



# NOTES

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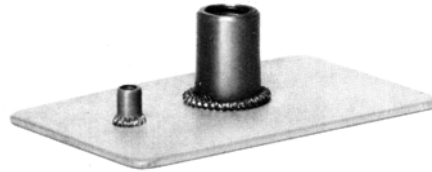
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# BLIND NUTS

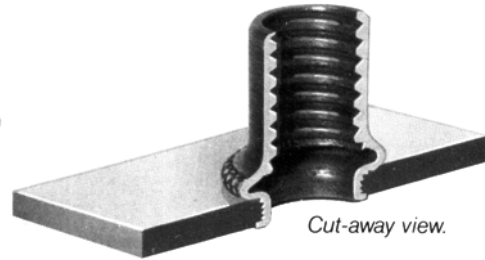
## HIGH-STRENGTH RivIT® INSERTS

Provide high strength permanent threads for blind applications in sheet metal, tubing or plastics

- Many versions readily available from stock.
- Low cost assembly.
- High torque-out resistance without special installation preparation.



*Knurled barrel grips hole edge firmly with minimum protrusion on external material surfaces.*



*Cut-away view.*

### Features:

- Easy, blind installation in single diameter holes with standard, readily available tooling.
- No need for keyway or close tolerance hole preparation.
- Knurled barrel assures high rotational resistance.
- Flush head type with either through or blind ends threads.
- Internal thread lock, blind end and special configurations are available.
- Variety of cost effective hand and power installation tools available.

### Materials:

303 CRES Stainless Steel per AMS 5640 or equal.

### Finish:

Passivated per QQ-P-35.

### Self-Locking Feature: (303 CRES material only).

Self-locking versions are available.

Optional dry film lubricant per MIL-L-46010 can be supplied and is recommended for locking parts. The lock location for the thru-thread type is in the last two threads. See next page, "F" dimension for lock location on blind-end type.

### Grip Selection

For proper sizing, determine the grip range (material thickness plus burrs, paint and required air gaps). Select the correct Camloc Blind Nut from the Grip Tables. For best results, select the next longer size if the material is soft and the grip approaches the maximum. If you plan to countersink the head, the countersink must be machined so that the Camloc Blind Nut head is slightly above the material surface before setting.

*Note: See page D-5 for panel preparation.*

### RivIT Performance Data

Nominal Thread Size	Ultimate <sup>1</sup> Tensile Load Lbs. Min.	Ultimate <sup>2</sup> Torque-Out In.-Lbs.
4 - 40	720	7
6 - 32	1100	15
8 - 32	1700	23
10 - 24	2100	27
10 - 32	2400	27
1/4 - 20	3800	45
1/4 - 28	4350	45
5/16 - 18	6300	90
5/16 - 24	6950	90
3/8 - 16	9300	120
3/8 - 24	1050	120

<sup>1</sup> Tensile strength values for 303 CRES are based on developing the tensile strength of a 120,000 psi bolt; carbon steel values are based on developing the tensile strength of a 60,000 psi bolt. Patent material shear strength should be equal or higher to develop loads tabulated.

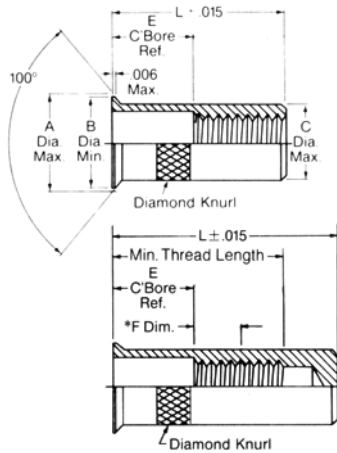
<sup>2</sup> Torque-out values are average for actual tests in 7075-T6 aluminum with no axial load on the RivIT inserts. The torque-out values are shown for reference and design purposes only. Variations must be expected in actual use.

**D**

# BLIND NUTS

## Flush Head Style

Thru-Thread Type

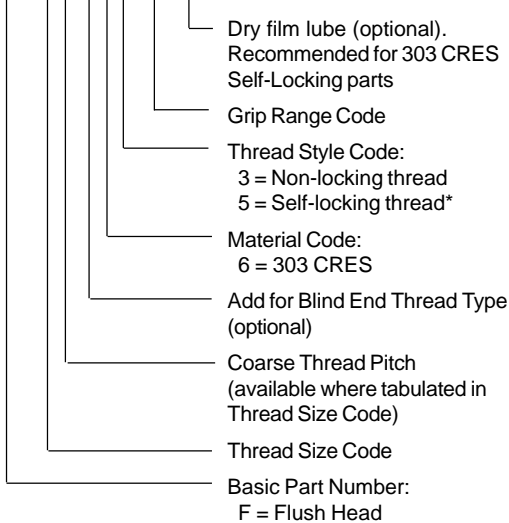


Blind End Thread Type

\*F Dim. indicates the beginning of thread lock.

