



Smoothwall Bin

Magnum™ Operator and Installation Manual

This manual applies to:

Magnum-F™ — 40° Bottom Cone

Magnum-F™ — 55° Bottom Cone

Magnum-G™ — 40° Bottom Cone

Magnum-G™ — 55° Bottom Cone

Twin Air Bin

Super Twin Air Bin



Read this manual before using product. Failure to follow instructions and safety precautions can result in serious injury, death, or property damage. Keep manual for future reference.

Part Number: 298837 R0

Revised: May 2017



We strongly recommend that all personnel associated with this equipment be trained in the correct operational and safety procedures required for this product. This product has been designed and constructed according to general engineering standards, other local regulations may apply and must be followed by the operator. Use the sign-off sheet below to record initial and periodic reviews of this manual with all such personnel.

[illegible]

CONTENTS

1. Introduction	5
1.1. Serial Number Location.....	5
1.2. Intended Use	6
1.2.1 Misuse	6
2. Safety.....	7
2.1. Safety Alert Symbol and Signal Words.....	7
2.2. General Safety	7
2.3. Overhead Power Lines	8
2.4. Smoothwall Bin Unloading Safety.....	8
2.5. Smoothwall Bin Entry Safety.....	8
2.5.1 Roof Entry.....	9
2.6. Smoothwall Bin Emergency Entry.....	9
2.7. Smoothwall Bin Entrapment	9
2.7.1 Flowing Grain	9
2.7.2 Collapse of Bridged Grain.....	10
2.7.3 Collapse of a Vertical Wall of Grain	11
2.8. Combustible Dust	12
2.9. Ladder Safety.....	12
2.10. Work Area Safety	12
2.11. Drives and Lockout/Tagout Safety	12
2.12. Personal Protective Equipment.....	13
2.13. Safety Equipment	13
2.14. Safety Decals	14
2.14.1 Decal Installation/Replacement.....	14
2.14.2 Safety Decal Locations and Details	14
3. Features.....	19
4. Installation	21
4.1. Installation Safety.....	21
4.2. Site Selection	21
4.3. Site Conditions.....	22
4.4. Bin Site Expansion	22
4.5. Foundation Specifications	22
5. Operation	25
5.1. Operation Safety	25
5.2. Filling Bin	25
5.3. Grain and Fertilizer Storage	26
5.4. Conditioning Grain	26
5.5. Unloading Hopper Bins	27
5.6. Cleanout	27
6. Maintenance	28
6.1. Maintenance Safety	28
6.2. Maintenance Schedule.....	28
6.3. Repair Damaged Painted Surfaces	28
6.4. Adjust the Rack and Pinion Plate	29
7. Specifications	31

7.1. Magnum-F™	31
7.2. Magnum-G™	34
8. Westeel Warranty:Smoothwall Bins.....	37

1. Introduction

Thank you for purchasing a Westeel Smoothwall Bin. This equipment will allow safe and efficient operation when you read and follow all of the instructions contained in this manual. With proper care, your smoothwall bin will provide you with many years of trouble-free operation.

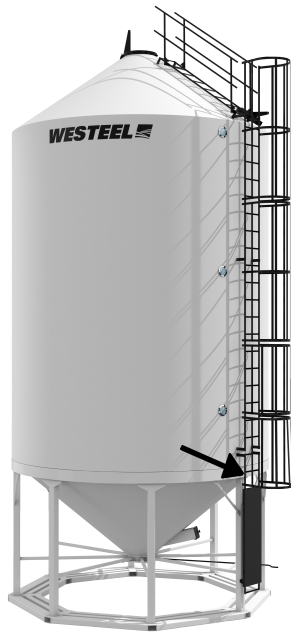
Keep this manual handy for frequent reference and to review with new personnel. A sign-off form is provided on the inside front cover for your convenience. If any information in this manual is not understood or if you need additional information, please contact your local distributor or dealer for assistance.

This manual should be regarded as part of the equipment. Suppliers of both new and second-hand equipment are advised to retain documentary evidence that this manual was provided with the equipment.

1.1. Serial Number Location

Always give your dealer the serial number on your smoothwall bin (shown below) when ordering parts or requesting service or other information. Please record this information in the table below for easy reference.

Model Number	
Serial Number	
Date Received	



1.2. Intended Use

The smoothwall bin is designed solely for use in customary agricultural or similar operations. Use in any other way is considered as contrary to the intended use. Compliance with and strict adherence to the conditions of operation and maintenance as specified by Westeel, also constitute essential elements of the intended use.

The smoothwall bin should be operated, maintained, serviced, and repaired only by persons who are familiar with its particular characteristics and who are acquainted with the relevant safety procedures.

Accident prevention regulations and all other generally recognized regulations on safety and occupational medicine must be observed at all times.

Any modifications carried out to the smoothwall bin may relieve Westeel of liability for any resulting damage or injury.

The smoothwall bin may be safely used with:

- free-flowing grains or other non-corrosive granular material up to 52 lb/ft³ (833 kg/m³)
- treated seed, when not corrosive or subject to poor flow; check with your local supplier.
- fertilizer up to 62 lb/ft³ (993 kg/m³) when the interior bin walls are originally painted by Westeel).

Use in any other way is considered as contrary to the intended use and is not covered by the warranty.

1.2.1 Misuse

Do not use the smoothwall bin for:

- storage of fertilizer when the interior bin walls are not originally painted by Westeel).
- storage of liquids.

2. Safety

2.1. Safety Alert Symbol and Signal Words



This safety alert symbol indicates important safety messages in this manual. When you see this symbol, be alert to the possibility of injury or death, carefully read the message that follows, and inform others.

Signal Words: Note the use of the signal words **DANGER**, **WARNING**, **CAUTION**, and **NOTICE** with the safety messages. The appropriate signal word for each message has been selected using the definitions below as a guideline.



Indicates an imminently hazardous situation that, if not avoided, will result in serious injury or death.



Indicates a hazardous situation that, if not avoided, could result in serious injury or death.



Indicates a hazardous situation that, if not avoided, may result in minor or moderate injury.



Indicates a potentially hazardous situation that, if not avoided, may result in property damage.

2.2. General Safety

The safety information in the safety section of this manual applies to all safety practices. Specific safety information (such as Operation Safety), can be found in the appropriate section.

YOU are responsible for the **SAFE** use and maintenance of your smoothwall bin. **YOU** must ensure that you and anyone else who is going to work around the smoothwall bin understands all procedures and related **SAFETY** information contained in this manual.

Remember, **YOU** are the key to safety. Good safety practices not only protect you, but also the people around you. Make these practices a working part of your safety program. All accidents can be avoided.

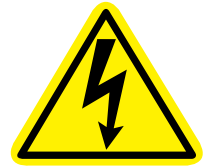
- It is the smoothwall bin owner, operator, and maintenance personnel's responsibility to read and understand **ALL** safety instructions, safety decals, and manuals and follow them when assembling, operating, or maintaining the equipment.
- Owners must give instructions and review the information initially and annually with all personnel before allowing them to operate the smoothwall bin. Untrained users/operators expose themselves and bystanders to possible serious injury or death.
- The smoothwall bin is not intended to be used by children.
- Use the smoothwall bin for its intended purposes only.
- Do not modify the smoothwall bin in any way without written permission from the manufacturer. Unauthorized modification may impair the function and/or safety, and could affect the life of the smoothwall bin. Any unauthorized modification of the smoothwall bin will void the warranty.



2.3. Overhead Power Lines

WARNING

- Keep smoothwall bins a horizontal distance of at least 50 ft (15 m) from power lines.
- Do not use the smoothwall bin if there is a chance of any loading or unloading equipment contacting power lines.
- Do not locate smoothwall bins on both sides of a power line.
- Electrocution can occur without direct contact.



2.4. Smoothwall Bin Unloading Safety

WARNING

- Never enter a smoothwall bin when loading or unloading.
- Unload only as described in the operation section of this manual.
- Lock the bin door (where equipped) and close/lock all other access doors when not in use.

2.5. Smoothwall Bin Entry Safety

The information in this section applies to entry through any access point.

WARNING

Always try to work and solve problems without entering a bin.

