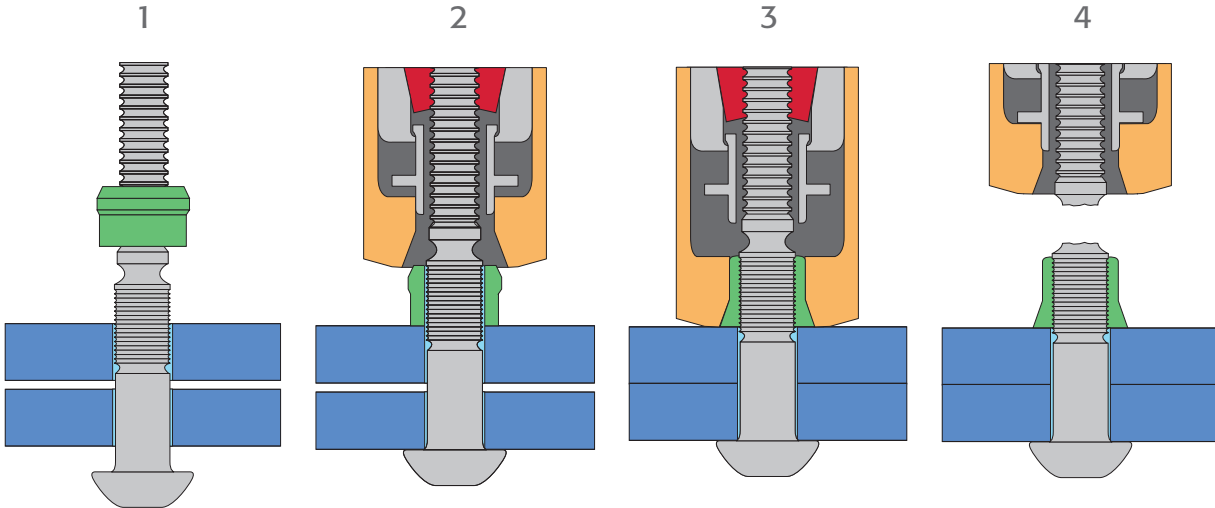
Grade 5 fasteners certified to meet or exceed all ASTM A-325 standards.



For applications ranging from railcar to mining equipment manufacturing, C50L<sup>®</sup> HuckBolt<sup>®</sup> fasteners from Alcoa Fastening Systems & Rings offer superior vibration resistance and overall durability. Heavy-duty applications demand tough, reliable fasteners. And extensive testing has demonstrated that C50L HuckBolt fasteners meet or exceed the performance of torqued bolts in both shear and tensile strength (with a longer fatigue life). Value is built in, too. Over the lifetime of your product, the investment you make in the quality of C50L HuckBolt fasteners will pay for itself. You won't find a stronger, more reliable fastening system, no matter what your application.

## Installs safer and quieter

The C50L HuckBolt system is engineered to be installed without torquing or multiple impacts. Noise level is significantly reduced, and as a result, your installation area becomes quieter, less stressful, and more productive.



*The pin is inserted into the prepared hole and the smooth bore collar is placed on the pin*

*The installation tool is applied to the pintail. When the tool is activated, the jaws in the nose assembly pull on the pintail and the nose anvil pushes on the collar to remove any gap.*

*The nose anvil starts to swage the collar into the lockgrooves on the pin. Continued swaging causes the collar to lengthen and develop clamp.*

