# PLASTIC & STEEL
# GRAVITY BOX AUGERS
## 6”x12’/6”x14’/6”x16’

Beginning with Serial #A36060100

Part No. 22787

## Foreword

This symbol identifies important safety messages. When you see it, read the message that follows and be alert to the possibility of personal injury.

Remember, safety instructions stated in this manual are for your protection. Read them carefully and follow them closely when working around or using this machine.

Read and study this manual completely before attempting to operate this implement. Take this manual to the field for handy reference when operating, adjusting, or servicing your machine.

When referenced, “Right-Hand” (RH) and “Left-Hand” (LH) side of the machine are determined by standing behind the machine and facing in the direction of travel.

## Product Information

Please fill out and retain this portion for your records. All products manufactured by Unverferth Mfg. Co., Inc. are warranted to be free from material and workmanship defects for one full year from time of consumer delivery. Your local dealer will gladly assist you with any warranty questions.

The serial number plate is located as shown in FIG. 1.

Product _____

Serial Number _____

Date of Purchase _____

Dealer _____

City _____ State _____ Zip _____

Please supply this information when you have questions or when ordering repair or replacement parts. Your dealer needs this information to give you prompt, efficient service.

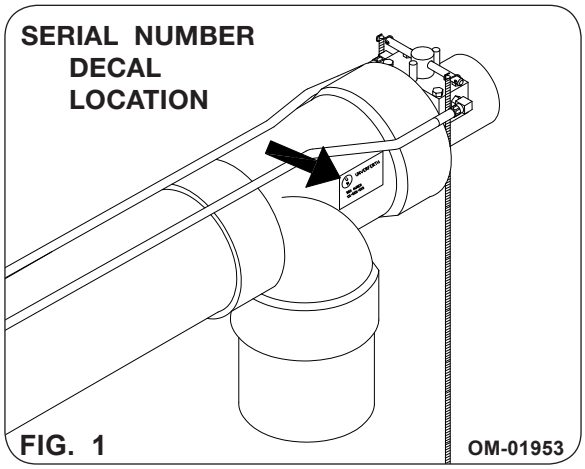



FIG. 1

**IMPORTANT**

*The information, specifications, and illustrations in the manual are on the basis of information available at the time it was written. Due to continuing improvements in the design and manufacture of Unverferth products, all specifications and information contained herein are subject to change without notice.*

## Table of Contents

# SECTION I
# Safety



# SECTION II
# Set Up

## Table of Contents

# SECTION III
# Operation



# SECTION IV
# Maintenance



# SECTION V
# Parts

## Notes

# SECTION I
# Safety

## General Hazard Information

No accident-prevention program can be successful without the wholehearted cooperation of the person who is directly responsible for the operation of the equipment.

A large number of accidents can be prevented only by the operator anticipating the result before the accident is caused and doing something about it. No power-driven equipment, whether it be transportation or processing, whether it be on the highway, in the field, or in the industrial plant, can be safer than the person who is at the controls. If accidents are to be prevented--and they can be prevented--it will be done by the operators who accept the full measure of their responsibility.

It is true that the designer, the manufacturer, and the safety engineer can help; and they will help, but their combined efforts can be wiped out by a single careless act of the operator.

It is said that, “the best kind of a safety device is a careful operator.” We, at Unverferth Mfg. Co., Inc. ask that you be that kind of operator.

**REMEMBER:**

**THINK SAFETY**

**A CAREFUL OPERATOR IS THE BEST INSURANCE AGAINST AN ACCIDENT!**

**SIGNAL WORDS**

**DANGER**

**INDICATES AN EXTREMELY HAZARDOUS SITUATION OR ACTION THAT WILL RESULT IN SERIOUS INJURY OR DEATH.**

**WARNING**

**INDICATES A HAZARDOUS SITUATION OR ACTION THAT COULD RESULT IN SERIOUS INJURY OR DEATH.**

**CAUTION**

**INDICATES AN UNSAFE SITUATION OR ACTION THAT MAY RESULT IN PERSONAL INJURY.**

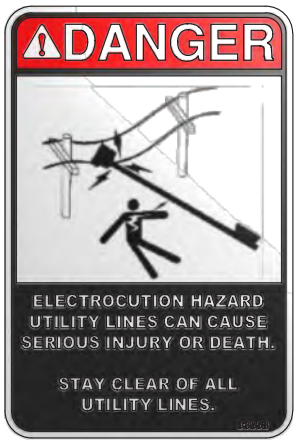
***IMPORTANT***

*Is used for instruction on operating, adjusting, or servicing a machine.*

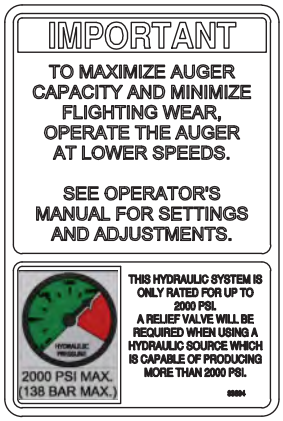
## Safety Decals

**⚠ WARNING**

- **REPLACE LOST, DAMAGED, PAINTED, OR UNREADABLE DECALS IMMEDIATELY. IF PARTS THAT HAVE DECALS ARE REPLACED, ALSO MAKE SURE TO INSTALL NEW DECALS. THESE DECALS INFORM AND REMIND THE OPERATOR WITH OPERATIONAL INFORMATION AND SAFETY MESSAGES.**




PART NO. 93558




PART NO. 93694


PART NO. 97961


PART NO. 98766


PART NO. 95445


PART NO. 95886


PART NO. 96911

## Following Safety Instructions

- Read and understand this operator's manual before operating.

- All machinery should be operated only by trained and authorized personnel.
- To prevent machine damage, use only attachments and service parts approved by the manufacturer.
- Always shut towing vehicle engine and hydraulic power unit engine off and remove key before servicing the implement.

- Avoid personal attire such as loose fitting clothing, shoestrings, drawstrings, pants cuffs, long hair, etc., that may become entangled in moving parts.

## Before Servicing

- Avoid working under an implement; however, if it becomes absolutely unavoidable, make sure the implement is safely blocked.

- Ensure that all applicable safety decals are installed and legible.
- When working around the implement, be careful not to be cut by sharp edges.

## Before Operating

- Always make certain everyone and everything is clear of the machine before beginning operation.
- Verify that all safety shields are in place and properly secured.
- Ensure that all applicable safety decals are installed and legible.
- When working around the implement, be careful not to be cut by sharp edges.

## During Operation

- Regulate speed to field conditions. Maintain complete control at all times.
- Never service or lubricate equipment when in operation.
- Keep away from overhead power lines. Electrical shock can cause serious injury or death.
- Use extreme care when operating close to ditches, fences, or on hillsides.
- Do not leave towing vehicle unattended with engine running.

## Pressurized Oil

- Relieve the hydraulic system of all pressure before adjusting or servicing. See hydraulic power unit manual for procedure to relieve pressure.
- High-pressure fluids can penetrate the skin and cause serious injury or death. Use cardboard or wood to detect leaks in the hydraulic system. Seek medical treatment immediately if injured by high-pressure fluids.
- Hydraulic system must be purged of air before operating to prevent serious injury or death.
- Do not bend or strike high-pressure lines. Do not install bent or damaged tubes or hoses.
- Repair all oil leaks. Leaks can cause fires, personal injury, and environmental damage.
- Route hoses and lines carefully to prevent premature failure due to kinking and rubbing against other parts. Make sure that all clamps, guards and shields are installed correctly.
- Check hydraulic hoses and tubes carefully. Replace components as necessary if any of the following conditions are found:
  - End fittings damaged, displaced, or leaking.
  - Outer covering chafed/cut or wire reinforcing exposed.
  - Outer covering ballooning locally.
  - Evidence of kinking or crushing of the flexible part of a hose.

## Preparing for Emergencies

- Keep a first aid kit and properly rated fire extinguisher nearby.

- Keep emergency numbers for fire, rescue, and poison control personnel near the phone.


## Wearing Protective Equipment

- Wear clothing and personal protective equipment appropriate for the job.

- Wear steel-toed shoes when operating.

- Wear hearing protection when exposed to loud noises.

- Do not wear additional hearing impairing devices such as radio headphones, etc.

# SECTION II
# Set Up

## General Set Up Information

This section contains all of the instructions required for the complete assembly of the entire Gravity Box Auger.

For your safety, and the safety of others, use proper tools and equipment and always use safe working procedures. Refer to these instructions before starting any work on your machine.

For ease of assembly, install all hardware loosely until assembly is complete and then tighten according to "Torque Chart" unless otherwise specified.

**⚠ WARNING**

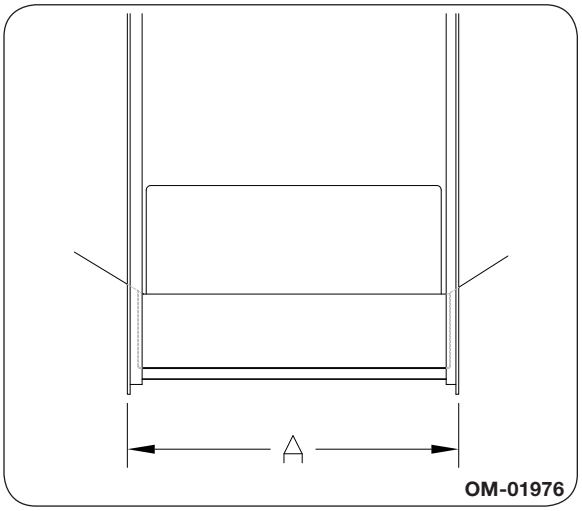
- **READ AND UNDERSTAND SAFETY RULES BEFORE OPERATING OR SERVICING THIS MACHINE. REVIEW "SAFETY" SECTION IN THIS MANUAL, IF NECESSARY.**
- **TIPPING OR MOVEMENT OF THE MACHINE CAN CAUSE SERIOUS INJURY OR DEATH. BE SURE THE MACHINE IS SECURELY BLOCKED.**
- **MOVING PARTS CAN CRUSH AND CUT. KEEP AWAY FROM MOVING PARTS.**
- **KEEP HANDS CLEAR OF PINCH POINT AREAS.**
- **FALLING OBJECTS CAN CAUSE SERIOUS INJURY OR DEATH. DO NOT WORK UNDER THE MACHINE AT ANY TIME WHILE BEING HOISTED. BE SURE ALL LIFTING DEVICES AND SUPPORTS ARE RATED FOR THE LOADS BEING HOISTED. THESE ASSEMBLY INSTRUCTIONS WILL REQUIRE SAFE LIFTING DEVICES UP TO 500 LBS. SPECIFIC LOAD RATINGS FOR INDIVIDUAL LOADS WILL BE GIVEN AT THE APPROPRIATE TIME IN THE INSTRUCTIONS.**
- **EYE PROTECTION AND OTHER APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT MUST BE WORN WHILE SERVICING THE IMPLEMENT.**

**IMPORTANT**

- *The procedures for assembling this unit were intended for two or more people.*

## Door Angle Dimension For Hopper

1. To determine which side of the door angles to mount the brackets, measure to the outside of the gravity box door angles (DIM “A”).




| "A" DIM. Door Angle | Hopper Mounting Bracket Location | Transport Bracket Location |
|---|---|---|
| 29" | Bracket to Outside of Door Angle - Small Door Instructions | Small Door Instructions |
| 29 1/4" | Bracket to Inside of Door Angle - Small Door Instructions | Small Door Instructions |
| 30" | Bracket to Outside of Door Angle - Small Door Instructions | Small Door Instructions |
| 34" | Bracket to Outside of Door Angle - Small Door Instructions | Small Door Instructions |
| 39" | Bracket to Inside of Door Angle - Small Door Instructions | Large Door Instructions |
| 40" | Bracket to Outside of Door Angle - Small Door Instructions | Large Door Instructions |
| 50" | Bracket to Inside of Door Angle - Large Door Instructions | Large Door Instructions |
| 62" | Bracket to Inside of Door Angle - Large Door Instructions | Large Door Instructions |

## Small Door

Before attaching mounting brackets refer to the "Door Angle Dimension For Hopper" in this section. This will help determine where to mount the door angles mounting brackets; see FIG. 2-1.

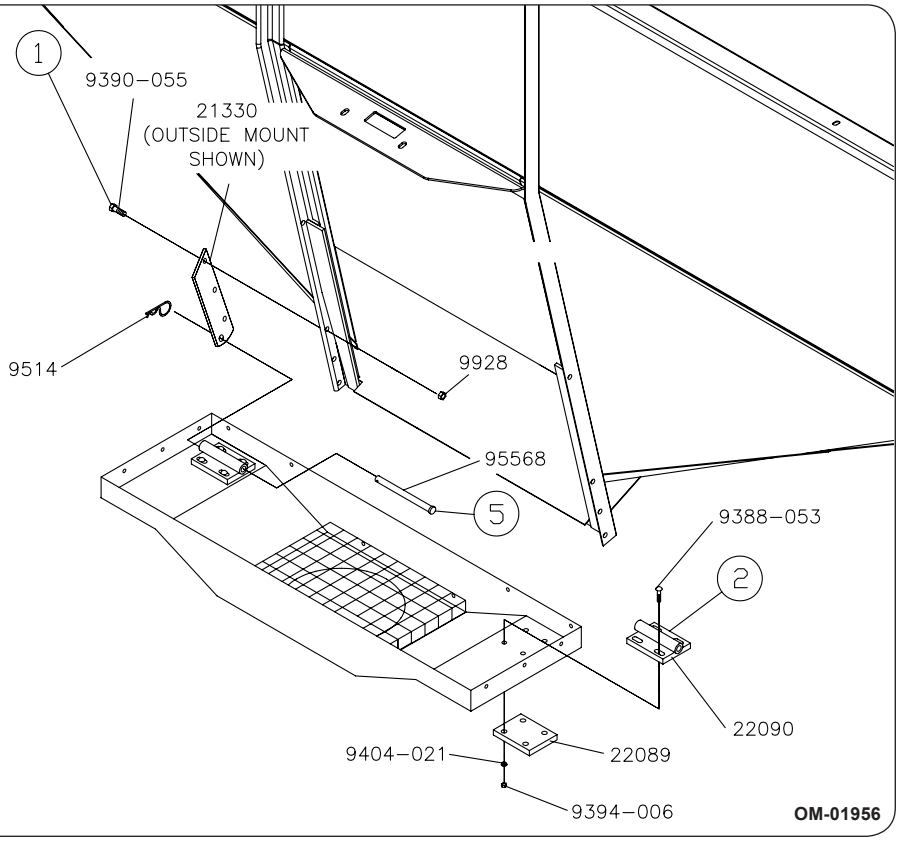



FIG. 2-1 OM-01956

1. Use two mounting brackets (21330), six 3/8"-16UNC x 1" capscrews (9390-055), and 3/8"-16UNC locknuts (9928) and place in the lower three holes on each door angle. See FIG. 2-1.

2. Attach hopper pivot mount (22090) to inside of hopper (FIG. 2-1). Install carriage bolts (9388-053) on the under side of the hopper. Install the backing plate (22089), lock washers (9404-021), and hex nuts (9394-006). Slide the pivot mounts inward or outward to assemble the clevis pin and tighten hardware.

3. Align hopper seal to the inside of the hopper and fasten the corners using back strap (22508), two 1/4"-20UNC x 3/4" capscrews (9390-003), and 1/4"-20UNC locknuts (9936) (FIG. 2-2). Attach the two springs (22507) to the outside of the hopper using four U-clips (22506) and 1/4"-20UNC x 1 1/4" capscrews (9390-006) and 1/4"-20UNC locknuts (9936).

4. Fasten hopper seal to the sides of auger hopper using two straps (21642), six 1/4"-20UNC x 3/4" capscrews (9390-003), and 1/4"-20UNC locknuts (9936) (FIG. 2-2).

5. Using a safe lifting device rated at a minimum of 500 lbs., attach auger hopper to mounting bracket (FIG. 2-1). Use two 1/2" dia. x 6" clevis pins (95568) and hairpin cotters (9514) to attach the hopper pivot tubes to the mounting brackets (FIG. 2-1).

## Small Door (Continued)

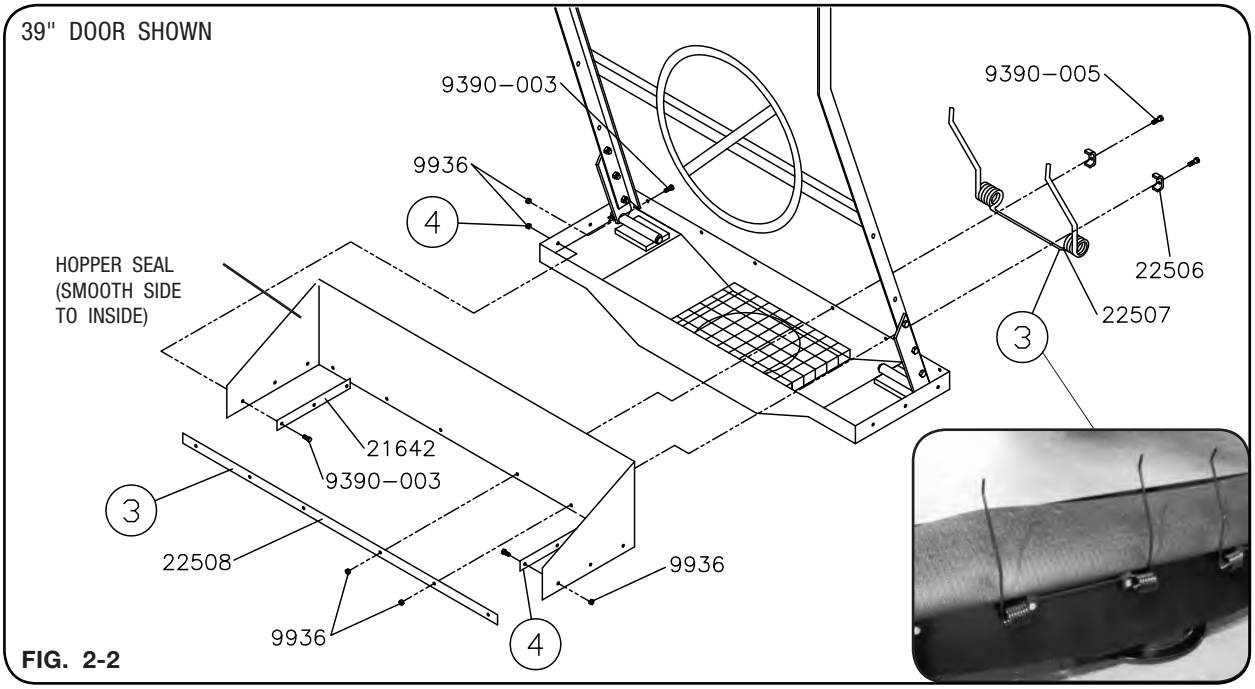
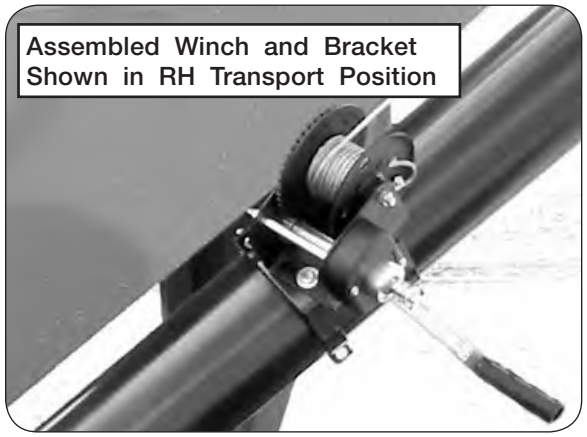



FIG. 2-2

6. Before mounting the winch bracket to the auger tube, determine which way you wish to have the auger pointing when in transport. When transport bracket is located on the right, the winch bracket and winch should be positioned as shown using the darkened holes (FIG. 2-3A). If you wish to locate the transport bracket to the left, reverse the position of the winch and bracket as indicated using the other darkened holes (FIG. 2-3B). Be sure to locate the winch bracket the proper length from the intake end of the auger as shown by the dimensions.



