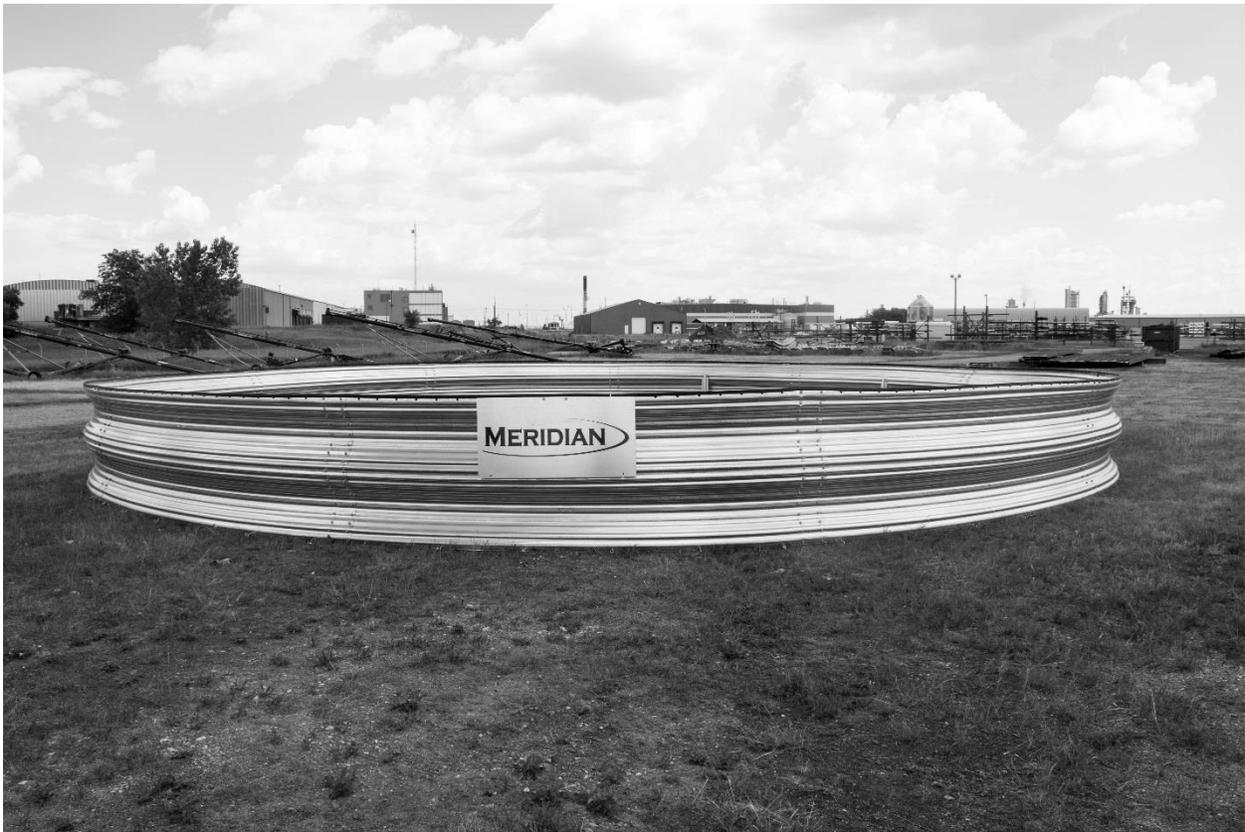


# GRAIN RING ASSEMBLY MANUAL





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## SAFETY ALERT

The Safety Alert symbol identifies important safety messages on the



Behlen Grain Ring and in the manual. When you see this symbol, be alert to the possibility of personal injury or death. Follow the instructions in the safety message.

**This Safety Alert symbol means:  
ATTENTION! BECOME ALERT!  
YOUR SAFETY IS INVOLVED!**

### 3 Big Reasons

1. **Accidents Disable and Kill**
2. **Accidents Cost**
3. **Accidents Can Be Avoided**

### SIGNAL WORDS:

Note the use of signal words **DANGER**, **WARNING** and **CAUTION** with the safety messages. The appropriate signal word for each message has been selected using the following guide lines.

**WARNING** - Indicates a potentially hazardous situation that, if not avoided, could result in death or serious injury, and includes hazards that are exposed when guards are re-moved. It may also be used to alert against unsafe practices.

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

**CAUTION** - Indicates a potentially hazardous situation that, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.

If you have any questions not answered in this manual or require additional copies or the manual is damaged, please contact your dealer or Behlen Industries LP, 927 Douglas Street, Brandon, MB R7A 7B3. (Telephone) 1-888-315-1035, (FAX) 204-725-4932. (Internet) [www.behlen.ca](http://www.behlen.ca)

# SAFETY & GENERAL SAFETY

## SAFETY

**YOU** are responsible for the **SAFE** operation and maintenance of your Meridian Grain Ring. **YOU** must ensure that you and anyone else who is going to operate, maintain or work around the Grain Ring be familiar with the operating and maintenance 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. Be certain that **EVERYONE** operating this equipment is familiar with the recommended operating and maintenance procedures and follows all the safety precautions. Most accidents can be prevented. Do not risk injury or death by ignoring good safety practices.

- Grain Ring owners must give operating instructions to operators or employees before allowing them to operate the machine, and at least annually.
- A person who has not read and understood all operating and safety instructions is not qualified to operate the machine. An untrained operator exposes himself/herself and bystanders to possible serious injury or death. Always be and stay alert to any possible unsafe operating or maintenance procedures or conditions.
- Do not modify the equipment in any way. Unauthorized modification may impair the function and/or safety of the components and systems and could affect the life of the equipment, possibly invalidating the warranty coverage.
- Think SAFETY! Work SAFELY!

## GENERAL SAFETY

1. Read and understand the operator's Manual and all safety signs before operating, maintaining, or adjusting.
2. Have a first-aid kit available for use should the need arise and know how to use it.
3. Have a fire extinguisher available for use should the need arise and know how to use it.
4. Wear appropriate protective gear. This list includes but is not limited to:
  - a. A hard hat
  - b. Protective shoes with slip resistant soles
  - c. Protective goggles, glasses or face shield
  - d. Heavy gloves
  - e. Protective clothing
  - f. Respirator
4. Install and secure all guards before starting.
5. Establish a lock-out tag-out policy for the work site. Be sure all personnel are trained in and follow all procedures. Lock-out tag-out all power sources before entering bin or working around loading/unloading equipment.
6. Clear the area of people, especially small children, before starting.
7. Review safety related items annually with all personnel who will be using or maintaining the bin.

