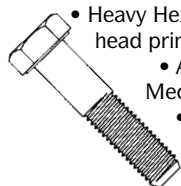




A-325 Structural Bolts

Structural Bolts - A325 Heavy Hex Bolts



- Heavy Hex Bolts with a washer-face on the underside of the head primarily used in Structural Steel joints.
- Available in Black (Plain), Hot Dip Galvanized and Mechanical Galvanized Finishes.
- Available in Type I & Type III (Weathering Steel)
- A325-T full-thread in Type I only



- A325-T full-thread in Type I only
- Type I available in 1/2" through 1 1/4" diameters
- Type III available in 3/4" through 1" diameters
- **Specify Finish & Type (I or III) when ordering.**

Available in Metric (A325M), M20, M22 & M25 diameters up to 170mm in length. Black (Plain), Hot Dip Galvanized & Mechanical Galvanized Finishes. Please call for availability and pricing.

Length	(Black)		Galvanized	
	Plain	Hot Dip	Hot Dip	Mechanical
1/2 - 13 Nominal Size and Threads				
1-1/4	50C125A3O	50C125A3OH	50C125A3OH	50C125A3O0M
1-1/2	50C150A3O	50C150A3OH	50C150A3OH	50C150A3O0M
1-3/4	50C175A3O	50C175A3OH	50C175A3OH	50C175A3O0M
2	50C200A3O	50C200A3OH	50C200A3OH	50C200A3O0M
2-1/4	50C225A3O	50C225A3OH	50C225A3OH	50C225A3O0M
2-1/2	50C250A3O	50C250A3OH	50C250A3OH	50C250A3O0M
2-3/4	50C275A3O	50C275A3OH	50C275A3OH	50C275A3O0M
3	50C300A3O	50C300A3OH	50C300A3OH	50C300A3O0M
3-1/4	50C325A3O	50C325A3OH	50C325A3OH	50C325A3O0M
3-1/2	50C350A3O	50C350A3OH	50C350A3OH	50C350A3O0M
3-3/4	50C375A3O	50C375A3OH	50C375A3OH	50C375A3O0M
4	50C400A3O	50C400A3OH	50C400A3OH	50C400A3O0M
5/8 - 11 Nominal Size and Threads				
1-1/2	62C150A3O	62C150A3OH	62C150A3OH	62C150A3O0M
1-3/4	62C175A3O	62C175A3OH	62C175A3OH	62C175A3O0M
2	62C200A3O	62C200A3OH	62C200A3OH	62C200A3O0M
2-1/4	62C225A3O	62C225A3OH	62C225A3OH	62C225A3O0M
2-1/2	62C250A3O	62C250A3OH	62C250A3OH	62C250A3O0M
2-3/4	62C275A3O	62C275A3OH	62C275A3OH	62C275A3O0M
3	62C300A3O	62C300A3OH	62C300A3OH	62C300A3O0M
3-1/4	62C325A3O	62C325A3OH	62C325A3OH	62C325A3O0M
3-1/2	62C350A3O	62C350A3OH	62C350A3OH	62C350A3O0M
3-3/4	62C375A3O	62C375A3OH	62C375A3OH	62C375A3O0M
4	62C400A3O	62C400A3OH	62C400A3OH	62C400A3O0M
4-1/2	62C450A3O	62C450A3OH	62C450A3OH	62C450A3O0M
5	62C500A3O	62C500A3OH	62C500A3OH	62C500A3O0M
5-1/2	62C550A3O	62C550A3OH	62C550A3OH	62C550A3O0M
3/4 - 10 Nominal Size and Threads				
1-1/2	75C150A3O	75C150A3OH	75C150A3OH	75C150A3O0M
1-3/4	75C175A3O	75C175A3OH	75C175A3OH	75C175A3O0M
2	75C200A3O	75C200A3OH	75C200A3OH	75C200A3O0M
2-1/4	75C225A3O	75C225A3OH	75C225A3OH	75C225A3O0M
2-1/2	75C250A3O	75C250A3OH	75C250A3OH	75C250A3O0M
2-3/4	75C275A3O	75C275A3OH	75C275A3OH	75C275A3O0M
3	75C300A3O	75C300A3OH	75C300A3OH	75C300A3O0M
3-1/4	75C325A3O	75C325A3OH	75C325A3OH	75C325A3O0M
3-1/2	75C350A3O	75C350A3OH	75C350A3OH	75C350A3O0M
3-3/4	75C375A3O	75C375A3OH	75C375A3OH	75C375A3O0M
4	75C400A3O	75C400A3OH	75C400A3OH	75C400A3O0M
4-1/2	75C450A3O	75C450A3OH	75C450A3OH	75C450A3O0M
5	75C500A3O	75C500A3OH	75C500A3OH	75C500A3O0M
5-1/2	75C550A3O	75C550A3OH	75C550A3OH	75C550A3O0M
6	75C600A3O	75C600A3OH	75C600A3OH	75C600A3O0M
6-1/2	75C650A3O	75C650A3OH	75C650A3OH	75C650A3O0M
7	75C700A3O	75C700A3OH	75C700A3OH	75C700A3O0M

