



Box Auger



**200 Series (Sump Style)
Box Auger
Models 212, 214 & 215**

Beginning With Serial Number D42370100

Part No. 24394

Foreword

Your new BOX AUGER is designed and manufactured to give you years of dependable service. To keep it running efficiently, read the instructions in this operator's manual.

This manual covers operations, service, assembly, and parts for your BOX AUGER. Read and study manual completely before attempting to operate this implement. Take this manual to the field for handy reference when operating, adjusting, or servicing your machine.



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

Product Information

When ordering parts or when requesting further information or assistance, always give the following information:

- Machine name
- Serial number

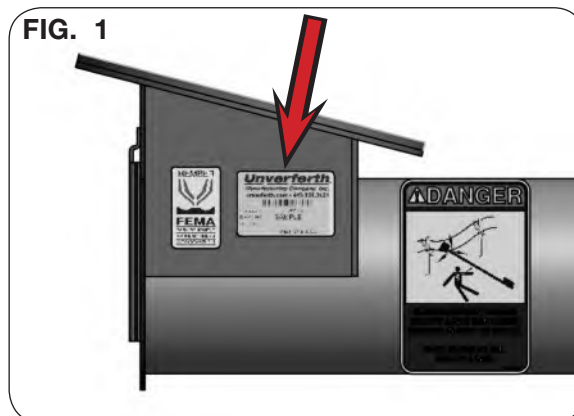
All products manufactured by Unverferth Mfg. Co., Inc. are warranted to be free from material and workmanship defects for one full year from time of consumer delivery. Your local dealer will gladly assist you with any warranty questions.

Please fill out and retain this portion for your records. The serial number plate is located on the frame as shown below.

Purchase Date _____ Model _____ Serial Number _____

Dealer _____ City _____

Dealer Contact _____ Phone _____



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 KILLBROS products, all specifications and information contained herein are subject to change without notice.

Table of Contents

Foreword2
Product Information.....3

SECTION I
Safety

General Hazard Information 1-2
Safety Decals..... 1-3
Follow Safety Instructions 1-4
Before Servicing 1-4
Before Operating..... 1-4
During Operation 1-5
Pressurized Oil..... 1-5
Preparing For Emergencies 1-6
Wearing Protective Equipment..... 1-6

SECTION II
Set Up

Assembly 2-2
Hopper (For 30" - 39" Doors) 2-2
Mounting Hopper To Box 2-3
Auger Tube 2-3
Hopper (For 64" Doors) 2-4
Auger Tube 2-5
Winch Bracket 2-5
Transport Bracket 2-5
Winch Cable 2-6
Winch Assembly 2-7
Secondary Cable..... 2-8
Hydraulic Hoses..... 2-9
Spout 2-9
Box Transport Bracket..... 2-10
S-Hooks & Rope..... 2-10

Table of Contents

SECTION III
Operation

Preparing Hydraulic Supply..... 3-2
Connecting Gravity Box To Transport Vehicle..... 3-2
Transporting..... 3-3
Preparing Auger 3-3
Performance 3-4

SECTION IV
Maintenance

Lubrication..... 4-2
Storage/Maintenance 4-2
Troubleshooting..... 4-2
Torque Chart 4-5

SECTION V
Parts

Auger Components..... 5-2
Hopper Components
For 30" - 39" Doors..... 5-4
Hopper Components
For 64" Doors..... 5-6
Hopper Components
For 50" Doors..... 5-8
Winch Components 5-9
Optional Relief Valve & Electronic On/Off Control Components..... 5-10
Optional Telescopic Spout..... 5-12
Optional Flow Control & Electronic On/Off Control Components..... 5-13

Notes

SECTION I

Safety

General Hazard Information	1-2
Safety Decals.....	1-3
Follow Safety Instructions	1-4
Before Servicing	1-4
Before Operating.....	1-4
During Operation	1-5
Pressurized Oil.....	1-5
Preparing For Emergencies	1-6
Wearing Protective Equipment.....	1-6

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



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



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



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



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

Safety Decals

⚠ WARNING

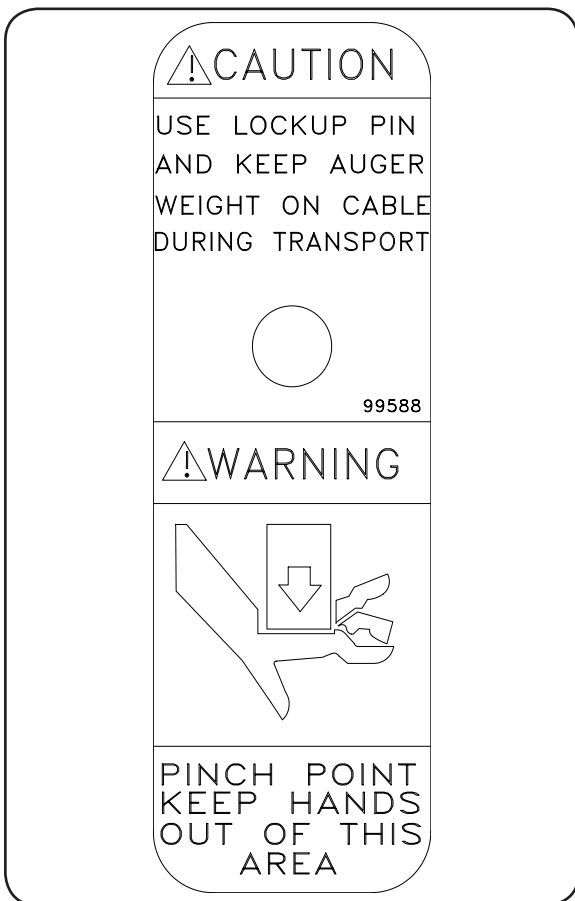
- REPLACE LOST, DAMAGED, PAINTED, OR UNREADABLE DECALS IMMEDIATELY. IF PARTS THAT HAVE DECALS ARE REPLACED, ALSO MAKE SURE TO INSTALL NEW DECALS. THESE DECALS INFORM AND REMIND THE OPERATOR WITH OPERATIONAL INFORMATION AND SAFETY MESSAGES.



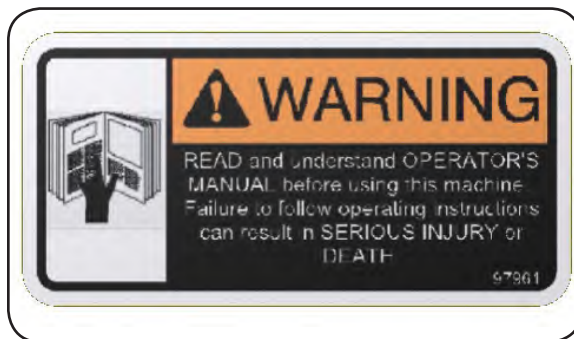
PART NO. 95445



PART NO. 98766



PART NO. 99588



PART NO. 97961



PART NO. 93558

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.
- Never attempt to operate implement unless you are in driver's seat.



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.

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.

During Operation

- Regulate speed to field conditions. Maintain complete control at all times.
- Never 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.
- Seed being transported may contain seed treatment. Read and follow all requirements for personal protective equipment and first aid as outlined on seed tags.

Pressurized Oil

- Relieve pressure before disconnecting hydraulic lines or servicing hydraulic system. 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:
 - o End fittings damaged, displaced, or leaking.
 - o Outer covering chafed/cut or wire reinforcing exposed.
 - o Outer covering ballooning locally.
 - o 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

Assembly	2-2
Hopper (For 30" - 39" Doors)	2-2
Mounting Hopper To Box	2-3
Auger Tube	2-3
Hopper (For 64" Doors)	2-4
Auger Tube	2-5
Winch Bracket	2-5
Transport Bracket	2-5
Winch Cable	2-6
Winch Assembly	2-7
Secondary Cable	2-8
Hydraulic Hoses	2-9
Spout	2-9
Box Transport Bracket	2-10
S-Hooks & Rope	2-10

Assembly

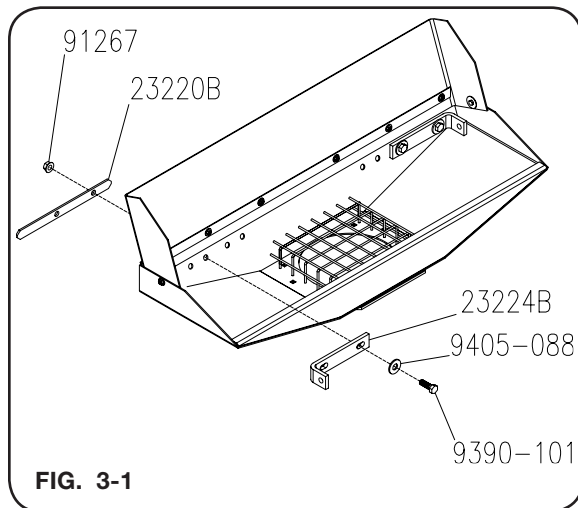
For your safety, and the safety of others, use proper tools and equipment and always use safe working procedures. Refer to these instructions before starting any work on your machine.

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.**

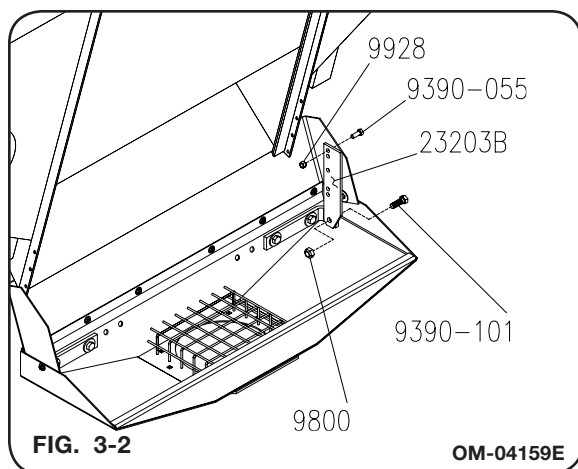
Hopper Assembly For Door Angle Widths Up To 39" (continued)

1. Before attaching mounting brackets determine box door dimension. As shown in FIG. 3-1, secure brackets (23224B) to hopper using four 1/2"-13UNC x 1 1/2" capscrews (9390-101), four flat washers (9405-088), two straps (23220B), and four 1/2"-13UNC flange nuts (91267).