### How to Order:

**H111F 3 C B 6 3 -080 M**



Thread Size	Thread Size Code	Grip Range	Grip Range Code
(4-40) .112-40 UNJC-3B	0C	.030-.070	-070
		.070-.110	-110
		.110-.150	-150
		.150-.190	-190
(6-32) .138-32 UNJC-3B	1C	.030-.070	-070
		.070-.110	-110
		.110-.150	-150
		.150-.190	-190
(8-32) .164-32 UNJC-3B	2C	.030-.070	-070
		.070-.110	-110
		.110-.150	-150
		.150-.190	-190
(10-24) .190-24 UNJC-3B	3C	.030-.080	-080
		.080-.130	-130
		.130-.180	-180
		.180-.230	-230
(10-32) .190-32 UNJF-3B	3	.230-.280	-280
		.030-.080	-080
		.080-.130	-130
		.130-.180	-180
(1/4-20) .250-20 UNJC-3B	4C	.180-.230	-230
		.230-.280	-280
		.030-.080	-080
		.080-.140	-140
(1/4-28) .250-28 UNJF-3B	4	.140-.200	-200
		.200-.260	-260
		.260-.320	-320
		.030-.080	-080
(5/16-18) .3125-18 UNJC-3B	5C	.080-.140	-140
		.140-.200	-200
		.200-.260	-260
		.260-.320	-320
(5/16-24) .3125-24 UNJF-3B	5	.060-.080	-080
		.080-.140	-140
		.140-.200	-200
		.200-.260	-260
(3/8-16) .375-16 UNJC-3B	6C	.260-.320	-320
		.060-.080	-080
		.080-.140	-140
		.140-.200	-200
(3/8-24) .375-24 UNJF-3B	6	.200-.260	-260
		.260-.320	-320
		.060-.080	-080
		.080-.140	-140
(3/8-24) .375-24 UNJF-3B	6	.140-.200	-200
		.200-.260	-260
		.260-.320	-320
		.060-.080	-080

**BLIND NUTS**

Common Dimensions					Thru Type	Blind End Type	
A Dia. Max.	B Dia. Min.	C Dia. Max.	E Dim.	F Dim. +.030 -.000	L Dim.	Min. Thread Length	L Dim.
.219	.205	.186	.17	.112	.330	.395	.530
			.21		.370	.435	.570
			.25		.410	.475	.610
			.29		.450	.515	.650
			.33		.490	.555	.690
.219	.205	.186	.17	.138	.370	.440	.615
			.21		.410	.480	.655
			.25		.450	.520	.695
			.29		.490	.560	.735
			.33		.530	.600	.775
.254	.240	.217	.18	.164	.420	.485	.650
			.22		.460	.525	.690
			.26		.500	.565	.730
			.30		.540	.605	.770
			.34		.580	.645	.810
.294	.280	.255	.21	.190	.490	.587	.760
			.26		.540	.637	.810
			.31		.590	.687	.860
			.36		.640	.737	.910
			.41		.690	.787	.960
.294	.280	.255	.21	.190	.490	.541	.715
			.26		.540	.591	.765
			.31		.590	.641	.815
			.36		.640	.691	.865
			.41		.690	.741	.915
.359	.345	.326	.23	.250	.600	.705	.900
			.29		.660	.765	.960
			.35		.720	.825	1.020
			.41		.780	.865	1.080
			.47		.840	.934	1.140
.359	.345	.326	.23	.250	.600	.641	.830
			.29		.660	.701	.890
			.35		.720	.761	.950
			.41		.780	.821	1.010
			.47		.840	.881	1.070
.431	.417	.395	.25	.312	.715	.812	1.050
			.31		.775	.872	1.110
			.37		.835	.932	1.170
			.43		.895	.992	1.230
			.49		.955	1.052	1.290
.431	.417	.395	.25	.312	.715	.750	.955
			.31		.775	.810	1.015
			.37		.835	.870	1.075
			.43		.895	.930	1.135
			.49		.955	.990	1.195
.504	.490	.467	.27	.375	.830	.926	1.195
			.33		.890	.986	1.255
			.39		.950	1.046	1.315
			.45		1.010	1.106	1.375
			.51		1.070	1.166	1.435
.504	.490	.467	.27	.375	.830	.832	1.055
			.33		.890	.892	1.115
			.39		.950	.952	1.175
			.45		1.010	1.012	1.235
			.51		1.070	1.072	1.295

All dimensions in inches.