Length	(Black)		Galvanized	
	Plain	Hot Dip	Hot Dip	Mechanical
3/4 - 10 Nominal Size and Threads				
7-1/2	75C750A3O	75C750A3OH	75C750A3OH	75C750A3O0M
8	75C800A3O	75C800A3OH	75C800A3OH	75C800A3O0M
9	75C900A3O	75C900A3OH	75C900A3OH	75C900A3O0M
9-1/2	75C950A3O	75C950A3OH	75C950A3OH	75C950A3O0M
10	75C1000A3O	75C1000A3OH	75C1000A3OH	75C1000A3O0M
7/8 - 9 Nominal Size and Threads				
1-3/4	87C175A3O	87C175A3OH	87C175A3OH	87C175A3O0M
2	87C200A3O	87C200A3OH	87C200A3OH	87C200A3O0M
2-1/4	87C225A3O	87C225A3OH	87C225A3OH	87C225A3O0M
2-1/2	87C250A3O	87C250A3OH	87C250A3OH	87C250A3O0M
2-3/4	87C275A3O	87C275A3OH	87C275A3OH	87C275A3O0M
3	87C300A3O	87C300A3OH	87C300A3OH	87C300A3O0M
3-1/4	87C325A3O	87C325A3OH	87C325A3OH	87C325A3O0M
3-1/2	87C350A3O	87C350A3OH	87C350A3OH	87C350A3O0M
3-3/4	87C375A3O	87C375A3OH	87C375A3OH	87C375A3O0M
4	87C400A3O	87C400A3OH	87C400A3OH	87C400A3O0M
4-1/2	87C450A3O	87C450A3OH	87C450A3OH	87C450A3O0M
5	87C500A3O	87C500A3OH	87C500A3OH	87C500A3O0M
5-1/2	87C550A3O	87C550A3OH	87C550A3OH	87C550A3O0M
6	87C600A3O	87C600A3OH	87C600A3OH	87C600A3O0M
6-1/2	87C650A3O	87C650A3OH	87C650A3OH	87C650A3O0M
7	87C700A3O	87C700A3OH	87C700A3OH	87C700A3O0M
7-1/2	87C750A3O	87C750A3OH	87C750A3OH	87C750A3O0M
1 - 8 Nominal Size and Threads				
2	100C200A3O	100C200A3OH	100C200A3OH	100C200A3O0M
2-1/4	100C225A3O	100C225A3OH	100C225A3OH	100C225A3O0M
2-1/2	100C250A3O	100C250A3OH	100C250A3OH	100C250A3O0M
2-3/4	100C275A3O	100C275A3OH	100C275A3OH	100C275A3O0M
3	100C300A3O	100C300A3OH	100C300A3OH	100C300A3O0M
3-1/4	100C325A3O	100C325A3OH	100C325A3OH	100C325A3O0M
3-1/2	100C350A3O	100C350A3OH	100C350A3OH	100C350A3O0M
3-3/4	100C375A3O	100C375A3OH	100C375A3OH	100C375A3O0M
4	100C400A3O	100C400A3OH	100C400A3OH	100C400A3O0M
4-1/2	100C450A3O	100C450A3OH	100C450A3OH	100C450A3O0M
5	100C500A3O	100C500A3OH	100C500A3OH	100C500A3O0M
5-1/2	100C550A3O	100C550A3OH	100C550A3OH	100C550A3O0M
6	100C600A3O	100C600A3OH	100C600A3OH	100C600A3O0M
6-1/2	100C650A3O	100C650A3OH	100C650A3OH	100C650A3O0M
7	100C700A3O	100C700A3OH	100C700A3OH	100C700A3O0M
7-1/2	100C750A3O	100C750A3OH	100C750A3OH	100C750A3O0M
1-1/8 - 7 Nominal Size and Threads				
2-1/4	112C225A3O	112C225A3OH	112C225A3OH	112C225A3O0M
2-1/2	112C250A3O	112C250A3OH	112C250A3OH	112C250A3O0M
2-3/4	112C275A3O	112C275A3OH	112C275A3OH	112C275A3O0M
3	112C300A3O	112C300A3OH	112C300A3OH	112C300A3O0M



