

**HAYDON BOLTS, INC.**

1181 Unity Street  
Philadelphia, PA 19124

**Confidential  
Credit  
Application**

Fax: 215-537-5569  
Telephone: 215-537-8700

Company Name: \_\_\_\_\_ Federal ID No.: \_\_\_\_\_

**If Tax Exempt, Forward Certificate**

Mailing Address: \_\_\_\_\_ State License No.: \_\_\_\_\_

Shipping Address: \_\_\_\_\_

Telephone Number: \_\_\_\_\_ Fax Number: \_\_\_\_\_

E-mail: \_\_\_\_\_ Web Page: \_\_\_\_\_

Division/Subsidiary of: \_\_\_\_\_ Address: \_\_\_\_\_

Nature of Business: \_\_\_\_\_

Number of Employees: \_\_\_\_\_ Date Established: \_\_\_\_\_

**Where did you hear of Haydon Bolts?** \_\_\_\_\_

Type of Organization: Corporation: \_\_\_\_\_ Partnership: \_\_\_\_\_ Proprietorship: \_\_\_\_\_ LLC \_\_\_\_\_ LLP \_\_\_\_\_

**Principals Names:**

1 \_\_\_\_\_ Title: \_\_\_\_\_

2. \_\_\_\_\_

3. \_\_\_\_\_

Trade References – We request five please. **PLEASE INCLUDE AN EMAIL ADDRESS OR FAX NUMBER**

**COMPANY** **EMAIL OR FAX** **TELEPHONE**

1. \_\_\_\_\_

2. \_\_\_\_\_

3. \_\_\_\_\_

4. \_\_\_\_\_

5. \_\_\_\_\_

**Bank Name:** \_\_\_\_\_ **Account No.:** \_\_\_\_\_

Address: \_\_\_\_\_

Officer Name: \_\_\_\_\_ Telephone No.: \_\_\_\_\_

Do you have a line of credit with this bank? Yes: \_\_\_\_\_ No: \_\_\_\_\_

Are you willing to use it to fulfill your obligations to Haydon Bolts, Inc.? Yes: \_\_\_\_\_ No: \_\_\_\_\_

The undersigned applies for open credit with HAYDON BOLTS, INC., and agrees that all sales made pursuant to this application will be subject to the terms and conditions of credit and sale attached.

Principal Signature: \_\_\_\_\_ Title: \_\_\_\_\_ Date: \_\_\_\_\_

Person to contact for additional information: \_\_\_\_\_

Direct Phone Number/Extension: \_\_\_\_\_

## HAYDON BOLTS, INC. TERMS & CONDITIONS OF CREDIT & SALE

All sales by Haydon Bolts, Inc are made subject to the following terms and conditions. Haydon expressly rejects any different or additional terms or conditions contained in any documents submitted by Buyer. Haydon's acceptance of any purchase order and/or sales of any goods is expressly made conditional on Buyer's assent to these terms and conditions.

1. All proposals, negotiations, and representations, if any, regarding the transaction and made in writing prior to the date of an order are merged herein. The Seller makes no representations or warranties concerning this proposal except such as are expressly contained herein, and this document may not be changed or modified.
2. PRICES – All prices whether herein named or heretofore quoted or proposed, shall be adjusted to the Seller's prices in effect at the time of shipment, and are FOB our plant, Philadelphia, PA, unless otherwise stated.
3. TOOLING – Any tooling charge included in any order shall cover the expense of designing and manufacturing tooling for the production of item(s) on the first order. Such tooling shall be maintained for production of the item(s) on subsequent or repeat orders or for a period not longer than one (1) year from date of shipment of last production order. Title to all such tooling shall remain with HAYDON BOLTS, INC.
4. TAXES – Any taxes which the Seller may be required to pay or collect, under any existing or future law, upon or with respect to the sale, purchase, delivery, storage, processing, use or consumption of any of the material covered hereby, including taxes upon or measured by the receipts from the sale thereof, shall be for the account of the Buyer, who shall promptly pay the amount thereof to the Seller upon demand.
5. DELAY – The Seller shall be excused for any delay in performance due to acts of God, war, riot, embargoes, acts of civil or military authorities, fires, floods, accidents, quarantine restrictions, strikes, differences with workmen, plant conditions, delays in transportation, shortage of cars, fuel, labor, or materials, or any circumstances or cause beyond the control of the Seller in the reasonable conduct of its business.
6. INSPECTION – The Buyer may inspect, or provide for inspection, at the place of manufacture. Such inspection shall be conducted so as not to interfere unreasonably with the manufacturer's operations, and subsequent approval or rejection shall be made before shipment of the material. Notwithstanding the foregoing, if, upon receipt of such material by the Buyer, the same shall appear not to conform to any contract resulting from an order between the Buyer and the Seller the Buyer shall immediately notify the Seller of such condition and afford the Seller a reasonable opportunity to inspect the material.
7. PRICING, FREIGHT DISCREPANCIES AND RETURNED MATERIAL – Questions concerning pricing or freight discrepancies must be made within ten (10) days of receipt of shipment. Contact your salesperson. In no case may material be returned without the Seller's prior written permission. Goods returned without written permission will not be accepted and could result in additional costs to the customer. Goods must be packaged properly and in resale condition. All returns are subject to a 25% restocking fee.
8. EXCLUSION OF WARRANTIES – THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR ANY PURPOSE ARE EXCLUDED FROM ANY CONTRACT RESULTING FROM AN ORDER. THERE ARE NO EXPRESS WARRANTIES AS TO THE MATERIAL FURNISHED HEREUNDER UNLESS MADE IN WRITING AND SIGNED BY AN OFFICER OF SELLER.
9. BUYER'S REMEDIES – If the material furnished to the Buyer shall be proven defective, whether due to Seller's negligent acts or omissions or otherwise, to conform to any contract resulting from an order or to any express or implied warranty, during a period not to exceed thirty (30) days from the date of shipment, the Seller shall replace such non-conforming material to the original point of delivery and shall furnish instruction for its disposition. Any transportation charges involved in such disposition shall be for the Seller's account.

The Buyers exclusive and sole remedy on account or in respect of the furnishing of material that shall be proven defective, whether due to Seller's negligent acts or omissions, or otherwise, to conform to any contract, resulting from an order or to any express or implied warranty, during a period not to exceed thirty (30) days from date of shipment, shall be to secure replacement thereof as aforesaid. The Seller shall not in any event be liable for the cost of any labor expended on any such material or for any special, direct, indirect, incidental or consequential damage to anyone by reason of the fact that such material does not conform to any contract resulting from an order or to any express or implied warranty.

10. PERMISSIBLE VARIATIONS, STANDARDS & TOLERANCES – Except in the particulars specified by Buyer and expressly agreed to in writing by Seller, all material shall be produced in accordance with Seller's standard practices. All material, including that produced to meet an exact specification, shall be subject to tolerances and variations consistent with usages of the trade and regular industry practices concerning: dimension, weight, straightness, section, composition and mechanical properties; normal variations in surface, internal conditions and quality; deviations from tolerances and variations consistent with practical testing and inspection methods. Orders will be considered complete upon shipment of a reasonable quantity of ten (10) percent over or under the amount specified in the order when it is impractical to produce the exact quantity ordered.
11. PATENTS –The Buyer shall indemnify the Seller against any judgment for damages and costs which may be rendered against the Seller in any suit brought on account of the alleged infringement of any United States patent by any product supplied by the Seller made in accordance with materials, designs or specifications furnished or designed by the Buyer, provided that prompt written notice be given to the Buyer of the bringing of the suit and than an opportunity be given to the Buyer to defend it.
12. CREDIT APPROVAL – Shipments, deliveries and performance of work shall at all times be subject to the approval of the Seller's Credit Department. The Seller may at any time decline to make any shipment or delivery or perform any work except upon receipt of payment or security or upon terms and conditions satisfactory to such Department.
13. JOB INFORMATION – Specific information pertaining to a purchase order may be required prior to supplying material. This includes the name, address and phone number of the property owner and the general contractor, the location of the project, State or Federal ID numbers and a copy of the payment and performance bond.
14. TERMS OF PAYMENT – Subject to the provisions of CREDIT APPROVAL above, terms of payment are 1% 10 net 30 days and shall be effective from date of invoice. If an account becomes 60 days past due, no further credit may be granted without payment of past due portion. A cash discount is allowed on MERCHANDISE ONLY. Taking of cash discount out of terms shall result in loss to Buyer of future cash discount option. The Seller may charge interest at the rate of 18% per annum on all overdue invoices.
15. LEGAL PROCEEDINGS AND INTEREST – The parties agree that the costs of any legal proceedings brought by Seller against any Buyer for nonpayment of invoices, including filing fees, court costs and attorney fees, shall be the responsibility of the Buyer. Seller will not waive or relinquish the right to file or maintain a mechanic's lien or claim against the buildings or grounds at which the material purchased are to be supplied or delivered. Interest will be charged on all past due amounts at 18% per annum.
16. COMPLIANCE WITH LAWS – The Seller intends to comply with all laws applicable to its performance or any contract resulting from an order.
17. DISPUTE RESOLUTION – At Seller's election, and in its sole discretion, any controversy or claim arising out of or relating to the sale of the subject goods or the performance or breach of this agreement shall be submitted to final and binding arbitration in accordance with the then current Construction Industry Rules of the American Arbitration Association. In the event Seller elects arbitration of a claim or dispute, judgment shall be entered on any award entered thereon. The arbitration provisions contained herein shall survive the termination or expiration of an order or performance or breach thereof. If Seller does not select arbitration, all disputes shall be submitted to court process. At Seller's election and sole discretion, the venue for any dispute resolution proceeding, whether arbitration or court litigation is elected by Seller, shall be Philadelphia, PA.
18. MISCELLANEOUS – If any part of the movement of the material involves use of a motor carrier, Seller intends to secure equipment from the motor carrier having the lowest rate; but if such equipment is not reasonably available, Seller reserves the right to move the material by any other motor carrier having available necessary equipment. When delivery terms are other than FOB our plant, all means of transportation and routing shall be subject to the control of the Seller.

If an order is accepted and the Buyer's order form is used for the purpose, it is expressly understood and agreed that the terms and conditions herein set forth shall prevail insofar as the same may in any way conflict with the terms and conditions set forth in such order form, and the issuance of such order by the Buyer shall be deemed to note the Buyer's assent to the foregoing.

19. NON-WAIVER BY SELLER – Waiver by the Seller of a breach of any of the terms and conditions of any contract resulting from an order shall not be construed as a waiver of any other breach.
20. ACCEPTANCE OF PURCHASE ORDERS – ANY PURCHASE ORDER PURSUANT TO ANY QUOTATION OR PROPOSAL SHALL NOT RESULT IN A CONTRACT UNTIL IT IS ACCEPTED AND ACKNOWLEDGED BY THE SELLER'S OFFICE AT PHILADELPHIA, PENNSYLVANIA.



# **HAYDON BOLTS, INC.**

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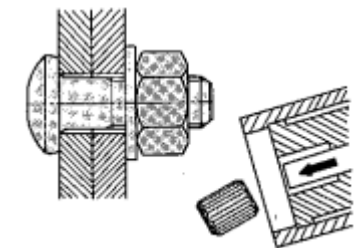
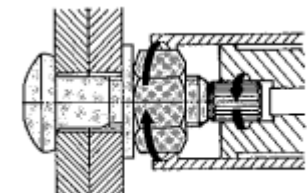
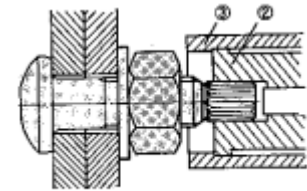
# HAYDON BOLTS, INC.

## High Strength Tension Control (TC) Bolts

TC Bolts have their own built in torque control device and are installed without the use of torque controlled tools. The torque requirements of the bolts are achieved by engaging the bolt and nut with inner and outer sockets and drive with the electric shear wrench until the control groove shears of the spline.

### Advantages:

1. Proper bolt tension can be confirmed by the shear-off spline.
2. Visual Inspection – (No torque gauges required.)
3. No special expertise required for installation.
4. Wrench adjustment not required
5. Installation can be achieved by one operator on one side of the structure.
6. Substantial reduction in installation noise.
7. Overall cost savings as a result of reduction of labor and time.



### Installation Procedures:

1. Place bolt thru hole in properly aligned joining members
2. Attach washer and snug tighten all assemblies in the joint
3. Fit the inner socket firmly over the bolt's spline
4. Engage the outer socket of the wrench over the nut
5. Pull the trigger. The outer socket will rotate the nut until the torque control groove shears off the spline, thereby achieving proper bolt tension
6. Remove the wrench and push the spline ejection trigger to remove the spline from the wrench's socket

### IMPORTANT TIPS ON: Handling – Storage – Installation

1. All structural fasteners should be protected from dirt, moisture and sun light at the job site. No more than the amount of bolts to be used that day should be removed from the container in a protected storage area. Dirty, rusted, or dry bolts should not be used.
2. Place all bolts into the connection, with a washer under the nut in standard and short slotted holes. For long slotted and oversize holes, a washer should be placed under the head of the bolt and under the nut. Washer and nut identification markings should always face away from the connection.
3. Bring all fasteners in the connection into a snug tight condition, starting from the most ridged part of the connection.



# HAYDON BOLTS, INC.

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## Staying Out of Trouble at the Job Site

### Tips & Problem Solving Solutions

#### Verify Bolt Tension on the Job Site

1. Review the basic bolt calibrator set up as described for bolt tension calibrator such as a Skidmore Wilhelm.
2. Be sure that unit is calibrated and that it is set up with the correct diameter bushings.
3. Use hardened spacers for longer bolts, DO NOT stack multiple flat washers.
4. Review the instructions for use of the testing device
5. Only use bolts from fresh, unopened bolts for testing

#### Installation Problems

**Q:** A bolt breaks in the threaded portion before the spline shears off?

**Answer:** Mostly likely the torque co-efficiency value has decreased.

#### Possible Causes:

1. Storage conditions allowing moisture, exposure to rain, high humidity, temperatures over 140 degrees
2. Lubrication of the product beyond "as delivered" condition from the factory. (Use of oil, grease or wax on the product components at the job site is prohibited.)
3. Adhesion of oils, paints, mill scale, dirty burrs or foreign material on the faying surfaces which may allow rotation of the bolt or rotation of the washer with the nut during tightening operation.
4. Not properly bringing the connection to the sung tight condition before final wrench tightening which may allow for the bolt to rotate, same as hex bolts.
5. Possible misalignment of the connection members that may prevent proper contact of the bolt head and faying surface.
6. Exposure to the environment over an extended time period before final tightening.

**Q:** Spline breaks at the shear groove before joint connection is made or before specified fastener tension is achieved in bolt tension testing device?

**Answer:** Mostly likely the torque co-efficiency value has become higher.

#### Possible Causes:

1. Storage and handling conditions allowing sand, dirt, rust or other foreign material to accumulate on the threads of the bolt or nut.
2. Rough handling of the fasteners that would cause nicks or gouges on the bolt and nut.
3. Exposure to environmental conditions that cause rust to form on the threads of the bolt nut or washer face.
4. Failure to follow AISC procedures for initial tightening in bringing all plies of the joint into firm contact before final tightening. (i.e. trying to draw distorted plies together and shearing the spline before the plies are in contact instead of using "fit up" bolts.) On a TC bolt, the spline will shear off when too great of a torque force is applied. Whereas a hex bolt may be torqued beyond the plastic limit of the bolt without the knowledge of together.

#### Wrench Problems

Spline does not eject from socket.

1. Check inner socket for abrasions or upsets. Remove replace socket.
2. Check inner socket for rust, sand, dirt oil or other foreign material caused by poor handling or care in the field. Clean inner socket and replace if necessary.
3. Check bolt spline foreign as a result of poor handling in the field.
4. Check ejector spring for contamination, clean components if necessary. Replace spring and pin if broken or worn.
5. Check sockets for wear and replace if necessary.

**Q:** Socket does not engage properly with spline or nut.

1. Check serrations of the socket for wear and replace if necessary.
2. Check socket size to be sure it matches the fastener being used.