## EQUIPMENT SAFETY GUIDELINES

1. Safety of the operator and bystanders is one of the main concerns in designing and developing a machine. 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. You, the operator, can avoid many accidents by observing the following precautions in this section. To avoid personal injury or death, study the following precautions and insist those working with you, or for you, follow them.
2. In order to provide a better view, certain photographs or illustrations in this manual may show an assembly with a safety shield removed. However, equipment should never be operated in this condition. Keep all shields in place. If shield removal becomes necessary for repairs, replace the shield prior to use.
3. Never use alcoholic beverages or drugs which can hinder alertness or coordination while operating this equipment. Consult your doctor about operating this machine while taking prescription medications.
4. **Under no circumstances should young children be allowed to work with this equipment. Do not allow persons to operate or assemble this unit until they have read this manual and have developed a thorough understanding of the safety precautions and of how it works.** Review the safety instructions with all users annually.
5. This equipment is dangerous to children and persons unfamiliar with its operation. The operator should be a responsible, properly trained and physically able person familiar with farm machinery and trained in this equipment's operations. If the elderly are assisting with farm work, their physical limitations need to be recognized and accommodated. Never exceed the limits of a piece of machinery. If its ability to do a job, or to do so safely, is in question – **DON'T TRY IT.**
6. Do not modify the equipment in any way. Unauthorized modifications result in serious injury or death and may impair the function and life of the equipment.
7. In addition to the design and configuration of this implement, including Safety Signs and Safety Equipment, hazard control and accident prevention are dependent upon the awareness, concern, prudence, and proper training of personnel involved in the operation, transport, maintenance, and storage of the machine. Refer also to Safety Messages and operation instruction in each of the appropriate sections of the auxiliary equipment and machine Manuals. Pay close attention to the Safety Signs affixed to the auxiliary equipment and the machine.

# SAFETY TRAINING & SAFETY SIGNS

## SAFETY TRAINING

1. Safety is a primary concern in the design and manufacture of our products. Unfortunately, our efforts to provide safe equipment can be wiped out by a single careless act of an operator or bystander
2. In addition to the design and configuration of equipment, hazard control and accident prevention are dependent upon the awareness, concern, prudence and proper training of personnel involved in the operation, transport, maintenance and storage of this equipment.
3. It has been said, "The best safety feature is an informed, careful operator." We ask you to be that kind of an operator. It is the operator's responsibility to read and understand ALL Safety and Operating instructions in the manual and to follow these. Accidents can be avoided.
4. Working with unfamiliar equipment can lead to careless injuries. Read this manual, and the manual for your auxiliary equipment, before assembly or operating, to acquaint yourself with the machines. If this machine is used by any person other than yourself, it is the machine owner's responsibility to make certain that the operator, prior to operating:
  - a. Reads and understands the operator's manuals.
  - b. Is instructed in safe and proper use.
5. Know your controls and how to stop augers, conveyors and any other auxiliary equipment quickly in an emergency. Read this manual and the one provided with your other equipment.
6. Train all new personnel and review instructions frequently with existing workers. Be certain only a properly trained and physically able person will operate the machinery. A person who has not read and understood all operating and safety instructions is not qualified to operate the machine. An untrained operator exposes himself and bystanders to possible serious injury or death. If the elderly are assisting with farm work, their physical limitations need to be recognized and accommodated. .

## SAFETY SIGNS

1. Keep safety signs clean and legible at all times.
2. Replace safety signs that are missing or have become illegible.
3. Replaced parts that displayed a safety sign should also display the current sign.
4. Safety signs are available from your authorized Distributor or Dealer Parts Department or the factory.

### How to Install Safety Signs:

- Be sure that the installation area is clean and dry.
- Be sure temperature is above 50°F (10°C).
- Determine exact position before you remove the backing paper.
- Remove the smallest portion of the split backing paper.
- Align the sign over the specified area and carefully press the small portion with the exposed sticky backing in place.
- Slowly peel back the remaining paper and carefully smooth the remaining portion of the sign in place.
- Small air pockets can be pierced with a pin and smoothed out using the piece of sign backing paper.

## PREPARATION

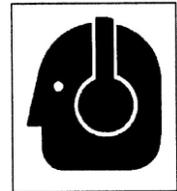
1. Never operate the Grain Ring and auxiliary equipment until you have read and completely understand this manual, the auxiliary equipment Operator's Manual, and each of the Safety Messages found on the safety signs on the Bin and auxiliary equipment.

2. Personal protection equipment including hard hat, safety glasses, safety shoes and gloves are recommended during assembly, installation, operation, adjustment, maintaining, repairing, removal or moving the implement. Do not allow long hair, loose fitting clothing or jewellery to be around equipment.



3. **PROLONGED EXPOSURE TO LOUD NOISE MAY CAUSE PERMANENT HEARING LOSS!**

Motors or equipment attached 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 80db. Noise over 85db on a long-term basis can cause severe hearing loss. Noise over 90db adjacent to the Operator over a long-term basis may cause permanent, total hearing loss.



**NOTE:** Hearing loss from loud noise (from tractors, chain saws, radios, and other such sources close to the ear) is cumulative over a lifetime without hope of natural recovery.

4. Clear working area of debris, trash or hidden obstacles that might be hooked or snagged, causing injury, damage or tripping.
5. Operate only in daylight or good artificial light.
6. Be sure machine is properly anchored, adjusted and in good operating condition.
7. Ensure that all safety shielding and safety signs are properly installed and in good condition.
8. Before starting, give the machine a "once over" for any loose bolts, worn parts, cracks, leaks, frayed belts and make necessary repairs. Always follow maintenance instructions

## OPERATING SAFETY

1. Make sure that anyone who will be operating the Grain Ring or working on or around the unit reads and understands all the operating, maintenance and safety information in the operator's manual.
2. Keep all bystanders, especially children, away from the Grain Ring when loading or unloading is being done, or when authorized personnel are carrying out maintenance work.
3. Do not enter the Grain Ring during loading. This could result in you being buried in the falling material and suffocating.
4. Do not enter the Grain Ring during unloading. You could be caught in the unloading machinery resulting in serious injury or death.
5. If you enter the Grain Ring, make sure that there is no possibility that either the loading or unloading auger could be started up. Lock out the power sources for the augers and have a responsible, trained person close at hand to keep unauthorized individuals away from the work area.
6. Establish a lock-out tag-out policy for the work site. Be sure all personnel are trained in and follow all procedures. Lock-out tag-out all power sources before entering Grain Ring or working around loading/unloading equipment.
7. Enter the empty Grain Ring with extreme caution and 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 Grain Ring before entering the enclosed area.
8. If material is bridged or caked causing a blockage. Use a long pole, a length of board or a stick to break the material loose.
9. Review safety related items annually with all personnel who will operating, using or maintaining the Grain Ring.