A-325 Structural Bolts / Nuts

Fasteners
Anchors
Strut
Threaded Rod
Pipe Hangers
Tools
Abrasives
On-Site Supplies
fety

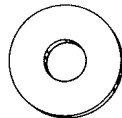
Structural Bolts - A325 Heavy Hex Bolts - cont.

Length	(Black)		Galvanized	
	Plain	Hot Dip	Hot Dip	Mechanical
1-1/8 - 7 Nominal Size and Threads				
3-1/4	112C325A3O	112C325A3OH	112C325A3O0M	
3-1/2	112C350A3O	112C350A3OH	112C350A3O0M	
3-3/4	112C375A3O	112C375A3OH	112C375A3O0M	
4	112C400A3O	112C400A3OH	112C400A3O0M	
4-1/2	112C450A3O	112C450A3OH	112C450A3O0M	
5	112C500A3O	112C500A3OH	112C500A3O0M	
5-1/2	112C550A3O	112C550A3OH	112C550A3O0M	
6	112C600A3O	112C600A3OH	112C600A3O0M	
6-1/2	112C650A3O	112C650A3OH	112C650A3O0M	
7	112C700A3O	112C700A3OH	112C700A3O0M	
7-1/2	112C750A3O	112C750A3OH	112C750A3O0M	

1-1/4 - 7 Nominal Size and Threads				
2-1/4	125C225A3O	125C225A3OH	125C225A3O0M	
2-1/2	125C250A3O	125C250A3OH	125C250A3O0M	
2-3/4	125C275A3O	125C275A3OH	125C275A3O0M	
3	125C300A3O	125C300A3OH	125C300A3O0M	
3-1/4	125C325A3O	125C325A3OH	125C325A3O0M	
3-1/2	125C350A3O	125C350A3OH	125C350A3O0M	
3-3/4	125C375A3O	125C375A3OH	125C375A3O0M	
4	125C400A3O	125C400A3OH	125C400A3O0M	
4-1/2	125C450A3O	125C450A3OH	125C450A3O0M	
5	125C500A3O	125C500A3OH	125C500A3O0M	
5-1/2	125C550A3O	125C550A3OH	125C550A3O0M	
6	125C600A3O	125C600A3OH	125C600A3O0M	
6-1/2	125C650A3O	125C650A3OH	125C650A3O0M	
7	125C700A3O	125C700A3OH	125C700A3O0M	
7-1/2	125C750A3O	125C750A3OH	125C750A3O0M	

A325 Flat Washers (ASTM F436)

- Plain or Hot Dip Galvanized Finish.
- Call for complete specifications.