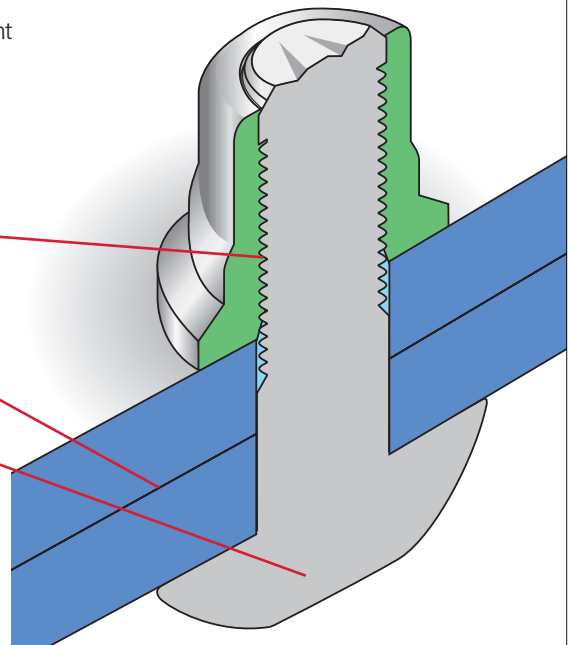
*When swaging of the collar into the lockgrooves is complete, the pintail separates from the pin which completes the installation cycle.*

## Successful, consistent installations

Unlike threaded fasteners, the C50L HuckBolt delivers consistent installation results. High costs of calibrating, maintaining, and replacing tools are eliminated. And installation does not require expensive, highly experienced workers.

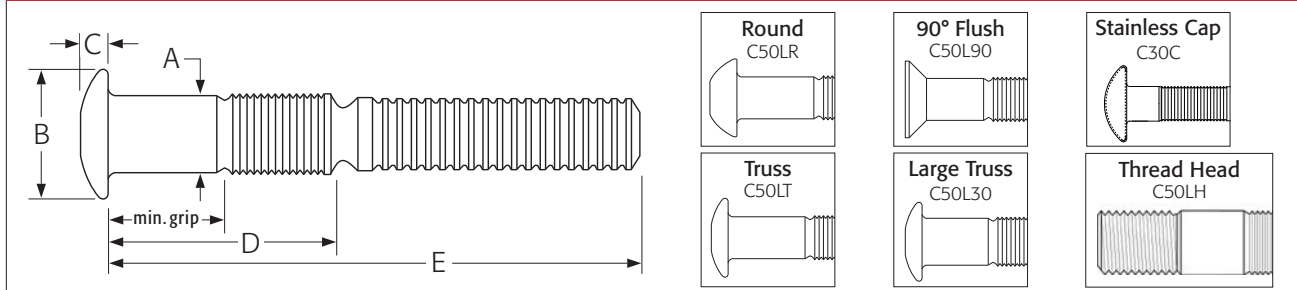
- Swaged-on collar forms a permanent, vibration-proof connection
- Initial long length of fastener enables pull-out of large gaps
- Pre-load remains constant from installation-to-installation

**For Oversized Holes:** To optimize clamp, hardened washers such as ASTM F436, DIN 6916 or EN 14399-6 are recommended for use with oversize holes and slots, along with good bolting practice.



# C50L® HuckBolt® data and dimensions

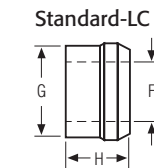
## Head style options



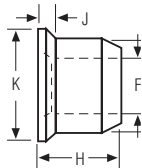
## Fastener dimensions

| Diameter | Code | Round Head    |       |       | Truss Head C50LT |       | C50L30 |       | 90° Flush Head |       | Stainless Steel Capped Head |       | Thread Head C50LH |       |
|----------|------|---------------|-------|-------|------------------|-------|--------|-------|----------------|-------|-----------------------------|-------|-------------------|-------|
|          |      | A             | B     | C     | B                | C     | B      | C     | B              | C     | B                           | C     | B                 | C     |
| 1/2"     | 16   | 0.515 - 0.490 | 0.906 | 0.316 | 0.906            | 0.240 | 1.090  | 0.266 | 0.906          | 0.250 | —                           | v     | —                 | —     |
| 5/8"     | 20   | 0.642 - 0.617 | 1.141 | 0.397 | 1.141            | 0.297 | 1.330  | 0.315 | 1.140          | 0.313 | 1.440                       | 0.390 | —                 | —     |
| 3/4"     | 24   | 0.768 - 0.741 | 1.383 | 0.495 | 1.383            | 0.360 | —      | —     | 1.370          | 0.375 | —                           | —     | —                 | —     |
| 7/8"     | 28   | 0.895 - 0.866 | 1.610 | 0.550 | 1.610            | 0.420 | —      | —     | 1.594          | 0.430 | —                           | —     | —                 | —     |
| 1"       | 32   | 1.025 - 0.990 | 1.850 | 0.618 | —                | —     | —      | —     | —              | —     | —                           | —     | —                 | —     |
| 1-1/8"   | 36   | 1.095 - 1.125 | 2.063 | 0.688 | —                | —     | —      | —     | —              | —     | —                           | —     | —                 | —     |
| 1-3/8"   | 44   | 1.400 - 1.350 | 2.530 | 0.850 | —                | —     | —      | —     | 2.510          | 0.670 | —                           | —     | —                 | 1.688 |