# HAYDON BOLTS, INC.

## TC Bolt Sizes in Stock

<b>5/8" (11) F1852/A325 TC BOLTS IN STOCK</b>			
<b>PART #</b>	<b>DESCRIPTION</b>	<b>WEIGHT PER 100</b>	<b>QTY PER KEG</b>
PTU062150	5/8(11) X 1-1/2	40	500
PTU062175	5/8(11) X 1-13/4	43	470
PTU062200	5/8(11) X 2	45	450
PTU062225	5/8(11) X 2-1/4	47	410
PTU062250	5/8(11) X 2-1/2	49	380
PTU062275	5/8(11) X 2-3/4	51	360
PTU062300	5/8(11) X 3	54	325

<b>3/4" (10) F1852/A325 TC AND F2280/A490 TC BOLTS IN STOCK</b>			
<b>PART #</b>	<b>DESCRIPTION</b>	<b>WEIGHT PER 100</b>	<b>QTY PER KEG</b>
PTU075175	3/4(10) X 1-3/4	66	300
PTU075200	3/4(10) X 2	70	280
PTU075225	3/4(10) X 2-1/4	73	270
PTU075250	3/4(10) X 2-1/2	76	250
PTU075275	3/4(10) X 2-3/4	79	250
PTU075300	3/4(10) X 3	83	240
PTU075325	3/4(10) X 3-1/4	86	230
PTU075350	3/4(10) X 3-1/2	89	220
PTU075375	3/4(10) X 3-3/4	92	200
PTU075400	3/4(10) X 4	95	190
PTU075425	3/4(10) X 4-1/4	98	180
PTU075450	3/4(10) X 4-1/2	102	180
PTU075475	3/4(10) X 4-3/4	105	160
PTU075500	3/4(10) X 5	108	150
PTU075550	3/4(10) X 5-1/2	114	150
PTU075600	3/4(10) X 6	118	130



# HAYDON BOLTS, INC.

<b>7/8" (9) F1852/A325 TC AND F2280/A490 TC BOLTS IN STOCK</b>			
<b>PART #</b>	<b>DESCRIPTION</b>	<b>WEIGHT PER 100</b>	<b>QTY PER KEG</b>
PTU087200	7/8 (9) X 2	106	200
PTU087225	7/8 (9) X 2-1/4	110	190
PTU087250	7/8 (9) X 2-1/2	114	180
PTU087275	7/8 (9) X 2-3/4	120	180
PTU087300	7/8 (9) X 3	124	170
PTU087325	7/8 (9) X 3-1/4	128	160
PTU087350	7/8 (9) X 3-1/2	129	150
PTU087375	7/8 (9) X 3-3/4	131	140
PTU087400	7/8 (9) X 4	136	140
PTU087425	7/8 (9) X4-1/4	140	130
PTU087450	7/8 (9) X 4-1/2	143	120
PTU087475	7/8 (9) X 4-3/4	149	120
PTU087500	7/8 (9) X 5	153	115
PTU087525	7/8 (9) X 5-1/4	157	110
PTU087550	7/8 (9) X 5-1/2	162	100
PTU087575	7/8 (9) X 5-3/4	165	100
PTU087600	7/8 (9) X 6	170	95
PTU087650	7/8 (9) X 6-1/2	185	80
PTU087700	7/8 (9) X 7	194	70
PTU087750	7/8 (9) X 7-1/2	202	70
PTU087800	7/8 (9) X 8	209	70





# HAYDON BOLTS, INC.

<b>1" (8) F1852/A325 TC AND F2280/A490 TC BOLTS IN STOCK</b>			
<b>PART #</b>	<b>DESCRIPTION</b>	<b>WEIGHT PER 100</b>	<b>QTY PER KEG</b>
PTU100200	1 (8) X 2	140	140
PTU100225	1 (8) X 2-1/4	143	140
PTU100250	1 (8) X 2-1/2	149	130
PTU100275	1 (8) X 2-3/4	154	130
PTU100300	1 (8) X 3	160	120
PTU100325	1 (8) X 3-1/4	166	120
PTU100350	1 (8) X 3-1/2	171	110
PTU100375	1 (8) X 3-3/4	177	110
PTU100400	1 (8) X 4	183	100
PTU100425	1 (8) X 4-1/4	188	90
PTU100450	1 (8) X 4-1/2	194	90
PTU100475	1 (8) X 4-3/4	199	80
PTU100500	1 (8) X 5	205	80
PTU100550	1 (8) X 5-1/2	217	80
PTU100600	1 (8) X 6	228	70
PTU100650	1 (8) X 6-1/2	251	60
PTU100700	1 (8) X 7	262	50
PTU100750	1 (8) X 7-1/2	273	50
PTU100800	1 (8) X 8	288	50

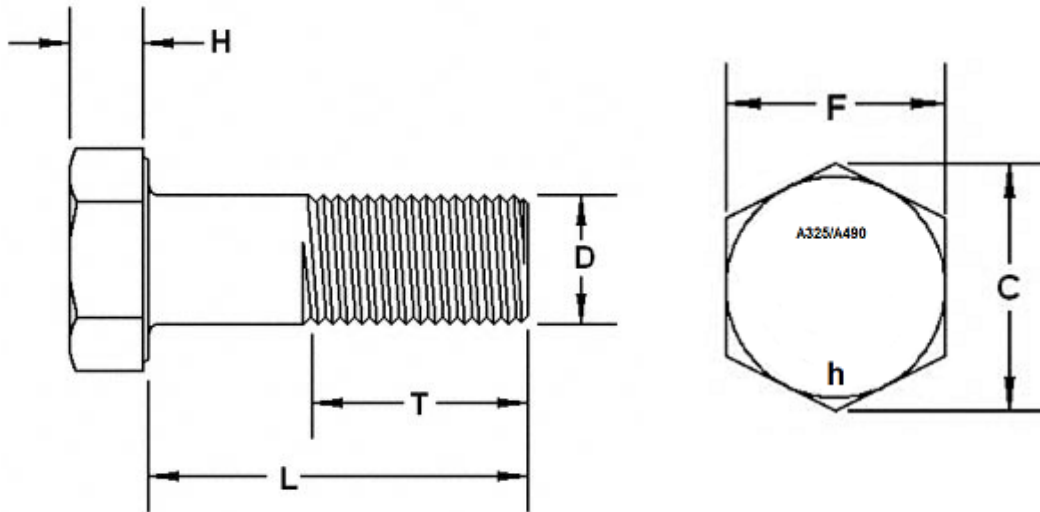
<b>1-1/8" (7) F1852/A325 TC AND F2280/A490 TC BOLTS IN STOCK</b>			
<b>PART #</b>	<b>DESCRIPTION</b>	<b>WEIGHT PER 100</b>	<b>QTY PER KEG</b>
PTU113250	1-1/8 (7) X 2-1/2	218	80
PTU113275	1-1/8 (7) X 2-3/4	225	80
PTU113300	1-1/8 (7) X 3	232	80
PTU113325	1-1/8 (7) X 3-1/4	250	70
PTU113350	1-1/8 (7) X 3-1/2	252	70
PTU113375	1-1/8 (7) X 3-3/4	254	70
PTU113400	1-1/8 (7) X 4	260	70
PTU113425	1-1/8 (7) X 4-1/4	267	60
PTU113450	1-1/8 (7) X 4-1/2	273	60
PTU113475	1-1/8 (7) X 4-3/4	280	60
PTU113500	1-1/8 (7) X 5	288	50
PTU114550	1-1/8 (7) X 5-1/2	302	50
PTU113600	1-1/8 (7) X 6	316	50
PTU113700	1-1/8 (7) X 7	320	30
PTU113750	1-1/8 (7) X 7-1/2	341	30





# HAYDON BOLTS, INC.

## Hex Head Bolts



Bolt Diameter	Width Across Flats (F)			Width Across Corners (C)		Height (H)		
	Nominal	Max	Min	Max	Min	Nominal	Max	Min
1/2	7/8	0.875	0.850	1.010	0.969	11/32	0.364	0.302
5/8	1-1/16	1.062	1.031	1.227	1.175	27/64	0.444	0.378
3/4	1-1/4	1.250	1.212	1.443	1.383	1/2	0.524	0.455
7/8	1-7/16	1.438	1.394	1.660	1.589	37/64	0.604	0.531
1	1-5/8	1.625	1.575	1.876	1.796	43/64	0.700	0.591
1-1/8	1-13/16	1.812	1.756	2.093	2.002	3/4	0.780	0.658
1-1/4	2	2.00	1.938	2.309	2.209	27/32	0.876	0.749
1-3/8	2-3/16	2.188	2.119	2.526	2.416	29/32	0.940	0.810
1-1/2	2-3/8	2.375	2.300	2.742	2.622	1	1.036	0.902
1-3/4	2-3/4	2.750	2.662	3.175	3.035	1-5/32	1.196	1.054
2	3-1/8	3.125	3.025	3.608	3.449	1-11/32	1.388	1.175
2-1/4	3-1/2	3.500	3.388	4.041	3.862	1-1/2	1.548	1.327
2-1/2	3-7/8	3.875	3.750	4.474	4.275	1-21/32	1.708	1.479

**Standard Thread Lengths**  
 For Bolt Lengths ≤ 6" use: Thread Length = (2 x Diameter) + 1/4"  
 For Bolt Lengths > 6" use: Thread Length = (2 x Diameter) 1/2"



# HAYDON BOLTS, INC.

## Sizes in Stock

1/2 (13) STRUCTURAL A325-1 BOLTS IN STOCK						
PART #	LENGTH	WEIGHT PER 100	QTY PER KEG	WIDTH ACROSS FLATS	BOLT HEAD HEIGHT	LENGTH OF THREAD
AAA050125	1/2 (13) X 1-1/4	11.7	1710	7/8	5/16	1
AAA050150	1/2 (13) X 1/1/2	12.8	1560	7/8	5/16	1
AAA050175	1/2 (13) X 1/3/4	14.1	1420	7/8	5/16	1
AAA050200	1/2 (13) X 2	15.2	1290	7/8	5/16	1
AAA050225	1/2 (13) X 2-1/4	16.8	1190	7/8	5/16	1
AAA050250	1/2 (13) X 2-1/2	18.2	1100	7/8	5/16	1
AAA050275	1/2 (13) X 2-3/4	19.5	1000	7/8	5/16	1
AAA050300	1/2 (13) X 3	20.9	950	7/8	5/16	1
AAA050325	1/2 (13) X 3-1/4	22.2	850	7/8	5/16	1
AAA050350	1/2 (13) X 3-1/2	23.6	750	7/8	5/16	1
AAA050375	1/2 (13) X 3-3/4	24.9	700	7/8	5/16	1
AAA050400	1/2 (13) X 4	26.2	675	7/8	5/16	1

5/8 (11) STRUCTURAL A325-1 & A325-3 BOLTS IN STOCK						
PART #	LENGTH	WEIGHT PER 100	QTY PER KEG	WIDTH ACROSS FLATS	BOLT HEAD HEIGHT	LENGTH OF THREAD
AAA062150	5/8(11) X 1-1/2	21.7	900	1-1/16	25/64	1-1/4
AAA062175	5/8(11) X 1-3/4	23.5	850	1-1/16	25/64	1-1/4
AAA062200	5/8(11) X 2	25.6	825	1-1/16	25/64	1-1/4
AAA062225	5/8(11) X 2-1/4	27.7	775	1-1/16	25/64	1-1/4
AAA062250	5/8(11) X 2-1/2	29.8	725	1-1/16	25/64	1-1/4
AAA062275	5/8(11) X 2-3/4	31.9	600	1-1/16	25/64	1-1/4
AAA062300	5/8(11) X 3	34	575	1-1/16	25/64	1-1/4
AAA062325	5/8(11) X 3-1/4	36	550	1-1/16	25/64	1-1/4
AAA062350	5/8(11) X 3-1/2	38.1	500	1-1/16	25/64	1-1/4
AAA062375	5/8(11) X 3-3/4	40.3	450	1-1/16	25/64	1-1/4
AAA062400	5/8(11) X 4	42.3	400	1-1/16	25/64	1-1/4
AAA062450	5/8(11) X 4-1/2	51	375	1-1/16	25/64	1-1/4
AAA062500	5/8(11) X 5	52.3	300	1-1/16	25/64	1-1/4
AAA062550	5/8(11) X 5-1/2	54.9	275	1-1/16	25/64	1-1/4
AAA062600	5/8(11) X 6	59.1	250	1-1/16	25/64	1-1/4



# HAYDON BOLTS, INC.

3/4 (9) STRUCTURAL A325-1, A325-3, A490-1 & A490-3 BOLTS IN STOCK						
PART #	LENGTH	WEIGHT PER 100	QTY PER KEG	WIDTH ACROSS FLATS	BOLT HEAD HEIGHT	LENGTH OF THREAD
AAA075175	3/4 (10) X 1-3/4	36.5	650	1-1/4	15/32	1-3/8
AAA075200	3/4 (10) X 2	39	650	1-1/4	15/32	1-3/8
AAA075225	3/4 (10) X 2-1/4	42	550	1-1/4	15/32	1-3/8
AAA075250	3/4 (10) X 2-1/2	45	525	1-1/4	15/32	1-3/8
AAA075275	3/4 (10) X 2-3/4	48.1	475	1-1/4	15/32	1-3/8
AAA075300	3/4 (10) X 3	51.1	425	1-1/4	15/32	1-3/8
AAA075325	3/4 (10) X 3-1/4	54.1	400	1-1/4	15/32	1-3/8
AAA075350	3/4 (10) X 3-1/2	57.1	375	1-1/4	15/32	1-3/8
AAA075375	3/4 (10) X 3-3/4	60.1	350	1-1/4	15/32	1-3/8
AAA075400	3/4 (10) X 4	63.2	300	1-1/4	15/32	1-3/8
AAA075425	3/4 (10) X 4-1/4	66.2	300	1-1/4	15/32	1-3/8
AAA075450	3/4 (10) X 4-1/2	69.2	275	1-1/4	15/32	1-3/8
AAA075475	3/4 (10) X 4-3/4	72.2	250	1-1/4	15/32	1-3/8
AAA075500	3/4 (10) X 5	75.2	225	1-1/4	15/32	1-3/8
AAA075525	3/4 (10) X 5-1/4	78.2	225	1-1/4	15/32	1-3/8
AAA075550	3/4 (10) X 5-1/2	81.3	200	1-1/4	15/32	1-3/8
AAA075575	3/4 (10) X 5-3/4	84.3	190	1-1/4	15/32	1-3/8
AAA075600	3/4 (10) X 6	87.3	190	1-1/4	15/32	1-3/8
AAA075625	3/4 (10) X 6-1/4	90.1	175	1-1/4	15/32	1-3/8
AAA075650	3/4 (10) X 6-1/2	92.9	150	1-1/4	15/32	1-3/8
AAA075700	3/4 (10) X 7	99	140	1-1/4	15/32	1-3/8
AAA075750	3/4 (10) X 7-1/2	107	135	1-1/4	15/32	1-3/8
AAA075800	3/4 (10) X 8	113	120	1-1/4	15/32	1-3/8
AAA075850	3/4 (10) X 8-1/2	117	120	1-1/4	15/32	1-3/8
AAA075900	3/4 (10) X 9	138	100	1-1/4	15/32	1-3/8
AAA075950	3/4 (10) X 9-1/2	140	80	1-1/4	15/32	1-3/8
AAA07600	3/4 (10) X 10	143	60	1-1/4	15/32	1-3/8



# HAYDON BOLTS, INC.

7/8 (9) STRUCTURAL A325-1, A325-3, A490-1 & A490-3 BOLTS IN STOCK						
PART #	LENGTH	WEIGHT PER 100	QTY PER KEG	WIDTH ACROSS FLATS	BOLT HEAD HEIGHT	LENGTH OF THREAD
AAA087175	7/8(9) X 1-3/4	52.2	450	1-7/16	35/64	1-1/2
AAA087200	7/8(9) X 2	56.4	425	1-7/16	35/64	1-1/2
AAA087225	7/8(9) X 2-1/4	60.2	375	1-7/16	35/64	1-1/2
AAA087250	7/8(9) X 2-1/2	64.2	350	1-7/16	35/64	1-1/2
AAA087275	7/8(9) X 2-3/4	68.3	325	1-7/16	35/64	1-1/2
AAA087300	7/8(9) X 3	72.4	300	1-7/16	35/64	1-1/2
AAA087325	7/8(9) X 3-1/4	76.6	275	1-7/16	35/64	1-1/2
AAA087350	7/8(9) X 3-1/2	80.7	250	1-7/16	35/64	1-1/2
AAA087375	7/8(9) X 3-3/4	84.8	250	1-7/16	35/64	1-1/2
AAA087400	7/8(9) X 4	88.9	225	1-7/16	35/64	1-1/2
AAA087425	7/8(9) X 4-1/4	94.3	200	1-7/16	35/64	1-1/2
AAA087450	7/8(9) X 4-1/2	98	200	1-7/16	35/64	1-1/2
AAA087475	7/8(9) X 4-3/4	103.3	180	1-7/16	35/64	1-1/2
AAA087500	7/8(9) X 5	106	175	1-7/16	35/64	1-1/2
AAA087525	7/8(9) X 5-1/4	112	150	1-7/16	35/64	1-1/2
AAA087550	7/8(9) X 5-1/2	114	150	1-7/16	35/64	1-1/2
AAA087575	7/8(9) X 5-3/4	116	150	1-7/16	35/64	1-1/2
AAA087600	7/8(9) X 6	122	135	1-7/16	35/64	1-1/2
AAA087625	7/8(9) X 6-1/2	125	130	1-7/16	35/64	1-1/2
AAA087650	7/8(9) X 6-1/2	130	125	1-7/16	35/64	1-1/2
AAA087675	7/8(9) X 6-3/4	138	120	1-7/16	35/64	1-1/2
AAA087700	7/8(9) X 7	141	120	1-7/16	35/64	1-1/2
AAA087725	7/8(9) X 7-1/4	147	115	1-7/16	35/64	1-1/2
AAA087750	7/8(9) X 7-1/2	149	110	1-7/16	35/64	1-1/2
AAA087775	7/8(9) X 3/4	155	100	1-7/16	35/64	1-1/2
AAA087800	7/8(9) X 8	158	90	1-7/16	35/64	1-1/2
AAA087850	7/8(9) X 8-1/2	163	85	1-7/16	35/64	1-1/2
AAA087900	7/8(9) X 9	173	80	1-7/16	35/64	1-1/2
AAA087925	7/8(9) X 9-1/4	178	80	1-7/16	35/64	1-1/2
AAA087950	7/8(9) X 9-1/2	181	80	1-7/16	35/64	1-1/2
AAA088000	7/8(9) X 10	188	65	1-7/16	35/64	1-1/2



# HAYDON BOLTS, INC.

1 (8) STRUCTURAL A325-1, A325-3, A490-1 & A490-3 BOLTS IN STOCK						
PART #	LENGTH	WEIGHT PER 100	QTY PER KEG	WIDTH ACROSS FLATS	BOLT HEAD HEIGHT	LENGTH OF THREAD
AAA100200	1 (8) X 2	78.8	300	1-5/8	39/64	1-3/4
AAA100225	1 (8) X 2-1/4	83.4	275	1-5/8	39/64	1-3/4
AAA100250	1 (8) X 2-1/2	88	250	1-5/8	39/64	1-3/4
AAA100275	1 (8) X 2-3/4	94	225	1-5/8	39/64	1-3/4
AAA100300	1 (8) X 3	99	225	1-5/8	39/64	1-3/4
AAA100325	1 (8) X 3-1/4	104	200	1-5/8	39/64	1-3/4
AAA100350	1 (8) X 3-1/2	110	200	1-5/8	39/64	1-3/4
AAA100375	1 (8) X 3-3/4	115	175	1-5/8	39/64	1-3/4
AAA100400	1 (8) X 4	120	175	1-5/8	39/64	1-3/4
AAA100425	1 (8) X 4-1/4	125.5	150	1-5/8	39/64	1-3/4
AAA100450	1 (8) X 4-1/2	131	150	1-5/8	39/64	1-3/4
AAA100475	1 (8) X 4-3/4	136.5	130	1-5/8	39/64	1-3/4
AAA100500	1 (8) X 5	142	130	1-5/8	39/64	1-3/4
AAA100525	1 (8) X 5-1/4	147.5	125	1-5/8	39/64	1-3/4
AAA100550	1 (8) X 5-1/2	153	110	1-5/8	39/64	1-3/4
AAA100575	1 (8) X 5-3/4	159	105	1-5/8	39/64	1-3/4
AAA100600	1 (8) X 6	163	105	1-5/8	39/64	1-3/4
AAA100650	1 (8) X 6-1/2	173	100	1-5/8	39/64	1-3/4
AAA100675	1 (8) X 6-3/4	178	90	1-5/8	39/64	1-3/4
AAA100700	1 (8) X 7	184	90	1-5/8	39/64	1-3/4
AAA100725	1 (8) X 7-1/4	189	80	1-5/8	39/64	1-3/4
AAA100750	1 (8) X 7-1/2	195	80	1-5/8	39/64	1-3/4
AAA100775	1 (8) X 7-3/4	200	75	1-5/8	39/64	1-3/4
AAA100800	1 (8) X 8	206	75	1-5/8	39/64	1-3/4
AAA100825	1 (8) X 8-1/4	214	70	1-5/8	39/64	1-3/4
AAA100850	1 (8) X 8-1/2	220	70	1-5/8	39/64	1-3/4
AAA100875	1 (8) X 8-3/4	224	50	1-5/8	39/64	1-3/4
AAA100900	1 (8) X 9	228	50	1-5/8	39/64	1-3/4
AAA100950	1 (8) X 9-1/2	238	50	1-5/8	39/64	1-3/4
AAA101000	1 (8) X 10	249	50	1-5/8	39/64	1-3/4