# MAINTENANCE SAFETY & LOCK-OUT TAG-OUT SAFETY

## MAINTENANCE SAFETY

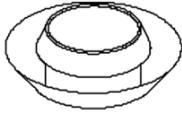
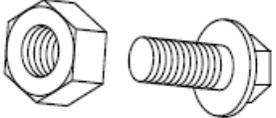
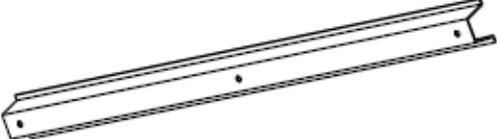
1. Good maintenance is your responsibility. Poor maintenance is an invitation to trouble.
2. Follow good shop practices.
  - a. Keep service area clean and dry.
  - b. Be sure electrical outlets and tools
  - c. Are properly grounded.
  - d. Use adequate light for the job at hand.
3. If you enter the Grain Ring, make sure that there is no possibility that either the loading or unloading auger could be started up. Lock out the power sources for the augers and have a responsible, trained person close at hand to keep unauthorized individuals away from the work area.
4. Review safety related items annually with all personnel who will be operating, using or maintaining the Grain ring.
5. Enter the empty Grain Ring with extreme caution and 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 Grain Ring before entering the enclosed area.
6. Use personal protection devices such as eye, hand, breathing and hearing protectors, when performing any service or maintenance work.
7. A fire extinguisher and first aid kit should be kept readily accessible while performing maintenance on this equipment.
8. Periodically tighten all bolts, nuts and screws to ensure the unit is in a safe condition.
9. When completing a maintenance or service function, make sure all safety shields and devices are installed before placing unit in service.

## LOCK-OUT TAG-OUT SAFETY

1. Establish a formal Lock-Out Tag-Out program for your operation.
2. Train all operators and service personnel before allowing them to work around the Grain Ring.
3. Provide tags at the work site and a sign-up sheet to record tag out details

# Parts List

**NOTE:** Not all components listed are required for every Grain Ring

Part#	Description	Illustration
1328006	Plastic Hole Plug	
2688010	Hex Nut 5/16" NC	
3948001	Flat Washer 5/16"	
214609	Tarp Hook 5/16" NC	
3209099	Metal Ring Edge Protector	
217711	217711 Eye Bolt 3/8NC x 4" (102mm)	
999801	Bolt & Nut Kit 3/8NC x 3/4 (100 pcs)	
999805	Bolt & Nut Kit 3/8NC x 3/4 (500 pcs)	
999870	Bolt & Nut Kit 3/8NC x 3/4 (750 pcs)	
999811	Bolt & Nut Kit 3/8NC x 1 1/4 (100 pcs)	
999812	Bolt & Nut Kit 3/8NC x1 1/4 (500 pcs)	
999873	Bolt & Nut Kit 3/8NC x1 1/4 (750 pcs)	
231100	Stiffener 45" (1143mm)	

# Tools for Assembly

Hard Hat



Impact Wrench or Speed Wrench



1/2", 9/16" Wrench



1/2", 9/16" Sockets



Hammer



Hearing Protection



Aligning Bars



Work Gloves



Safety Glasses



Steel Toe Work Boots



## Bills of Materials - Capacities

### 40' (12.27m) Grain Ring – Actual Diameter: 40'-3 1/16" (12.27m)

Model / Catalogue number		GR040x1	GR040x2
Height		3.42' / 1.04m	6.84' / 2.08m
Part #	Description	Qty.	Qty.
231001-22	Panel Grain Ring 25H 40'	11	22
GR040K	Grain Ring 40 Hardware Kit	1	1
231100	Stiffener	6	12
137003	Meridian Grain Ring Decal	1	1
999801	Kit Bolt&nut 100 @ 3/4 Dt1500	3	1
999811	Kit Bolt&nut 100 @ 1-1/4 Dt1500	1	3
999870	Kit Bolt&nut 750 @ 3/4 Dt1500	0	1

GR040K - 40' (12.19m) Grain Ring Hardware Kit		
Part #	Description	Qty.
1328006	Plastic Hole Plug (250/Bag)	750
21-28	Erection Manual – Grain Ring	1
217609	Hook – Tarp	66
2688010	Hex Nut 5/16" NC	132
3948001	Flat Washer 5/16" (L	132
3209099	Metal Ring Edge Protector	6

Model #	Bushel Capacity	Units	Weight	Wheat & Soybeans	Corn
GR040x1	6,898	Imperial	844 lbs	207 tn	193.15 t
		Metric	383 kg	188 t	175.23t
GR040x2	10,569	Imperial	1,685 lbs	317 tn	295 tn
		Metric	764 kg	288 t	268 t

## 51' (15.62m) Grain Ring – Actual Diameter: 51'-3" (15.621m)

Model / Catalogue number		GR051x1	GR051x2
Height		3.42' / 1.04m	6.84' / 2.08m
Part #	Description	Qty.	Qty.
231002-22	Panel Grain Ring 25H 51'	14	28
GR051K	Grain Ring 51 Hardware Kit	1	1
231100	Stiffener	7	14
137003	Meridian Grain Ring Decal	1	1
999805	Kit Bolt&nut 500 @ 3/4 Dt1500	1	0
999811	Kit Bolt&nut 100 @ 1-1/4 Dt1500	2	0
999870	Kit Bolt&nut 750 @ 3/4 Dt1500	0	2
999812	Kit Bolt&nut 500 @ 1-1/4 Dt1500	0	1

