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## HARDWARE DATA

### RECOMMENDED TIGHTENING TORQUE

The hardware used in connectors must be compatible with the connector material, have high mechanical strength and be corrosion resistant and correspond to NEMA recommendations.

Copper alloy connectors have hardware made of DURIMUM™, which is BURNDY's trade name for silicon bronze alloy ASTMB99 type B. This material was first introduced by BURNDY® in 1927 for use in outdoor construction, and today, is the standard throughout the industry.

DURIMUM™ and Steel Hardware		Aluminum Hardware	
Bolt Size	Rec. Torque (Inch Pounds)	Bolt Size	Rec. Torque (Inch Pounds)
1/4 - 20	80	1/2 - 13	300
5/16 - 18	180	5/8 - 11	480
3/8 - 16	240	3/4 - 10	650
1/2 - 13	480		
5/8 - 11	660		
3/4 - 10	1,050		

Aluminum connectors generally have aluminum alloy hardware. The bolts are 2024T4 and anodized to resist corrosion. The nuts are 6061T6, which is resistant to corrosion and does not require anodizing. Both nuts and bolts are lubricated to eliminate galling and to provide consistent

clamping forces.

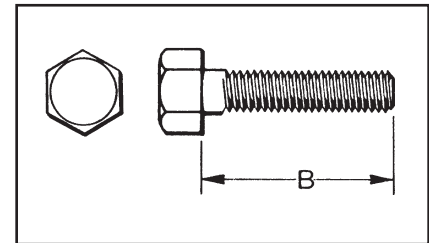
To reduce or greatly exceed the recommended torque can adversely affect the performance of the connector.

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## DURIMUM™ BOLT

### SILICON BRONZE

BURNDY® introduced silicon-bronze bolts, nuts and other hardware items on outdoor connector applications in 1927. Today the DURIMUM™ trademark is a standard for this use. DURIMUM™ bolts combine high strength with corrosion resistance. Heads have American Standard



dimension and the threads are per American National Coarse Series, Class #2 fit. The silicon

bronze is per ASTM B99.

Catalog Number	Thread Size	B Length (Inches)
25X50HEBBOX	1/4-20	1/2
25X62HEBBOX	1/4-20	5/8
25X75HEBBOX	1/4-20	3/4
25X100HEBBOX	1/4-20	1
25X125HEBBOX	1/4-20	1-1/4
25X150HEBBOX	1/4-20	1-1/2
25X200HEBBOX	1/4-20	2
25X250HEBBOX	1/4-20	2-1/2
25X300HEBBOX	1/4-20	3
31X50HEBBOX	5/16-18	1/2
31X62HEBBOX	5/16-18	5/8
31X75HEBBOX	5/16-18	3/4
31X100HEBBOX	5/16-18	1
31X125HEBBOX	5/16-18	1-1/4
31X150HEBBOX	5/16-18	1-1/2
31X175HEBBOX	5/16-18	1-3/4
31X200HEBBOX	5/16-18	2
31X250HEBBOX	5/16-18	2-1/2
31X300HEBBOX	5/16-18	3
38X50HEBBOX	3/8-16	1/2
38X62HEBBOX	3/8-16	5/8
38X75HEBBOX	3/8-16	3/4
38X88HEBBOX	3/8-16	7/8
38X100HEBBOX	3/8-16	1

