

# MERIDIAN<sup>®</sup>

## OWNER'S MANUAL



## CORRUGATED HOPPER COMBOS



# WARRANTY REGISTRATION FORM



**Attention Dealers:**

You can register products online through the Dealer Login: <http://dealers.meridianmfg.com/login/>

It is mandatory to register your product in order to qualify for future warranties that may arise. Knowingly falsifying information on this form will result in the voiding of the product warranty.

You may scan/photograph this completed form (must be legible), email it to: [register@meridianmfg.com](mailto:register@meridianmfg.com)  
A copy of this form may also be mailed to Meridian Manufacturing Inc.

Buyer's Name _____	Dealer's Name _____
Address _____	Address _____
City, Prov/State _____	City, Prov/State _____
Postal Code/Zip Code _____	Postal Code/Zip Code _____
Phone Number _____	Phone Number _____

**Note:** Registering a product in multiple entry format is only allowed when the product has the same model number and the same dealer, however each serial number must be legibly listed for each unit. Delivery dates for a multiple entry must be within a one month time frame.

Product Information: \_\_\_\_\_

Model Number _____	Serial Number _____
Invoice Date _____	

**Important:** Please send this form to the Meridian Manufacturing Inc. location which built this product being registered. If you require further assistance call you're dealer or the Meridian® outlet nearest to your location.

We want to thank you for purchasing a Meridian® manufactured product. Whether this is your first Meridian® purchase or you have been a customer for years, you are now part of the Meridian® community of customers and we appreciate your business.

It is important that you now complete the product registration information and this form indicating you have received delivery. This registration and information is necessary to ensure you have access to warranty and product updates in the event it be required in the future.

Registration can be completed by using this form or visiting your dealer who will complete the form online. You will be given access to the Meridian® Community and become eligible for updates, special offers and prizes.

Again thank you for choosing Meridian.

I have thoroughly instructed the buyer on the above described equipment. The review included the content of this manual, equipment care, adjustments, safe operation and warranty policy.

Date \_\_\_\_\_ Dealer's Signature \_\_\_\_\_

The above equipment and this manual have been received by me. I have been thoroughly instructed as to care, adjustments, safe operation and applicable warranty policy.

Date \_\_\_\_\_ Buyer's Signature \_\_\_\_\_

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## Section 1: INTRODUCTION

Congratulations on your choice of a Meridian Manufacturing Inc. Corrugated Hopper Combo for your grain storage needs.

This product has been designed and manufactured to meet the exacting standards for such equipment in the agricultural industry and will keep your operation working at optimum efficiency.

Safe, efficient and trouble free usage of your corrugated bin(s) requires that you and anyone else who will be working with or maintaining the bin, read and understand the Safety, Usage and Maintenance information contained within this manual.

Keep this manual handy for future reference. Call your Meridian® dealer or distributor if you need assistance, information or additional/replacement copies, or a digital copy of this document.

Information provided herein is of a descriptive nature. Consistent with Meridian's policy of continued research and development of our products, we reserve the right to modify the equipment design and specifications and change information contained in this publication without any preliminary notice.

Bin specifications, features and available options may vary depending on the region.

### 1.1 SERIAL NUMBER

The serial number is located above the safety decals, on the hopper leg where the crank is attached.

Have the serial number available when communicating with the dealer or factory and requesting service or asking for information.

Use the space provided for easy reference.

Bin Model No: \_\_\_\_\_

Bin Serial No: \_\_\_\_\_



Fig 1 - Serial number location on hopper leg

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## Section 2: SAFETY

- 3 Big Reasons why safety is important to you:
- Accidents Disable and Kill
  - Accidents Cost
  - Accidents Can Be Avoided



The Safety Alert Symbol identifies important safety messages on the bin and in this manual.

The following signal words are used in this manual to express the degree of hazard for areas of personal safety.

When you see the symbol and/or the signal words described below, obey the accompanying message to avoid possible injury or death.



Indicates a hazardous situation that, if not avoided, will result in death or serious injury. This signal word is limited to the most extreme situations. Typically for machine components which, for functional purposes, cannot be guarded.



Indicates a hazardous situation, if not avoided, could result in death or serious injury. This word identifies hazards that are exposed when guards are removed. It may be used to alert against unsafe practices.



Indicates a hazardous situation, if not avoided, could result in minor or moderate injury. It may be used to alert against unsafe practices.



Indicates practices or situations which may result in the malfunction of, or damage to equipment.



Safety instructions (or equivalent) signs indicate specific safety-related instructions or procedures.

## 2.1 SAFETY ORIENTATION

YOU are responsible for the SAFE usage and maintenance of your Meridian® Corrugated Hopper Combo. Be sure that everyone who will maintain or work around it, is familiar with the safety, maintenance procedures.

This manual will take you step-by-step through your working day. It will alert you to all the safe practices that should be adhered to while using the bin.

It has been said, "The best safety feature is an informed, careful worker" Good safety practices not only protect you but also the people around you. Make these practices a dynamic part of your workday.


Most accidents can be prevented. Do not risk injury or death by ignoring good safety practices.

- Bin owners must give instructions to employees before allowing them to use the bin.


Procedures must be reviewed annually thereafter, as per OSHA (Occupational Safety and Health Administration) regulation 1928.57.


- Develop a comprehensive safety program for your work area.
- The most important safety device is a SAFE worker. It is their responsibility to understand all safety and usage instructions in this document, and to follow them.
- An untrained worker exposes himself and bystanders to possible serious injury or death.
- Think SAFETY! Work SAFELY!

## 2.2 GENERAL SAFETY

- Read and understand the owner's manual and all safety decals before using or maintaining the bin. 

- Only trained, competent persons shall use the bin. An untrained person is not qualified to use it and operate its auxiliary equipment.

- Have a first-aid kit available for use should the need arise. 

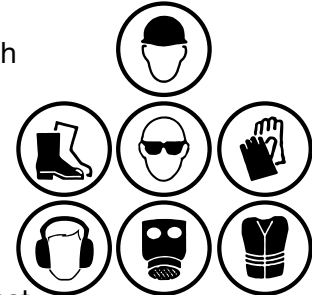
- Provide a fire extinguisher for use in case of an accident. Store in a highly visible place. 


- Use this bin for its intended purpose only.

- This bin is not intended for use by children.