# HAYDON BOLTS, INC.

1-1/8 (7) STRUCTURAL A325-1, A325-3, A490-1 & A490-3 BOLTS IN STOCK						
PART #	LENGTH	WEIGHT PER 100	QTY PER KEG	WIDTH ACROSS FLATS	BOLT HEAD HEIGHT	LENGTH OF THREAD
AAA113225	1-1/8 (7) X 2-1/4	110	170	1-3/16	11/16	2
AAA113250	1-1/8 (7) X 2-1/2	115	170	1-3/16	11/16	2
AAA113275	1-1/8 (7) X 2-3/4	122	170	1-3/16	11/16	2
AAA113300	1-1/8 (7) X 3	128	170	1-3/16	11/16	2
AAA113325	1-1/8 (7) X 3-1/4	134	160	1-3/16	11/16	2
AAA113350	1-1/8 (7) X 3-1/2	141	135	1-3/16	11/16	2
AAA113375	1-1/8 (7) X 3-3/4	148	135	1-3/16	11/16	2
AAA113400	1-1/8 (7) X 4	155	125	1-3/16	11/16	2
AAA113425	1-1/8 (7) X 4-1/4	162	125	1-3/16	11/16	2
AAA113450	1-1/8 (7) X 4-1/2	168	115	1-3/16	11/16	2
AAA113475	1-1/8 (7) X 4-3/4	175	110	1-3/16	11/16	2
AAA113500	1-1/8 (7) X 5	182	105	1-3/16	11/16	2
AAA113525	1-1/8 (7) X 5-1/4	190	95	1-3/16	11/16	2
AAA113550	1-1/8 (7) X 5-1/2	196	90	1-3/16	11/16	2
AAA113575	1-1/8 (7) X 5-3/4	202	70	1-3/16	11/16	2
AAA113600	1-1/8 (7) X 6	209	70	1-3/16	11/16	2
AAA113625	1-1/8 (7) X 6-1/4	218	70	1-3/16	11/16	2
AAA113650	1-1/8 (7) X 6-1/2	227	70	1-3/16	11/16	2
AAA113675	1-1/8 (7) X 6-3/4	231	70	1-3/16	11/16	2
AAA113700	1-1/8 (7) X 7	235	70	1-3/16	11/16	2
AAA113725	1-1/8 (7) X 7-1/4	241	70	1-3/16	11/16	2
AAA113750	1-1/8 (7) X 7-1/2	255	70	1-3/16	11/16	2
AAA113775	1-1/8 (7) X 7-3/4	260	60	1-3/16	11/16	2
AAA113800	1-1/8 (7) X 8	263	60	1-3/16	11/16	2



# HAYDON BOLTS, INC.

1-1/4 (7) STRUCTURAL A325-1, A325-3, A490-1 & A490-3 BOLTS IN STOCK						
PART #	LENGTH	WEIGHT PER 100	QTY PER KEG	WIDTH ACROSS FLATS	BOLT HEAD HEIGHT	LENGTH OF THREAD
AAA125225	1-1/4 (7) X 2-1/4	142	130	2	25/32	2
AAA125250	1-1/4 (7) X 2-1/2	150	130	2	25/32	2
AAA125275	1-1/4 (7) X 2-3/4	158	130	2	25/32	2
AAA125300	1-1/4 (7) X 3	167	130	2	25/32	2
AAA125325	1-1/4 (7) X 3-1/4	175	125	2	25/32	2
AAA125350	1-1/4 (7) X 3-1/2	183	125	2	25/32	2
AAA125375	1-1/4 (7) X 3-3/4	192	110	2	25/32	2
AAA125400	1-1/4 (7) X 4	200	100	2	25/32	2
AAA125425	1-1/4 (7) X 4-1/4	209	95	2	25/32	2
AAA125450	1-1/4 (7) X 4-1/2	217	90	2	25/32	2
AAA125475	1-1/4 (7) X 4-3/4	225	85	2	25/32	2
AAA125500	1-1/4 (7) X 5	237	85	2	25/32	2
AAA125525	1-1/4 (7) X 5-1/4	245	80	2	25/32	2
AAA125550	1-1/4 (7) X 5-1/2	251	75	2	25/32	2
AAA125600	1-1/4 (7) X 6	267	70	2	25/32	2
AAA125625	1-1/4 (7) X 6-1/4	284	70	2	25/32	2
AAA125650	1-1/4 (7) X 6-1/2	288	65	2	25/32	2
AAA125675	1-1/4 (7) X 6-3/4	301	60	2	25/32	2
AAA125700	1-1/4 (7) X 7	308	55	2	25/32	2
AAA125725	1-1/4 (7) X 7-1/4	312	50	2	25/32	2
AAA125750	1-1/4 (7) X 7-1/2	316	50	2	25/32	2
AAA125775	1-1/4 (7) X 7-3/4	324	50	2	25/32	2
AAA125800	1-1/4 (7) X 8	333	50	2	25/32	2
AAA125850	1-1/4 (7) X 8-1/2	350	40	2	25/32	2
AAA125900	1-1/4 (7) X 9	367	40	2	25/32	2
AAA125950	1-1/4 (7) X 9-1/2	384	40	2	25/32	2

1-1/2 (6) STRUCTURAL A325-1, A325-3, A490-1 & A490-3 BOLTS IN STOCK						
PART #	LENGTH	WEIGHT PER 100	QTY PER KEG	WIDTH ACROSS FLATS	BOLT HEAD HEIGHT	LENGTH OF THREAD
AAA150300	1-1/2 (7) X 3	265	25	2-3/8	15/16	2-1/4
AAA150325	1-1/2 (7) X 3-1/4	277	25	2-3/8	15/16	2-1/4
AAA150375	1-1/2 (7) X 3-3/4	290	25	2-3/8	15/16	2-1/4
AAA150400	1-1/2 (7) X 4	313	25	2-3/8	15/16	2-1/4
AAA150425	1-1/2 (7) X 4-1/4	316	25	2-3/8	15/16	2-1/4
AAA150450	1-1/2 (7) X 4-1/2	325	25	2-3/8	15/16	2-1/4
AAA150475	1-1/2 (7) X 4-3/4	335	25	2-3/8	15/16	2-1/4
AAA150500	1-1/2 (7) X 5	350	25	2-3/8	15/16	2-1/4
AAA150525	1-1/2 (7) X 5-1/4	364	20	2-3/8	15/16	2-1/4
AAA150550	1-1/2 (7) X 5-1/2	375	18	2-3/8	15/16	2-1/4
AAA150575	1-1/2 (7) X 5-3/4	398	15	2-3/8	15/16	2-1/4
AAA150600	1-1/2 (7) X 6	408	15	2-3/8	15/16	2-1/4
AAA150650	1-1/2 (7) X 6-1/2	424	15	2-3/8	15/16	2-1/4
AAA150675	1-1/2 (7) X 6-3/4	440	15	2-3/8	15/16	2-1/4
AAA150700	1-1/2 (7) X 7	448	15	2-3/8	15/16	2-1/4
AAA150725	1-1/2 (7) X 7-1/4	470	10	2-3/8	15/16	2-1/4
AAA150750	1-1/2 (7) X 7-1/2	482	10	2-3/8	15/16	2-1/4
AAA150800	1-1/2 (7) X 8	506	10	2-3/8	15/16	2-1/4
AAA150900	1-1/2 (7) X 9	555	10	2-3/8	15/16	2-1/4
AAA151000	1-1/2 (7) X 10	600	10	2-3/8	15/16	2-1/4



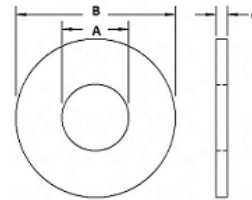


# HAYDON BOLTS, INC.

## Structural Washers ASTM F436

Finish: Plain, Hot Dip and Mechanical Galvanized

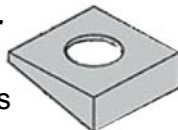
Special sizes available upon request.



PART #	For Bolt Diameter	Keg Qty.	Weight Per 100	I.D.	O.D.	Thickness (C)
				(A)	(B)	
AAW050	1/2	2500	1.93	17/32	1-1/16	.097-.177
AAW062	5/8	1800	3.73	11/16	1-5/16	.122-.177
AAW075	3/4	1300	4.33	13/16	1-15/32	.136-.177
AAW087	7/8	625	6.84	15/16	1-3/4	.136-.177
AAW100	1	700	9	1-1/8	2	.136-.177
AAW113	1-1/8	500	11.07	1-1/4	2-1/4	.136-.177
AAW125	1-1/4	300	13.67	1-3/8	2-1/20	.136-.177
AAW150	1-1/2	200	24	1-5/8	3	.136-.177
AAW175	1-3/4	150	30.67	1-7/8	3-3/8	.178-.28
AAW200	2	100	38	2-1/8	3-3/4	.178-.28
AAW225	2-1/4	50	56	2-3/8	4	.24-.34
AAW250	2-1/2	50	72	2-5/8	4-1/2	.24-.34
AAW275	2-3/4	50	91	2-7/8	5	.24-.34
AAW300	3	50	104	3-1/8	5-1/2	.24-.34

### Hardened Bevel Washer

1-3/4 x 1-3/4 x 16 -2/3%  
Slope for Standard Beams



### Direct Tension Indicator (DTI's)

Plain Finish ASTM F959 or  
Mechanical Galvanized ASTM B695



Bolt Diameter	Container Quantity	Net Weight Per 100 Pcs.
1/2	1,000	25.2
5/8	1,000	23.9
3/4	1,000	22.6
7/8	1,000	21.1
1	1,000	19.3

Bolt Diameter	Container Quantity	Net Weight	Container Quantity	Weight Per 100 Pcs.
1/2	1,500	2.45	-	-
5/8	1,000	3.7	-	-
3/4	600	6.35	450	7.5
7/8	400	9.2	350	11.2
1	350	11.5	250	14.3
1-1/8	300	12	200	16.95
1-1/4	250	12.55	150	21.95



# HAYDON BOLTS, INC.

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## ASTM – F1554

Comparable to AASHTO – M314

### Scope:

- This specification covers straight and bent, headed and headless, carbon, carbon boron, alloy or high-strength low-alloy steel anchor bolts.
- Steels are available in three strength grades: 36, 55 and 105-KSI yield strength. The grade 55 steel has a supplemental amendment to the spec, the S1 supplement that addresses and allows for welding.
- Grade 55 S1 is dual certifiable to grade 36
- **Haydon stocks grade 105 and 55 S1. We stock 55 S1 only so you don't have to worry if you can weld to it or not, you're always covered.**
- Typical applications for anchoring structural supports to concrete foundations:
  - Building columns
  - Column supports for highway signs
  - Street lighting and traffic signals
  - Steel bearing plates, etc
- Corrosion protection is included in this specification. Zinc, Hot Dip ASTM A153, Class C or Mechanically applied ASTM B695, Class 50.
- The style and grade of the nut and washer are included in this specification.

**ASTM – F1554** eliminates the need to specify anchor bolts using the A36, A352, A449, A193-B7 or A307 specifications.

**Stock Size Range: 1/2" through 4" diameter**

### Other Materials Available

Steels: ASTM 449 - A325 - A193 - A345 - A588

Stainless: ASTM – A276 – 300 & 400 Series

Other non-ferrous: Aluminum – Bronze Brass



# HAYDON BOLTS, INC.

L Anchor Bolts in Stock - Plain Finish							
Spec: F1554-55 S1							
Dia	Length	Hook	Thread	Dia	Length	Hook	Thread
1/2	6	2	1-1/2	7/8	12	4	4
1/2	8	2	1-1/2	7/8	14	4	4
1/2	10	2	1-1/2	7/8	16	4	4
1/2	12	2	1-1/2	7/8	18	4	4
1/2	14	2	1-1/2	7/8	20	4	4
1/2	16	2	1-1/2	7/8	24	4	4
1/2	18	2	1-1/2	7/8	30	4	4
1/2	20	2	1-1/2	1	15	4	4
5/8	8	3	3	1	18	4	4
5/8	10	3	3	1	20	4	4
5/8	12	3	3	1	24	4	4
5/8	14	3	3	1	30	4	6
5/8	15	3	3	1	36	6	7
5/8	16	3	3	1-1/4	24	6	6
5/8	18	3	3	1-1/4	30	6	6
5/8	20	3	3	1-1/4	36	6	6
5/8	24	3	3	<p align="center"><b>Straight Rod Anchors, L Shaped Anchors and Tie-Rod Assemblies can be manufactured to your specification from .5" through 4" diameter.</b></p>			
3/4	8	3	4				
3/4	10	3	4				
3/4	12	3	4				
3/4	13	3	4				
3/4	14	3	4				
3/4	15	3	4				
3/4	16	3	4				
3/4	18	3	4				
3/4	20	3	4				
3/4	21	3	4				
3/4	24	3	4				
3/4	30	3	4				



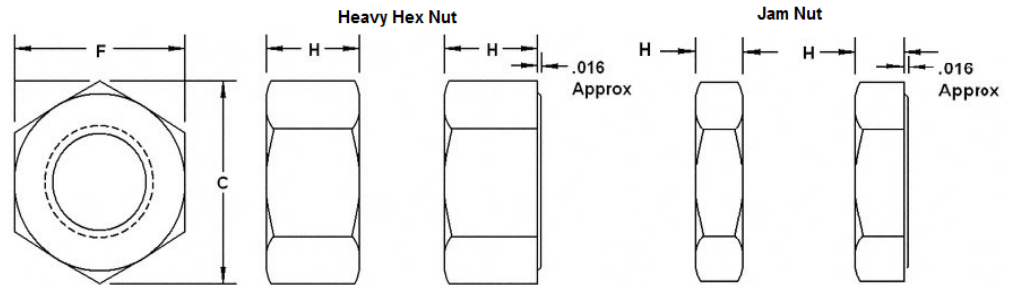
# HAYDON BOLTS, INC.

L Anchor Bolts in Stock - Hot Dip Galvanized Finish							
Spec: F1554-55 S1							
Dia	Length	Hook	Thread	Dia	Length	Hook	Thread
1/2	6	2	1-1/2	7/8	16	4	4
1/2	8	2	1-1/2	7/8	18	4	4
1/2	10	2	1-1/2	7/8	20	4	4
1/2	12	2	1-1/2	7/8	24	4	4
1/2	14	2	1-1/2	7/8	30	4	4
1/2	16	2	1-1/2	1	15	4	4
1/2	18	2	1-1/2	1	18	4	4
5/8	6	3	3	1	20	4	4
5/8	8	3	3	1	24	4	4
5/8	12	3	3	1	30	4	6
5/8	15	3	3	1	36	6	7
5/8	18	3	3	1-1/4	24	6	6
5/8	24	3	3	1-1/4	30	6	6
3/4	8	3	4	1-1/4	36	6	6
3/4	10	3	4	1-1/2	36	6	8
3/4	12	3	4	1-1/2	60	6	8
3/4	15	3	4	1-1/2	72	6	8
3/4	18	3	4				
3/4	21	3	4				
3/4	24	3	4				
3/4	30	3	4				
3/4	36	3	4				



# HAYDON BOLTS, INC.

## Nuts



### Heavy Hex Nuts

ASTM A563 Grade A, C, C3

ASTM A563 DH, DH3, A194, 2H, 8, 8M

Finishes: Plain, Hot Dip Galvanized, Mechanically Galvanized and Zinc Plated

Nut Diameter	Width Across Flats (F)	Width Across Corners (C)		Thickness (H)	Weight per Nut
		Max	Min		
1/2	7/8	1.010	0.969	31/64	0.07
5/8	1-1/16	1.227	1.175	39/64	0.12
3/4	1-1/4	1.443	1.382	47/64	0.20
7/8	1-7/16	1.660	1.589	55/64	0.30
1	1-5/8	1.876	1.796	63/64	0.43
1-1/8	1-13/16	2.093	2.002	1-7/64	0.59
1-1/4	2	2.309	2.209	1-7/32	0.79
1-3/8	2-3/16	2.526	2.416	1-11/32	1.02
1-1/2	2-3/8	2.742	2.622	1-15/32	1.31
1-5/8	2-9/16	2.959	2.828	1-19/32	1.62
1-3/4	2-3/4	3.175	3.035	1-23/32	2.04
1-7/8	2-15/16	3.392	3.242	1-27/32	2.41
2	3-1/8	3.608	3.449	1-31/32	2.99
2-1/4	3-1/2	4.041	3.862	2-13/64	4.19
2-1/2	3-7/8	4.474	4.275	2-29/64	5.64
2-3/4	4-1/4	4.907	4.688	2-45/64	7.38
3	4-5/8	5.340	5.102	2-61/64	9.50
3-1/4	5	5.774	5.515	3-3/16	11.94
3-1/2	5-3/8	6.207	5.928	3-7/16	15.26
3-3/4	5-3/4	6.640	6.341	3-11/16	18.12
4	6-1/8	7.073	6.755	3-15/16	21.80

\*\*\*AVAILABLE MELTED AND MANUFACTURED IN THE U.S.A.\*\*\*

### Hex Nuts

ASTM A563 Grade A

Finishes: Plain, Hot Dip Galvanized, Mechanically Galvanized and Zinc Plated

Nut Diameter	Width Across Flats (F)	Width Across Corners (C)		Thickness (H)	Weight per Nut
		Max	Min		
1/2	3/4	0.866	0.84	7/16	.038
5/8	15/16	1.083	1.051	35/64	.074
3/4	1-1/8	1.299	1.24	41/64	.12
7/8	1-5/16	1.516	1.447	3/4	.2
1	1-1/2	1.732	1.653	55/64	.29
1-1/8	1-1/16	1.949	1.859	31/32	.41
1-1/4	1-7/8	2.165	2.066	1-1/16	.55
1-3/8	2-1/16	2.382	2.273	1-11/64	.74
1-1/2	2-1/4	2.598	2.48	1-9/32	.95



# HAYDON BOLTS, INC.

## Commercial Flat Washers

Bolt Size Inch	Outside Diameter Inch	Inside I.D. Inch	Thickness	Approx. Lbs per 100 Pcs.	Approx. No./Pcs. 50 Lbs.	Approx. No./Pcs. Per Lb.
3/16	9/16	1/4	.036/.065	0.28	18,050	361
1/4	3/4	5/16	.051/.080	0.67	7,450	149
5/16	7/8	3/8	.064/.104	1.11	4,350	87
3/8	1	7/16	.064/.104	1.49	3,350	67
7/16	1 1/4	1/2	.064/.104	2.44	2,050	41
1/2	1 3/8	9/16	.086/.132	3.85	1,300	26
9/16	1 15/32	5/8	.086/.132	4.55	1,100	22
5/8	1 3/4	11/16	.108/.160	7.7	650	13
3/4	2	13/16	.122/.177	11	455	9.1
7/8	2 1/4	15/16	.136/.192	15.3	325	6.5
1	2 1/2	1 1/16	.136/.192	18.8	265	5.3
1 1/4	3	1 3/8	.136/.192	22	225	4.5
1 3/8	3 1/4	1 1/2	.153/.213	33.3	150	3
1 1/2	3 1/2	1 5/8	.153/.213	38.4	130	2.6
1 5/8	3 3/4	1 3/4	.153/.213	44.8	115	2.3
1 3/4	4	1 7/8	.153/.213	50	100	2
1 7/8	4 1/4	2	.153/.213	56.9	90	1.8
2	4 1/2	2 1/8	.153/.213	63	79	1.6
2 1/4	4 3/4	2 3/8	.193/.248	82.6	60	1.2
2 1/2	5	2 5/8	.210/.280	96.1	52	1
2 3/4	5 1/4	2 7/8	.228/.310	110	45	0.9
3	5 1/2	3 1/8	.249/.327	130	43	0.8

**Available in Stock**

Finishes: Plain, Hot Dip Galvanized & Mechanical Galvanized



# HAYDON BOLTS, INC.

## Anchor Bolt Sleeves

When you're sleeving Anchor Bolts, use the Wilson Sleeve

The Wilson Anchor Bolt Sleeve is used as an in-place form, to provide a grout pocket around an anchor bolt. It expedites the mounting of machinery and equipment, is maintenance free and easy to use.