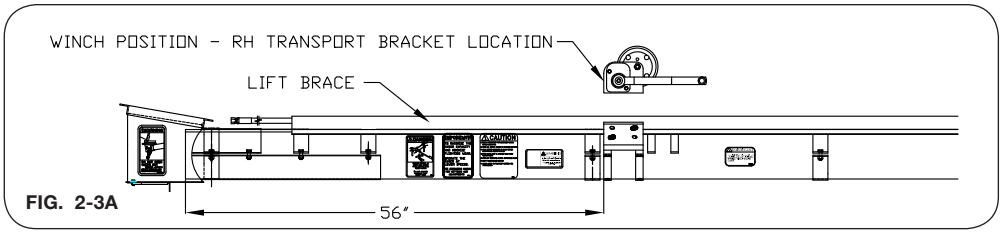




FIG. 2-3A

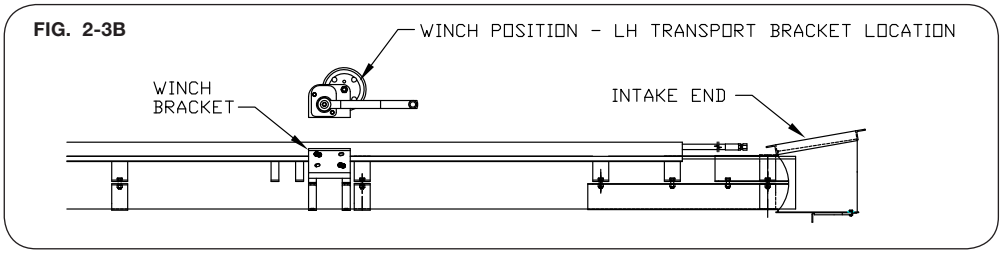



FIG. 2-3B

## Small Door (Continued)

7. **PLASTIC ONLY**
In order to place the winch bracket on the auger tube, the lift brace clamp rings must be removed or loosened enough to allow the winch bracket to fit under the intake end of the brace (FIG. 2-4). After loosening, lift or pry up the brace to provide "passing" clearance for the winch bracket flanges.

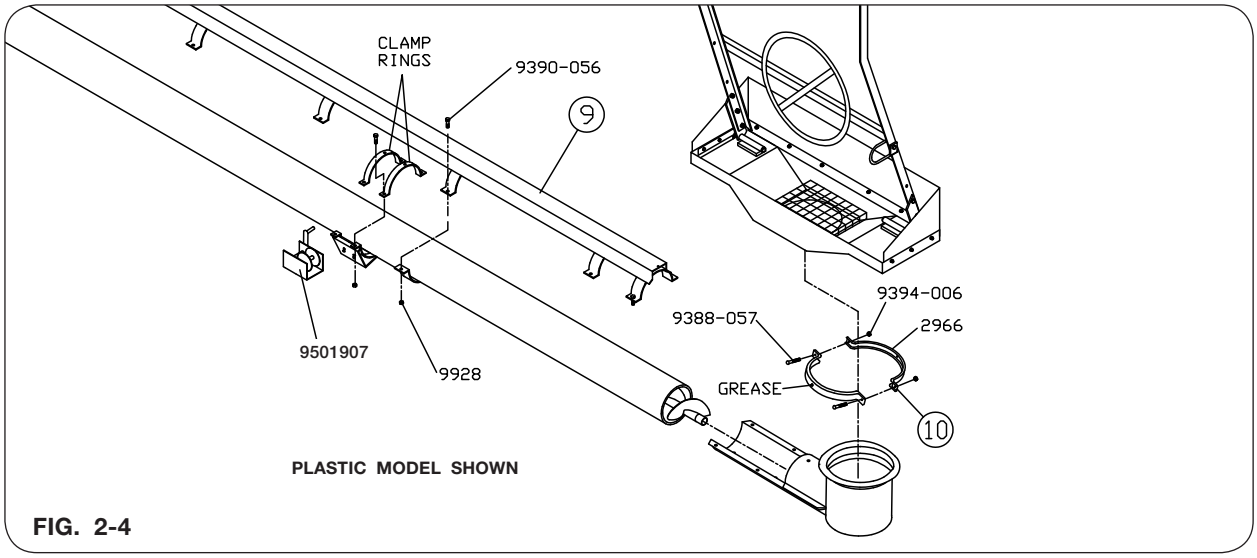



FIG. 2-4

8. With the winch bracket (9501907) properly located, attach the clamp rings using four 3/8"-16UNC x 1 1/4" capscrews (9390-056), locknuts (9928). Mount the winch as described above using 3/8"-16UNC x 1" capscrews (9390-055), flat washers (9405-076), and locknuts (9928). (FIG. 2-4)

9. **PLASTIC ONLY**
Check position of lift brace and winch bracket and tighten all clamps securely. (FIG. 2-4)

10. Using a safe lifting device rated at a minimum of 500 lbs., connect the swivel base to the auger hopper outlet using two swivel clamps (2966), 3/8"-16UNC x 2 1/2" carriage bolts (9388-057), and 3/8"-16UNC hex nuts (9394-006) (FIG. 2-4). Then grease.

## Small Door (Continued)

**IMPORTANT**

- *Boxes with a door angle measurement of 62” will use a 60” cable spacing instead of the 48” spacing shown in FIG. 2-5.*

11. Drill two 7/16” dia. holes 48” apart centered around the door angles and attach the swivel cable to the top of the gravity box using the following parts (FIG. 2-5):
    A. 3/8”-16UNC x 1 1/4” capscrew (9390-056)
    B. Bushing (22046)
    C. 3/8” flat washer (9405-076)
    D. 3/8”-16UNC locknut (9928)

12. Connect the thimble end of the winch cable to the swivel cable pulley using a quick link (91514) (FIG. 2-5).

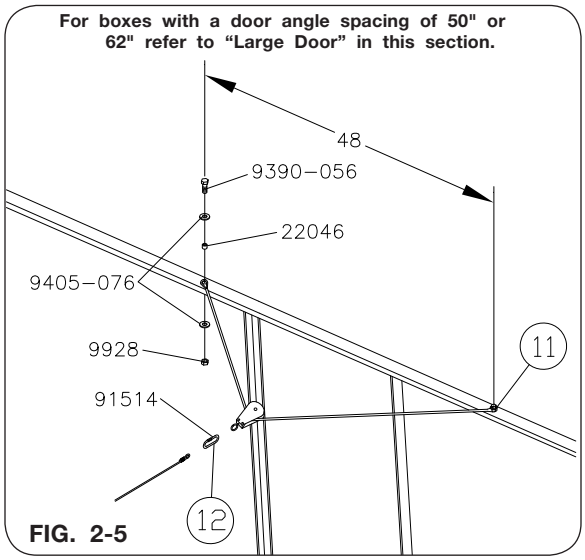


FIG. 2-5

13. Insert one of the thimble ends of the secondary support cable and the 6 link chain between the lift lugs located on the upper end of the lift brace. Insert a 3/8”-16UNC x 2” capscrew (9390-059) through the lift lugs, cable, and chain. Fasten with locknut (9928) (FIG. 2-6).

14. Use a quick link to fasten the winch cable pulley to the end of the 6 link chain. Thread the winch cable through the pulley and fasten to the winch. (For attaching cable to winch see “Winch Assembly” in this section.)

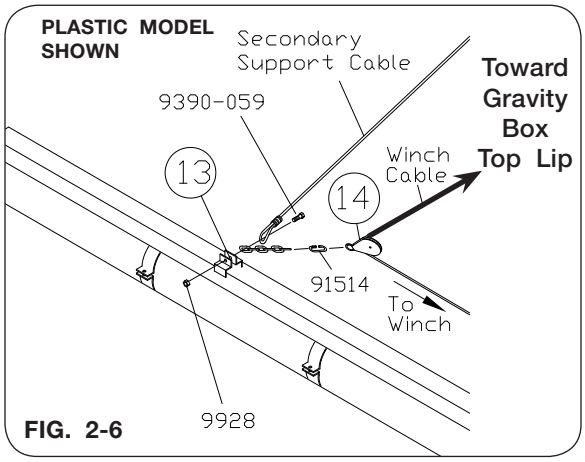


FIG. 2-6

**IMPORTANT**

- *Some applications may require shortening of the 6 link chain, using only two or three links increases the lift height of the auger for transport position.*

## Small Door (Continued)

15. Slip the 48" flexible rubber spout on the auger spout and apply the clamp ring (20739). Fasten using a 1/4"-20UNC x 1 1/4" capscrew (92936) and hex nut (9394-002) (FIG. 2-7).

16. Fasten "S" hooks (9006) on each end of the valve handle with pliers, and tie one rope on each hook. Crimp both ends of "S" hooks (FIG. 2-7).

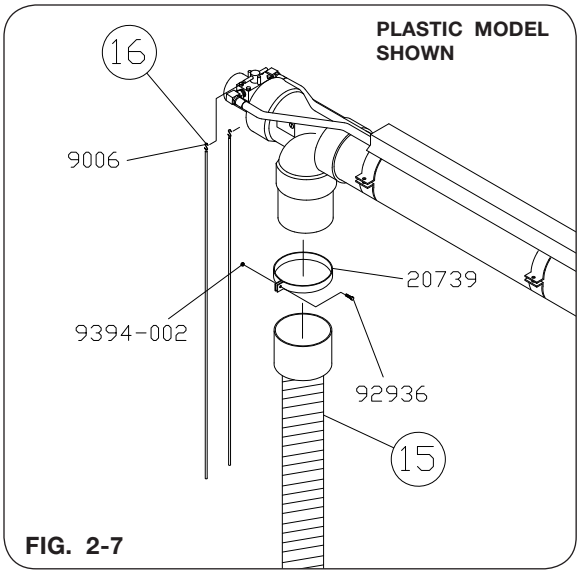


FIG. 2-7

17. Drill three 7/16" diameter holes. Attach the other end of the secondary support cable to the upper-middle rail of the gravity box by placing a 3/8" flat washer on top of the rail, insert a 3/8"-16UNC x 1 3/4" capscrew (9390-058) and tighten with a 3/8" flat washer (9405-076) and 3/8"-16UNC locknut (9928) (FIG. 2-8).

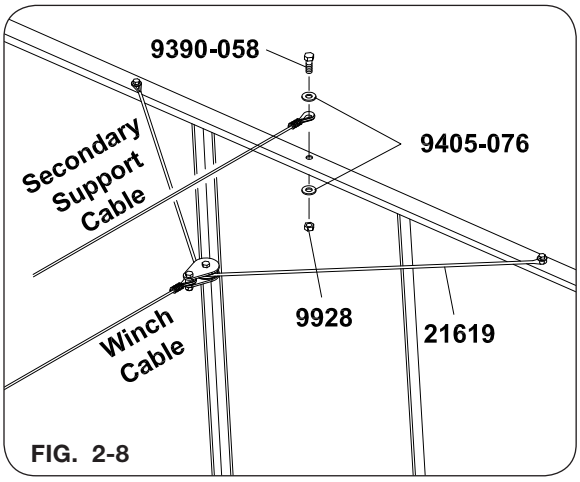
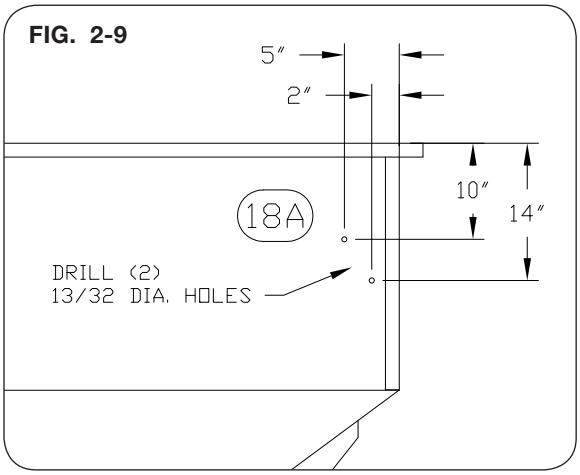


FIG. 2-8

18A. **12' AND 14' AUGERS (Except Unverferth Gravity Box Models 235 & 275)**
Depending on which direction the auger is to be transported, locate and *drill two 13/32" dia. holes for transport bracket. Attach with two 3/8"-16UNC x 1 1/4" capscrews (9390-056), backing plate (22241), 3/8" washers (9405-076), and locknuts (9928). See FIG. 2-9.

FIG. 2-9



## Small Door (Continued)

18B. **12' AND 14' AUGERS (Unverferth Gravity Box Models 235 & 275 ONLY)** Depending on which direction the auger is to be transported, locate and *drill two 13/32" dia. holes for transport bracket. Attach with two 3/8"-16UNC x 1 1/4" capscrews (9390-056), backing plate (22241), 3/8" washers (9405-076), and locknuts (9928). See FIG. 2-10.

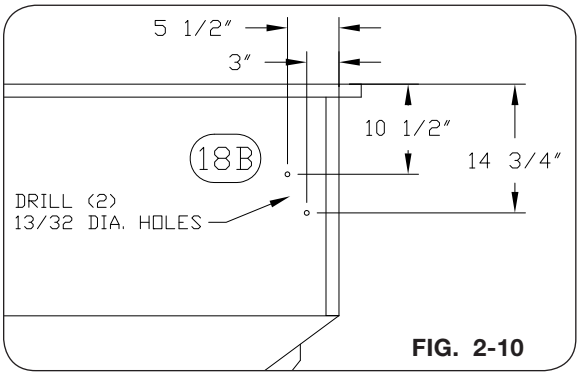



FIG. 2-10

18C. **16' AUGERS**
Only one 13/32" dia. hole is required for mounting transport bracket. Use backing plate (22241) on opposing side of support strap. Use backup plate (25748B) to replace backing plate on opposing side of transport bracket. Attach with one 3/8"-16UNC x 1 1/4" capscrew, 3/8" washer, and locknut using the top hole on the transport bracket. See FIG. 2-11. With 16' Auger, a support strap for bracket is required. (FIG. 2-12) Drill two holes after aligning the strap with the attached transport bracket and secure with three 3/8"-16UNC x 1 1/4" capscrews, 3/8" washers, locknuts, and a backing plate.

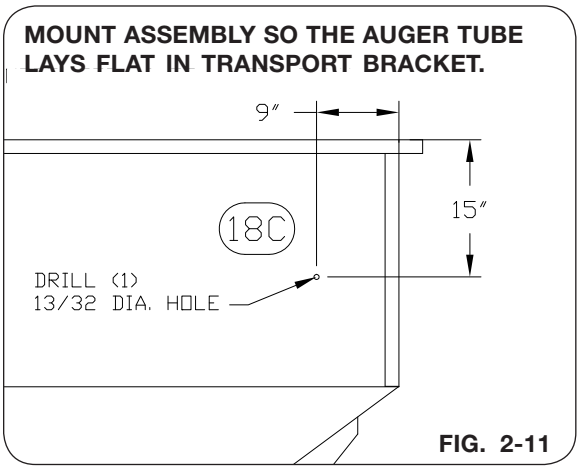
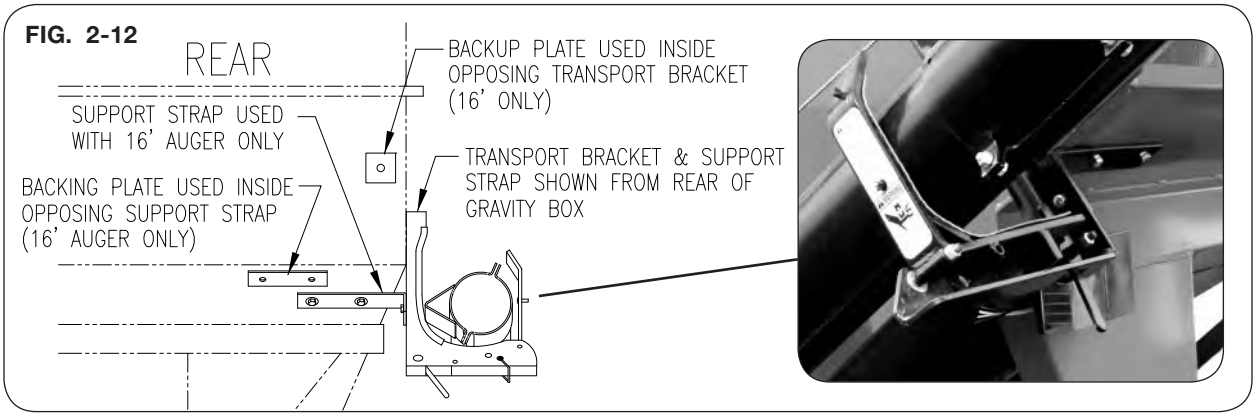



FIG. 2-11

NOTE: If mounting to a box with a door angle dimension of 39" or larger, see "Large Door" instructions in this section.

19. Assemble latch rest bracket to the auger tube using four 3/8"-16UNC x 1 1/4" capscrews and locknuts. Locate the rest bracket by centering rest bracket on the transport bracket so the angled stop plate faces towards the box as shown in FIG. 2-12. Rotate rest bracket approximately 25° so the solid steel stop plate hits the transport bracket. Then tighten hardware.

FIG. 2-12



## Small Door (Continued)

20. Assemble the hose holder to the door angle opposite of the transport bracket. Use one 3/8”-16UNC x 1 1/4” capscrew (9390-056), and one 3/8”-16UNC locknut (9928) (FIG. 2-13).

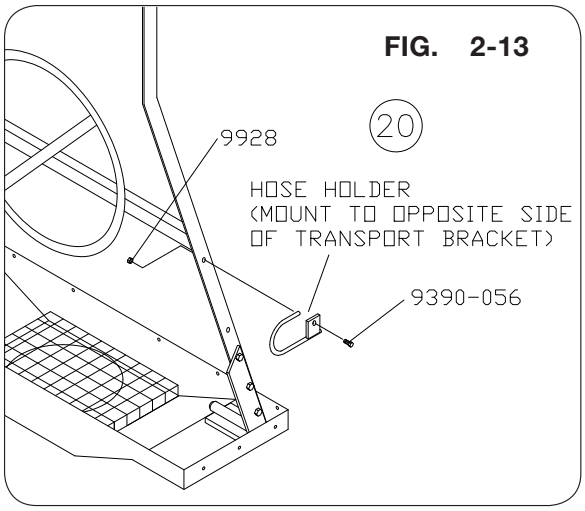



FIG. 2-13

21. Position hose mounting bracket on the skid cross member at the tractor end of the box. Drill 13/32” dia. hole and fasten the bracket with a 3/8”-16UNC x 1” capscrew (9390-055), and 3/8”-16UNC locknut (9928) (FIG. 2-14A & FIG. 2-14B).

22. Assemble two unions (93839) to the mounting bracket (FIG. 2-14A & FIG. 2-14B).

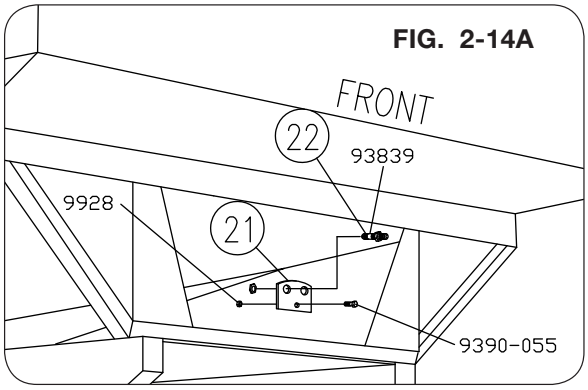



FIG. 2-14A


FIG. 2-14B

## Large Door

1. Attach the mounting brackets to the inside of the “L” bracket on the door angle (FIG. 2-15). Use four 7/16”-14UNC x 1 1/4” capscrews (9390-079) and 7/16”-14UNC locknuts (94980).