Mounting Hopper To A Box

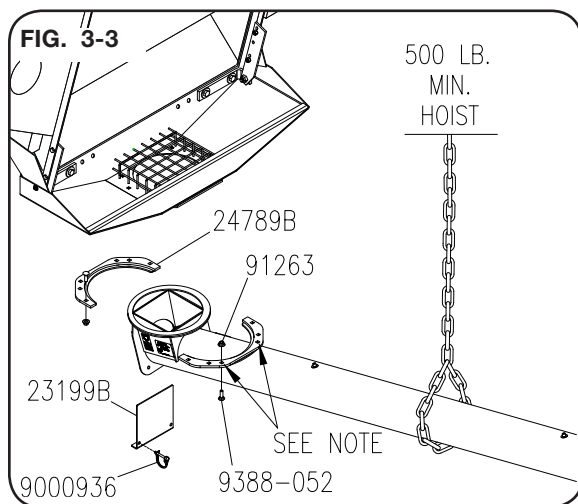
2. Attach both mounting plates (23203B) to gravity box door angles using four 3/8"-16UNC x 1" capscrews (9390-055), and four 3/8"-16UNC locknuts (9928). Slide seal up under box chute and secure hopper assembly to mounting plates as shown in FIG. 3-2 using two 1/2"-13UNC x 1 1/2" capscrews (9390-101) and two 1/2"-13UNC locknuts (9800).



Auger Tube

3. Slide clean out door (23199B) into back of auger tube weldment. Secure with lynch pins (9000936).
4. Using a minimum 500 lb. hoist, safely lift auger tube assembly into position under hopper weldment. Using swivel plates (24789B), as shown in FIG. 3-3, secure auger tube to bottom of hopper with eight 3/8"-16UNC x 1 1/4" carriage bolts (9388-052), and twelve 3/8"-16UNC flange nuts (91263).

NOTE: For clearance purposes, the front two carriage bolts must be inserted from underneath hopper, see FIG. 3-3.

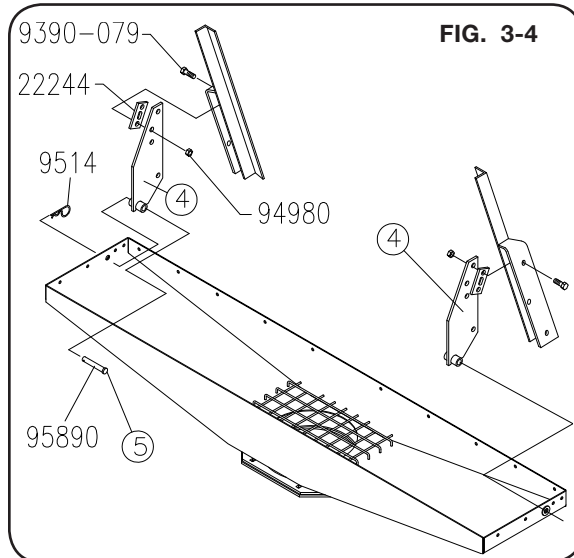


Hopper Assembly For 64" Door Angle Width

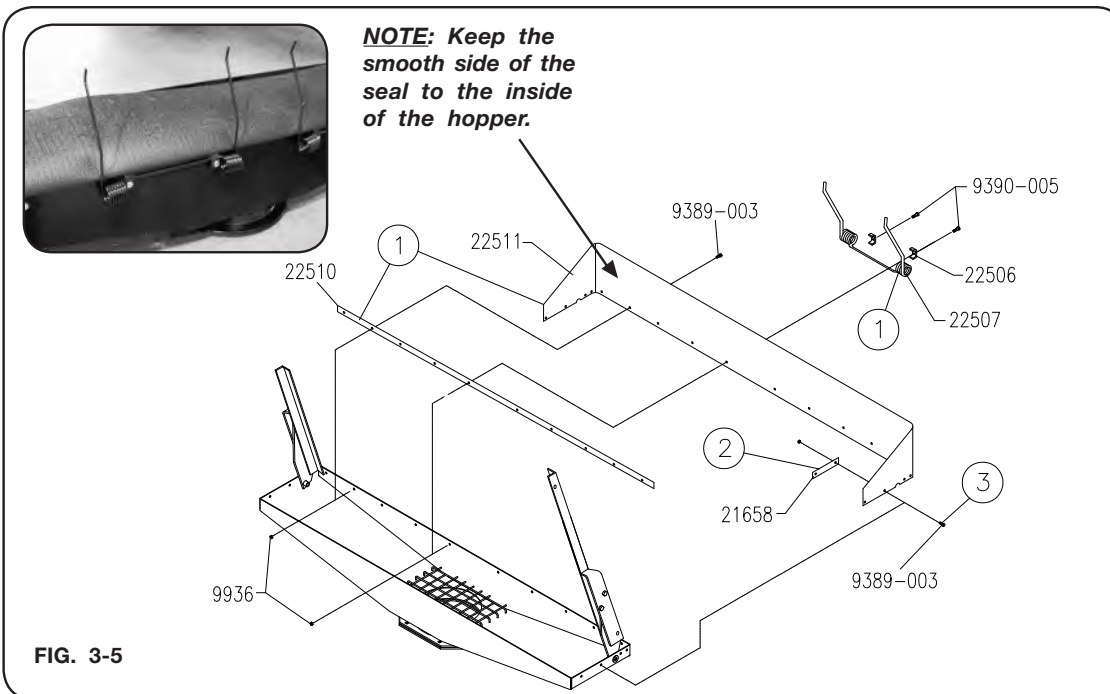
1. Attach the mounting brackets to the inside of the "L" bracket on the door angle (Fig. 3-4). Use four 7/16"-14UNC x 1 1/4" capscrews (9390-079) and 7/16"-14UNC locknuts (94980).

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.



2. Attach auger hopper assembly to the mounting brackets. Use two 1/2" x 3 1/2" clevis pins (95890) and hair pin cotters (9514) to attach the hopper pivot tubes to the mounting brackets (Fig. 3-4).

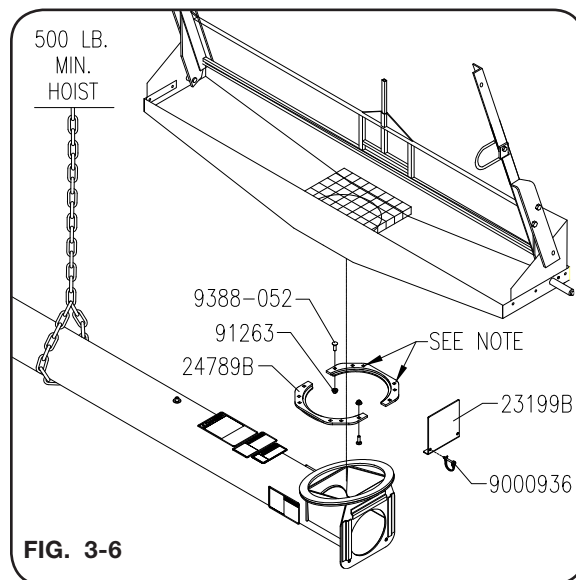


Hopper Assembly For 64" Door Angle Width (continued)

Auger Tube

3. Slide clean out door (23199B) into back of auger tube weldment. Secure with lynch pins (9000936).
4. Using a minimum 500 lbs. hoist, safely lift auger tube assembly into position under hopper weldment. Using plates (24789B), as shown in FIG. 3-6, secure auger tube to bottom of hopper with eight 3/8"-16UNC x 1 1/4" carriage bolts (9388-052), and twelve 3/8"-16UNC flange nuts (91263).

NOTE: For clearance purposes, the front two carriage bolts must be inserted from underneath hopper, see FIG. 3-6.



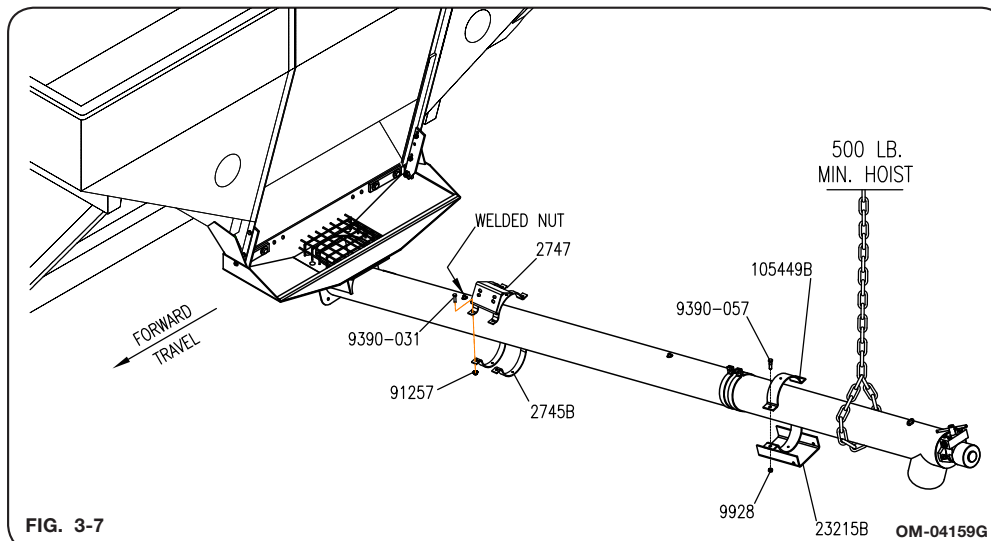
Winch Bracket

NOTE: Before mounting the winch bracket to the auger tube, determine whether you want the auger pointing forward or towards the rear during transport. Position in FIG. 3-7 shows winch installed for a rear auger transport position.