Series	Bolt Size	Shell Size	Cubic Inches of Grout Per Shell	Shells Per Carton	Cubic Inches of Grout Per Carton	Bags of Grout Per Carton
AX	1/2	2X5	15.95	100	1595	1.06
AX	3/4	2X5	15.16	100	1516	1.11
A	5/8	2X7	21.41	100	2141	1.42
A	3/4	2X7	20.5	100	2050	1.36
A	7/8	2X7	19.52	100	1952	1.3
B	1	3X10	65.8	50	3290	2.19
B	1 1/4	3X10	61.4	50	3070	2.04
C	1 1/2	4X15	167.6	20	3352	2.23
C	1 3/4	4X15	158	20	3160	2.11
D	2	4X18	176.76	20	3525	2.35
D	2 1/4	4X18	161.82	20	3236	2.15
E	2 1/2	6X24	575.28	10	5753	3.82
E	3	6X24	523.44	10	5235	3.48



**Note: Grout estimate based on .87 cu. Ft yield per 100 lbs. of non-corrosive grout**

TABLE 2: MATERIAL AND TESTING DATA	
Plastic:	High Density Polyethylene
Density, gms/cc:	ASTM D 1505-68 .956
Vicat Softening Point °F	ASTM D 1525-70 256°F / 124°C
Brittleness Temperature °F	ASTM D 746-70 -180°F/ -118°C
Torch Application:	Slow Burn
Compression Test:	180 psi/12.7 kg/sq.cm





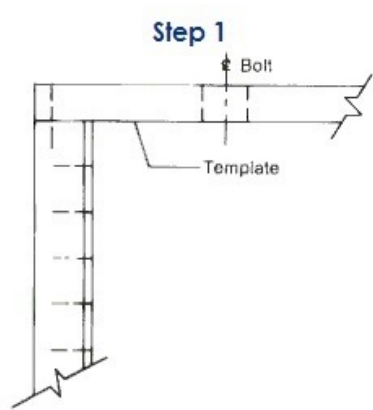
# HAYDON BOLTS, INC.

## Composition and Materials

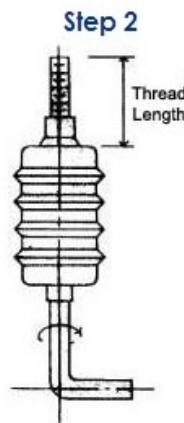
The Wilson Anchor Bolt Sleeve is manufactured of high impact plastic. It is non-rusting, non-conductive and lightweight. Single unit constructions provides for reduction installation labor because no welding, threading or cleaning is required. The configuration is such that the grout and concrete “lock” it in place, providing greater pullout strength than with straight pipes.

## Method of Installation:

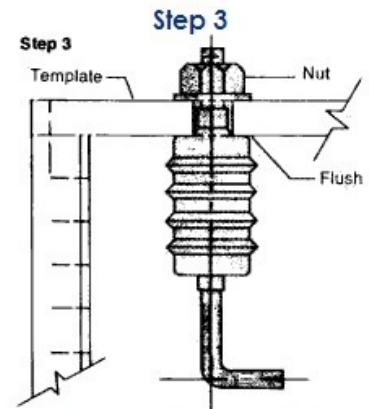
The bottom of the sleeve is passed over the top of the bolt until the threaded portion engages the self-threading top of the sleeve. The sleeve is turned until the proper projection is obtained. The entire assembly is cast into the concrete, with the top of the sleeve at foundation level. When the anchor bolt is ready to adjust, the top of the sleeve is cut off and the top is discarded. The bolt may now be adjusted within the sleeve. Expansion or non-shrinking grout is cast into the sleeve



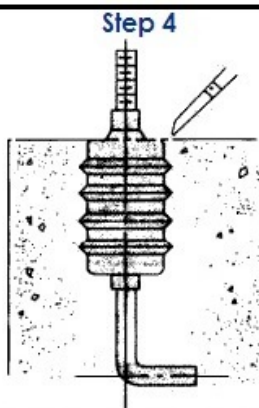
See Table For Hole Size in Template



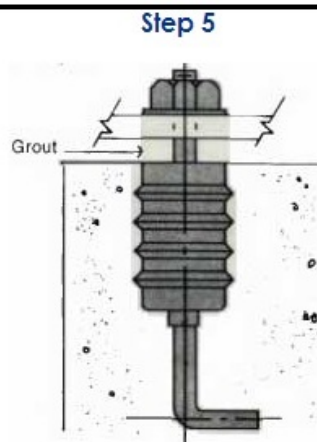
Screw Bolt Through Sleeve-Bottom To Top of Thread Length Spec.



Insert Sleeved Bolt into Template. Hand tighten nut to secure in place.



Before installing equipment, cut out top of sleeve.



Install Equipment; Grout

Anchor Bolt		Template Hole	
Diameter			
Inches	mm.	Inches	mm.
1/2	13	3/4	19
5/8	16	7/8	22
3/4	19	1 1/8	29
7/8	22	1 1/4	32
1	25	1 3/8	35
1 1/4	32	1 5/8	41
1 1/2	38	1 7/8	48
1 3/4	44	2 1/8	54
2	51	2 1/2	64
2 1/4	57	2 3/4	70
2 1/2	64	3 1/4	83
3	76	3 3/4	96

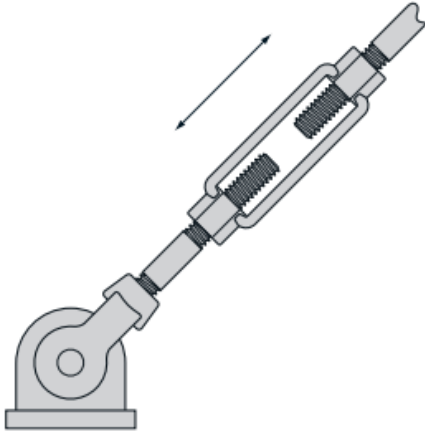


# HAYDON BOLTS, INC.

## Turnbuckles

### Applications

Turnbuckles are used to provide length and tension adjustment of tie rods and hanger assemblies. They are widely used in structural steel bracing and pipe support applications.



Typical turnbuckle application

### Relevant Standards

Our forged turnbuckle bodies are manufactured to meet Federal Spec. FF-T-791b, Type 1, Form 1, and Class 2 (superseded by ASTM F1145, Type 1, and Grade 1 Class B.) They also meet the dimensions and load ratings shown in the AISC Construction Manual of Steel Construction, 9<sup>th</sup> edition page 4-149.

### Materials

Haydon stocks turnbuckle bodies in C1035 steel, forged and normalized in accordance with ASTM A668 Class C. Heat treated carbon steel turnbuckle bodies and stainless steel turnbuckle bodies are available by special order.

### Finishes

Standard finish is plain steel, shot blasted after forging. Hot dip galvanized and zinc electroplating are available.

### Threads

Standard threads are UNC 2B, RH/LH, with other thread series and profiles also available by special order. Hot dip galvanized turnbuckles are normally

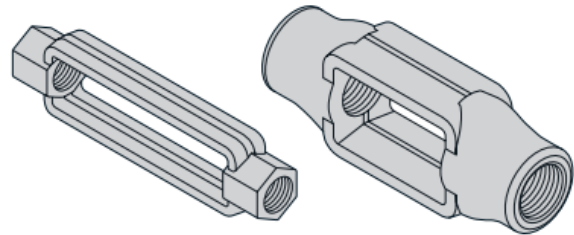
tapped oversize after galvanizing to accommodate the zinc coating on the rods.

### Fittings

Left and right hand stub end fittings are also available. Dimensions are available upon request.

### Dimensions

Refer to Table 1 for Turnbuckle body dimensions. Note that for the 2-1/4 and 2-1/2 sizes, the nut area is round instead of hex shaped.



Turnbuckle with hexagonal ends

Turnbuckle with round ends

### Notes Regarding Strength

ASTM F1145 and Federal Specification FF-T-791b tabulate the recommended working loads and minimum breaking strengths for each size of the turnbuckle body. The safe working loads listed in Table 1 are taken from the AISC Manual of Steel Construction and are based on safety factors in the range of 3:1, 4:1 and 5:1, depending on size and application.

From a thread strength standpoint the nut area of carbon steel turnbuckles bodies forged to ASTM A668 Class C is roughly equivalent to an ASTM A563 Grade C heavy hex nut. It is possible to heat treat the turnbuckle bodies to higher hardness levels but for applications where ASTM A563 Grade DH or ASTM A194 Grade 2H nuts are recommended, sleeve nuts should be considered.

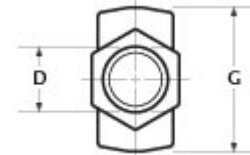
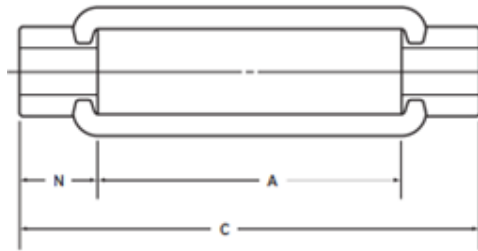
### Specifying and ordering Turnbuckle Bodies

1. Determine turnbuckle thread size based on safe working load and rod diameter from Table 1. Also select take up length for sizes 1" and under.
2. Specify the desired finish (typically plain or HDG) and any other special requirements.



# HAYDON BOLTS, INC.

## Turnbuckle Data Sheet



Thread Diameter (D)	Takeup (A)	Nut Length (N)	Overall Length (C)	Body Width (G)	Safe Working Load (lbs)	Weight (lbs)
3/8	6	5/8	7-1/4	11/32	1200	0.4
1/2	6	3/4	7-1/2	15/16	2200	0.8
1/2	12	3/4	13-1/2	15/16	2200	1.3
5/8	6	1-5/16	7-7/8	1-17/32	3500	1
5/8	12	1-5/16	13-7/8	1-17/32	3500	1.7
3/4	6	1-1/8	8-1/4	1-25/32	5200	1.5
3/4	12	1-1/8	14-1/4	1-25/32	5200	2.5
7/8	6	1-5/16	8-5/8	1-7/8	7200	1.6
7/8	12	1-5/16	14-5/8	1-7/8	7200	3.4
1	6	1-3/8	8-3/4	2-1/32	10000	2
1	12	1-1/2	15	2-1/32	10000	4.6
1-1/8	6	1-3/4	9-1/2	2-17/32	15200	3.8
1-1/4	6	1-3/4	9-1/2	2-17/32	15200	3.5
1-3/8	6	1-7/8	9-3/4	2-3/4	21400	6
1-1/2	6	1-7/8	9-3/4	3-1/32	21400	5.8
1-5/8	6	2-7/16	10-3/4	3-9/16	27600	9.8
1-3/4	6	2-7/16	10-3/4	3-9/16	27600	9.5
1-7/8	6	1-9/16	11-1/8	4	34500	13.4
2	6	2-9/16	11-1/8	4	34500	13
2-1/4	6	3-3/8	13-1/2	4-5/8	48000	23.5
1-1/2	6	3-3/8	13-1/2	5	60000	23.5

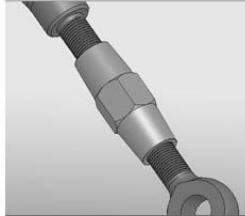


# HAYDON BOLTS, INC.

## Sleeve Nuts

### Applications

Sleeve nuts are used to couple tie rods and provide a limited degree of length adjustment (typically 4-5 inches.) They're often used in place of turnbuckles when high strength rods are specified.



Typical sleeve nut application

### Relevant Standards

Sleeve nut dimensions are shown in the AISC Steel Construction Manual, 13th edition, on pages 15-17. When requested, we can also certify chemical and mechanical properties to ASTM nut specifications (A563 or A194.)

### Materials

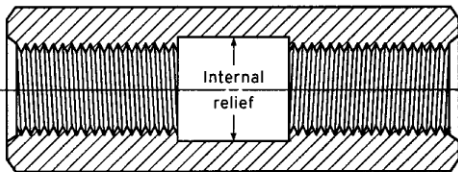
Standard sleeve nuts are produced from ASTM A108 grade 12L14 hexagon or round bars with 50 ksi minimum yield strength. Other available materials include 1045, 4140, structural grades and stainless steels.

### Finishes

Standard finish is plain with either a cold drawn or hot rolled mill finish, depending on the type of bar stock used. Hot dip galvanizing and as zinc electroplating is available.

### Threads

Standard threads are UNC 2B, RH/LH, with other thread series and profiles available by special order. Sleeve nuts are also frequently threaded RH/RH for use as extra-long coupling nuts. Standard parts are tapped from each end to a depth of  $L/2$ , so that rods may be threaded all the way to the center of the nut. If the overall length of the sleeve nut prohibits tapping to a depth of  $L/2$ , the center of the nut can be relieved as shown below.

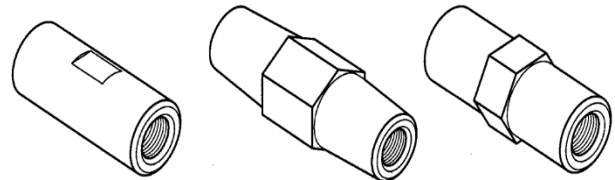


Cross section showing internal thread relief

Hot dip galvanized sleeve nuts are normally tapped oversize after galvanizing to accommodate the zinc coating on the rod threads. Standard parts are tapped from each end to a depth of  $L/2$ , so that rods may be threaded all the way to the center of the nut. If the overall length of the sleeve nut prohibits tapping to a depth of  $L/2$ , the center of the nut can be relieved as shown below.

### Dimensions

Refer to the sleeve nut table for sleeve nut dimensions. Some of the sizes listed in this table have an 'Across Flats Size' slightly larger than that called for by AISC due to commercial availability of hexagon bar stock. Because of limited availability of hex bar stock larger than 3-1/2", sleeve nuts with thread sizes 2-1/2" and larger are usually made from round bar. These larger parts can be provided with milled wrench flats or a



Round sleeve nut with wrench flats Sleeve nut with tapered ends. Round sleeve nut with hex center milled hex. Tapered ends also available.

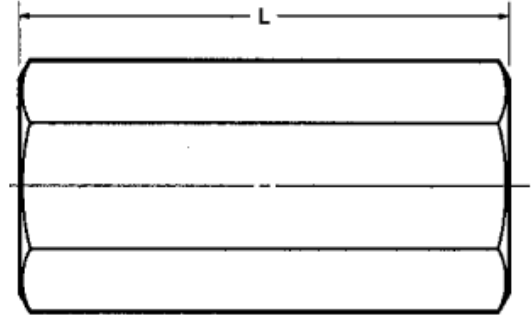
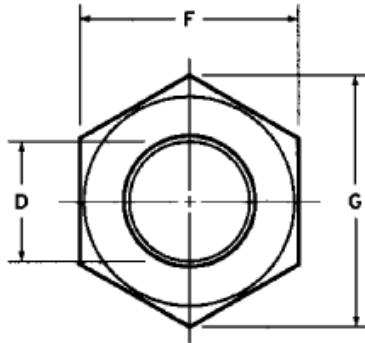
### Notes Regarding Strength

As noted in the AISC Construction Manual, sleeve nuts will be stronger than their corresponding connecting rods when made from the same material. Because hex stock is not produced in the structural grades used for tie rods, our standard hex sleeve nuts are produced from steel with 50 ksi minimum yield strength to ensure compatibility with both grade 36 and grade 50 rods. These parts can also be certified to ASTM A563 grade A. When high strength rods are specified, sleeve nuts produced to meet ASTM A563 grade DH and A194 grade 2H and grade 7 can be provided. These parts will meet all chemical and mechanical properties called for in those specifications. In order to meet these strength requirements, the rods must be threaded into the sleeve nut for a distance equal to or greater than the thread size.



# HAYDON BOLTS, INC.

## Sleeve Nut Data Sheet



Thread Diameter (D)	Width Across Flats (F)	Width Across Points (G)	Overall Length (L)	Weight (lbs)
1/2	7/8	1	4	0.53
5/8	1-1/8	1-5/16	5	1.12
3/4	1-1/4	1-7/16	5	1.29
7/8	1-1/2	1-3/4	7	2.67
1	1-5/8	1-7/8	7	2.97
1-1/8	1-7/8	2-3/16	7-1/2	4.35
1-1/4	2	2-5/16	7-1/2	4.75
1-3/8	2-1/4	2-5/8	8	6.56
1-1/2	2-3/8	2-3/4	8	7.06
1-5/8	2-5/8	3-1/16	8-1/2	9.37
1-3/4	2-3/4	3-3/16	8-1/2	9.97
1-7/8	3	3-7/16	9	12.82
2	3-1/4	3-5/8	9	13.5
2-1/4	3-1/2	4-1/16	9-1/2	17.8
2-1/2	3-7/8	4-1/2	10	22.9
2-3/4	4-1/4	4-15/16	10-1/2	28.8
3	4-5/8	5-5/16	11	35.7
3-1/4	5	5-3/4	11-1/2	43.5
3-1/2	5-3/8	6-3/16	12	52.3
3-3/4	5-3/4	6-5/8	12-1/2	62.2
4	6-1/8	7-1/16	13	73.0
4-1/2	6-7/8	7-15/16	14	99.0
5	7-5/8	8-13/16	15	130.0





# HAYDON BOLTS, INC.

## Coupling Nuts

### Applications

Coupling nuts are used to make up long tie rod assemblies from shorter lengths of rod and to facilitate assembly of two fasteners or fittings which both have external threads.