- Wear personal protective equipment (PPE). This list may include but is not limited to:

- Hard hat
- Protective shoes with slip resistant soles
- Eye protection
- Work gloves
- Hearing protection
- Respirator or filter mask
- Hi-Visibility safety vest



- Stay away from power lines. Electrocutation can occur without direct contact. 

- Never use alcoholic beverages or drugs which can hinder alertness or coordination while operating this equipment.

Consult your doctor about operating machine while taking prescription medications.

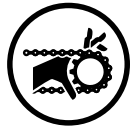
- If the elderly are assisting with farm work, their physical limitations need to be recognized and accommodated.

## 2.3 EQUIPMENT SAFETY GUIDELINES

- Safety of the workers and bystanders is one of the main concerns when designing and developing this bin. However, every year many accidents occur which could have been avoided by a few seconds of thought, and a more careful approach to handling equipment.
- Do not allow personnel to use this bin until they have read this manual. They should have a thorough understanding of the safety precautions.

Review the safety instructions with all users annually.

- In order to provide a better view, certain photographs or illustrations in this manual may show an assembly with safety guards removed.



Equipment should never be operated in this condition. All guards must be in place. If removal becomes necessary for repairs, replace the guard prior to use.

- This equipment is dangerous to children and persons unfamiliar with its operation.

The operator must be responsible, properly trained and physically able. You should be familiar with farm machinery in general.

- Never exceed the limits of a piece of machinery. If its ability to do a job, or to do so safely, is in question - DO NOT TRY IT.
- Do not modify the equipment in any way. Unauthorized modification result in serious injury or death and may impair the function and life of the equipment.

## 2.4 SAFETY DECALS

- Keep safety decals clean/legible at all times.
- Replace safety decals that are missing or have become illegible.
- All safety decals have a part number in the lower right hand corner. Use this part number when ordering replacements.
- Safety decals are available from your authorized distributor, dealer's parts department or from the factory.

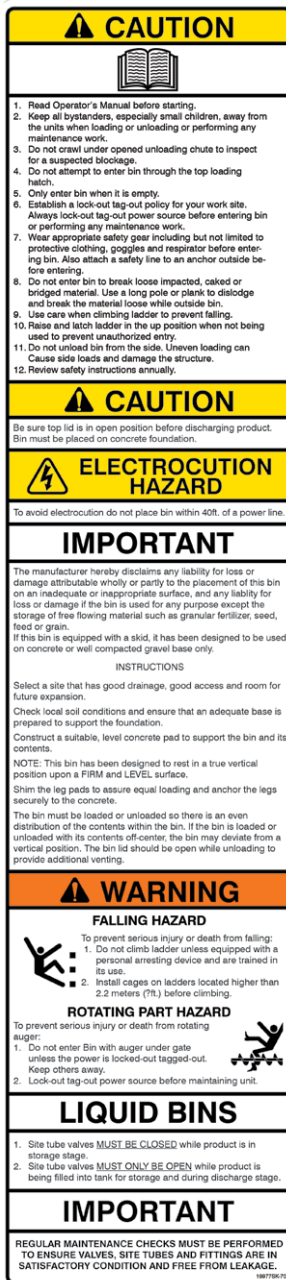
### 2.4.1 Safety Decal Application:

1. Be sure the application area is clean and dry. Ensure the surrounding temperature is above 10°C (50°F).
  - Remove all dirt, grease, wax from the surface.
  - Clean with a non-ammonia based cleaner.
  - Wipe the clean surface with isopropyl alcohol on paper towel, and allow to dry.
2. Determine the exact position before you remove the backing paper.
3. Peel a small portion of the split backing paper.
4. Align the decal over the specified area. Use a squeegee to carefully press the small portion, with the exposed adhesive backing, into place.
5. Slowly peel back the remaining paper and carefully smooth the rest of the decal into place.
6. Small air pockets can be pierced with a pin and smoothed out using the squeegee, or a piece of sign backing paper.

## 2.5 SAFETY DECAL LOCATION

Safety decals are attached to the structure in a visible and convenient location for readability. A safe workplace requires that you familiarize yourself with the information on the decals.

Fig 2 - Safety decal



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## 2.6 WORK PREPARATION

- Mount signage around structure to indicate that this structure is off limits. No unauthorized persons allowed.
- Install and secure all guards on auxiliary loading/unloading equipment be using it.
- **PROLONGED EXPOSURE TO LOUD NOISE MAY CAUSE PERMANENT HEARING LOSS!**

Agricultural equipment can often be noisy enough to cause permanent, partial hearing loss. We recommend that you wear hearing protection on a full-time basis if the noise in the operator's position exceeds 80 db.



Noise over 85 db on a long-term basis can cause severe hearing loss.



Noise over 90 db adjacent to the operator over a long-term basis may cause permanent, total hearing loss.

**Note:**

Hearing loss from loud noise (tractors, chain saws, radios, etc.) is cumulative over a lifetime without hope of natural recovery.

- Clear working area of stones, branches or hidden obstacles that might be hooked or snagged, causing injury or damage.
- Work only in daylight or good artificial light.
- Be sure all machine is in a stable position, is adjusted and in good operating condition.
- Ensure that all safety guards and safety decals are properly installed and in good condition.
- Before starting, inspect all equipment for any loose bolts, worn parts, cracks, leaks or frayed belts. Make the necessary repairs.

## 2.7 OPERATING SAFETY

- Make sure that anyone who will be using the bin or working on or around it reads and understands all the operating, maintenance and safety information in the owner's manual.
  - Keep all bystanders, especially children, away from the bin when loading or unloading is being done, or when authorized personnel are carrying out maintenance work.
  - Do not crawl under the opened unloading chute to inspect for a suspected blockage. This is an unsafe practice. Caked or impacted product could suddenly break loose and cause facial and/or eye injury.
  - Do not attempt to enter the bin through the top loading hatch. This opening is designed for loading the bin only and not for human entry.
  - Use the optional roof manhole only for entry into the bin and only when the bin is empty for cleaning purposes.
  - If you enter the bin, make sure that there is no possibility that either loading or unloading auger could be started up. Lock out the power sources for all auxiliary equipment and have a responsible, trained person close at hand to keep unauthorized individuals away from the work area.
  - Enter the empty bin with extreme caution. Wear protective clothing, goggles and a properly filtered respirator mask to guard against chemical vapour or residual dust. 
- Do not enter the bin to break loose impacted, caked or bridged material. You could fall through the bridged material if you are trying to clear it from the top. Or have it cave in on you from the bottom. Either situation could result in you being buried in the falling material and suffocating.
  - If material is bridged or caked causing a blockage. Use a long pole, a length of board to break the material loose.
  - Be very careful when climbing up or down the exterior ladder. Remove excess mud or other material from your footwear that could cause slipping. 
  - The optional roof manhole should not be used to load or unload material. This will cause the material to be off center, either piling up or emptying unevenly to one side of the bin. This uneven stressing of the bin could cause structural damage.