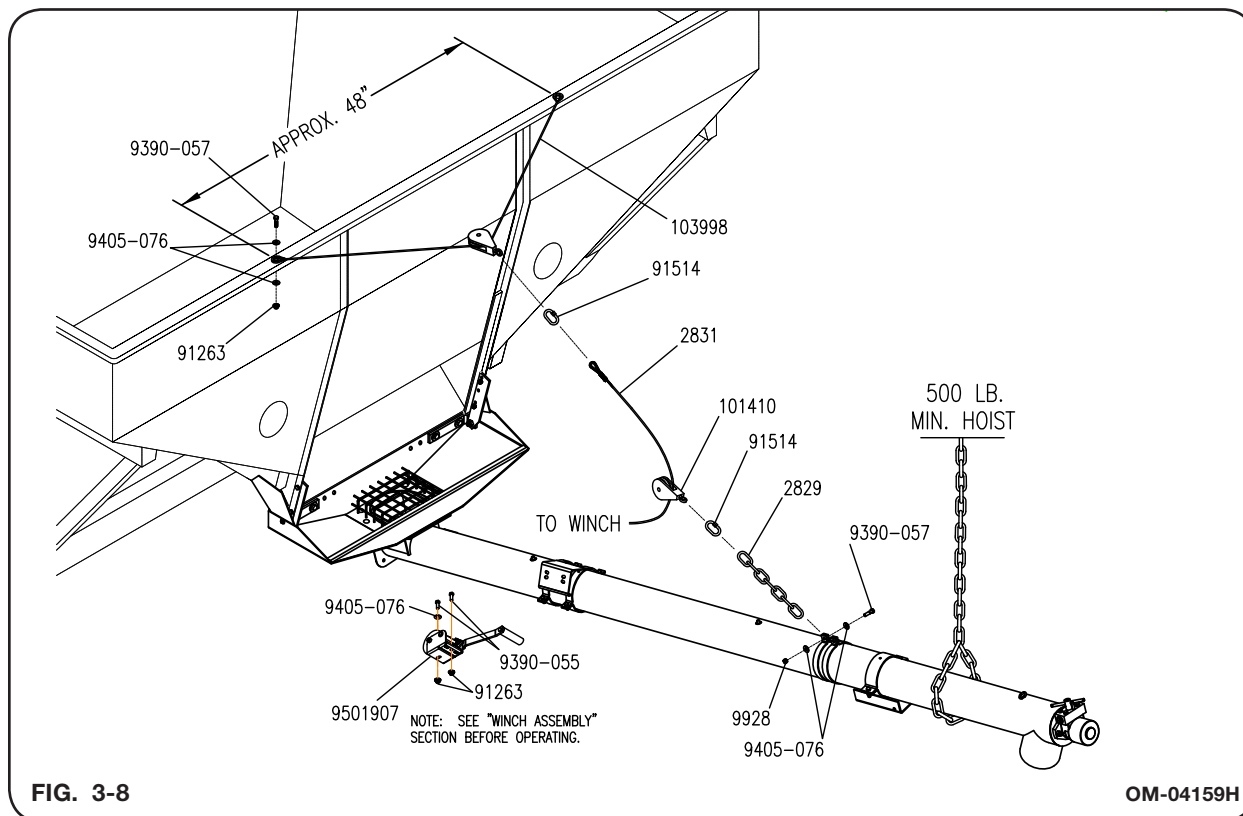
5. At location shown in FIG. 3-7, approximately 6" from bottom welded nut on auger tube, attach winch bracket (2747) and winch clamps (2745B) with four 5/16"-18UNC x 1 1/4" capscrews (9390-031), and four 5/16"-18UNC flange nuts (91257).

Transport Bracket

6. When assembling transport bracket (23215B) and clamp (105449B), *attach loosely* using two 3/8"-16UNC x 1 1/2" capscrews (9390-057), and two 3/8"-16UNC locknuts (9928) allowing bracket to slide freely on auger tube until location of box transport bracket (23317B) can be determined at a later step.



Hopper Assembly For 64" Door Angle Width (continued)



Winch Cable

7. Secure winch (9501907) to bracket using hardware provided, two 3/8"-16UNC x 1" capscrews (9390-055), two 3/8"-16UNC flange nuts (91263) and one 3/8" flat washer (9405-076) for the winch's slotted hole.

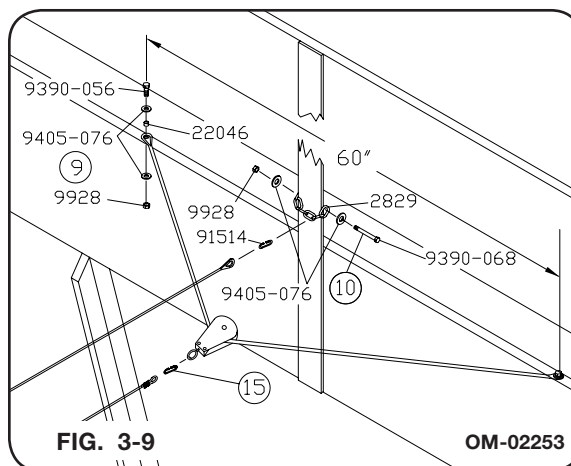
NOTE: If installing hopper assembly for 60" doors, proceed to step 8B.

- 8A. Begin assembly of winch cable by drilling two 7/16" diameter holes on top of box in approximate location shown in FIG. 3-8. Secure swivel cable (103998) using two 3/8"-16UNC x 1 1/2" capscrews (9390-057), four 3/8" flat washers (9405-076), and two 3/8"-16UNC flange nuts (91263).

- 8B. Begin assembly of winch cable by attaching chain to center strap using 3/8"-16UNC x 4 1/2" capscrew (9390-068), locknut (9928) and two flat washers (9405-076). See Fig. 3-9.

9. Attach quick link (91514) to pulley end of swivel cable.

10. Thread winch cable (2831) through pulley (101410).



Hopper Assembly For 64" Door Angle Width (continued)

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.

NOTE: Refer to proper assembly instructions for your gravity box before installing winch.

11. Check that all cables and winch are securely installed and not damaged in any way.
12. Tie cable to winch by the following instructions. Refer to FIG. 3-10.

NOTE: Start cable between spool plate.

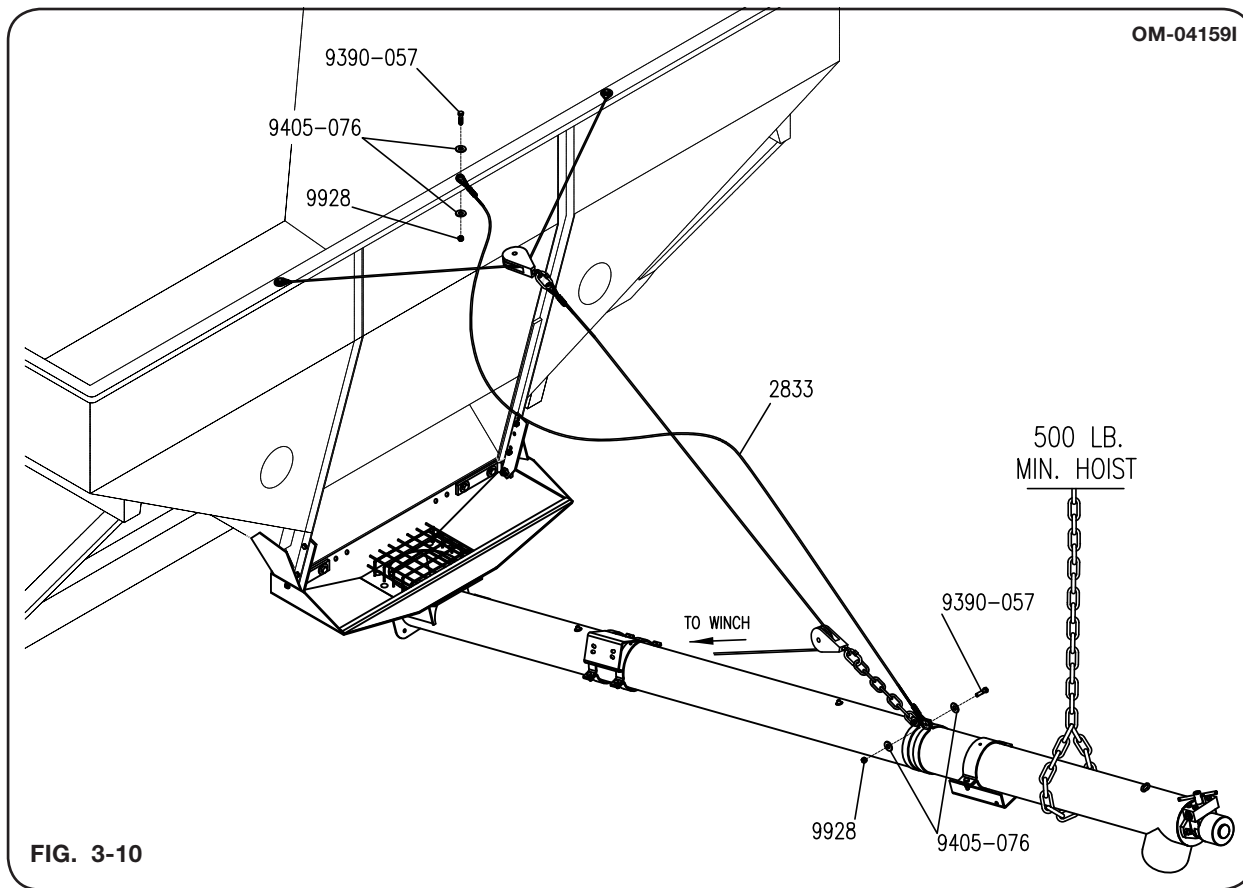


FIG. 3-10

Hopper Assembly For 64" Door Angle Width (continued)

13. Thread cable from inside winch out through hole "A".

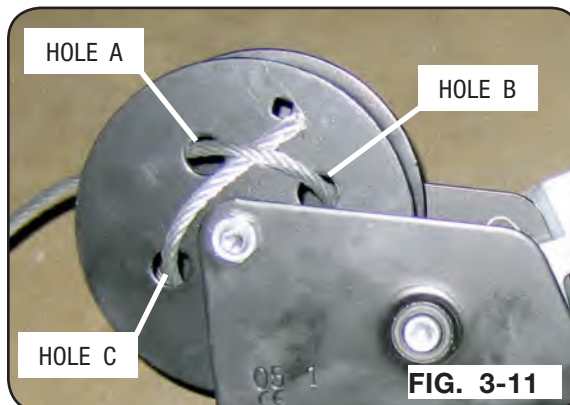
14. Continue through hole "B" and hole "C" as shown in FIG. 3-11.

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

16. 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.