### Relevant Standards

Coupling nut dimensions are described by the Industrial Fasteners Institute in standard IFI-128. Chemical and mechanical properties are controlled in conformance with ASTM and SAE nut specifications (ASTM A563, ASTM A194 and SAE J995.)

### Materials

Standard coupling nuts are produced from ASTM A108 grade 12L14 hexagon or round bars with 50 ksi minimum yield strength. Other available materials include 1045, 4140, structural grades and stainless steels.

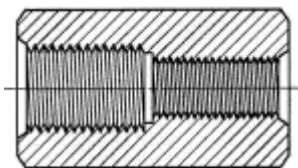
### Finishes

Standard finish is plain with either a cold drawn or hot rolled mill finish, depending on the type of bar stock used. Hot dip galvanizing is available as well as zinc electro plating.

### Threads

Standard threads are UNC 2B, RH, with other thread series and profiles available by special order. Coupling nuts up to 2-1/4" thread size are tapped all the way through from one end, allowing them to be completely threaded on to one of the members to be coupled, a feature that is required for certain assembly situations. Coupling nuts larger than 2-1/4"

cannot be tapped all the way through without special extended length taps and are therefore furnished with RH/RH threads (tapped to a depth of L/2 from each end) unless specifically



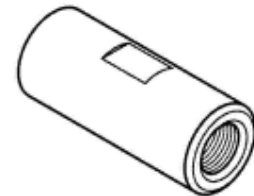
Cross section of reducing coupling nut

ordered as "threaded all the through."

Coupling nuts can also be threaded with two different sizes. These parts are normally identified as "Reducing Coupling Nuts."

### Dimensions

Refer to the table for coupling nut dimensions. Some of the sizes listed in this table have an "Across Flats Size" slightly larger than

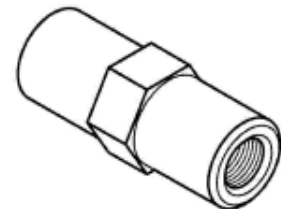


Round coupling nut with wrench flats

that called for by IF-128 due to commercial availability of hexagon bar stock. Because of limited availability of hex stock larger than 3-1/2", coupling nuts with thread sizes 2-1/2" and larger are usually made from round bar. These larger parts can be provided with milled wrench flats or a milled hex.

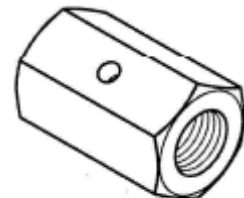
### Notes Regarding Strength

Standard coupling nuts meet the chemical and mechanical requirements of ASTM A563 grade A. When high strength rods are specified, coupling nuts produced to meet ASTM A563 grade DH and A194 grade 2H or grade 7 can be provided. These parts will meet all of the chemical and mechanical properties called for in those specifications. It should be noted that in



Round coupling nut with hex center

order to meet the strength requirements noted above, the rods must be threaded into the coupling nut for a distance equal to or greater than the nominal diameter. The IFI-128 specification describes an optional hole located at L/2, (also known as a "sight hole") which allows visual verification that the threads are fully engaged

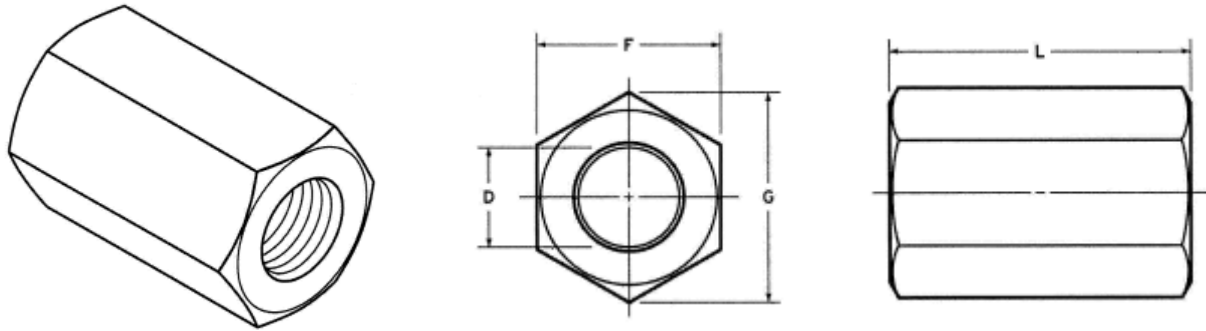


Coupling nut with sight hole



# HAYDON BOLTS, INC.

## Coupling Nut Data Sheet



Nominal Size	Width Across Flats (F)	Width Across Points (G)	Length (L)	Weight (lbs)
1/2	3/4	7/8	1-1/2	0.12
5/8	15/16	1-1/8	1-7/8	0.3
3/4	1-1/8	1-5/16	2-1/4	0.42
7/8	1-5/16	1-7/16	2-5/8	0.56
1	1-1/2	1-3/4	3	0.99
1-1/8	1-11/16	1-7/8	3-3/8	1.23
1-1/4	1-7/8	2-3/16	3-3/4	1.93
1-3/8	2-11/16	2-5/16	4-1/8	2.31
1-1/2	2-1/4	2-5/8	4-1/2	3.33
1-5/8	2-9/16	3-3/16	4-7/8	6.17
1-3/4	2-3/4	3-3/16	5-1/4	6.16
1-7/8	2-15/16	3-7/16	5-5/8	8.01
2	3-1/8	3-7/16	6	7.9
2-1/4	3-1/2	4-1/16	6-3/4	12.7
2-1/2	3-7/8	4-1/2	7-1/2	17.2
2-3/4	4-1/4	4-15/16	8-1/4	22.7
3	4-5/8	5-5/16	9	29.2
3-1/4	5	5-3/4	9-3/4	36.8
3-1/2	5-3/8	6-3/16	10-1/2	45.8
3-3/4	5-3/4	6-5/8	11-1/4	56
4	6-1/8	7-1/16	12	68
4-1/2	6-7/8	7-15/16	13-1/2	96
5	7-5/8	8-13/16	15	130

\*\*\*Questions in reference to the coupling nut developing the strength of the rod must be directed to an engineer. \*\*\*



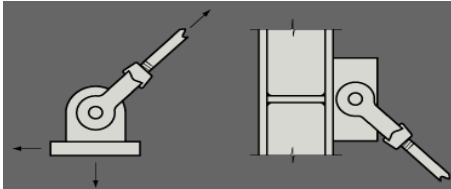


# HAYDON BOLTS, INC.

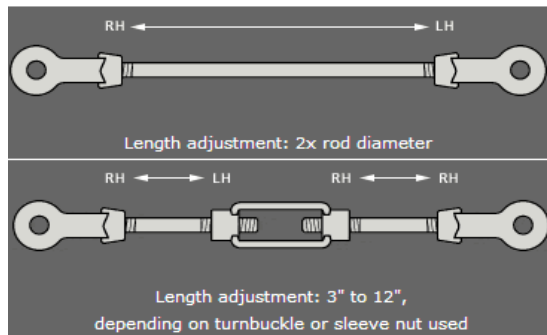
## Clevises

### Applications

Clevises are used to connect tie rods and hanger assemblies to structural steel or fabricated lugs. The pin connection ensures that the rod is loaded only in tension and sees no bending forces. Our clevises are widely used in structural steel bracing and pipe support applications.



Length adjustment of rod assemblies can be provided by pairing RH and LH threaded clevises with single lengths of rod or by using RH threads on both clevises with two rods and a turnbuckle or sleeve nut.



### Relevant Standards

Clevises are manufactured to meet the dimensions and load ratings shown in the American Institute of Steel Construction Inc. (AISC) Steel Construction Manual, 13th edition, pages 15-14 and 15-15. Carbon and alloy steel clevises are forged per ASTM A668. Stainless clevises are forged per ASTM A473.

### Materials

Haydon stocks clevis forgings in C1035 steel, ASTM A668 Class A, and 316 stainless steel, ASTM A473 Designation A. Heat-treated carbon and alloy steel clevises are available by special order.

### Finishes

Standard finish for carbon steel clevises is plain steel, shot blasted after forging. Hot dip galvanizing is available as well as zinc electroplating. Standard processing for stainless steel clevises after forging is pickling and passivation. An electro-polished finish is also available for stainless steel parts.

### Threads

Threads are UNC 2B, with the UNF thread series and metric M profile also available. We can also provide clevises with pipe threads for non-structural applications. HD galv clevises are normally tapped oversize after galvanizing to accommodate the zinc coating on the rod threads.

### Notes Regarding Strength

The AISC safe working load listed in Clevis Table 1 is based on the net tensile area through the maximum pin hole, 60,000 Psi ultimate tensile strength material and a 5:1 or 3:1 safety factor, depending on application. The allowable pin and tap size combinations in Clevis Table 2 are based on maintaining a net tensile stress area through the pin hole at 125% of the UNC tensile stress area of the rod. All of the pin diameters shown in Table 2 will likewise exceed the corresponding rod strength based on shear, but they should be investigated for bending if large grips are used (greater than 1-1/2") and there is a significant difference between the material thickness and the grip size (greater than 1/2"). The threaded area of carbon steel clevises forged to ASTM A668 Class A is equivalent to an ASTM A563 Grade C heavy hex nut. For high-strength applications, our carbon steel clevises can be heat treated up through ASTM A668 Class 'F'.

### Pins

Standard pin material is carbon steel with 50 ksi minimum yield strength. Pins are available in headed or straight configurations. We normally supply 1/2" through 1" sizes as headed pins and 1-1/8" and larger as straight pins, although both styles are available throughout the full range of sizes.

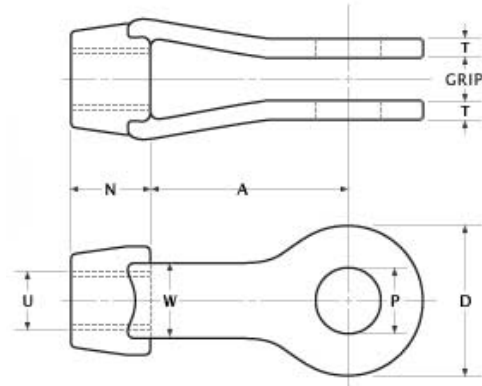
### Specifying and Ordering Clevises

1. Determine clevis number based on safe working load and rod size in Table 1. Your application's maximum load should be less than or equal to value shown in 'Safe Working Load' column, and your rod size should be less than or equal to number shown in 'Max Tap Size' column. If not, select a larger size clevis.
2. Select pin diameter in Table 2 to find your rod (tap) size, then moving across that row to find your clevis size. Allowable pin diameters are listed at the top of each column where your clevis number appears.
3. Determine grip based on the thickness of the material that will receive the pin. The grip size is specified as material thickness + 1/4" but the minimum grip for #2 through #5 clevises is 3/4" and 1" for #6 and #7 clevises. Grip dimensions are normally in 1/4" increments.
4. Specify the desired finish and other special requirements



# HAYDON BOLTS, INC.

## Clevis Data Sheet



Clevis Number	Max Tap Size (U)	Max Pin Size (P)	Eye Diameter (D)	Nut Thickness (N)	Throat Depth (A)	Leg Width (W)	Leg Thickness (T)	Safe Working Load (lbs)	Typical Weight w/pin (lbs)
2	5/8	3/4	1-7/16	5/8	3-7/8	1-1/16	5/16	3,500	1.5
2-1/2	7/8	1-1/2	2-1/2	1-1/8	4	1-1/4	5/16	7,500	2.5
3	1-3/8	1-3/4	3	1-5/16	5	1-1/2	1/2	15,000	5.0
3-1/2	1-1/2	2	3-1/2	1-5/8	6	1-3/4	1/2	18,000	8.0
4	1-3/4	2-1/2	4	1-3/4	6	2	1/2	21,000	11.0
5	2	2-1/2	5	2-1/4	7	2-1/2	5/8	37,500	21.0
6	2-1/2	3	6	2-3/4	8	3	3/4	54,000	32.0
7	3	3-3/4	7	3	9	3-1/2	7/8	68,500	53.0

Tap Size (U)	PIN DIAMETER (P)															
	1/2	5/8	3/4	7/8	1	1-1/4	1-1/2	1-3/4	2	2-1/4	2-1/2	2-3/4	3	3-1/4	3-1/2	
3/8	2	2	2													
1/2	2	2	2													
5/8	2	2	2	2-1/2	2-1/2	2-1/2	2-1/2									
3/4			2-1/2	2-1/2	2-1/2	2-1/2	2-1/2									
7/8				2-1/2	2-1/2	2-1/2	2-1/2	3								
1					3	3	3	3								
1-1/8					3	3	3	3	3-1/2							
1-1/4					3	3	3	3	3-1/2							
1-3/8					3	3	3	3-1/2	3-1/2	4						
1-1/2						3-1/2	3-1/2	4	4	5						
1-5/8							4	4	4	5	5					
1-3/4							4	4	5	5	5					
1-7/8								5	5	5	5					
2								5	5	5	5	6	6			
2-1/4									6	6	6	6	6	7	7	
2-1/2									6	6	6	7	7	7	7	
2-3/4											7	7	7	7		
2-3/4											7					

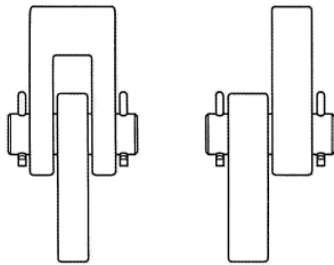


# HAYDON BOLTS, INC.

## Clevis Pins

### Applications

Pin connections are a cost effective method of connecting two structural members which are subjected to simple tension loads. They allow straightforward and rapid field installation of bracing and support members. Because pin connections normally do not clamp the connected members, they are generally only recommended for use in connections where they are loaded in double shear.



Double shear and single shear connections

### Relevant Standards

The AISC Steel Construction Manual, 13th edition, page 15-19, defines basic dimensions for both headed and straight clevis pins used in structural applications. The AISC manual identifies headed pins as 'vertical pins' and straight pins as 'horizontal' pins, implying that headed pins should be used in applications where the long axis of the pin is oriented vertically. In these applications, a straight pin could fall out of the connection if the cotter pin was improperly installed or failed due to corrosion. ANSI/ASME B18.8.1 defines dimensions and tolerances for small cold formed clevis pins for use in machines and linkages. This specification covers sizes from 3/16" through 1" diameter.

### Materials

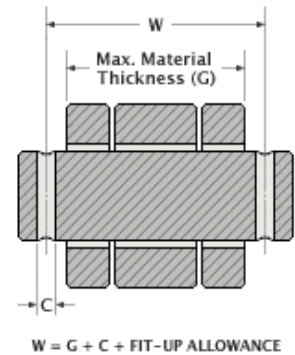
Smaller headed pins are produced from cold headed low carbon steel wire. Straight pins and larger headed pins (1-1/4" diameter and up) are machined from ASTM A108 Grade 1117 bar stock. Other available materials for machined pins include 1045, 4140, A36, A572/A588, A193 Grade B7, A668 and various stainless grades.

### Finishes

Smaller headed and straight pins are normally supplied with a plain, cold drawn mill finish. Larger pins which are made from hot rolled or forged bars are machined to produce an ANSI 125 finish on the bearing diameter. Hot dip galvanized and zinc electroplating coatings are available for corrosion protection.

### Dimensions

Refer to the Clevis Pin Table for basic dimensions of standard clevis pins. An additional dimension, 'W' is determined as shown in the cotter hole spacing figure, and is normally specified in 1/4" increments. Assembly environment, coatings and thickness tolerances should all be considered when determining the fit-up allowance. The minimum recommended value is 1/4".



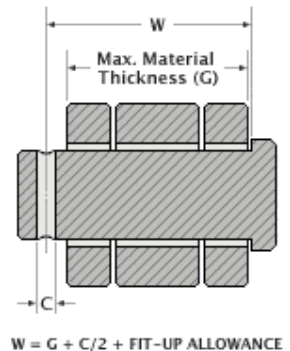
Straight Pin

### Cotter Pins

Headed and straight pins are normally supplied with extended prong steel cotter pins with a zinc plated finish. Other cotter pin styles and materials are available.

### Other Options

Headed pins are occasionally specified with a shouldered, threaded end and a mating nut. Plate washers or recess nuts can be used in conjunction with these designs to provide grip adjustment. Customs are also available.

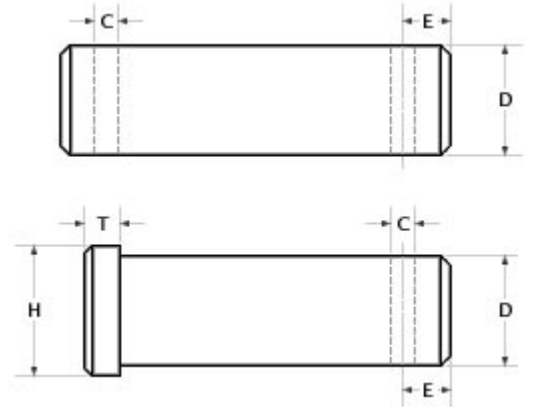
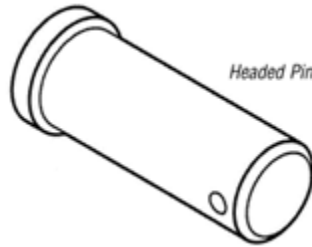
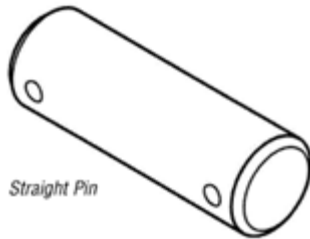


Headed Pin



# HAYDON BOLTS, INC.

## Clevis Pin Data Sheet



Pin Diameter (D)	Head Diameter (H)	Head Thickness (T)	Cotter Size	Cotter Hole Diameter (C)	Center Hole Setback (E)
1/2	5/8	5/32	1/8	5/32	5/32
5/8	1	13/64	1/8	5/32	5/32
3/4	15/16	1/4	1/8	5/32	3/8
7/8	1-1/32	5/16	1/8	5/32	3/8
1	1-3/16	11/32	1/8	5/32	3/8
1-1/8	1-1/2	3/8	1/4	5/16	1/2
1-1/4	1-1/2	3/8	1/4	5/16	1/2
1-3/8	1-3/4	3/8	1/4	5/16	1/2
1-1/2	1-3/4	3/8	1/4	5/16	1/2
1-5/8	2	3/8	1/4	5/16	1/2
1-3/4	2	3/8	1/4	5/16	1/2
1-7/8	2-1/4	3/8	1/4	5/16	1/2
2	2-3/8	3/8	1/4	5/16	1/2
2-1/4	2-3/4	3/8	3/8	13/32	1/2
2-1/2	3	3/8	3/8	13/32	1/2
2-3/4	3-1/4	3/8	3/8	13/32	1/2
3	3-1/2	1/2	1/2	17/32	1
3-1/4	3-3/4	1/2	1/2	17/32	1
3-1/2	4	1/2	1/2	17/32	1
3-3/4	4-1/4	1/2	1/2	17/32	1
4	4-1/2	1/2	1/2	17/32	1
4-1/2	5	1/2	1/2	17/32	1
5	5-1/2	1/2	1/2	17/32	1



# HAYDON BOLTS, INC.

## Pins with Recess Nuts

### Applications

Pins with recess nuts are used widely in structural steel applications for pin connections, hanger assemblies and bridge bearings. Smaller sizes are often used with clevises in place of standard straight pins with two cotters. They offer several advantages over bolts for shear connections. The reduced threaded diameter of the pin combined with the recess area of the nut allows grip adjustment while ensuring that the threads are excluded from the bearing area. Also, the reduced threaded diameter on the pin helps to keep the threads free from damage while the pin is being inserted into a close-fitting hole.

