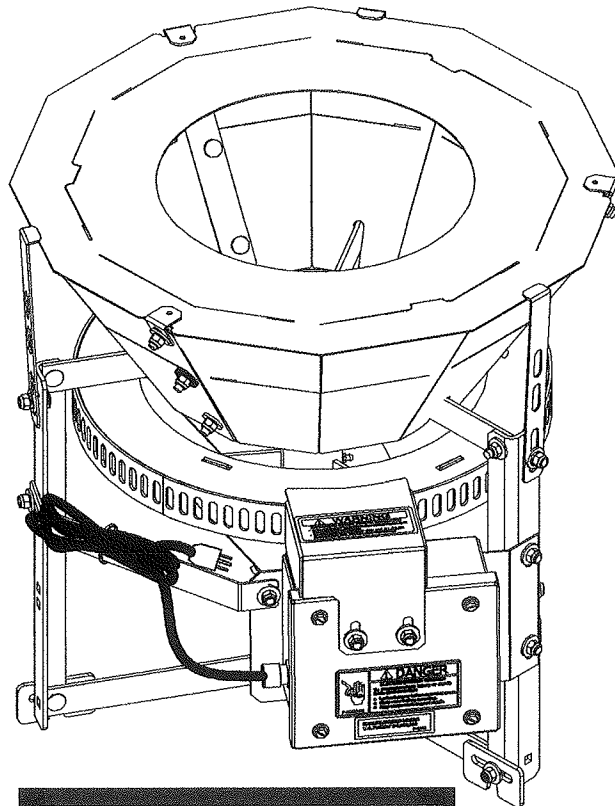


MINI DIVERTER 116I-001A



MANUFACTURED UNDER
U.S. PATENT # 6,923,389

P-12093

INSTALLATION AND OPERATING INSTRUCTIONS

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P-12916
7-12-12

INTRODUCTION

READ THIS MANUAL COMPLETELY BEFORE INSTALLING OR USING THE MINI DIVERTER.

If grain hits any spreader pan exactly in the center, the bin should always fill level from side to side. The Shivvers Mini Diverter sits on top of the spreader and diverts the grain stream off center. A small gear motor slowly rotates the Mini Diverter and this gives the effect of perfectly centered grain. The Mini Diverter will not help the grain spread from the center of the bin to the outside wall.

The Mini Diverter is rated for input augers up to 10" diameter, or approximately 3,000 bushels of wet corn per hour. It requires at least a 29" roof opening, without special spreader mounting brackets. The Mini Diverter is 16" high (20" – 24" with the easily removable centering cone). The Mini Diverter requires only 1 amp of 120 VAC power. It comes with a regular 3 prong power cord, which is usually plugged into the same receptacle as the main spreader.

Installation is easiest for a Shivvers Grain Hog Spreader which has the new threaded rod swivel mounts (653-241A). Just set the Mini Diverter on top of the spreader cone and adjust the three centering brackets. The spreader may need to be lowered in the bin opening to allow the roof cover to be closed. Make sure there is clearance below the spreader to allow it to be lowered. Possible obstructions could be a center vertical auger, or stirrators.

The Mini Diverter top inlet cone may be used as shipped, or it may be cut down in the field to a smaller size. The anti-splatter cap on top of the inlet cone may also be modified in the field for different configurations.

Certain accessories may be required for the installation, at extra cost. Contact the factory for availability of accessories.

Specifications may change without prior notice. Contact your dealer, or the factory, with any questions.

SAFETY

The installer and operator of this machinery must assume the responsibility for their safety, and that of those who are working with them. They must also make sure the equipment is installed properly. Factors that contribute to the overall safety of operation are: proper use, maintenance, and frequent inspection of the equipment. All of these are the operator's responsibility.

If any items covered in this manual are not completely understood, or there is a concern with the safety of the product, contact SHIVVERS Manufacturing Incorporated at the address shown on the front page.

SHIVVERS is genuinely interested in providing the safest practical equipment to our customers. If you have a suggestion which you believe will enhance the safety of this product, please write us and let us know.



TAKE NOTE ANYTIME THIS SAFETY ALERT SYMBOL APPEARS. YOUR SAFETY, AND THAT OF PERSONS AROUND YOU, IS AT STAKE.

The safety alert symbol will be accompanied by one of three signal words whose definitions are given as:

- DANGER:** Red and white. 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 that, for functional purposes, cannot be guarded.
- WARNING:** Orange and black. 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 removed. It may also be used to alert against unsafe practices.
- CAUTION:** Yellow and black. 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.

