

TBX TOWERS



TBX TOWER

TBX is the standard tower.
THBX is the heavy tower.
THDBX is the heavy duty tower.

A Tower Kit includes the rotor plate, top plate, hardware pack and one set of steps on the top section.

Leg hardware is included with each section purchased.

TOWER MODELS		
Nominal Ht in Ft	Catalog Number	Combination of Tower Sections
24	TBX24	TBX1A – 2 – 3
	THBX24	TBX2A – 3 – 4
	THDBX24	TBX3A – 4 – 5
32	TBX32	TBX1A – 2 – 3 – 4
	THBX32	TBX2A – 3 – 4 – 5
	THDBX32	TBX3A – 4 – 5 – 6
40	TBX40	TBX1A – 2 – 3 – 4 – 5
	THBX40	TBX2A – 3 – 4 – 5 – 6
	THDBX40	TBX3A – 4 – 5 – 6 – 7
48	TBX48	TBX1A – 2 – 3 – 4 – 5 – 6
	THBX48	TBX2A – 3 – 4 – 5 – 6 – 7
	THDBX48	TBX3A – 4 – 5 – 6 – 7 – 8
56	TBX56	TBX1A – 2 – 3 – 4 – 5 – 6 – 7
	THBX56	TBX2A – 3 – 4 – 5 – 6 – 7 – 8
64	TBX64	TBX1A – 2 – 3 – 4 – 5 – 6 – 7 – 8

TOWER OPTIONS (can be ordered separately)

Tower Model		Base Stubs	Hinged Base	Side Arm Mt	Mast Kit in Tower Kit	Rotor Plate in Tower Kit	Top Plate in Tower Kit	Extra Step Kit	Hardware Pack in Tower Kit	Anti-climb Panels
TBX	24	BS-3	HB36	SM	MK2	RP1	TP1	SK1,2,3	HWP-TBX24	ACP3-3
	32	BS-4	HB36	SM	MK2	RP1	TP1	SK1,2,3	HWP-TBX32	ACP3-4
	40	BS-5	HB36	SM	MK2	RP1	TP1	SK1,2,3	HWP-TBX40	ACP3-5
	48	BS-6	HB36	SM	MK2	RP1	TP1	SK1,2,3	HWP-TBX48	ACP3-6
	56	BS-7/8	HB78	SM	MK2	RP1	TP1	SK1,2,3	HWP-TBX56	ACP3-7
	64	BS-7/8	HB78	SM	MK2	RP1	TP1	SK1,2,3	HWP-TBX64	ACP3-8
THBX	24	BS-4	HB36	SM	TC	RP2	TP2	SK2,3	HWP-THBX24	ACP3-4
	32	BS-5	HB36	SM	TC	RP2	TP2	SK2,3	HWP-THBX32	ACP3-5
	40	BS-6	HB36	SM	TC	RP2	TP2	SK2,3	HWP-THBX40	ACP3-6
	48	BS-7/8	HB78	SM	TC	RP2	TP2	SK2,3	HWP-THBX48	ACP3-7
	56	BS-7/8	HB78	SM	TC	RP2	TP2	SK2,3	HWP-THBX56	ACP3-8
THDBX	24	BS-5	HB36	SM	TC	RP3	TP3	SK3	HWP-THDBX24	ACP3-5
	32	BS-6	HB36	SM	TC	RP3	TP3	SK3	HWP-THDBX32	ACP3-6
	40	BS-7/8	HB78	SM	TC	RP3	TP3	SK3	HWP-THDBX40	ACP3-7
	48	BS-7/8	HB78	SM	TC	RP3	TP3	SK3	HWP-THDBX48	ACP3-8

Part #	8' TBX Sections	Weight
TBX1A	Offset top section w/ TP1, RP1, MK2 and TACWS (the anti-climb warning sign)	26#
TBX2	Standard offset section and TACWS	24#
TBX2A	Offset top section w/ TP2, RP2, TC and TACWS	31#
TBX3	Standard offset section and TACWS	29#
TBX3A	Offset top section w/ TP3, RP3, TC and TACWS	39#
TBX4	Standard offset section and TACWS	42#
TBX5	Standard offset section and TACWS	60#
TBX6	Standard offset section and TACWS	65#
TBX7	Standard offset section and TACWS	75#
TBX8	Standard offset section and TACWS	83#
TBX8ST	Standard offset straight section and TACWS	85#

Nuts and bolts are included in section prices. The TBX8ST has bolted top set braces for ease of installation.

Part #	TBX Accessories	Weight
MK2	Mast hardware kit w/ rotor post for top and rotor plate	2#
TC	Heavy duty mast clamp	3#
TB3	Heavy duty thrust bearing, recommended for 2" OD tubing (for use w/ section 3 and field drilled hole)	2½#
TB4	Heavy duty thrust bearing, recommended for 3" OD tubing (for use w/ section 3 and field drilled hole)	12#
SM	Side mount (28"-40") w/ 4', 1½" OD mast, (fits sections 1 thru 4)	1#
SK1	Extra step kit for section 1 (3 steps on one face)	1#
SK2	Extra step kit for section 2 (3 steps on one face)	1#
SK3	Extra step kit for section 3 (3 steps on one face)	1#
ACP	Anti-climb panels (Page 13 for more information)	

Part #	Top and Rotor Plates	Weight
TP1A	Top plate for section 1 with hardware, nuts, bolts	2#
TP2A	Top plate for section 2 with hardware, nuts, bolts	2#
TP3A	Top plate for section 3 with hardware, nuts, bolts	2½#
RP1A	Rotor plate for section 1 with hardware, nuts, bolts	1½#
RP2A	Rotor plate for section 2 with hardware, nuts, bolts	2#
RP3A	Rotor plate for section 3 with hardware, nuts, bolts	2½#