### GR051K - 51' (15.55m) Grain Ring Hardware Kit

Part #	Description	Qty.
1328006	Plastic Hole Plug (250/Bag)	1,000
21-28	Erection Manual – Grain Ring	1
217609	Hook – Tarp	84
2688010	Hex Nut 5/16" NC	168
3209099	Metal Ring Edge Protector	7
3948001	Flat Washer 5/16" (L	168

Model #	Bushel Capacity	Units	Weight	Wheat & Soybeans	Corn
GR051x1	12,602	Imperial	1,082 lbs	378 tn	353 tn
		Metric	491 kg	343 t	320 t
GR051x2	18,549	Imperial	2,177 lbs	556 tn	519 tn
		Metric	987 kg	505 t	471 t

## 62' (18.97m) Grain Ring – Actual Diameter: 62'-2 3/4" (18.968m)

Model / Catalogue number		GR062x1	GR062x2
Height		3.42' / 1.04m	6.84' / 2.08m
Part #	Description	Qty.	Qty.
231003-22	Panel Grain Ring 25H 62'	17	34
GR062K	Grain Ring 62 Hardware Kit	1	1
231100	Stiffener	9	18
137003	Meridian Grain Ring Decal	1	1
999801	Kit Bolt&nut 100 @ 3/4 Dt1500	1	1
999805	Kit Bolt&nut 500 @ 3/4 Dt1500	1	0
999811	Kit Bolt&nut 100 @ 1-1/4 Dt1500	3	1
999812	Kit Bolt&nut 500 @ 1-1/4 Dt1500	0	1
999870	Kit Bolt&nut 750 @ 3/4 Dt1500	0	2

GR062K - 62' (18.90m) Grain Ring Hardware Kit		
Part #	Description	Qty.
1328006	Plug Hole Plastic (250/Bag)	1,000
21-28	Erection Manual - Grain Ring	1
217609	Hook - Tarp	102
2688010	Nut Hex 5/16 Nc	204
3948001	Washer Flat 5/16 (L	204
3209099	Metal Ring Edge Protector	9

Model #	Bushel Capacity	Units	Weight	Wheat & Soybeans	Corn
GR062x1	20,681	Imperial	1,320 lbs	620 tn	579 tn
		Metric	599 kg	563 t	525 t
GR062x2	29,449	Imperial	2,628 lbs	883 tn	825 tn
		Metric	1,192 kg	801 t	748 t

## 70' (21.20m) Grain Ring – Actual Diameter: 69'-6 5/8" (21.20m)

Model / Catalogue number		GR070x1	GR070x2
Height		3.42' / 1.04m	6.84' / 2.08m
Part #	Description	Qty.	Qty.
231004-22	Panel Grain Ring 25H 70'	19	19
231004-20	Panel Grain Ring 25H 70'	0	19
GR070K	Grain Ring 70 Hardware Kit	1	1
231100	Stiffener	10	20
137003	Meridian Grain Ring Decal	1	1
999811	Kit Bolt&nut 100 @ 1-1/4 Dt1500	3	1
999870	Kit Bolt&nut 750 @ 3/4 Dt1500	1	2
999801	Kit Bolt&nut 100 @ 3/4 Dt1500	0	3
999812	Kit Bolt&nut 500 @ 1-1/4 Dt1500	0	1

### GR070K - 70' (21.34m) Grain Ring Hardware Kit

Part #	Description	Qty.
1328006	Plug Hole Plastic (250/Bag)	1,250
21-28	Erection Manual - Grain Ring	1
217609	Hook - Tarp	114
2688010	Nut Hex 5/16 Nc	228
3948001	Washer Flat 5/16 (L	228
3209099	Metal Ring Edge Protector	10

Model #	Bushel Capacity	Units	Weight	Wheat & Soybeans	Corn
GR070x1	27,586	Imperial	1,478 lbs	828 tn	772 tn
		Metric	670 kg	751 t	701 t
GR070x2	38,539	Imperial	3,169 lbs	1,156 tn	1,079 tn
		Metric	1,437 kg	1,049 t	979 t

## 77' (23.43m) Grain Ring – Actual Diameter: (76'-10 7/16" (23.432m)

Model / Catalogue number		GR077x1	GR077x2
Height		3.42' / 1.04m	6.84' / 2.08m
Part #	Description	Qty.	Qty.
231005-22	Panel Grain Ring 25H 77'	21	21
231005-20	Panel Grain Ring 25H 77'	0	21
GR077K	Grain Ring 77 Hardware Kit	1	1
231100	Stiffener	11	22
137003	Meridian Grain Ring Decal	1	1
999801	Kit Bolt&nut 100 @ 3/4 Dt1500	1	0
999811	Kit Bolt&nut 100 @ 1-1/4 Dt1500	3	2
999870	Kit Bolt&nut 750 @ 3/4 Dt1500	1	2
999805	Kit Bolt&nut 500 @ 3/4 Dt1500	0	1
999812	Kit Bolt&nut 500 @ 1-1/4 Dt1500	0	1

### GR077K - 77' (23.47m) Grain Ring Hardware Kit

Part #	Description	Qty.
1328006	Plug Hole Plastic (250/Bag)	1,250
21-28	Erection Manual - Grain Ring	1
217609	Hook - Tarp	126
2688010	Nut Hex 5/16 Nc	252
3948001	Washer Flat 5/16 (L	252
3209099	Metal Ring Edge Protector	11

Model #	Bushel Capacity	Units	Weight	Wheat & Soybeans	Corn
GR077x1	35,834	Imperial	1,631 lbs	1,075 tn	1,003 tn
		Metric	740 kg	975 t	910 t
GR077x2	49,213	Imperial	3,503 lbs	1,476 tn	1,378 tn
		Metric	1,589 kg	1,339 t	1,250 t

## 92' (27.89m) Grain Ring – Actual Diameter: 91'-6 3/16" (27.89m)

Model / Catalogue number		GR092x1	GR092x2
Height		3.42' / 1.04m	6.84' / 2.08m
Part #	Description	Qty.	Qty.
231006-20	Panel Grain Ring 25H 92'	25	25
231006-18	Panel Grain Ring 25H 92'	0	25
GR092K	Grain Ring 92 Hardware Kit	1	1
231100	Stiffener	13	26
137003	Meridian Grain Ring Decal	1	1
999801	Kit Bolt&nut 100 @ 3/4 Dt1500	2	2
999811	Kit Bolt&nut 100 @ 1-1/4 Dt1500	4	1
999870	Kit Bolt&nut 750 @ 3/4 Dt1500	1	3
999873	Kit Bolt&nut 750 @ 3/4 Dt1500	0	1

