

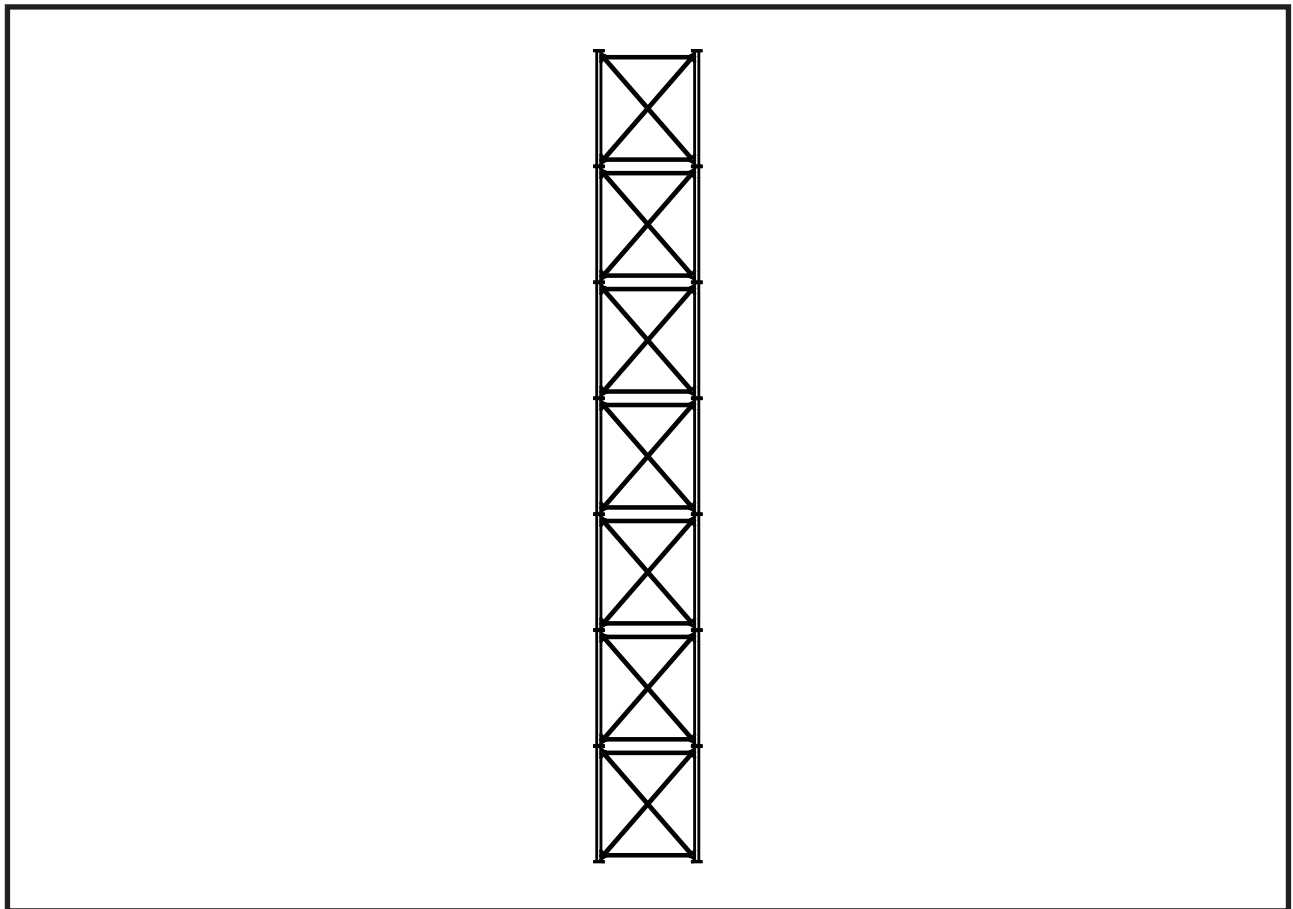


A Unit of **GLOBAL** Industries, Inc.

TWO COLUMN TOWER

4" [102 mm] STAGED

Construction, Owner's, and Operator's Manual



Effective Date
2011-08-16



Publication Number
400024 Rev 01
(English Version)

The Symbol shown below is used to call your attention to instructions concerning your personal safety. Watch this symbol - it points out important safety precautions. It means “ATTENTION” - Become Alert! Your Personal Safety Is Involved! Read the message that follows and be alert to the possibility of personal injury or death.