Size	Plain	HDG	Size	Plain	HDG
1/2	50DA3W	50DA3WH	1	100DA3W	100DA3WH
5/8	62DA3W	62DA3WH	1-1/8	112DA3W	112DA3WH
3/4	75DA3W	75DA3WH	1-1/4	125DA3W	125DA3WH
7/8	87DA3W	87DA3WH	1-1/2	150DA3W	150DA3WH

Beveled Square Washers

Also available in Cast Iron O.G. Washers and Cast Iron Bridge or Timber Washers.



Nominal ID	Hot Dip Galvanized		Qty.
	Plain	Hot Dip Galvanized	
1/4	25DBEW	25DBEWH	100
5/16	31DBEW	31DBEWH	100
3/8	37DBEW	37DBEWH	100
1/2	50DBEW	50DBEWH	50
5/8	62DBEW	62DBEWH	25
3/4	75DBEW	75DBEWH	20
7/8	87DBEW	87DBEWH	15
1	100DBEW	100DBEWH	10

How Much Squirt is Tight?

Squirter® DTI's

- Flexible silicone is embedded in the depressions under the bumps.
- Tighten the bolt until the calibrated amount of organic silicone appears from under the squirt locations.



Size	Part No.
3/4	75DLIWSQ
7/8	87DLIWSQ
1	100DLIWSQ

A490 Hex Bolt with Nut Type 1 Plain



Length	Part No.	Length	Part No.
7/8 - 9 Nominal Size & Threads		1-8 Nominal Size & Threads	
2	87C200A4B	4-3/4	100C275A4B
3	87C300A4B	5	100C275A4B
5	87C500A4B	5-1/2	100C275A4B
6	87C600A4B	6-1/2	100C275A4B
7	87C700A4B	6-1/2	100C275A4B
7-1/2	87C750A4B	7	100C275A4B
1-8 Nominal Size & Threads		9	100C275A4B
2-3/4	100C275A4B	1-1/4 - 7 Nominal Size & Threads	
3	100C275A4B	1	75C100A4B
3-1/2	100C275A4B	2	75C200A4B
3-3/4	100C275A4B	2-1/4	75C225A4B
4	100C275A4B	2-1/2	75C250A4B
4-1/4	100C275A4B	3-3/4	75C375A4B
4-1/2	100C275A4B	11	75C1100A4B

ASTM A563 Grade DH and DH3 Structural Nuts

- Finishes: Grade DH - Black (Plain), mechanical galvanized & hot dipped galvanized.
- Grade DH3 - Black Type III weathering steel

Size	DH	Size	DH 3 Type III
1/2 - 13	50CDHH	1/2 - 13	50CHHN/A563DH3
5/8 - 11	62CDHH	5/8 - 11	62CHHN/A563DH3
3/4 - 10	75CDHH	3/4 - 10	75CHHN/A563DH3
7/8 - 9	87CDHH	7/8 - 9	87CHHN/A563DH3
1 - 8	100CDHH	1 - 8	100CHHN/A563DH3
1-1/8 - 7	112CDHH	1-1/8 - 7	112CHHN/A563DH3
1-1/4 - 7	125CDHH	1-1/4 - 7	125CHHN/A563DH3



ASTM A563 Grade C



ASTM A563 Grade C3



ASTM A563 Grade DH



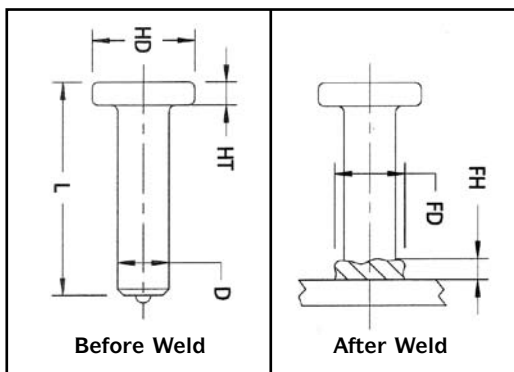
ASTM A563 Grade DH3





Stud Welding

Fasteners
Anchors
Struct
Threaded Rod
Pipe Hangers
Tools
Abrasives
On-Site Supplies
Safety