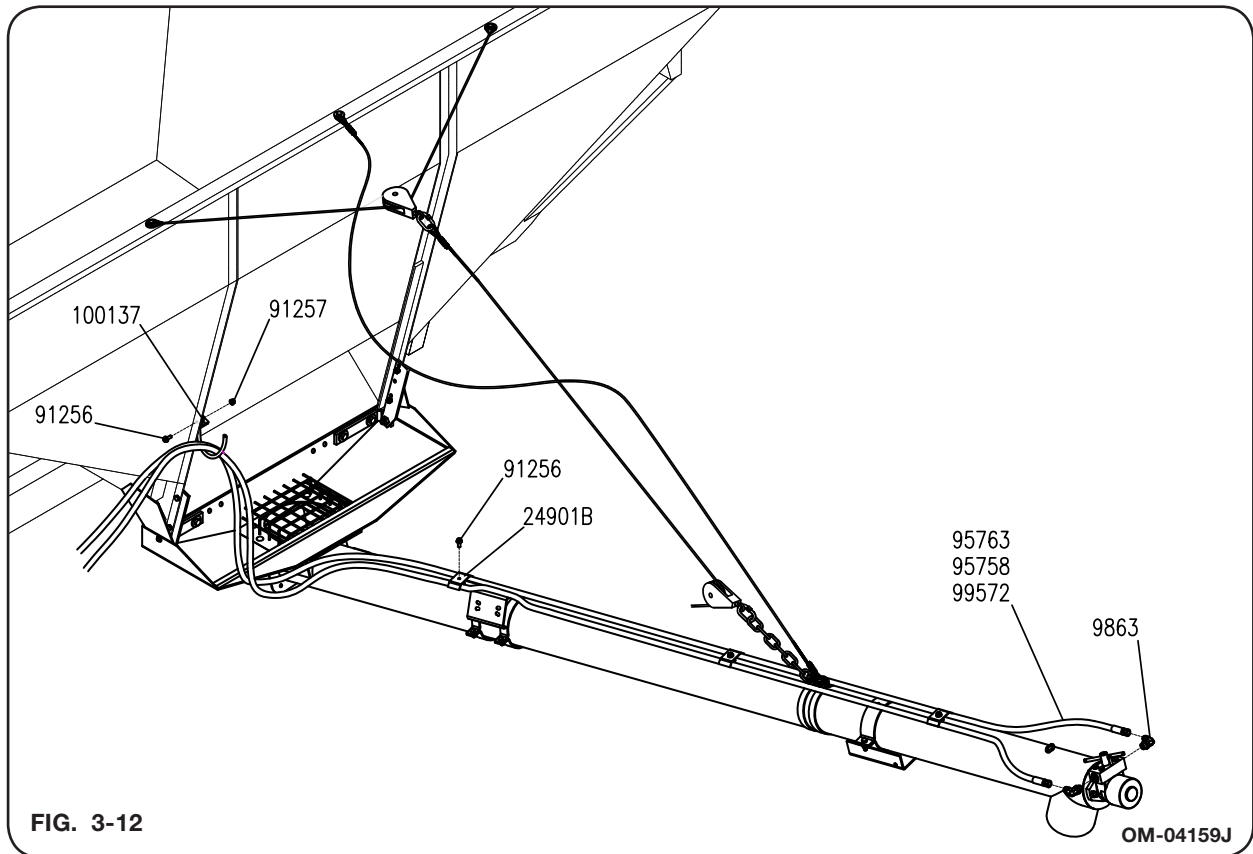
17. Secure second quick link (91514) to pulley (101410) and chain (2829). Secure opposite end of chain to first strap on auger tube using hardware provided, 3/8"-16 x 1 1/2" capscrew (9390-057), two 3/8" flat washers (9405-076), and 3/8"-16 locknut (9928), FIG. 3-10.



Secondary Cable

18. Drill one 7/16" diameter hole on top of box in location shown in FIG. 3-11. Attach one end of secondary cable (2833) to box and opposite end to auger strap using two 3/8"-16 x 1-1/2" capscrews (9390-057), four 3/8" flat washers (9405-076), and two 3/8"-16 locknuts (9928).

Hopper Assembly For 64" Door Angle Width (continued)

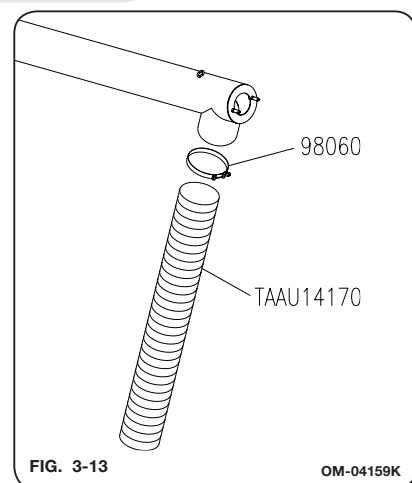


Hydraulic Hoses

19. Lay hydraulic hoses out on top of auger tube. Connect each hose to motor using 90° elbow (9863). Run length of tube securing in three places with clamp plates (24901B) and three 5/16-18 x 3/4" flange screws (91256), FIG. 3-12.
20. Secure hose bracket (100137) in approximate location shown in FIG. 3-12 in existing hole. Secure using 5/16"-18 x 3/4" flange screw (91256) and 5/16"-18 flange nut (91257).

Spout

21. Attach flexible spout (TAAU14170) to auger using clamp (98060), FIG. 3-13.



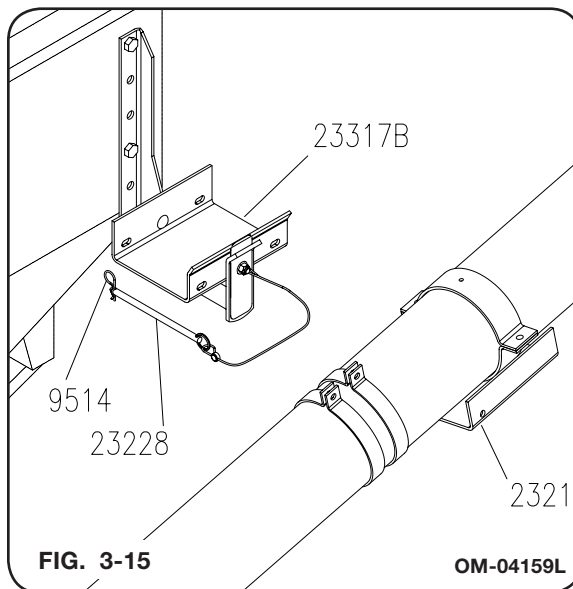
Hopper Assembly For 64" Door Angle Width (continued)

Box Transport Bracket

- Using winch, lift auger and rotate to either front or rear of box to determine location of transport bracket. As shown in FIG. 3-14, position bracket near top and edge of box.

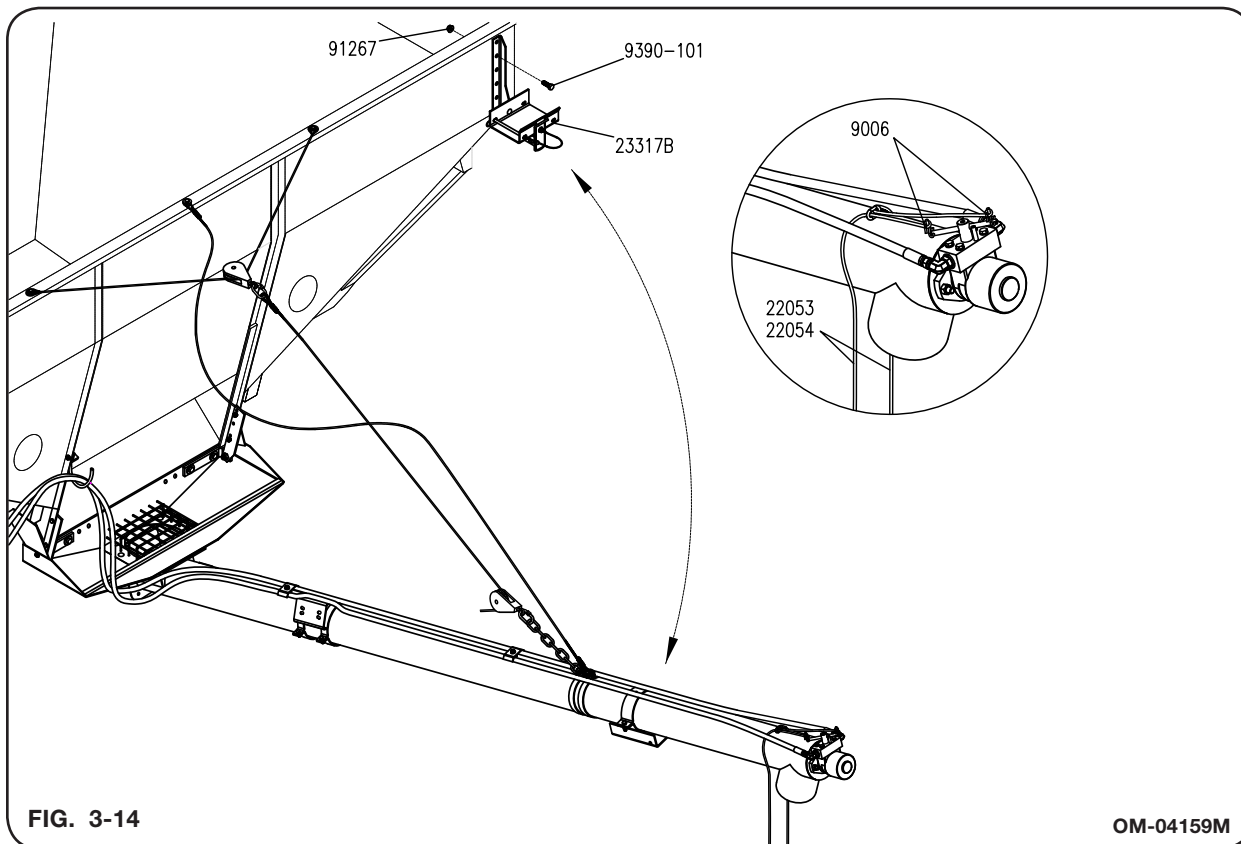
NOTE: Using auger, locate position so that the bracket on auger tube (23215B) aligns and lays inside tray of box transport bracket (23317B).

- Once position is located, drill two 9/16" holes using bracket (23317B) as a template. Secure to box using two 1/2"-13 x 1 1/2" capscrews (9390-101), and two 1/2"-13 flange nuts (91267).
- Once transport bracket (23317B) is secured to side of box, slide bracket (23215B) into position and tighten hardware.
- Latch auger into place with pin (23228) and hairpin cotter (9514), FIG. 3-15.



S-Hooks & Rope

- Attach S-hooks (9006) to hydraulic motor. Secure ropes (22053, 22054) to ends of S-hooks and thread through loop on top of auger tube.



SECTION III

Operation

Preparing Hydraulic Supply.....	3-2
Connecting Gravity Box To Transport Vehicle.....	3-2
Transporting.....	3-3
Preparing Auger	3-3
Performance	3-4

General Operations

⚠ WARNING

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

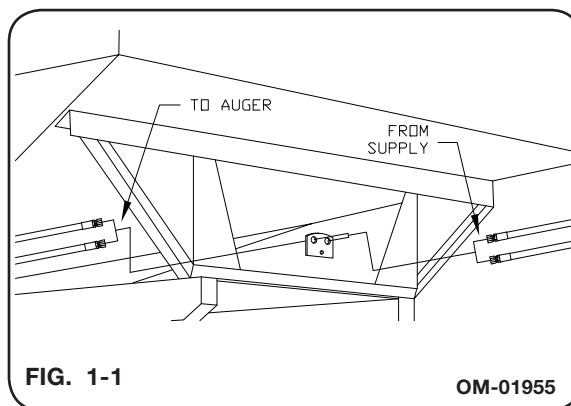
Read this operation section thoroughly. Acquaint yourself with the adjustments required to obtain efficient and trouble-free operations.