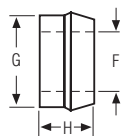
## Collar dimensions



Flanged-3LC<sup>1</sup>



Low Profile-8LC<sup>2</sup>/  
LC-2R



| Style            | Diameter | F             | G             | H                          | J             | K             |
|------------------|----------|---------------|---------------|----------------------------|---------------|---------------|
| LC               | 1/2"     | 0.515 - 0.535 | 0.800 - 0.765 | 0.645 - 0.610              | —             | —             |
|                  | 5/8"     | 0.650 - 0.665 | 0.985 - 0.970 | 0.875 - 0.845 <sup>3</sup> | —             | —             |
|                  | 3/4"     | 0.775 - 0.790 | 1.180 - 1.165 | 0.960 - 0.930              | —             | —             |
|                  | 7/8"     | 0.915 - 0.920 | 1.375 - 1.360 | 1.113 - 1.083              | —             | —             |
|                  | 1"       | 1.035 - 1.050 | 1.570 - 1.550 | 1.275 - 1.240              | —             | —             |
|                  | 1-1/8"   | 1.165 - 1.185 | 1.770 - 1.750 | 1.440 - 1.390              | —             | —             |
| 3LC <sup>1</sup> | 1/2"     | 0.510 - 0.530 | 0.807 - 0.793 | 0.760 - 0.722              | 0.130 - 0.120 | 1.035 - 0.980 |
|                  | 5/8"     | 0.648 - 0.660 | 0.996 - 0.980 | 0.962 - 0.926              | 0.170 - 0.142 | 1.273 - 1.227 |
|                  | 3/4"     | 0.775 - 0.793 | 1.195 - 1.175 | 1.150 - 1.115              | 0.200 - 0.175 | 1.520 - 1.480 |
|                  | 7/8"     | 0.895 - 0.907 | 1.370 - 1.360 | 1.333 - 1.300              | 0.230 - 0.205 | 1.615 - 1.575 |
|                  | 1"       | 1.035 - 1.050 | 1.565 - 1.550 | 1.520 - 1.480              | 0.263 - 0.237 | 1.893 - 1.854 |
|                  | 1-1/8"   | 1.160 - 1.770 | 1.760 - 1.750 | 1.715 - 1.675              | 0.289 - 0.273 | 2.145 - 2.105 |
| 8LC <sup>2</sup> | 1/2      | 0.508 - 0.535 | 0.800 - 0.780 | 0.500 - 0.470              | —             | —             |
|                  | 5/8      | 0.640 - 0.665 | 0.982 - 0.972 | 0.700 - 0.670              | —             | —             |
|                  | 3/4      | 0.775 - 0.790 | 1.180 - 1.165 | 0.745 - 0.715              | —             | —             |
|                  | 7/8      | 0.903 - 0.920 | 1.375 - 1.360 | 0.863 - 0.833              | —             | —             |
|                  | 1.0      | 1.030 - 1.050 | 1.568 - 1.552 | 0.980 - 0.950              | —             | —             |
| AC-R44           | 1-3/8"   | 1.407 - 1.420 | 2.159 - 2.146 | 1.762 - 1.738              | —             | —             |

1 When using 3LC collars, include J dimension in grip dimension to determine grip number.

2 Optional collar at reduced clamping force and tensile strength. Contact AFSR for data. When using 8LC collars, subtract J dimension from grip dimension to determine grip number.