**IMPORTANT**

- *On some grain box models, the shim plate (22244) may have to be used between the mounting bracket and the “L” bracket to achieve proper spacing to mount the hopper.*

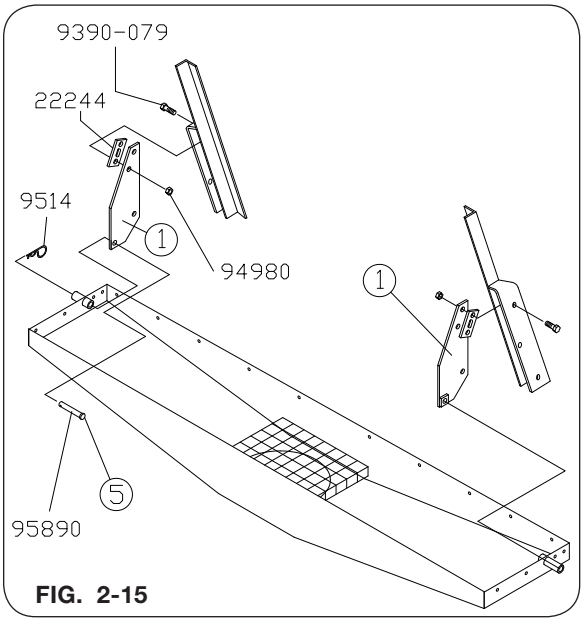
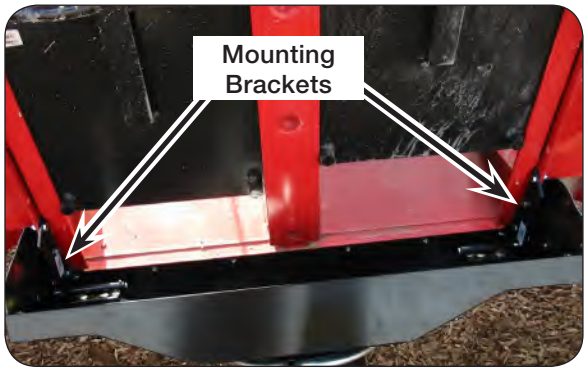


FIG. 2-15




2. Using a safe lifting device rated at a minimum of 500 lbs., attach auger hopper to the mounting brackets. Use two 1/2” dia. x 3 1/2” clevis pins (95890) and hair pin cotters (9514) to attach the hopper pivot tubes to the mounting brackets. (FIG. 2-16)

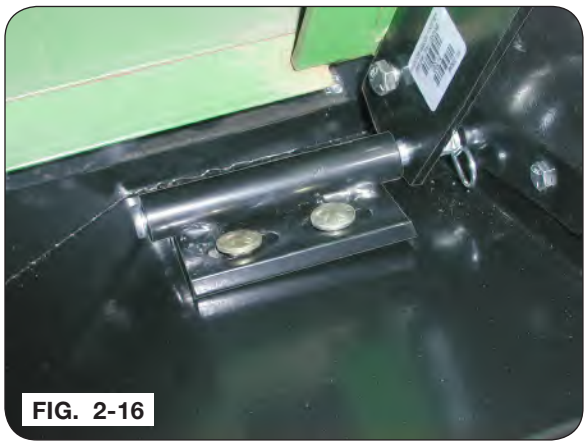
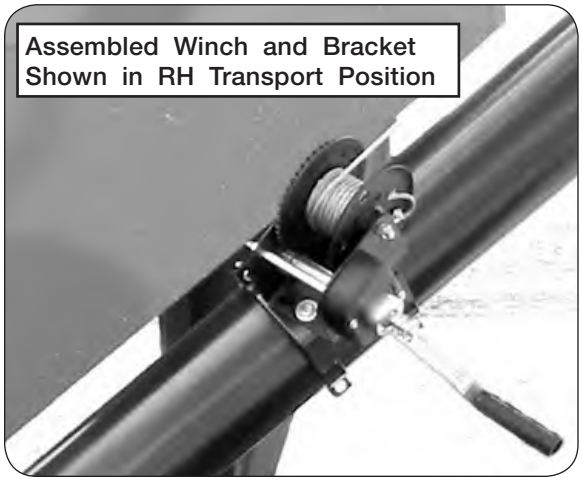


FIG. 2-16

## Large Door (Continued)

3. Before mounting the winch bracket to the auger tube, determine which way you wish to have the auger pointing when in transport. When transport bracket is located on the right, the winch bracket and winch should be positioned as shown using the darkened holes (FIG. 2-17B). If you wish to locate the transport bracket to the left, reverse the position of the winch and bracket as indicated using the other darkened holes (FIG. 2-17A). Be sure to locate the winch bracket the proper length from the intake end of the auger as shown by the dimensions.



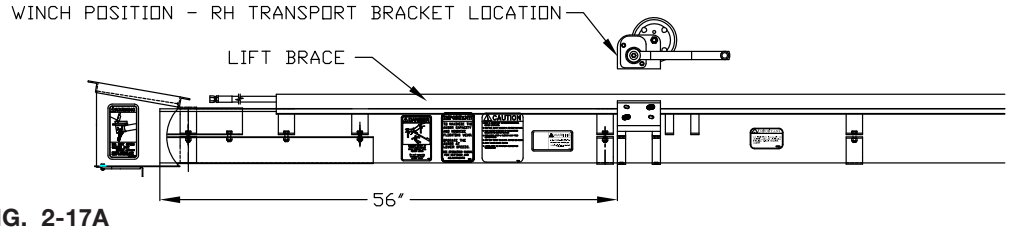




FIG. 2-17A

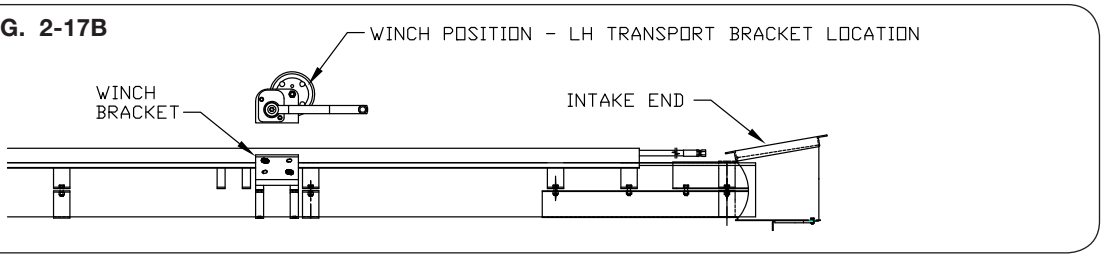
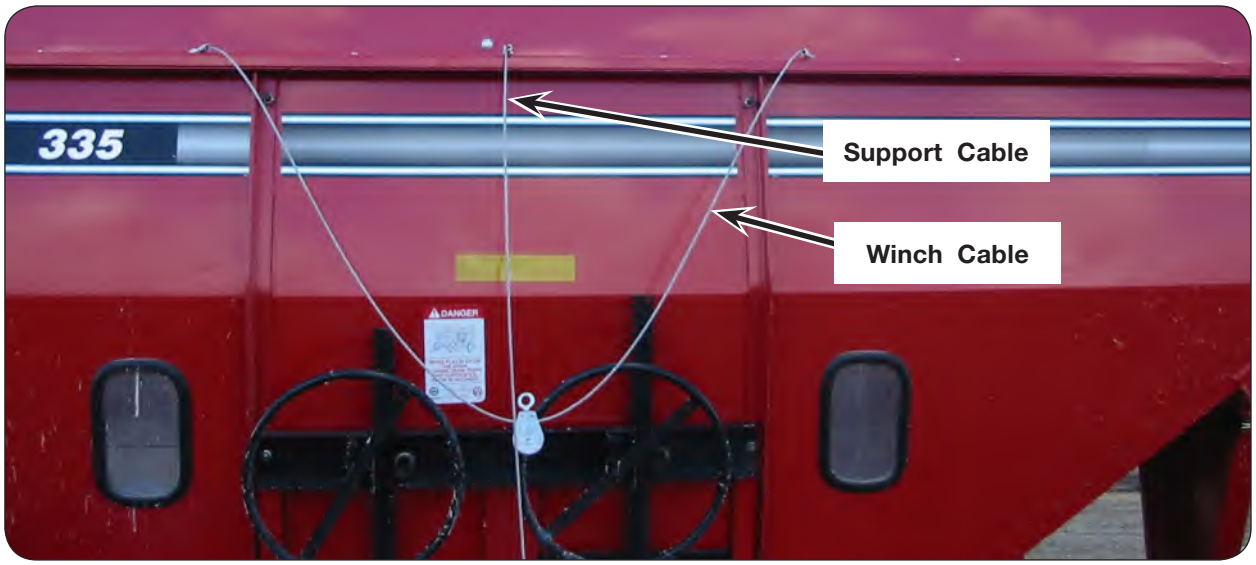
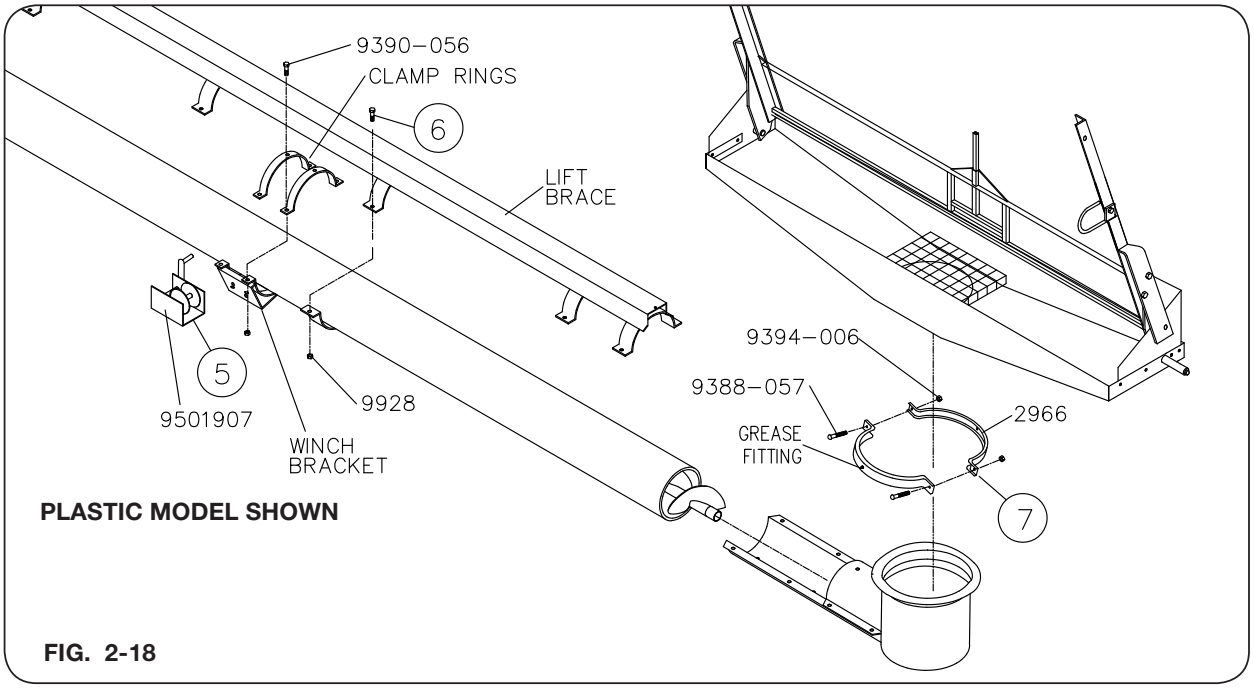



FIG. 2-17B



## Large Door (Continued)

4. **PLASTIC ONLY**
In order to place the winch bracket on the auger tube, the lift brace clamp rings must be removed or loosened enough to allow the winch bracket to fit under the intake end of the brace (FIG. 2-18). After loosening, lift or pry up the brace to provide "passing" clearance for the winch bracket flanges.




**PLASTIC MODEL SHOWN**

**FIG. 2-18**

5. With the winch bracket properly located, attach the clamp rings using four 3/8"-16UNC x 1 1/4" capscrews (9390-056), lock washers (9404-021), and 3/8"-16UNC hex nuts (9394-006). Mount the winch as described above using two 3/8"-16UNC x 1" capscrews, lock washers, and nuts. (FIG. 2-18)

6. **PLASTIC ONLY**
Check position of lift brace and winch bracket and tighten all clamps securely. (FIG. 2-18)

7. Using a safe lifting device rated at a minimum of 500 lbs., connect the swivel base to the auger hopper outlet using two swivel clamps (2966), 3/8"-16UNC x 2 1/2" carriage bolts, and 3/8"-16UNC hex nuts (FIG. 2-18). Then grease.

## Large Door (Continued)

8. Drill two 7/16” diameter holes 60” on center through the lower or formed lip where side extensions attach. (FIG. 2-19)

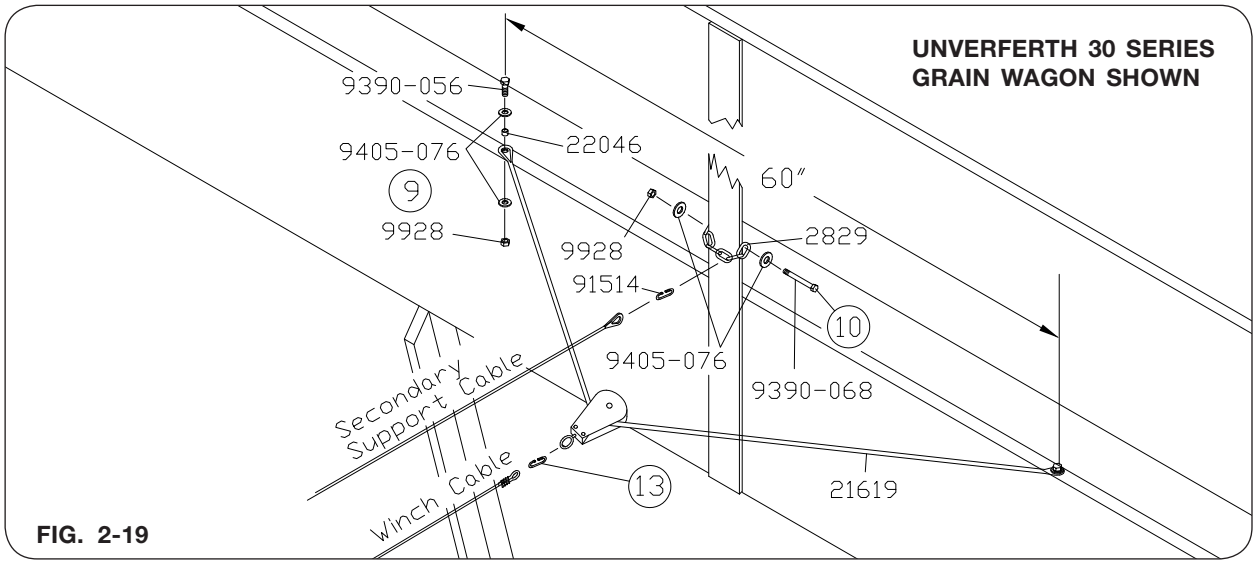


FIG. 2-19

9. Attach the swivel cable assembly to the lower lip of the side wall using (FIG. 2-19):
   A. 3/8”-16UNC x 1 1/4” capscrew (9390-056)
   B. bushing (22046)
   C. 3/8” flat washers (9405-076)
   D. 3/8”-16UNC locknut (9928)

10. Attach the chain to the center strap using side of gravity box (FIG. 2-19):
   A. 3/8”-16UNC x 4 1/2” capscrew (9390-068)
   B. 3/8”-16UNC locknuts (9928)
   C. Two 3/8” flat washers (9405-076)

11. Secure the 6 link chain (2829) and secondary suuport cable to the lift lug located on the upper end of the lift brace with a 3/8”-16UNC x 2” capscrew (9390-059) and 3/8”-16UNC locknut (9928). (FIG. 2-20)

12. Connect the 6 link chain and pulley together with a quick link. Thread the winch cable through the pulley and fasten to the winch. (For attaching cable to winch see “Winch Assembly” in this section.)

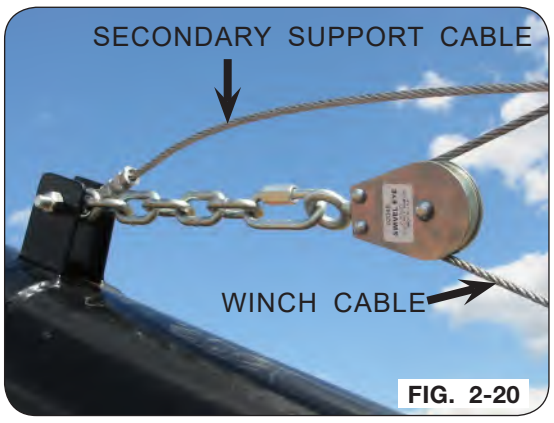


FIG. 2-20

13. Connect the thimble end of the winch cable to the pulley using a quick link (91514). (FIG. 2-19)

**IMPORTANT**

- *Some applications may require shortening of the 6-link chain, using only two or three links increases the lift height of the auger for transport position.*

## Large Door (Continued)

14. Slip the 48” flexible rubber spout on the auger spout and apply the clamp ring (20739). Fasten using a 1/4”-20UNC x 1 1/4” capscrew (92936) and 1/4”-20UNC hex nut (9394-002) (FIG. 2-21). Criss-cross the ropes across the top of the tube and allow for the remainder of the rope to hang down alongside the downspout.

15. Fasten “S” hooks (9006) on each end of the valve handle with pliers, and tie one rope on each hook. (FIG. 2-21)

16. Depending on which direction the auger is to be transported, locate and *drill two 13/32” dia. holes for transport bracket assembly for 12’ and 14’ Augers. Attach with two 3/8”-16UNC x 1 1/4” capscrews (9390-056), 3/8” washers (9405-076), 3/8”-16UNC locknuts (9928), and backing plate (22241). **Only one 13/32” dia. hole is required for mounting transport bracket for 16’ Auger. Attach with one 3/8”-16UNC x 1 1/4” capscrew, 3/8” washer, and 3/8”-16UNC locknut using the top hole on the transport bracket. With 16’ Auger, a support strap for bracket is required, see FIG. 2-24. Drill two holes after aligning the strap with the attached transport bracket and secure with three 3/8”-16UNC x 1 1/4” capscrews, 3/8” washers, locknuts, and a backing plate. FIG. 2-22 and FIG. 2-23 shows the approximate locating dimensions. Mount the assembly so that the auger tube lays flat in the transport bracket.