Be Alert! Your Personal Safety Is Involved

A copy of this manual should be available at all times to the owner/operator. Additional copies may be requested from the company at the address shown on the back cover. Please reference manual part number 400024 when requesting additional copies.

Please Contact MFS/YORK/STORMOR or Your Dealer
If You Have Any Questions Concerning This Manual

Keep This Manual In A Safe Place Available For Future Reference.

The safety and performance of this Two Column Tower, constructed and readied for operation will be affected by the installation and construction personnel. Towers generally involve extreme heights and high winds. Careful consideration must be given to the structural requirements. Brownie Systems cannot be responsible for the construction of the Two Column Tower. The information obtained in this manual is offered only as a convenience to the installer. No liability is expressed or implied toward the installation.



PREFACE

You have purchased the finest Two Column Tower manufactured today. The following information is intended as a guide for: Two Column Tower pre-assembly, proper construction of your Two Column Tower, and safe and proper use of your Two Column Tower once constructed.



General Safety Statement

Your safety and the safety of others associated with grain system equipment, is of prime concern to us at Brownie Systems. This manual was written with the safety of the operator and/or others who come into contact with the equipment as our prime concern. We wrote this manual to help you to better understand how to safely build and use your Two Column Tower.

It is your responsibility as the owner, builder, operator, or supervisor, to know what specific requirements, precautions, and hazards exist and to make these known to all personnel working with the equipment or in the area, so that they too may take any necessary safety precautions that may be required!


Failure to read this Manual and its Safety Instructions by all operators and all personnel is a misuse of the equipment. We want you as our partner in safety!

All personnel, including construction personnel, must read and understand all equipment Operator's Manuals before starting Two Column Tower construction!



NOTE: Although Global Industries, Inc. language translations of this manual are made as accurately as possible, if there is a conflict or difference between the English and the other translations of this manual, the English text will prevail.

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Warranty

Global Industries Inc. (the **Company**) makes the following warranty to the initial retail purchaser of its products (the **Customer**).

MATERIALS and WORKMANSHIP:

The Company warrants products manufactured by it to be free from defects in materials and workmanship in normal use and service for a period of one (1) year after date of delivery to the Customer.

COMPANY'S OBLIGATION and CUSTOMER'S EXCLUSIVE REMEDY:

The Company's sole obligation and the Customer's exclusive remedy under this warranty is as follows:

If within one (1) year after delivery to the customer the product fails to function properly due to a defect in either materials or workmanship, the Company will at its option, either repair the defective part or replace the defective part with a new or reconditioned part. Labor charges for removing defective parts and installing replacement parts, shipping charges with respect to such parts, and applicable sales and other taxes, if any, shall not be covered by this warranty.

CONDITIONS, LIMITATIONS, AND EXCLUSIONS:

There are no warranties or merchantability or fitness for a particular purpose with respect to any product manufactured or sold by the Company. Motors provided by the Company are in most instances warranted by the manufacturer thereof and are not warranted by the Company. The Company shall not be responsible under this warranty or otherwise for personal injury or for **Incidental or Consequential Damages**, including, without limitation, loss of use and lost profits. This warranty does not apply to defects or damages caused by misuse, improper maintenance, or improper installation of the Company's product or any equipment attached to or used in connection with the Company's product. The Company reserves the right to make changes or improvements to its products without incurring any obligation with respect to previously manufactured products. Field modification of this product without the expressed written permission of the Company constitutes a misuse of the product. The Company shall have no liability under this warranty until payment in full for the product in question has been made by the customer. The foregoing is the sole warranty made by the Company. No one is authorized to make other warranties on behalf of the Company.

Notes:



General Safety Requirements



WARNING!

Watch For This Symbol:  !

It Points Out Important Safety Precautions.

It Means “ATTENTION” - Become Alert!
Your Safety Is Involved.

GENERAL SAFETY REQUIREMENTS

This Brownie Systems Construction and Owners Manual is written to assist and instruct those who are responsible for Two Column Tower assembly, and for anyone using the Two Column Tower once assembled.

Global Industries Inc. assumes no liability with respect to proper assembly, installation, and inspection, or use of its products established under applicable laws, all of which is the sole responsibility of the purchaser and those doing the assembly work.

Appurtenances and the accessories manufactured by us for use with our products conform only to applicable Federal or Safety Standards in effect at such time.

WORK AREA SAFETY STATEMENT

Under no circumstances should persons not involved in the operation be allowed to **trespass** into or be present in the work area.