Connect a safety line to yourself and have a responsible, trained person outside, holding the line, in case of an emergency.

## 2.8 MAINTENANCE SAFETY

- Good maintenance is your responsibility. Poor maintenance is an invitation to trouble.
- Follow good shop practices:
  - Keep service area clean and dry.
  - Be sure electrical outlets and tools are properly grounded.
  - Use adequate light for the job.
- Create a Lock-Out Tag-Out program for the auxiliary equipment used to load and unload the bin.
- These bins can store a variety of products and each site is different. It is important to develop an applicable maintenance program to suit your specific work place.
- Do not crawl under the opened unloading chute to inspect for a suspected blockage. Product could suddenly break loose and cause facial and/or eye injury.
- If you enter the bin, make sure that there is no possibility that the loading or unloading auger could be started up. Lock out the power sources for all equipment and have a responsible, trained person close at hand to keep unauthorized individuals away from the work area.
- Enter the empty bin with extreme caution, it is a confined space.
  - Wear protective clothing, and a properly filtered respirator mask to protect against chemical vapour or residual dust.
  - Connect a safety line to yourself and have a responsible, trained person outside, close at hand to assist in an emergency.
- Use personal protective equipment (PPE) such as eye, hand, breathing and hearing protectors, when performing any service or maintenance work.



- A fire extinguisher and first aid kit should be kept readily accessible while performing maintenance on this equipment.
- Periodically tighten all bolts, nuts and screws and check that all cotter pins are properly installed to ensure the bin and auxiliary equipment are secure.
- When completing a maintenance or service function, make sure all safety shields and devices are installed before placing unit in service.



## 2.9 LOCK-OUT TAG-OUT SAFETY

- Establish a formal Lock-Out Tag-Out program for your work site.
- Train all operators and service personnel before allowing them to work around the area.
- Provide tags on all auxiliary equipment and a sign-up sheet to record tag-out details.

## Section 3: SITE AND INSTALLATION

### WARNING

- Read and understand the owner's manual.
- Clear the area of bystanders, especially children, before starting.
- Prepare the base carefully to be sure the bin is supported evenly to prevent tipping.
- Stay away from power lines when lifting or moving the bin. Electrocutation can occur without direct contact.
- Move the bin on a calm day or light breeze. The bin is a large, hard-to-handle object that can easily be caught and moved by the wind.
- Use extra care when moving bin. Never move a bin with product in it.
- Use only an approved hoist, crane or other lifting system when positioning bin.
- Secure, anchor the base when positioned.

### 3.1 BIN LOCATION

Unless otherwise specifically provided in writing, Meridian® does not take responsibility for any defects or damages to any property, or injury to any persons, arising from or related to any site or assembly considerations, including but not limited to:

- Bin location and bin siting.
  - Soil conditions and corresponding foundation requirements.
  - Field modifications or equipment additions that affect the bin structure.
  - Interconnections with neighbouring structures.
  - Compliance with all applicable safety standards, including but not limited to, fall restraint systems (ladders or other systems). Local safety authorities should be contacted as standards vary between jurisdictions.
- It is important that you, the customer, plan the work site to minimize or eliminate the need to move the bin(s) once positioned.
- We recommend that you consult a civil engineer regarding the chosen site, the soil load bearing capacity, proper method of construction and type of concrete pad.
  - Clear area of bystanders, especially children.
  - Use only hoists or cranes with sufficient lift capacity and reach for the bin being positioned.
  - Do not move or transport the bin when it is windy. Wait for a calmer day.
  - Ensure the bin is positioned on a base that has been properly prepared to support the weight and loads of the bin when filled.
  - Electrocutation can occur without direct contact. Do not place bin within 40 ft from power lines.

## 3.2 BIN FOUNDATION

The following foundation specifications shall be interpreted as recommendations only. We recommend that you consult a civil engineer regarding the chosen site. Because of the many variable soil conditions, Meridian Manufacturing Inc. assumes no liability for results arising from the use of the recommendations. However, these minimum standards must be respected to assure bin warranty applicability.

### 1. Gravel Base:

Meridian® hopper combo bins installed with steel skid bases require proper site preparation to prevent damage or possible overturning.

- The site should be in a well-drained location with all silt, organic, and loose soil removed. Topsoil should be excavated to a depth equivalent to the depth of the gravel base specified below.
- Provide a compacted gravel base of sufficient depth and bearing capacity as follows:
  - 21 ft dia. hopper (23 ft max. wall height)
    - 18 in. depth at 4500 lb/ft<sup>2</sup>
  - 24 ft dia. hopper (23 ft max. wall height)
    - 24 in. depth at 5000 lb/ft<sup>2</sup>
  - 27 ft dia. hopper (23 ft max. wall height)
    - 30 in. depth at 6000 lb/ft<sup>2</sup>
- The gravel base should extend beyond the inner and outer perimeter of the foundation a distance equal to the depth of the gravel base.
- The compacted gravel base must be level within  $\pm 3/8$ ". This condition must be maintained even after loading in order to prevent damaging eccentric loading.
- The foundation must contact the gravel base at all points around its perimeter. Gaps between the foundation and the gravel are not acceptable.
- The assembled foundation, hopper, and bin should be anchored to prevent the overturning from wind when empty.

### 2. Concrete Slab:

We recommend that you consult a civil engineer regarding the site you choose, the soil conditions, and soil load bearing capacity. A professional engineer can advise on the proper method of construction and type of concrete slab for your needs.

The best type of base, and the one we recommended, is a concrete slab that is located on well drained, level ground that is capable of supporting the concrete slab and a full bin under all environmental conditions.

The design of a concrete slab is based on varied load bearing specifications for the different sized corrugated bins. Meridian® is not responsible for damage caused by an inadequate concrete slab. It is the responsibility of the owner to ensure that good construction practices are followed to obtain the required load carrying capacity for the slab. A concrete slab built to the proper performance specifications will ensure a long, trouble-free life for the storage system.

Meridian® can provide your engineer with the required information, such as bin design and leg reactions (wind and weight load).