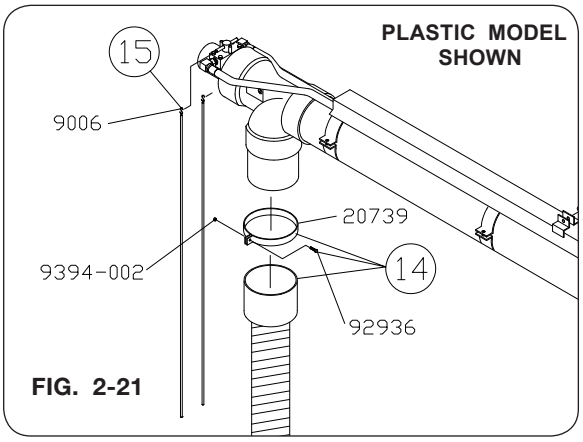


FIG. 2-21

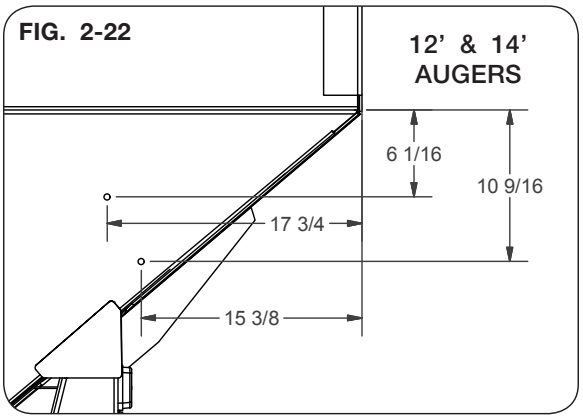


FIG. 2-22

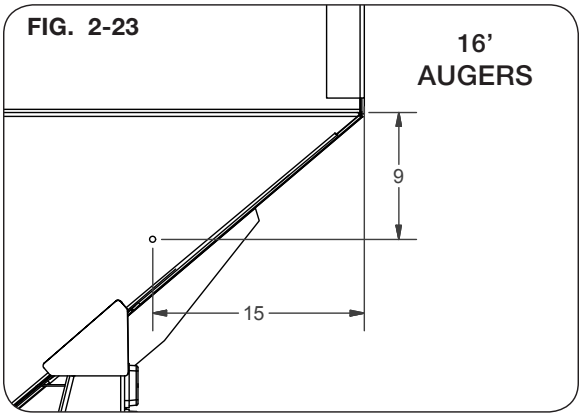


FIG. 2-23

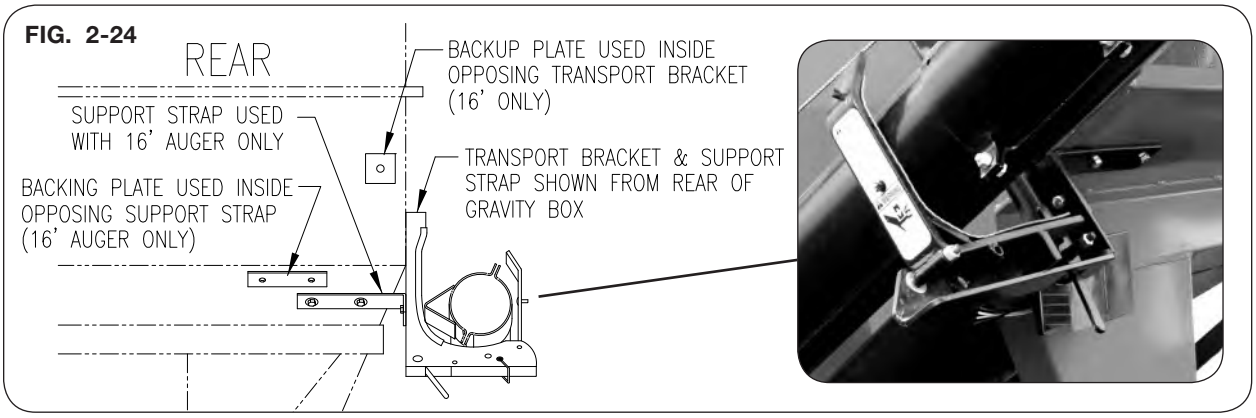
## Large Door (Continued)

**IMPORTANT**

- *When assembling the latch rest bracket, make sure the angled plate always faces the box (FIG. 2-24).*

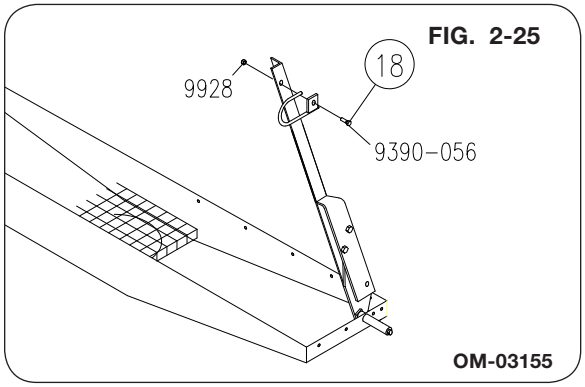
17. **Assemble latch rest bracket to the auger tube using four 3/8”-16UNC x 1 1/4” capscrews and locknuts. Locate the rest bracket by centering rest bracket on the transport bracket so the angled stop plate faces towards the box as shown in FIG. 2-24). Rotate rest bracket approximately 25° so the solid steel stop plate hits the transport bracket. Then tighten hardware.**

**FIG. 2-24**




18. **Assemble the hose holder to the door angle opposite of the transport bracket. Drill a 3/16” dia. hole approximately 14” up from the “L” bracket. Use one 3/8”-16UNC x 1 1/4” capscrew (9390-056), and one 3/8”-16UNC locknut (9928) (FIG. 2-25).**

**FIG. 2-25**

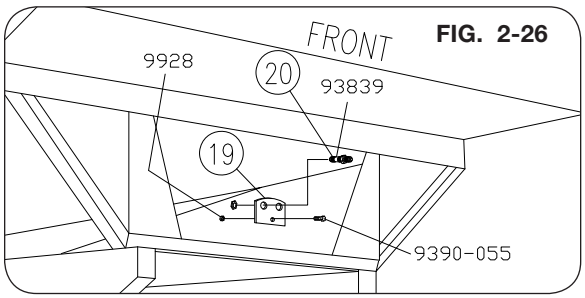



**IMPORTANT**

- *On metal augers use cable tie (93617) 30” up on the tube to hold the hydraulic hose, as not to cover the decals.*
- *Boxes with large tires may require the hose bracket to be located 12 to 18” higher to eliminate interference with the tires.*

19. **Position hose mounting bracket to the under frame of the box. Drill a 13/32” dia. hole and fasten the bracket with a 3/8”-16UNC x 1” capscrew (9390-055), and 3/8”-16UNC locknut (9928) (FIG. 2-26).**
20. **Assemble two unions (93839) to the mounting bracket (FIG. 2-26).**

**FIG. 2-26**




## Winch Assembly

**⚠ WARNING**

- **BEFORE OPERATING WINCH, BE SURE THAT WINCH IS SECURELY INSTALLED TO THE AUGER AND THAT THE CABLES ARE TIED TO THE WINCH AND GRAVITY BOX. BE SURE TO READ THE FOLLOWING INSTRUCTIONS AND OPERATING PROCEDURES PROVIDED WITH THE WINCH. FAILURE TO DO SO COULD RESULT IN DAMAGE TO THE AUGER OR SERIOUS BODILY HARM.**

**IMPORTANT**

- *Refer to proper assembly instructions for your gravity box before installing winch.*
- *On 16' Box Augers, see instruction sheet accompanied with the winch for winch and cable assembly.*

1. Check that all cables and winch are securely installed and not damaged in any way.

2. Tie cable to winch by the following instructions (FIG. 2-27).

NOTE: Start cable between spool plate.

1. Thread cable from inside winch, out through hole "A".

2. Continue through hole "B" and hole "C" as shown in FIG. 2-27.

3. Finally, thread back under cable between hole "A" and "B". Tighten.

4. When operating the winch, take note of the following guidelines:
   -- never walk under auger while it is suspended
   -- never leave auger unattended while it is suspended
   -- test winch each time by lifting auger a few inches out of transport bracket before completely raising
   -- never winch auger up or down while it is loaded
   -- be sure that cable is not kinked or unaligned on winch drum
   -- always take safety precautions

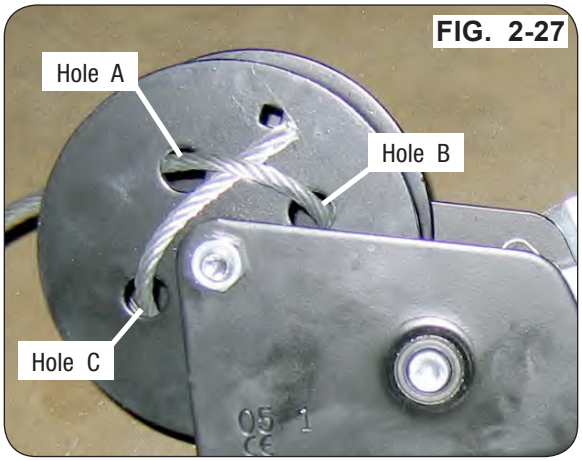


FIG. 2-27

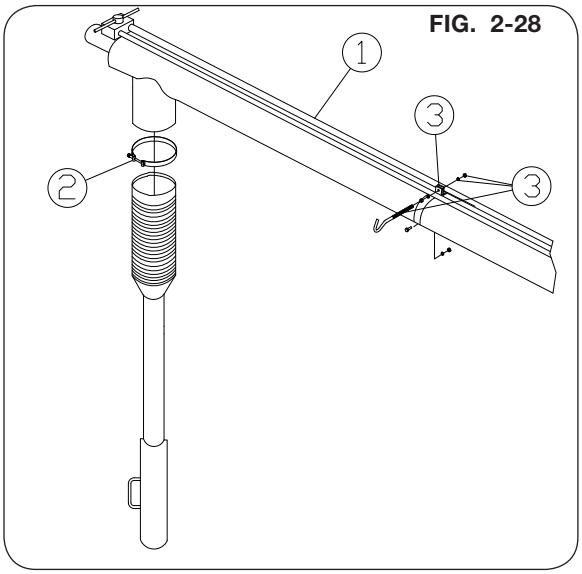
## Optional Telescopic Spouts-2-Stage (9' to 14'9")

### Steel Model Package #22721 Optional 5'6" to 10' Spout

1. Raise the auger approximately 4-5 feet off the ground.
2. Slip the telescopic spout with clamp ring over the tube adapter end and fasten.
3. Install clamp halves (2745B) to auger tube with 3/8"-16UNC x 1 1/4" capscrew (9390-056), hook bolt (95940), two lock washers (9404-021), and locknut (9928).

NOTE: Place clamp on auger tube where spout handle lines up and the hook is on top and faces outward when the auger is in transport. Clamp should lie under the hydraulic hoses.

FIG. 2-28



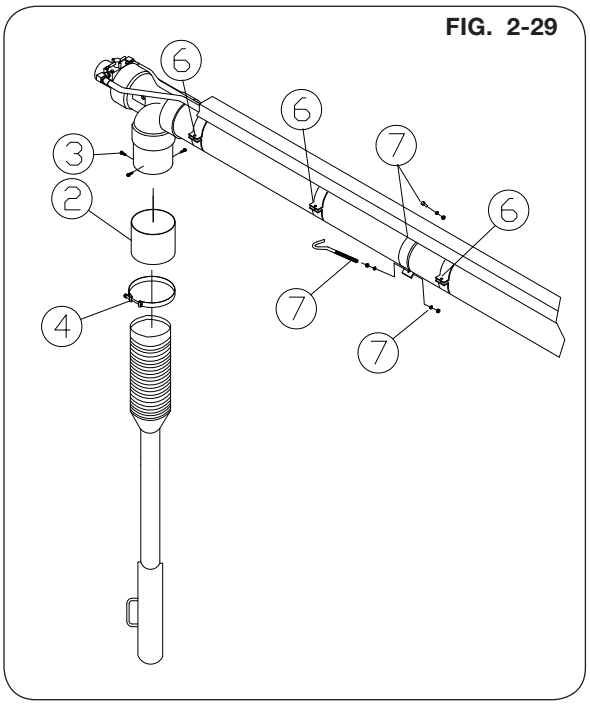

### Plastic Model Package #22724 Optional 5'6" to 10' Spout

1. Raise the auger approximately 4-5 feet off the ground.
2. Slide the tube adapter (22010) into the auger spout, leaving approximately 3" of the adapter protruding from the auger spout.

NOTE: Applying heat to the plastic down-spout before inserting the adapter may improve assembly.

3. Attach the tube adapter to the auger spout using three 1/4"-20UNC x 1 self-tapping screws (9512).
4. Slip the telescopic spout with clamp ring over the tube adapter end and fasten.
5. After installing extendable spout, raise auger to release tension on secondary support cable and block auger to support the weight.

FIG. 2-29




6. Loosen bolts which hold brace to auger.
7. Install top half of clamp (20741) under brace and hoses. Secure other half of clamp with 3/8"-16UNC x 1 1/4" capscrew (9390-056), hook bolt (95940), two lock washers (9404-021), and locknut (9928).

NOTE: Hook should line up with the handle on spout. The hook should be on the bottom side of the auger tube facing up and outward when the auger is in transport position.

## Optional Flow Control Valve

Tractors having high-capacity hydraulic systems with 12 to 20 GPM flow, may cause your auger to run too fast, resulting in:

A. Excess Vibration
B. Excess Wear
C. Loss of Performance

To eliminate these problems, an adjustable flow control valve is offered for installation into the auger hydraulic system. This valve will allow the operator to adjust the flow to obtain the recommended operating speed of 400 to 600 RPM.

NOTE: The speed control valve may be ordered through your Unverferth dealer.

1. Before assembling hydraulic components, place control valve bracket into position near the middle of the front lower frame of the gravity box. Drill a 13/32" diameter hole approximately 5/8" down as shown in FIG. 2-30.

NOTE: If original hose mounting bracket was installed, use the same hole and hardware.

2. Secure bracket to gravity box with the hardware supplied to mount the hose mounting bracket (3/8"-16UNC bolt, 3/8" lock washer, and 3/8"-16UNC hex nut).

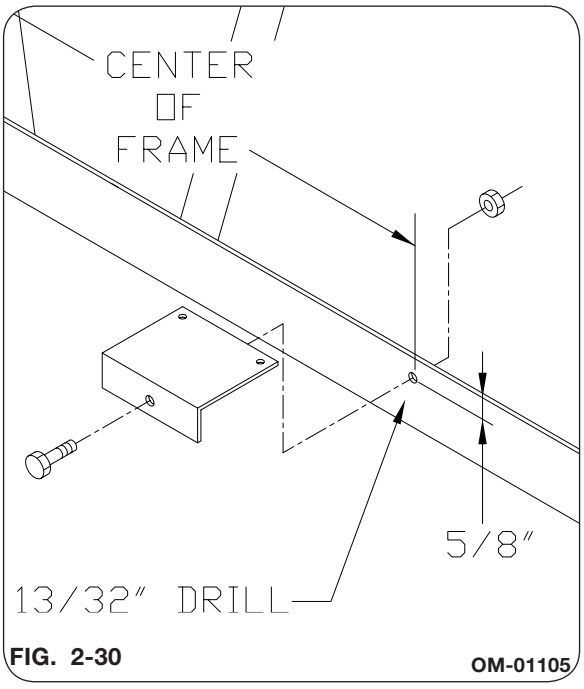



FIG. 2-30 OM-01105

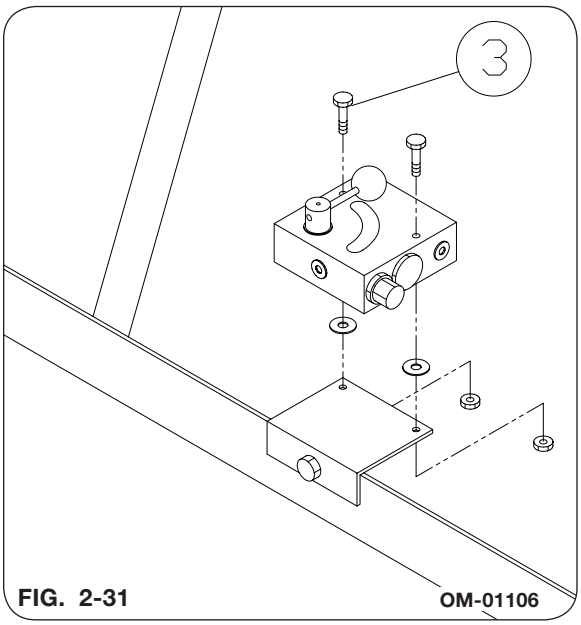



FIG. 2-31 OM-01106

3. Position the valve (9000832) on the bracket (21298) and secure using 1/4"-20UNC x 2 1/2" capscrews, 3/8" washers, and 1/4"-20UNC locknuts (FIG. 2-31).

## Optional Flow Control Valve (Continued)

**⚠ WARNING**

- **HIGH-PRESSURE FLUIDS CAN PENETRATE THE SKIN AND CAUSE SERIOUS INJURY OR DEATH. USE CARDBOARD OR WOOD TO DETECT LEAKS IN THE HYDRAULIC SYSTEM. SEEK MEDICAL TREATMENT IMMEDIATELY IF INJURED BY HIGH-PRESSURE FLUIDS.**

- **RELIEVE THE HYDRAULIC SYSTEM OF ALL PRESSURE BEFORE ADJUSTING OR SERVICING. SEE THE HYDRAULIC POWER UNIT OPERATOR'S MANUAL FOR PROPER PROCEDURES.**

4. To install control valve, follow appropriate plumbing diagram (FIG. 2-32) for open-center hydraulic system or (FIG. 2-33) for closed-center hydraulic system. Contact your local dealer to identify which system your tractor is equipped with.

**IMPORTANT**

- *When auger is loaded with material, auger should not stall. Adjust speed to allow for smooth, even feeding of material through tube.*

5. Once the control valve is installed, the auger speed can be set as follows:
   A. Set flow control valve approximately 1/2 way on flow indicator (lock into position).
   B. Start oil flow and run auger to check auger speed. Flighting should run smooth, not lag or fluctuate in speed, adjust speed control valve if necessary

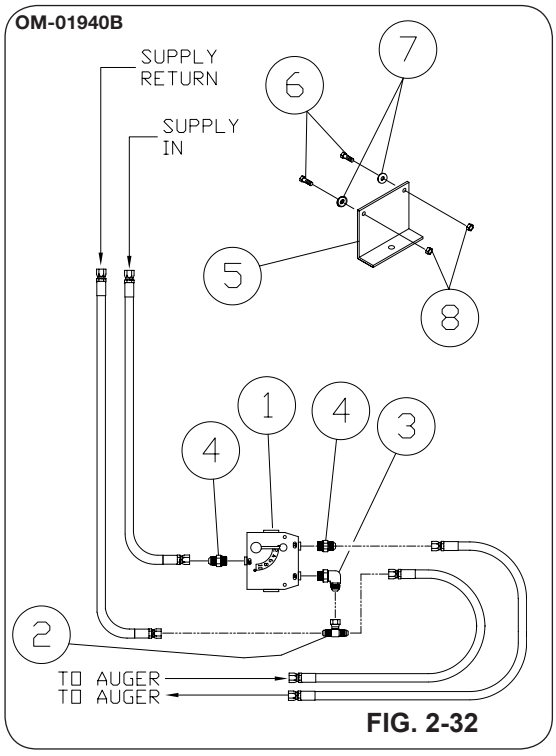



FIG. 2-32

| ITEM | PART NO. | DESCRIPTION |
|---|---|---|
| | 21299 | Flow-Control Valve Kit<br>For Open-Center Systems |
| 1 | 9000832 | Flow Control Valve |
| 2 | 94997 | Swivel Tee |
| 3 | 9863 | Elbow 90° |
| 4 | 9864 | Adapter |
| 5 | 21298 | Bracket |
| 6 | 9390-011 | Capscrew 1/4-20 x 2 1/2" Lg. |
| 7 | 9405-064 | Flat washer 1/4" |
| 8 | 9936 | Locknut 1/4-20 |

## Optional Flow Control Valve (Continued)

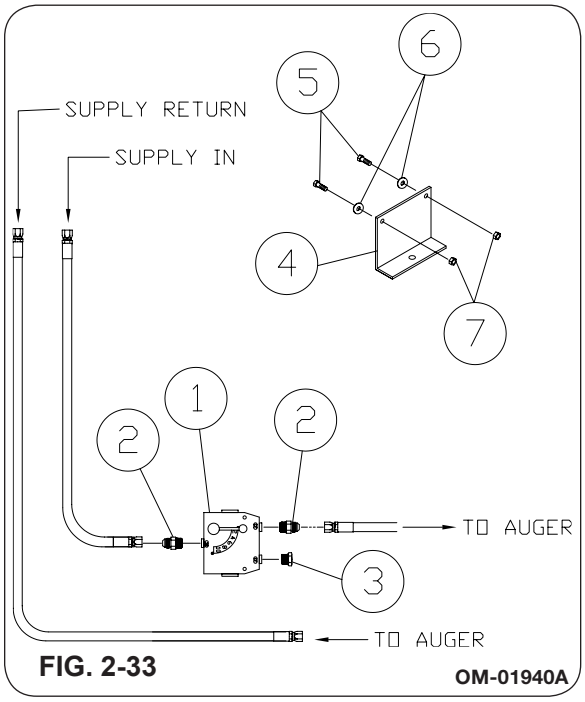



FIG. 2-33 OM-01940A

| ITEM | PART NO. | DESCRIPTION |
|---|---|---|
| | 21300 | Flow-Control Valve Kit For Closed-Center Systems |
| 1 | 9000832 | Flow Control Valve |
| 2 | 9864 | Adapter |
| 3 | 93657 | Plug |
| 4 | 21298 | Bracket |
| 5 | 9390-011 | Capscrew 1/4”-20UNC x 2 1/2" Lg. |
| 6 | 9405-064 | Flat washer 1/4" |
| 7 | 9936 | Locknut 1/4”-20UNC |

## Optional Check Valve

These instructions are for the installation of the Check Valve (94909) for the Unverferth Hydraulic Box Auger. This unit will allow the auger to only run forward.