3 H length for 20 (5/8") diameter in F, I or 2CU material is 805 - 770.

# C50L® HuckBolt® data and dimensions

## Grip tables

| Grip | Grip Range    | 1/2" (16) |       | 5/8" (20) |       | 3/4" (24) |       | 7/8" (28) |       | 1" (32) |        | 1-1/8" (36) |        | 1-3/8" (44)    |
|------|---------------|-----------|-------|-----------|-------|-----------|-------|-----------|-------|---------|--------|-------------|--------|----------------|
|      |               | D         | E     | D         | E     | D         | E     | D         | E     | D       | E      | D           | E      | Grip range     |
| 4    | .250 - .500   | 1.213     | 3.172 | 1.433     | 3.656 | 1.518     | 4.156 | —         | —     | —       | —      | —           | —      | up to          |
| 8    | .500 - .750   | 1.463     | 3.422 | 1.683     | 3.906 | 1.768     | 4.406 | 1.921     | 4.688 | 2.073   | 5.375  | —           | —      | 34.25"         |
| 12   | .750 - 1.000  | 1.713     | 3.672 | 1.933     | 4.156 | 2.018     | 4.656 | 2.171     | 4.938 | 2.323   | 5.625  | —           | —      |                |
| 16   | 1.000 - 1.250 | 1.963     | 3.922 | 2.183     | 4.406 | 2.268     | 4.906 | 2.421     | 5.188 | 2.573   | 5.875  | —           | —      | Call for data. |
| 20   | 1.250 - 1.500 | 2.213     | 4.172 | 2.433     | 4.656 | 2.518     | 5.156 | 2.671     | 5.438 | 2.823   | 6.125  | —           | —      |                |
| 24   | 1.500 - 1.750 | 2.463     | 4.422 | 2.683     | 4.906 | 2.768     | 5.406 | 2.921     | 5.688 | 3.073   | 6.375  | —           | —      |                |
| 28   | 1.750 - 2.000 | 2.713     | 4.672 | 2.933     | 5.156 | 3.018     | 5.656 | 3.171     | 5.938 | 3.323   | 6.625  | —           | —      |                |
| 32   | 2.000 - 2.250 | 2.963     | 4.922 | 3.183     | 5.406 | 3.268     | 5.906 | 3.421     | 6.188 | 3.573   | 6.875  | —           | —      |                |
| 36   | 2.250 - 2.500 | 3.213     | 5.172 | 3.433     | 5.656 | 3.518     | 6.156 | 3.671     | 6.438 | 3.823   | 7.125  | —           | —      |                |
| 40   | 2.500 - 2.750 | 3.463     | 5.422 | 3.683     | 5.906 | 3.768     | 6.406 | 3.921     | 6.688 | 4.073   | 7.375  | —           | —      |                |
| 44   | 2.750 - 3.000 | 3.713     | 5.672 | 3.933     | 6.156 | 4.018     | 6.656 | 4.171     | 6.938 | 4.323   | 7.625  | —           | —      |                |
| 48   | 3.000 - 3.250 | 3.963     | 5.922 | 4.183     | 6.406 | 4.268     | 6.906 | 4.421     | 7.188 | 4.573   | 7.875  | —           | —      |                |
| 52   | 3.250 - 3.500 | 4.213     | 6.172 | 4.433     | 6.656 | 4.518     | 7.156 | 4.671     | 7.438 | 4.823   | 8.125  | —           | —      |                |
| 56   | 3.500 - 3.750 | 4.463     | 6.422 | 4.683     | 6.906 | 4.768     | 7.406 | 4.921     | 7.688 | 5.073   | 8.375  | 5.250       | 8.563  |                |
| 60   | 3.750 - 4.000 | 4.713     | 6.672 | 4.933     | 7.156 | 5.018     | 7.656 | 5.171     | 7.938 | 5.323   | 8.625  | 5.500       | 8.813  |                |
| 64   | 4.000 - 4.250 | 4.963     | 6.922 | 5.183     | 7.406 | 5.268     | 7.906 | 5.421     | 8.188 | 5.573   | 8.875  | 5.750       | 9.063  |                |
| 68   | 4.250 - 4.500 | 5.213     | 7.172 | 5.433     | 7.656 | 5.518     | 8.156 | 5.671     | 8.438 | 5.823   | 9.125  | 6.000       | 9.313  |                |
| 72   | 4.500 - 4.750 | 5.463     | 7.422 | 5.683     | 7.906 | 5.768     | 8.406 | 5.921     | 8.688 | 6.073   | 9.375  | 6.250       | 9.563  |                |
| 76   | 4.750 - 5.000 | 5.713     | 7.672 | 5.933     | 8.156 | 6.018     | 8.656 | —         | —     | 6.323   | 9.625  | 6.500       | 9.813  |                |
| 80   | 5.000 - 5.250 | 5.963     | 7.922 | —         | —     | —         | —     | —         | —     | 6.573   | 9.875  | 6.750       | 10.063 |                |
| 84   | 5.250 - 5.500 | —         | —     | —         | —     | —         | —     | —         | —     | 6.823   | 10.125 | 7.000       | 10.313 |                |
| 88   | 5.500 - 5.750 | —         | —     | —         | —     | —         | —     | —         | —     | 7.073   | 10.375 | 7.250       | 10.563 |                |
| 92   | 5.750 - 6.000 | —         | —     | —         | —     | —         | —     | —         | —     | 7.323   | 10.625 | 7.500       | 10.813 |                |