The bin must be bolted to the slab so that all the legs or bolt plates sit evenly and are firmly in contact with the concrete. If the concrete is uneven, full "leg base plate" shims can be used.



### 3.3 CONCRETE SLAB CONSTRUCTION

The following information provides specifications and general guidelines for construction of concrete slabs for supporting bins.

It is very important that close attention be given to site preparation and soil conditions in order to provide a good base for the concrete slab.

Items to be aware of include but are not limited to the following:

#### 1. **Soil Conditions:**

Sod and other organic material must be removed before laying down the gravel fill. Positive drainage must be provided to drain excessive moisture away from the concrete slab.

The concrete slab is designed for load stresses on soils with minimum allowable soil bearing capacity of 1500 psf.

The engineer is not responsible for concrete slab performance on soils with lower than specified bearing capacity or soils that are unsuitable for supporting a concrete pad.

Soil conditions should be assessed on the basis of soil tests, or of the performance history of similar structures in your local area.

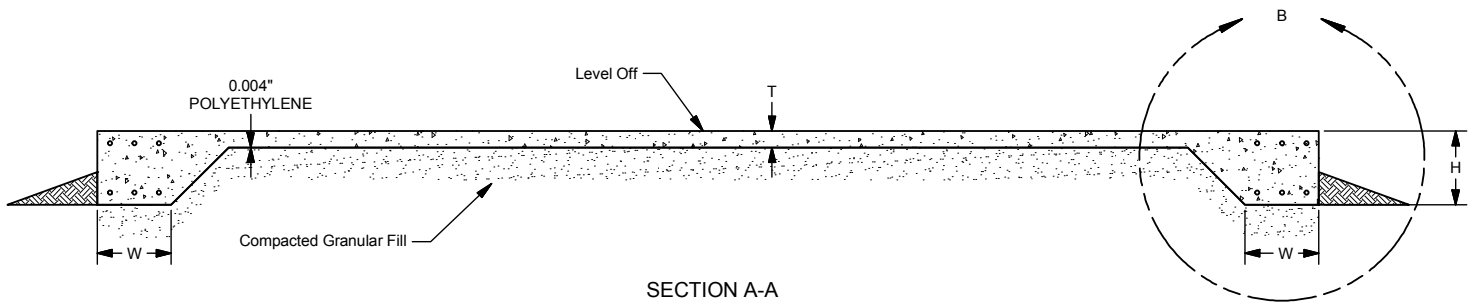
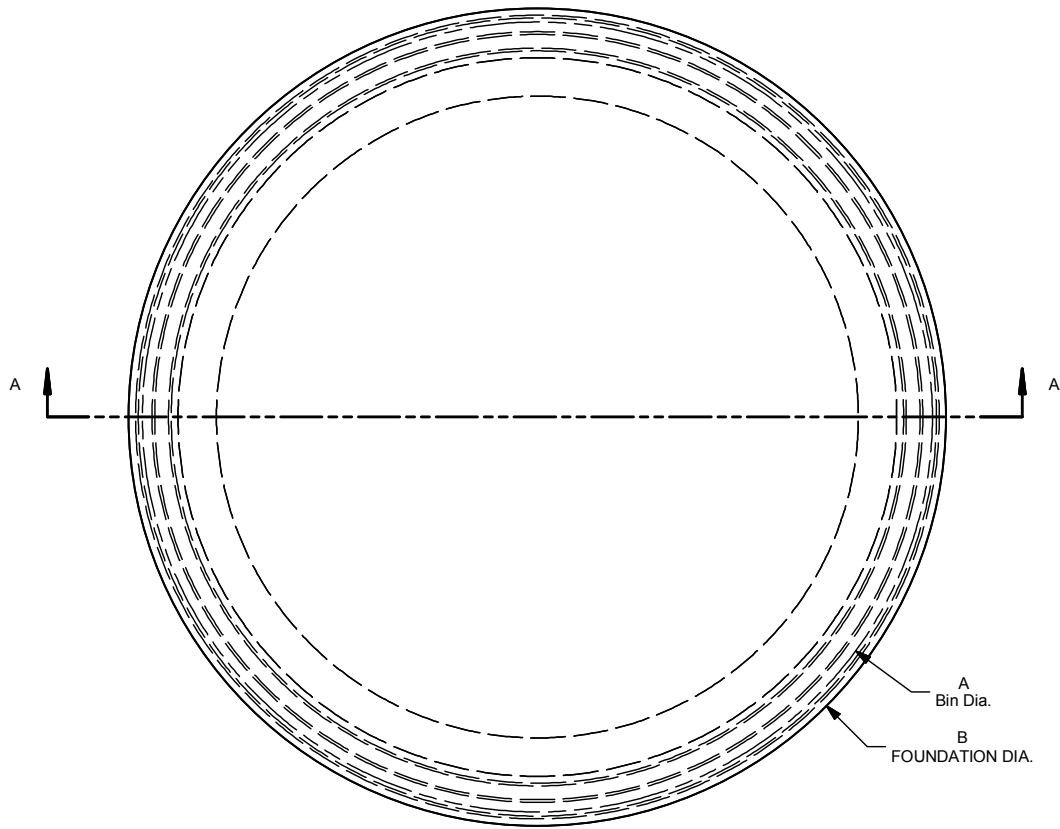
#### 2. **Slab Structures:**

The following specifications must be followed to construct a concrete slab to meet the load and stress carrying requirements:

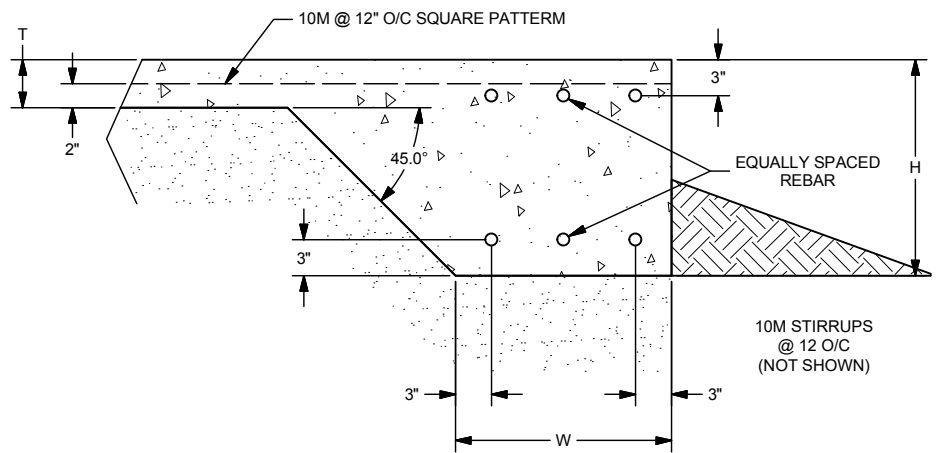
- The concrete must have a minimum 28 day strength of 3000 psi (1361 kg).
- Use sulphate resistant cement where required by soil conditions.
- Do not pour concrete on frozen ground or in an excavation that contains ice, snow, excessive moisture or when the air temperature is below 4°C (40°F).