Type CA Stud Headed Concrete Anchor - Full Weld Base Type F Ferrule Supplied

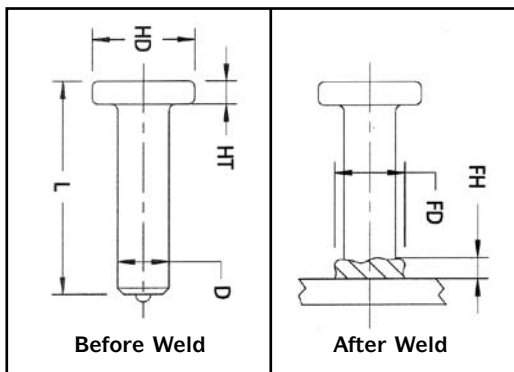
#2

D Dia.	L Min. Length B4 Weld	#1 Stud Part No.	H Head Dia.	HT Head Height Min.	FD Weld Fillet Dia.	FH Weld Fillet Height	Chuck Part No.	Foot Part No.	Grip Part No.	Foot #3 and Grip
1/2	1-1/8	1011-08-018	1	5/16	11/16	5/32	8032	11125	8053	8126
1/2	1-1/2	1011-08-024	1	5/16	11/16	5/32	8032	11125	8053	8126
1/2	1-5/8	1011-08-026	1	5/16	11/16	5/32	8032	11125	8053	8126
1/2	2-1/8	1011-08-034	1	5/16	11/16	5/32	8032	11125	8053	8126
1/2	2-5/8	1011-08-042	1	5/16	11/16	5/32	8032	11125	8053	8126
1/2	3-1/8	1011-08-050	1	5/16	11/16	5/32	8032	11125	8053	8126
1/2	4-1/8	1011-08-066	1	5/16	11/16	5/32	8032	11125	8053	8126
1/2	5-5/16	1011-08-085	1	5/16	11/16	5/32	8032	11125	8053	8126
1/2	6-1/8	1011-08-098	1	5/16	11/16	5/32	8032	11125	8053	8126
1/2	8-1/8	1011-08-130	1	5/16	11/16	5/32	8032	11125	8053	8126

#1. Tru-weld Studs are available in any required length above the standard minimum.

#2. Listed Ferrule is for standard flat down hand position.

#3. Requires use of P/N-11101 dual leg adapter.



Type SC Stud Shear Connector - Full Weld Base Type F Ferrule Supplied

#2

D Dia.	L Min. Length B4 Weld	#1 Stud Part No.	H Head Dia.	HT Head Height Min.	FD Weld Fillet Dia.	FH Weld Fillet Height	Chuck Part No.	Foot Part No.	Grip Part No.	Foot #3 and Grip
3/4	3-3/16	1011-12-051	1-1/4	3/8	1-1/16	1/4	8038	1112	8054	8127
3/4	3-11/16	1011-12-059	1-1/4	3/8	1-1/16	1/4	8038	1112	8054	8127
3/4	4-3/16	1011-12-067	1-1/4	3/8	1-1/16	1/4	8038	1112	8054	8127
3/4	4-11/16	1011-12-075	1-1/4	3/8	1-1/16	1/4	8038	1112	8054	8127
3/4	5-3/16	1011-12-083	1-1/4	3/8	1-1/16	1/4	8038	1112	8054	8127
3/4	6-3/16	1011-12-099	1-1/4	3/8	1-1/16	1/4	8038	1112	8054	8127
3/4	7-3/16	1011-12-115	1-1/4	3/8	1-1/16	1/4	8038	1112	8054	8127
3/4	8-3/16	1011-12-131	1-1/4	3/8	1-1/16	1/4	8038	1112	8054	8127
3/4	9-3/16	1011-12-147	1-1/4	3/8	1-1/16	1/4	8038	1112	8054	8127
3/4	10-3/16	1011-12-163	1-1/4	3/8	1-1/16	1/4	8038	1112	8054	8127

#1. Tru-weld Studs are available in any required length above the standard minimum.