Part #	Masts	Weight
P8114	8' Mast (1¼")	6½#

TBX TOWER

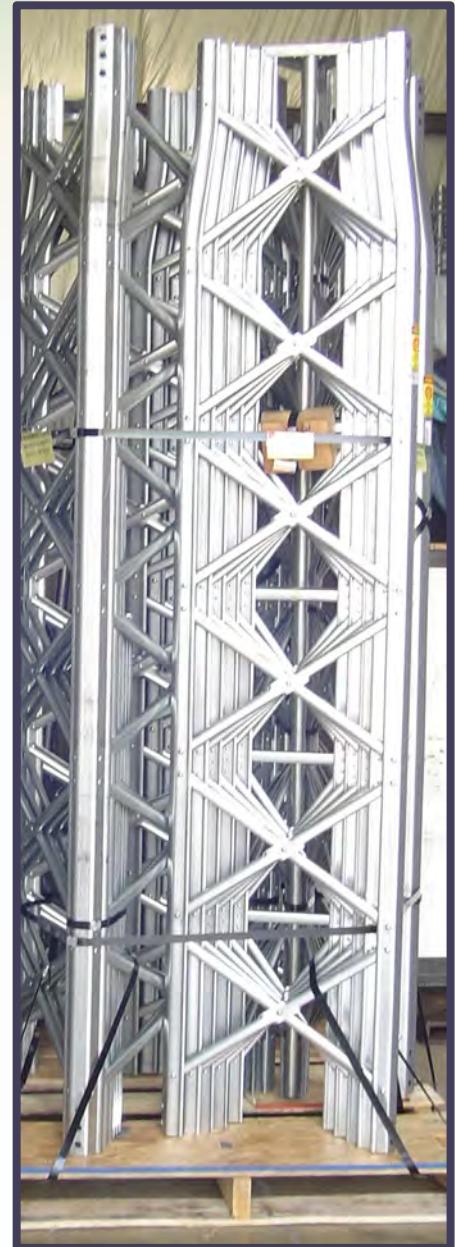
The TBX tower originated as the AX Tower through Rohn Products. This tower has been a leader in lightweight, self-supporting towers for over 50 years.

The TBX tower has gone through several generations of tower from AX to BX to TBX when Thomas Shelby assumed production of the tower line from Rohn Products.

TBX towers are manufactured in the USA and provide users with the following details:

- X Brace design with rivets at the ends and center as well as beaded channel legs all to provide greater strength
- Greater width and weight at the bottom of the tower to provide stability
- All steel and pre-galvanized for added life
- Easy to install rotors
- Three steps on one face supplied on top section.

The following pages should provide you with the information that you need to get started on your tower. We are always happy to assist you with any questions that may arise. Thomas Shelby & Co, Inc is committed to providing you with an excellent tower and superior customer service.



We can be contacted at:

Sandown Wireless
19 phillipswood Road
Sandown, NH 03873
Office: 603-425-9876
email:
sales@criticaltowers.com

WHAT TO EXPECT WHEN RECEIVING YOUR TOWER

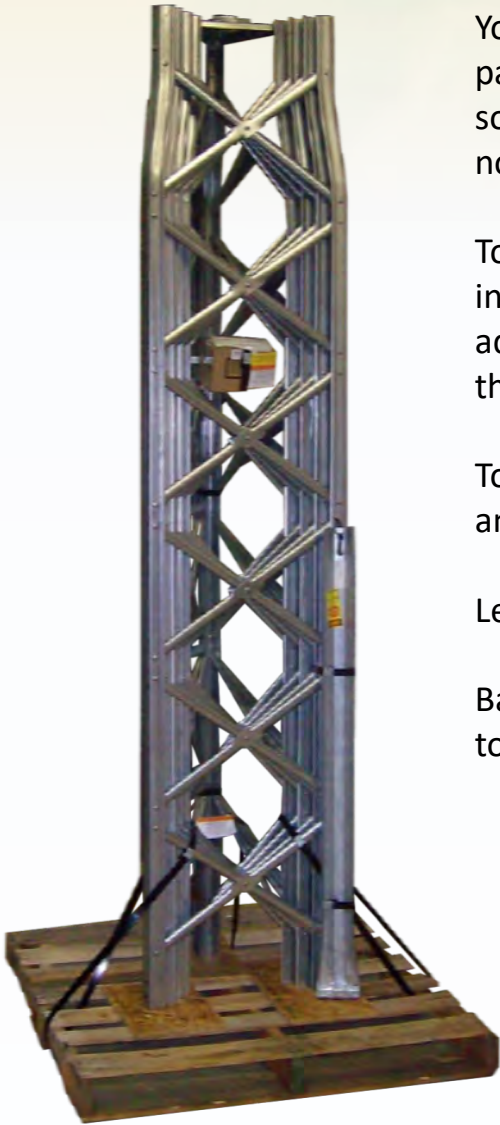
Your tower will arrive via LTL Freight. It is shipped on a pallet for support and safety. Please inspect your tower as soon as it is delivered and note with the driver any noticeable issues.

Towers are shipped nested. Smaller sections are placed inside of the larger sections. Hardware packs and any additional accessories that you ordered will be strapped to the tower with banded strap.

Tower kits include the rotor plate, top plate, hardware pack and one face of steps on the top section.

Leg hardware is included with each section purchased.

Base stubs are sold separately but will be strapped to the tower on shipment.