SAFETY

Anytime you are working with your drying unit, be sure to observe these common sense rules:

1. All units must be equipped with a main power disconnect switch. This disconnect switch must shut power off to the complete drying system. It must have the capability of being locked into the OFF or OUT position. Disconnect and **LOCK OUT** this main power disconnect switch before conducting any inspection, maintenance, repair, adjustment, or cleaning of the drying system. When you must have the electrical power on to troubleshoot equipment, do it from a safe distance, and always from outside the dryer.
2. Always keep all shields and guards in place. If shields or guards must be removed for inspection or maintenance, replace them before unlocking and turning the power back on.
3. Be sure everyone is clear of all the drying and transferring equipment, and outside of all bins, before unlocking and turning the power on. Some equipment may run upon re-application of power.
4. Make sure that all decals are in place and are easy to read. Do not operate the equipment with missing or illegible decals. If replacements are needed, contact SHIVERS Manufacturing, Inc. or your dealer.
5. Prior to use, inspect all equipment to insure that it is in good operating condition. Do not operate with missing, damaged, or worn parts. Use only SHIVERS approved replacement parts, for Shivvers equipment.
6. Metal edges can be sharp. Wear protective clothing and handle equipment and parts with care.
7. Keep children and bystanders away from drying and transferring equipment at all times.
8. If going up the bin ladder and/or performing maintenance on the top of the bin, take precautions to prevent accidental falls. When on top of the bin, wear a safety harness or other safety device.
9. At least annually, review all operating and safety manuals with any personnel working with this equipment. Always train new employees before they operate the drying equipment. Insist that they read and understand the operating and safety manuals.

SAFETY

ALL ELECTRICAL WIRING SHALL BE INSTALLED IN COMPLIANCE WITH THE LATEST EDITION OF THE ANSI/NFPA STANDARD 70. NATIONAL ELECTRICAL CODE, AS A MINIMUM REQUIREMENT, AND IN COMPLIANCE WITH LOCAL WIRING CODES AS APPLICABLE.

WIRING MUST BE DONE BY A COMPETENT ELECTRICIAN. A LICENSED ELECTRICIAN IS RECOMMENDED, AND MUST BE USED WHEN REQUIRED BY LOCAL OR STATE STATUTES.

Make sure all safety decals are installed on the system as shown in the Operator's manual.

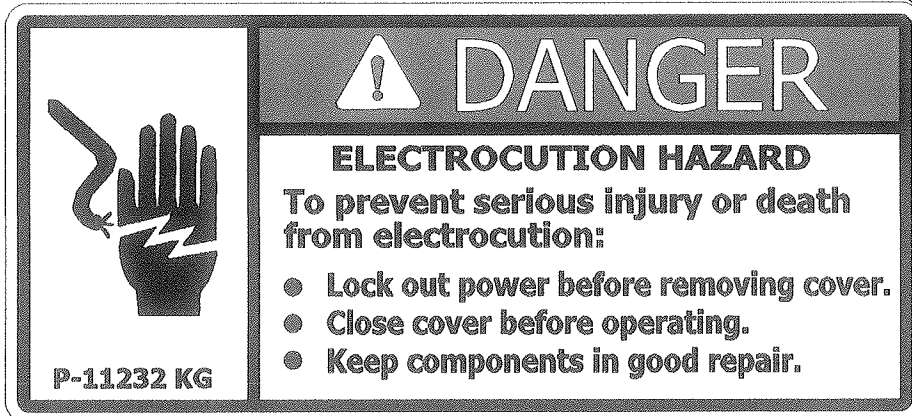
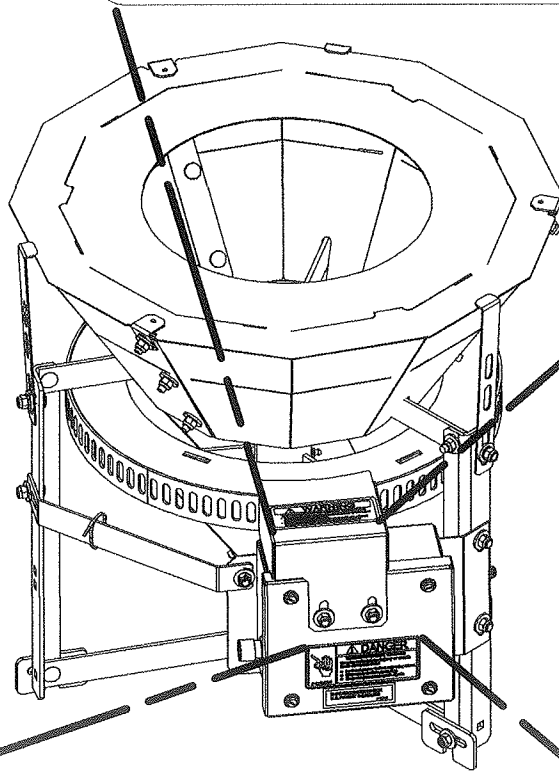
Make sure power can be disconnected and locked off.