#2. Listed Ferrule is for standard flat down hand position.

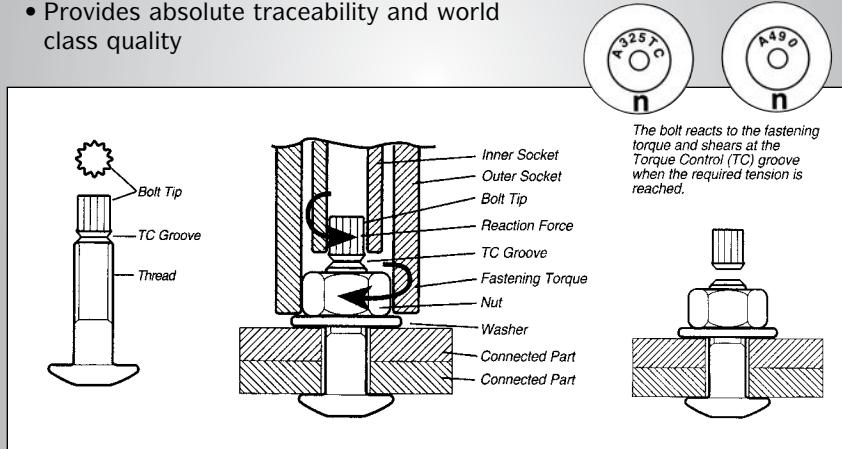
#3. Requires use of P/N-11101 dual leg adapter.





TC (Tension Control) Bolts

- TC Bolts know when the specified tension has been reached; the special tip shears
- No operator or tool can accidentally over tension - It's a calibrated bolt
- Visual inspection: when the tip is gone, tension is correct
- TC Bolts are installed faster with less operator fatigue
- Noiseless installation
- One man installation
- Provides absolute traceability and world class quality



TC Bolt Installation Tool

- Specifically designed for use with tension control, or twist off type bolts.
- One sided, one man installation.
- Lightweight, electric operation.
- Low maintenance.
- Quiet, non-impacting operation.
- No tool or air compressor calibration.
- Reduced operator fatigue.

Part No.	Description
S60EZA	5/8" - 7/8" dia. TC Bolts
S90EZA	1", 3/4 & 7/8" dia. TC Bolts
S110EZ	Up to 1-1/8" dia. TC Bolts
S80EZ	Compact Wrench

Length Plain Galvanized

3/4 - 10 Nominal Size & Threads

Length	Plain	Galvanized
1-3/4	75C175TCB	75C175TCB0M
2	75C200TCB	75C200TCB0M
2-1/4	75C225TCB	75C225TCB0M
2-1/2	75C250TCB	75C250TCB0M
2-3/4	75C275TCB	75C275TCB0M
3	75C300TCB	75C300TCB0M
3-1/4	75C325TCB	75C325TCB0M
3-1/2	75C350TCB	75C350TCB0M
3-3/4	75C375TCB	75C375TCB0M
4	75C400TCB	75C400TCB0M
4-1/4	75C425TCB	75C425TCB0M
4-1/2	75C450TCB	75C450TCB0M
4-3/4	75C475TCB	75C475TCB0M
5	75C500TCB	75C500TCB0M
5-1/4	75C525TCB	75C525TCB0M
5-1/2	75C550TCB	75C550TCB0M
5-3/4	75C575TCB	75C575TCB0M
6	75C600TCB	75C600TCB0M