## Installed fastener values

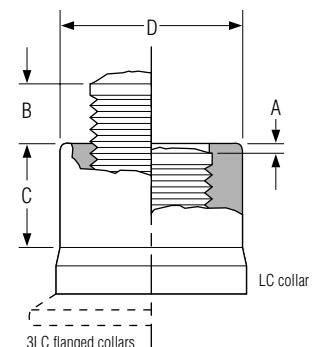
| Diameter | Carbon Steel Pins<br>LC-2R or 3LC-2R Collars |       |         | 2024C Aluminum Pins<br>LC-F or 3LC-F Collars |       |         | 6061F Aluminum Pins<br>LC-I or 3LC-I Collars |       |         |
|----------|----------------------------------------------|-------|---------|----------------------------------------------|-------|---------|----------------------------------------------|-------|---------|
|          | Shear                                        | Clamp | Tensile | Shear                                        | Clamp | Tensile | Shear                                        | Clamp | Tensile |
| 1/2"     | 14400                                        | 12050 | 17050   | 7300                                         | 5900  | 7850    | 5300                                         | 4400  | 4900    |
| 5/8"     | 22500                                        | 19200 | 27100   | 11400                                        | 9200  | 12300   | 8300                                         | 6900  | 7670    |
| 3/4"     | 32400                                        | 28400 | 40100   | 16400                                        | 13300 | 17700   | 11900                                        | 9950  | 11040   |
| 7/8"     | 43400                                        | 39250 | 55450   | SPECIAL ORDER ONLY                           |       |         |                                              |       |         |
| 1"       | 56500                                        | 51500 | 72700   |                                              |       |         |                                              |       |         |
| 1-1/8"   | 69500                                        | 58450 | 82950   | —                                            | —     | —       | —                                            | —     | —       |
| 1-3/8"   | 100000                                       | 85000 | 129500  | —                                            | —     | —       | —                                            | —     | —       |

## Hole data

| Diameter | Max Hole |
|----------|----------|
| 1/2"     | 0.563    |
| 5/8"     | 0.688    |
| 3/4"     | 0.813    |
| 7/8"     | 0.938    |
| 1"       | 1.063    |
| 1-1/8"   | 1.188    |
| 1-3/8"   | 1.500    |