LOCATION OF SAFETY DECALS

This manual shows the location of safety decals that apply to the Mini Diverter.

P-10935

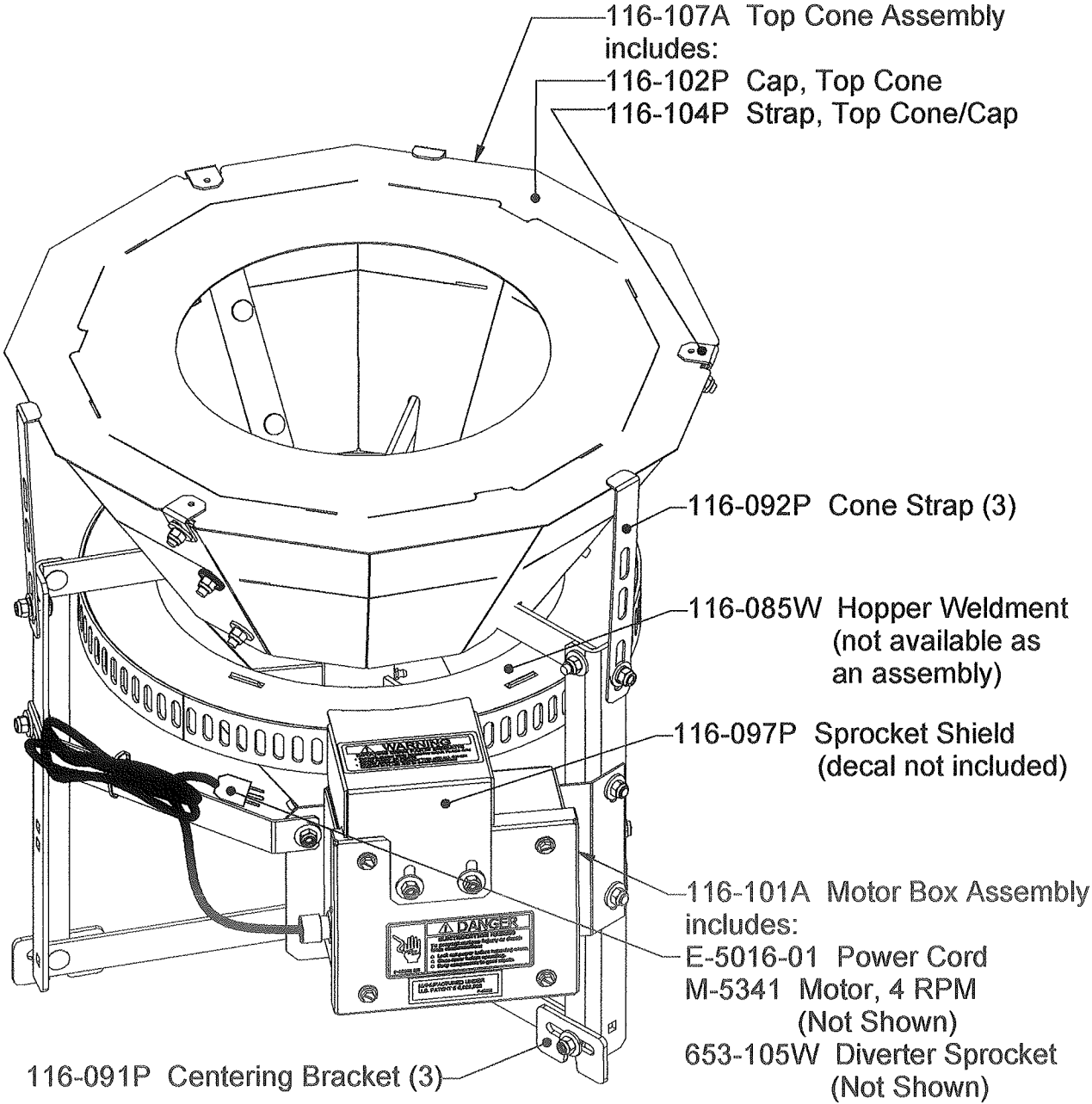
On sprocket shield
of Mini Diverter



P-11232

On motor box
lid weldment

IDENTIFICATION OF PARTS



INSTALLATION

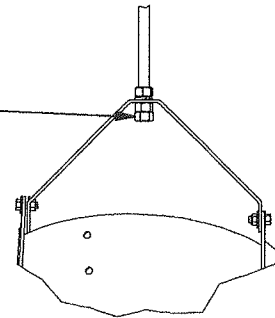


Make sure all power to the grain bin is disconnected and locked out. Make sure all energy sources are in a safe condition. Use personal protective equipment as required for the job.