It shall be the duty of all operators to see that children and/or other persons stay out of the work area! Trespass into the work area by anyone not involved in the actual operations, or trespass into a hazard area by anyone, shall result in an immediate shut down by the operator.

It shall be the responsibility of all operators to see that the work area has secure footing and is clean and free of all debris and tools which might cause accidental tripping and/or falling. It shall also be their responsibility to keep the work area clean and orderly during the operation. It shall also be the responsibility of the operator to have damaged equipment repaired and be made free of sharp edges.

WORK AREA AND EQUIPMENT SAFETY

Do not operate your equipment without shields and guards in place. Failure to heed this warning may result in serious personal injury or death.

Follow all climbing safety laws and regulations. When climbing Towers, Ladders, and/or Other Grain Systems Equipment. Take care not to fall from heights.

Common sense dictates that such appurtenances should not be used when conditions such as rain, wind, or ice preclude their safe use. Global Industries, Inc. strongly recommends that optional climbing equipment be purchased to meet the current specifications set forth by OSHA whether the individual operator is required by law to do so or not. A properly secured safety belt should be used at all times when performing operations work or maintenance on Two Column Towers, Ladders, and/or Other Grain Systems Equipment.

Care must be taken to avoid entanglement in equipment installed in or on a Two Column Tower. Securely lock-out all power, be it electrical or PTO, prior to working on or near such equipment.

Field modification of the Two Column Towers and/or Other Grain Systems Equipment without the authorization of the manufacturer may present unknown dangers to the operator and must be avoided.

AUXILIARY EQUIPMENT SAFETY

You may decide to buy and install “auxiliary equipment” made by other manufacturers.

Global Industries, Inc. has no control over the design and manufacture of this equipment. If you buy and install auxiliary equipment then at a minimum **we suggest that you do the following:**

- 1** Obtain, read, and understand the instructions and cautions of the auxiliary equipment manufacturer. Be certain all equipment is installed according to the manufacturer’s instructions.
- 2** Check with Global Industries, Inc. or your dealer to make certain that your Two Column Tower is designed to support any additional loads supplied by the auxiliary equipment.
- 3** Obtain any applicable safety decals from the manufacturer of the auxiliary equipment and make certain they are displayed in a visible location.
- 4** Make certain all electrical equipment is properly installed and grounded by a qualified electrician.
- 5** Check availability and operation of electrical lock-out and emergency stop systems.
- 6** Be certain all guards and shields are securely in place.
- 7** Store all operations / maintenance manuals in a safe place available for future use.

PROPER PERSONNEL

To insure safe use of your Two Column Tower, be certain that only trained persons install, maintain, and use your Two Column Tower.

OSHA OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970

Certain purchasers of our products may be subject to the requirements and standards of the William-Steiger Occupational Safety and Health Act of 1970, which prescribes standards for use of appurtenances of our manufacture, such as handrails, platforms, stairways, fixed ladders, ladder cages, and guard rails. (Occupational Safety and Health Standards Section 1910.21 through 1910.32). Before installing these devices, familiarize yourself with the above Federal Standards.

At the time of manufacture, these optional items conform to applicable standards.

Global Industries, Inc. assumes no liability with respect to proper construction, assembly, inspection, or use of its products under applicable laws, all of which is the sole responsibility of the purchaser and those doing the assembly work.

OSHA, ANSI, NIOSH

You may obtain further relevant safety information for the safe construction, operation, and use of your Grain Systems Equipment from OSHA, ANSI, and NIOSH:

www.osha.gov

1-800-321-OSHA

www.ansi.org

www.cdc.gov/niosh

1-800-232-4636 (cdc info, NIOSH)

OPERATOR QUALIFICATIONS

Operation of this unit shall be limited to competent and experienced persons. In order to be qualified, they must also know and meet all other requirements, such as, but not limited to, the following:

- 1** Some laws and regulations specify that no one under the age of 16 years may operate power machinery. It is your responsibility to know what these requirements are in your own area or situation.
- 2** Current OSHA regulations state in part: "At the time of initial assignment and at least annually thereafter, the employer shall instruct every employee in the safe operation and servicing of all equipment with which the employee is, or will be involved."*
- 3** Unqualified persons are to **STAY OUT** of the work area.
- 4** A person who has not read and understood all operating and safety instructions is not qualified to operate the machine.