If you must enter the bin, follow the safety information below to safely enter through the roof or door:

- Stop the unloading process if the bin is being unloaded and lockout/tagout power before entering the bin, refer to Lockout/Tagout Safety.
- Always wear a dust-filtering respirator when entering the bin. Grain dust and spores when inhaled into the lungs can cause severe reactions leading to hospitalization in some cases. Persistent exposure may cause “farmer’s lung,” which can eventually be fatal.
- Before working inside the bin, ventilate the area by opening the vent or by other equivalent means to force air into the bin to prevent oxygen-deficient atmosphere. Inadequate oxygen is very harmful to your health and can cause death. Exposure to carbon dioxide can cause drowsiness, headache and even death due to suffocation. Test the atmosphere. If the carbon dioxide hazard cannot be reduced or eliminated or you cannot test the atmosphere, use correctly fitted and appropriate respirator.
- Never walk on grain to make it flow.

If you ignore the safety precautions above and enter the smoothwall bin, you could die from being submerged.

2.5.1 Roof Entry

The information in this section applies to entry through the bin roof only.

WARNING

- Never enter a bin from the roof if you don't know its unloading history. Bridges of stored material can form above a void space below, causing potential for entrapment.
- Have body harness tethered to a lifeline controlled by two others outside the bin. One worker should be able to see inside worker through the inspection hatch. If there is an accident, one worker can focus on the victim while the other goes/calls for help.
- In the event that you are trapped in the bin as it is unloading, move as quickly as possible toward the bin wall; keep yourself elevated above the material by walking on the flowing mass while staying as close as possible to the bin wall.

2.6. Smoothwall Bin Emergency Entry

In an emergency situation:

- Follow protocols set by your local occupational safety and health agency.
- If you need to rescue somebody inside the bin, call emergency responders and only attempt to rescue using non-entry rescue procedure/equipment. Do not enter the bin unless you are trained for rescue, equipped and relieved.

2.7. Smoothwall Bin Entrapment

It takes more than 1000 lb (4.5kN) of force to remove someone buried below the surface.

The following sections cover common ways a person gets submerged or trapped:

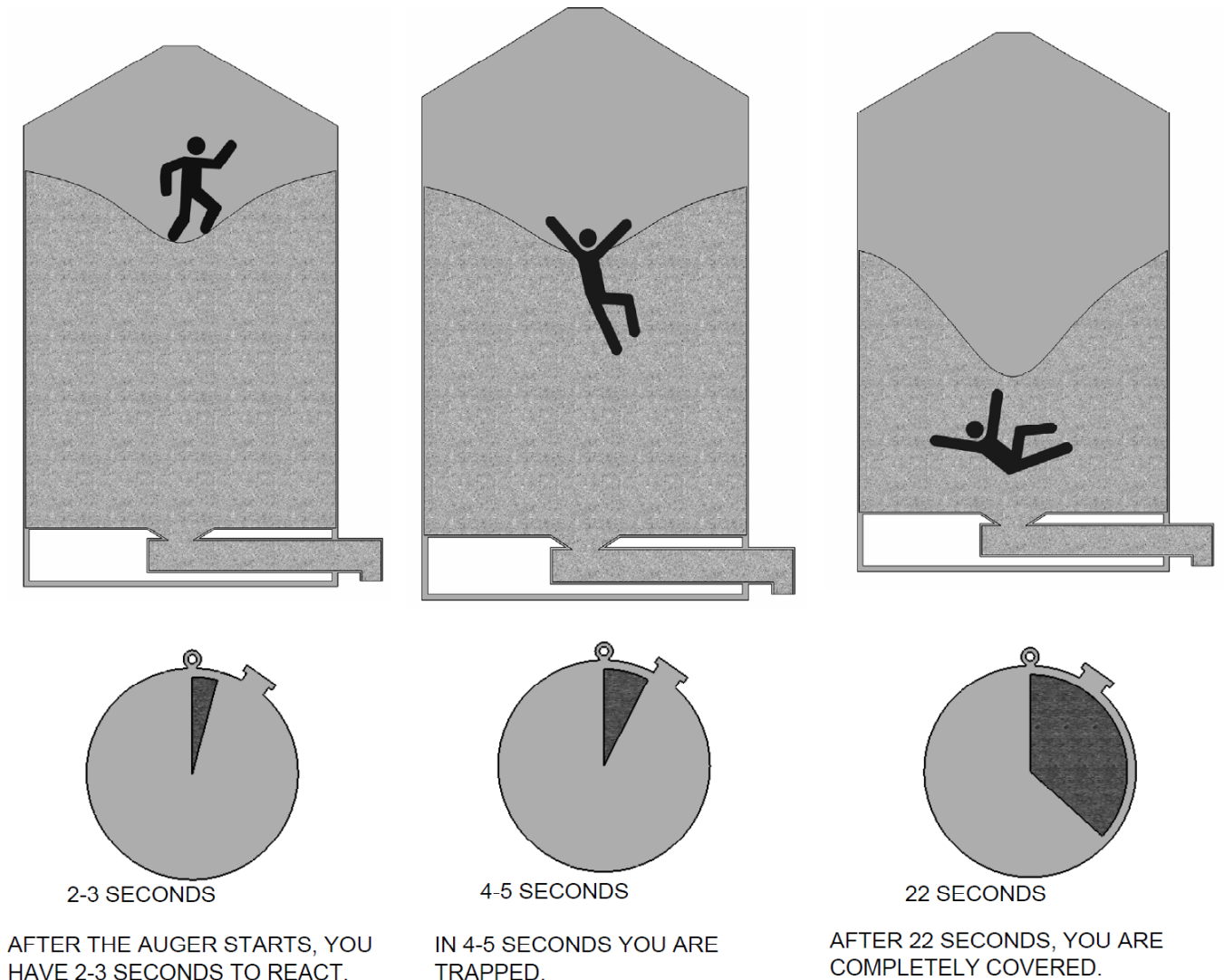
2.7.1 Flowing Grain

This procedure may also apply to fertilizer where the bin is intended for fertilizer storage.

WARNING

- Grain flows in a funnel-shaped path when unloading. This vortex of grain behaves very much like a water drain. Velocity increases as grain flows from the bin wall at the top of the grain mass into a small vertical column at the center of the bin.
- Flowing grain will not support the weight of a person. Submersion happens within seconds.



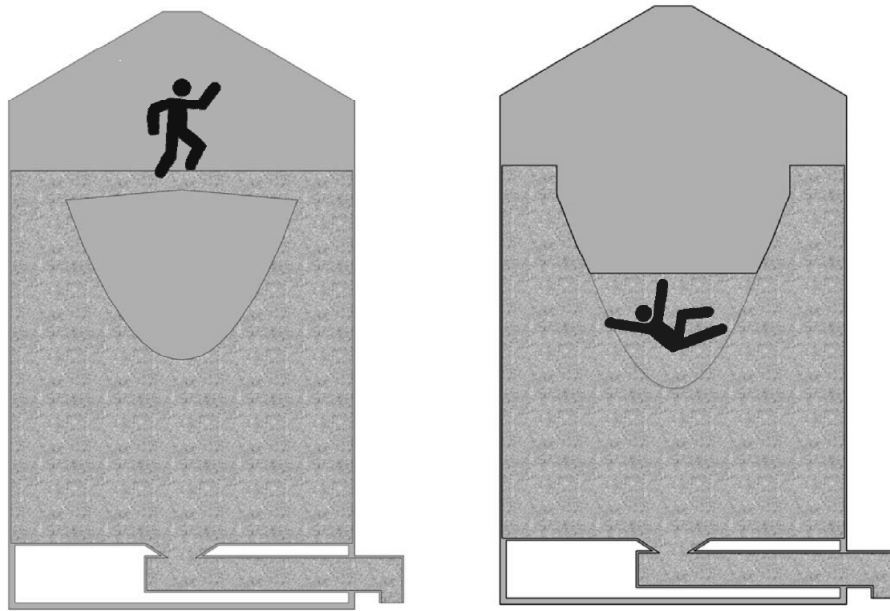
Figure 1. Bin Suffocation Hazards in Flowing Grain

2.7.2 Collapse of Bridged Grain

This procedure may also apply to fertilizer where the bin is intended for fertilizer storage.