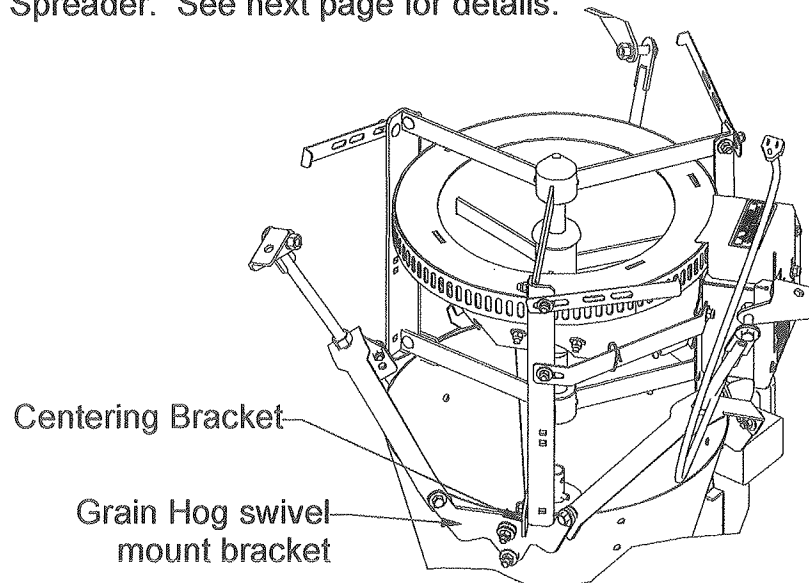
These instructions are for installing a Mini Diverter on top of a Shivers Grain Hog Spreader with threaded rod swivel mounts. The bin roof opening must be between 29" and 36" in diameter. For other spreaders, mounts, or openings, the installation procedure and/or parts required may be different. Consult other pages of this manual or contact the factory if there are any questions.

1. Follow instructions provided with the Grain Hog Spreader for installing it. Most installations will require that the standard threaded rods are adjusted to their maximum length. Longer threaded rods are available if required. See the accessories page in this manual for details.

Standard length threaded rods adjusted to maximum length.