Preparing Hydraulic Supply

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 8 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 tighten securely. Be sure that the auger control is in the off position (Fig. 1-1).



⚠ 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.**

General Operations (continued)

Transporting

BEFORE TRANSPORTING

Be sure to empty auger completely by closing gravity box door and allowing auger to run until empty. 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).

NOTE: Auger must be empty before transporting, failure to do so voids warranty.

⚠ WARNING

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

⚠ CAUTION

- USE APPROVED TRANSPORT LIGHTS AND REFLECTORS WHEN TRANSPORTING AT NIGHT, DURING PERIODS OF POOR VISIBILITY, AND AS REQUIRED BY LOCAL LAW.

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.
6. To release auger from the transport bracket pull out pin, lift auger slightly and auger will swing-out freely.
 7. To latch the auger, raise the auger up enough to lay the auger rest bracket tray inside box rest bracket tray.
 8. Insert the transport pin, where shown, to lock the auger in place.

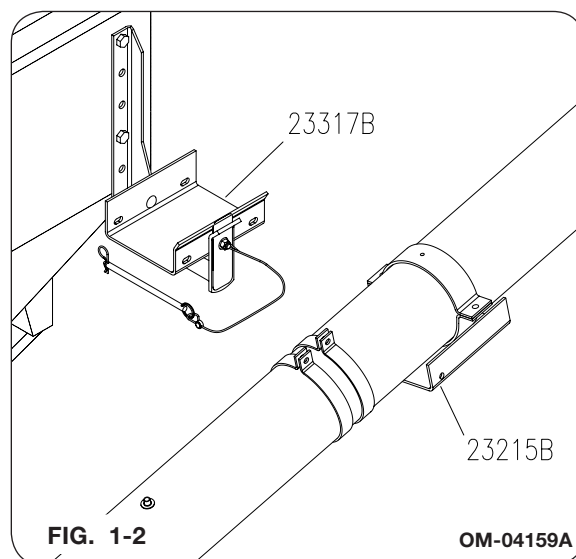


FIG. 1-2

OM-04159A

General Operations (continued)

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.

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

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. With the auger rotating, open chute door. Be sure to regulate flow from gravity box into hopper for optimum performance.

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

Performance

NOTE: Many grain augers run too fast. This is usually the result of hydraulic systems that provide high flow (18 to 30 GPM) at the accessory outlets. When adjustment is provided, the flow should be reduced to 8 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 fighting life. When the auger speed is too fast, it may cause severe vibration, damage, or premature fighting or tube wear. The material handled may incur more damage while the rate of discharge may actually be reduced! If your hydraulic source can not be adjusted, contact your KILLBROS dealer regarding optional equipment.

SECTION IV
Maintenance

Lubrication..... 4-2
Storage/Maintenance 4-2
Troubleshooting..... 4-2
Torque Chart 4-5

Box Auger — Maintenance

Lubrication

Oil or grease periodically or as needed:

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

Storage

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 the auger / hopper. Use pressurized water to wash out the auger and hopper after using fertilizers.
2. Wipe off the following:
 - hydraulic valve
 - motor
 - hydraulic hoses and fittings
3. Check the following:
 - Winch and secondary cable for wear
 - Spout clamp rings
 - Hopper mounting bolts for proper adjustment
 - Cable ties for tightness
 - Valve, motor, hoses, and fittings for leaks, etc.

DO THE FOLLOWING BEFORE PLACING THE AUGER IN STORAGE:

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

Troubleshooting

SYMPTOM		REMEDIES
A. Auger will not turn over or develop proper speed or torque:		
1.	Wrong hose hook-up to tractor control levers	Refer to the tractor operator's manual for valve and control lever arrangement
2.	Insufficient tractor hydraulic pressure	Check hydraulic reservoir oil level
3.	Hydraulic hoses kinked or twisted	Find cause and correct
4.	Hydraulic components leaking oil	Repair or replace components
5.	Pump does not deliver sufficient pressure or volume	Check output and delivery -- repair if necessary
6.	Auger mechanism binding	Check for cause and correct

Troubleshooting (continued)

SYMPTOM		REMEDIES
B. Auger runs too slowly:		
1.	Air in system	Bleed system and tighten connections
2.	Internal leak in controls or motor	Replace seals; repair or replace valves or motor
3.	Pump is worn	Repair or replace pump
4.	If auger starts slowly and speed increases after oil heats up, or if auger slows down after oil heats up	Use proper weight hydraulic oil. If auger starts slowly and speed increases after oil heats up; oil is too heavy weight, or if auger slows down after oil heats up, oil is too light weight
C. Auger turning in the wrong direction:		
1.	Incorrect piping between source and control valve	Reverse piping connections
D. Oil heats excessively:		
1.	Oil level too low	Fill to proper level
2.	Dirty oil	Drain, flush, and refill with clean oil and filter
3.	Oil too light weight in hot climate	Drain and refill with proper weight oil
4.	Oil too heavy weight	Use recommended weight oil
5.	Oil slipping through worn pump	Repair or replace pump
6.	Hoses or valves too small	Use larger hoses and valves
7.	Restricted lines or piping	Re-route lines to eliminate restrictions
8.	Reservoir too small to provide adequate cooling	Replace with larger reservoir or install oil cooler
E. Pump / motors / seals blow - shaft / housing breaks / hoses burst:		
1.	When a standard control valve is returned to neutral to stop or start, sudden excess pressure is created which will 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	Avoid sudden and rapid starting and stopping
F. Auger creeps when spout switch is shut-off:		
1.	Oil flow (GPM) is too high	Decrease oil flow (not pressure) to hydraulic motor with use of a flow control valve which must not exceed 12 GPM

Troubleshooting (continued)

SYMPTOM		REMEDIES
G. <u>Electronic Valve Control:</u>		
ELECTRONIC VALVE DOES NOT JUMP OR HUM WHEN TURNED ON.		BAD POWER SOURCE, CONNECTION, SOLENOID, OR WIRING HARNESS (SEE BELOW).
1.	<u>Check connections</u>	Includes Items 1 thru 4
2.	<u>Check power source</u> - Disconnect power source from wire harness. Check for power between the power source and wire harness with voltmeter.	-- If terminals are corroded, disconnect power source and clean the terminals. -- If OK, continue with step 2.
3.	<u>Check wire harness</u> - 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, poor power source. -- If OK, continue with step 3. -- If no power, replace wire harness. -- If OK, continue with step 4.
4.	<u>Check solenoid</u> - 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.

Occasionally when an auger has been connected into an auxiliary hydraulic system, it may not operate or auger the material being handled. When hydraulic pressure and flow gauges are not available, it may be difficult to determine if there is a fault in the source, hydraulic system, or the auger. A convenient method of determining this is to connect the auger hydraulic hoses to another tractor system and check the operation.

If, for example, the auger operates from the other tractor system but not from the original tractor, there is a fault in the original tractor connection, or the original tractor system is not adequate. If the auger fails to operate on either tractor, there is probably a fault with the auger control valve, motor, or the auger itself. In this case, refer to the troubleshooting guide.

Torque Chart

CAPSCREWS - GRADE 5



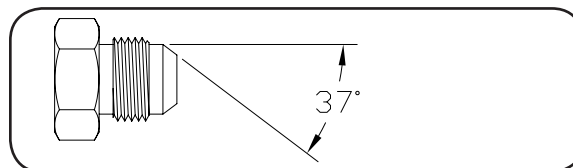
NOTE: Grade 5 cap screws can be identified by three radial dashes on head.

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

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

HYDRAULIC FITTING-TORQUE AND INSTALLATION PROCEDURES

SAE FLARE CONNECTION (J.I.C.)



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.

Notes

SECTION V

Parts

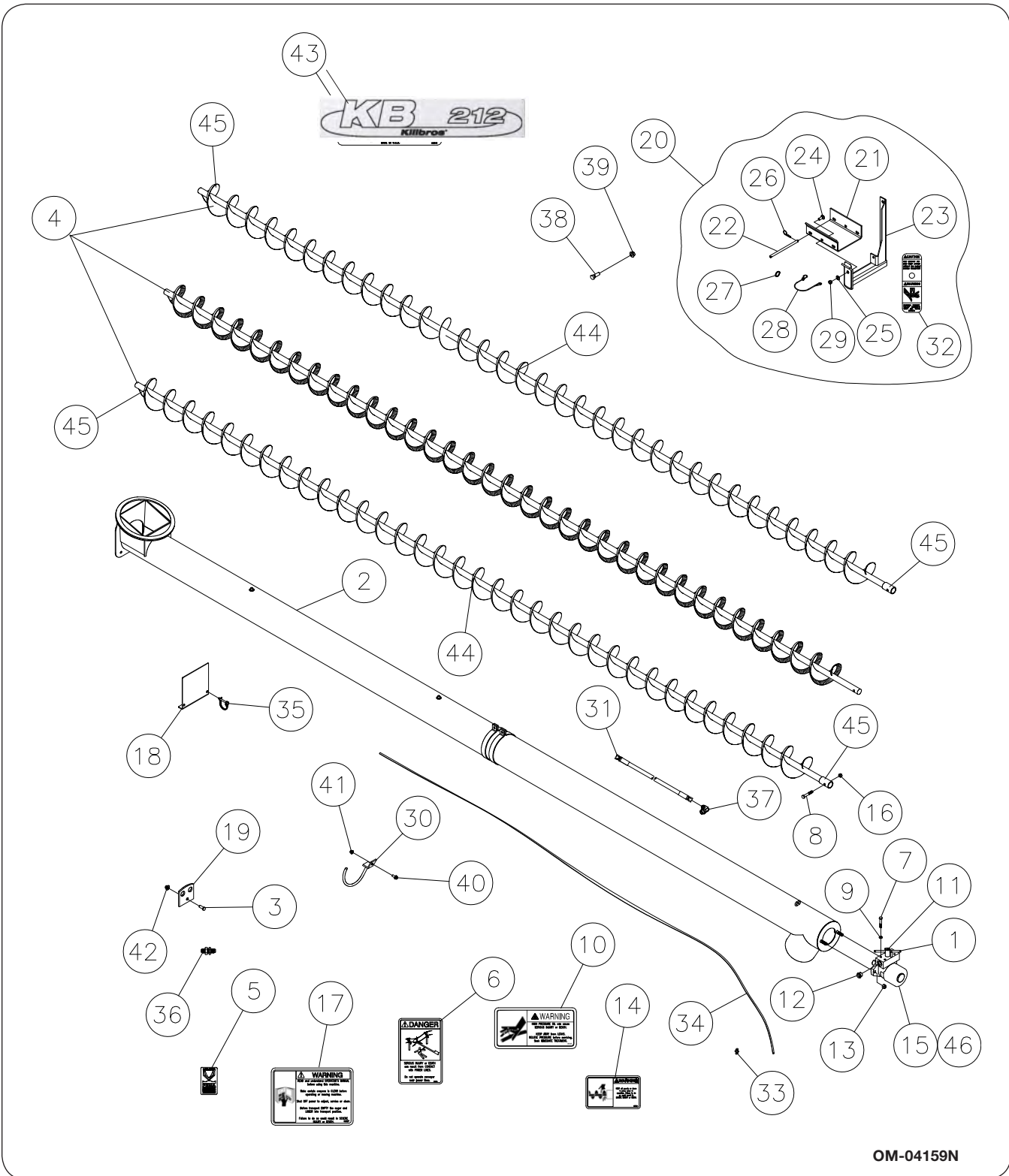
Please visit www.unverferth.com/parts/ for the most current parts listing.