Catalog Number	Thread Size	B Length (Inches)
38X125HEBBOX	3/8-16	1-1/4
38X150HEBBOX	3/8-16	1-1/2
38X175HEBBOX	3/8-16	1-3/4
38X200HEBBOX	3/8-16	2
38X225HEBBOX	3/8-16	2-1/4
38X250HEBBOX	3/8-16	2-1/2
38X275HEBBOX	3/8-16	2-3/4
38X300HEBBOX	3/8-16	3
38X325HEBBOX	3/8-16	3-1/4
38X350HEBBOX	3/8-16	3-1/2
38X400HEBBOX	3/8-16	4
38X450HEBBOX	3/8-16	4-1/2
38X500HEBBOX	3/8-16	5
44X150HEBBOX	7/16-14	1-1/2
44X200HEBBOX	7/16-14	2
50X75HEBBOX	1/2-13	3/4
50X100HEBBOX	1/2-13	1
50X125HEBBOX	1/2-13	1-1/4
50X150HEBBOX	1/2-13	1-1/2
50X175HEBBOX	1/2-13	1-3/4
50X200HEBBOX	1/2-13	2
50X225HEBBOX	1/2-13	2-1/4
50X250HEBBOX	1/2-13	2-1/2
50X275HEBBOX	1/2-13	2-3/4

Catalog Number	Thread Size	B Length (Inches)
50X300HEBBOX	1/2-13	3
50X325HEBBOX	1/2-13	3-1/4
50X350HEBBOX	1/2-13	3-1/2
50X375HEBBOX	1/2-13	3-3/4
50X400HEBBOX	1/2-13	4
50X450HEBBOX	1/2-13	4-1/2
50X500HEBBOX	1/2-13	5
50X550HEBBOX	1/2-13	4-1/2
50X600HEBBOX	1/2-13	6
62X100HEBBOX	5/8-11	1
62X125HEBBOX	5/8-11	1-1/4
62X150HEBBOX	5/8-11	1-1/2
62X175HEBBOX	5/8-11	1-3/4
62X200HEBBOX	5/8-11	2
62X225HEBBOX	5/8-11	2-1/4
62X250HEBBOX	5/8-11	2-1/2
62X275HEBBOX	5/8-11	2-3/4
62X300HEBBOX	5/8-11	3
62X325HEBBOX	5/8-11	3-1/4
62X350HEBBOX	5/8-11	3-1/2
62X400HEBBOX	5/8-11	4
62X450HEBBOX	5/8-11	4-1/2
62X500HEBBOX	5/8-11	5
62X600HEBBOX	5/8-11	6

**DURIUM™ NUTS**

**SILICON BRONZE**

DURIUM™ hexagon regular nuts are non-magnetic and are made to American Standard dimensions. American National Coarse Series threads. #2 fit.



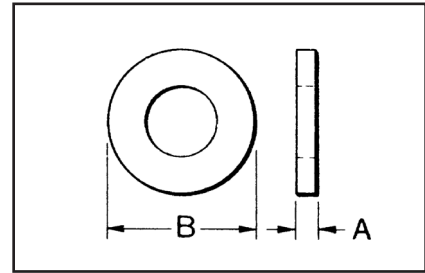
Catalog Number	Thread Size
25CHENBOX	1/4-20
31CHENBOX	5/16-18
38CHENBOX	3/8-16
44CHENBOX	7/16-14
50CHENBOX	1/2-13
62CHENBOX	5/8-11
75CHENBOX	3/4-10
100CHENBOX	1-8

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**DURIUM™ FLAT WASHERS**

**SILICON BRONZE**

High strength DURIUM™ Flat Washers are non-magnetic and free from galvanic action when in contact with copper. Conforms to SAE standards.



Catalog Number	For Bolt Size	Nominal Dimensions in Inches	
		A	B
25FWBOX	1/4	1/16	5/8
31FWBOX	5/16	1/16	11/16
38FWBOX	3/8	1/16	13/16
44FWBOX	7/16	1/16	15/16
50FWBOX	1/2	3/32	1-1/16
62FWBOX	5/8	3/32	1-5/16
75FWBOX	3/4	9/64	1-15/32

**DURIUM™ SPLIT LOCKWASHERS**

**SILICON BRONZE**

DURIUM™ spring type lockwasher has high resiliency and exerts constant pressure on the face of the nut, preventing vibration from loosening the nut.