WARNING

- Grain can “bridge” across a bin, creating an empty air space below. A person can easily break through this bridge and become trapped, risking suffocation.
- To identify bridged grain, look for a funnel shape on the surface of the grain after having removed some of the grain. If surface is undisturbed, the grain has bridged and formed a crust.
- Never walk on the grain crust. The crust rarely becomes strong enough to support the weight of a person.
- To remove bridge, try breaking the bridge from the inspection hatch or filler cap. Use a pole to hit the surface, securing it with a rope in case it is dropped. Be aware that chunks of crusted grain can move down to the auger and limit flow.

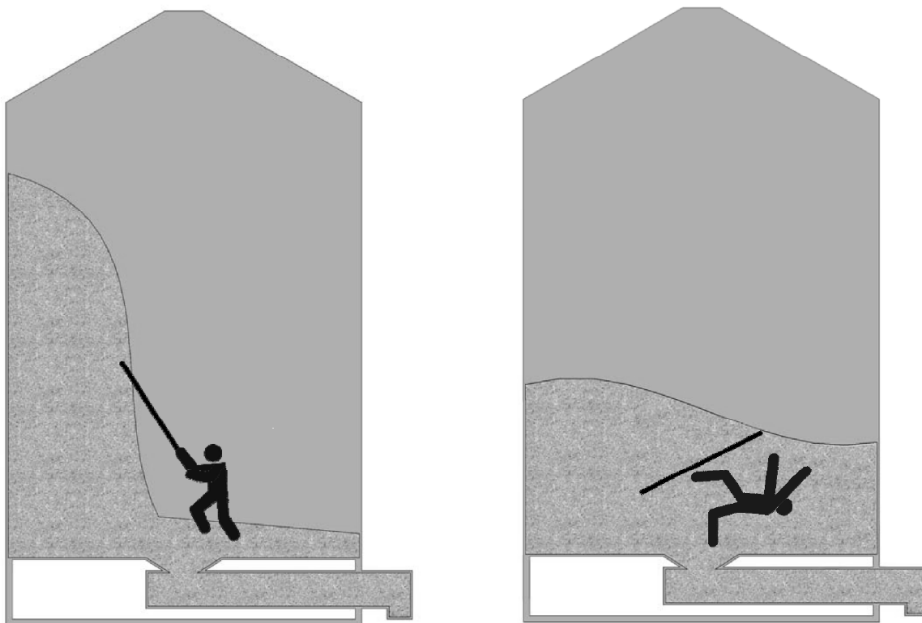
Figure 2. Bin Suffocation Hazards in Bridged Grain

2.7.3 Collapse of a Vertical Wall of Grain

This procedure may also apply to fertilizer where the bin is intended for fertilizer storage.

⚠ WARNING

- Vertical walls of grain are created when the bin is partially empty. Poking at the wall can make the grain avalanche and submerge a person.
- Do not enter bin to break down grain that has set up. Break grain mass from top of bin outside.

Figure 3. Bin Suffocation Hazards from a Vertical Grain Wall

2.8. Combustible Dust

WARNING

The smoothwall bin has been designed for safe use in areas where hazards due to combustible dust may potentially occur. To fully minimize the risk of a dust explosion:

- Clean up dust deposits after operation of the equipment.
- Always purchase replacement parts from the manufacturer or authorized dealer/distributor. Original manufacturers parts are designed with explosion proof features.
- Follow the maintenance schedule to keep equipment operating at normal conditions. This will further help to prevent the risk of components overheating or wearing out which may lead to explosion risks.
- Do not use anything inside the bin that may produce a flame, such as a match, a lighter, or anything that may produce a shower of sparks, such as a grinder or power saw, unless the air is free of dust and all dust deposits have been removed from the work area, or the work area is wet such that dust cannot be dispersed in the air and smoldering processes from sparks cannot develop.

2.9. Ladder Safety

WARNING

- Do not climb ladder if damaged, wet, icy, greasy, or slippery.
- Remove slippery materials on platforms, rungs and gripping surfaces.
- Maintain good balance by having at least three points of contact at all times.
- Safety harnesses and climbing equipment are required. Consult local safety authorities.



2.10. Work Area Safety

- Have another trained person nearby who can shut down the smoothwall bin in case of accident.
- The work area should be kept clear of bystanders.
- Keep the work area clean and free of debris.

2.11. Drives and Lockout/Tagout Safety

Inspect the power source(s) before using and know how to shut down in an emergency. Whenever you service or adjust your equipment, make sure you shut down your power source and follow lockout and tagout procedures to prevent inadvertent start-up and hazardous energy release. Know the procedure(s) that applies to your equipment from the following power sources.

For example:

- De-energize, block, and dissipate all sources of hazardous energy.
- Lock out and tag out all forms of hazardous energy.



- Ensure that only 1 key exists for each assigned lock, and that you are the only one that holds that key.
- After verifying all energy sources are de-energized, service or maintenance may be performed.
- Ensure that all personnel are clear before turning on power to equipment. For more information on occupational safety practices, contact your local health and safety organization.

2.12. Personal Protective Equipment

The following Personal Protective Equipment (PPE) should be worn at all times when operating or maintaining the equipment.

Safety Glasses

- Wear safety glasses at all times to protect eyes from debris.



Coveralls

- Wear coveralls to protect skin.



Hard Hat

- Wear a hard hat to help protect your head.



Steel-Toe Boots

- Wear steel-toe boots to protect feet from falling debris.



Work Gloves

- Wear work gloves to protect your hands from sharp and rough edges.



Respirator

- Wear a respirator to prevent breathing potentially harmful dust.



2.13. Safety Equipment

The following Safety Equipment should be kept on site:



Fire Extinguisher

- Provide a fire extinguisher for use in case of an accident. Store in a highly visible and accessible place.



First-Aid Kit

- Have a properly-stocked first-aid kit available for use should the need arise, and know how to use it.



2.14. Safety Decals

- Keep safety decals clean and legible at all times.
- Replace safety decals that are missing or have become illegible. See decal location figures that follow.
- Replaced parts must display the same decal(s) as the original part.
- Replacement safety decals are available **free of charge** from your distributor, dealer, or factory.

2.14.1 Decal Installation/Replacement

1. Decal area must be clean and dry, with a temperature above 50°F (10°C).
2. Decide on the exact position before you remove the backing paper.
3. Align the decal over the specified area and carefully press the small portion with the exposed sticky backing in place.
4. Slowly peel back the remaining paper and carefully smooth the remaining portion of the decal in place.
5. Small air pockets can be pierced with a pin and smoothed out using the sign backing paper.

2.14.2 Safety Decal Locations and Details

Replicas of the safety decals that are attached to the smoothwall bin and their messages are shown in the figure (s) that follow. Safe operation and use of the smoothwall bin requires that you familiarize yourself with the various safety decals and the areas or particular functions that the decals apply to, as well as the safety precautions that must be taken to avoid serious injury, death, or damage.