BREAKING DOWN THE BUNDLE

1. Mast, accessories and hardware packages need to be removed prior to de-bundling of the tower sections.
2. Bundle is to be laid on its side on a flat, smooth surface.
3. Remove innermost section (smallest) by sliding from the bottom (widest opening). Proceed with each additional section. Protective gloves are suggested when handling towers. **Pry tools are NOT recommended on towers.**
4. Inspect each section for any transport or shipping damages. It is acceptable to replace any broken or loose rivets with a snug fitting machine bolt, nut or lock washer. If replacing a rivet, make sure the bolts are securely tightened.

TOWER ASSEMBLY

You should choose the appropriate base for your tower, *concrete base with base stubs or hinged concrete base*, and ensure that it is properly installed before assembling your tower. See foundation information starting on page 8. Bolt the base section (*the largest section*) to the base. Proceed with the erection as follows:

1. The legs on each higher section slide inside the previous one and should be positioned on the stop rivet in the previous leg. This stop rivet is to prevent the tower section being installed from slipping through the previous section and is not for the purpose of aligning the assembly holes. (*Special Note: the TBX8 section does not have a stop rivet in it, so extreme caution should be used when installing the TBX7 section into the TBX8 section.*)
2. Erect the tower, section by section vertically, by inserting the next proceeding section into the previous allowing the stop rivet to catch the section. Install the appropriate hardware. The tower can be assembled on the ground and hinged up when using the HB36 or HB78 bases. Please use extreme caution when doing this and watch for power lines, trees or anything in the line of the tower. Do not load additional items onto the tower prior to erection when using the hinged base.
3. Loose, missing or faulty rivets should be replaced with a similar size nut and bolt which can be obtained at a local hardware store.

ADDITIONAL INFORMATION

- Do not install towers near power lines. All towers should be installed out of falling distance of power lines since every electrical and telephone wire should be considered dangerous.
- It is recommended that anti-climb sections should be installed on all towers to prevent unauthorized persons from climbing towers. Only one person should be on a tower at a time.
- All antenna installations must be grounded per local or national codes.
- All towers should be installed and dismantled by experienced and trained personnel.
- All types of antenna installations should be thoroughly inspected by qualified personnel at least twice a year and re-marked with hazard and warning labels to ensure safety and proper performance. A safety package (part #TACWS) is available which includes one anti-climb warning sign and two Danger – Watch for Wires labels along with other printed safety information. One safety package is included with each tower.

Note:

$\frac{3}{8}$ " bolts are used on TBX1, TBX2 and the top of the TBX3 sections. $\frac{9}{16}$ " bolts are used on the bottom of TBX3 and all sections TBX4 through TBX8. TBX8 is the largest section.

One set of cross braces on one face of the top section is purposely left off to allow easy access to the rotor plate for installing the mast and rotor.

ROTOR INSTALLATION

Most makes of rotors can be installed on the rotor plate inside the top tower section of the TBX, THBX and THDBX towers. There is a short piece of tubing furnished with each tower that can be used as a thrust bearing (for 1 $\frac{1}{4}$ " mast) with the mast clamp installed on the top plate as is described under the heading Mast Assembly. Do not install rotors on the THDBX top plate – must be installed on the rotor plate.

For the THBX – Heavy Duty and the THDBX – Extra Heavy Duty Towers, when a rotor is used a 4" piece of tubing or pipe with an interior diameter (I.D.) larger than the outer diameter (O.D.) of the mast can be installed in the pipe flange clamp and used as a bearing for the mast to turn.

ROTOR ASSEMBLY

Some inline model rotors mount directly to the rotor plate. The lower housing of the rotor is not used when this is done. The necessary holes for mounting most rotors are pre-punched in the plate itself and the bolts furnished to bolt the lower housing to the upper housing (4 $\frac{1}{4}$ "x1" bolts) are to be inserted from the bottom of the plate upward and into the rotor. It is desirable to place $\frac{3}{8}$ " nuts to act as spacers between the rotor plate and rotor.

These nuts will prevent the terminals of the rotor and the rotor wire from shorting on the rotor plate. An 8" piece of tubing is furnished with each tower. It can be installed into the clamp (V-clamp and L-brackets furnished for offset rotor installation only) for the offset type rotors. It is necessary to reverse the clamp assembly (to face outside of the tower) opposite that of installing a standard mast to the rotor plate. Some rotors can be mounted directly to the L-bracket or to the 8' mast as previously described.

Also, some rotors mount beneath the rotor plate. It will be necessary to increase the $\frac{1}{4}$ " holes in the rotor plate to $\frac{3}{8}$ " holes to use the $\frac{3}{8}$ " bolts furnished with these rotors.

MAST ASSEMBLY

1. Two U-bolt assemblies with L-brackets are supplied for installing the mast. These L-brackets are bolted through the slotted holes on the rotor and top plate with the short legs of the L-bracket toward the outside of the tower.
2. Run the U-bolt through the open side of the formed V-clamp and into the L-bracket placing the $\frac{5}{16}$ " nuts and washers on the U-bolt loosely.
3. To install the mast, place one end of it through the upper U-bolt assembly end plate and slide it down into the lower U-bolt assembly to hold the mast.
4. Adjustments to make the mast vertical may be made by moving the L-bracket in the slotted holes. The THBX and THDBX towers are furnished with a mast clamp installed on the top plate made from a pipe floor flange, which is provided with three bolts to be used as set screws to secure the mast. The box of hardware consists of one U-bolt assembly as described above and it can be installed on the lower plate as is instructed above.