**⚠ WARNING**

- **HIGH-PRESSURE FLUIDS CAN PENETRATE THE SKIN AND CAUSE SERIOUS INJURY OR DEATH. USE CARDBOARD OR WOOD TO DETECT LEAKS IN THE HYDRAULIC SYSTEM. SEEK MEDICAL TREATMENT IMMEDIATELY IF INJURED BY HIGH-PRESSURE FLUIDS.**

- **RELIEVE THE HYDRAULIC SYSTEM OF ALL PRESSURE BEFORE ADJUSTING OR SERVICING. SEE THE HYDRAULIC POWER UNIT OPERATOR'S MANUAL FOR PROPER PROCEDURES.**

**IMPORTANT**

- *Be sure to disconnect hydraulics while working in an environment clean of dirt and debris. If dirt should enter into system, flush system. Failure to remove dirt could result in motor failure or damage to system supply.*
- *To reverse/change the rotation of the auger flighting, remove solenoid block from hydraulic motor, rotate 180°, and reassemble. To insure the electric ON/OFF switch is working correctly (on is on/off is off), the input hose must go into the port marked "A" and the output hose must come out of the port marked "B".*

NOTE: The Check Valve must be installed on the return side of the motor in order to work properly.

1. Relieve hydraulic pressure and disconnect hydraulic RETURN line from the elbow near the control valve.

2. Insert the check valve between the control valve and elbow and reconnect the hydraulic line to the elbow.

3. Check auger for proper rotation before loading with material.

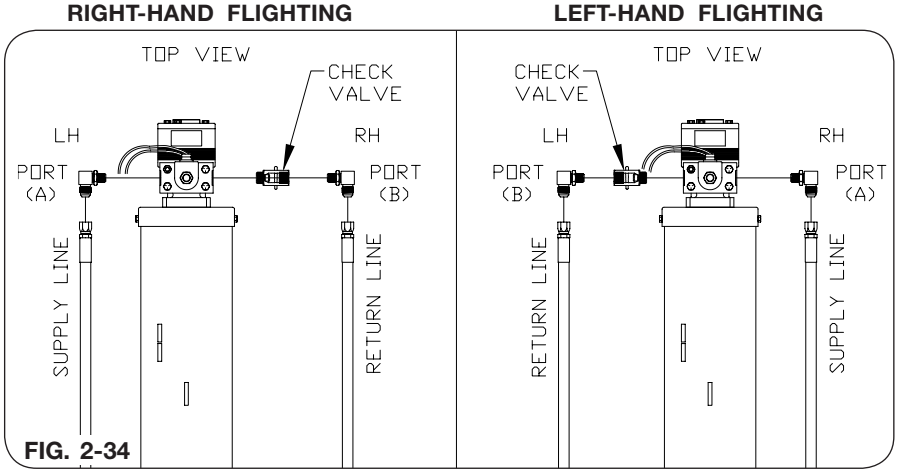


FIG. 2-34

## Optional Relief Valve

This instruction sheet is for the installation of the **Relief Valve** for the Unverferth Auger products. This unit will allow excessive hydraulic pressure to bypass the motor to prevent damage.

**⚠ WARNING**

- **HIGH-PRESSURE FLUIDS CAN PENETRATE THE SKIN AND CAUSE SERIOUS INJURY OR DEATH. USE CARDBOARD OR WOOD TO DETECT LEAKS IN THE HYDRAULIC SYSTEM. SEEK MEDICAL TREATMENT IMMEDIATELY IF INJURED BY HIGH-PRESSURE FLUIDS.**

- **RELIEVE THE HYDRAULIC SYSTEM OF ALL PRESSURE BEFORE ADJUSTING OR SERVICING. SEE THE HYDRAULIC POWER UNIT OPERATOR'S MANUAL FOR PROPER PROCEDURES.**

**IMPORTANT**

- *Be sure to disconnect hydraulics while working in an environment clean of dirt and debris. If dirt should enter into system, flush system. Failure to remove dirt could result in motor failure or damage to system supply.*

1. Disconnect hoses at motor end.

2. Before installing the relief valve determine whether your flight is right-handed or left-handed. View the auger from the hopper end, if the flight turns clockwise it is left-handed. Right-handed flight turns counter clockwise.

3. Once the flight direction is known, position the relief valve as follows: For right-handed flights the in-port ("A") goes to the left-side of the motor. Again, look from the hopper end or the shaft end of the motor. For left-handed flights, the in-port ("A") goes to right side of motor. FIG. 2-35 & FIG. 2-36 show left-hand flight.

4. Apply an SAE approved sealant and connect relief valve, adapters, tee, and hose to hydraulic lines as shown (FIG. 2-36).

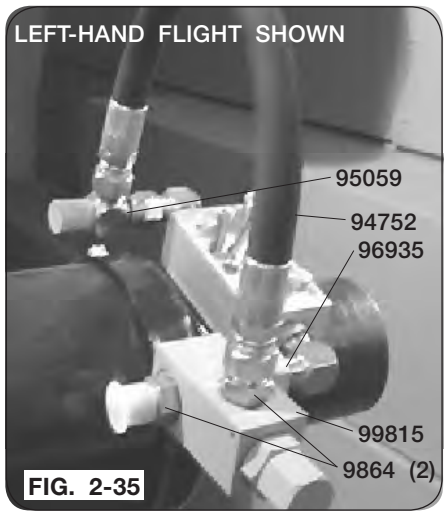


FIG. 2-35

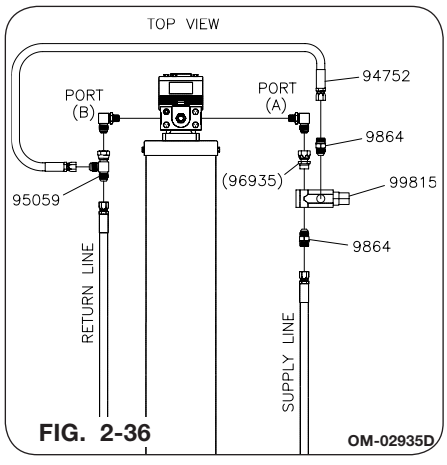


FIG. 2-36

## Optional Electronic Valve

These instructions are for the installation of the **Electronic Control** for the Unverferth Hydraulic Box Auger. This unit allows convenient on/off control of the auger.

To install this unit, a 12 Volt D.C. electrical source must be available. DO NOT install into any electrical system that does not meet these specifications. Failure to abide will result in damage to components.

**⚠ WARNING**

- **HIGH-PRESSURE FLUIDS CAN PENETRATE THE SKIN AND CAUSE SERIOUS INJURY OR DEATH. USE CARDBOARD OR WOOD TO DETECT LEAKS IN THE HYDRAULIC SYSTEM. SEEK MEDICAL TREATMENT IMMEDIATELY IF INJURED BY HIGH-PRESSURE FLUIDS.**

- **RELIEVE THE HYDRAULIC SYSTEM OF ALL PRESSURE BEFORE ADJUSTING OR SERVICING. SEE THE HYDRAULIC POWER UNIT OPERATOR'S MANUAL FOR PROPER PROCEDURES.**

***IMPORTANT***

- *Be sure to disconnect hydraulics while working in an environment clean of dirt and debris. If dirt should enter into system, flush system. Failure to remove dirt could result in motor failure or damage to system supply.*
- *To obtain the correct auger rotation connect the hydraulic supply line to the "A" port on the solenoid valve and the return line to the "B" port.*
- *"A" port will be located on the right-hand side of the auger. To determine the right-hand side, stand at the hopper end of the auger and look towards the motor end.*
- *Be sure cable is taut along auger tube. A loose or drooping wire will tend to catch and be torn.*
- *Depending on the length of the spout, excess wire may need to be looped and securely tied to auger.*

## Optional Electronic Valve (Continued)

1. Relieve hydraulic pressure and disconnect valve from hydraulic lines and from motor by loosening the four bolts.

2. Align the solenoid valve up to the motor with the “A” port on the solenoid valve to the “A” port on the motor (FIG. 2-37).

3. Connect electronic valve to hydraulic lines. Position valve on motor with new “O”-rings and secure using the four bolts and lock washers that held the previous valve (FIG. 2-38).

4. Position the electrical lines down the length of the auger tube along the hydraulic lines. Secure the cable to the hydraulic line using the seven 6” cable ties provided (FIG. 2-38).

5. Run the switch down the spout as shown. Secure using two 28” cable ties. Position bottom tie strap approximately 15 inches from bottom of spout to allow for easy access to switch.

6. Run leads to front of gravity box and connect to a 12 Volt D.C. electrical supply. The covered terminal must be assembled to the positive supply of the power source. The covered terminal must be connected to the ground of the power source. (FIG. 2-39)

7. Check auger for proper installation and turn on electrical and hydraulic power supplies. The auger will function when the “ON” button is pressed. To stop auger, press “OFF” button on switch.

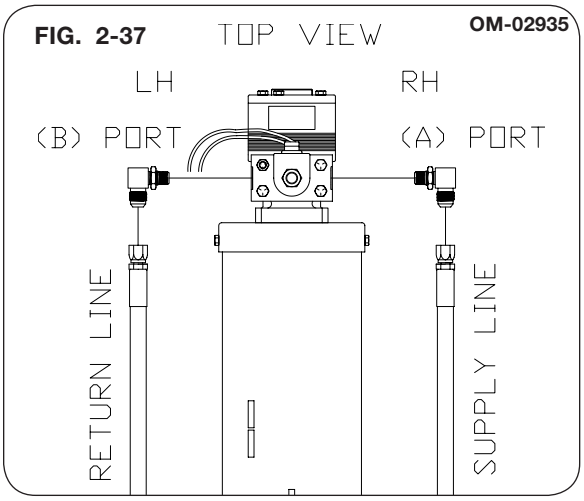


FIG. 2-37 OM-02935

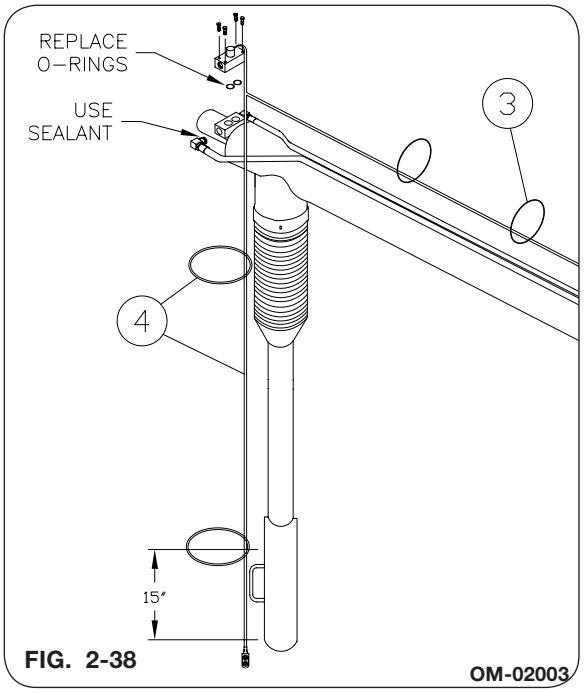


FIG. 2-38 OM-02003

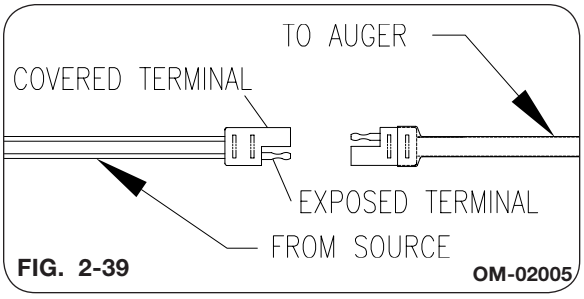


FIG. 2-39 OM-02005

## Optional Electronic Valve (Continued)

**IMPORTANT**

- *When electrical power supply is stopped, the auger will automatically shut-off, even though hydraulic power is still being supplied.*

**Maximum Operating Pressures:**

- *Continuous 1500 psi (min. 1000 psi).*
- *Peak (10% of duty cycle) 2250 psi.*
- *Back pressure 1000 psi.*
- *Maximum oil flow 12 GPM (min. 10 GPM).*
- *Recommended oil viscosity range 100-200 S.S.U.*
- *Maximum operating temperature 180 degrees.*
- *Recommended filtration 10 micron or finer.*

**Refill tractor oil reservoir after auger is put into operation.**

**Avoid:**

- *Large contamination particles in fluid such as machining chips or sand.*
- *Extremely high fluid temperature causing motor to operate slowly and reduce the ability to lubricate.*
- *Shock-limit the rate of pressure buildup.*
- *Higher than-needed working pressures.*
- *Using smaller than 1/2" hose between tractor and auger hose coupling.*

# SECTION III
# Operation

## Preparing Hydraulic Supply

**⚠ WARNING**

- **KNOW AND UNDERSTAND SAFETY RULES BEFORE OPERATING OR SERVICING THIS MACHINE. REVIEW "SAFETY" SECTION IN THIS MANUAL IF NECESSARY.**

Read this operation section thoroughly. Acquaint yourself with the adjustments required to obtain efficient and trouble-free operations.

1. Before operating the unit, be sure that you refer to tractor's or the hydraulic supply's operating manual on proper operating procedures of the hydraulics.

2. Be sure to check the hydraulic reservoir for proper levels of fluid.

3. Be sure that the hydraulic system supplies at least 6 GPM at 1000 PSI.

## Connecting Gravity Box to Transport Vehicle

4. Be sure to hitch tractor or truck to gravity box securely. Use safety chains and SMV signs during on-road use.

5. Connect hydraulic supply lines to auger hydraulic lines and tightened securely. Be sure that the auger control is in the off position (FIG. 3-1).

**⚠ WARNING**

- **HIGH-PRESSURE FLUIDS CAN PENETRATE THE SKIN AND CAUSE SERIOUS INJURY OR DEATH. USE CARDBOARD OR WOOD TO DETECT LEAKS IN THE HYDRAULIC SYSTEM. SEEK MEDICAL TREATMENT IMMEDIATELY IF INJURED BY HIGH-PRESSURE FLUIDS.**

- **RELIEVE THE HYDRAULIC SYSTEM OF ALL PRESSURE BEFORE ADJUSTING OR SERVICING. SEE THE HYDRAULIC POWER UNIT OPERATOR'S MANUAL FOR PROPER PROCEDURES.**

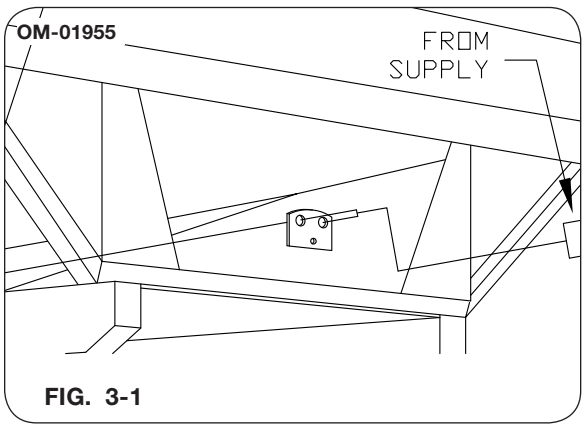



FIG. 3-1

## Preparing Auger

6. To release auger from the transport bracket pull back on the latch and the auger will swing-out freely. If not, raise the auger up until it is free to swing.

7. To latch the auger, raise the auger up enough to hit the middle of the pivot strap. Push the auger inward until the pivot strap is latched.

8. Insert the transport pin, where shown, to lock the auger in place.

**IMPORTANT**

- *Do not allow the auger to rest on the bottom of the transport bracket during transport. Traveling through rough terrain would allow the auger to bounce causing damage to the auger. The weight of the auger should be supported by the winch cable during transport. The transport bracket secures the auger to the side of the gravity box and does not supporting the weight of the auger.*

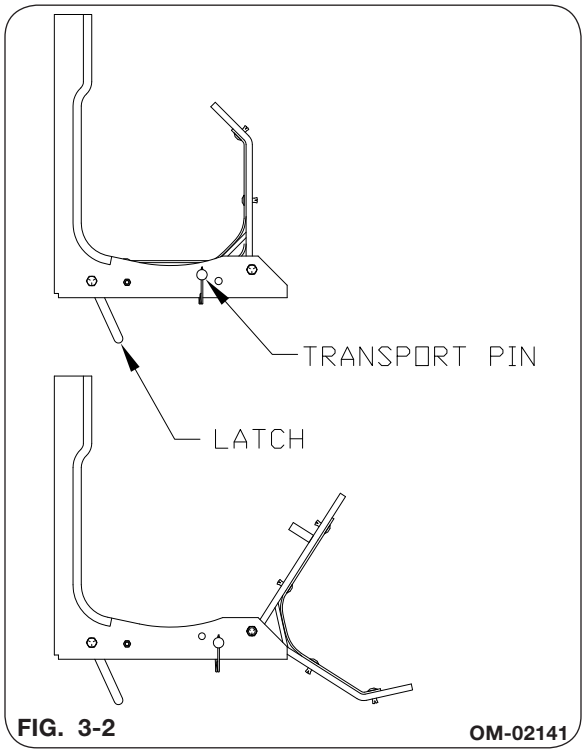



FIG. 3-2 OM-02141

**⚠ WARNING**

- **MOVING OR ROTATING COMPONENTS CAN CAUSE SERIOUS INJURY OR DEATH. ENSURE SERVICE COVERS, CHAIN/BELT COVERS AND CLEAN-OUT DOOR ARE IN PLACE AND SECURELY FASTENED BEFORE OPERATING UNIT.**

**⚠ CAUTION**

- **BE SURE TO MAINTAIN A FIRM GRIP OF THE WINCH HANDLE AT ALL TIMES WHEN LOWERING AUGER TUBE. BE SURE TO ENGAGE RATCHET PAW (ON WINCH) INTO POSITION WHEN WINCHING IS COMPLETE, OR AUGER TUBE WILL DROP SUDDENLY WHEN HANDLE IS RELEASED.**

## Preparing Auger (Continued)

**IMPORTANT**

- *Always check that the secondary support cable and winch are connected securely and are not damaged. Also, be sure clean-out door is closed.*

NOTE: Refer to "Winch Assembly" in SET UP section for proper winch and cable installation.

9. Position auger over area to be filled and turn control valve to the ON position. Be sure that auger is rotating in the forward direction. If the auger is not, switch incoming hydraulic lines or refer to assembly instructions.

10. Once the auger has begun to rotate, open hopper door. Be sure to regulate flow from gravity box into hopper for optimum performance.

NOTE: To achieve optimum performance, test by placing auger at different angles. The position of the auger depends on the type of material being handled.

NOTE: Use pressurized water to wash-out auger and hopper after using fertilizer. See MAINTENANCE section.

## Transporting

Be sure to empty auger completely by closing gravity box door and allowing auger to run. Turn the auger off and raise into position to latch into transport bracket, while securely holding the winch handle. Once in place, lock winch and tighten cable so that it is taut and carries a majority of the auger weight. Finally, reposition transport pin into transport bracket (FIG. 1-2).

**⚠ WARNING**

- **ALWAYS TRAVEL AT A SPEED WHICH PERMITS COMPLETE CONTROL OF EQUIPMENT.**

**⚠ CAUTION**

- **USE APPROVED ACCESSORY LIGHTS AND REFLECTORS WHEN TRANSPORTING AT NIGHT, DURING PERIODS OF POOR VISIBILITY, AND AS REQUIRED BY ALL LAWS.**

***IMPORTANT***

- *Auger must be empty before transporting, failure to do so voids warranty.*
- *Before transporting, be sure that auger is securely mounted in transport position.*
- *During transport, the auger should not rest on the transport bracket. Raise the auger up-off of the transport bracket approximately 1" to eliminate damage to the auger tube.*
- *Use caution when traveling, do not attempt to transport unit under low hanging tree branches, overhead telephone wires or electrical wires. Be aware of transport height of unit or damage could occur.*
- *Comply with all state and local laws governing highway safety and regulations when moving equipment on public roads.*

## Performance

NOTE: Many grain augers run too fast. This is usually the result of modern hydraulic systems which provide high flow (18 to 40 GPM) at the accessory outlets. When adjustment is provided, the flow should be reduced to 6 to 12 GPM. The lower flow rates will result in optimum performance of the auger, produce less harm to the material handled, and provide longer wear life of the flighting. When the auger speed is too fast, it may cause severe vibration, damage, or premature wear of the flighting and tube. The material handled may incur more damage while the rate of discharge may actually be reduced! If your hydraulic source can not be adjusted, refer to "Optional Flow Control Valve" in SET UP section.

## Notes

# SECTION IV

# Maintenance

## Lubrication

Oil or grease periodically (or as needed) the following:

-- Clean-out door
-- Pivots on bottom of auger and sides of hopper
-- Winch (gears, bearings, and handle)

## Storage/Maintenance

Your auger is an important investment. Spend a little time to protect it from destructive rust and corrosion. You will be repaid in longer service life and better performance.