Figure 4. Safety Decal Locations



Table 1. Safety Decals


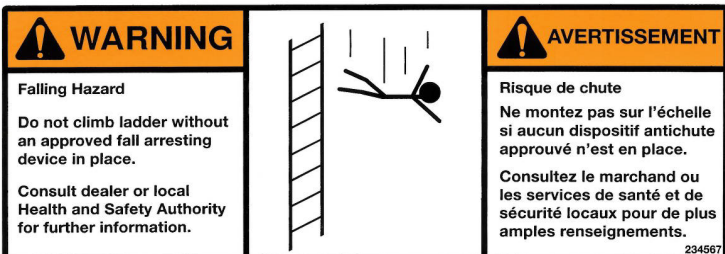
Item	Description	Part Number
1		236088
2		234567

Table 1 Safety Decals (continued)

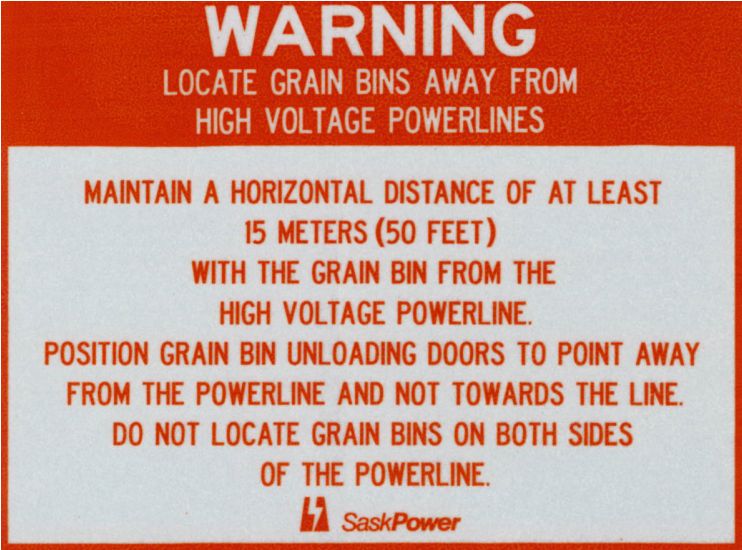
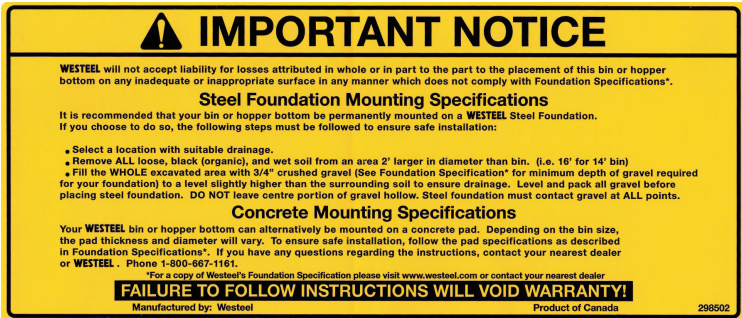

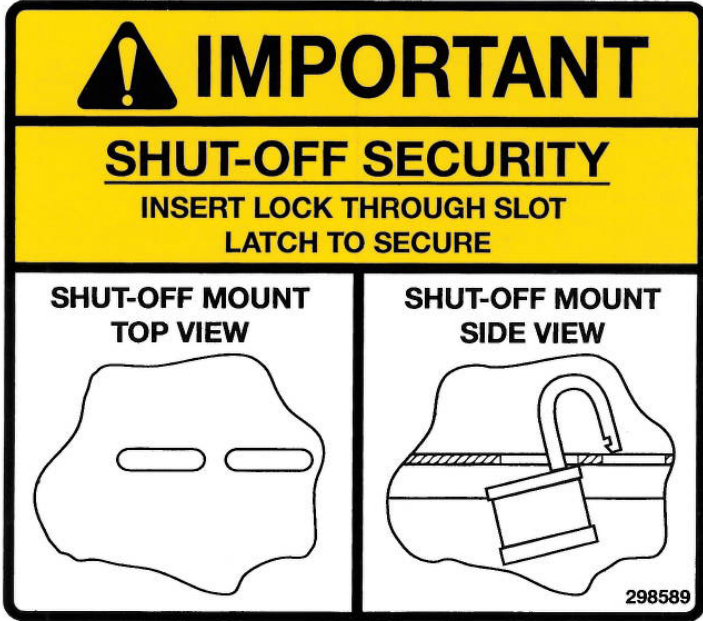
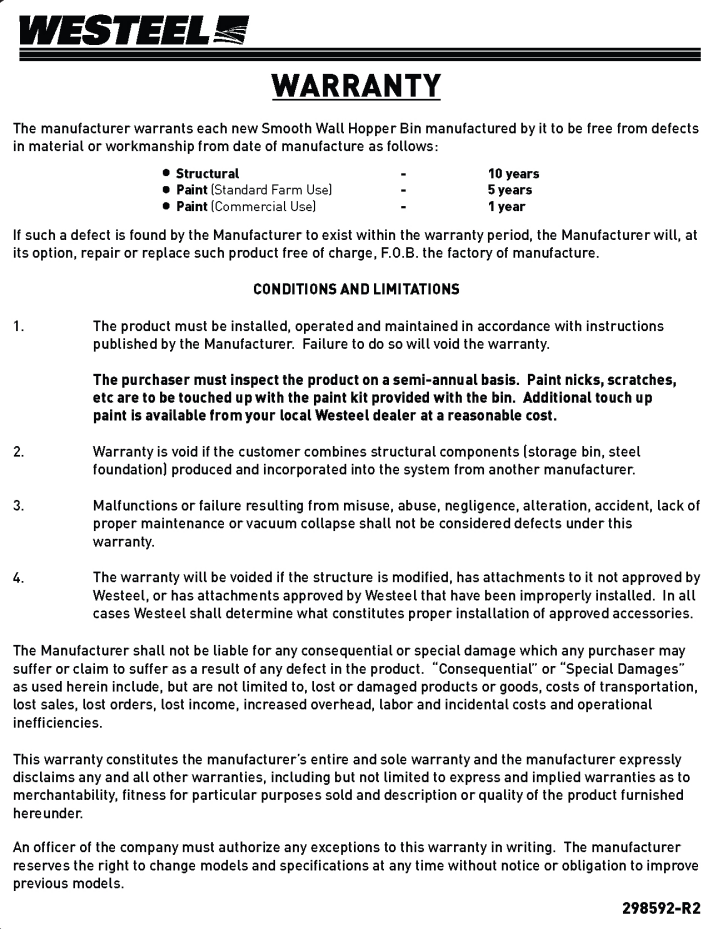
Item	Description	Part Number
3		298514
4		298502
5		298554

Table 1 Safety Decals (continued)

Item	Description	Part Number
6		298589
7		298592

3. Features

Below are some of the main features of the Westeel Smoothwall Bin.

Figure 5. Typical Smoothwall Bin

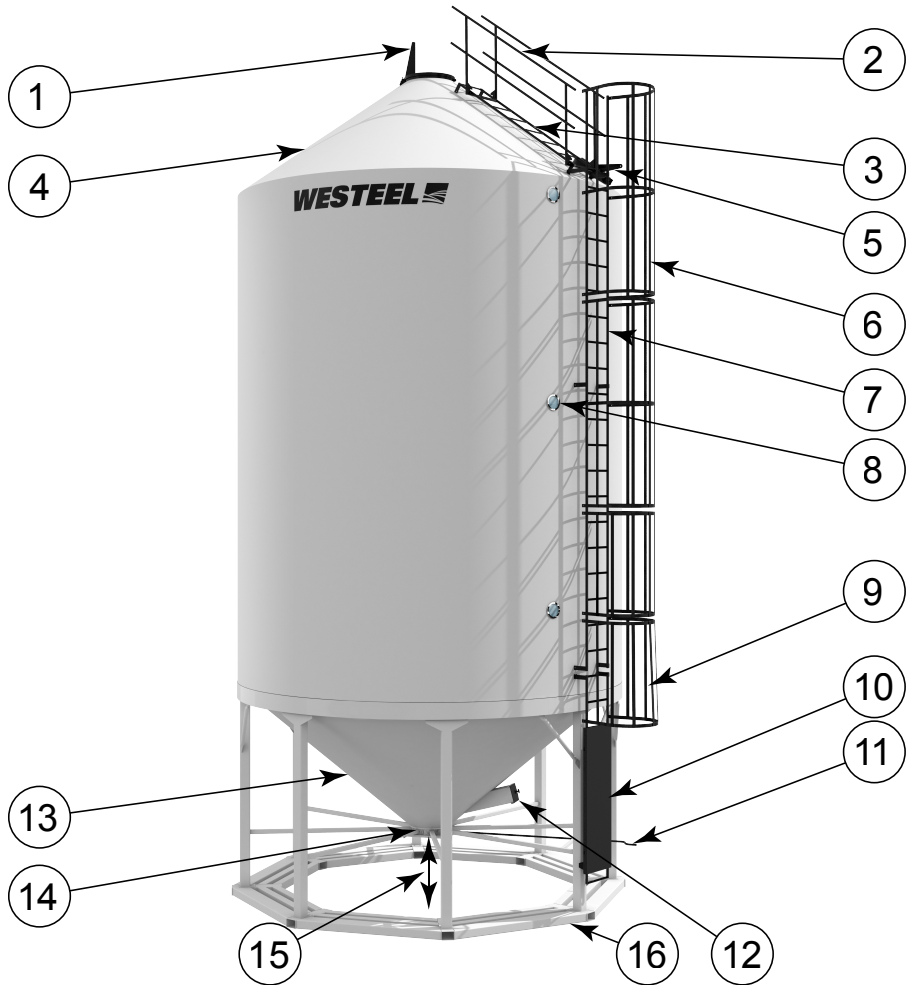


Table 2. Smoothwall Bin Features

Item	Feature
1	24" Top Opening with Lid
2	Roof Ladder Hand Rail (Optional)
3	Roof Ladder
4	Top Cone (30°/35°)
5	Top Inspection Hatch with Lid (Optional)
6	Sidewall Ladder Cages (Optional)
7	Sidewall Ladder