Catalog Number	For Bolt Size
25SWBOX	1/4
31SWBOX	5/16
38SWBOX	3/8
44SWBOX	7/16
50SWBOX	1/2
62SWBOX	5/8
75SWBOX	3/4

**DURIUM™ INTERNAL TOOTH LOCKWASHERS**

**SILICON BRONZE**

DURIUM™ Internal Tooth Lockwashers are available as illustrated. The teeth are twisted slightly and present biting edges which grip the nut and the part being clamped, preventing the nut from backing off.

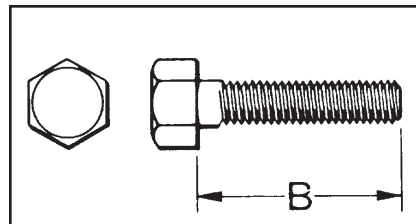
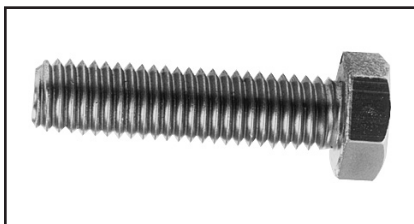


Catalog Number	For Bolt Size
25NWBOX	1/4
31NWBOX	5/16
38NWBOX	3/8
44NWBOX	7/16
50NWBOX	1/2
62NWBOX	5/8
75NWBOX	3/4

ALUMINUM HARDWARE

BOLTS

BURNDY® aluminum hexagon head bolts are manufactured of alloy 2024-T4 and are finished with anodic coating and lubricated. Threads are coarse series, class 2A fit.



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Catalog Number	Thread Size	B Length (Inches)
50X150HABBOX	1/2-13	1-1/2
50X175HABBOX	1/2-13	1-3/4
50X200HABBOX	1/2-13	2
50X225HABBOX	1/2-13	2-1/4
50X250HABBOX	1/2-13	2-1/2
50X275HABBOX	1/2-13	2-3/4
50X300HABBOX	1/2-13	3
50X325HABBOX	1/2-13	3-1/4
50X350HABBOX	1/2-13	3-1/2
50X375HABBOX	1/2-13	3-3/4
50X400HABBOX	1/2-13	4
50X425HABBOX	1/2-13	4-1/4
50X450HABBOX	1/2-13	4-1/2

Catalog Number	Thread Size	B Length (Inches)
50X500HABBOX	1/2-13	5
50X550HABBOX	1/2-13	5-1/2
62X175HABBOX	5/8-11	1-3/4
62X200HABBOX	5/8-11	2
62X225HABBOX	5/8-11	2-1/4
62X250HABBOX	5/8-11	2-1/2
62X300HABBOX	5/8-11	3
62X350HABBOX	5/8-11	3-1/2
62X400HABBOX	5/8-11	4
62X450HABBOX	5/8-11	4-1/2
62X500HABBOX	5/8-11	5
62X550HABBOX	5/8-11	5-1/2
62X600HABBOX	5/8-11	6

NUTS

BURNDY® aluminum nuts are manufactured of alloy 6061-T6, are finished type, coarse thread, class 2B fit.



Catalog Number	Thread Size
50HANBOX	1/2-13
62HANBOX	5/8-11

FLAT WASHERS

BURNDY® aluminum flat washers are manufactured of alloy 2024-T4 and are medium design.



Catalog Number	Description	For Bolt Size
50FWABOX	Flat Washer	1/2
62FWABOX	Flat Washer	5/8

SPLIT LOCKWASHERS

BURNDY® aluminum split lockwashers are manufactured of alloy 7075-T6 and are regular design.