* Federal Occupational Safety and Health Standards for Agriculture, Subpart D. Section 9128.57 (a) (6).

SAFETY QUESTIONS OR CONCERNS

Please contact Brownie Systems with ANY questions or concerns.

In the USA

Phone: 1-800-228-4285

Fax: 1-308-382-6954

 **WARNING!**

Owners and Contractors: Before starting construction of your Two Column Tower, **1) READ AND UNDERSTAND THIS MANUAL!**

2) Read and understand the instructions for all equipment, auxiliary equipment, structures, or other products, and the like within or connected to this Two Column Tower.

4) Read and understand any applicable OSHA Regulations, Building Codes, and Electric Codes.

 **WARNING!**

Make certain all persons on Two Column Towers during construction are properly fastened to safety cables to prevent injury or death due to falling!

 **WARNING!**

Installation of accessories or equipment in or on your Two Column Tower that would over-stress these structures in any manner will void your Two Column Tower and grain systems equipment Warranties. If you do not have specific recommendations from Brownie Systems or the grain systems manufacturer, where additional loading is involved, contact both Brownie Systems and the grain systems manufacturer before installing any such appurtenances or equipment!

 **WARNING!**

At all times, make certain that all persons within the work area on or near Two Column Towers, ladders, lifts, crane lifts, scaffolds, or the like are secure and not in danger of falling! Also make certain that the work surfaces are clean and free of clutter.

 **WARNING!**

Do not attempt Two Column Tower construction when the weather makes it unsafe. Especially, when wind conditions are not favorable!

 **WARNING!**

DO NOT substitute parts or hardware for those supplied by Brownie Systems.

 **WARNING!**

Move components safety. Use only proper lifting equipment with ample load-carrying capacity. Hand lifting is dangerous.



WARNING!

When adding additional equipment not previously accounted for, considerable wind load or weight may be added to this Tower. Be certain that your Brownie Tower is designed for all equipment, and any future additions. If you are uncertain, contact the factory before installing the Tower.

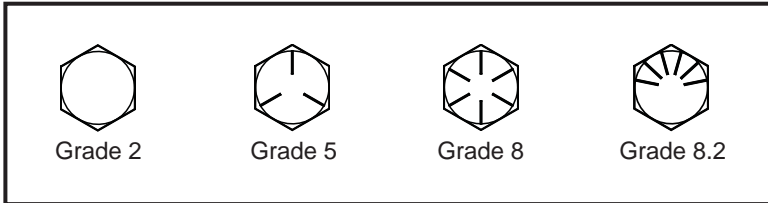


WARNING!

Local codes supersede the instructions provided in this manual and should be strictly adhered to. Contact the manufacturer if you have questions.

<2> Bolt Torque

Bolt Head Identification



Bolt Torque Values

coarse thread bolts

T = Tightening Torque P = Bolt Tensile Load in lbs

Bolt Diameter - Threads/Inch	Grade 2				Grade 5				Grade 8 and 8.2			
	P	T			P	T			P	T		
		ft-lbs	Nm	kgf-m		ft-lbs	Nm	kgf-m		ft-lbs	Nm	kgf-m
1/4" - 20	1313	6	8.1	0.83	2000	9	12	1.2	2850	13	18	1.8
5/16" - 18	2176	12	16	1.7	3350	19	26	2.6	4700	27	37	3.7
3/8" - 16	3188	22	30	3.0	4950	34	46	4.7	6950	48	65	6.6
7/16" - 14	4388	35	47	4.8	6800	55	75	7.6	9600	77	104	11
1/2" - 13	6850	63	85	8.7	9050	83	110	11	12800	120	163	17
5/8" - 11	9300	110	150	15	14500	170	230	24	20300	230	312	32
3/4" - 10	11400	160	217	22	21300	290	390	40	30100	410	556	57
7/8" - 9	13800	220	298	30	29500	470	640	65	41600	670	910	93
1" - 8	15000	280	380	39	38700	710	960	98	54600	1000	1400	138

Use the torque values listed in the table above for all Two Column Tower hardware connections!



WARNING!

UNDER NO CIRCUMSTANCES SHALL ANY OTHER BOLT BE SUBSTITUTED FOR THOSE SUPPLIED BY BROWNIE SYSTEMS! The correct bolts as specified and proved by Brownie Systems must be used throughout the entire assembly of this Two Column Tower. You must achieve the correct bolt torques as indicated in the table above throughout the complete assembly! Using the wrong bolts or not achieving the correct torque values could result in the structural damage or failure of this Two Column Tower!