DO THE FOLLOWING AFTER USE:

1. Clean out auger/hopper. Use pressurized water to wash out auger and hopper after use.
2. Wipe off the following:
   -- Hydraulic valve, motor, hoses, and fittings.
   -- Swivel base, cradle.
   -- Reflectors and warning/caution decals.
3. Check the following:
   -- Mounting bolts for tightness.
   -- Cable ties for tightness.
   -- Valve, motor, hoses, and fittings for leaks, etc.
   -- Hydraulic hoses for wear-abuse.

DO THE FOLLOWING BEFORE PLACING THE CONVEYOR IN STORAGE:

-- Repaint any chipped or scraped areas.
-- Inspect for damaged or worn parts. Replace before next season.
-- Store unit inside, away from livestock.

## Troubleshooting

| SYMPTOMS | REMEDIES |
|---|---|
| **A. AUGER WILL NOT TURN OVER OR DEVELOP PROPER SPEED OR TORQUE:** | |
| 1. Pump does not deliver sufficient pressure or volume | 1. Check output and delivery, change if necessary |
| 2. Auger jammed | 2. Shut-off and lock-out power, open clean-out door and remove excess material (make sure swivel spout is clear) |
| **B. AUGER RUNS TOO SLOW:** | |
| 1. Engine running too slow | 1. Increase engine speed |
| 2. Pump not producing minimum required flow and pressure | 2. Check pump capacity and correct |
| 3. Pump is worn | 3. Repair or replace pump |
| 4. Internal leak in controls or motor | 4. Replace seals; repair or replace valves or motor |
| 5. Air in system | 5. Bleed system and tighten connections |
| 6. Improper hydraulic oil viscosity | 6. If auger starts slowly and speed increases after oil heats up, oil is too heavy weight. If auger slows down after oil heats up, oil is too light weight |
| **C. AUGERS TURN IN WRONG DIRECTION:** | |
| 1. Control valve on tractor not set properly | 1. Reset |
| **D. OIL HEATS EXCESSIVELY.** | |
| 1. Oil viscosity incorrect | 1. Drain and refill with proper weight oil |
| 2. Dirty oil | 2. Drain, flush, and refill with a clean oil and filter |
| 3. Oil level too low | 3. Fill to proper level |
| 4. Oil slipping through worn pump | 4. Repair or replace pump |
| 5. Restricted line or piping | 5. Reroute lines to eliminate restrictions |
| 6. Reservoir too small to provide adequate cooling | 6. Replace with larger reservoir or install oil cooler |
| **E. PUMP / MOTOR SEALS BLOW-SHAFT / HOUSING BREAKS - HOSE BURST:** | |
| 1. When a standard control valve is returned to neutral, to stop, or start a motor, sudden pressure is created which may break seals, tear off motor shafts, burst housing or hoses. (Especially at speed under load.) This sudden shock cannot be relieved through the primary relief valve in the system | 1. Avoid sudden and rapid starting and stopping (or convert to a free wheeling control valve (on the tractor) or a cushion valve may be installed) |

## Troubleshooting

| SYMPTOMS | REMEDIES |
|---|---|
| **F. AUGER CREEPS WHEN SPOUT SWITCH IS SHUT-OFF:** | |
| 1. Oil flow (GPM) is too high. | 1. Decrease oil flow (not pressure) to hydraulic motor with use of a flow control valve which must not exceed 12 GPM |
| **G. ELECTRONIC VALVE CONTROL** | |
| Electronic valve does not jump or hum when turned on. | Bad power source, connection, solenoid, or wiring harness (see below). |
| A. Check connections | -- If terminals are corroded, disconnect power source and clean the terminals.<br>-- If OK, continue with step B. |
| B. Check power source - Disconnect power source from wire harness. Check for power between the power source and wire harness with voltmeter. | -- If no power, poor power source.<br>-- If OK, continue with step C. |
| C. Check wire harness - Reconnect power source to wire harness. Disconnect solenoid from wire harness and check power supply at solenoid end of harness with voltmeter. (Make sure power source and switch are turned on). | -- If no power, replace wire harness.<br>-- If OK, continue with step D. |
| D. Check solenoid - Turn off power supply. Disconnect solenoid from wire harness and disconnect wire harness from power supply. Connect solenoid directly to power source connector. Supply power to solenoid. | -- If solenoid doesn't hum or jump replace solenoid. |

## Torque Chart

CAPSCREWS - GRADE 5 

NOTE: Grade 5 capscrews can be identified by three radial dashes on head.

U-BOLTS - GRADE 7

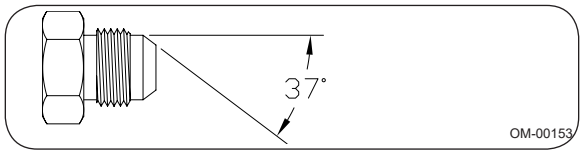
NOTE: Tighten U-bolts evenly and equally to have the same number of threads exposed on each end.

NOTE: Torque 3/4-10 U-bolts to 240 ft. lbs.

**IMPORTANT**

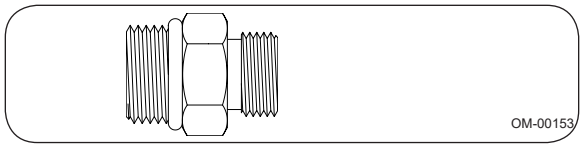
- *Do not use teflon tape or thread sealant as all fittings have mechanical or o-ring seals. This prevents contamination from tape or thread sealants entering the tractor's hydraulic system.*

**SAE FLARE CONNECTION (JIC)**



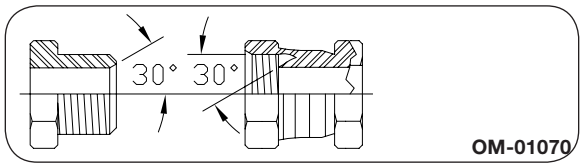

1. Tighten nut by hand until it bottoms the seat.
2. Using a wrench, rotate nut to tighten. Turn nut 1/3 turn to apply proper torque.

**SAE STRAIGHT THREAD "O"-RING SEAL**




1. Insure jam nut and washer are backed up to the back side of smooth portion of elbow adapter.
2. Lubricate "O"-Ring -- VERY IMPORTANT!
3. Thread into port until washer bottoms onto spot face.
4. Position elbows by backing up adapter.
5. Tighten jam nut.

**MALE NPTF / FEMALE NPSM**




1. Tighten nut finger tight until it bottoms the seat.
2. Using a wrench, rotate nut to tighten. Turn nut 1/3 turn to apply proper torque.

## Torque Chart (Continued)

Recommended torques for SAE Grade 5 hardware.
NOTE: Grade 5 capscrews can be identified by three radial dashes on the head.

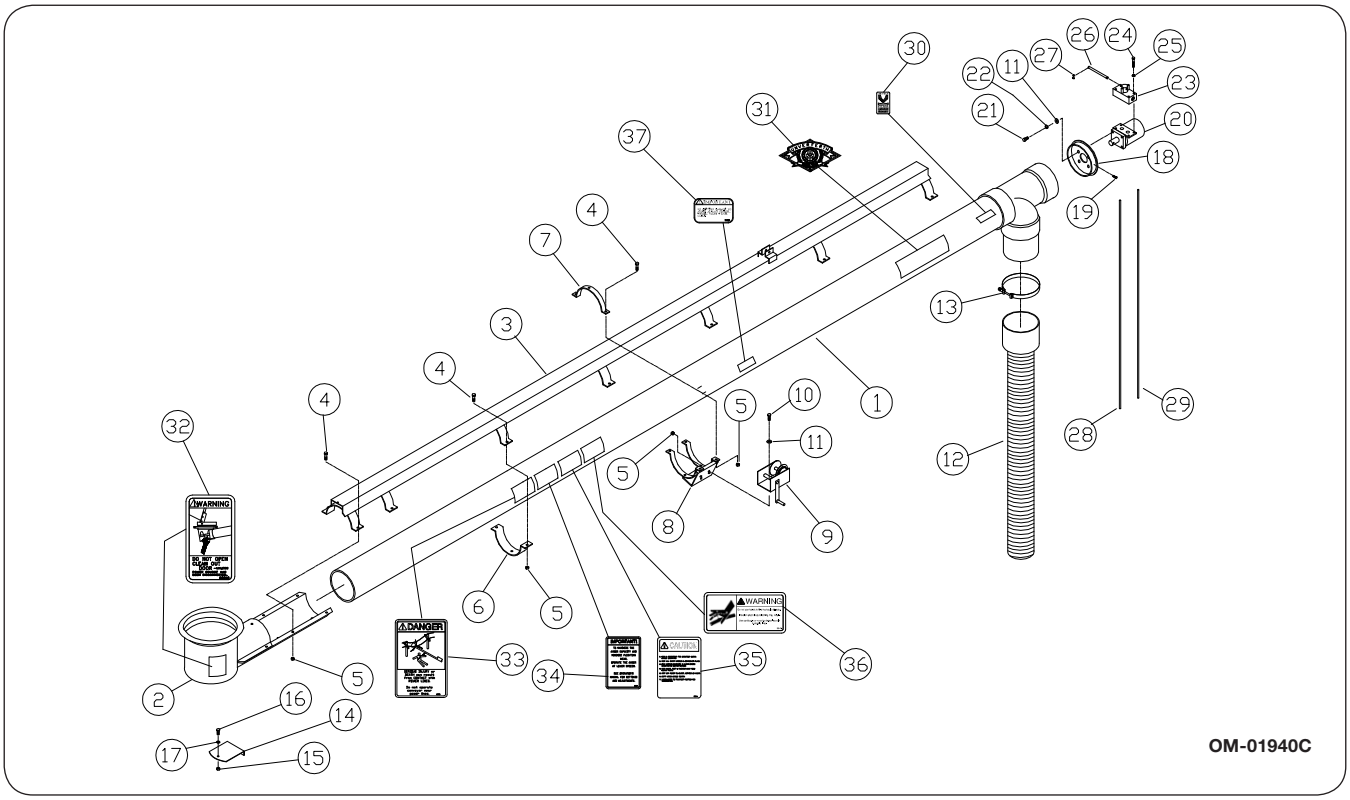
| SIZE | FOOT POUNDS | NEWTON METERS |
|---|---|---|
| 1/4-20 | 8-10 | 11-13 |
| 1/4-28 | 9-11 | 12-15 |
| 5/16-18 | 15-17 | 20-23 |
| 5/16-24 | 17-19 | 23-26 |
| 3/8-16 | 25-28 | 34-38 |
| 3/8-24 | 28-31 | 38-42 |
| 7/16-14 | 40-45 | 54-61 |
| 7/16-20 | 45-50 | 61-68 |
| 1/2-13 | 62-68 | 84-92 |
| 1/2-20 | 68-75 | 92-102 |
| 9/16-12 | 90-98 | 122-133 |
| 9/16-18 | 100-110 | 134-148 |
| 5/8-11 | 120-135 | 162-183 |
| 5/8-18 | 124-137 | 168-186 |
| 3/4-10 | 200-220 | 270-300 |
| 3/4-16 | 210-230 | 285-310 |
| 7/8-9 | 330-350 | 425-475 |
| 7/8-14 | 360-380 | 460-515 |
| 1-8 | 500-525 | 675-710 |
| 1-14 | 540-560 | 730-760 |
| 1 1/8-7 | 600-635 | 815-860 |
| 1 1/8-12 | 665-700 | 920-950 |
| 1 1/4-7 | 850-895 | 1150-1215 |
| 1 1/4-12 | 940-990 | 1275-1340 |
| 1 3/8-6 | 1125-1175 | 1525-1590 |
| 1 3/8-12 | 1280-1335 | 1735-1810 |
| 1 1/2-6 | 1500-1560 | 2035-2115 |
| 1 1/2-12 | 1685-1755 | 2285-2380 |

# SECTION V
# Parts

**Please visit www.unverferth.com/parts/ for the most current parts listing.**

## Plastic Auger Components

**Please visit www.unverferth.com/parts/ for the most current parts listing.**

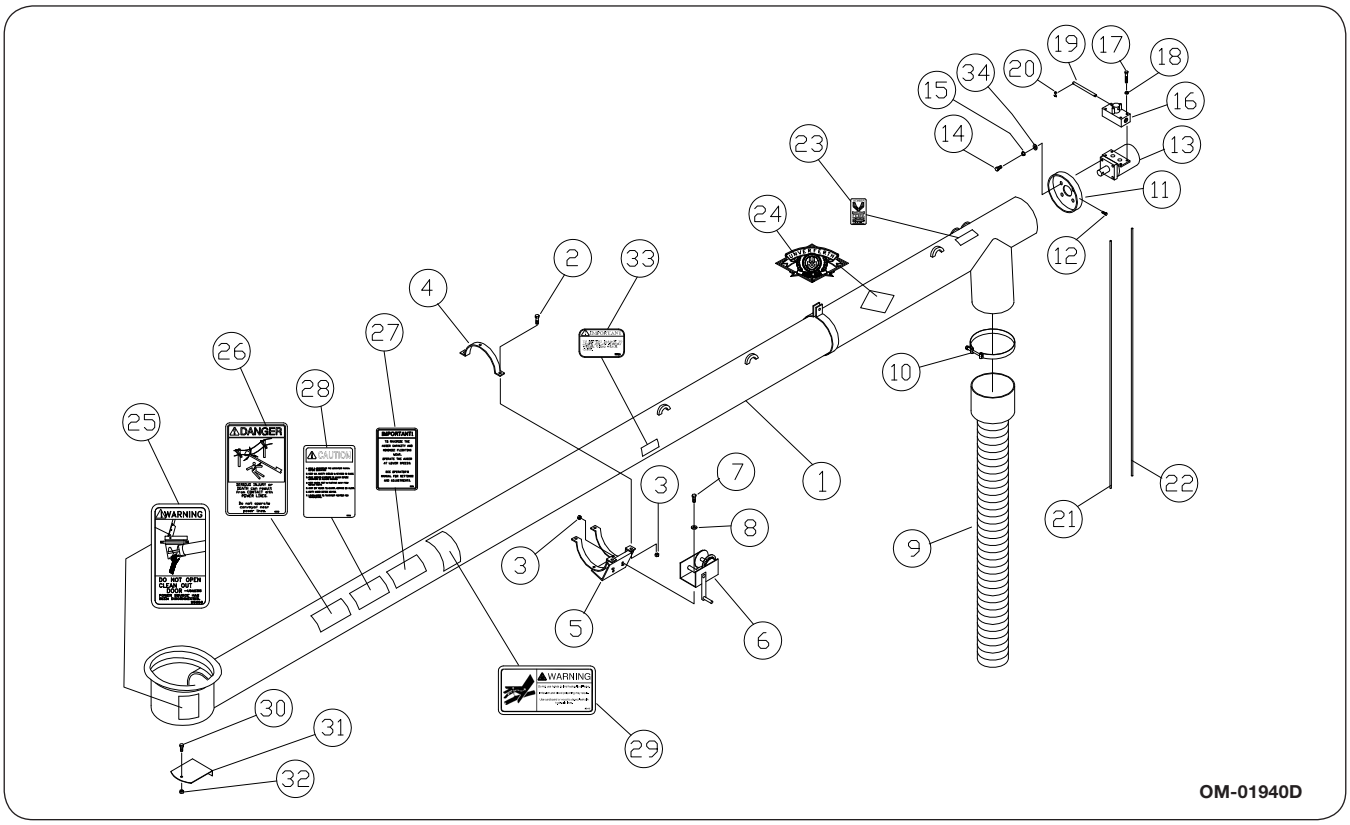



| ITEM | PART NO. | DESCRIPTION |
|---|---|---|
| 1 | 20742 | Auger Tube (12' Auger) |
| | 20743 | Auger Tube (14' Auger) |
| | 21949 | Auger Tube (16' Auger) |
| 2 | 21896 | Lower Swivel Asy for Stainless & Plastic Flighting |
| | 21898 | Lower Swivel Assembly for Brush Flighting |
| 3 | 21969 | Brace (12' Auger) |
| | 21389 | Brace (14' Auger) |
| | 21952 | Brace (16' Auger) |
| 4 | 9390-056 | Capscrew 3/8-16UNC x 1 1/4" |
| 5 | 9928 | Locknut 3/8-16UNC |
| 6 | 20819 | Clamp 2" |
| 7 | 20741 | Clamp 1" |
| 8 | 20756 | Winch Bracket |
| 9 | 9501907 | Winch (12' & 14' Auger) |
| | 95849 | Winch (16' Auger) |
| 10 | 9390-055 | Capscrew 3/8-16UNC x 1" |
| 11 | 9405-076 | Flat Washer 3/8" USS |
| 12 | 91562 | Flexible Spout |
| | 22011 | Optional Telescopic Spout (5'6" to 10') (Not Shown) |
| | 22724 | Optional Telescopic Spout (9' to 14'9") (Not Shown) |
| 13 | 2262 | Spout Clamp |
| | 92936 | Capscrew 1/4-20UNC x 1 1/4" |
| | 9936 | Locknut 1/4-20UNC |
| 14 | 21943B | Door |
| 15 | 96839 | Locknut 1/4-20UNC |

| ITEM | PART NO. | DESCRIPTION |
|---|---|---|
| 16 | 96897 | Capscrew 1/4-20UNC x 1/2" |
| 17 | 97099 | Flat Washer 1/4" USS (Stainless Steel) |
| 18 | 20744 | End Cap |
| 19 | 9512 | Self-Tapping Screw 1/4" Dia. x 1" |
| 20 | 91604B | Hydraulic Motor w/O-Ring |
| | 91306 | O-Ring |
| | 91687 | Seal Kit for Hydraulic Motor |
| 21 | 9390-055 | Capscrew 3/8-16UNC x 1" |
| 22 | 9404-021 | Lock Washer 3/8" |
| 23 | 95488 | Control Valve |
| 24 | 9390-034 | Capscrew 5/16-18UNC x 2" |
| 25 | 9404-019 | Lock Washer 5/16" |
| 26 | 2265 | Valve Handle |
| 27 | 9006 | S-Hook |
| 28 | 22054 | Nylon Rope (White) |
| 29 | 22053 | Nylon Rope (Yellow) |
| 30 | 91605 | Decal, "FEMA" |
| 31 | 97001 | Decal, "UNVERFERTH" |
| 32 | 95656 | Decal, "WARNING" (Clean-Out Door) |
| | 98766 | Decal, "WARNING" (Rotating Auger) |
| 33 | 93558 | Decal, "DANGER" (Electrocution Hazard) |
| 34 | 93694 | Decal, "IMPORTANT" (Auger Capacity) |
| 35 | 9364 | Decal, "CAUTION" (Read Operator's Manual) |
| | 97961 | Decal, "WARNING" (Read Operator's Manual) |
| 36 | 95445 | Decal, "WARNING" (High-Pressure Fluids) |
| 37 | 96911 | Decal, "IMPORTANT" (Support Weight) |