#### 3. **Foundation Specifications:**

- a. All foundations must be designed on leveled soil with a bearing capacity of 3,000 psf (14,646 kg/m<sup>2</sup>). When in doubt, consult a local engineer or architect.
- b. All soil or organic material on the site of the foundation must be excavated and replaced by porous frost-proof material to provide proper draining under foundation and reduce frosting problems (gravel, sand, ballast, crushed stone). This underlying basis is then compacted and covered with polyethylene plastic which acts as a moisture barrier.
- c. Once the forms have been prepared, begin the placement of reinforcement rods in the foundation (see foundation drawing details). The reinforcement rods offer their greatest strength when they have been joined together, either by weld or wire. 6 x 6" (15.24 x 15.24 cm) wire mesh or 10M (#3) at 12" O/C each way covering the entire area of the foundation, completes preparation before beginning concrete pouring.
- d. Concrete must have a minimum compressive strength of 3,000 psi (20.7 MPa) after 28 days.
- e. Approximative concrete volume quantities found in the corresponding table.
- f. Foundation surface must be level. Columns must be shimmed in uneven circumstances.
- g. Follow general concrete best practices and guidelines. Wait a minimum of 7 days to install the bins on concrete. It is recommended to wait 28 days until filling the combo hopper bin, to ensure full concrete strength is achieved.



SECTION A-A



DETAIL B

COMBO HOPPER CONCRETE DETAILS

Bin Dia. "A"	Foundation Dia. "B"	Rebar (metric)	Rebar (imp.)	"H"	"W"	"T"	Concrete (cubic yards)
15' (4.57m)	17' 6"	3-15M	3-#5	18"	30"	4"	9.0
15' 10" (4.82m)	18' 6"	3-15M	3-#5	18"	30"	4"	10.5
18' (5.49m)	21' 0"	3-15M	3-#5	18"	30"	4"	11.8
21' (6.40m)	24' 0"	3-15M	3-#5	18"	30"	4"	14.4
24' (7.32m)	27' 0"	3-15M	3-#5	18"	30"	4"	17.0
27' (8.23m)	30' 0"	3-15M	3-#5	18"	30"	4"	20.0

- NOTES:
- MAXIMUM SIDEWALL HEIGHT = 23'-0" (6 RINGS)
  - MAXIMUM PRODUCT BULK DENSITY = 50 PCF

### 3.4 INSTALLATION

Care must be used when moving, lifting and installing the bin. Installation instructions include but are not limited to:

- Clear the area of bystanders, especially small children.
- Have at least one other trained and responsible person to assist and who, in case of an emergency or accident, can provide assistance or seek assistance.
- Stay away from power lines when lifting or moving the bin. Do not place a bin within 40 ft from power lines.

Electrocution can occur without direct contact.

- Never move a bin that has product in it. The legs, base and supporting structure are not designed with sufficient strength to carry the combined mass. Any structural damage occurring during the move, can lead to more problems or damage when the bin is filled at its final position.
- Do not use tow hooks on a temporary skid base to pull the bin with any product inside. Because of the inherent high centre of gravity and the pulling force that would be concentrated at the tow hooks, the bin would tip over, creating a safety hazard.
- If the unit must be pulled, make sure that it is completely empty and that the area that it will be pulled over is firm, level and contains no obstructions. Proceed with extra caution. The bin is top heavy, having a high centre of gravity and can tip easily.
- Use only a crane, hoist or lift with sufficient load carrying and reach capacity. It must have the appropriate stability to raise, move, position and lower the bin.

- It is recommended that installing the bin be done on a calm day or one with light winds. A bin is a large, hard-to-handle object that can easily be caught and moved by the wind.

**Note:**

It is easier to position the top lid before placing the bin than after.

- Determine where the auger or conveyor will be when loading the bin. The position of this equipment will determine the rotation of the top lid, covering the loading hatch, at the peak of the bin. The lid will need to be opened and out of the way of the loading equipment.
  - Loosen the lid clamping bolts and rotate it to the required position prior to securing the bin into its permanent position.
  - Tighten the clamping bolts to their specified torque and tie the rope to the lid handle.
- Be sure the base cannot move.
  - Stake the skid plate when equipped with a temporary base.
  - Bolt the base to the permanent concrete pad.

If the base can move, it can lift or slide which leads to tipping.



Fig 3 - Unloading bin

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## Section 4: OPERATION

### **WARNING**

- Read and understand the owner's manual.
- Keep all bystanders, especially small children, away from bin(s) when loading, unloading or performing maintenance work.
- Do not unload bin from the side. Uneven loading can cause side loads and damage the structure.
- Do not crawl under opened unloading chute to inspect for a suspected blockage.
- Use a long pole or plank to dislodge and break the material loose while outside bin.
- Do not attempt to enter bin through the top loading hatch.
- Only enter bin when it is empty.
- Wear appropriate safety gear including but not limited to protective clothing, goggles and respirator before entering bin. Attach a safety line to an anchor outside.
- Use care when climbing ladder to prevent falling.
- Raise and latch ladder in the up position when not being used to prevent unauthorized use.

This Meridian® Hopper Combo is designed to be used in with grain storage operation. There is a wide variety of options and auxiliary equipment which can be used to load and unload product.

It is the responsibility of the owner and users to be familiar with the bin(s) and all the auxiliary loading/unloading equipment before starting. Read the equipment manuals and train all personnel before they start working with the machine. Follow all safety instructions exactly - it is everyone's business. By following the recommended procedures, a safe working environment is provided for the workers and bystanders in the work site.

The design and configuration of this bin includes safety decals. Hazard controls and accident prevention are dependent upon the personnel working with and maintaining it. Their awareness, concern, prudence and proper training are crucial.

Many features incorporated into this bin are the result of suggestions made by customers like you.

By following these instructions, in conjunction with a good maintenance program, your bin will provide many years of trouble free storage.