Catalog Number	Description	For Bolt Size
50SWALBOX	Split Washer	1/2
62SWALBOX	Split Washer	5/8

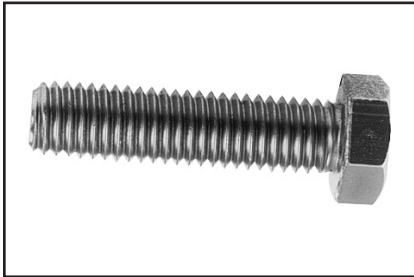
**GALVANIZED  
STEEL HARDWARE**

Galvanized bolts, nuts, flatwashers, and internal tooth lockwashers are manufactured per ASTM307 Grade A. Nut surfaces and bolt heads have American Standard dimensions, and the

threads are per American National Coarse Series, Class #2 fit. Galvanizing is per ASTM A153.

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**BOLTS**



Catalog Number	Thread Size	Length (B)
38X125HGSBBOX	3/8-16	1.25
38X275HGSBBOX	3/8-16	2.75
38X225HGSBBOX	3/8-16	2.25
50X100HGSBBOX	1/2-13	1.00
50X150HGSBBOX	1/2-13	1.50
50X200HGSBBOX	1/2-13	2.00
62X100HGSBBOX	5/8-11	1.00

Catalog Number	Thread Size	Length (B)
62X175HGSBBOX	5/8-11	1.75
75X125HGSBBOX	3/4-11	1.25
75X200HGSBBOX	3/4-10	2.00
75X500HGSBBOX	3/4-10	5.00
75X600HGSBBOX	3/4-10	6.00
100X200HGSBBOX	1-8	2.00

**NUTS**



Catalog Number	Thread Size
31CHGSNBOX	5/16-18
38HGSN009BOX	3/8-16
38HGSNBOX	3/8-16
50HGSNBOX	1/2-13

Catalog Number	Thread Size
62HGSNBOX	5/8-11
75HGSNBOX	3/4-10

**FLAT WASHERS**



Catalog Number	For Bolt Size	Nominal Dimensions (Inches)	
		I.D.	O.D.
38X81FWGSBOX	3/8	0.41	0.81
50X106FWGSBOX	1/2	0.53	1.06
62X131FWGSBOX	5/8	0.66	1.31

**INTERNAL TOOTH  
LOCKWASHERS**



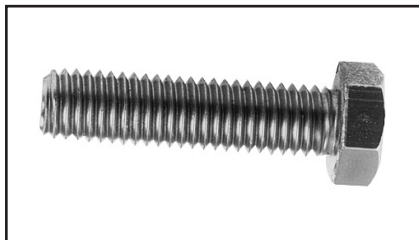
Catalog Number	Bolt Size
38NWGSBOX	3/8
50NWGSBOX	1/2
62NWGSBOX	5/8
75NWGSBOX	3/4

**STAINLESS STEEL  
HARDWARE**

Stainless steel bolts, nuts, flatwashers and split lockwashers are manufactured from 18-8 non-magnetic material. Nut surfaces and bolt heads have American National Coarse Series, Class #2 fit.

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**BOLTS**



Catalog Number	Thread Size	Length B
38X125HSSBBOX	3/8-16	1-1/4
38X225HSSBBOX	3/8-16	2-1/4
38X250HSSBBOX	3/8-16	2-1/2
38X275HSSBBOX	3/8-16	2-3/4
50X200HSSBBOX	1/2-13	2

Catalog Number	Thread Size	Length B
50X250HSSBBOX	1/2-13	2-1/2
50X300HSSBBOX	1/2-13	3
62X300HSSBBOX	5/8-11	3
75X300HSSBBOX	3/4-10	3

**NUTS**



Catalog Number	Thread Size
25HSSNBOX	1/4-20
38HSSNBOX	3/8-16
50HSSNBOX	1/2-13
62HSSNBOX	5/8-11
75HSSNBOX	3/4-10

**SPLIT LOCKWASHERS**



Catalog Number	For Bolt Size
25SWSSLTBOX	1/4
38SWSSMDBOX	3/8
50SWSSMDBOX	1/2
62SWSSMDBOX	5/8