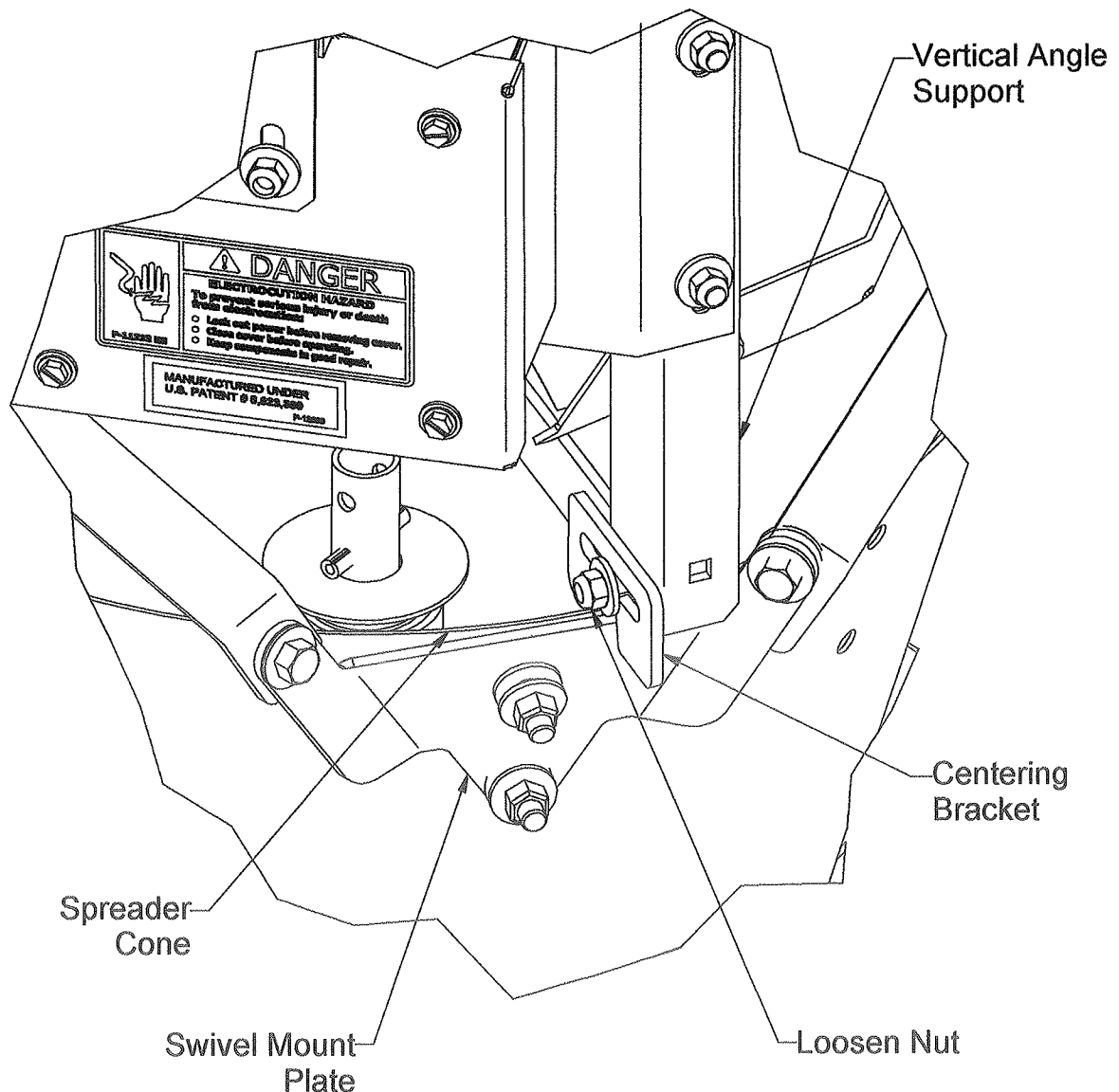


2. Once the Grain Hog Spreader is installed and leveled, remove the top cone from the Mini Diverter and set the Mini Diverter on top of the Grain Hog Spreader cone. Pay attention to where the Mini Diverter Motor is and where it will plug into, and position as required. The Mini Diverter centering brackets should sit on the Grain Hog swivel mount brackets. The centering brackets may require some adjustment. The Mini Diverter must be centered over the Grain Hog Spreader. See next page for details.



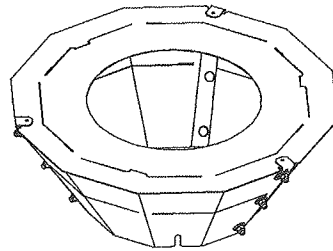
INSTALLATION

3. Loosen the nuts at the bottom the of vertical angle support pieces just enough to slide the centering brackets. The (3) centering brackets should be between the washer and the angle support.
4. Center the Mini Diverter over the spreader cone. The vertical angle support pieces should be located all the way to the right on the swivel mount plates, as shown. Pull the centering bracket tight against the inside surface of the cone while keeping the Mini Diverter centered on the spreader cone and tighten the nut. Make sure the inside of the centering bracket does not stick up or it may catch on the diverter as it rotates. Repeat.



INSTALLATION

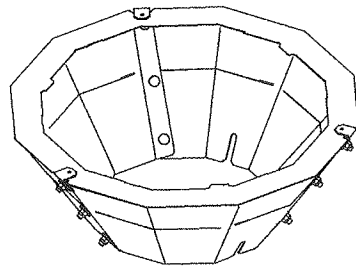
5. Once the Mini Diverter is on top of the spreader and centered, options can be explored concerning the top centering cone assembly. This assembly gathers the incoming grain and directs it into the Mini Diverter. The cap helps prevent grain - especially dry grain - from splattering out of the cone. The top cone assembly can be used as shipped, or modified for the particular installation.



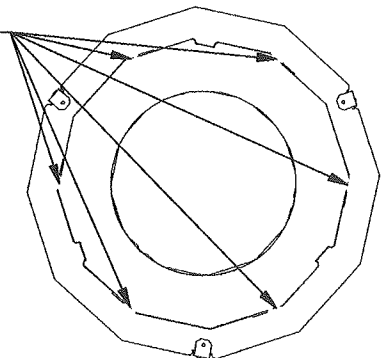
Top Cone
Assembly
116-107A
(as shipped)

If the incoming auger has a spout on it, and the spout cannot move much, the assembly may work fine as shipped.