Table 2 Smoothwall Bin Features (continued)

Item	Feature
8	6" View Glass
9	Entrance Ladder Cage (Optional)
10	Lockable Ladder Gate (Optional)
11	Crank Handle
12	Poke Hole with Lid (Optional for Grain Bin)
13	Bottom Cone - 40°/55°
14	Shut off mount - SS plate (Fertilizer Bin), MS plate (Grain Bin)
15	Clearance - Standard 26"
16	Foundation (Optional)

4. Installation



Before continuing, ensure you have completely read and understood this manual's Safety section, in addition to the safety information in the section(s) below.

4.1. Installation Safety

WARNING

- Do not take chances with safety. The components can be large, heavy, and hard to handle. Always use the proper tools, rated lifting equipment, and lifting points for the job.
- Always have two or more people installing the smoothwall bin.
- Make sure you have sufficient lighting for the work area.
- Tighten all fasteners according to their specifications. Do not replace or substitute bolts, nuts, or other hardware that is of lesser quality than the hardware supplied by the manufacturer.

4.2. Site Selection

Selection of an appropriate site is a very important step prior to assembling or setting up a smoothwall bin. The following must be adhered to when choosing a bin site:

- Choose a firm, level, well-drained site, preferably at the top of a small hill or incline so that snow/water cannot collect near the bin.
- The soil needs a bearing capacity of at least 2,500 lb/ft² (120 kPa) when using a Westeel designed foundation. Check bearing capacity if there is any doubt about its adequacy. If building a hopper bottom bin, refer to that manual for further information on concrete foundation requirements.
- Top soil is not adequate for the support of a bin and must be removed prior to assembly and replaced with packed gravel fill.
- The foundation may be subject to frost movement. If in doubt about the site, hire a professional engineer who is familiar with local conditions.
- Some materials that seem adequate at one time of year may become unstable later. Dry clay, for example, may lose practically all its strength if it becomes saturated with water.
- Bins should never be located near high buildings that may cause uneven snow build up on the bin roof or uneven wind pressure on the structure; both may result in bin damage.
- Bins should be positioned a safe distance from power lines or electrical transmission equipment. Contact your local power company to obtain recommended equipment clearance information.
- Electrical control equipment in contact with the bin must be grounded and installed in accordance with local codes.
- Determine your electrical needs for assembly and ensure that there is the correct type and a sufficient amount of power to operate tools, air compressors, lighting, etc.
- Ensure that there is sufficient power to operate any aeration or unload equipment that is to be installed.
- Orientation: Consider door (if equipped) and vent placement, loading auger direction, and unloading auger direction when choosing a site.



4.3. Site Conditions

Access routes to the site and within the site should be given on a site plan showing dimensions and level of access routes, level of the prepared working area for site traffic and plant, and areas available for storage.

Construction of the bin shall not start until the following site conditions have planned for and evaluated for safety:

- provision and maintenance of hard standing surfaces for cranes and access equipment;
- access routes to and within the site should be included on the site plan;
- soil conditions affecting the safe operation of the structure;
- possible settlement of erection supports for the structure;
- details of underground services, overhead cables or site obstructions;
- limitations on dimensions or weights of components that can be delivered onto the site;
- special environmental and climatic conditions on and around the site;
- particulars of adjacent structures affecting or affected by the works.

4.4. Bin Site Expansion

Future potential bin site expansion should be considered and planned for prior to siting and construction.

4.5. Foundation Specifications

Your smoothwall bin must be installed on a Westeel steel foundation or a concrete foundation.

Steel Foundation

When installing a steel foundation:

1. Select a location with good drainage.
2. Remove loose soil in an area 2' larger than your bin.
3. Fill excavated area with 3/4" crushed gravel to the depth indicated in [Table 3 on page 23](#).
4. Level and pack the gravel before placing the steel foundation.

Note

Do not leave the center of the gravel hollow. The foundation must contact gravel at all points.

Concrete Foundation

When installing a concrete foundation:

1. Select a location with good drainage.
2. Remove loose soil from the area indicated in the Fdn Dia "D" column of [Table 3 on page 23](#)

Note

A minimum soil bearing capacity of 2500 psf is recommended.

3. Excavate the area 8" to 12" below bottom of pad.

4. Fill excavated area with 3/4" crushed gravel.
5. Compact gravel.
6. Reinforce and pour curb-type or single-pour foundation according to [Figure 6 on page 23](#) and [Table 3 on page 23](#).

Note

Use high-strength sulphate-resistant concrete (3000 psi, 21 MPa minimum).

7. Place hopper on foundation using 1/2" anchor bolts.

Note

Use shims to ensure all legs contact the pad. Allow the concrete to cure for a minimum of 21 days (recommended) before filling the bin. This period of time ensures the concrete reaches at least 75% strength.

Note

A steel foundation is not recommended when using a concrete foundation.

Figure 6. Concrete Foundation

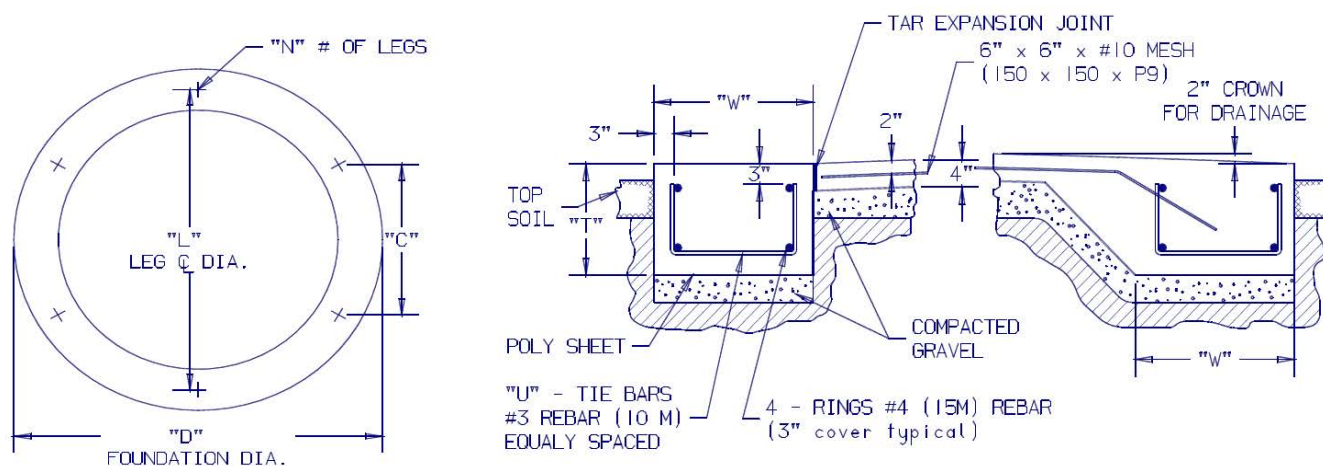


Table 3. Steel and Concrete Foundation Specifications

Bin Diameter	Capacity (Tons)	Number of Legs	Foundation Diameter "D"	Leg Center Diameter "L"	Chord "C"	Depth "T" Concrete or Gravel	Width "W"	Tie Qty "U"
8'	18	4	107"	89"	67-1/2"	8" to 10"	18"	n/a
12'	27 to 57	6	167"	147"	74"	10" to 12"	20"	12
12'	73t	6	171"	147"	74"	14" to 16"	24"	12
14'	34 to 54	6	182"	161-3/4"	80-3/4"	10" to 12"	20"	12
14'	73 to 92	6	186"	162-3/4"	80-3/4"	14" to 16"	24"	12
16'	75 to 123	8	209"	185"	70-3/4"	14" to 16"	24"	16
16'	147 to 170	8	209"	185"	70-3/4"	22" to 24"	24"	16
16'	198 to 223	8	215"	185"	70-3/4"	24" to 28"	30"	24

Approximate Concrete Required (Curb Type)

- **Ring:** Leg Ctr dia (in.) x actual Width (W-in.) x Actual Depth (T-in.) / 14,850 = cubic yards.
- **Center Pad:** Actual Ring inside dia (in.) x Actual Ring inside dia (in.) x Actual depth (in.) / 59,404 = cubic yards.