Auger Components	5-2
Hopper Components	
For 30" - 39" Doors	5-4
Hopper Components	
For 64" Doors	5-6
Hopper Components	
For 50" Doors	5-8
Winch Components	5-9
Optional Relief Valve & Electronic On/Off Control Components	5-10
Optional Telescopic Spout	5-12
Optional Flow Control & Electronic On/Off Control Components	5-13

Box Auger — Parts

Auger Components

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



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Box Auger — Parts

Auger Components

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

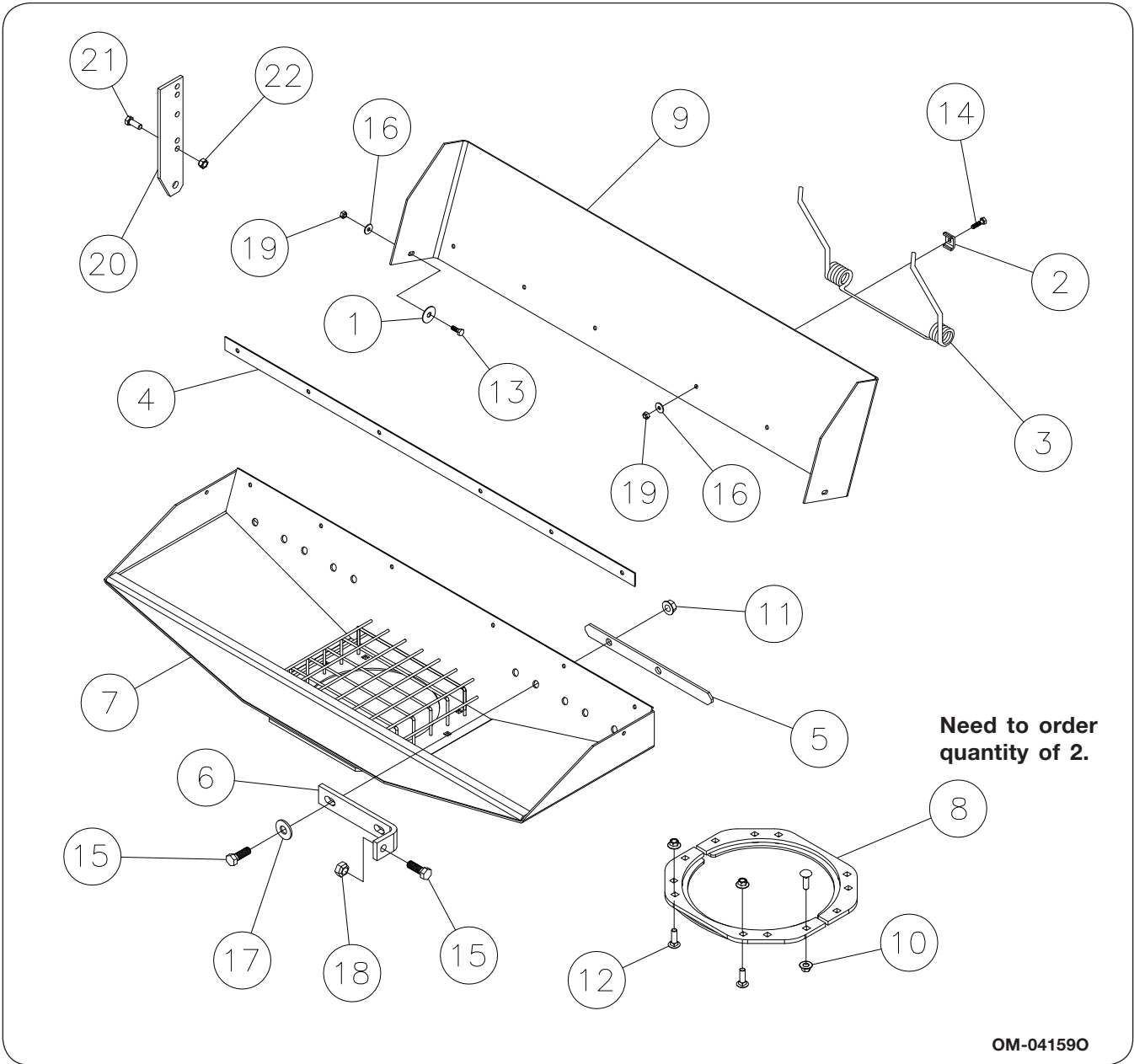
ITEM	PART NO.	DESCRIPTION
1	2265	Handle/Valve
2	23398B	12' Auger Tube Weldment (Decals)
	23399B	14' Auger Tube Weldment (Decals)
	23400B	15' Auger Tube Weldment (Decals)
3	9390-055	Capscrew 3/8-16 x 1"
4	21976	12' Brush Flighting
	23312B	12' Steel Flighting
	900200	12' Plastic Flighting
	21890	14' Brush Flighting
	23313B	14' Steel Flighting
	900201	14' Plastic Flighting
	103934	15' Brush Flighting
	23314B	15' Steel Flighting
	900202	15' Plastic Flighting
5	91605	Decal, FEMA
6	93558	Decal, DANGER
7	9390-034	Capscrew 5/16-18 x 2"
8	9390-060	Capscrew 3/8-16 x 2 1/4"
9	9404-019	Lockwasher 5/16"
10	95445	Decal, WARNING
11	95488	Hydraulic Control Valve
12	96792	Caplug 3/4-16
13	9799	Locknut 7/16-14
14	98766	Decal, WARNING
15	98772	Hydraulic Motor
16	9928	Locknut 3/8-16
17	99587	Decal, WARNING
18	23199B	Clean Out Door
19	21350	Hose Bracket
20	23317B	Bracket Assembly (Includes Items 21-29&32)
21	23204B	Plate
22	23228	Pin 3/8" x 7 1/4"
23	23316B	Bracket Weldment
24	9388-051	Carriage Bolt 3/8-16 x 1"
25	9405-074	Flatwasher 3/8"
26	9514	Hairpin Cotter

ITEM	PART NO.	DESCRIPTION
27	97489	Split Ring
28	97879	Nylon Lanyard
29	9928	Locknut 3/8-16
30	100137	Hose Bracket
31	95763	Hydraulic Hose 228" (12')
	95758	Hydraulic Hose 252" (14')
	99572	Hydraulic Hose 264" (15')
32	99588	Decal, WARNING
33	9006	S-Hook
34	22053	Yellow Rope
	22054	White Rope
35	9000936	Lynch Pin
36	93839	Bulkhead Union
37	9863	Elbow, 90° 3/4-16 JIC
38	9390-101	Capscrew 1/2-13 x 1 1/2"
39	91267	Flange Nut 1/2-13
40	91256	Flange Screw 5/16-18 x 3/4"
41	91257	Flange Nut 5/16-18
42	91263	Flange Nut 3/8-16
43	902090	Decal, KILLBROS 12'
	902091	Decal, KILLBROS 14'
	902092	Decal, KILLBROS 15'
44	900199	Flight Section 5" Dia. (RH Wound)
45	901122	Flight Section 5" Dia. w/Gusset RH (Ends Only)
46	91306	O-Ring