BE CAREFUL AND USE SAFETY PRECAUTIONS DURING ALL INSTALLATIONS.

TBX LEGS

Section #	LEG JOINT BOLTS			X (Top)	Y (Bottom)
	Location	QTY	Size		
2	Top	2	$\frac{3}{8} \times \frac{3}{4}$	$10\frac{7}{16}"$	$12\frac{11}{16}"$
	Bottom	2	$\frac{3}{8} \times \frac{3}{4}$		
3	Top	2	$\frac{3}{8} \times \frac{3}{4}$	$12\frac{13}{16}"$	$15\frac{1}{16}"$
	Bottom	2	$\frac{9}{16} \times 1$		
4	Top	2	$\frac{9}{16} \times 1$	$15\frac{3}{16}"$	$17\frac{7}{16}"$
	Bottom	2	$\frac{9}{16} \times 1$		
5	Top	2	$\frac{9}{16} \times 1$	$17\frac{5}{8}"$	$20\frac{1}{8}"$
	Bottom	2	$\frac{9}{16} \times 1$		
6	Top	2	$\frac{9}{16} \times 1$	$20\frac{5}{16}"$	$22\frac{13}{16}"$
	Bottom	2	$\frac{9}{16} \times 1$		
7	Top	2	$\frac{9}{16} \times 1$	23"	$25\frac{1}{2}"$
	Bottom	3	$\frac{9}{16} \times 1$		
8	Top	3	$\frac{9}{16} \times 1$	$25\frac{11}{16}"$	$28\frac{7}{16}"$
	Bottom	3	$\frac{9}{16} \times 1$		
8STR	Top	3	$\frac{9}{16} \times 1$	$28\frac{7}{16}"$	$28\frac{7}{16}"$
	Bottom	3	$\frac{9}{16} \times 1$		

Section 1

Section 2

Section 3

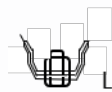
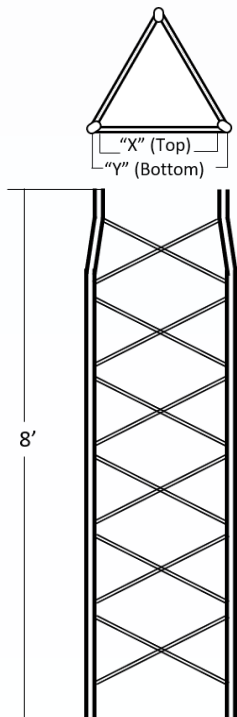
Section 4

Section 5

Section 6

Section 7

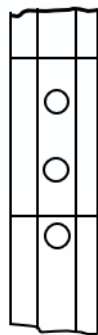
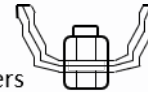
Section 8



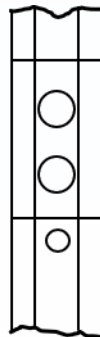
Lock Washers



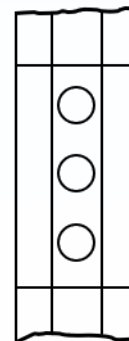
Lock Washers



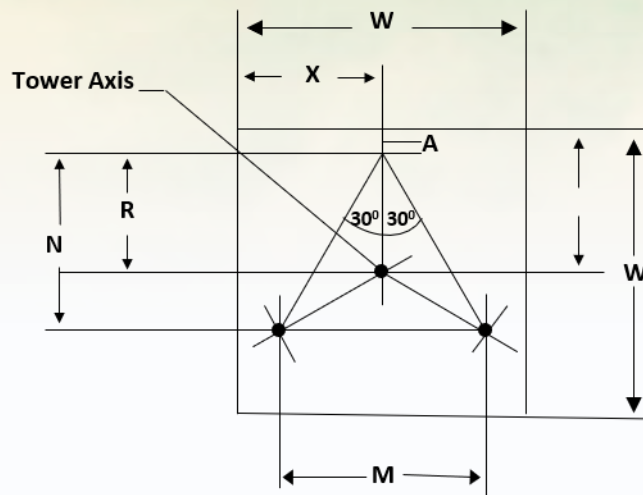
Typical Leg Joint
Between
Sections 1-2
Sections 2-3



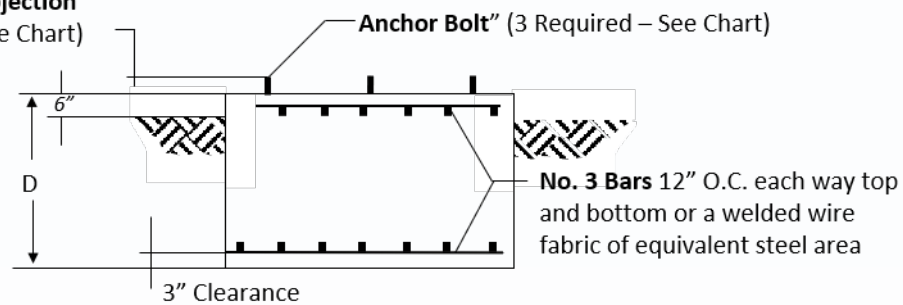
Typical Leg Joint
Between
Sections 3-4
Sections 4-5
Sections 5-6
Sections 6-7



Typical Leg Joint
Between
Sections 7-8



Maximum Bolt Projection (See Chart)



Foundation Notes

1. Concrete, 3000PSI minimum, ultimate strength.
2. ASTM A-615 Grade 40 deformed re-bars.
3. All forms must be removed from concrete before placing compacted backfill.
4. Foundation designed for 2000 PSF soil.
5. It is recommended that a wood template be constructed by the user for holding anchor bolts at the proper dimensions while concrete is being poured.
6. Reinforcing is recommend for temperature and shrinkage control.
7. Welding is prohibited on reinforcing steel and embedment.