<3> Tower Installation

1 Assemble the Tower, Use a Crane

4" x 5/16" [102 mm x 8 mm] wall tube

4" [102 mm] x 11ga wall tube

10' [3,048 mm] typical

stage 2 (above eave)

stage 0 (below eave)

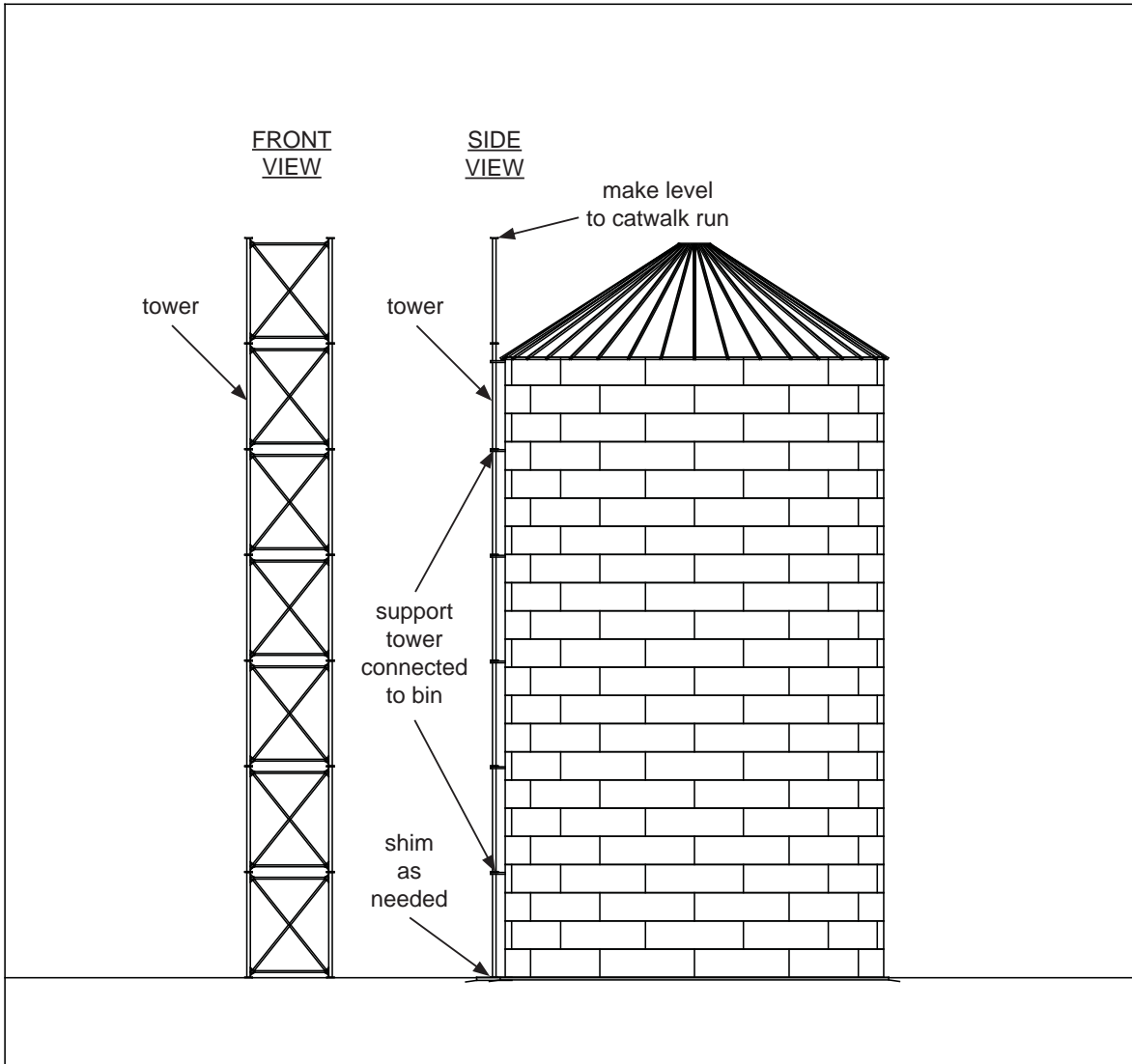
FRONT VIEW

SIDE VIEW

Complete the tower assembly on the ground. Correctly tighten all connections. Use a crane to lift the tower into place on the foundation. **Follow the instructions and drawings on the following pages to complete the Tower installation.**