## Steel Auger Components

**Please visit www.unverferth.com/parts/ for the most current parts listing.**

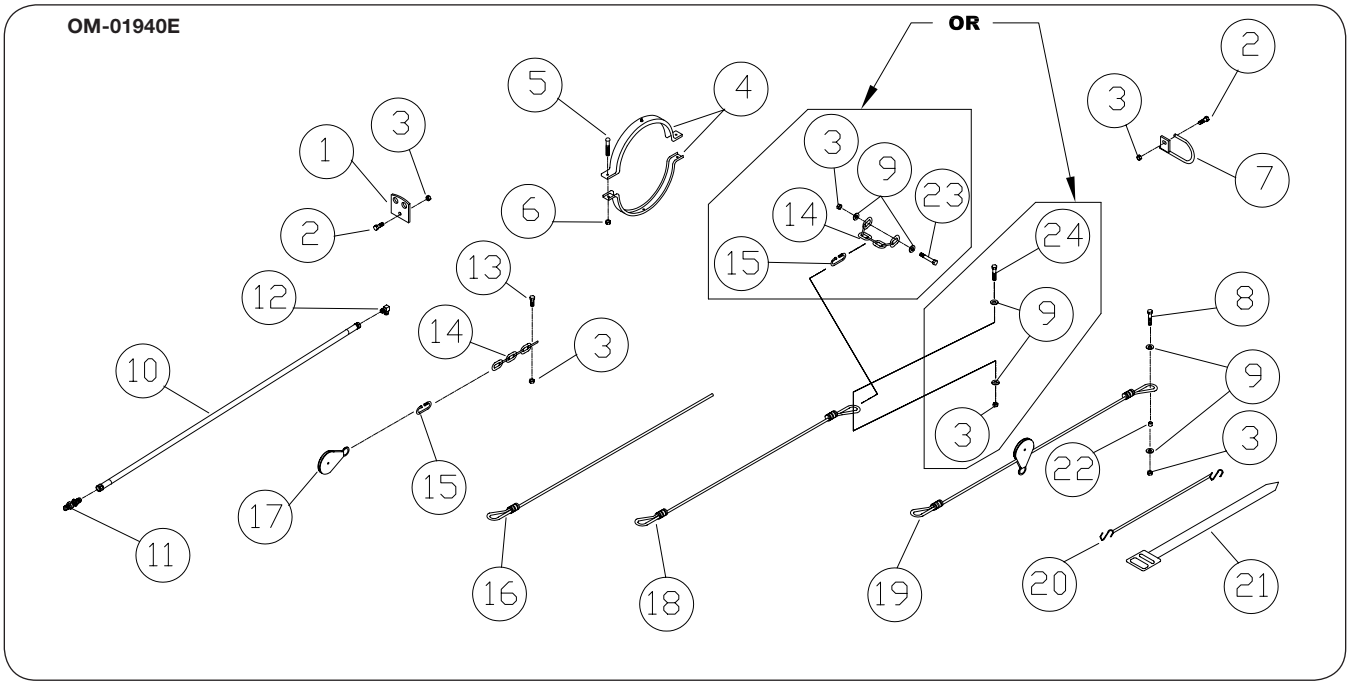



| ITEM | PART NO. | DESCRIPTION |
|---|---|---|
| 1 | 21992B | Auger Tube (12' Auger) |
| | 21577B | Auger Tube (14' Auger) |
| | 21981B | Auger Tube (16' Auger) |
| 2 | 9390-056 | Capscrew 3/8-16 x 1 1/4" |
| 3 | 9928 | Locknut 3/8-16 |
| 4 | 2745B | Clamp 2" |
| 5 | 2747 | Winch Bracket |
| 6 | 9501907 | Winch (12' & 14' Auger) |
| | 95849 | Winch (16' Auger) |
| 7 | 9390-055 | Capscrew 3/8-16UNC x 1" |
| 8 | 9405-076 | Flat Washer 3/8" USS |
| 9 | 97094 | Flexible Spout |
| | 22012 | Optional Telescopic Spout (5'6" to 10') (Not Shown) |
| | 9985 | Optional Telescopic Spout (9' to 14'9") (Not Shown) |
| 10 | 2262 | Spout Clamp |
| | 92936 | Capscrew 1/4-20UNC x 1 1/4" |
| | 9936 | Locknut 1/4-20UNC |
| 11 | 2865B | End Cap |
| 12 | 9512 | Self-Tapping Screw 1/4" Dia. x 1" |
| 13 | 91604B | Hydraulic Motor w/O-Ring |
| | 91306 | O-Ring |
| | 91687 | Seal Kit for Hydraulic Motor |

| ITEM | PART NO. | DESCRIPTION |
|---|---|---|
| 14 | 9390-055 | Capscrew 3/8-16UNC x 1" |
| 15 | 9404-021 | Lock Washer 3/8" |
| 16 | 95488 | Control Valve |
| 17 | 9390-034 | Capscrew 5/16-18UNC x 2" |
| 18 | 9404-019 | Lock Washer 5/16" |
| 19 | 2265 | Valve Handle |
| 20 | 9006 | S-Hook |
| 21 | 22054 | Nylon Rope (White) |
| 22 | 22053 | Nylon Rope (Yellow) |
| 23 | 91605 | Decal, "FEMA" |
| 24 | 97001 | Decal, "UNVERFERTH" |
| 25 | 95656 | Decal, "WARNING" |
| | 98766 | Decal, "WARNING" |
| 26 | 93558 | Decal, "DANGER" |
| 27 | 93694 | Decal, "IMPORTANT" |
| 28 | 9364 | Decal, "CAUTION" |
| | 97961 | Decal, "WARNING" |
| 29 | 95445 | Decal, "WARNING" |
| 30 | 9390-001 | Capscrew 1/4-20UNC x 1/2" |
| 31 | 21549 | Door |
| 32 | 9936 | Locknut 1/4-20UNC |
| 33 | 96911 | Decal, "IMPORTANT" |
| 34 | 9405-076 | Flat Washer 3/8" USS |

## Hose Holder, Cables, & Hardware

**Please visit www.unverferth.com/parts/ for the most current parts listing.**

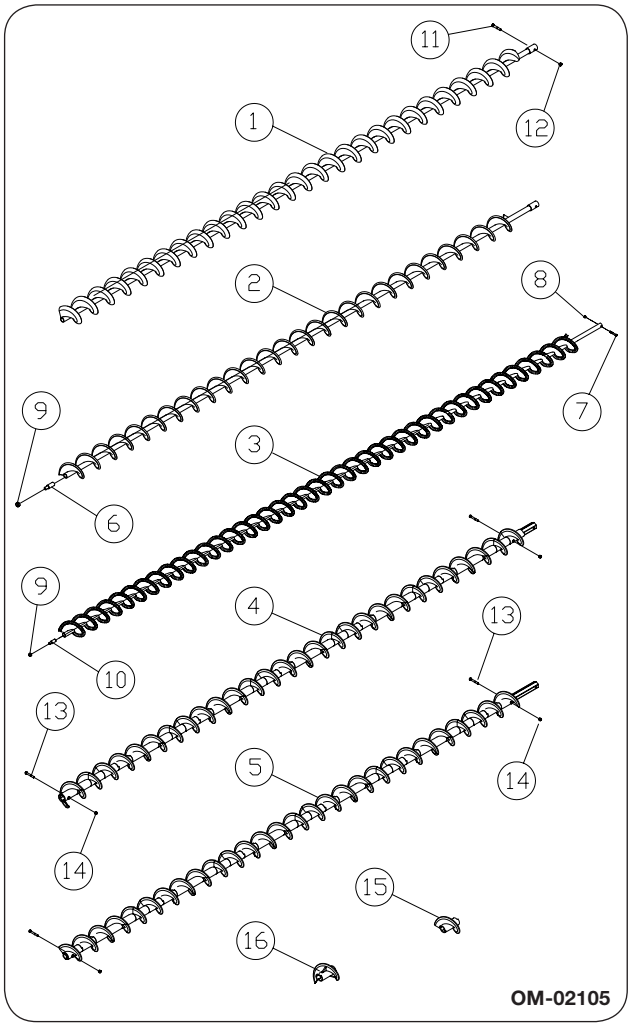



| ITEM | PART NO. | DESCRIPTION |
|---|---|---|
| 1 | 21350 | Hose Bracket |
| 2 | 9390-055 | Capscrew 3/8-16UNC x 1" |
| 3 | 9928 | Locknut 3/8-16UNC |
| 4 | 22751 | Swivel Clamp |
| 5 | 9388-057 | Carriage Bolt 3/8-16UNC x 2 1/2" |
| 6 | 9394-006 | Hex Nut 3/8-16UNC |
| 7 | 20103 | Hose Holder |
| 8 | 9390-056 | Capscrew 3/8-16UNC x 1 1/4" |
| 9 | 9405-076 | Flat Washer 3/8" USS |
| 10 | 95763 | Hydraulic Hose 228" Lg. |
| | 95758 | Hydraulic Hose 252" Lg. |
| | 93838 | Hydraulic Hose 276" Lg. |
| 11 | 93839 | Bulkhead Union |
| 12 | 9863 | Elbow |
| 13 | 9390-059 | Capscrew 3/8-16UNC x 2" |
| 14 | 2829 | Chain |

| ITEM | PART NO. | DESCRIPTION |
|---|---|---|
| 15 | 91514 | Quick Link |
| 16 | 2831 | Winch Cable 123" (12' & 14' Auger) |
| | 22050 | WInch Cable 183" (16' Auger) |
| 17 | 92459 | Swivel Pulley |
| 18 | 2833 | Secondary Support Cable 78" (12' Auger) |
| | 22048 | Secondary Support Cable 101" (14' Auger) |
| | 22580 | Secondary Support Cable 108" (16' Auger) |
| 19 | 21619 | Cable Assembly w/Swivel Pulley |
| 20 | 9235 | Tarp Strap |
| 21 | 93617 | Cable Tie (for Plastic Auger) |
| | 91217 | Cable Tie (for Steel Auger) |
| 22 | 22046 | Bushing |
| 23 | 9390-068 | Capscrew 3/8-16UNC x 4 1/2" |
| 24 | 9390-058 | Capscrew 3/8-16UNC x 1 3/4" |

## Flighting Components

**Please visit www.unverferth.com/parts/ for the most current parts listing.**

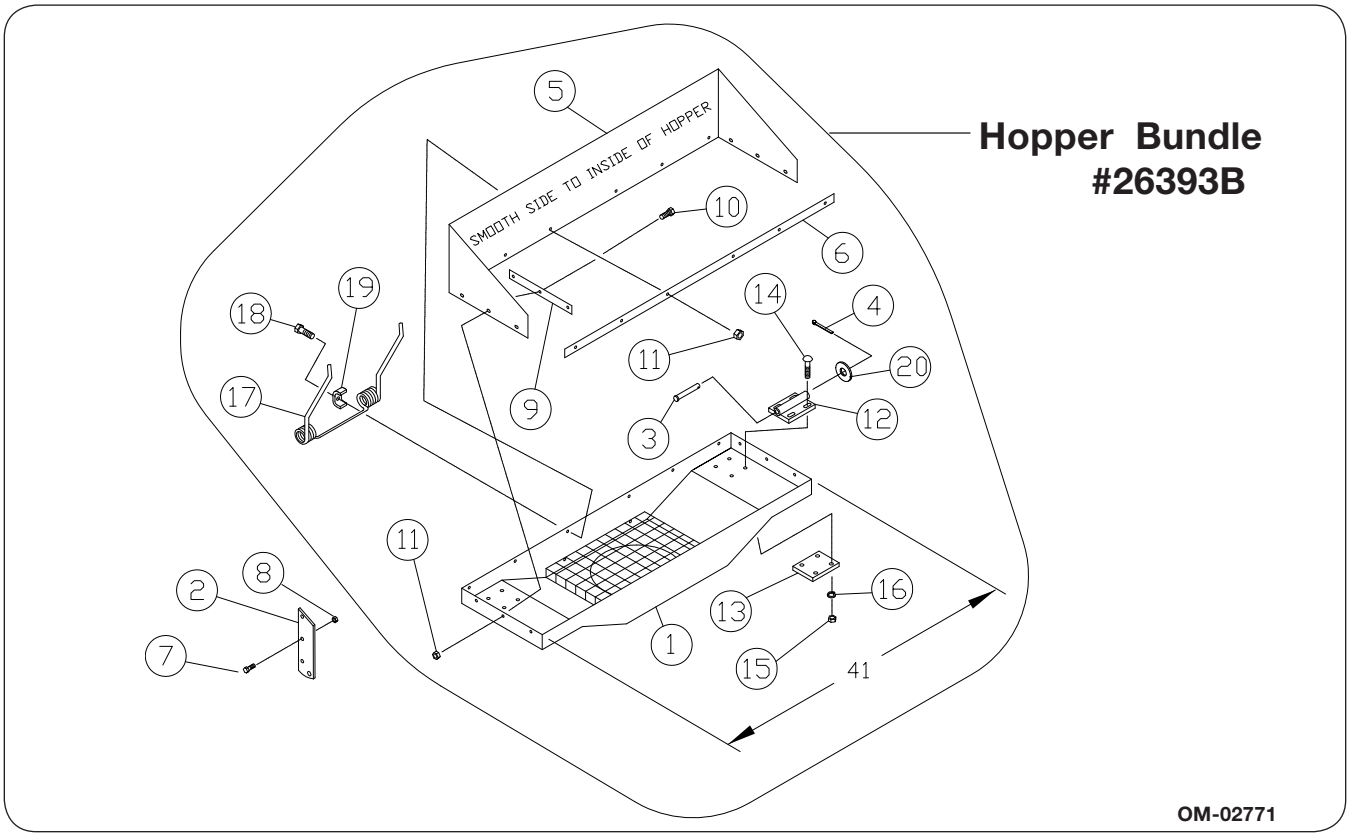



Steel Flighting Box Augers with a serial number of: A43970099 and lower have Left-Hand Flighting
A43970100 and higher have Right-Hand Flighting

| ITEM | PART NO. | DESCRIPTION |
|---|---|---|
| 1 | 2238B | Flighting (Steel - 12' Metal Auger) Left-Hand |
| | 23312B | Flighting (Steel - 12' Metal Auger) Right-Hand |
| | 24097B | Flighting (Steel - 14' Metal Auger) Left-Hand |
| | 23313B | Flighting (Steel - 14' Metal Auger) Right-Hand |
| | 22747B | Flighting (Steel - 16' Metal Auger) Left-Hand |
| | 23315B | Flighting (Steel - 16' Metal Auger) Right-Hand |
| 2 | 22614 | Flighting (Stainless Steel - 12' Plastic Auger) |
| | 22616 | Flighting (Stainless Steel - 14' Plastic Auger) |
| | 22615 | Flighting (Stainless Steel - 16' Plastic Auger) |
| 3 | 21976 | Flighting (Brush - 12' Metal & Plastic Auger) |
| | 21890 | Flighting (Brush - 14' Metal & Plastic Auger) |
| | 21957 | Flighting (Brush - 16' Metal & Plastic Auger) |
| 4 | 900200 | Flighting (Plastic - 12' Metal Auger) |
| | 900201 | Flighting (Plastic - 14' Metal Auger) |
| | 900203 | Flighting (Plastic - 16' Metal Auger) |
| 5 | 900245 | Flighting (Plastic - 12' Plastic Auger) |
| | 900246 | Flighting (Plastic - 14' Plastic Auger) |
| | 900247 | Flighting (Plastic - 16' Plastic Auger) |
| 6 | 22582 | Bearing Pin |
| 7 | 9390-058 | Capscrew 3/8-16UNC x 1 3/4" |
| 8 | 9394-006 | Hex Nut 3/8-16UNC |
| 9 | 96907 | Hex Nut 1/2-20UNC |
| 10 | 22637 | Bearing Pin Assembly |
| 11 | 9390-060 | Capscrew 3/8-16UNC x 2 1/4" |
| 12 | 9928 | Locknut 3/8-16UNC |
| 13 | 91484 | Capscrew 5/16-18UNC x 2 1/4" |
| 14 | 92929-007 | Elastic Stop Nut 5/16-18UNC |
| 15 | 900199 | Plastic Flight Section |
| 16 | 901122 | Plastic Flight Section w/Gusset |

## Hopper Components for Small Door

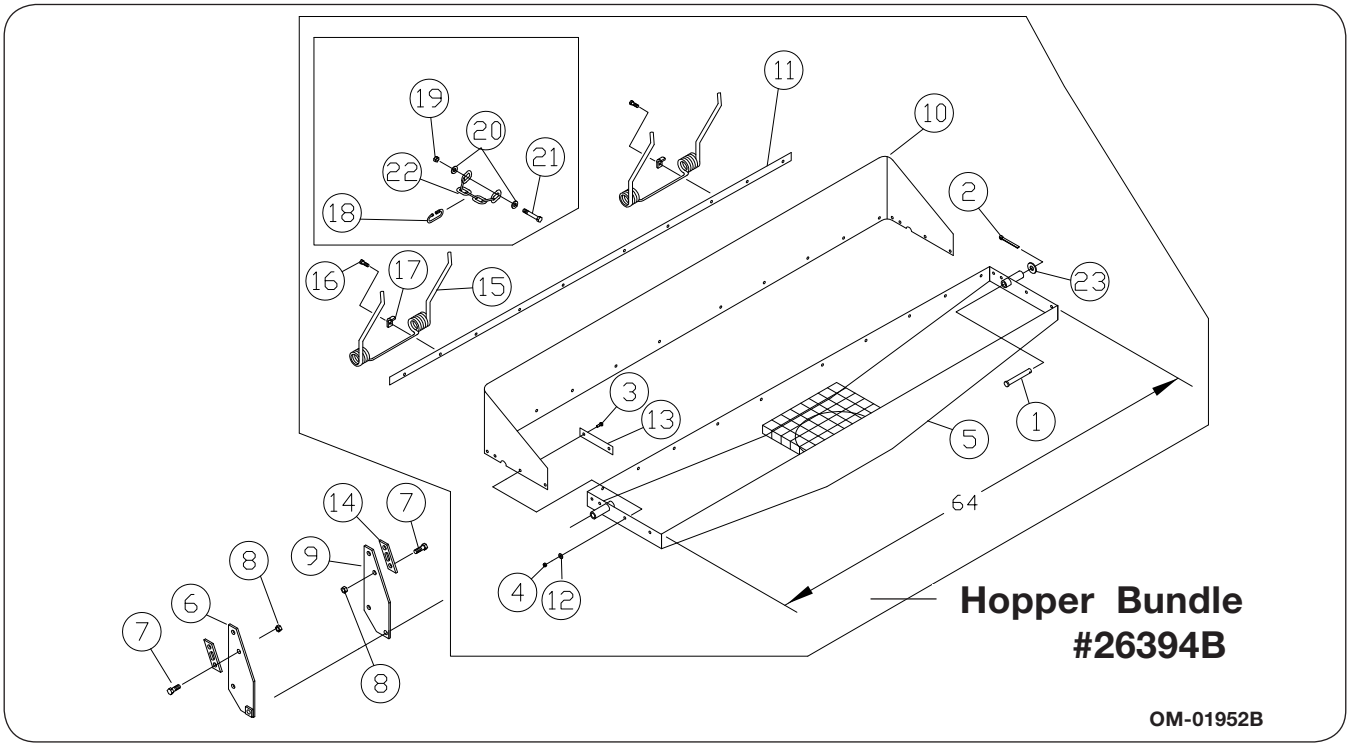
**Please visit www.unverferth.com/parts/ for the most current parts listing.**




| ITEM | PART NO. | DESCRIPTION |
|---|---|---|
| 1 | 22588 | Hopper |
| 2 | 21330 | Mount Plate |
| 3 | 95568 | Clevis Plate 1/2" Dia. x 6" |
| 4 | 9391-035 | Cotter Pin |
| 5 | 22509 | Rubber Seal |
| 6 | 22508 | Back Strap |
| 7 | 9390-055 | Capscrew 3/8-16UNC x 1" |
| 8 | 9928 | Locknut 3/8-16UNC |
| 9 | 21642 | Side Strap |
| 10 | 9390-003 | Capscrew 1/4-20UNC x 3/4" |
| 11 | 9936 | Locknut 1/4-20UNC |
| 12 | 22090 | Hopper Pivot |
| 13 | 22089 | Backing Plate |
| 14 | 9388-053 | Carriage Bolt 3/8-16UNC x 1 1/2" |
| 15 | 9394-006 | Hex Nut 3/8-16UNC |
| 16 | 9404-021 | Lock Washer 3/8" USS |
| 17 | 22507 | Spring |
| 18 | 9390-006 | Capscrew 1/4-20UNC x 1 1/4" |
| 19 | 22506 | U-Clip |
| 20 | 9405-088 | Flat Washer, 1/2" USS |