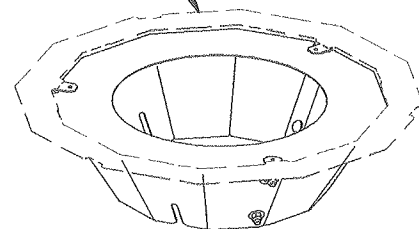
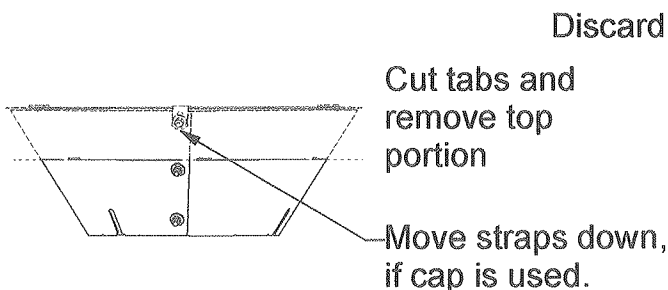
If the opening in the cap is too small, tabs can be cut to increase the opening from 12" to about 18.5". The cap may also be removed completely by removing the straps holding it in place. NOTE: More grain splatter may occur with the cap completely removed. Cut the tabs using a die grinder, sawzall, or jig saw. Smooth any sharp edges before installation.



Cut out center
at the 6 tabs
as shown.

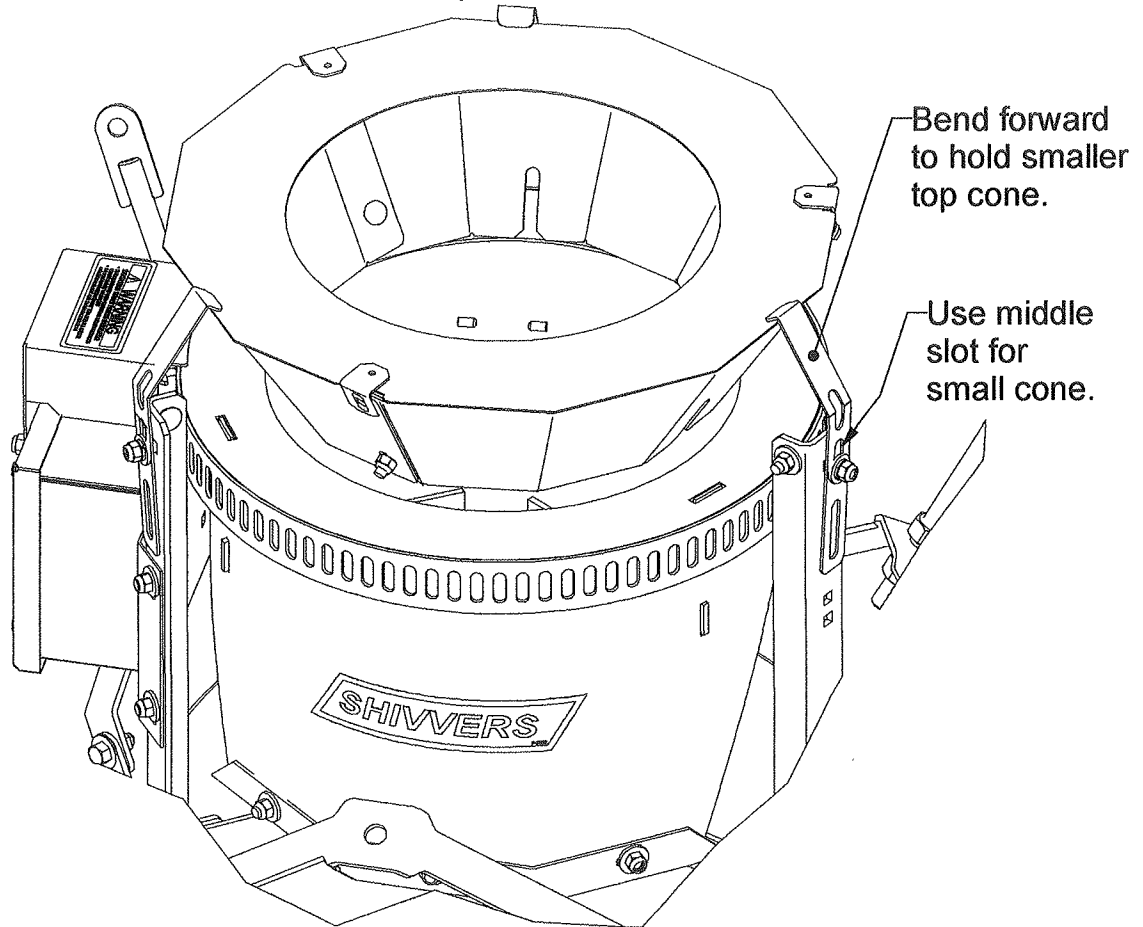


If the cone doesn't need to be as tall, or big, it too can be cut down to a smaller size. If the anti-splatter shield is required for the smaller cone, the 6 tabs can be cut and the inside piece of the cap can be used, as shown. Remove the straps on the top portion of the cone that was cut off and re-install them on the smaller cone, using the top holes and existing hardware.