# INSTALLATION TOOLS

H111HG-4-[ ] Hand Gun for limited production runs or field repair of blind nuts.

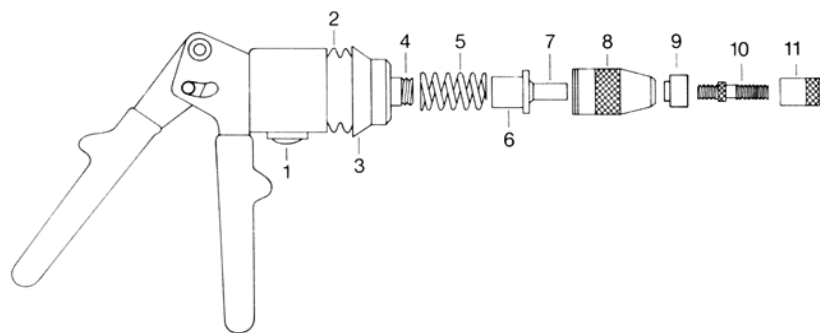


The H111HG-4 Insert hand gun is an extremely powerful, versatile and lightweight tool capable of installing Insert sizes up to 1/4". Many years of trouble free operation can be expected from this tool, however, you should become familiar with a few simple operating procedures to ensure maximum performance and minimum wear.

**H111HG-4 Series Hand Gun Part No. Selection**

Thread Size Code	Nominal Insert Thread Size	Hand Gun Set Part No.	Components Included		
			Anvil Part No.	Pull-Up Mandrel Part No.	Plastic Case/Hand Gun Part No.
0C	4-40	H111HG-4-0C	H111AH-1	H111MH-0C	H111HG-4
1C	6-32	H111HG-4-1C	H111AH-1	H111MH-1C	
2C	8-32	H111HG-4-2C	H111AH-2	H111MH-2C	
3C	10-24	H111HG-4-3C	H111AH-3	H111MH-3C	
3	10-32	H111HG-4-3	H111AH-3	H111MH-3	
4C	1/4-20	H111HG-4-4C	H111AH-4	H111MH-4C	
4	1/4-28	H111HG-4-4	H111AH-4	H111MH-4	

- Notes:**
1. To order complete assembly, select Hand Gun Set Part No. for corresponding nominal thread size.
  2. Hand Gun Set includes: Anvil and Mandrel for nominal thread size desired, Plastic Case, and Gun.
  3. Individual components may be ordered separately.
  4. Use H111-PG6 Power Gun to install insert size of 5/16-18 and greater.



Item Number	Description —
1	Button
2	Reservoir
3	Protective Shield
4	Puller Shaft
5	Spring
6	Master Shaft Holder
7	Master Shaft
8	Outer Sleeve
9	Turning Nut
10	Pull-Up Mandrel
11	Anvil



## Operating Instructions for the H111HG-4 Hand Gun

### Principles of Operation:

The H111HG-4 utilizes a patented cylindrical hydraulic pump assembly which is actuated by the movement ("pumping") of the handle assembly. The pull-up mandrel remains stationary while the outer sleeve of the tool moves forward until sufficient load is developed to upset the fastener. A load of 2500 lbs. can be achieved in just a few pumps, however, the maximum stroke of 5/8" will require approximately 11 pumps.

### Operation: (Refer to Figure 1)

1. Push in on the button (Item #1) and draw the handles together. If there is any extension of the outer sleeve (Item #8), this will cause it to fully retract to its starting position. Now, release the button.
2. Thread the left handed thread pull-up mandrel (Item #10) onto the master shaft (item #7) and push the required anvil (Item #11) in place making sure that it bottoms out against the turning nut.