BASE CHARTS

HINGED BASE 36 (HB36)

QTY	PART #	DESCRIPTION
1	HBC1	Center Stub Pipe 1½" STD
1	HBL1	Left Stub Pipe 1½" STD
1	HBR1	Right Stub Pipe 1½" STD
3	HBV1	Yoke
3	AB20	Anchor Bolt ¾" x 20"
6	W34	¾" Split Washer
6	B9163	9/16" x 3" Bolt
12	N34	¾" Heavy Hex Nut
12	N916	9/16" Hex Nut
3	BP13	¾" x 3" x 3" Bearing Plate
6	B91612	9/16" x 3½" Bolt

HINGED BASE 78 (HB78)

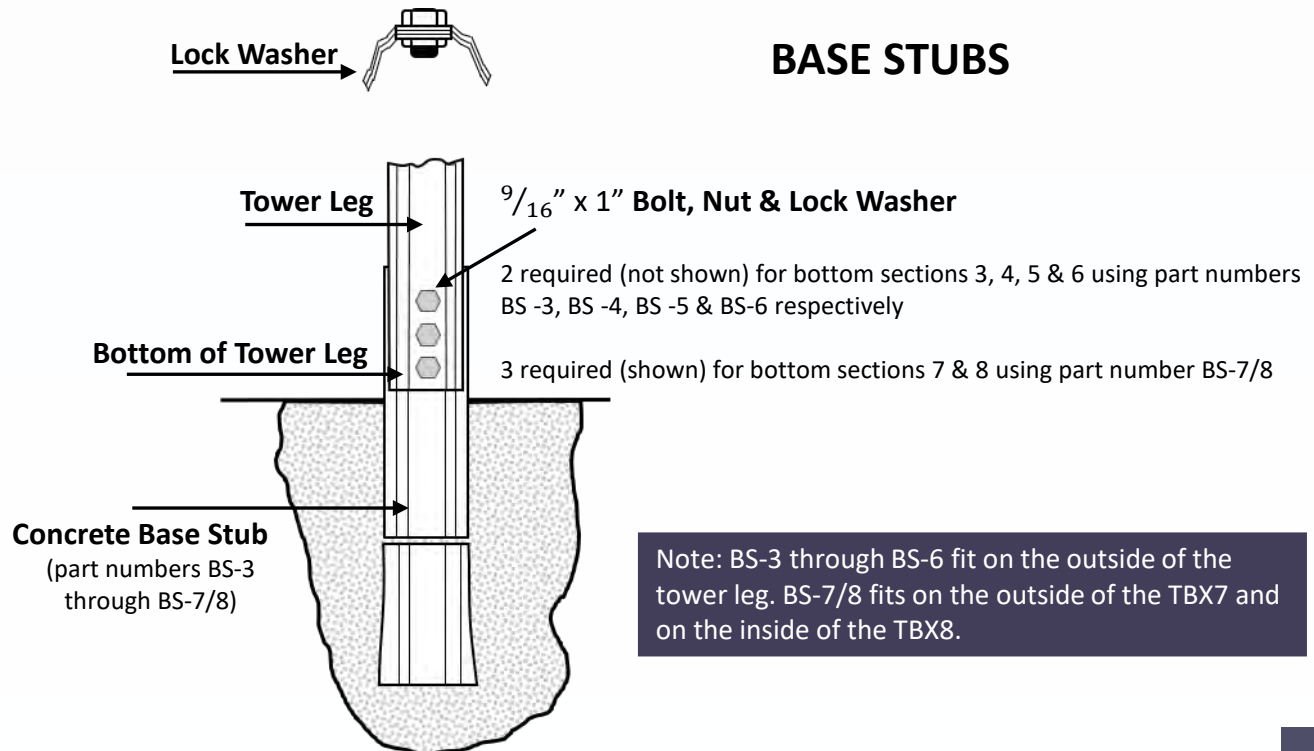
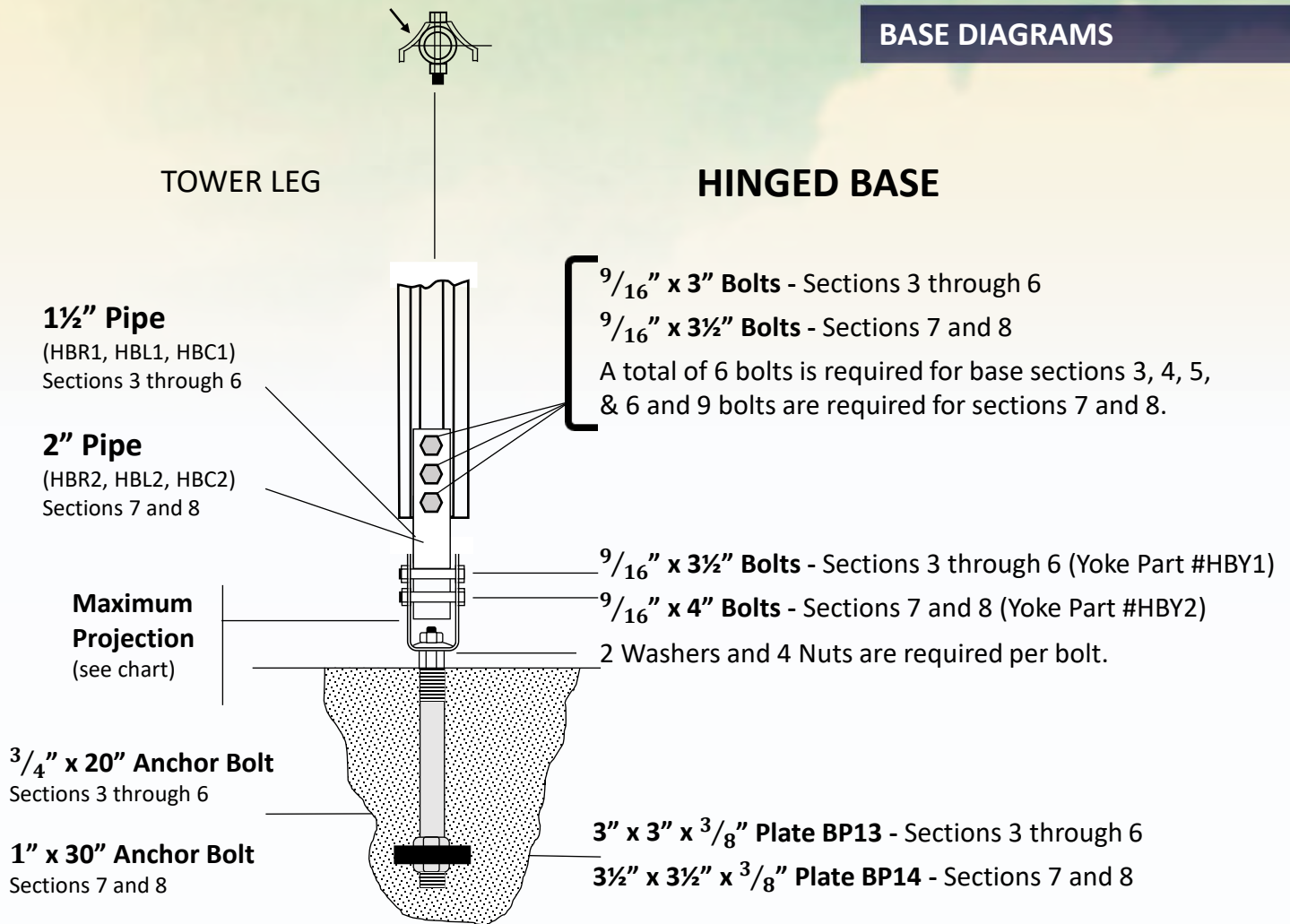
QTY	PART #	DESCRIPTION
1	HBC2	Center Stub Pipe 2" STD
1	HBL2	Left Stub Pipe 2" STD
1	HBR2	Right Stub Pipe 2" STD
3	HBV2	Yoke
3	AB30	Anchor Bolt 1" x 30"
6	W1	1" Split Washer
9	B91612	9/16" x 3½" Bolt
12	N1	1" Heavy Hex Nut
15	N916	9/16" Hex Nut
3	BP14	¾" x 3½" x 3½" Bearing Plate
6	B9164	9/16" x 4" Bolt