### Relevant Standards

Pin and recess dimensions are shown in the AISC Steel Construction Manual, 13th edition, page 15-18. Chemical and mechanical properties of the materials used will conform to any ASTM, AASHTO, AERMA and or state DOT specifications identified at the time the order is placed.

### Materials

Standard pins are produced from cold finished steel bars conforming to ASTM A108 with 50 ksi minimum yield strength. Other available carbon and alloy steels include ASTM A668 forged bars, ASTM A434 quenched and tempered alloy steel bars, and ASTM A572 grade 50/50W bars. Available stainless steels include gall resistant types such as ASTM A276 UNS S21800 (Nitronic 60) 304, 316 and 410 grades. Standard nuts are produced from ASTM A36 plate or 12L14 hex bar. Other available nut materials include ASTM A572 grade 50/50W plate, ASTM A668 forged bars and stainless steel. Pins are also occasionally specified with ASTM A563 heavy hex nuts nut in A, C or DH grades.

### Finishes

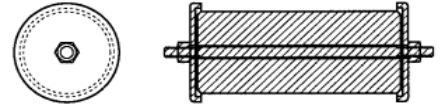
Standard finish is plain with a cold drawn mill finish on the bearing diameter. Hot rolled and forged bars are machined to produce an ANSI 125 finish or better. Hot dip galvanized and zinc electroplating coatings are available.

### Threads

Standard threads are 6UN 2A/2B, with other thread series and profiles available upon request.

### Dimensions

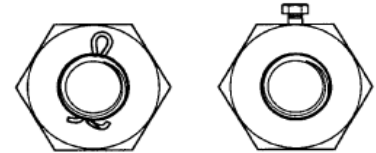
The grip length of the pin should be determined by the maximum thickness of the materials which make up the connection. The recess feature compensates for members whose thickness is on the low end of the tolerance. The recess also ensures that the chamfer on the pin's bearing diameter (dimension 'C') is excluded from the grip and that the structural members have full bearing on the pin. Pins over 10 inches in diameter are often secured with cap washers and a tie rod instead of recess nuts.



Large diameter pin with cap washers.

### Accessories and Options

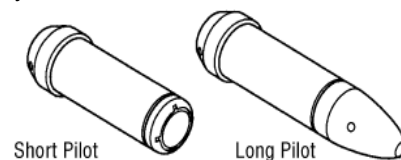
A wide range of washers are available, made from carbon steel, stainless steel, PTFE, neoprene and high density polyethylene. Bushings can be provided in bronze, PTFE, or composite materials. Link plates can be supplied for bridge suspender applications. Cotter pins are often used where maintaining a precise grip dimension is not critical, set bolts allow the nuts to be locked securely in the field after final grip adjustment.



Cotter pins and set bolt locking features

### Pilot and Driving Nuts

Pilot nuts and driving nuts are available to protect the pin threads during field installation. Driving nuts have a domed end and a shoulder which permits the pin to be driven to the proper depth. Pilot nuts have a tapered nose which serves to align the bearing members as the pin is driven home. Short pilots are generally sufficient unless there are many plies in the connection or assembly conditions are difficult



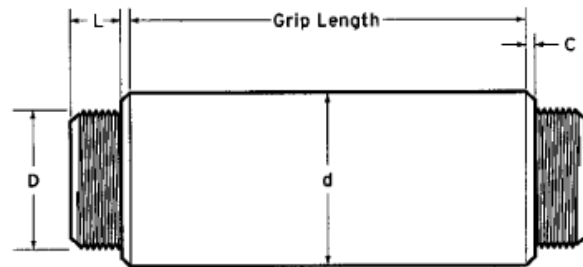
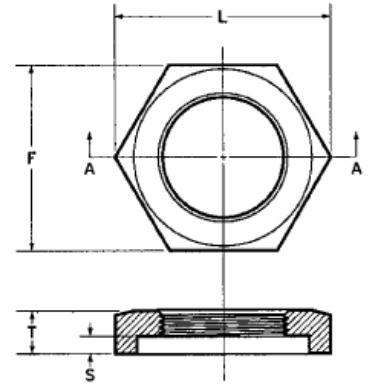
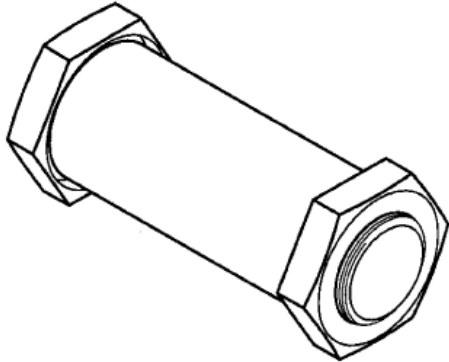
Pins with pilot and driving nuts





# HAYDON BOLTS, INC.

## Pin and Recess Nut Data Sheet



Pin Diameter (d)			PIN			NUT					
			Thread Diameter (D)	Thread Length (L)	Chamfer Length (C)	Thickness (T)	Short Diameter (F)	Long Diameter (L)	Recess Diameter (R)	Recess Depth (S)	Approx lbs
-	2	2-1/4	1-1/2	1	1/8	7/8	3	3-3/8	25/8	1/4	1
-	2-1/2	2-3/4	2	1-1/8	1/8	1	3-5/8	4-1/8	3-1/8	1/4	2
3	3-1/4	3-1/2	2-1/2	1-1/4	1/8	1-1/8	4-3/8	5	3-7/8	3/8	3
-	3-3/4	4	3	1-3/8	1/4	1-1/4	4-7/8	5-5/8	4-3/8	3/8	4
4-1/4	4-1/2	4-3/4	3-1/2	1-1/2	1/4	1-3/8	5-3/4	6-5/8	5-1/4	1/2	6
-	5	5-1/4	4	1-5/8	1/4	1-1/2	6-1/4	7-1/4	5-3/4	1/2	7
5-1/2	5-3/4	6	4-1/2	1-3/4	1/4	1-5/8	7	8-1/8	6-1/2	5/8	9
-	6-1/4	6-1/2	5	1-7/8	3/8	1-3/4	7-5/8	8-7/8	7	5/8	12
-	6-3/4	7	5-1/2	2	3/8	1-7/8	8-1/8	9-3/8	7-1/2	3/4	14
-	7-1/4	7-1/2	5-1/2	2	3/8	1-7/8	8-5/8	10	8	3/4	16
7-3/4	8	8-1/4	6	2-1/4	3/8	2-1/8	9-3/8	10-7/8	8-3/4	3/4	22
8-1/2	8-3/4	9	6	2-1/4	3/8	2-1/8	10-1/4	11-7/8	9-5/8	3/4	28
-	9-1/4	9-1/2	6	2-3/8	3/8	2-1/4	11-1/4	13	10-5/8	3/4	39
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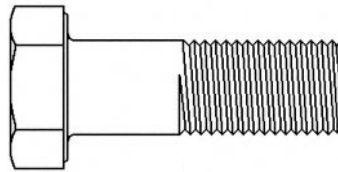
# HAYDON BOLTS, INC.

## Bolts – Hex and Heavy Hex

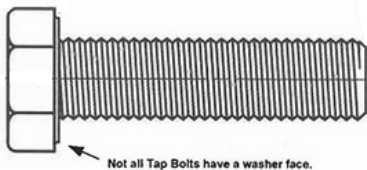
ASTM A307 Grade A and Grade B

Domestic and Imported

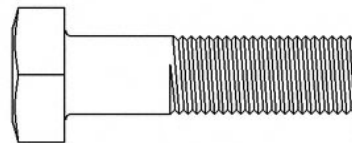
1/2" up to 2-1/2"



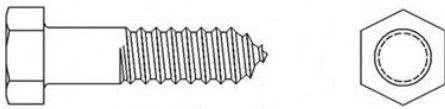
Hex Tab Bolts



Square Bolts – ASTM A307 Grade A



Lag Screws – ASTM A307 Grade A



Carriage Bolts – ASTM A307 Grade A



Square-neck Carriage Bolt

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### Other Bolts Available:

Countersunk Head Bolts  
Button Head Bolts  
Dome Head Bolts

### Other Materials Available:

Stainless Steel  
Brass  
Aluminum  
Special Alloys

**Custom bolts manufactured at our facility to your specification**



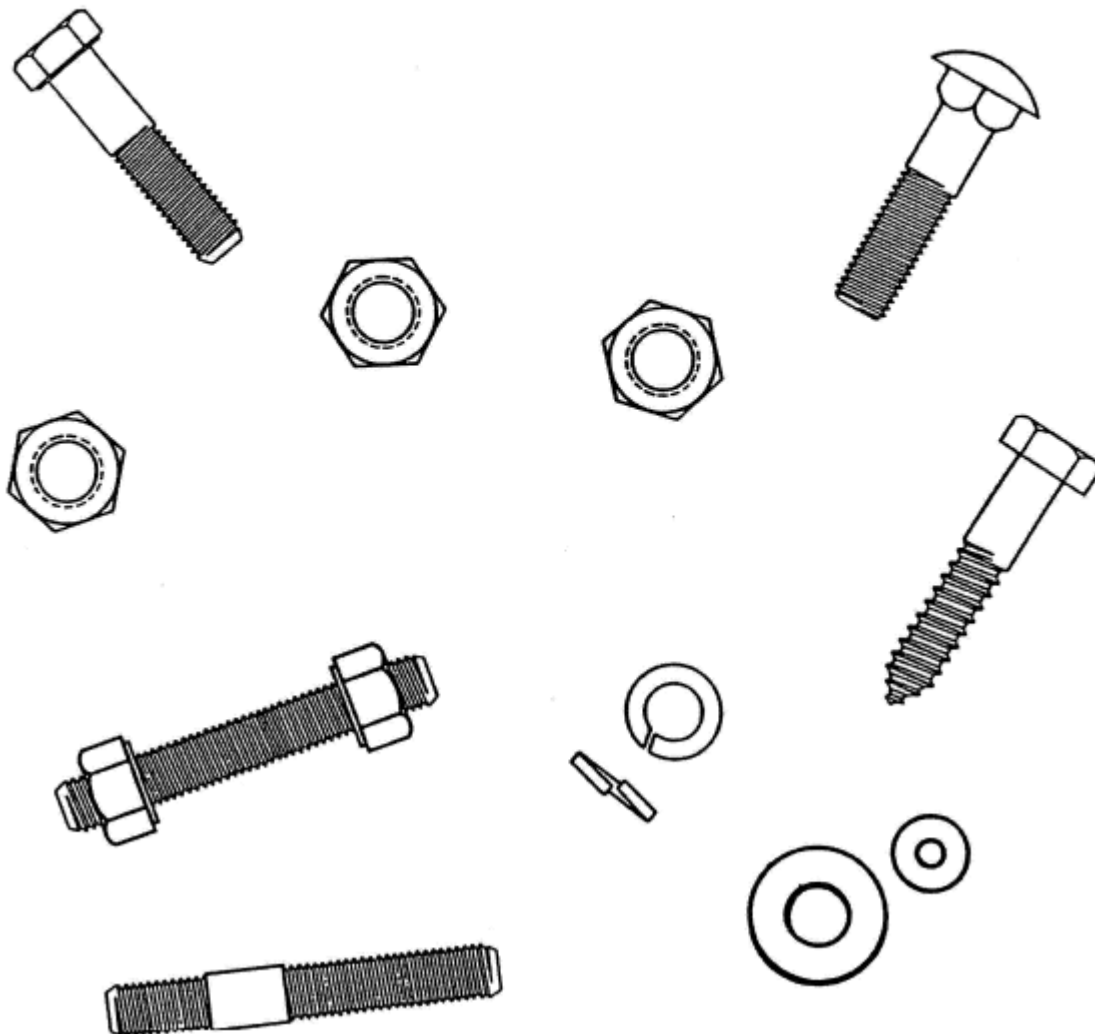


# HAYDON BOLTS, INC.

## **Stainless Steel**

18-8, T 304, T 316

**Bolts, Cap Screws, Washers, Rod, Carriage Bolts, Monel and Nuts**





# HAYDON BOLTS, INC.

## Threaded Rod in Stock



**Low Carbon Steel**

**Plain Oil Finish**

Stock Lengths – 6' & 12'

**Low Carbon Steel**

**Plated Electro-Galvanized Finish**

Stock Lengths – 6' & 12'

**Low Carbon Steel**

**Hot Dip Galvanized**

Stock Lengths 6' & 12'

**A-193 Grade B7 – Plain**

Stock Lengths 12'

**A-449 – Plain \* Hot Dip Galvanized**

Stock Lengths 12'

**18/8 Stainless Steel**

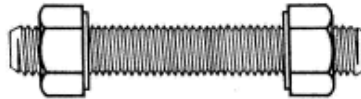
Stock Lengths – 6'





# HAYDON BOLTS, INC.

## Studs



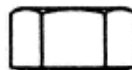
**Heat-Treated Alloy Steel  
ASTM A193 Grade B7**

**Continuous Threads  
IN STOCK  
Diameters**

<b>3/8 - 16</b>	<b>1/2 - 13</b>	<b>5/8 - 11</b>	<b>3/4 - 10</b>	<b>7/8 - 9</b>
<b>1 - 8</b>	<b>1 1/8 - 8</b>	<b>1 1/4 - 8</b>	<b>1 1/2 - 8</b>	

## **Heavy Hex Nuts - Washer Faced ASTM A194 Grade - 2H**

Plain Finish  
Tapped UNC Threads up to 4" Diameter  
Or  
Tapped UN 8 Threads Over 1" Diameter





# HAYDON BOLTS, INC.

**STRONG-BOLT® 2** - a wedge anchor for cracked and uncracked concrete. It received classification a Category 1 anchor\*, the highest attainable anchor category for performance in cracked concrete under static and seismic loading. Available in stainless steel, it is code-listed by ICC-ES under the 2012 IBC requirements for post-installed anchors in cracked and uncracked concrete. Available in 304/316 stainless steel it offers optimum performance in both cracked and uncracked concrete, meeting 2012 IBC standards for post-installed anchors.

\* 1" diameter is classified as Category 2

**Material** - Carbon-steel stud with special alloy clip, 304/316 stainless-steel stud with stainless-steel clip

**Finish** - Zinc-plated (carbon-steel)

## Features

- Category 1 anchor classification
- Tri-segmented clip, each segment adjusts independently, increasing follow-up expansion should the hole increase in size as a result of a crack.
- Dual embossments on each clip segment to undercut into the concrete increasing follow-up expansion should a crack occur.
- The 3/8" anchor solution approved for 3 1/4" concrete thickness, can be installed in cracked concrete with a minimum thickness of 3 1/4", including concrete-over-metal decking.
- High-strength alloy clip on carbon-steel anchors
- Standard (ANSI) fractional anchor installs with common drill bit sizes and tools.

## Code Reports

- ICC-ES ESR-3037 (carbon and stainless steel in cracked/uncracked concrete)
- IAPMO UES ER-240 (carbon steel in CMU)
- Florida Statewide Product Approval FL15731
- City of Los Angeles RR 25891 (carbon and stainless steel in cracked/uncracked concrete)
- City of Los Angeles RR 25936 (carbon steel in CMU)
- Underwriters Laboratories File Ex3605
- Factory Mutual 3043442 and 3047639





# HAYDON BOLTS, INC.

## Strong Bolt 2 Product Data

Size (in.)	Carbon Steel Model No.	316 Stainless Steel Model No.	304 Stainless Steel Model No.	Drill Bit Dia. (in.)	Thread Length (in.)	Quantity	
						Box	Carton
1/4 x 1 3/4	STB2-25134	STB2-251346SS	STB2-251344SS	1/4	15/16	100	500
1/4 x 2 1/4	STB2-25214	STB2-252146SS	STB2-252144SS	1/4	17/16	100	500
1/4 x 3 1/4	STB2-25314	STB2-253146SS	STB2-253144SS	1/4	2 -7/16	100	500
3/8 x 2 3/4	STB2-37234	STB2-372346SS	-	3/8	1 -5/16	50	250
3/8 x 3	STB2-37300	STB2-373006SS	-	3/8	1 -9/16	50	250
3/8 x 3 1/2	STB2-37312	STB2-373126SS	-	3/8	2 -1/16	50	250
3/8 x 3 3/4	STB2-37334	STB2-373346SS	-	3/8	2 -5/16	50	250
3/8 x 5	STB2-37500	STB2-375006SS	-	3/8	3 -9/16	50	200
3/8 x 7	STB2-37700	STB2-377006SS	-	3/8	5 -9/16	50	200
1/2 x 3 3/4	STB2-50334	STB2-503346SS	-	1/2	2 -1/16	25	125
1/2 x 4 1/4	STB2-50414	STB2-504146SS	-	1/2	2 -9/16	25	100
1/2 x 4 3/4	STB2-50434	STB2-504346SS	-	1/2	3 -1/16	25	100
1/2 x 5 1/2	STB2-50512	STB2-505126SS	-	1/2	3-13/16	25	100
1/2 x 7	STB2-50700	STB2-507006SS	-	1/2	5 -5/16	25	100
1/2 x 8 1/2	STB2-50812	STB2-508126SS	-	1/2	6	25	50
1/2 x 10	STB2-50100	STB2-501006SS	-	1/2	6	25	50
5/8 x 4 1/2	STB2-62412	STB2-624126SS	-	5/8	2 -7/16	20	80
5/8 x 5	STB2-62500	STB2-625006SS	-	5/8	2-15/16	20	80
5/8 x 6	STB2-62600	STB2-626006SS	-	5/8	3-15/16	20	80
5/8 x 7	STB2-62700	STB2-627006SS	-	5/8	4-15/16	20	80
5/8 x 8 1/2	STB2-62812	STB2-628126SS	-	5/8	6	20	40
5/8 x 10	STB2-62100	STB2-621006SS	-	5/8	6	10	20
3/4 x 5 1/2	STB2-75512	STB2-755126SS	-	3/4	3 -3/16	10	40
3/4 x 6 1/4	STB2-75614	STB2-756146SS	-	3/4	3-15/16	10	40
3/4 x 7	STB2-75700	STB2-757006SS	-	3/4	4-11/16	10	40
3/4 x 8 1/2	STB2-75812	STB2-758126SS	-	3/4	6	10	20
3/4 x 10	STB2-75100	-	-	3/4	6	10	20
1 x 7	STB2-100700	-	-	1	3-1/2	5	20
1 x 10	STB2-1001000	-	-	1	3-1/2	5	10
1 X 13	STB2-1001300	-	-	1	3-1/2	5	10



# HAYDON BOLTS, INC.

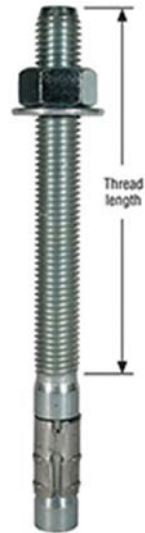
**STRONG-BOLT®** - The Strong-Bolt® is specifically designed for optimum performance in both cracked and uncracked concrete, under static and seismic loading; a requirement that the 2009 IBC places on post-installed anchors.