3. Thread the appropriate Insert onto the mandrel and install. Depending upon the size and grip range of the insert, the number of pumps will vary, however, 6 to 8 full pumps will generally suffice.
4. To remove the pull-up mandrel from the fastener, push the button and draw the handles together as in Step 1. Turn the outer sleeve counterclockwise until the mandrel is disengaged.

### CAUTION

The mechanical advantage of the H111HG-4 tool is such that it is possible to reach loads of up to 2500 lbs. in just a few pumps. Over pumping can result in stripping the Insert threads, or in some cases the pull-up mandrel will break from excessive load.

It is recommended that several fasteners be installed in a representative test plate in order to determine the "feel" and the number of pumps required to properly install the Insert.

# INSTALLATION TOOLS

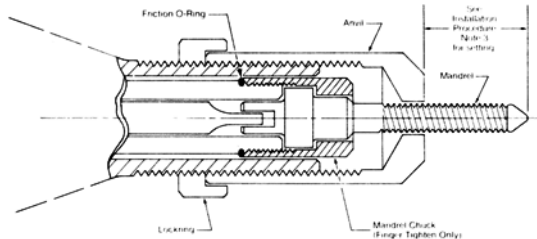
## H111-[ ] PG-6 Power Gun Assembly

Power Gun for fast blind nut installation and high production runs.\*\*

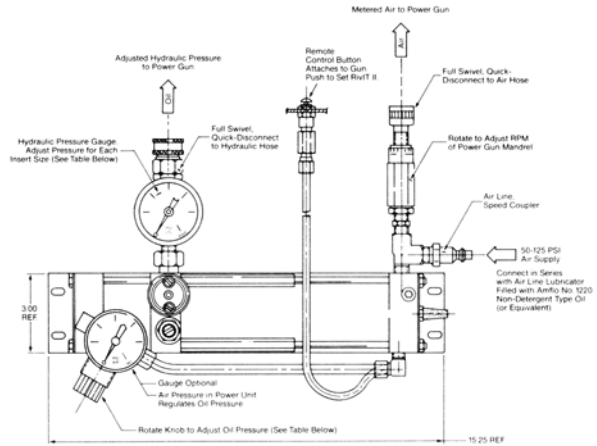


Camloc Power Gun installs all size Inserts. Simply connect power unit to 50-125 PSI air supply, adjust pressure and it's ready to use.

### Nose Assembly Components



### Power Unit

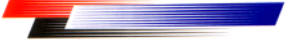


Plumbing arrangement manufacturer's option. To order complete assembly, select correct Power Gun Assembly Part Number for corresponding nominal Insert thread size. (See table below.) Components may be ordered separately. Hoses are supplied with Power Gun.

Thread Size Code	Nominal Insert Thread Size	Power Gun Assembly Part No.	Power Gun Only Part No.	Components Included					Approx. Installation Hydraulic Pressure Gauge Setting (PSI)*	
				Power Unit Part No.	Pull-up Mandrel Part No.	Mandrel Chuck Part No.	Anvil Part No.	Anvil Lock Ring Part No.	Steel	CRES
0C	4-20	H111-0CPG-6	H111-PG-6	H111-PP-6	H111-0CMP-5	H111-203	H111-0AP-5	H111-LR-5	600	700
1C	6-32	H111-1CPG-6			H111-1CMP-5		H111-1AP-5			
2C	8-32	H111-2CPG-6			H111-2CMP-5		H111-2AP-5		1000	1200
3C	10-24	H111-3CPG-6			H111-3CMP-5		H111-3AP-5			
3	10-32	H111-3PG-6			H111-3MP-5		H111-4AP-5		1400	1950
4C	¼-20	H111-4CPG-6			H111-4CMP-5					
4	¼-28	H111-4PG-6			H111-4MP-5		H111-5AP-5		2000	2450
5C	5/16-18	H111-5CPG-6			H111-5CMP-5					
5	5/16-24	H111-5PG-6			H111-5MP-5		H111-6AP-5		2600	3000
6C	3/8-16	H111-6CPG-6			H111-6CMP-5					
6	3/8-24	H111-6PG-6			H111-6MP-5				3200	4000

\* Pressures shown do not compensate for different grips and must be verified or adjusted through trial installation in actual panels. Caution: Use only minimum hydraulic pressures that will properly bulb inserts. Additional pressures could result in thread stripping of smaller sized and self-locking inserts.

\*\* Safety Precaution: H111-PG-6 Power Gun to be used with H111-PP-6 Power Unit only.



# NOTES

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