HINGED BASE

Sec #	M	N	R	Max Proj	Anchor Bolt	Bearing	D	W	X	CU YDS CONC
3	13 5/16"	11 1/2"	7 11/16"	2 5/8"	(3) ¾" x 20"	BP13	4' - 0"	3' - 6"	1' - 9"	1.8
4	15 11/16"	13 9/16"	9 1/16"	2 5/8"	(3) ¾" x 20"	BP13	4' - 0"	4' - 0"	2' - 0"	2.4
5	18 5/16"	15 7/8"	10 9/16"	2 5/8"	(3) ¾" x 20"	BP13	4' - 0"	4' - 6"	2' - 3"	3.0
6	21"	18 3/16"	12 1/8"	2 5/8"	(3) ¾" x 20"	BP13	4' - 0"	4' - 9"	2' - 4½"	3.4
7	23 1/4"	20 1/8"	13 7/16"	3 1/4"	(3) 1" x 20"	BP14	4' - 0"	5' - 3"	2' - 7½"	4.1
8	26 3/16"	22 11/16"	15 1/8"	3 1/4"	(3) 1" x 20"	BP14	4' - 0"	5' - 9"	2' - 10½"	4.9

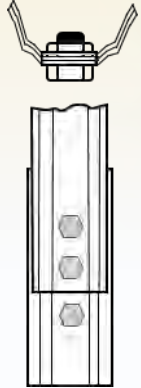
BASE STUBS

Part #	Sect. #	W	X	D	CU YDS CONC	A
BS-3	3	3' - 6"	1' - 9"	4' 0"	1.8	1' - 1¼"
BS-4	4	4' - 0"	2' - 0"	4' 0"	2.4	1' - 2"
BS-5	5	4' - 6"	2' - 3"	4' 0"	3.0	1' - 3 1/2"
BS-6	6	4' - 9"	2' - 4½"	4' 0"	3.4	1' - 3 1/2"
BS-7/8	7	5' - 3"	2' - 7½"	4' 0"	4.1	1' - 4 3/4"
BS-7/8	8	5' - 9"	2' - 10½"	4' 0"	4.9	1' - 6"

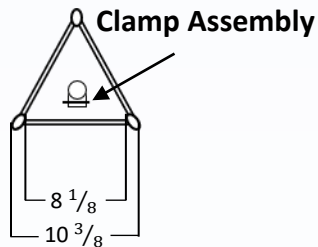


TOP SECTIONS

Lock Washer



Typical Leg Joint
Between sections 1-2



Straight section eliminates
1/8" dimension.

This bay of braces is omitted on one
face to accommodate the rotor when
used as a top section.