## Inspection data

| Diameter | Pin Part No. | LC Collar | 3LC Collar | A max | B max | C min | D max |
|----------|--------------|-----------|------------|-------|-------|-------|-------|
| 1/2"     | C50L(-)( )16 | LC-2R16G  | 3LC-2R16G  | .063  | .375  | .406  | .733  |
| 5/8"     | C50L(-)( )20 | LC-2R20G  | 3LC-2R20G  | .063  | .375  | .625  | .916  |
| 3/4"     | C50L(-)( )24 | LC-2R24G  | 3LC-2R24G  | .063  | .375  | .656  | 1.110 |
| 7/8"     | C50L(-)( )28 | LC-2R28G  | 3LC-2R28G  | .063  | .375  | .750  | 1.282 |
| 1"       | C50L(-)( )32 | LC-2R32G  | 3LC-2R32G  | .063  | .375  | .875  | 1.465 |
| 1-1/8"   | C50LR-BR36   | LC-2R36G  | —          | .063  | .625  | .906  | 1.646 |
| 1-3/8"   | C50LR-BR44   | AC-R44U   | —          | .188  | .688  | 1.250 | 2.020 |



# C50L® HuckBolt® Installation Tooling

## Hydraulic Tools & Nose Assemblies

|                      | Model 2620 | Model 2620PT | Model 2624 | Model 3585 | Model 2630 | Model 507 | Model 12142 |
|----------------------|------------|--------------|------------|------------|------------|-----------|-------------|
| <b>Nose Assembly</b> |            |              |            |            |            |           |             |
| 1/2"                 | 99-5000    | 99-5002      | 99-5021    | 99-5021    |            |           |             |
| 5/8"                 |            |              | 99-5008    | 99-5008    |            |           |             |
| 3/4"                 |            |              |            | 99-5010    |            |           |             |
| 7/8"                 |            |              |            |            | 99-5014    |           |             |
| 1"                   |            |              |            |            |            | 99-5016   |             |
| 1-1/8"               |            |              |            |            |            | 99-5019   |             |
| 1-3/8"               |            |              |            |            |            |           | Integral    |



2620/2620-PT\*



2624



3585



2630



507



12142

## Tooling weight and dimensions

| Model         | Weight         | Length       | Height | Width |
|---------------|----------------|--------------|--------|-------|
| 2620/2620-PT* | 10.4/11.0 lbs. | 6.60"/10.10" | 7.0"   | 2.82" |
| 2624          | 13.9 lbs.      | 7.37"        | 7.73"  | 3.48" |
| 3585          | 18.5 lbs.      | 7.84"        | 10.36" | 4.02" |
| 2630          | 22.3 lbs.      | 7.90"        | 8.65"  | 4.44" |
| 507           | 43.4 lbs.      | 15.50"       | 6.00"  | 5.40" |
| 12142         | 60.0 lbs.      | 11.76"       | 6.56"  | 6.56" |

For limited clearance installation tools contact manufacturer.

\* Pass through



Powerig  
Model 918/  
918-5



Powerig  
Model 940

## Huck Powerig® hydraulic units

| Model 918/918-5                                                        | Model 940                                               | Model 913H not shown                          | Model 968 not shown                             |
|------------------------------------------------------------------------|---------------------------------------------------------|-----------------------------------------------|-------------------------------------------------|
| High-production applications                                           | Portable; production and repair                         | Portable; production and repair               | Portable; production and repair                 |
| 918 powers 2 tools (2 gpm/tool)<br>918-5 powers 3 tools (1.3 gpm/tool) | 70 in. <sup>3</sup> /min. flow rate (.3 gpm)            | 139 in. <sup>3</sup> /min. flow rate (.6 gpm) | 70 in. <sup>3</sup> /min. flow rate (.3 gpm)    |
| Electrically powered;<br>220, 440, or 550 volts, 3 phase               | Electrically powered;<br>115 or 220 volts, single phase | Gasoline powered                              | Air powered; 50 cfm<br>(.024 m <sup>3</sup> /s) |
| Weights 585/601 lbs. without<br>hydraulic fluid                        | Weights 66 lbs. without<br>hydraulic fluid              | Weights 122 lbs. without<br>hydraulic fluid   | Weights 75 lbs. without<br>hydraulic fluid      |
| 44"L x 25"W x 30"H                                                     | 13.9"L x 16.1"W x 18.5"H                                | 24"L x 21"W x 27"H                            | 10.45"L x 16.33"W x 15.68"H                     |

# Ordering Information

Follow the form below to construct a part number for ordering C50L pins and their respective collars.  
Refer to the Grip Tables (page 5) for grip numbers.