### GR092K - 92' (27.89m) Grain Ring Hardware Kit

Part #	Description	Qty.
1328006	Plug Hole Plastic (250/Bag)	1,500
21-28	Erection Manual - Grain Ring	1
217609	Hook - Tarp	150
2688010	Nut Hex 5/16 Nc	300
3948001	Washer Flat 5/16 (L	300
3209099	Metal Ring Edge Protector	13

Model #	Bushel Capacity	Units	Weight	Wheat & Soybeans	Corn
GR092x1	56,854.00	Imperial	2,252 lbs	1,706 tn	1,592 tn
		Metric	1,021 kg	1,547 t	1,444 t
GR092x2	75,816.00	Imperial	5,181 lbs	2,274 tn	2,123 tn
		Metric	2,350 kg	2,063 t	1,926 t

## 106' (32.36m) Grain Ring – Actual Diameter: 106'-1 7/8" (32.36m)

Model / Catalogue number		GR106x1	GR106x2
Height		3.42' / 1.04m	6.84' / 2.08m
Part #	Description	Qty.	Qty.
231007-18	Panel Grain Ring 25H 106'	29	58
GR106K	Grain Ring 106 Hardware Kit	1	1
231100	Stiffener	15	30
137003	Meridian Grain Ring Decal	1	1
999812	Kit Bolt&nut 500 @ 1-1/4 Dt1500	1	1
999870	Kit Bolt&nut 750 @ 3/4 Dt1500	2	4
999805	Kit Bolt&nut 500 @ 3/4 Dt1500	0	1
999873	Kit Bolt&nut 750 @ 3/4 Dt1500	0	1

GR106K - 106' (32.36m) Grain Ring Hardware Kit		
Part #	Description	Qty.
1328006	Plug Hole Plastic (250/Bag)	1,750
21-28	Erection Manual - Grain Ring	1
217609	Hook - Tarp	174
2688010	Nut Hex 5/16 Nc	348
3948001	Washer Flat 5/16 (L	348
3209099	Metal Ring Edge Protector	14

Model #	Bushel Capacity	Units	Weight	Wheat & Soybeans	Corn
GR106x1	84,657	Imperial	3,442 lbs	2,540 tn	2,370 tn
		Metric	1,561 kg	2,304 t	2,150 t
GR106x2	110,171	Imperial	6,885 lbs	3,305 tn	3,085 tn
		Metric	3,123 kg	2,998 t	2,798 t

# ASSEMBLY PROCEDURE

**NOTE:** Choose a site to build the Grain Ring with a higher elevation than the surrounding area. This will ensure adequate drainage.

Note: The Grain Ring must be round to ensure proper fit of tarp. Meridian Manufacturing Group and its suppliers will not be responsible for improper tarp fit due to out of round construction of the Grain Ring.

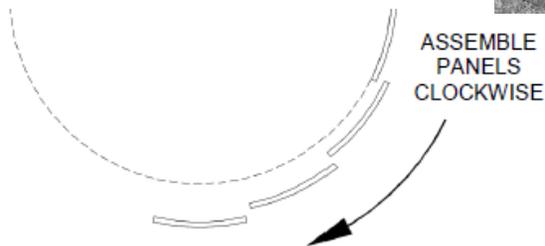
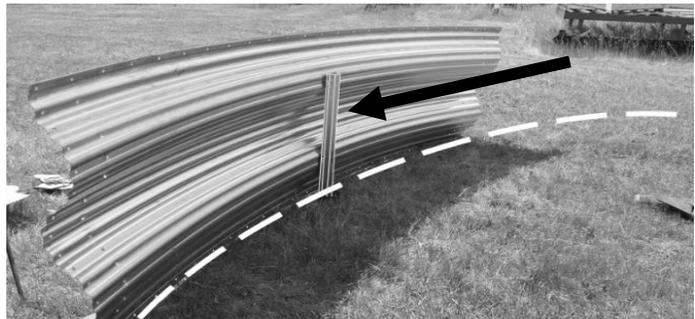
1. Mark Center. Use a rope and spray paint to mark where the grain circle will be sitting.



2. Stand one panel on the side, ensure it lines up with paint on the ground



3. Once aligned, drive a strut into the ground (inside circle) and bolt it to 2 humps of panel. Panels must be assembled in a clockwise manner.



4. Continue assembling panels until completing circle (install 3 bolts per joint to allow for adjustments)



5. Once circle is finished, measure every second panel from center.



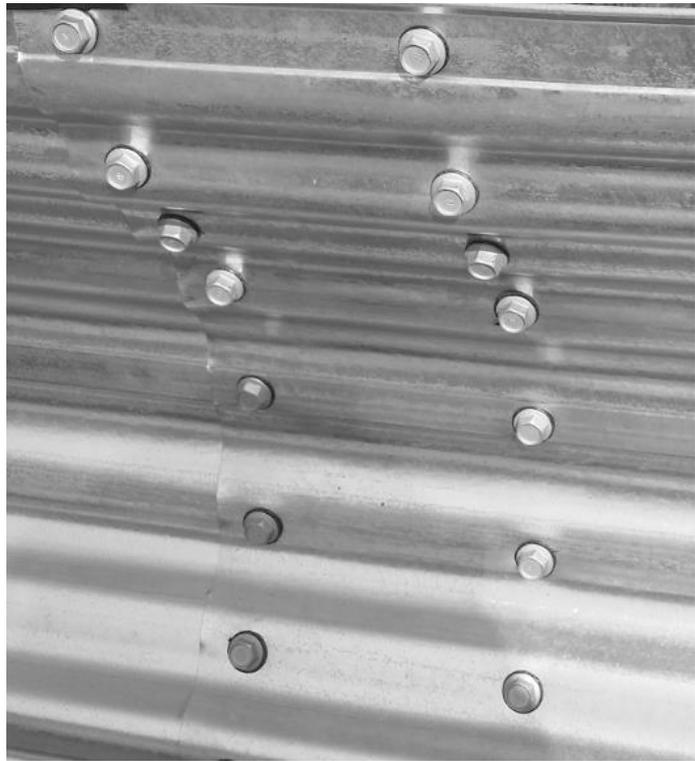
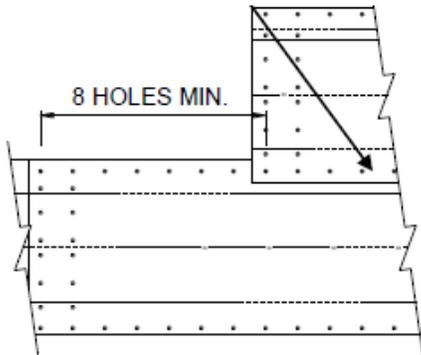
6. Adjust as needed.