## 4.1 COMPONENTS AND CONTROLS

Bin specifications, components and available options may vary depending on the region. The location of components and options may vary and change without notice.

### One Piece Cone Hopper:

Cone hoppers are available in one piece. 15 ft diameter bins have a 40° cone, and the 16-21 ft diameter cones have a 35° cone.

### Split Hopper Cone:

Split hopper cones are available for 24 ft and 27 ft diameter bins. They have a 35° cone.

These hopper cones have bolt-on legs.

### Unloading Chute with Slide Gate:

The unloading chute at the base of the cone comes with a rack and pinion slide gate assembly. A crank is used to work the gate.



Fig 4 - Open piece hopper with skid base



Fig 5 - Split hopper cone



Fig 6 - Unloading chute with slide gate and crank

**⚠ WARNING**  
FALLING HAZARD  
Use extreme caution when climbing.

**Sidewall and Roof Ladder:**

Each Bin is designed and built with a ladder that reaches the loading hatch, at the top of the bin. One section of ladder is connected to each corrugated ring.



Fig 7 - Roof ladder

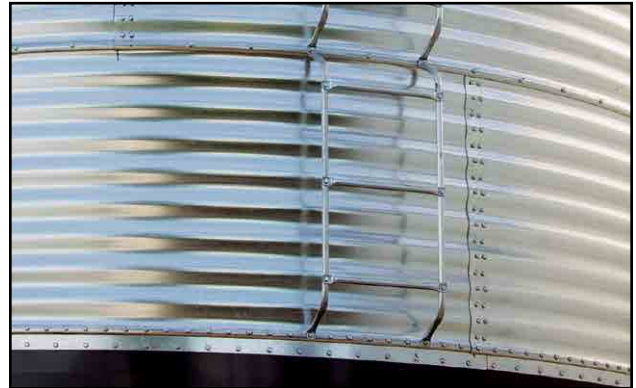


Fig 8 - Sidewall ladder

**27" Bin Lid:**

The lid, covering the 27 inch loading hatch, is spring-loaded and has a remote lid opener.

A cable is attached to the lid, extends down to the ground, and is connected to a leg. Pull it to open the lid, release it to close.



Fig 9 - Loading hatch covered by the lid

**Roof Manhole:**

The manhole is located on the lower edge of the roof, beside the ladder. It can be used as an inspection port.



Fig 10 - Roof manhole

## 4.2 OPTIONAL EQUIPMENT

The location of options may vary and change without notice. Not all options may be available in all regions.

### Ladder Cage:

This cage surrounds the ladder to reduce the chance of falling.



Fig 11 - Ladder cage

### Spiral Staircase:

This staircase is available for 18' to 27' hopper combos.



Fig 12 - Spiral staircase

### Double or Triple Skid:

A double or triple skid base is available to bolt the hopper legs.



Fig 13 - Triple skid

### Bottom Manway:

This access hole is located on the cone and provides access to the interior of the bin. Do not use it to dislodge bridged material inside the bin.



Fig 14 - Bottom manway



**Auger Boot:**

This assembly allows an auger to fit into the bottom cone of the Bin and provides for easy and convenient unloading.

**Utility Auger:**

A utility auger is available for convenient unloading. It is available in 4, 6, 8 and 10 inch diameters. The tube is a standard 16 foot length, and extensions are available.



Fig 15 - Auger boot

**LevALERT® Bin Level Indicator:**

LevALERTs are available for installation on the sidewall of the bin. The indicator turns a bright yellow colour when the product inside the bin reaches that point or is above it.

LevALERTs can be installed at any time, and are available with an optional proximity switch to control lights, alarms, etc.



Fig 16 - LevAlert® bin level indicator

**Additional Options:**

- Roof Vents
- Leg Extensions
- Grain or Feed Boot
- Transitions
- Fan Mounting Brackets

**Note:**

A variety of control systems and switches are available to be used with your storage system for loading and unloading.

Always have a licensed electrician provide the power and controls for your system. All wiring should comply with the ANSI/NFPA 70 electrical requirements.



Fig 17 - Roof vents and stiffeners

### 4.3 MERIDIAN AIRMAX™

Grain normally is harvested when its moisture content is low enough to allow for long term storage without a deterioration in grain quality or spoilage.

Unfortunately, farmers have always faced crop maturity variations, adverse weather conditions and labor shortages that require harvesting before the moisture content of the grain will allow safe, long term storage. Storage problems can range from localized hot spots to complete deterioration and spoilage. Depending on the moisture content, the grain can go down from premium quality until, in the worst case, it is unfit for both human and animal consumption.

Meridian Manufacturing Inc. offers an inexpensive grain drying method called “aeration”. This involves forcing outside air into the bottom of the bin to reduce moisture content, lower the temperature of the material and maintain grain quality. No external heating is required, but a low temperature heater to aid drying in adverse weather conditions is needed. The only extra energy is that needed to force air through the grain.

Meridian® has an optional ducting system that is installed in the factory. They also have a smaller version which can be installed in the field.

The internally mounted rocket provides uniform air flow and drying throughout the bin. The innovative hollow duct design is formed by a self-cleaning perforated metal screen to allow air to disperse through the grain in all directions.

Each customer can chose which ducting system they want for their storage system. Some must be ordered from, and installed at the factory and others can be field installed.

Review the table on the next page, to select the system that works best with your application.

Vertical Aeration One-Piece

Vertical Aeration Sectional



Removable Horizontal Aeration

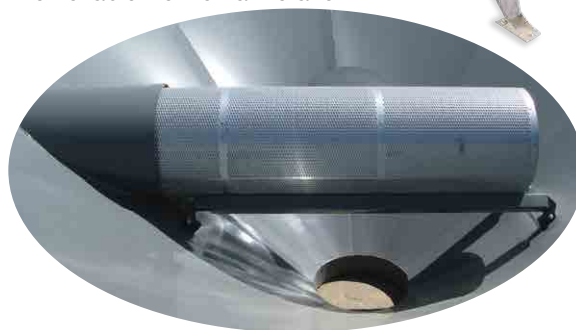


Fig 18 - AirMax™ Aeration systems



Fig 19 - AirMax™ Inline fan



Fig 20 - AirMax™ Centrifugal fan

**Note:**

- Vertical Aeration is available in 30” or 45” diameters.
- Horizontal Aeration is available in 18” or 24” round aeration tubes.
- Order them to be installed in the factory or as a bolt-in sectional kit to be installed into existing hopper bins.