2

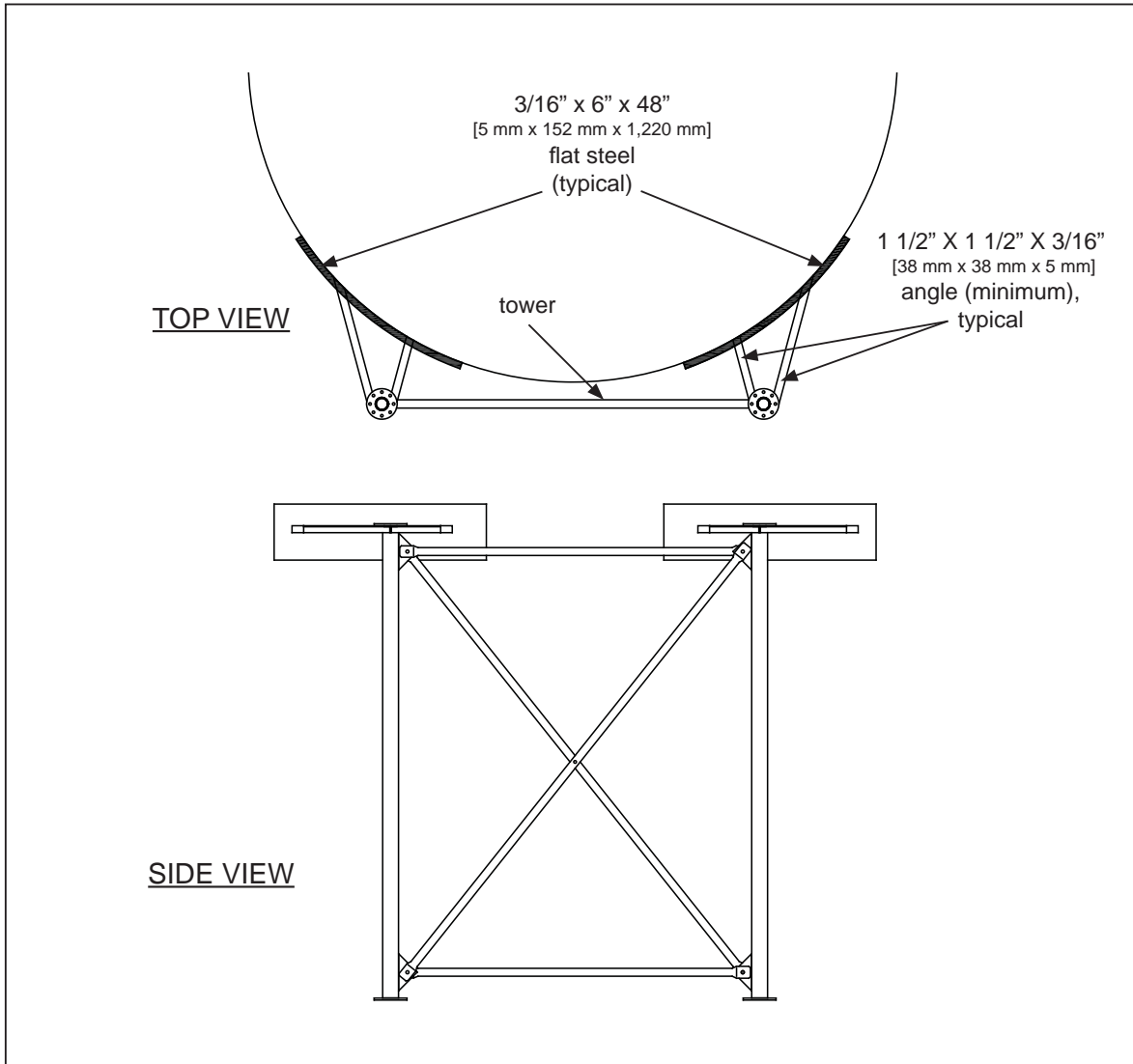
Position and Install the Tower to the Foundation



Position the tower so it is correctly in line to support the catwalk (or overhead conveying system). If necessary, shim between the column plates and the foundation as needed to level the tower. Install the tower to the foundation using (4) adequately sized anchors bolts (not supplied by Brownie Systems). (Consult your foundation design engineer for anchor sizes). Plumb the tower.