INSTALLATION

6. If the top cone is cut down in size, the cone straps can be moved down and bent forward to hold the smaller top cone to the Mini Diverter.



WIRING

Usually the Mini Diverter is just plugged into the same 120 VAC outlet as the grain spreader. If a duplex receptacle is not available, a splitter cord is available from Shivers. See the accessories list in this manual for the part number. A splitter cord, or cube tap, can also be obtained locally.

The Mini Diverter can also be wired to a dedicated ON/OFF switch, if desired.

Provisions should be made to somehow allow the Mini Diverter to be shut off, or unplugged, while the main spreader can still be operated. In other words, do not hard wire the two directly together.

The Mini Diverter requires only 1 amp of 120 VAC power.

Make sure the Mini Diverter power cord cannot become entangled in the Mini Diverter, or in the grain spreader below it.

OPERATION

Operation of the Mini Diverter is simple. Just make sure it is centered on the grain spreader, and slowly rotating, then direct the grain stream into it.

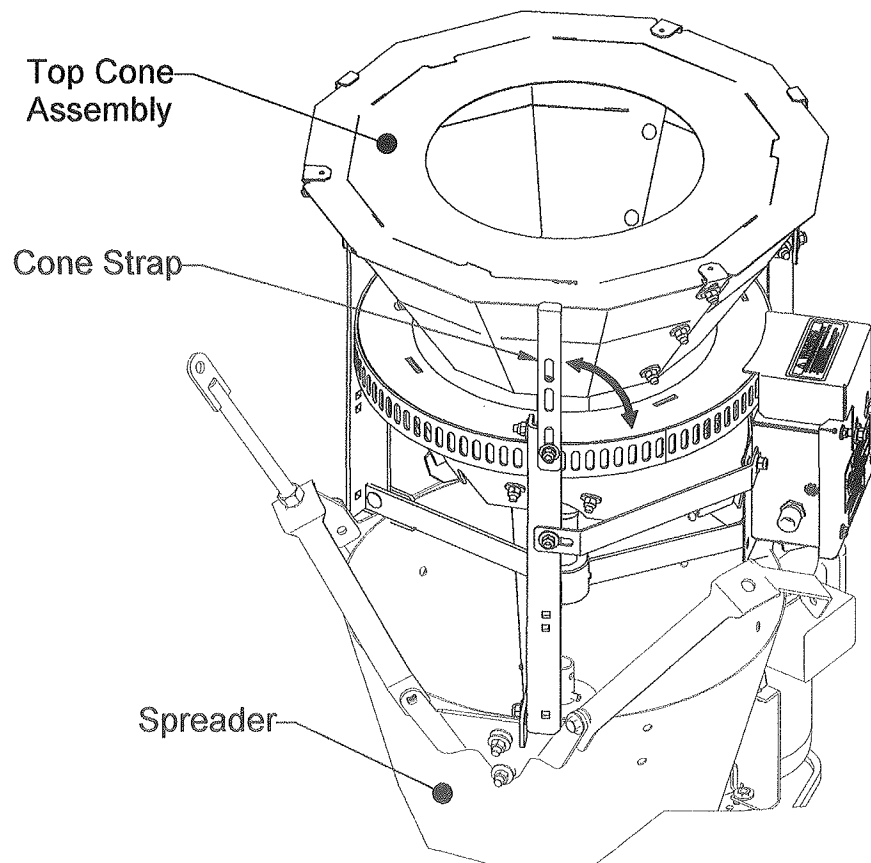
If the installation required the removal of the Top Cone Assembly in order to close the bin roof cap, place the top cone on the Mini Diverter and secure it with the 3 cone straps, before use.

Normally the Mini Diverter is wired to come on and off with the main grain spreader, but it could have a separate switch. Just make sure the Mini Diverter is plugged in, has power, and is slowly rotating for normal operation.

If a low spot develops in the grain bin, theoretically it should be possible to shut off the Mini Diverter in the proper location and more grain will go to the low spot. Results will vary depending on the grain spreader used and the incoming flow rate. Some experimentation will be required to determine the effects of operating with the Mini Diverter off.

If the Top Cone Assembly needs to be removed to close the bin roof cap, just make sure it is either taken to the ground, or is securely attached to the bin roof so it will not fall off.

Press out on the cone straps and rotate them down so they are out of the way. The Top Cone Assembly can now be lifted off the Mini Diverter.



LIMITATIONS

The Mini Diverter will not help with problems from the center of the bin to wall. Those kinds of problems are directly related to the spreader pan design and pan speed, or pan angle.