Box Auger — Parts

Hopper Components For 39" Door Angles

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



Hopper Components For 39" Door Angles

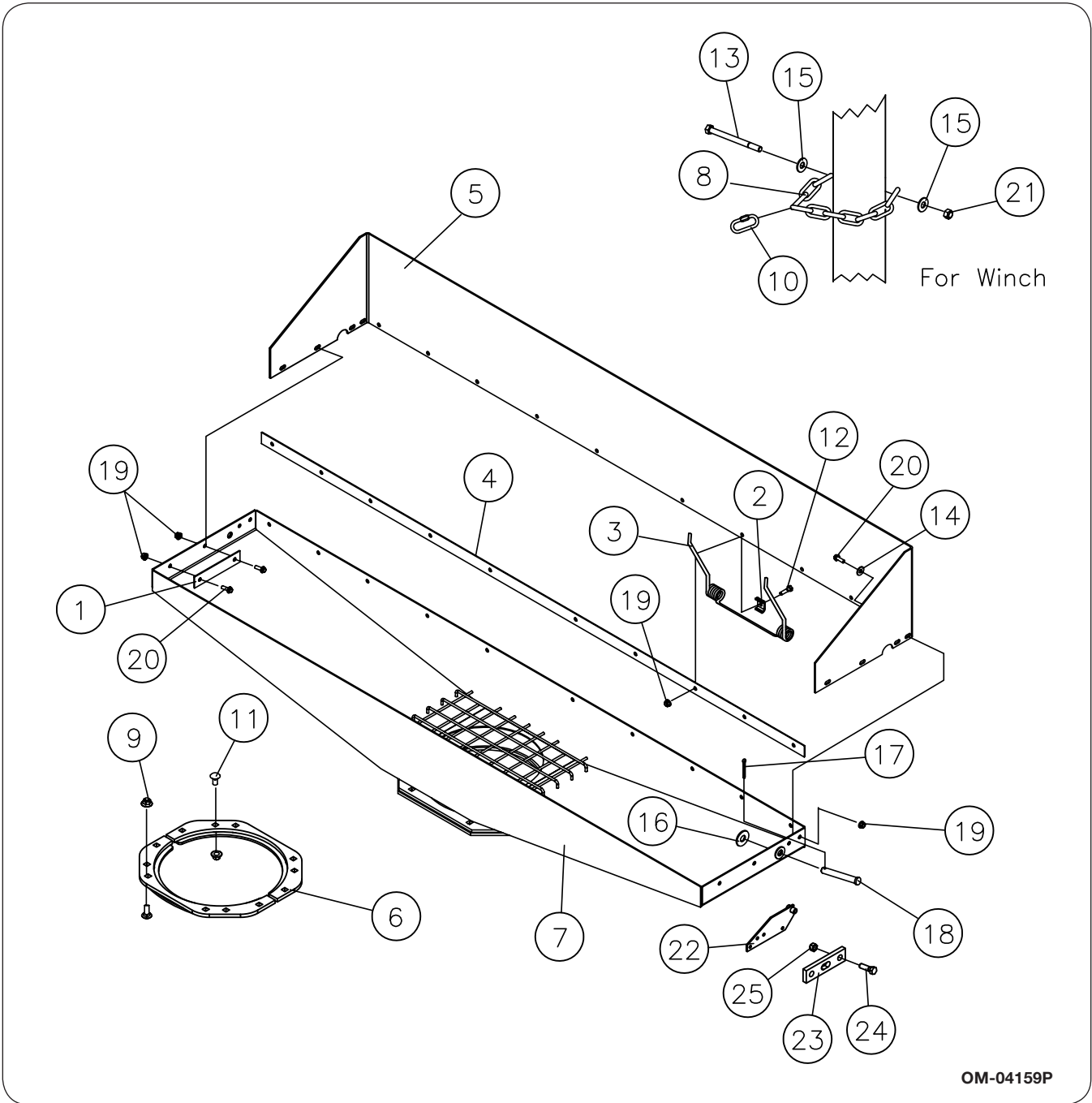
Please visit www.unverferth.com/parts/ for the most current parts listing.

ITEM	PART NO.	DESCRIPTION
	23227B	Hopper Assembly (Includes Items 1 thru 19)
1	105005	Washer 1 1/4" Dia. x 1/4" Dia.
2	22506	U-Clip
3	22507	Spring
4	22508	Strap, Hopper/Seal Assembly
5	23220B	Bar 7GA x 1" x 12 1/2"
6	23224B	Bar 3/8" x 1 1/2" x 9 1/2"
7	N/A	Hopper Weldment
8	24789B	Clamp Ring Weldment (Need to order quantity of 2)
9	23412	Seal/Hopper w/Holes & Slots
10	91263	Flange Nut 3/8-16
11	91267	Flange Nut 1/2-13
12	9388-052	Carriage Bolt 3/8-16 x 1 1/4"
13	9390-003	Capscrew 1/4-20 x 3/4"
14	9390-006	Capscrew 1/4-20 x 1 1/4"
15	9390-101	Capscrew 1/2-13 x 1 1/2"
16	9405-064	Flatwasher 1/4"
17	9405-088	Flatwasher 1/2"
18	9800	Locknut 1/2-13
19	9936	Locknut 1/4-20
20	23203B	Bar
21	9390-055	Capscrew 3/8-16 x 1"
22	9928	Locknut 3/8-16

Box Auger — Parts

Hopper Components For 64" Door Angles

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



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Hopper Components For 64" Door Angles

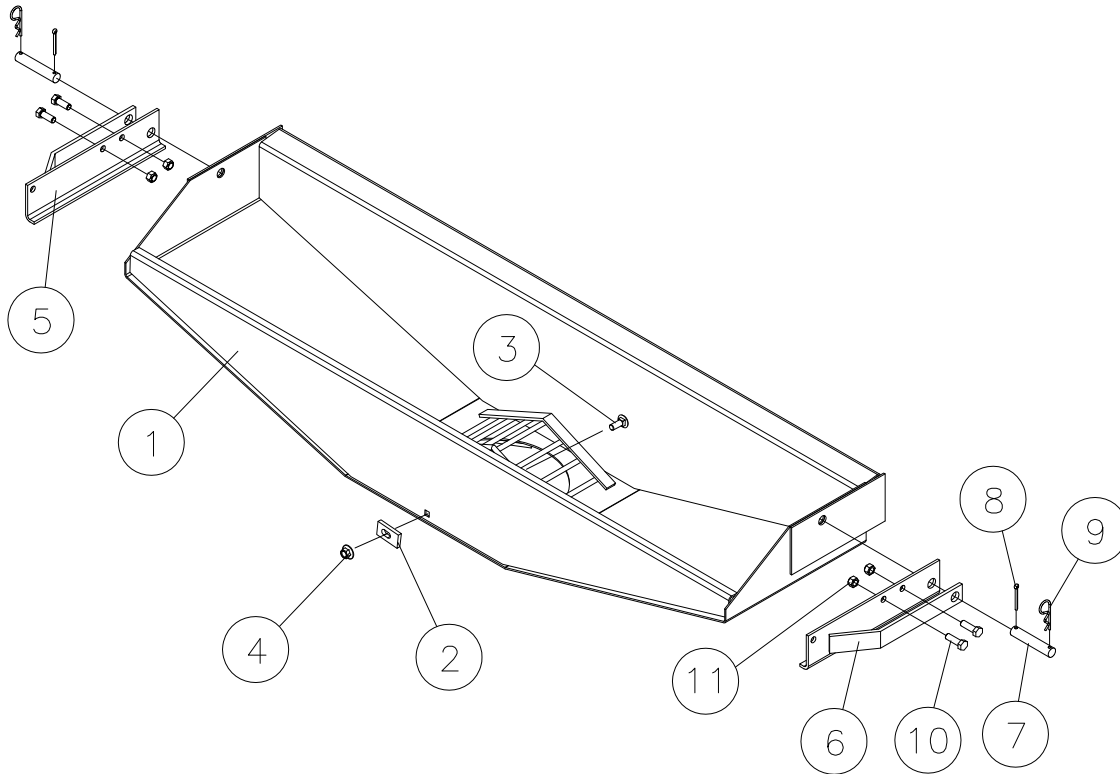
Please visit www.unverferth.com/parts/ for the most current parts listing.

ITEM	PART NO.	DESCRIPTION
	23394B	Hopper Assembly
1	21658	Hopper Seal Strap
2	22506	U-Clip
3	22507	Torsion Spring
4	22510	Hopper Seal Strap
5	22511	Hopper Seal
6	24789B	Hopper Retainer Plate
7	N/A	Hopper Weldment
8	2829	Chain
9	91263	Large Flange Nut, 3/8-16UNC
10	91514	Quick Link
11	9388-052	Carriage Bolt, 3/8-16 x 1 1/4
12	9390-005	Capscrew, 1/4-20UNC x 1
13	9390-068	Capscrew, 3/8-16UNC x 4 1/2
14	9405-064	Flatwasher, 1/4 USS
15	9405-076	Flatwasher, 3/8 USS
16	9405-088	Flatwasher, 1/2 USS
17	9391-035	Cotter Pin, 5/32 x 1 1/2
18	95890	Clevis Pin, 1/2 x 3 1/2
19	97189	Large Flange Nut, 1/4-20UNC
20	97420	Flange Screw, 1/4-20 x 3/4
21	9928	Locknut, 3/8-16UNC
22	23366B	Mounting Bracket Weldment
23	22244	Spacer Plate
24	9390-079	Capscrew, 7/16-14UNC x 1 1/4 Gr.5
25	94980	Locknut, 7/16-14UNC

Box Auger — Parts

Hopper Components For 50" Door

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



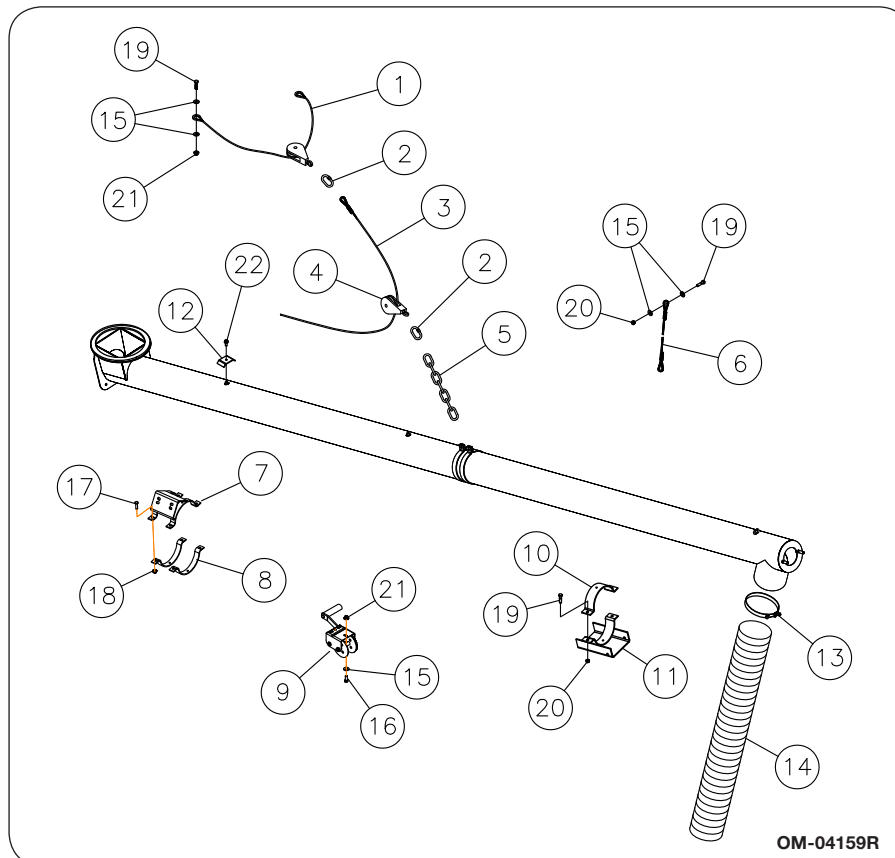
OM-04159Q

ITEM	PART NO.	DESCRIPTION
1	TAAU26340	Hopper Assembly For 50" Doors
2	TAAU14034	Intake Retainer Clip
3	9388-051	Carriage Bolt, 3/8-16 x 1
4	91263	Large Flange Nut, 3/8-16UNC
5	TAAU14051A	Hopper Hanger Weldment - Left-Hand
6	TAAU14041A	Hopper Hanger Weldment - Right-Hand
7	TAAU14061	Pin, 5/8 Dia. x 3 1/4 w/Holes
8	9391-035	Cotter Pin
9	94148	Hairpin Cotter
10	9390-055	Capscrew, 3/8-16UNC x 1 Gr.5
11	9928	Locknut, 3/8-16UNC