**Material** - Carbon steel stud with a special alloy clip, stainless steel stud with a stainless steel clip

**Finish** – Zinc plated (carbon steel)

## Features

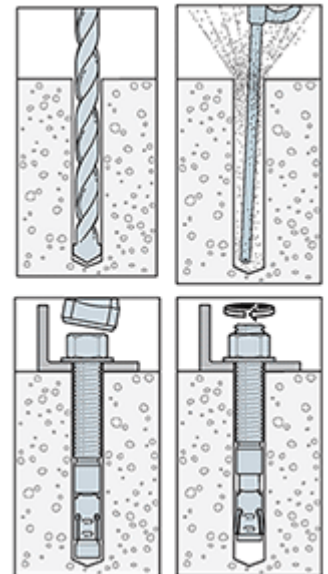
- Tri-segmented clip each segment is able to adjust independently increasing follow-up expansion should the hole increase in size as a result of a crack.
- Dual embossments on each clip segment: Allows the clip to undercut into the concrete increasing follow-up expansion should a crack occur.
- 316 stainless steel clip
- Imperial fractional sized anchor: Fits most fixtures and installs with common drill bits sizes and tools.
- Head is stamped with the Simpson Strong-Tie® "S" sign and size ID for easy identification



## Installation

- Do not use an impact wrench to set or tighten the Strong-Bolt anchor
- Drill a hole in the base material using a carbide drill bit the same diameter as the nominal diameter of the anchor to be installed. Drill the hole to the specified embedment depth and blow it clean using compressed air. Overhead installations need not be blown clean. Alternatively, drill the hole deep enough to accommodate embedment depth and dust from drilling.
- Assemble the anchor with nut and washer so that the top of the nut is flush with the top of the anchor. Place the anchor in the fixture and drive into the hole until washer and nut are tight against the fixture.
- Tighten to the required installation torque.

**Caution:** Oversized holes in the base material will make it difficult to set the anchor and will reduce the anchor's load capacity.





# HAYDON BOLTS, INC.

## Strong-Bolt Anchor Product Data

Size	Model	Drill Bit Dia	Thread Length	Quantity	
				Box	Ctn
1/2 x 3 3/4	STB50334	1/2	1 - 3/4	25	125
1/2 x 4 1/4	STB50414		2 - 1/4	25	100
1/2 x 5 1/2	STB50512		3 - 1/2	25	100
1/2 x 7	STB50700		5	25	100
1/2 x 8 1/2	STB50812		6	25	50
1/2 x 10	STB50100		6	25	50
5/8 x 4 1/2	STB62412	5/8	2 - 1/16	20	80
5/8 x 5	STB62500		2 - 9/16	20	80
5/8 x 6	STB62600		3 - 9/16	20	80
5/8 x 7	STB62700		4 - 9/16	20	80
5/8 x 8 1/2	STB62812		6	20	40
5/8 x 10	STB62100		6	10	20
3/4 x 5 1/2	STB75512	3/4	2 - 11/16	10	40
3/4 x 6 1/4	STB75614		3 - 7/16	10	40
3/4 x 7	STB75700		4 - 3/16	10	40
3/4 x 8 1/2	STB75812		5 - 11/16	10	20
3/4 x 10	STB75100		6	10	20
1 x 7	STB100700	1	3 - 1/2	5	20
1 x 10	STB1001000		3 - 1/2	5	10
1 x 13	STB1001300		3 - 1/2	5	10

## Strong-Bolt Installation Data

Dia	1/2	5/8	3/4	1
Bit Size	1/2	5/8	3/4	1
Min. Fixture Hole	9/16	11/16	7/8	1 - 1/8
Wrench Size	3/4	15/16	1 - 1/8	1 - 1/2

## Material Specifications

Carbon Steel Zinc Plated			
Component Material			
Anchor Body	Nut	Washer	Clip
Carbon Steel SAE J403, Grade 1030-1035	Carbon Steel ASTM A 563, Grade A	Carbon Steel ASTM F844	316 Stainless Steel
SAE J403, Grade 12L14			
Zinc meets ASTM B633, Class SC 1, Type III			

\*The published length is the overall length of the anchor. Allow one diameter for nut and washer thickness.

## Code Reports

- ICC-ES ESR-3037 (carbon and stainless steel in cracked and uncracked concrete)
- IAPMO UES ER-240 (carbon steel in CMU)
- Florida Statewide Product Approval FL15731
- City of Los Angeles RR 25891 (carbon and stainless steel in cracked and uncracked concrete)
- City of Los Angeles RR 25936 (carbon steel in CMU)
- Underwriters Laboratories File Ex3605
- Factory Mutual 3043442 and 3047639





# HAYDON BOLTS, INC.

**Sleeve-All** – are pre-assembled expanding sleeve for use in all types of solid base materials. Available in acorn, hex, rod coupler, flat or round head styles for a wide range of applications.



**Material:** Carbon and Stainless Steel

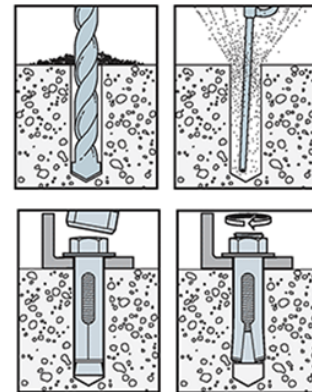
**Finish:** Carbon Steel, Zinc plated

**Installation:**

- Drill a hole in the base material using a carbide drill bit the same diameter as the nominal diameter of the anchor being installed to the specified embedment depth.
- Blow hole clean with compressed air, overhead holes ne not be blown clean.
- Place the anchor in the fixture and drive into the hole until washer and nut are tight against fixture
- Tighten to required installation torque

**Sleeve-All Product Data- Stainless Steel**

Size	Model No.	Head Style	Bolt Diameter - Threads per Inch	Max. Fixture Thickness	Quantity	
					Box	Carton
1/4 X 2 - 1/4	SL2514PFSS	Phillips Flat Head	3/16 - 24	1 - 1/8	100	500
3/8 X 1 - 7/8	SL37178HSS	Hex Head	5/16 - 18	3/8	50	250
3/8 X 3	SL37300HSS			1 - 1/2	50	200
1/2 X 3	SL50300HSS		3/8 - 16	3/4	25	100
1/2 X 4	SL50400HSS			1 - 3/4	25	100



**Sleeve-All Data (rod coupler) Zinc plated**

Size	Model No	Accepts Rod Dia.	Wrench Size	Quantity	
				Box	Carton
3/8 X 1 - 7/8	SL37178C	3/8	1/2	50	200
1/2 X 2 - 1/4	SL50214C	1/2	5/8	25	100
5/8 X 2 - 1/4	SL62214C	5/8	3/4	20	80

**Sleeve-All Installation Data\***

Sleeve-All Dia.	1/4	5/16	3/8	1/2	5/8	3/4
Bit Size	1/4	5/16	3/8	1/2	5/8	3/4
Wrench Size	3/8	7/16	1/2	9/16	3/4	15/16
Wrench Size Coupler Nut			1/2	5/8	3/4	-

\*Applies to Acorn and Hex Head configurations only



# HAYDON BOLTS, INC.

## Sleeve-All Product Data – Zinc Plated Carbon Steel

Size Inches	Model No.	Head Style	Bolt Diameter - Threads per Inch	Max. Fixture Thickness Inches	Quantity		
					Box	Carton	
1/4 x 1 3/8	SL25138A	Acorn Head	3/16 - 24	1/4	100	500	
1/4 x 2 1/4	SL25214A			1 - 1/8	100	500	
5/16 X 1 - 1/2*	SL31112H	Hex Head	1/4 - 20	3/8	100	500	
5/16 X 2 - 1/2	SL31212H			1 - 1/16	50	250	
3/8 X 1 - 7/8	SL37178H		5/16 - 18	3/8	50	250	
3/8 X 3	SL37300H			1 - 1/2	50	200	
3/8 X 4	SL37400H			2 - 1/4	50	200	
1/2 X 2 - 1/4*	SL50214H			3/8 - 16	1/2	50	200
1/2 X 3	SL50300H		3/4		25	100	
1/2 X 4	SL50400H		1 - 3/4		25	100	
1/2 X 6	SL50600H		3 - 3/8		20	80	
5/8 X 2 - 1/4*	SL62214H		1/2 - 13	1/2	25	100	
5/8 X 3	SL62300H			3/4	20	80	
5/16 X 4 - 1/4	SL62414H			1 - 1/2	10	40	
5/8 X 6	SL62600H	3 - 1/4			10	40	
3/4 X 2 - 1/2*	SL75212H	5/8 - 11		1/2	10	40	
3/4 X 4 - 1/4	SL75414H			7/8	10	40	
3/4 X 6 - 1/4	SL75614H		2 - 7/8	5	20		
1/4 X 2	SL25200PF	Phillips Flat Head	3/16 - 24	7/8	100	500	
1/4 X 3	SL25300PF			1 - 7/8	50	250	
5/16 X 2 - 1/2	SL31212PF		1/4 - 20	1 - 1/16	50	250	
5/16 X 3 - 1/2	SL31312PF			2 - 1/16	50	250	
3/8 X 2 - 3/4	SL37234PF		5/16 - 18	1 - 1/4	50	200	
3/8 X 4	SL37400PF			2 - 1/2	50	200	
3/8 X 5	SL37500PF			3 - 1/2	50	200	
3/8 X 6	SL37600PF			4 - 1/2	50	200	
1/4 X 2	SL25200R		Round Head	3/16 - 24	7/8	100	500
1/4 X 2 - 3/4	SL25234R				1 - 5/8	50	250
3/8 X 2 - 1/2	SL37212R	5/16 - 18		1	50	200	
3/8 X 3 - 3/4	SL37334R			2 - 1/4	50	200	
3/8 X 4 - 3/4	SL37434R			3 - 1/4	50	200	



Flat



Acorn



Round



Rod Coupler

\*These models do not meet minimum embedment requirements for rated load values.



# HAYDON BOLTS, INC.

**Wedge-All** – are non-bottom bearing, wedge style expansion anchor for use in solid concrete or grout filled concrete masonry. A one piece clip ensures uniform holding as tension is applied. Available in a threaded stud and (single size) tie-wire models. Tie-wire anchors are set with the claw end of a hammer.

**Material:** Carbon and stainless steel

**Finish:** Carbon steel anchors are available zinc plated or mechanically galvanized

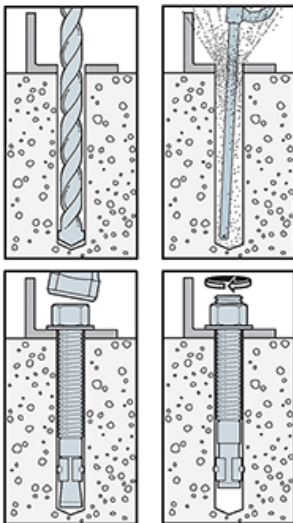
### Features

- One piece wrap around clip
- Threaded end is chamfered for ease of starting nut
- Most sizes feature full thread for added versatility



### Installation

- Holes in metal fixtures to be mounted should exceed nominal anchor diameter by 1/16" for 1/4" thru 5/8" diameter anchors
- Do not use an impact wrench to set or tighten the Wedge-All



### Wedge-All Installation Data

Wedge-All Dia.	1/4	3/8	1/2	5/8	3/4	7/8	1	1 - 1/4
Bit Size	1/4	3/8	1/2	5/8	3/4	7/8	1	1 - 1/4
Wrench Size	5/16	7/16	9/16	11/16	7/8	1	1 - 1/8	1 - 3/8
Wrench	7/16	9/16	3/4	15/16	1 - 1/8	1 - 5/16	1 - 1/2	1 - 7/8

Caution: Oversized holes in the base material will make it difficult to set the anchor and will reduce the anchor's load capacity.



# HAYDON BOLTS, INC.

**TITEN HD®** - a high-strength, self-undercutting, non-expansion, screw anchor for cracked or uncracked concrete and masonry, under both static and seismic loading conditions. The Titen HD anchor is ideal for structural applications, even at reduced edge distances and spacing. Recommended for permanent dry, interior non-corrosive environments or temporary outdoor applications.



**Material:** Carbon steel, heat treated

**Finish:** Zinc plated, mechanically galvanized

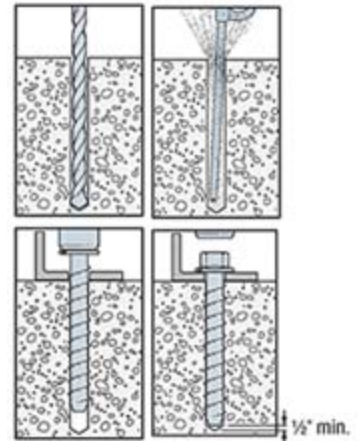
## Features

- Serrated teeth on the tip facilitate cutting and reduce installation torque.
- Thread design undercuts to transfer the load to the base material
- Specialized heat treating process creates tip hardness for better cutting without compromising the ductility to prevent breakage.
- Hex-washer head: Requires no separate washer and provides a clean installed appearance. (Some districts may require an additional square plate washer for sill plate applications)
- Removable: ideal for temporary anchoring or where fixtures need to be moved. Reuse of the anchor to achieve listed load values is not recommended.
- No special drill bit needed, installs using standard ANIS drill bits
- Installs with 50% less torque than competition

## Installation

- Drill a hole in the base material using a carbide drill bit the same diameter as the nominal diameter of the anchor to be installed and to a embedment depth plus ½"
- Clean hole using compressed air
- Insert anchor and tighten until the hex washer head contacts the fixture

\*Do not use an impact wrench to install in CMU\*





# HAYDON BOLTS, INC.

## Titen HD Anchor Product Data – Zinc Plated

Size	Model No	Drill Bit Dia	Wrench Size	Quantity			
				Box	Carton		
3/8 X 3	THD37300H	3/8	9/16	50	200		
3/8 X 4	THD37400H			50	200		
3/8 X 5	THD37500H			50	100		
3/8 X 6	THD37600H			50	100		
1/2 X 3	THD50300H	1/2	3/4	25	100		
1/2 X 4	THD50400H			20	80		
1/2 X 5	THD50500H			20	80		
1/2 X 6	THD50600H			20	80		
1/2 X 6 - 1/2	THD50612H			20	40		
1/2 X 8	THD50800H			20	40		
1/2 X 12	THD501200H			20	40		
1/2 X 13	THD501300H			20	40		
1/2 X 14	THD501400H			20	40		
1/2 X 15	THD501500H			20	40		
5/8 X 4	THD62400H	5/8	15/16	10	40		
5/8 X 5	THD62500H			10	40		
5/8 X 6	THD62600H			10	40		
5/8 X 6 - 1/2	THD62612H			10	40		
5/8 X 8	THD62800H	5/8	15/16	10	20		
5/8 X 4	THDB62400H			10	40		
5/8 X 5	THDB62500H			10	40		
5/8 X 6	THDB62600H			10	40		
5/8 X 6 - 1/2	THDB62612H			10	40		
5/8 X 8	THDB62800H			10	20		
3/4 X 4	THD75400H			3/4	1 - 1/8	10	40
3/4 X 5	THD75500H					5	20
3/4 X 6	THD75600H	5	20				
3/4 X 7	THD75700H	5	10				
3/4 X 8 - 1/2	THD75812H	5	10				
3/4 X 10	THD75100H	5	10				



\* Titen HD Mini also available

### Hole Dimensions

Titen HD Dia	Wrench Size	Recommended Hole Size
3/8	9/16	1/2 to 9/16
1/2	3/4	5/8 to 11/16
5/8	15/16	3/4 to 13/16
3/4	1 - 1/8	7/8 to 15/16

1. Zinc plating meets ASTM B633, SC1
2. Length is measured from the underside of the head to the tip of the anchor



# HAYDON BOLTS, INC.

## Titen HD Product Data – Mechanically Galvanized

Size	Model No	Drill Bit Dia	Wrench Size	Quantity	
				Box	Carton
3/8 X 5	THD37500HMG	3/8	9/16	50	100
3/8 X 6	THD37600HMG			50	100
1/2 X 5	THD50500HMG	1/2	3/4	20	80
1/2 X 6	THD50600HMG			20	80
1/2 X 6 - 1/2	THD50612HMG			20	40
1/2 X 8	THD50800HMG			20	40
5/8 X 5	THD62500HMG	5/8	15/16	10	40
5/8 X 6	THD62600HMG			10	40
5/8 X 6 - 1/2	THD62612HMG			10	40
5/8 X 8	THD62800HMG			10	20
5/8 X 5	THDB62500HMG	5/8	15/16	10	40
5/8 X 6	THDB62600HMG			10	40
5/8 X 6 - 1/2	THDB62612HMG			10	40
5/8 X 8	THDB62800HMG			10	20
3/4 X 8 - 1/2	THD75812HMG	3/4	1 - 1/8	5	10
3/4 X 10	THD75100HMG			5	10



Titen HD Rod Coupler

Mechanical Galvanizing meets ASTM B695, Class 65 Type I

## Mechanically Galvanized

### Code Reports

- ICC-ES Evaluation Service ESR-2713 (AC193) (concrete)
- ICC-ES Evaluation Service ESR-1056 (AC106) (CMU)
- City of Los Angeles RR25741 (concrete)
- City of Los Angeles RR25560 (CMU)
- Florida Statewide Product Approval FL15730.7
- Factory Mutual 3017082, 3035761 and 3043442

### Titen HD Mini Product Data

Size	Model No.	Drill Bit Dia	Wrench Size	Recomm ended	Quantity	
					Box	Carton
1/4" x 1 3/4"	THD25134H	1/4	3/8	5/16 - 3/8	100	500
1/4" x 2 1/4"	THD25214H	1/4	3/8	5/16 - 3/8	50	250
1/4" x 3"	THD25300H	1/4	3/8	5/16 - 3/8	50	250
3/8" x 1 3/4"	THD37134H	3/8	9/16	1/2 - 9/16	50	250
3/8" x 2 1/2"	THD37212H	3/8	9/16	1/2 - 9/16	50	200





# HAYDON BOLTS, INC.

**AT** – a two-component, high-solids, 10:1 ratio, acrylic-based adhesive for use as a high strength, anchor-grouting material. Formulated for use in all types of weather, AT is designed to dispense easily and cure at temperatures down to 0°F. Resin and initiator are dispensed and mixed simultaneously through the mixing nozzle. AT meets the physical requirements of ASTM C881, Type I & IV, Grade 3, Classes A, B & C, except AT is a non-epoxy product formulated for fast cure time.