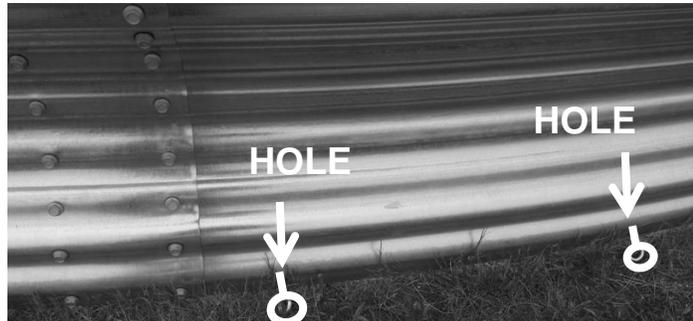
7. Once panel is aligned install strut (there should be a strut every second panel)



8. Once all struts are installed, install the remainder of the bolts on every panel joint. Overlap second Ring Panels to the outside of the first ring. The second ring of panels must be placed on the outside of the first ring to prevent water from entering the grain ring. The seam lines for the second ring must be offset from those on the first ring by at least 8 bolt holes.



9. Install tarp hooks at bottom of circle. After every panel joint, install one panel hook; then leave 2 spaces between the remainder. Tarp hooks can be installed two ways, depending on panel rows. It's either at bottom or middle of circle.

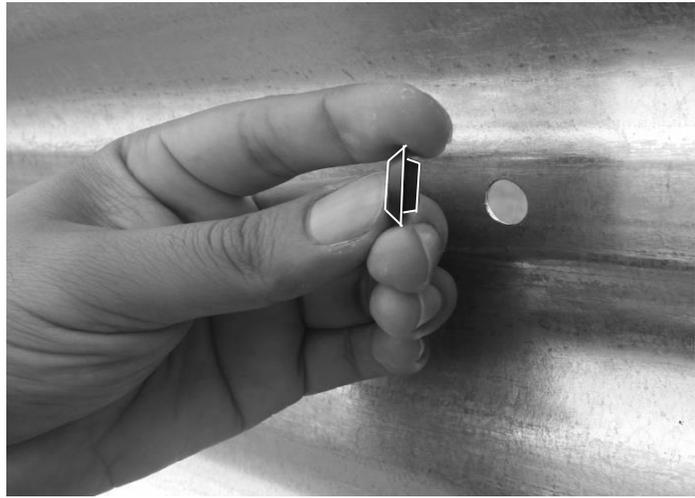


**NOTE:** If installing a tarp with ratchets and straps, the tarp hooks do not need to be installed.

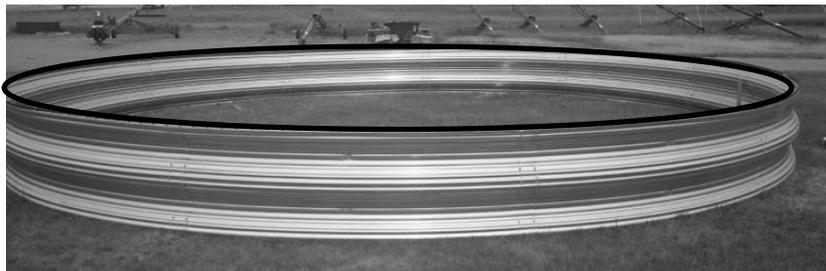
10. Install sign bolting 2 holes at top of sign with top of circle



11. Install hole plugs at all holes to avoid grain spillage. Insert Plastic Hole Plugs in all hole that do not have bolts



12. Install rubber cover on top edge



# SETTING STIFFENERS

## Setting Stiffeners — 3.42' [1.04m] and 6.84' [2.04m] Models

- Set Stiffener into the ground
- Using existing bolts, attach Stiffeners to Grain Ring Panels.
- Field-drill holes for stiffener channels where there are no existing holes.
- Stiffeners attached on center hole of every second panel

Stiffener Locations		
Grain Ring diameter	Grain Ring height	Qty. of Stiffeners
40' [12.27m]	3.42' [1.04m]	6
	6.84' [2.04m]	12
51' [15.62m]	3.42' [1.04m]	7
	6.84' [2.04m]	14
62' [18.97m]	3.42' [1.04m]	9
	6.84' [2.04m]	18
70' [21.20m]	3.42' [1.04m]	10
	6.84' [2.04m]	20
77' [23.43m]	3.42' [1.04m]	11
	6.84' [2.04m]	22
92' [27.89m]	3.42' [1.04m]	13
	6.84' [2.04m]	26
106' [32.36m]	3.42' [1.04m]	15
	6.84' [2.04m]	30

## Accessories

### Auger port

Cut a hole the size of the Auger Port Tube in one of the Grain Ring panels with a jigsaw or a torch.

Use the Auger Port Panel as a template and drill holes in the Grain Ring panel where required. Bolt on the Auger Panel. (Note: All bolts must be used.)

### Ground Sheet

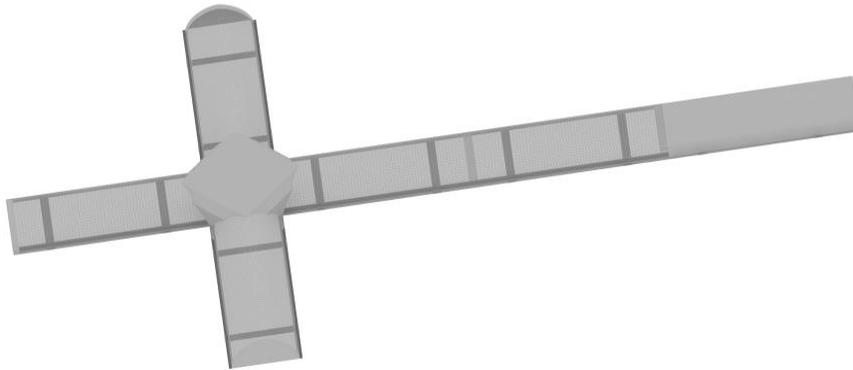
After the Grain Ring has been fully built, the ground sheet can be placed in side. Place the ground sheet in the center of the Grain Ring and unfold it.