**FLAT WASHERS**



Catalog Number	For Bolt Size	Nominal Dimensions (Inches)	
		I.D.	O.D.
25FWSBOX	1/4	0.27	0.69
38FWSBOX	3/8	0.41	1.00
50FWSBOX	1/2	0.59	1.13
62FWSBOX	5/8	0.66	1.31

**STAINLESS STEEL  
HARDWARE**

**BELLEVILLE WASHERS**



Any bolted “pad to flat” electrical connection should include a bolt, two flatwashers, and the nut. In addition, if any of the flat components is aluminum, a properly designed Belleville washer should be interposed between one of the flatwashers and either the bolt head or the nut, with the hollow of the Belleville washer placed against the flat washer. BURNDY® Belleville washers are designed to maintain substantial force when tightened to NEMA-recommended values and finely finished to avoid galling.

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Catalog Number	Material	Bolt Size	Nominal Dimensions		
			Thickness	I.D.	O.D.
38X75BWSSBOX	Steel - Stainless	3/8	0.06	0.39	0.75
50X106BWSSBOX	Steel - Stainless	1/2	0.10	0.53	1.06

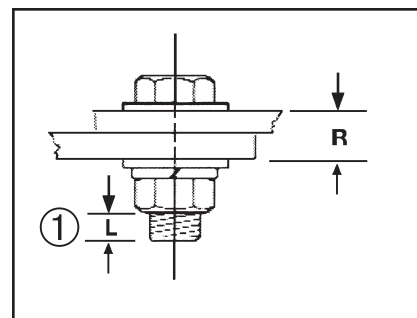


TYPE TMH

DURIUM™ SILICON BRONZE HARDWARE KITS

D-8

Type TMH are DURIUM™ silicon bronze hardware kits. The kits can be ordered for specific applications ensuring the proper type and amount of hardware for each installation. Packaged in separate sealed bags, they are convenient to use, eliminating mismatched quantities. DURIUM™ silicon bronze material provides long lasting corrosion resistance Grade 2.



Catalog Number	Size	Each TMH Kit Includes:					Working Range (R)	Installation Torque (In-lbs)
		Bolt		Flat Washer	Split Washer	Hex Nut		
		Length	Qty					
TMH262	1/4-20	0.75	2	4	2	2	0.09 - 0.34	80
TMH263		1.00	2	4	2	2	0.34 - 0.59	
TMH264		1.25	2	4	2	2	0.59 - 0.84	
TMH265		1.50	2	4	2	2	0.84 - 1.09	
TMH266	3/8-16	0.75	2	4	2	2	0.00 - 0.19	240
TMH267		1.00	2	4	2	2	0.19 - 0.44	
TMH268		1.25	2	4	2	2	0.44 - 0.69	
TMH269		1.50	2	4	2	2	0.69 - 0.94	
TMH270		1.75	2	4	2	2	0.94 - 1.19	
TMH271		2.00	2	4	2	2	1.19 - 1.44	
TMH332 ②		2.75	2	4	2	2	-	
TMH261 †		3.00	2	4	2	2	2.15 - 2.40	
TMH289 ††	1.25	1	2	1	1	0.02 - 0.27	480	
TMH295	1/2-13	1.25	2	4	2	2		0.27 - 0.49
TMH272		1.50	2	4	2	2		0.49 - 0.74
TMH294		1.75	2	4	2	2		0.74 - 0.99
TMH69		2.00	2	4	2	2		0.99 - 1.24

† For use with CUSA750-2TC38 copper spacer adaptor, (2) terminals and "°" thick equipment bus bar. For other combinations contact BURNDY®.

\* For other combinations contact BURNDY®.

① "L" dimension never exceeds 0.25"

② For use with CUSA442TC38 on 1/4" bus bar and HYLUG™ 4/0 - 750 kcmil.