## Applications

- Threaded rod anchoring
- Rebar doweling
- Pick-proof sealant around doors, windows and fixtures

## AT Adhesive Cartridge System

Model No	Capacity Ounces (Cubic Inches)	Cartdge Quantity	Dispensing Tools	Mixing Nozzel
AT10	9.6 (17.33)	12	CDT10/CDT10S or Standard 10 oz Single Tube Dispensing Tool	AMN813 (included)
AT13	12.5 (23.5)	10	ADT813S	AMN19Q
AT30	30 (542)	5	ADT30s or ADTA30P	

## Cure Schedule

Base Material Temperature		Cure Time
F	C	
0	-18	24 hrs
25	-4	8 hrs
40	4	4 hrs
60	16	1 hr
70	21	30 min
100	38	20 min

## Code Reports

- ICC Evaluation Service ESR-1772 (URM)
- City of L.A. RR25279
- Caltrans approved
- Florida Statewide Product Approval FL 15730.5
- Multiple DOT listings
- NSF/ANSI Standard 61 (216 in<sup>2</sup> /1000 gal), except SET1.7KTA

The load tables list values based upon results from the most recent testing and may not reflect those in current code reports. Where code jurisdictions apply, consult the current reports for applicable load values.



# HAYDON BOLTS, INC.

**AT-XP** - anchoring adhesive has been formulated for high-strength anchorage of threaded rod and rebar into concrete under a wide range of conditions. AT-XP adhesive dispenses easily in cold or warm environments with little to no odor, and when mixed properly is a teal color for easy post-installation identification.



## Applications

- Threaded rod anchoring
- Rebar doweling
- Suitable for horizontal, vertical and overhead applications

## Features

- Can be used under static and seismic loading conditions in both cracked and uncracked concrete
- Low odor formula dispenses easily at below freezing temperatures without the need to warm cartridge
- Easy hole cleaning method, no power brushing needed
- When properly mixed, adhesive will be a teal color for easy identification

## Adhesive Cartridge System

Model No	Capacity Ounces (cubic in)	Cartridge Type	Carton Qty	Dispensing Tool	Mixing Nozzel
AT - XP10	9.4 (16.9)	coaxial	12	CDT10S	AMN19Q
AT - XP13	12.5 (22.5)	side by side	10	ADT813S	
AT - XP30	30 (54)	side by side	5	ADT30S, ADTA30P or ADT30CKT	

## Cure Schedule

Base Material Temperature		Gel Time (min)	Cure Time (hrs)
F	C		
14	-10	30	24
32	0	15	8
50	10	7	3
68	20	4	1
86	30	1.5	30 min
100	38	1	20 min

\* Damp or water filled holes double cure time



# HAYDON BOLTS, INC.

## Installation & Additional Data for Threaded Rod & Rebar in Normal Weight Concrete

Characteristics	Symbol	Units	Nominal Anchor Diameter (inch) / Rebar Size							
			3/8 - #3	1/2 - #4	5/8 - #5	3/4 - #6	7/8 - #7	1 - #8	1 - 1/4 - #10	
<b>Installation Information</b>										
Drill Bit Diameter for Threaded Rod	D hole	in	7/16	9/16	11/16	13/16	1	1 - 1/8	1 - 3/8	
Drill Bit Diameter for Rebar	D hole	in	1/2	5/8	3/4	7/8	1	1 - 1/8	1 - 3/8	
Maximum Tightening Torque	T inst	ft - lbs	10	20	30	45	60	80	125	
Permitted Embedment Depth Range	Minimum	H ef	in	2 - 3/8	2 - 3/4	3 - 1/8	3 - 1/2	3 - 3/4	4	5
	Maximum	H ef	in	7 - 1/2	10	12 - 1/2	15	17 - 1/2	20	25
Minimum Concrete Thickness	H min	in	H ef + 5do							
Critical Edge Distance	C ac	in	Refer to Section 4.1.10 of IAPMO UES ER-263							
Minimum Edge Distance	C min	in	1 - 3/4							2 - 3/4
Minimum Anchor Spacing	S min	in	3							6

1. The information presented in this table is to be used in conjunction with the design criteria of ICC-ES AC308
2. Minimum and maximum embedment depths are set so as to fit the ICC-ES A308 design model.

**Shelf Life** – 9 months from date of manufacture in unopened cartridge

### Code Reports

- IAPMO UES ER-263 (Cracked and Uncracked Concrete)
- IAPMO UES ER-281 (Masonry)
- City of Los Angeles RR25960 (Cracked and Uncracked Concrete)
- City of Los Angeles RR25966 (Masonry)
- Florida Statewide Product Approval FL 16230
- NSF/ANSI Standard 61 (43.2in/1000 gal)



# HAYDON BOLTS, INC.

**SET** – is a two-component, 1:1 ratio, high-solids, epoxy-based adhesive for use as a high strength, non-shrink anchor grouting material. Resin and hardener are dispensed and mixed simultaneously through the mixing nozzle. SET meets or exceeds the requirements of ASTM C-881 specification for Type I, II, IV and V Grade 3, Class B and C.

## USES

- Threaded rod anchoring
- Rebar doweling
- Bonding hardened concrete to hardened concrete
- Pick-proof sealant around doors, windows and fixtures
- Paste-over for crack injection



## Set Cartridge Systems

Model No	Capacity Ounces (cubic in)	Cartridge Type	Carton Qty	Dispensing Tool	Mixing Nozzel
SET1.7KTA	1.7 (3.1)	side by side	12	Adaptor included for standard caulking tool	EMN1.7 (2 included)
SET22	22 (39.7)		10	EDT22S, EDTA22P or EDT22CKT	EMN22i
SET56	56 (101.1)		6	EDTA56P	EMN22i or EMN50

## Cure Schedule

Base Material Temp		Cure Time (hrs)
F	C	
40	4	72
65	18	24
85	29	20
90	32	16

**Shelf Life** – 24 months from the date of manufacture in unopened side by side cartridge.

## Code Reports

- ICC Evaluation Service ESR-1772 (URM)
- City of L.A. RR25279
- Caltrans approved
- Florida Statewide Product Approval FL 15730.5
- Multiple DOT Listings
- NSF/ANSI Standard 61 (216 in/1000 gal,) except SET 1.7KTA



# HAYDON BOLTS, INC.

**SET-XP** - is a 1:1 two-component, high-solids, epoxy-based anchoring adhesive formulated for optimum performance in both cracked and uncracked concrete. SET-XP® adhesive exceeds ICC-ES AC308 and 2009 IBC requirements and has proven to offer increased reliability in the most adverse conditions, including performance in cracked concrete under static and seismic loading. SET-XP® adhesive is teal in color. Resin and hardener are dispensed and mixed simultaneously through the mixing nozzle. SET-XP® adhesive exceeds the ASTM C 881 specification for Type I and Type IV, Grade 3, Class C epoxy.



## Uses

- Threaded rod anchoring
- Rebar doweling
- In tension and seismic zones where there is a risk of cracking through the anchor location

## SET-XP Cartridge Systems

Model No	Capacity Ounces (cubic in)	Cartridge Type	Carton Qty	Dispensing Tool	Mixing Nozzel
SET-XP10	8.5 (16.2)	single	12	CDT10S	EMN22i
SET-XP22	22 (39.7)	side by side	10	EDT22S, EDTA22P or EDT22CKT	
SET-XP56	56 (101.1)	side by side	6	EDTA56P	

## Cure Schedule

Base Material Temp		Gel Time (min)	Cure Time (hrs)
F	C		
50	10	75	72
60	16	60	48
70	21	45	24
90	32	35	24
110	43	20	24

**Shelf Life** - 24 months from date of manufacture in unopened side by side cartridge.

## Code Reports

- ICC-ES ESR-2508 (for cracked and uncracked concrete.)
- IAMPO UES ER-265 (for masonry)
- City of Los Angeles RR25744 (for cracked and uncracked concrete.)
- City of Los Angeles RR25965 (for masonry)
- Florida Statewide Product Approval FL 16230
- NSF/ANISI Standard 61 (216in/1000 gal)



# HAYDON BOLTS, INC.

**ET-HP** – is a two-component, high-solids epoxy system for use as a high-strength, non-shrink anchor grouting material. Resin and hardener are dispensed & mixed simultaneously through the mixing nozzle.

## Features

- Passed demanding adverse-condition tests of ICC-ES AC308 in elevated temperatures and long term sustained load
- Suitable for use under static and seismic loading conditions in cracked and uncracked concrete
- Easy hole-cleaning procedure, no power brushing required
- Suitable for use in damp or wet anchor sites
- When properly mixed, adhesive will be a uniform gray color
- Made in the USA



## ET Cartridge Systems

Model No	Capacity Ounces (cubic in)	Cartridge Type	Carton Qty	Dispensing Tool	Mixing4 Nozzel
ET-HP22	22 (39.7)	side by side	12	EDT22s, EDTA22P or EDTA22CKT	EMN22i
ET-HP56	56 (101.1)	side by side	10	EDTA56P	EMN22i or EMN50

## Cure Schedule

Base Material Temp		Cure Time
F	C	
40	6	72 hrs
60	16	24 hrs
80	27	24 hrs
100	38	12 hrs

**Shelf Life** – 24 months from date of manufacture in unopened container.

## Code Reports

- ICC-ES ESR-3372 (Uncracked Concrete)
- IAPMO UES ER-241 (Masonry)
- ICC-ES ESR-3638 (URM)
- City of Los Angeles RR25120 (URM)
- ASTM C 881 (Type I, IV, Grade 3 and Class C)
- Multiple DOT Listings





# HAYDON BOLTS, INC.

**EDOT Epoxy Anchoring Adhesive** - Formulated specifically for transportation projects, EDOT™ is a two-component, high-solids epoxy system. It is designed for use as a high-strength, non-shrink anchor grouting material providing an economical and high-strength solution for transportation applications. Resin and hardener are dispensed and mixed simultaneously through the static mixing nozzle. EDOT meets the requirements of ASTM C-881 and AASHTO M235 specifications for Type I, II, IV and V, Grade 3, Class C.

Visit [www.strongtie.com/dot](http://www.strongtie.com/dot) for specific state DOT approvals.

## USES

- Threaded rod anchoring
- Rebar doweling



**Shelf Life** – 24 months from date of manufacture in an unopened container.

## EDOT Packaging Systems

Model No	Capacity Ounces (cubic in)	Package Type	Carton	Dispensing Tool	Mixing Nozzel
EDOT22	22 oz (39.7)	Cartridge, side by side	10	EDT22S, EDTA22P, EDT22CKT	EMN22i
EDOT56	56 oz (101.1)	Cartridge, side by side	6	EDTA56P	EMN22i or EMN50
EDOT1KT	1 gallon kit (231)	(2) 1/2 gal pails	1 kit	Metering Pump	EMN37A
EDOT10KT	10 gallon kit (2,310)	(2) 5 gal pails	1 kit	Metering Pump	EMN37A
EDOT100KT	100 gallon kit (23,100)	(2) 50 gal pails	1 kit	Metering Pump	EMN37A

## Cure Schedule

Base Material Temp		Cure Time
F	C	
40	6	72 hrs
60	16	24 hrs
80	27	24 hrs
100	38	24 hrs



# HAYDON BOLTS, INC.

**Drop-In Anchors** - internally threaded, deformation-controlled expansion anchors with a preassembled expander plug, suitable for flush mount applications in solid base materials. Use the set tool to drive the expansion plug towards the bottom of the anchor.

**Lipped drop-in Anchors** - have a lip at the top of the anchor body that keeps the top of the anchor flush with the concrete. This eliminates the need for precisely drilled hole depths and allows for easier flush installation, consistent embedment and uniform rod lengths.

**Short Drop-In Anchors** are for use in solid and hollow concrete. The short length permits shallow embedment that helps to avoid drilling into rebar or prestressing strands. The wide surface flange enables the Short Drop-In to be installed in deep or bottomless holes. Fixed-depth drill bits are also available to take the guesswork out of drilling to the correct depth for these 3/8" and 1/2" Short Drop-Ins. Using the fixed depth bit drill bit prevents over drilling, which saves time and prolongs bit life.

**Material:** Carbon and stainless steel (DIA37S & DIA50S in zinc-plated & carbon steel only)

**Finish:** Carbon steel, Zinc plated.

Setting Tool



Fixed Length Drill Bit



## Installation

1. Drill a hole in the base material using the appropriate diameter carbide drill bit as specified in the product information tables. Drill the hole to the embedment depth plus 1/8" for flush mounting. Clean hole using compressed air.
2. Insert Drop-In anchor into hole. Tap with hammer until flush against surface.
3. Using the Drop-In setting tool, drive expander plug towards the bottom of the anchor until shoulder of setting tool makes contact with the top of the anchor.
4. Minimum thread engagement should be equal to the nominal diameter of the threaded insert.

Caution: Oversized holes will make it difficult to set the anchor and will reduce the anchor's load capacity.

## Drop-In Anchor Setting Tool Product Data

Model No	Used With	Box
DIAS25	DIA25, DIAL25	10
DIAS37	DIA37, DIAL37	10
DIAS50	DIA50, DIA50C, DIAL50	10
DIAS62	DIA62	5
DIAS75	DIA75, DIA75C	5

## Fixed Depth Drill Bit

Drill Bit Diameter	Drop-In Anchor	Model No	Drill Depth
1/2	3/8	MDPL050DIAS	15/16
5/8	1/2	MDPL062DIAS	1 - 1/4



# HAYDON BOLTS, INC.

## Drop-In Anchor Product Data – Carbon and Stainless Steel



Rod Size	Carbon Steel Model No	303 Stainless Model No	316 Stainless Model No	Drill Bit Diameter	Bolt Threads (inch)	Body Length	Thread Length	Quantity	
								Box	Carton
1/4	DIA25	DIA25SS	DIA256SS	3/8	20	1	3/8	100	500
3/8	DIA37	DIA37SS	DIA376SS	1/2	16	1 - 1/2	5/8	50	250
1/2	DIA50	DIA50SS	DIA506SS	5/8	13	2	3/4	50	200
5/8	DIA62	DIA62SS	-	7/8	11	2 - 1/2	1	25	100
3/4	DIA75	DIA75SS	-	1	10	3 - 1/8	1 - 1/4	25	80

## Lipped Drop-In Anchor Product Data



Rod Size	Carbon Steel	Drill Bit Diameter	Bolt Threads	Body Length	Thread Length	Quantity	
						Box	Carton
1/4	DIAL25	3/8	20	1	3/8	100	500
3/8	DIAL37	1/2	16	1 - 1/2	5/8	50	250
1/2	DIAL50	5/8	13	2	3/4	50	200

## Short Drop-In Anchor Product Data



Rod Size	Model No	Drill Bit Diameter	Bolt Threads	Body Length	Thread Length	Quantity	
						Box	Carton
3/8	DIA37S	1/2	16	3/4	1/4	100	500
1/2	DIA50S	5/8	13	1	5/16	50	200

## Coil Thread Drop-In Anchor



Rod Size	Carbon Steel Model No	Drill Bit Diameter	Bolt Threads	Body Length	Thread Length	Quantity	
						Box	Carton
1/2	DIA50C	5/8	6	2	3/4	50	200
3/4	DIA75C	1	13	3 - 1/8	1 - 1/4	20	80



# HAYDON BOLTS, INC.

## Marine & Miscellaneous Hardware

### Dock Washer



Used in dock and wood construction, they are an oversized, low carbon steel, domestic are available.

**Finish:** Hot-Dip Galvanized

Bolt Size	Outside Diameter	Inside Diameter	Thickness	Weight Per 100
3/8	2	7/16	3/16	16
1/2	2 - 1/4	9/16	3/16	20
5/8	2 - 1/2	11/16	1/4	32
3/4	3	13/16	1/4	46
7/8	3 - 1/2	15/16	5/16	79
1	4	1 - 1/16	3/8	124
1 - 1/4	5	1 - 3/8	3/8	193

### Ogee Round Washer



Used in wood and dock construction, they have a double curved face resembling an "S" and domestic are available.

**Finish:** Plain or Hot-Dip Galvanized

Bolt Size	Top Outside Diameter	Bottom Outside Diameter	Thickness	Weight Per 100
1/2	1 - 3/8	2 - 3/8	1/2	48
5/8	1 - 5/8	2 - 3/4	5/8	62
3/4	1 - 7/8	3	3/4	71
7/8	2	3 - 1/2	7/8	115
1	2 - 1/2	4	1	150
1 - 1/8	2 - 1/2	4 - 1/4	1 - 1/8	249
1 - 1/4	2 - 1/2	4 - 1/2	1 - 1/4	286

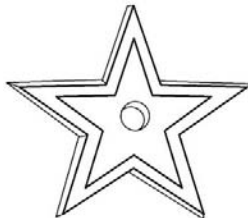
**Malleable Cast Iron Round Washers** Used in wood and dock construction. Domestic are available.



**Finish:** Plain or Hot-Dip Galvanized

Bolt Size	Outside Diameter	Thickness	Weight Per 100
1/2	2 - 1/2	1/4	22
5/8	2 - 3/4	5/16	32
3/4	3	7/16	42
7/8	3 - 1/2	7/16	55
1	3 - 3/4	1/2	63

### Star Washers



Used in restoration projects, they can be used as an artistic way to hold a façade to a structure.

**Finish:** Plain Only

Bolt Size	Outside Diameter	Thickness	Weight Per 100
3/4	3	7/16	42