The ground sheet will be larger than the perimeter of the Grain Ring. When filling the Grain Ring with grain a person must hold the ground sheet up against the side of the Grain Ring until the grain is high enough to hold it up.

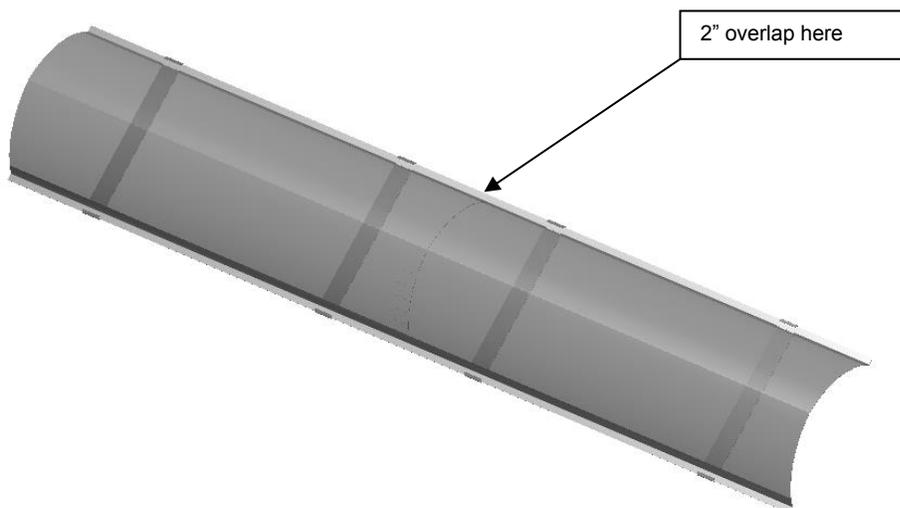
## V-duct Aeration System Assembly Procedure

Put two Strips [166687] on the bottom of the Aeration Tube [166685] or the Solid Tube [166686] about 9" from the end.

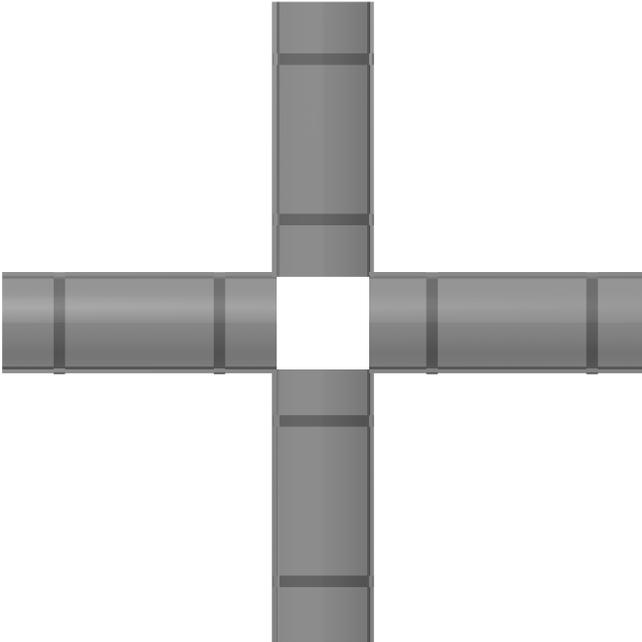
If they are too loose, try to push them or stand on the top of the Aeration Tube for better fit.



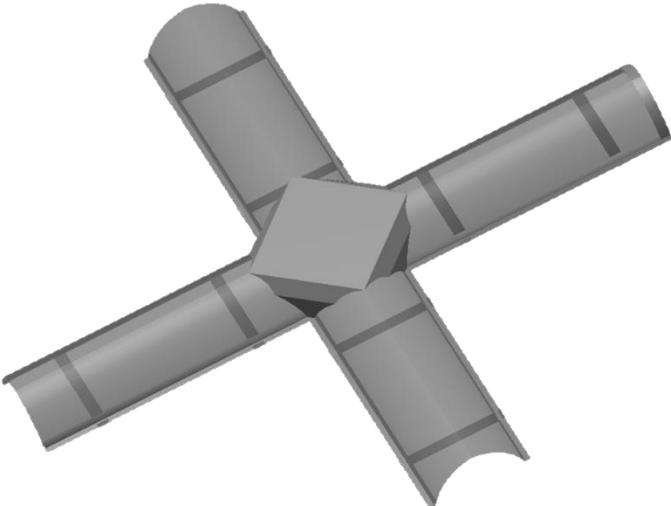
Straightly place the Aeration tubes as drawing shown, and overlap 2" to each other.



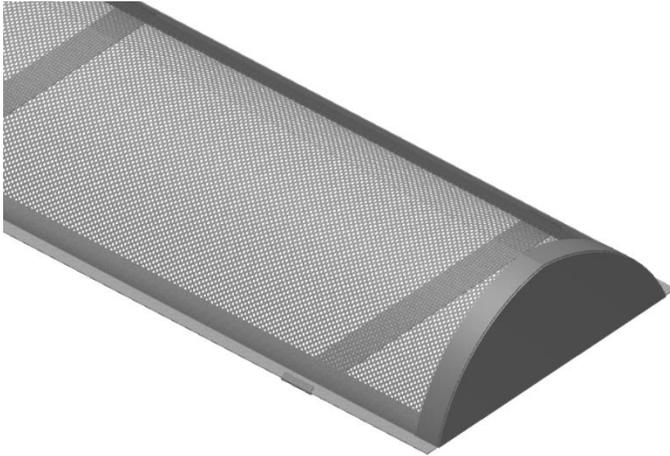
Before placing the Center [166683], the four Aeration Tubes should be placed on the floor. The lips should overlap by  $\frac{3}{4}$ " to each other.