- **Total approximate concrete yardage required:** add ring and center pad requirements. To convert cubic yards to cubic meters, multiply total yardage by .7645.

5. Operation



Before continuing, ensure you have completely read and understood this manual's Safety section, in addition to the safety information in the section(s) below.

5.1. Operation Safety

WARNING

- Unload the bin only as described in this manual.
- Always try to solve problems without entering a bin from the inspection hatch or filler cap.
- Never enter a bin when loading or unloading.
- Never enter a bin if you don't know its unloading history. Bridged material may form above a void space below, causing potential for entrapment.
- Lock the bin access points (where equipped) and close all other access doors when not in use.
- When filling, use top filler cap and direct product to the center of the bin. Do not fill from the inspection hatch; this will cause uneven loading and could cause the bin to collapse.
- Never overfill a bin. Material should never come into contact with or place pressure on the roof.
- Have another trained person nearby who can shut down the equipment in case of accident.
- Keep the work area clean and free of debris.

5.2. Filling Bin

1. Bins can be loaded by a portable auger or conveyor, or other handling system (where design permits) through the filler cap, directed toward the center of the bin. Refer to [Section 7. – Specifications on page 31](#).
2. Close and secure all access points.
3. Make sure hopper door and roof access point are closed.
4. Any temperature cables must be fastened to the hopper using breakable string (fishing line). Do not attach weights to the bottom of the temperature cables.

NOTICE

Attaching weights to temperature cables can damage the bin roof and is not covered by warranty.

5. Confirm maximum uneven settlement is not more than 1.5" from level after initial fill. Contact your dealer for assistance if required.
6. Use of a spout or chute will help prevent overfilling of the bin and obtain the most amount of storage from the bin, see [Figure 7 on page 26](#).

Important

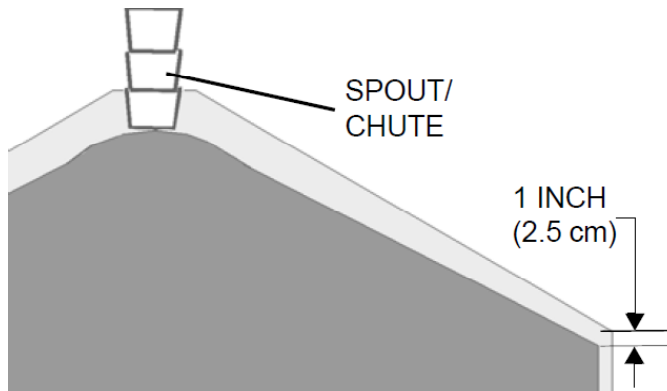
The grain bin is full when filled to no more than 1" below the eave.



WARNING

Opening the inspection hatch on an overfilled bin can cause grain to spill out, creating a potential falling hazard.



Figure 7. Filling Process

7. Close lid after filling.
- ➡ 8. Attach a padlock to the access points (as applicable) for security and to prevent unauthorized entry.
- ➡ 9. **When equipped:** Lock out the bin ladder to prevent unauthorized entry.

5.3. Grain and Fertilizer Storage

The smoothwall bin may be used to store grain or fertilizer, depending on the model, refer to [Section 7. – Specifications on page 31.](#)

Grain Storage

The smoothwall bin may be used to store dry, free flowing grains. Grain with higher moisture content levels can be safely stored with proper conditioning and monitoring. Ensure that you have the proper training and knowledge when storing grain that may not be in ideal condition. Grain stored in poor condition can cause problems in your smoothwall bin such as crusting, spoilage, or heating. Inspect grain quality regularly. Information on proper storage is available from local agricultural offices.

NOTICE Storage of spoiled grain can damage the bin interior.

Fertilizer Storage

The smoothwall bin may be used to store fertilizer. Ensure that you have the proper training and knowledge when storing fertilizer. Fertilizer stored in poor condition can cause problems in your smoothwall bin such as crusting, spoilage, or heating. Inspect fertilizer quality regularly. Information on proper storage is available from local agricultural offices.

5.4. Conditioning Grain

➡ When equipped with a conditioning system:

1. The grain bin must be filled as described in with grain below the eave to allow proper aeration or drying.
2. Grain should not contact the roof vents or conditioning systems may not operate properly.
3. Keep grain bin roof vents clear of ice.
4. Make sure that roof vents and fan are open and appropriately sized for your bin. Consult your local dealer if you are unsure.

NOTICE

To prevent roof and/or bin damage ensure all roof vents are open and unobstructed when conditioning grain.

5.5. Unloading Hopper Bins

1. Open the top lid for ventilation when unloading the bin.
2. Center unloading equipment under the slide gate.
3. Open the slide gate slowly to avoid bin wall stress.
4. Start the unloading equipment and open the slide gate.

5.6. Cleanout

Important

The bin should be cleaned thoroughly to lessen the risk of fire, insect infestation, and mold growth.

1. Use a stiff brush to clean bin sidewalls of thin layers of crusted material.

NOTICE

Do not use a wire brush to clean the inside of fertilizer bins as they will damage the paint.

2. Remove all of the old grain (or fertilizer if applicable) and fines/dust.
3. Clean the bin using a grain vac or similar means.



6. Maintenance



Before continuing, ensure you have completely read and understood this manual’s Safety section, in addition to the safety information in the section(s) below.

6.1. Maintenance Safety

WARNING

- Keep components in good condition. Follow the maintenance procedures.
- Ensure the service area is clean, dry, and has sufficient lighting.
- Do not modify any components without written authorization from the manufacturer. Modification can be dangerous and result in serious injuries.
- Use only genuine Westeel replacement parts or equivalent. Use of unauthorized parts will void warranty. If in doubt, contact Westeel or your local dealer.

6.2. Maintenance Schedule

Semi-Annually:
Section 6.3. – Repair Damaged Painted Surfaces on page 28
As Required:
Section 6.4. – Adjust the Rack and Pinion Plate on page 29

6.3. Repair Damaged Painted Surfaces

This procedure describes how to touch up paint nicks, scratches, etc with the paint kit that was provided with the bin. Additional touch up paint is available from your local Westeel dealer.

Refer to [Figure 8](#) – [Figure 10](#).

Figure 8. Scratches in Painted Surface



Figure 9. Nicks in Painted Surface

1. Clean the damaged area with a clean cloth.
2. Depending on the depth of the damage, sand the surface with a medium-grit abrasive pad or 180-grit sandpaper slightly larger than the affected area until the damage is smooth to the touch.
3. Blow off debris and clean the area thoroughly.
4. Shake Westeel-approved touch-up paint can thoroughly for one minute, see [Figure 10](#).

Figure 10. Westeel-approved Smoothwall White Touch-up Paint

5. Spray paint over the damaged area horizontally with a medium wet coat, working your way outward from the damage. It will be necessary to coat the damaged area multiple times with a flash off/dry time in between coats. Ensure at least 3-4 coats are applied to cover the damaged area. The length of time between coats will depend on the temperature. Refer to spray directions on the paint can.

Note

Avoid spraying on windy days as debris may stick to the paint.