## Hopper Components for Large Door

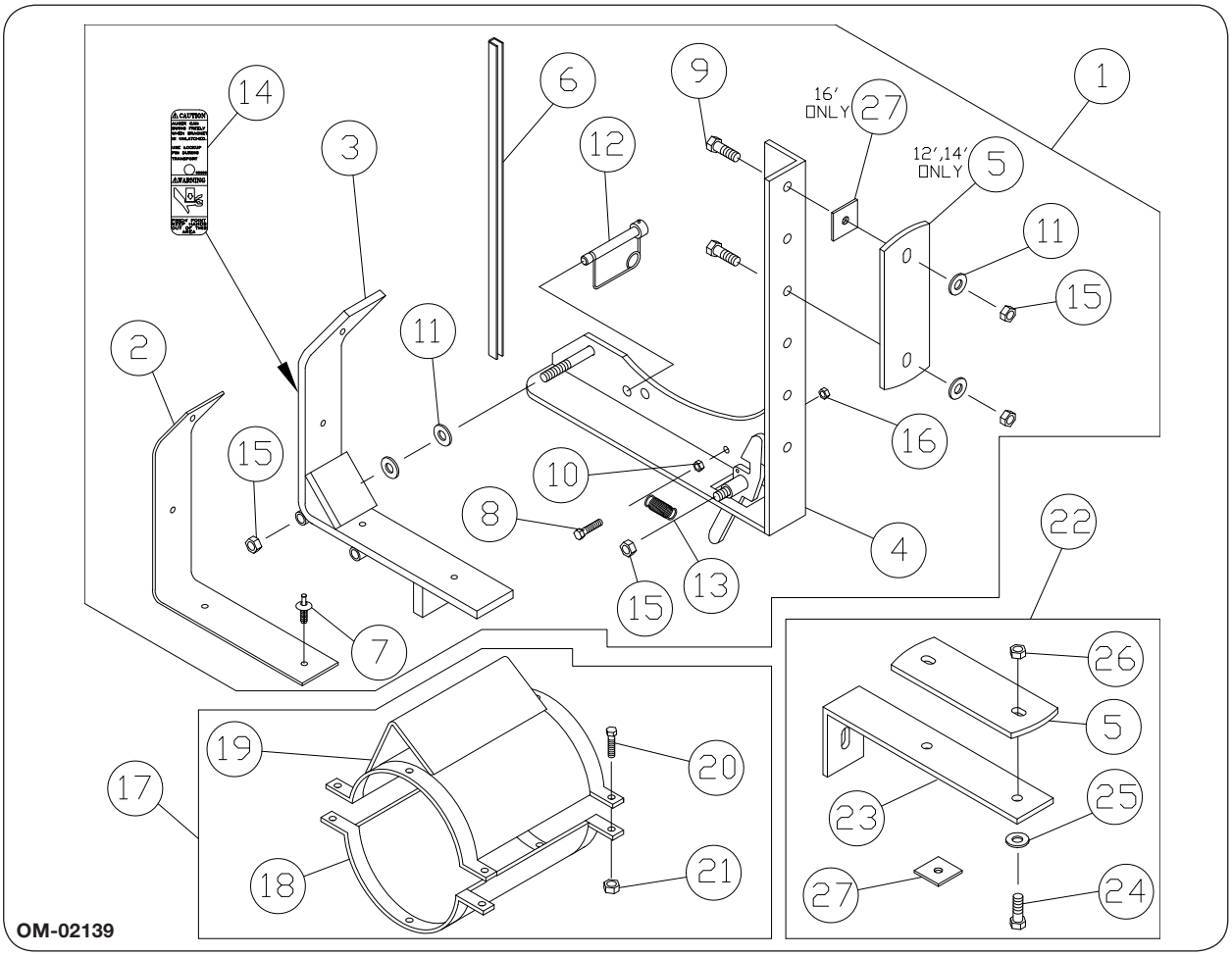
**Please visit www.unverferth.com/parts/ for the most current parts listing.**




| ITEM | PART NO. | DESCRIPTION |
|---|---|---|
| 1 | 95890 | Clevis Pin 1/2" Dia. x 3 1/2" |
| 2 | 9391-035 | Cotter Pin |
| 3 | 9390-003 | Capscrew 1/4-20UNC x 3/4" |
| 4 | 9936 | Locknut 1/4-20UNC |
| 5 | 21429 | Hopper (64") |
| 6 | 21671 | Mounting Bracket RH |
| 7 | 9390-079 | Capscrew 7/16-14UNC x 1 1/4" |
| 8 | 94980 | Locknut 7/16-14UNC |
| 9 | 21674 | Mounting Bracket LH |
| 10 | 22511 | Rubber Seal |
| 11 | 22510 | Back Strap |
| 12 | 9405-064 | Flat Washer 1/4" USS |
| 13 | 21658 | Side Strap |
| 14 | 22244 | Shim Plate |
| 15 | 22507 | Spring |
| 16 | 9390-006 | Capscrew 1/4-20 x 1 1/4" |
| 17 | 22506 | U-Clip |
| 18 | 91514 | Quick Link |
| 19 | 9928 | Locknut 3/8-16UNC |
| 20 | 9405-076 | Flat Washer 3/8" USS |
| 21 | 9390-068 | Capscrew 3/8-16UNC x 4 1/2" |
| 22 | 2829 | Chain |
| 23 | 9405-088 | Flat Washer, 1/2" USS |

## Transport Bracket

**Please visit www.unverferth.com/parts/ for the most current parts listing.**



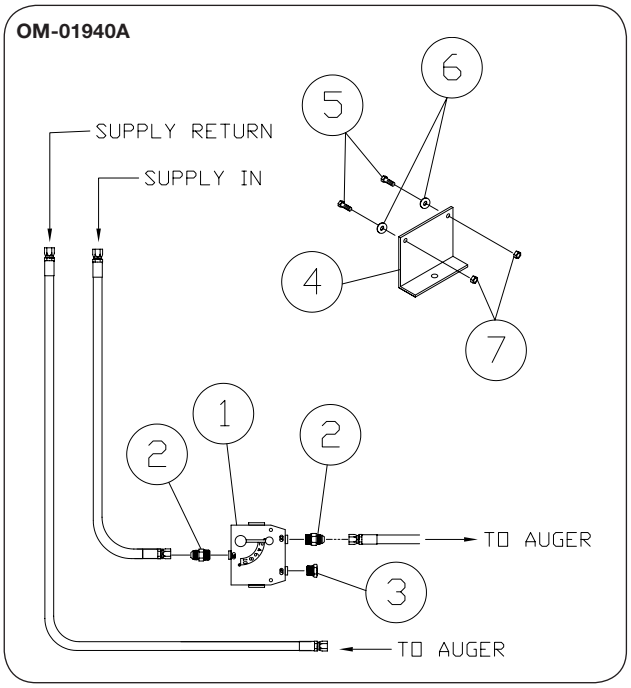

| ITEM | PART NO. | DESCRIPTION |
|---|---|---|
| 1 | 22075 | Transport Bracket Complete |
| 2 | 22070 | Rubber Strap |
| 3 | 22074 | Latch Weldment |
| 4 | 22076 | Bracket Weldment |
| 5 | 22241 | Plate |
| 6 | 22242 | U-Channel |
| 7 | 91043 | Rivet |
| 8 | 9390-009 | Capscrew 1/4-20UNC x 2" |
| 9 | 9390-056 | Capscrew 3/8-16UNC x 1 1/4" |
| 10 | 9394-002 | Hex Nut 1/4-20UNC |
| 11 | 9405-076 | Flat Washer 3/8" USS |
| 12 | 95937 | Snap Pin |
| 13 | 95831 | Spring |
| 14 | 95886 | Decal, "CAUTION" |
| 15 | 9928 | Locknut 3/8-16UNC |
| 16 | 9936 | Locknut 1/4-20UNC |

| ITEM | PART NO. | DESCRIPTION |
|---|---|---|
| 17 | 22664 | Latch Rest Bracket Bundle |
| 18 | 22661B | Clamp |
| 19 | 22618 | Latch Rest Bracket |
| 20 | 9390-056 | Capscrew 3/8-16UNC x 1/4" |
| 21 | 9928 | Locknut 3/8-16UNC |
| 22 | 22583 | Transport Strap Bundle - for 16' Augers ONLY |
| 23 | 22581 | L-Strap |
| 24 | 9390-056 | Capscrew 3/8-16UNC x 1 1/4" |
| 25 | 9405-076 | Flat Washer 3/8" USS |
| 26 | 9928 | Locknut 3/8-16UNC |
| 27 | 25748B | Backup Plate |

## Optional Flow Control & Electronic On/Off Control Components

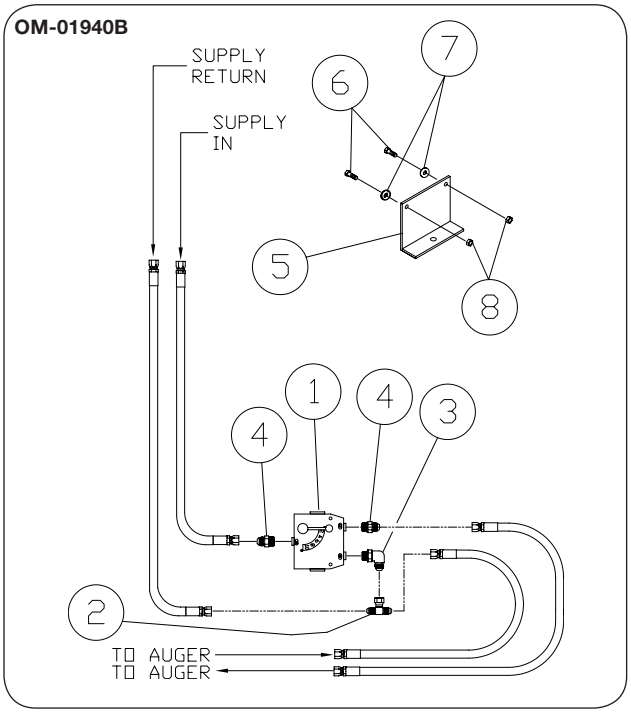
**Please visit www.unverferth.com/parts/ for the most current parts listing.**

OM-01940A

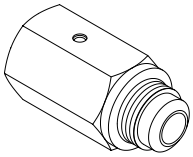



| ITEM | PART NO. | DESCRIPTION |
|---|---|---|
| | 21300 | Flow-Control Valve Kit for Closed-Center Systems |
| 1 | 9000832 | Flow Control Valve |
| 2 | 9864 | Adapter |
| 3 | 93657 | Plug |
| 4 | 21298 | Bracket |
| 5 | 9390-011 | Capscrew 1/4-20UNC x 2 1/2" |
| 6 | 9405-064 | Flat Washer 1/4" USS |
| 7 | 9936 | Locknut 1/4-20UNC |

OM-01940B




| ITEM | PART NO. | DESCRIPTION |
|---|---|---|
| | 21299 | Flow-Control Valve Kit for Open-Center Systems |
| 1 | 9000832 | Flow Control Valve |
| 2 | 94997 | Swivel Tee |
| 3 | 9863 | Elbow 90° |
| 4 | 9864 | Adapter |
| 5 | 21298 | Bracket |
| 6 | 9390-011 | Capscrew 1/4-20UNC x 2 1/2" |
| 7 | 9405-064 | Flat Washer 1/4" USS |
| 8 | 9936 | Locknut 1/4-20UNC |

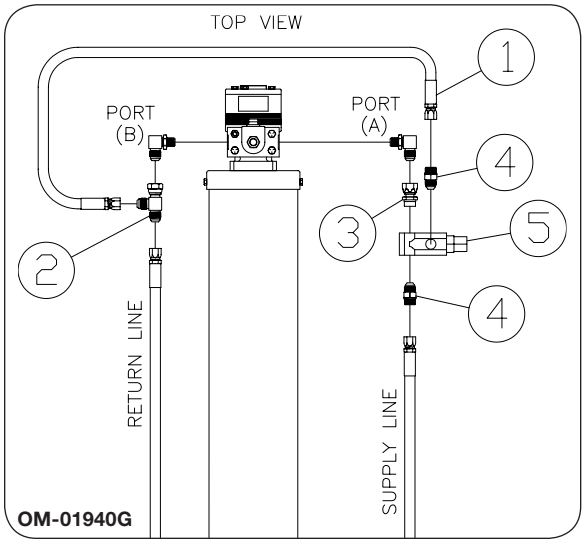


OM-01940F

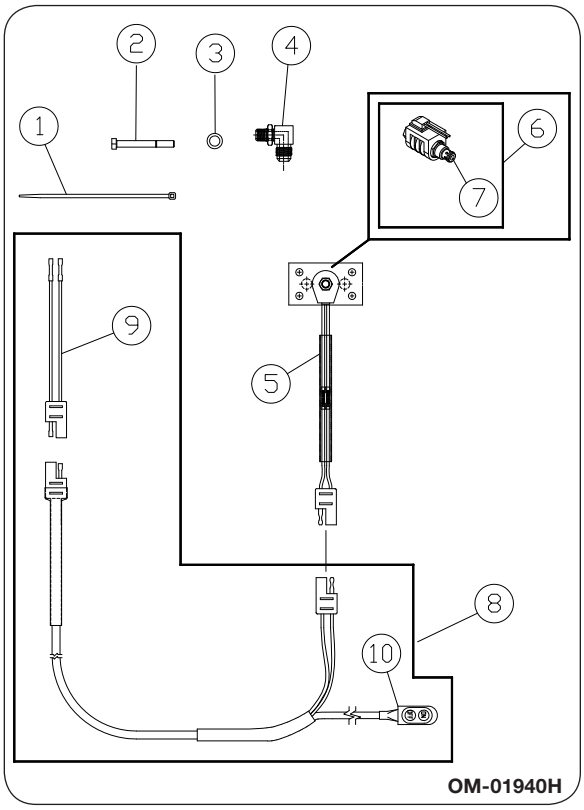
| ITEM | PART NO. | DESCRIPTION |
|---|---|---|
| 1 | 94909 | Anti-Reverse Check Valve |

## Optional Relief Valve & Electronic On/Off Control Components

**Please visit www.unverferth.com/parts/ for the most current parts listing.**




| ITEM | PART NO. | DESCRIPTION |
|---|---|---|
| | 23647 | Relief Valve Kit for Hydraulic Systems with Greater than 2500 PSI |
| 1 | 94752 | Hose 1/2 x 16 3/4" Lg. |
| 2 | 95059 | Tee |
| 3 | 96935 | Adapter |
| 4 | 9864 | Adapter |
| 5 | 99815 | Relief Valve |




| ITEM | PART NO. | DESCRIPTION |
|---|---|---|
| | 21905 | Electronic On/Off Control Package for 10' Telescopic Spout |
| | 22660 | Electronic On/Off Control Package for 14'9" Telescopic Spout |
| 1 | 91217 | Cable Tie 7 3/8" Lg. |
| | 94038 | Cable Tie 32" Lg. |
| 2 | 9390-037 | Capscrew 5/16-18 x 2 3/4" Lg. |
| 3 | 91306 | O-Ring |
| 4 | 95908 | Elbow 90° |
| 5 | 106975 | Electronic Valve |
| 6 | 95909 | Solenoid Cartridge Valve Assembly |
| 7 | 97306 | Electric Cartridge Assembly |
| 8 | 106974 | Wire Harness - for 10' Telescopic Spout |
| | 106993 | Wire Harness - for 14'9" Telescopic Spout |
| 9 | 21902 | Connector 2 - Way 8" Lg. |
| 10 | 92803 | Switch (Customer will have to splice in new switch.) |

## Optional Telescopic Spout

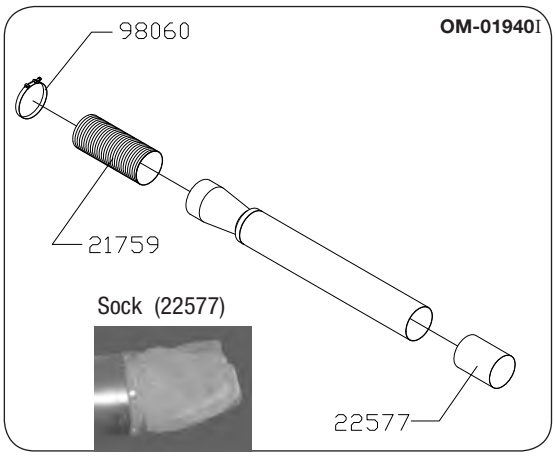
**Please visit www.unverferth.com/parts/ for the most current parts listing.**

### TELESCOPIC SPOUT ASSEMBLY FOR 5' 6" to 10' with Sock

| ITEM | PART NO. | DESCRIPTION |
|---|---|---|
| | 22578 | Telescopic Spout Assembly (for 5'6" to 10' w/Sock) |
| 1 | 22577 | Sock 5 3/8 Dia. x 8" Lg. |
| 2 | 98060 | Clamp |
| 3 | 21759 | Flexible Hose 6" Dia. x 18" Lg. |

NOTE: For Telescopic Spout Package which includes Spout, hardware and above listed components use:

- #22011 Telescopic Spout Bundle for Plastic Auger
- #22012 Telescopic Spout Bundle for Steel Auger

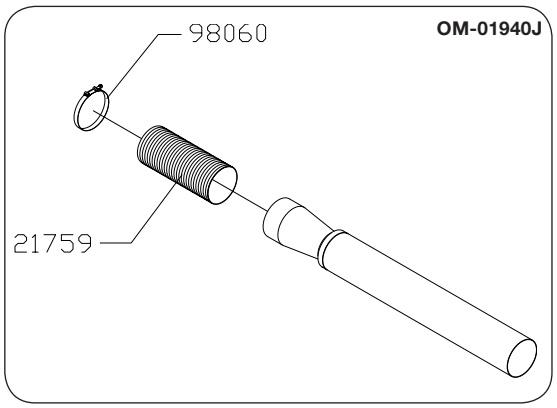



### TELESCOPIC SPOUT ASSEMBLY FOR 9' to 14' 9" less Sock

| ITEM | PART NO. | DESCRIPTION |
|---|---|---|
| | 22994 | Telescopic Spout Assembly (for 9' to 14') |
| 1 | 98060 | Clamp |
| 2 | 21759 | Flexible Hose 6" Dia. x 18" Lg. |

NOTE: For Telescopic Spout Package which includes Spout, hardware and above listed components use:

- #22724 Telescopic Spout Bundle for Plastic Auger
- #22721 Telescopic Spout Bundle for Steel Auger

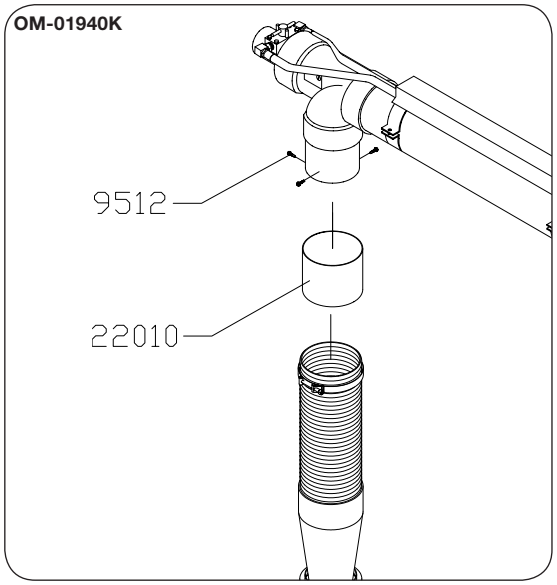



### TELESCOPIC SPOUT ATTACHMENTS FOR PLASTIC AUGER

| ITEM | PART NO. | DESCRIPTION |
|---|---|---|
| 1 | 22010 | Adapter |
| 2 | 9512 | Self-Drilling Screw 1/4-14 x 1" Lg. |

NOTE: For Telescopic Spout Package which includes Spout, hardware and above listed components for Plastic Auger use:

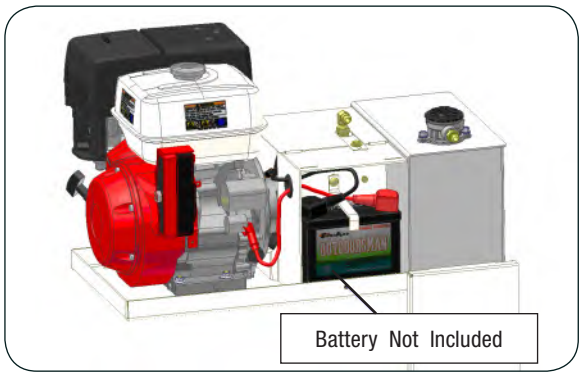
- #22011 Telescopic Spout Bundle for 5' 6" to 10'
- #22724 Telescopic Spout Bundle for 9' to 14' 9"



## Accessories Alternate Power Source

**Please visit www.unverferth.com/parts/ for the most current parts listing.**

| PART NO. | DESCRIPTION |
|---|---|
| 25786IV | 8 H.P. Power Pak (Honda, Electric-Start, gas powered) to operate auger without tractor (12-Volt Battery NOT Included) |



## Notes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