†† For use with all GAR-TC connectors. "R" dimension is allowable pad thickness of terminal

TYPE TMH-SS

STAINLESS STEEL HARDWARE KITS

Type TMH-SS are stainless steel hardware kits. Just like the standard TMH kits, these kits can be ordered for specific applications ensuring the proper type and amount of hardware for each installation. They are packaged in separate sealed bags and convenient for use and ordering.

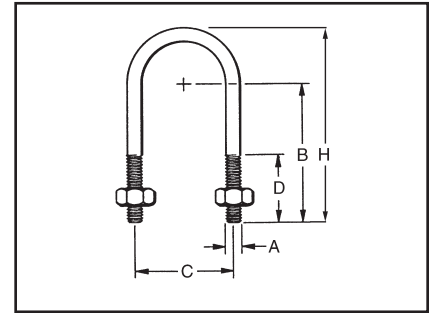
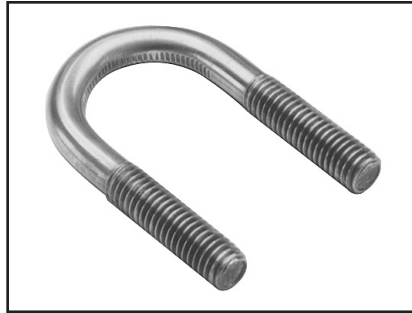
Catalog Number	Size	Each TMH Kit Includes:					Working Range (R)	Installation Torque (In-lbs)
		Bolt		Flat Washer	Split Washer	Hex Nut		
		Length	Qty					
TMH322SS	10-32	0.88	1	0	1	1	-	45
TMH262SS	1/4-20	0.75	2	4	2	2	0.09 - 0.34	80
TMH263SS		1.00	2	4	2	2	0.34 - 0.59	
TMH264SS		1.25	2	4	2	2	0.59 - 0.84	
TMH265SS		1.50	2	4	2	2	0.84 - 1.09	
TMH267SS	3/8-16	1.00	2	4	2	2	0.19 - 0.44	240
TMH268SS		1.25	2	4	2	2	0.44 - 0.69	
TMH269SS		1.50	2	4	2	2	0.69 - 0.94	
TMH270SS		1.75	2	4	2	2	0.94 - 1.19	
TMH271SS		2.00	2	4	2	2	1.19 - 1.44	
TMH261SS †		3.00	2	4	2	2	2.15 - 2.40	
TMH295SS	1/2-13	1.25	2	4	2	2	0.27 - 0.49	480
TMH272SS		1.50	2	4	2	2	0.49 - 0.74	
TMH294SS		1.75	2	4	2	2	0.74 - 0.99	
TMH69SS		2.00	2	4	2	2	0.99 - 1.24	



TYPE UB

DURIUM™  
SILICON BRONZE U-BOLTS

DURIUM™ U-BOLTS are specifically designed for electrical connections to pipe and rod. The U-BOLTS are threaded on the straight portion of the legs only allowing for more contact surface on the pipe or rod. American National Coarse Threads Class #2 fit. The silicon bronze is per ASTM B99.