**Table 1 - MERIDIAN AIRMAX™ SPECIFICATIONS**

Models	Max Bin Size (Bushels) <sup>1</sup>	Dimensions	Dia. I.D.	Weight (LB)	Screen Surface (Inches)	Inlet Size and Type	Height into Grain Cavity 35° Cone <sup>3</sup>	Height into Grain Cavity 40° Cone <sup>3</sup>	Height into Grain Cavity 55° Cone <sup>3</sup>
Vertical Aeration – One Piece									
V3004	3500	30” x 4’	20”	385	6299	9” x 14” Rect	n/a	86”	n/a
V3006	5000	30” x 6’	20”	440	9656	9” x 14” Rect	n/a	110”	n/a
V3008	6000	30” x 8’	20”	525	13132	9” x 14” Rect	n/a	134”	n/a
V4504	7000	45” x 4’	30”	580	9301	14” x 17” Rect	n/a	95”	n/a
Vertical Aeration – Sectional (Designed for Retrofitting Existing Hopper Bins and High-Flow Applications) <sup>4</sup>									
VS3004	5000	30” x 4’	20”	420	5245	9” x 14” Rect	80”	86”	99”
VS3006	8000	30” x 6’	20”	500	7990	9” x 14” Rect	104”	110”	123”
VS4504	15000	45” x 4’	30”	600	7925	14” x 17” Rect	88”	95”	116”
VS4506	20000	45” x 6’	30”	745	12100	14” x 17” Rect	112”	119”	140”
Horizontal Aeration (Removable for Fertilizer Storage and Available for Retrofitting Existing Bins)									
H1808	5000	18” x 8’	n/a	155	3478	18” Rnd	38”	44”	n/a
H2408	6500	24” x 8’	n/a	235	4660	24” Rnd	44”	50”	n/a
H2410	6500	24” x 10’	n/a	285	6284	24” Rnd	51”	59”	n/a
H2410-HD	8,500	24” x 10’	24”	360	6284	24” Rnd	51”	59”	n/a
H2412-HD	11,000	24” x 12’	24”	425	7908	24” Rnd	58”	68”	n/a

1. Recommended bushel capacities for Meridian AirMax® system.
2. Recommended bin model(s) for maximum grain drying and aeration results.
3. Distance from gate to top of aeration mechanism.
4. Meridian AirMax™ Sectional system is an exclusive and unique aeration product allowing installation of vertical aeration in existing hopper bins. This unit is built heavier than the one-piece Meridian AirMax®, withstanding weights up to 20,000 bushels.

## 4.4 LOADING

The bin(s) are designed to be easy to load with product. This list of general guidelines will help you in the loading process:

- A spring-loaded lid covers the loading hatch and can be opened from the ground by pulling on the cable provided. The lid will automatically close when the cable is released.
- The lid can be rotated to open in any direction. Before erecting the bin, decide on the opening direction and make the adjustment. This will be more convenient than waiting until the bin is set in place.

### NOTICE

#### STRUCTURAL DAMAGE HAZARD

Do not load bin off-centred.

Side piling will cause structural damage.

- A bin should always be centre loaded and unloaded to prevent uneven stresses caused by product piling up on one side and emptying from the other. Over-stressing in this manner will cause eventual structural damage. The loading hatch at the peak of the bin will facilitate centre-loading.
- The unloading chute at the base of the bin is designed to centre unload product.
- Do not, under any circumstances, attempt to use the optional roof manhole as either a loading port. The material will pile up unevenly, creating a situation that could cause damage to the bin.



Fig 21 - Loading the bin

## 4.5 UNLOADING

The standard hopper combo is designed with two feet of clearance at the bottom of the cone to provide room for unloading equipment. Use auxiliary unloading equipment as appropriate for your storage system.

A general list of guidelines to be followed include but are not limited to:

### NOTICE

#### IMPLOSION HAZARD

Check that all air vents are clear and open before emptying tank.

- Remember to regularly inspect the air vents to be sure they are not clogged.
- To unload product from the bin, use the crank to open the slide gate below the chute. The emptying rate is determined by how far the slide gate is opened.

Optional permanent auger mounts and boots to enclose the unloading chute are available to complement the functioning of your storage bin.

- If product cakes to the side, an uneven stress is generated on the bin structure and could cause structural damage. In most cases, banging the side of the bin with a rubber mallet will loosen the product. Another option is to use a long pole or piece of wood through the inspection manhole to break the caked material free.
- Do not crawl under an opened unloading chute to inspect for a suspected blockage. Caked or impacted product could suddenly break loose and cause facial, body and/or eye injury.

- Do not attempt to enter the bin through the loading hatch at the peak. This opening is designed for loading the bin only and not for human entry.
- Enter the roof manhole only when the bin is empty, for cleaning purposes.
- Use the bottom manway to enter the bin only when it is empty, for cleaning purposes.
- If you enter the bin, make sure that there is no possibility that the loading/unloading auger could be started up.

#### IMPORTANT:

Lock-Out Tag-Out the power sources to all auxiliary equipment and have a responsible, trained person close at hand to keep unauthorized individuals away from the work area.

- Enter the empty bin with extreme caution. Wear protective clothing, goggles for eye protection and a properly filtered respirator mask for lung protection.

It is also good safety practice to connect a safety line to yourself and a secure attachment point outside the bin before entering the enclosed area. Have a responsible, trained person outside to assist in case of an emergency.

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## Section 5: SERVICE AND MAINTENANCE

### **WARNING**

- Read and understand the owner's manual.
- Keep all bystanders, especially small children, away from the bin(s) when performing maintenance work.
- Establish a Lock-Out, Tag-Out program for your work site. Always Lock-Out, Tag-Out equipment before entering the bin or performing any maintenance work
- Do not crawl under opened unloading chute to inspect for a suspected blockage.
- Use care when climbing ladder.
- Do not attempt to enter bin through the top loading hatch.
- Only enter bin when it is empty. Attach a safety line to an anchor outside before entering.
- Wear appropriate personal protective gear, for the task you are performing. Wear a respirator when entering the bin.

Each work site is different. You must develop a service and maintenance program specific to your location and circumstances. You are responsible to ensure that your hopper bottom corrugated bin(s) are compatible with the product which you wish to store.

By following a careful service and maintenance program for your bin(s), you will enjoy many years of trouble-free storage.