NOTICE

Do not apply paint when temperature is below 10°C (50°F) as the coating may have undesired effects such as sags, lack of cure, or lack of adhesion.

6.4. Adjust the Rack and Pinion Plate

This procedure describes how to adjust the rack and pinion plate so that the maximum gap is 1/32".



1. Empty the bin.
2. Remove the shutoff plate and sprocket assembly.
3. Thoroughly clean the shutoff plate and mount.
4. Inspect the shutoff plate for damage and straighten if required.
5. Loosen all rollers just enough until they move in their slots.
6. Slide the shutoff plate into the fully closed position above the rollers. Ensure the chain stops are at the leading end of the plate and the plate is exactly centered from side-to-side.
7. Using a bottle jack under the shutoff plate, directly below the center of the opening, apply only enough pressure for the plate to contact the mount.

NOTICE

Excessive pressure will deform the plate and make movement difficult.

8. Bring each roller up until they just contact the plate and tighten the bolts. All rollers should turn easily by hand after tightening, but still contact the plate. Check and re-adjust if necessary.

Note

The two end rollers not covered by the shutoff plate are adjusted later in the procedure.

9. Remove the bottle jack and pull the plate out until it covers the two remaining end rollers.
10. Adjust the rollers as stated previously. No upward pressure should be applied to the plate during this part of the adjustment procedure. Check that the plate moves easily.
11. Re-install the sprocket assembly and handle.

7. Specifications

7.1. Magnum-F™

Magnum-F Hopper Epoxy Lined Fertilizer Storage Bins (40 Degree Bottom Cone)

Bin Includes Sidewall & Roof Ladders, 24" Top Opening, Bottom Inspection Hatch, 19" Discharge Stainless Steel R&P Slide Gate, Sight Glass(es) & 8" Pokehole.

Model Number	Fertilizer		Capacity		Diameter	Height	Auger Length
	Tonnes	Tons	(Cu. Ft.)	(Bu.)			
MAG 1204F	25	28	884	752	12' 6"	15' 1"	36'
MAG 1208F	39	43	1375	1169	12' 6"	19' 1"	36'
MAG 1212F	53	58	1866	1587	12' 6"	23' 1"	41'
MAG 1216F	67	74	2357	2004	12' 6"	27' 1"	46'
MAG 1404F	33	36	1141	970	14' 1"	15' 7"	36'
MAG 1408F	50	55	1764	1500	14' 1"	19' 7"	36'
MAG 1410F	59	65	2076	1765	14' 1"	21' 7"	41'
MAG 1412F	68	74	2387	2029	14' 1"	23' 7"	41'
MAG 1415F	81	89	2855	2427	14' 1"	26' 7"	46'
MAG 1416F	85	94	3010	2559	14' 1"	27' 7"	46'
MAG 1420F	103	113	3633	3089	14' 1"	31' 7"	51'
MAG 1608F	69	76	2434	2069	16' 0"	21' 10"	41'
MAG 1612F	92	101	3238	2753	16' 0"	25' 10"	46'
MAG 1615F	109	120	3841	3265	16' 0"	28' 10"	51'
MAG 1616F	114	126	4042	3436	16' 0"	29' 10"	51'
MAG 1620F	137	151	4847	4120	16' 0"	33' 10"	61'
MAG 1624F	159	176	5651	4804	16' 0"	37' 10"	61'
MAG 1625F	165	182	5852	4975	16' 0"	38' 10"	71'
MAG 1628F	180	199	6389	5431	16' 0"	40' 11"	71'

Model Number	Fertilizer		Capacity		Diameter	Height	Auger Length
	Tonnes	Tons	(Cu. Ft.)	(Bu.)			
MAG 1630F	191	211	6791	5773	16' 0"	42' 11"	71'
MAG 1632F	203	223	7193	6115	16' 0"	44' 11"	79'

Magnum-F Hopper Epoxy Lined Fertilizer Storage Bins (55 Degree Bottom Cone)

Bin Includes Sidewall & Roof Ladders, 24" Top Opening, Bottom Inspection Hatch, 19" Discharge Stainless Steel R&P Slide Gate, Sight Glass(es).

Model Number	Fertilizer		Capacity		Diameter	Height	Auger Length
	Tonnes	Tons	(Cu. Ft.)	(Bu.)			
MAG 120455F	30	33	1035	880	12' 6"	18' 5"	36'
MAG 120855F	43	48	1526	1298	12' 6"	22' 5"	41'
MAG 121255F	57	63	2017	1715	12' 6"	26' 5"	46'
MAG 121655F	71	78	2508	2132	12' 6"	30' 5"	51'
MAG 141055F	65	72	2291	1948	14' 1"	25' 7"	46'
MAG 141255F	74	81	2603	2213	14' 1"	27' 7"	46'
MAG 141555F	87	96	3070	2610	14' 1"	30' 7"	51'
MAG 141655F	91	101	3226	2743	14' 1"	31' 7"	61'
MAG 142055F	109	120	3849	3272	14' 1"	35' 7"	61'
MAG 161255F	100	111	3554	3021	16' 0"	30' 1"	51'
MAG 161555F	117	129	4157	3534	16' 0"	33' 1"	61'
MAG 161655F	123	136	4358	3705	16' 0"	34' 1"	61'
MAG 162055F	146	161	5162	4388	16' 0"	38' 1"	71'
MAG 162455F	168	185	5967	5072	16' 0"	42' 1"	71'
MAG 162555F	174	192	6168	5243	16' 0"	43' 1"	71'

Twin Air Hopper Epoxy Lined Fertilizer Storage Bins (40 Degree Bottom Cone)

Bin Includes Sidewall & Roof Ladders, 24" Top Opening, 19" Top Manway, 19" Discharge Stainless Steel R&P Slide Gate, Sight Glass(es).

Model Number	Fertilizer		Capacity		Diameter	Height	Auger Length
	Tonnes	Tons	(Cu. Ft.)	(Bu.)			
1408T	53	58	1870	1582	14' 1"	21' 6"	41'
1412T	71	78	2493	2120	14' 1"	25' 6"	46'
1416T	88	97	3116	2660	14' 1"	29' 6"	51'
1612T	95	104	3343	2821	16' 0"	27' 10"	46'
1616T	117	129	4148	3500	16' 0"	31' 10"	61'

Steel Foundations

Model Number	Suggested Bin Models
294105	Foundation Assembly (1 Ring) 1204F, 120455F
294108	Foundation Assembly (2 Rings) 1208F, 120855F, 1212F
294109	Foundation Assembly (3 Rings) 121255F, 1216F, 121655F
294102	Foundation Assembly (2 Rings) 1404F, 1408F, 1408T, 1410F, 141055F, 1412F, 141255F, 1412T
294103	Foundation Assembly (3 Rings) 1415F, 141555F, 1416F, 141655F, 1416T, 1420F, 142055F
294040	Foundation Assembly (2 Rings) 1608F, 1612F, 161255F, 1612T, 1615F, 161555F, 1616F, 161655F, 1616T
294041	Foundation Assembly (3 Rings) 1620F, 162055F
294042	Foundation Assembly (3 Rings HD) 1624F, 162455F, 1625F, 162555F
294043	Foundation Assembly (3 Rings HHD) 1628F, 1630F, 1632F

NOTE: Bulk density of fertilizer will vary from 55 to 65 lb/cu.ft. depending upon the blend and manufacturer. Westeel calculates the capacity by using 62 lb/cu. ft. If you purchase fertilizer and want to be sure that it can be stored in the bin, please ask the manufacturer of the fertilizer to provide you its bulk density. Take this number and multiply by the cu. ft. capacity of the bin for an exact tonnage rating.

*Please see Program for information on the Smoothwall Freight.

*Check with Westeel Customer Service for details.

7.2. Magnum-G™

Magnum-G Hopper Grain Storage Bins — Non-Epoxy Lined (40 Degree Bottom Cone)

Bin Includes Sidewall & Roof Ladders, 24" Top Opening, Bottom Inspection Hatch, 19" Discharge R&P Slide Gate & Sight Glass(es).