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Catalog Number	Thread Size	H	C	D	B
UB101	1/4-20	1.38	0.75	0.75	0.88
UB104	1/4-20	1.81	1.12	0.88	1.12
UB105	1/4-20	2.03	1.31	1.00	1.25
UB106	1/4-20	2.31	1.62	1.12	1.38
UB107	1/4-20	2.66	1.94	1.31	1.56
UB336	3/8-16	1.50	0.88	0.62	0.88
UB178	3/8-16	2.00	0.88	0.75	1.38
UB354	3/8-16	2.44	1.25	1.00	1.62
UB187	3/8-16	2.47	1.16	1.06	1.69
UB271	3/8-16	2.50	1.00	1.19	1.81
UB222	3/8-16	2.69	1.50	1.12	1.75
UB242	3/8-16	2.72	1.16	1.31	1.94
UB383	3/8-16	2.75	0.94	1.47	2.09
UB269	3/8-16	2.78	1.19	1.38	2.00
UB357	3/8-16	2.78	1.69	1.12	1.75
UB384	3/8-16	2.91	1.44	1.38	2.00
UB249	3/8-16	3.00	1.50	1.44	2.06
UB1031	3/8-16	3.31	1.75	1.90	2.25
UB244	3/8-16	3.31	1.75	1.62	2.25
UB199	3/8-16	3.41	2.34	1.44	2.05
UB204	3/8-16	3.47	2.06	1.62	2.25
UB124	3/8-16	3.50	2.75	1.31	1.94
UB268	3/8-16	3.97	2.34	2.00	2.62
UB257	3/8-16	4.16	2.81	1.94	2.56
UB1032	3/8-16	4.41	2.81	2.56	2.81
UB310	3/8-16	4.41	2.81	2.19	2.81
UB266	3/8-16	4.97	3.31	2.50	3.12
UB267	3/8-16	5.53	3.94	2.75	3.38
UB258	3/8-16	5.56	4.00	2.75	3.38
UB264	3/8-16	6.16	4.44	3.12	3.75
UB1033	3/8-16	6.16	4.44	3.50	3.75
UB261	3/8-16	6.34	4.94	3.06	3.69
UB422	3/8-16	7.69	6.00	3.88	4.50
UB1027	3/8-16	8.12	7.12	2.88	4.38
UB1028	3/8-16	9.62	9.12	2.88	4.88
UB1029	3/8-16	11.20	11.25	2.88	5.38

Catalog Number	Thread Size	H	C	D	B
UB1030	3/8-16	12.70	13.25	2.88	5.88
UB224	1/2-13	2.44	1.12	0.88	1.62
UB358	1/2-13	2.66	1.31	1.00	1.75
UB291	1/2-13	2.81	1.19	1.19	1.97
UB293	1/2-13	2.81	1.75	1.75	1.69
UB464	1/2-13	3.12	1.81	1.81	1.96
UB540	1/2-13	3.19	1.38	1.38	2.25
UB254	1/2-13	3.41	1.31	1.31	2.50
UB328	1/2-13	3.41	2.94	2.94	1.69
UB400	1/2-13	4.03	1.31	1.31	3.12
UB230	1/2-13	4.34	2.94	2.94	2.62
UB311	1/2-13	4.44	1.88	1.88	3.25
UB302	1/2-13	4.62	2.47	2.47	3.12
UB232	1/2-13	4.97	3.44	3.44	3.00
UB260	1/2-13	5.34	2.94	2.94	3.62
UB390	1/2-13	5.38	2.50	2.50	3.88
UB263	1/2-13	5.78	4.56	4.56	3.25
UB282	1/2-13	6.31	4.12	4.12	4.00
UB236	1/2-13	6.41	5.06	5.06	3.62
UB399	1/2-13	6.66	1.31	1.31	5.75
UB436	1/2-13	6.66	4.56	4.56	4.12
UB262	1/2-13	6.78	5.06	5.06	4.00
UB392	1/2-13	7.06	1.62	1.62	6.00
UB416	1/2-13	7.53	5.06	5.06	4.75
UB300	1/2-13	7.62	6.12	6.12	4.31
UB306	1/2-13	7.88	6.12	6.12	4.56
UB275	1/2-13	8.16	7.19	3.54	4.31
UB437	1/2-13	8.56	6.12	6.12	5.25
UB294	5/8-11	3.50	1.38	1.38	2.50
UB314	5/8-11	3.66	2.09	2.09	2.31
UB425	5/8-11	3.72	2.31	2.31	2.25
UB317	5/8-11	4.97	1.81	1.81	3.75
UB315	5/8-11	5.56	2.09	2.09	4.19
UB318	3/4-10	4.22	2.44	2.44	2.62
UB344	3/4-10	4.72	1.94	1.94	3.38
UB319	3/4-10	6.34	2.44	2.44	4.75