Place the Center [166683] on the top of the four Aeration tubes. The assembled joint should look like shown on picture. There are no screws necessary for assembly.



Put the End Cap [166684] to the end of the last Aeration Tube and use Tek Screws to bolt them together.



NOTE: Use the Solid Tube [166686] to connect the Aeration tube ducting and the fan transition.

# FILLING AND UNLOADING THE GRAIN RING

## FILLING THE GRAIN RING

Position the Auger so the discharge spout is located over the center of the Grain Ring. This will allow the grain to pile evenly.



Be sure to follow all safety procedures for all equipment used to fill and unload the Grain Ring.

## UNLOADING THE GRAIN RING

### 1 Panel versions

Unload auger can be inserted directly into the grain for removal. Once grain has been removed from the entire perimeter of the Grain Ring, panels can be removed to allow the auger to be moved into the Grain Ring to remove the remaining grain. For sizes bigger than 51' [15.62m] a Grain Vacuum is preferable.

### 2 Panel versions

Due to wall height a Grain Vacuum must be used to remove grain from the perimeter of the Grain Ring. Once grain has been removed from the entire of the Grain Ring, panels can be removed to allow an auger to be moved into the Grain Ring to remove the remaining grain.



**Grain Ring Panels cannot be removed unless there is no grain in contact with the panels. If panels are unbolted when grain is against them the panels could swing out unpredictably causing serious injury or death.**



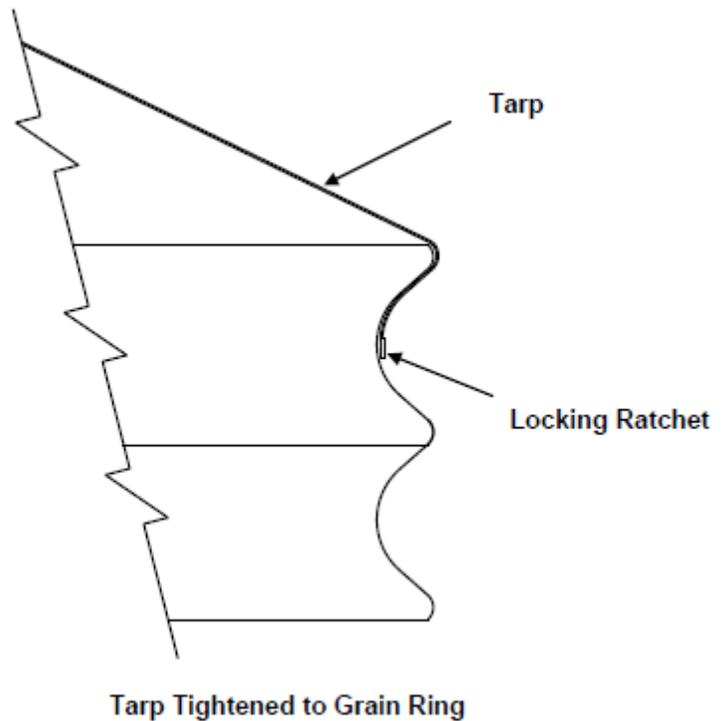
# TARP INSTALLATION

## Tarp Installation (Tarps with Locking Ratchet)

Place the tarp on top of the pile of grain by using a crane or loader on a tractor. Once the entire tarp is draped over the panels of the Grain Ring it can be tightened down.

This is done by using the 3 ratchets located around the tarp. When tightened the tarp should be tight to the Grain Ring panels.

**NOTE:** The Grain Ring must be round to ensure proper fit of Tarp. Meridian Manufacturing and its suppliers will not be responsible for improper tarp fit due to out of round construction of the Grain Ring.



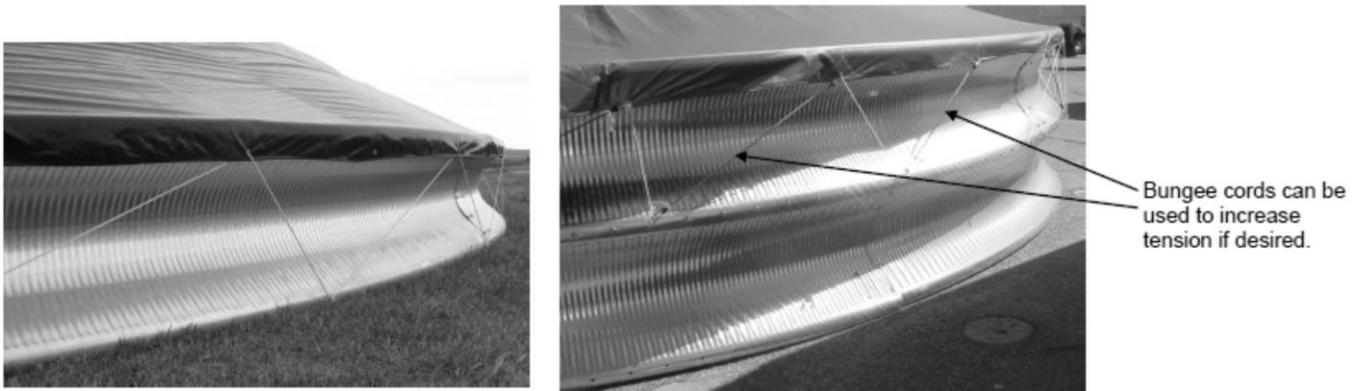
**Do not attempt to install tarp with winds higher than 9 MPH (15 km/h). The tarp could become airborne resulting in damage to machinery and/or personal injury.**

**Suffocation could occur if entangled in the tarp. Handle tarps with care.**

## Tarp Installation (Tarps with Eyelets)

Place the tarp on top of the pile of grain by using a crane or loader on a tractor. Once the entire tarp is draped over the panels of the Grain Ring it can be attached. This is done by threading a rope through the eyelets on the tarp and then through the eyebolts on the Grain Ring. SEE PICTURES BELOW

**NOTE:** The Grain Ring must be round to ensure proper fit of Tarp. Meridian Manufacturing and its suppliers will not be responsible for improper tarp fit due to out of round construction of the Grain Ring.



**Do not attempt to install tarp with winds higher than 9 MPH (15 km/h). The tarp could become airborne resulting in damage to machinery and/or personal injury.**

**Suffocation could occur if entangled in the tarp. Handle tarps with care.**

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