Model Number	Grain Tons	Feed Tons	Capacity		Diameter	Height	Auger Length
			(Cu. Ft.)	(Bu.)			
MAG 1204G	23	18	884	752	12' 6"	15' 1"	36'
MAG 1208G	36	28	1375	1169	12' 6"	19' 1"	36'
MAG 1212G	49	38	1866	1587	12' 6"	23' 1"	41'
MAG 1216G	62	48	2357	2004	12' 6"	27' 1"	46'
MAG 1404G	30	23	1141	970	14' 1"	15' 7"	36'
MAG 1408G	46	36	1764	1500	14' 1"	19' 7"	36'
MAG 1410G	54	42	2076	1765	14' 1"	21' 7"	41'
MAG 1412G	63	48	2387	2029	14' 1"	23' 7"	41'
MAG 1415G	75	58	2855	2427	14' 1"	26' 7"	46'
MAG 1416G	79	61	3010	2559	14' 1"	27' 7"	46'
MAG 1420G	95	73	3633	3089	14' 1"	31' 7"	51'
MAG 1608G	64	49	2434	2069	16' 0"	21' 10"	41'
MAG 1612G	85	65	3238	2753	16' 0"	25' 10"	46'
MAG 1615G	100	77	3841	3265	16' 0"	28' 10"	51'
MAG 1616G	106	81	4042	3436	16' 0"	29' 10"	51'
MAG 1620G	127	97	4847	4120	16' 0"	33' 10"	61'
MAG 1624G	147	114	5651	4804	16' 0"	37' 10"	61'
MAG 1625G	153	118	5852	4975	16' 0"	38' 10"	71'
MAG 1628G	167	128	6389	5431	16' 0"	40' 11"	71'
MAG 1630G	177	136	6791	5773	16' 0"	42' 11"	71'
MAG 1632G	188	144	7193	6115	16' 0"	44' 11"	79'

Magnum-G Hopper Grain Storage Bins — Non-Epoxy Lined (55 Degree Bottom Cone)

Bin Includes Sidewall & Roof Ladders, 24" Top Opening, Bottom Inspection Hatch, 19" Discharge R&P Slide Gate & Sight Glass(es).

Model Number	Grain Tons	Feed Tons	Capacity		Diameter	Height	Auger Length
			(Cu. Ft.)	(Bu.)			
MAG 120455G	27	21	1035	880	12' 6"	18' 5"	36'
MAG 120855G	40	31	1526	1298	12' 6"	22' 5"	41'
MAG 121255G	53	41	2017	1715	12' 6"	26' 5"	46'
MAG 121655G	66	51	2508	2132	12' 6"	30' 5"	51'
MAG 141055G	60	46	2291	1948	14' 1"	25' 7"	46'
MAG 141255G	68	53	2603	2213	14' 1"	27' 7"	46'
MAG 141555G	80	62	3070	2610	14' 1"	30' 7"	51'
MAG 141655G	84	65	3226	2743	14' 1"	31' 7"	61'
MAG 142055G	101	77	3849	3272	14' 1"	35' 7"	61'
MAG 161255G	93	72	3554	3021	16' 0"	30' 1"	51'
MAG 161555G	109	84	4157	3534	16' 0"	33' 1"	61'
MAG 161655G	114	88	4358	3705	16' 0"	34' 1"	61'
MAG 162055G	135	104	5162	4388	16' 0"	38' 1"	71'
MAG 162455G	156	120	5967	5072	16' 0"	42' 1"	71'
MAG 162555G	161	124	6168	5243	16' 0"	43' 1"	71'

Twin Air Hopper Grain Storage Bins - Non-Epoxy Lined (40 Degree Bottom Cone)

Bin Includes Sidewall & Roof Ladders, 24" Top Opening, 19" Top Manway, 19" Discharge R&P Slide Gate & Sight Glass(es).

Model Number	Grain Tons	Feed Tons	Capacity		Diameter	Height	Auger Length
			(Cu. Ft.)	(Bu.)			
1412TG	65	50	2493	2120	14' 1"	25' 6"	46'

Super Twin Air Hopper Grain Storage Bins — Non-Epoxy Lined (40 Degree Bottom Cone)

Bin Includes Sidewall & Roof Ladders, 24" Top Opening, 19" Top Manway, 19" Discharge R&P Slide Gate & Sight Glass(es).



Model Number	Grain Tons	Feed Tons	Capacity		Diameter	Height	Auger Length
			(Cu. Ft.)	(Bu.)			
1612TG	95	104	3343	2821	16' 0"	27' 10"	46'
1616TG	117	129	4148	3500	16' 0"	31' 10"	61'

Steel Foundations

Model Number	Suggested Bin Models
294105	Foundation Assembly (1 Ring) 1204G, 120455G
294108	Foundation Assembly (2 Rings) 1208G, 120855G, 1212G
294109	Foundation Assembly (3 Rings) 121255G, 1216G, 121655G
294102	Foundation Assembly (2 Rings) 1404G, 1408G, 1410G, 141055G, 1412G, 141255G, 1412TG
294103	Foundation Assembly (3 Rings) 1415G, 141555G, 1416G, 141655G, 1420G, 142055G
294040	Foundation Assembly (2 Rings) 1608G, 1612G, 161255G, 1612TG, 1615G, 161555G, 1616G, 161655G, 1616TG
294041	Foundation Assembly (3 Rings) 1620G, 162055G
294042	Foundation Assembly (3 Rings HD) 1624G, 162455G, 1625G, 162555G
294043	Foundation Assembly (3 Rings HHD) 1628G, 1630G, 1632G

NOTE: Grain bin capacities are based on 52 lb/cu.ft.
Feed bin capacity are based on 40 lb/cu.ft.

*Please see Program for information on the Smoothwall Freight.

*Check with Westeel Customer Service for details.

8. Westeel Warranty: Smoothwall Bins

The manufacturer warrants each new Smoothwall Hopper Bin manufactured by it to be free from defects in material or workmanship from date of manufacture as follows:

- Structural: 10 years
- Paint (standard farm use): 5 years
- Paint (commercial use): 1 year

If such a defect is found by the Manufacturer to exist within the warranty period, the Manufacturer will, at its option, repair or replace such product free of charge, F.O.B. the factory of manufacture.

CONDITIONS AND LIMITATIONS

1. The product must be installed, operated and maintained in accordance with instructions published by the Manufacturer. Failure to do so will void the warranty.

The purchaser must inspect the product on a semi-annual basis. Paint nicks, scratches, etc are be touched up with the paint kit provided with the bin. Additional touch up paint is available from your local Westeel dealer at a reasonable cost.

2. Warranty is void if the customer combines structural components (storage bin, steel foundation) produced and incorporated into the system from another manufacturer.
3. Malfunctions or failure resulting from misuse, abuse, negligence, alteration, accident, lack of proper maintenance or vacuum collapse shall not be considered defects under this warranty.
4. The warranty will be voided if the structure is modified, has attachments to it not approved by Westeel, or has attachments approved by Westeel that have been improperly installed. In all cases Westeel shall determine what constitutes proper Installation of approved accessories.

The Manufacturer shall not be liable for any consequential or special damage which any purchaser may suffer or claim to suffer as a result of any defect in the product. "Consequential" or "Special Damages" as used herein include, but are not limited to, lost or damaged products or goods, costs of transportation, lost sales, lost orders, lost income, increased overhead, labor and incidental costs and operational inefficiencies.

This warranty constitutes the manufacturer's entire and sole Warranty and the manufacturer expressly disclaims any and all other warranties, including but not limited to express and implied warranties as to merchantability, fitness for particular purposes sold and description or quality of the product furnished hereunder.

An officer of the company must authorize any exceptions to this warranty in writing, The manufacturer reserves the right to change models and specifications at any time without notice or obligation to improve previous models.





Westeel Saskatoon

Box 1370, North Corman Industrial Park
Saskatoon, Saskatchewan, S7K 3P5 Canada
Phone: (800) 667-1161

Westeel Nobleford

Box 94, 215 Barons Street
Nobleford, Alberta, T0L 1S0 Canada
Phone: (800) 565-2840

Website: www.westeel.com

Email: info@westeel.com

©Ag Growth International Inc. 2017

Printed in Canada