Although the Mini Diverter will help a lot, the best results will still come from hitting close to the exact center of the Mini Diverter with a straight up and down grain stream that is consistent in volume. In other words, some unevenness may occur with highly variable grain flows that are off to one side and/or angled coming in. Low flow plates are available for 6" or 8" auger inputs. See the Accessories section for more details.

For grain drying bins, un-level problems can also come from uneven temperatures under the floor. Before blaming the spreader, try putting grain in the bin with the heat, and the augering system, both off.

MAINTENANCE



Make sure all power to the grain bin is disconnected and locked out. Make sure all energy sources are in a safe condition. Use personal protective equipment as required for the job.

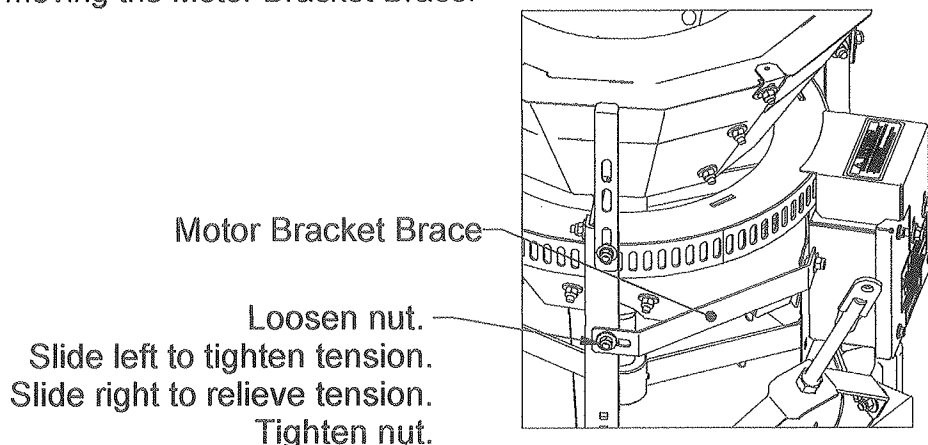
Since the Mini Diverter is an accessory device, make sure all associated equipment is in a safe condition before working on the Mini Diverter.

The Mini Diverter shouldn't require much maintenance other than the occasional removal of built up debris. It may also be necessary to adjust the tension on the cone straps which secure the Top Centering Cone assembly.

Inspect the Mini Diverter power cord for cracks and/or damage. Replace if required.

Adjusting sprocket engagement:

If the Mini Diverter starts slipping, the sprocket engagement can be adjusted by moving the Motor Bracket Brace.

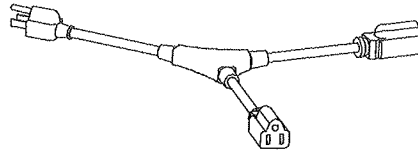


ACCESSORIES

Certain accessories may be required for the installation, at extra cost. Contact the factory for availability. Some examples are:

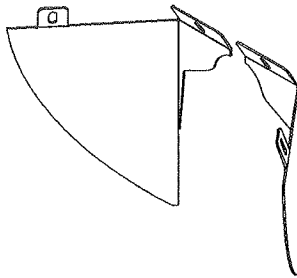
- 1). Splitter cord. Converts one outlet into two.

E-6542



- 2). Low flow plate kit for 8" input augers (especially required if grain can't be directed into the center of the Mini Diverter).

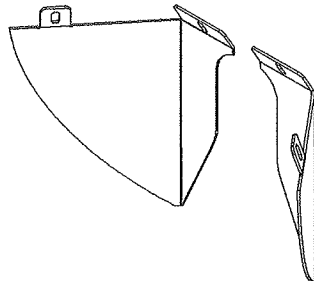
116-110P
8" Low Flow
Plate, LH



116-111P
8" Low Flow
Plate, RH

- 3). Low flow plate kit for 6" input augers (especially required if grain can't be directed into the center of the Mini Diverter).

116-108P
6" Low Flow
Plate, LH

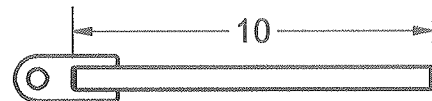


116-109P
6" Low Flow
Plate, RH

- 4). Six inch longer threaded rods for lowering the Shivers Grain Hog Spreader further. Three pieces required.



116-113W
6" longer than standard



653-236W
Standard length

- 5). Adapter kit for Spread-All Mfg's E2 and E3 series spreaders.
- 6). Adapter kit for other manufacturer's spreaders. Contact factory for availability.
- 7). Special brackets for bins with 24 – 29" roof openings.