### **IMPORTANT:**

If you enter the empty bin, make sure that there is no possibility that loading could start up. Lock-Out, Tag-Out all auxiliary equipment. A responsible, trained person must be close at hand for assistance.

### **WARNING**

#### **CONFINED SPACE HAZARD**

Enter the empty bin with extreme caution. Wear protective clothing, and a properly filtered respirator mask. Connect a safety line to yourself and have a responsible, trained person outside to assist in an emergency.

## 5.1 CONCRETE SLAB INSPECTION

Check the foundation conditions regularly. Cracks that are more than 1/8 inch wide in the concrete slab indicate significant movement.

Always consult with a professional engineer when foundation problems arise. If severe cracking exists, slab levels should be taken to determine whether any area of the slab is sinking independently.

Subsoil conditions should be monitored to ensure against bearing capacity losses.

## 5.2 BIN INSPECTION

1. Check that the bin lid is not obstructed and can be opened fully.

### **NOTICE**

**IMPLOSION HAZARD**  
Ventilation prevents a vacuum from forming during unloading, which may cause the bin to implode.

2. Inspect any air vent(s) to be sure that they are open and clear of obstructions.
3. Inspect all seams.
4. Tighten all bolts to their specific torques.
5. Use the loading hatch, or roof manhole to visually check inside the bin.
6. When the bin is empty, use the bottom manway in the hopper cone to enter for inspection and cleaning purposes.



## Section 6: REFERENCE

For information not included here, or for a digital copy of this manual, please call your dealer, or Meridian Manufacturing Inc. directly for assistance. Visit our website at: [www.meridianmfg.com](http://www.meridianmfg.com).

### 6.1 BIN SPECIFICATIONS



Fig 22 - 2406 SC Pictured

**Table 2 - CORRUGATED HOPPER COMBO BINS**

Hopper Combo	Bushel Capacity	Diameter	Overall Height (A)	Roof Height (B)	Wall Height (C)	Cone/Skid Height (D)	Bin Weight	Cone/Skid Weight	Overall Weight	Auger Requirement *
1505 SC	3,342	15'	30' 8"	4' 5"	18' 11"	7' 4"	2,986 lb	3,970 lb	6,956 lb	59'
1506 SC	3,909	15'	34' 5"	4' 5"	22' 8"	7' 4"	3,616 lb	3,970 lb	7,586 lb	59'
1604 DC	3,548	15'10"	31' 5"	7' 4"	16' 3-1/2"	7' 9"	2,880 lb	4,090 lb	6,970 lb	59'
1605 DC	4,170	15'10"	35' 2"	7' 4"	20' 1/2"	7' 9"	3,585 lb	4,090 lb	7,675 lb	59'
1805 SC	4,874	18'	32' 11"	5' 1"	18' 11"	8' 6"	3,567 lb	4,680 lb	8,247 lb	59'
1806 SC	5,690	18'	36' 8"	5' 1"	22' 8"	8' 6"	5,421 lb	5,000 lb	10,421 lb	66'
2105 SC	6,804	21'	35' 1"	6' 2"	18' 11"	9' 8"	4,270 lb	7,260 lb	11,530 lb	66'
2106 SC	7,914	21'	38' 10"	6' 2"	22' 8"	9' 8"	5,360 lb	7,260 lb	12,620 lb	66'

**Table 3 - CORRUGATED SPLIT HOPPER COMBO BINS**

Hopper Combo	Bushel Capacity	Diameter	Overall Height (A)	Roof Height (B)	Wall Height (C)	Cone/Skid Height (D)	Bin Weight	Cone/Skid Weight	Overall Weight	Auger Requirement *
2406 SC	10,498	24'	41' 1"	7' 2"	22' 8"	10' 10"	6,213 lb	9,750 lb	15,963 lb	66'
2706 SC	13,643	27'	43' 5"	8' 3"	22' 8"	12' 1"	7,801 lb	11,900 lb	19,701 lb	72'

\* Auger length is based on level ground. If ground slopes away from bin it needs to be taken into consideration

# WARRANTY

1. The manufacturer guarantees its products against any defects in materials or workmanship for a period of twelve (12) months from the date of purchase, provided that the said products are set up according to its instructions and recommendations and also that the said products are operated and used in proper conditions and according to its instructions and recommendations.
2. The manufacturer's responsibility and obligations under this warranty shall be limited to replacement of parts and shall not extend to parts, equipment or accessories that are component parts of the manufacturer's products but that are manufactured by other manufacturers. Those manufacturers' warranty will apply to such parts, equipment or accessories. Any parts set up by reason of the application of this warranty shall be amenable to the terms of this warranty except that the period of twelve (12) months applicable to such parts shall be preemptory and that upon termination of the said period, warranty shall be null and void, for any purpose whatsoever with respect to the said parts substituted to it before the termination of the said period of twelve (12) months.
3. This warranty shall not extend to loss and damage to content of the products, neither to property or loss of revenue. Moreover, it shall not extend to bodily injuries, including death, sustained by any person or animal.
4. The purchaser shall give notice to the manufacturer, without delay, of any damage or defects to its products that he may ascertain before they are set up, otherwise this warranty will not apply to such damage or defects.
5. Any modification or incorporation whatsoever made to products, except those authorized or recommended by the manufacturer, shall void this warranty; this warranty shall not apply to damages resulting from improper installation or erection of products by purchaser.
6. This warranty is the sole and only warranty and it is in lieu of any other warranty, express or implied, statutory or not.
7. Any claim under this warranty shall be notified in writing to the manufacturer's head office within thirty (30) days from the failure.

Specifications and descriptions are subject to change without notice.

Register your product at: [www.meridianmfg.com](http://www.meridianmfg.com)  
For warranty information send an email to: [warranty@meridianmfg.com](mailto:warranty@meridianmfg.com)

## WARRANTY CLAIM PROCEDURE

1. Should you find any factory defects, please advise your dealer immediately.
2. The dealer will supply you, the customer, with a warranty claim form and/or direct you to Meridian's customer service representative.
3. Warranty claims must be completed with ALL required information in order it to be accepted. Send photographs of the entire piece of equipment, and of the specific area of concern.
4. Once the warranty claim has been received by Meridian®, our customer service rep. will contact you. Warranty repair work will only be performed by Meridian® or an approved representative of Meridian®. No warranty work completed prior to approval by Meridian® will be honored. Failure to follow this procedure may affect any or all of this warranty.
5. All warranty claims will be dealt with at the discretion of the Meridian Manufacturing Inc. representative.



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