3

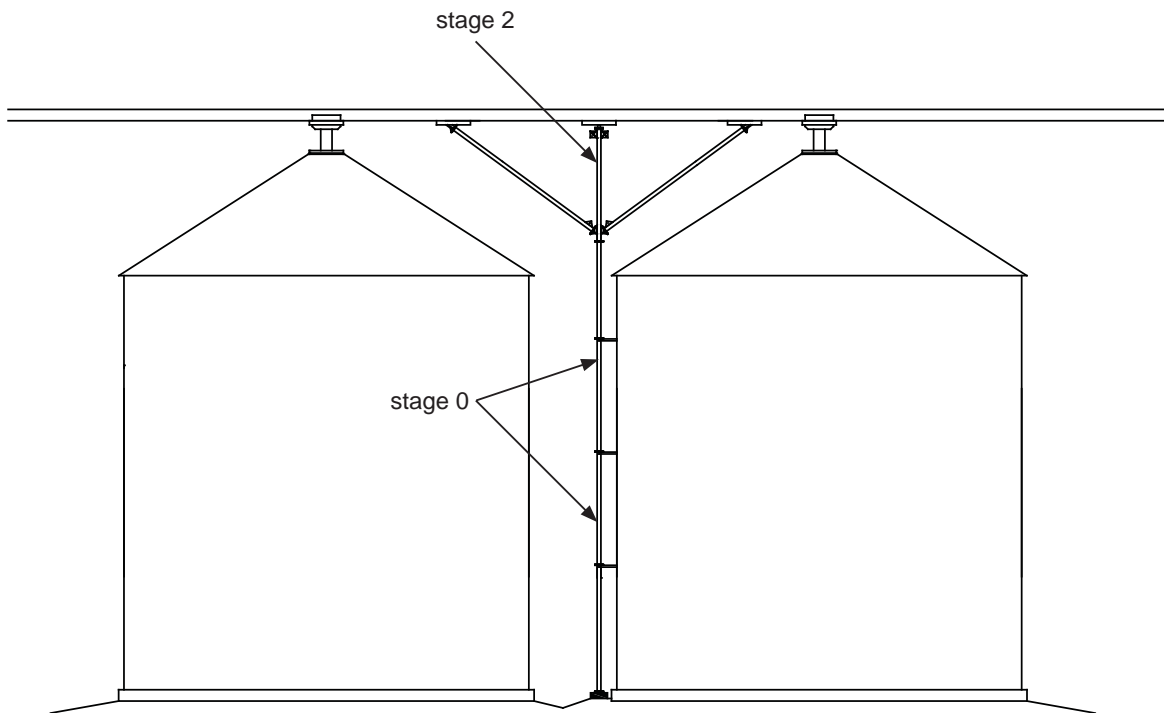
Securely Connect the Tower to the Bin



Use 1 1/2" x 1 1/2" x 3/16" [38 mm x 38 mm x 5 mm] angle iron to connect the tower to the bin. Connect the tower to the bin at the bin stiffeners (typically at 10' [3,048 mm] spacing) See [this page](#) and [the previous page](#). Connect the tower to the bin at each tower section splice joint below the bin eave. Tie the tower to the bin at each and every tower section splice joint. All tower section splice joints must connect either to the bin or to knee braces.

4

Install Knee Braces to the Tower



WARNING!

In order to correctly support the tower upper sections, knee braces must be installed from the catwalk down to each tower section splice joint above the bin eave!

Correctly support all overhead conveying equipment. Use 1 1/2" x 1 1/2" x 3/16" [38 mm x 38 mm x 5 mm] angle iron (minimum). Knee bracing must extend in both directions along the overhead conveying equipment run as shown above!

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Recent Significant Manual Changes:

2011-08-16 Rev. 01 Changes

- 1 Pages 1 and 20. A new cover replaced the old cover.
- 2 Pages 2, 7, 8, 9, and 12. Text changes were made.
- 3 Page 4. The Contents were regenerated.
- 4 Pages 10 - 11. These pages were added.
- 5 Pages 17 - 18. The Index was regenerated.
- 6 Other minor changes were made throughout the manual.

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MANUFACTURED BY

BROWNIE SYSTEMS
A Unit of **GLOBAL** Industries, Inc.



Brownie **SYSTEMS**

P. O. Box 2105 • 2928 East Highway 30
Grand Island, Nebraska 68802 - 2105, USA
TEL: 800-228-4285
FAX: 308-382-6954

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