Top Plate

Rotor Plate

Steps

(Top section of tower)
Available for sections 1, 2 & 3

8'

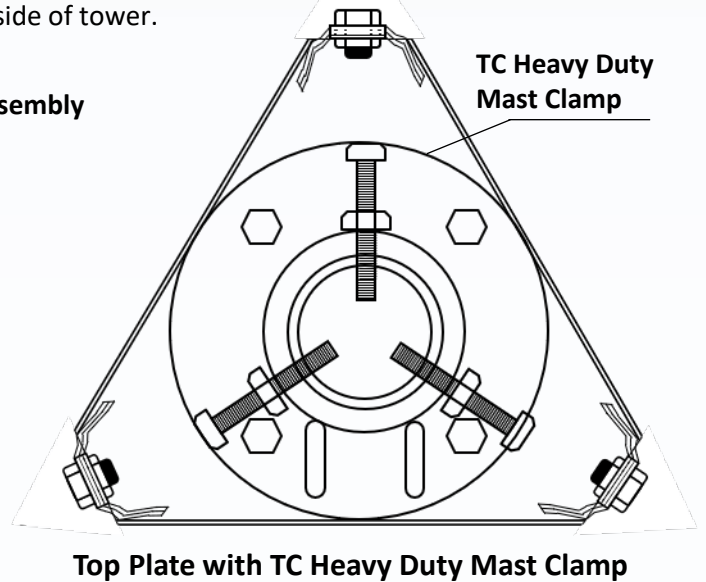
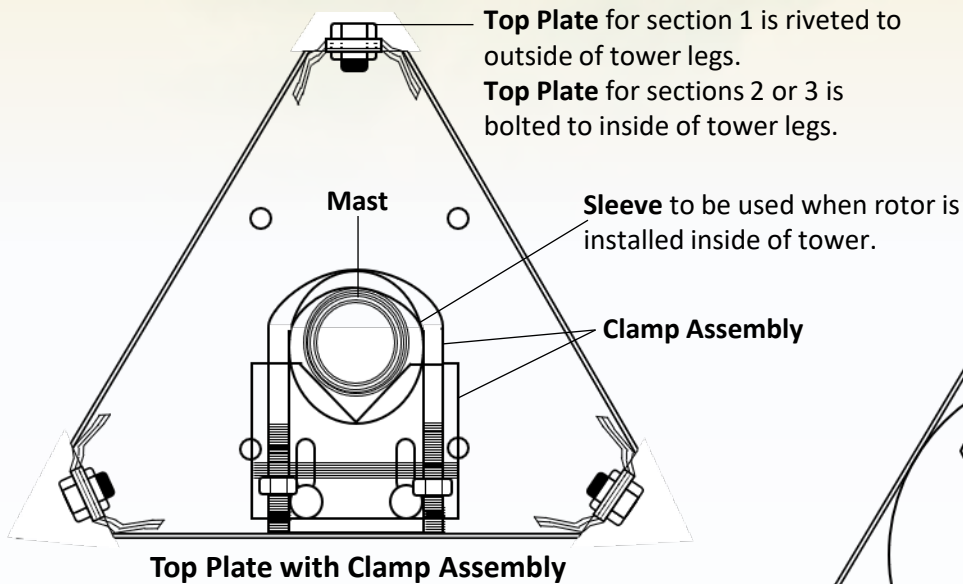
Top Section
Section 1, 2, 3

MK2 – Clamp Assembly/Mast Kit

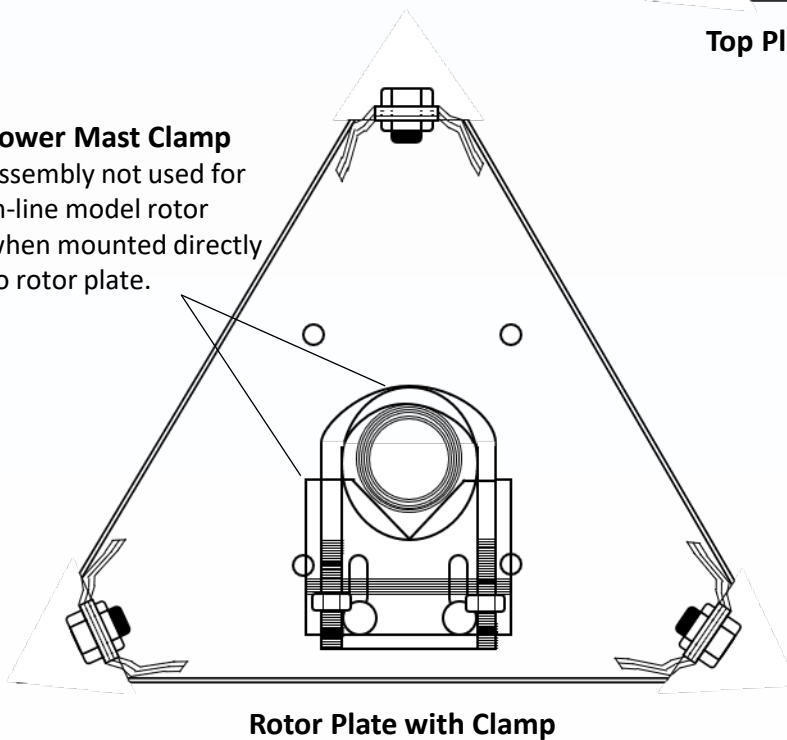
QTY	PART #	DESCRIPTION
4	B1412	1/4" x 1/2" HCS G5 ZP Bolt
4	N14	1/4" Hex ZP G5 Nut
4	N516	5/16" x 3/4" Hex ZP Nut
4	W14	1/4" Lock Washer Int ZP
4	W516	5/16" Lock Washer Int ZP
2	VB516	SSU-Bolt 5/16" x 2" v-Bottom
2	LB	TBX L Bracket
1	P-8	8"x 1 1/4" Tube 16 GA Pre-Gal
1	P-112	1 1/2" x 1 1/2" Tube 16 GA Pre-Gal