## Pins

C50L (HEAD STYLE) - (MATERIAL) (DIAMETER) - (GRIP NUMBER) - (COATING)

Example: C50LR-BR16-4 is a C50L HUCKBOLT fastener, Round Head, Carbon Steel, 1/2" Diameter, Grip 4

| Bolt Head Style | Prefix | Bolt Material                             | Code | Diameter | Code | Grip                           | Finish                            | Suffix    |
|-----------------|--------|-------------------------------------------|------|----------|------|--------------------------------|-----------------------------------|-----------|
| Round           | R      | Carbon Steel                              | BR   | 1/2"     | 16   | Refer to Grip Tables on page 5 | Zinc Plate, Clear Chromate .0003" | G         |
| Truss           | T      |                                           |      | 5/8"     | 20   |                                | Zinc Plate, Clear Chromate .0004" | GA        |
| Large Truss     | 30     | Aluminum 2024 and 6061 special order only |      | 3/4"     | 24   |                                | Geomet - 1 Coat                   | NP        |
| 90° Flush       | 90     |                                           |      | 7/8"     | 28   |                                | Geomet - 2 Coat                   | D1        |
| Thread Head     | H      | Stainless Steel available on request      |      | 1"       | 32   |                                | Geomet - 3 Coat                   | DL        |
|                 |        |                                           |      | 1-1/8"   | 36   |                                | Oil Finish                        | no suffix |
|                 |        |                                           |      | 1-3/8"   | 44   |                                |                                   |           |

## Collars

(COLLAR STYLE) - (MATERIAL) (DIAMETER) (COATING) (OPTIONS)

Example: LC-2R16G is a Standard Collar, Low Carbon Steel, 1/2" Diameter, Zinc Finish

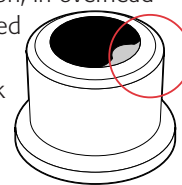
| Collar Style     | Prefix | Material         | Code | Diameter | Code | Coating                              | Code | Options | Suffix |
|------------------|--------|------------------|------|----------|------|--------------------------------------|------|---------|--------|
| Standard         | LC-    | Low Carbon Steel | 2R   | 1/2"     | 16   | Zinc                                 | G    | Tab-Lok | L      |
| Flanged          | 3LC-   |                  |      | 5/8"     | 20   | Additional coating options available |      |         |        |
| Low Profile      | 8LC-   | 3/4"             |      | 24       |      |                                      |      |         |        |
| Low Profile (44) | AC-R44 | 7/8"             |      | 28       |      |                                      |      |         |        |
|                  |        | 1"               |      | 32       |      |                                      |      |         |        |
|                  |        | 1-1/8"           |      | 36       |      |                                      |      |         |        |
|                  |        |                  |      | 1-3/8"   | 44   |                                      |      |         |        |

Tab-Lok™

The Tab Lok feature makes sure

### Tab-Lok™

The Tab-Lok feature makes sure the collar stays on the pin, before installation, in overhead and down slanted pin placements. To order Tab-Lok collars refer to adjacent charts.



# Alcoa Fastening Systems & Rings



For more than 120 years, the name Alcoa has been recognized worldwide as a strong leader in product quality and customer support. These strengths are found in every product manufactured for Alcoa Fastening Systems & Rings, offering the greatest breadth and depth of fastening system solutions in the industry.

Alcoa Fastening Systems & Rings (AFSR) maintains company offices in the United States and in many other countries. AFSR fastener distributors are also located in many of the world's industrial centers, where they provide a ready source of AFSR fasteners, installation tools, tool parts, and application assistance.

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Fax: 800 798 4825

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Kingston, NY 12401, USA  
Tel: 800 278 4825  
Fax: 845 334 7333

Industrial Distribution Group  
1925 North MacArthur Drive  
Tracy, CA 95376, USA  
Tel: 800 826 2884  
Fax: 800 573 2645

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