7/8 - 9 Nominal Size & Threads

Length	Plain	Galvanized
2	87C200TCB	87C200TCB0M
2-1/4	87C225TCB	87C225TCB0M
2-1/2	87C250TCB	87C250TCB0M
2-3/4	87C275TCB	87C275TCB0M
3	87C300TCB	87C300TCB0M
3-1/4	87C325TCB	87C325TCB0M
3-1/2	87C350TCB	87C350TCB0M
3-3/4	87C375TCB	87C375TCB0M
4	87C400TCB	87C400TCB0M
4-1/4	87C425TCB	87C425TCB0M
4-1/2	87C450TCB	87C450TCB0M
4-3/4	87C475TCB	87C475TCB0M
5	87C500TCB	87C500TCB0M
5-1/4	87C525TCB	87C525TCB0M
5-1/2	87C550TCB	87C550TCB0M
6	87C600TCB	87C600TCB0M

Length Plain Galvanized

1 - 8 Nominal Size & Threads

Length	Plain	Galvanized
2	100C200TCB	100C200TCB0M
2-1/4	100C225TCB	100C225TCB0M
2-1/2	100C250TCB	100C250TCB0M
2-3/4	100C275TCB	100C275TCB0M
3	100C300TCB	100C300TCB0M
3-1/4	100C325TCB	100C325TCB0M
3-1/2	100C350TCB	100C350TCB0M
3-3/4	100C375TCB	100C375TCB0M
4	100C400TCB	100C400TCB0M
4-1/4	100C425TCB	100C425TCB0M
4-1/2	100C450TCB	100C450TCB0M
4-3/4	100C475TCB	100C475TCB0M
5	100C500TCB	100C500TCB0M
5-1/4	100C525TCB	100C525TCB0M
5-1/2	100C550TCB	100C550TCB0M
5-3/4	100C575TCB	100C575TCB0M
6	100C600TCB	100C600TCB0M

1-1/8 - 7 Nominal Size & Threads

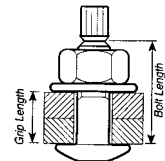
Length	Plain	Galvanized
2-3/4	112C275TCB	112C275TCB0M
3	112C300TCB	112C300TCB0M
3-1/4	112C325TCB	112C325TCB0M
3-1/2	112C350TCB	112C350TCB0M
3-3/4	112C375TCB	112C375TCB0M
4	112C400TCB	112C400TCB0M
4-1/4	112C425TCB	112C425TCB0M
4-1/2	112C450TCB	112C450TCB0M
4-3/4	112C475TCB	112C475TCB0M
5	112C500TCB	112C500TCB0M
5-1/2	112C550TCB	112C550TCB0M
6	112C600TCB	112C600TCB0M

We repair and rent **TONE** tools.

Determining Proper Bolt Length

Exclusive of washers the lengths determined by the use of this table should be rounded up to the next 1/4".

To determine the required bolt length, ADD the length shown to the Grip Length.



Bolt Size	Add
5/8"	7/8"
3/4"	1"
7/8"	1-1/8"
1"	1-1/4"

Mechanical Specifications

Bolts (A325)

<3 x Diameter - Hardness: Brinnell Min.-Max. 253 - 319; Rockwell C Min.-Max. C25 - C32 >3 x Diameter - Hardness: Brinnell Min.-Max. - - 319; Rockwell C Min.-Max. - -C34.

Bolts (A490)

<3 x Diameter - Hardness: Brinnell Min.-Max. 311 - 352; Rockwell C Min.-Max. C33 - C38 >3 x Diameter - Hardness: Brinnell Min.-Max. - - 352; Rockwell C Min.-Max. - -C38.

Nuts

Grade A-194 2H; Proof Load Stress (KSI): 175, Hardness: Brinnell Min. - Max. 248-352 - Rockwell Min. - Max. C24-C38

Washers

Grade: F-436; Rockwell Hardness C38 - C45

Complete Specifications are available upon request.