TC – Heavy Duty Mast Clamp

QTY	PART #	DESCRIPTION
3	B5162	5/16" x 18" x 2" Bolt
3	N516	5/16" Hex ZP Nut
4	B3834	3/8" x 3/4" HCS G5 ZP 1/8G
4	N38	3/8" Hex ZP Nut
4	W38	3/8" Lock Washer



Lower Mast Clamp
 assembly not used for
 in-line model rotor
 when mounted directly
 to rotor plate.



Note: The clamp assembly is normally used with section 1 as a top section.

The TC Heavy Duty Mast Clamp is normally used with section 2 or 3 as a top section.

Holes are placed on all top plates and rotor plates to accommodate either clamp.



TBX Anti-Climb Panels

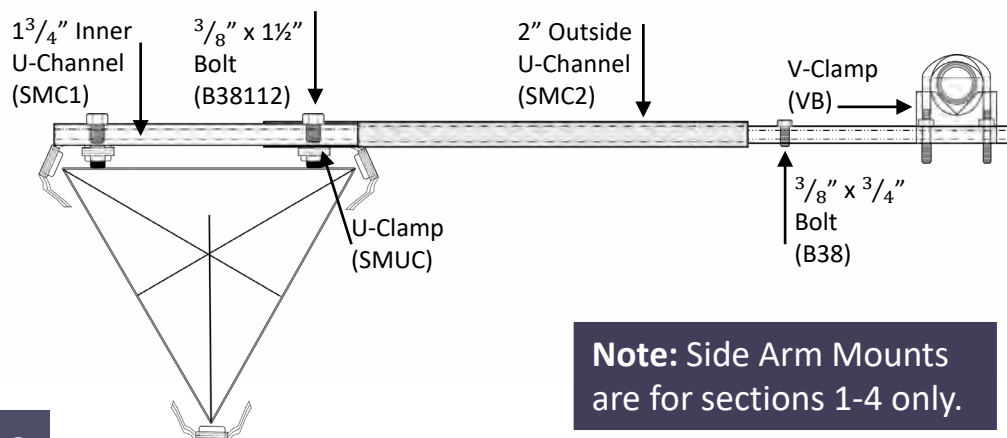
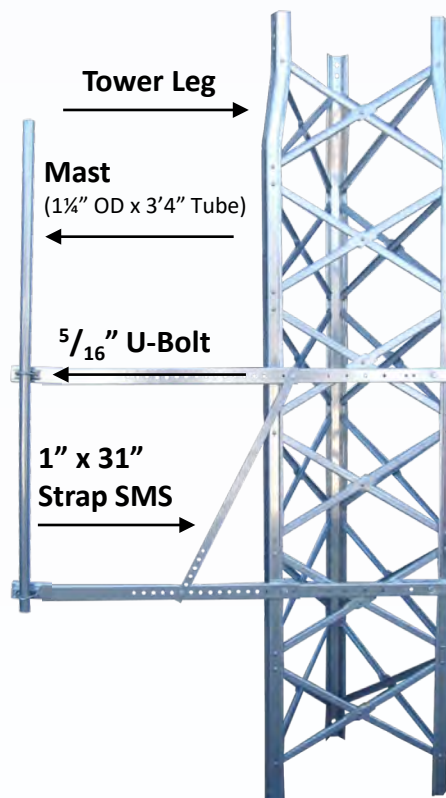
The Anti-climb panels attach to your bottom section of tower and will have the same ending number as the bottom section. A TBX 40 Tower is Sections 1, 2, 3, 4 and 5 with 5 as the bottom section. The anti-climb for a TBX 40 is ACP3-5. See page 3 to see which Anti-Climb Panel to order for your tower.

- Flat surface for extra security
- Made of durable 20ga steel
- Available for TBX, THBX and THDBX series

TO USE THE ACP:

- Bend all tabs to the center
- Tabs will fit in "V" of braces
- Run a rod from the top through the tabs and braces to secure panels

SIDE MOUNT (SM)		
QTY	PART #	DESCRIPTION
2	SMC2	2" Wide Outside Channel
2	SMC1	1 ³ / ₄ " Wide Inner Channel
4	SMUC	U-Clamp
1	SMS	1" x 31" Strap
1	P11434	1 ¹ / ₄ " OD x 16 GA Tube 3'4"
4	B38112	³ / ₈ " x 1 ¹ / ₂ " Bolt
5	N38	³ / ₈ " Nut
1	B38	³ / ₈ " x ³ / ₄ " Bolt
5	W38	³ / ₈ " Washer
2	VB516	⁵ / ₁₆ " U-Bolt
4	N516	⁵ / ₁₆ " Nut
4	W516	⁵ / ₁₆ " Washer
2	VB	V-Bracket



Note: Side Arm Mounts are for sections 1-4 only.

Catalog Index	
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10	Base Stub Diagram
9	Base Stubs Dimensions
4	Breaking Down the Tower Bundle
12	Clamp Diagrams
8	Foundation Information
3	General Information
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TBX TOWERS

Sandown Wireless

19 Phillipswood Road

Sandown, NH 03873

Office: 603-425.9876

Email:

sales@criticaltowers.com

MANUFACTURED IN THE USA
www.criticaltowers.com