Box Auger — Parts

Winch Components

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

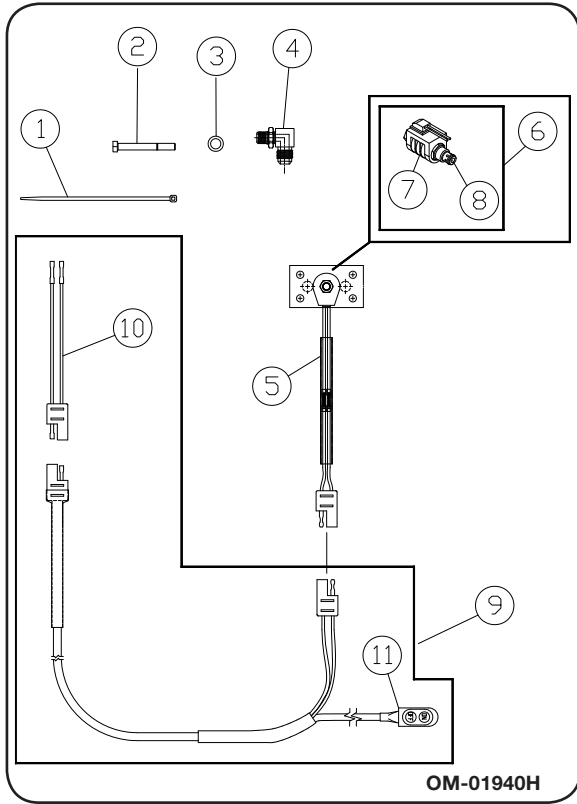


ITEM	PART NO.	DESCRIPTION
1	103998	Swivel Cable Assembly
2	91514	Quick Link
3	2831	Winch Cable 123" Long
4	101410	Pulley
5	2829	Chain, 6.92"
6	2833	Secondary Cable 78" Long
7	2747	Winch Bracket Weldment
8	2745B	Winch Clamp
9	9501907	Winch, 900 lbs. MAX.
10	105449B	Clamp
11	23215B	Transport Bracket Weldment
12	24901B	Hose Clamp
13	98060	T-Bolt Clamp
14	TAAU14170	Flex Spout, 6" x 4'
15	9405-076	Flat Washer 3/8"
16	9390-055	Capscrew 3/8-16 x 1"
17	9390-031	Capscrew 5/16-18 x 1 1/4"
18	91257	Flange Nut 5/16-18
19	9390-057	Capscrew 3/8-16 x 1 1/2"
20	9928	Locknut 3/8-16
21	91263	Flange Nut 3/8-16
22	91256	Flange Screw 5/16-18 x 3/4"

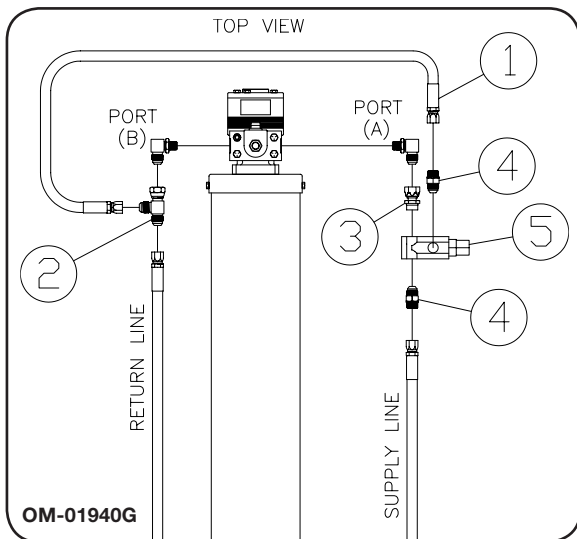
Box Auger — Parts

Optional Relief Valve & Electronic On/Off Components

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



ITEM	PART NO.	DESCRIPTION	
1	9000106	Cable Tie 6" 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°	
	900636	Adapter	
5	106975	Electronic Valve	
6	95909	Solenoid Cartridge Valve Assembly	
	7	97307	Solenoid
	8	97306	Electric Cartridge Assembly
9	106993	Wire Harness	
10	21902	Connector 2 - Way 8" Lg.	
11	92803	Switch (Customer will have to splice in new switch.)	

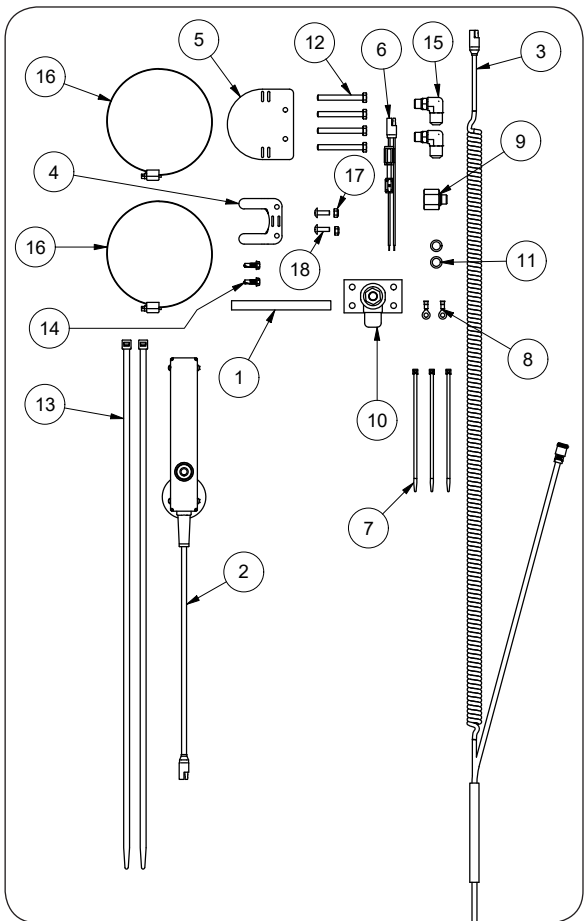


ITEM	PART NO.	DESCRIPTION
	23654	Relief Valve Kit for Hydraulic Systems with Greater than 2500 PSI
1	94752	Hose 1/2 x 16 3/4" Lg.
2	95059	Tee
3	96935	Adapter
4	9864	Adapter
5	99815	Relief Valve
6	23655	Instruction Sheet

Box Auger — Parts

Optional Relief Valve & Electronic On/Off Components

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



ITEM	PART NO.	DESCRIPTION
	26352	Electronic On/Off Control Kit For 10' Telescopic Spout
1	21907	Heat Shrink Tubing
2	26330	Switch Assembly w/Alt Action Push Button Switch
3	26341	Wire Harness Assembly Trailer Cable/Power Cord
4	26505	Switch Retainer
5	26506	Plate 4" x 4 1/4"
6	26507	Wire Harness w/Fuse
7	9000106	Cable Tie 6" Long
8	9002638	Eyelet 1/4"
9	900636	Reducer 9/16"-18 O-Ring Male x 3/4"-16 O-Ring Female Nut
10	901878	Valve/Electric 2-Way 15GPM
11	91306	O-Ring
12	9390-037	Capscrew 5/16"-18UNC x 2 3/4"
13	94038	Cable Tie 32" Long
14	9473	Self-Drilling Screw 1/4-14 x 3/4"
15	95908	Elbow 90° 3/4"-16 JIC Male x 9/16"-18 O-Ring Adj. Male
16	96931	Hose Clamp 6 1/2"
17	9936	Locknut 1/4"-20UNC
18	903174-535	Screw Truss Head Phillips 1/4"-20UNC x 3/4"

Optional Telescopic Scope

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

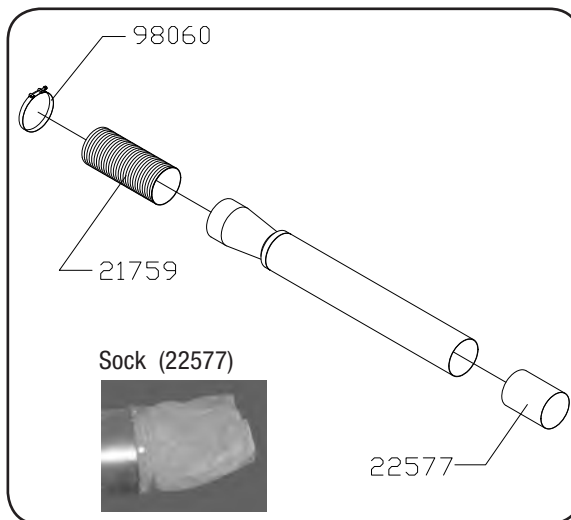
TELESCOPIC SPOUT ASSEMBLY FOR 8' with Sock

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



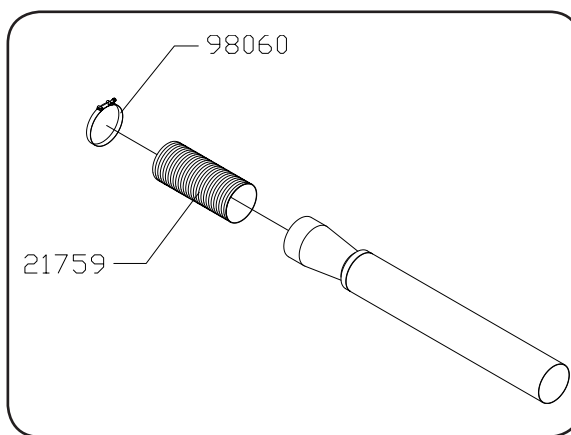
TELESCOPIC SPOUT ASSEMBLY FOR 14' less Sock

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

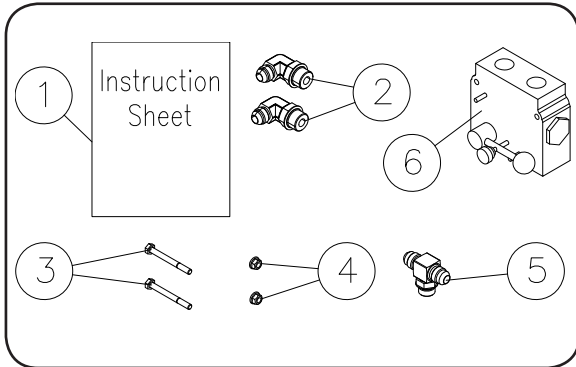
#22721 Telescopic Spout Bundle for Steel Auger



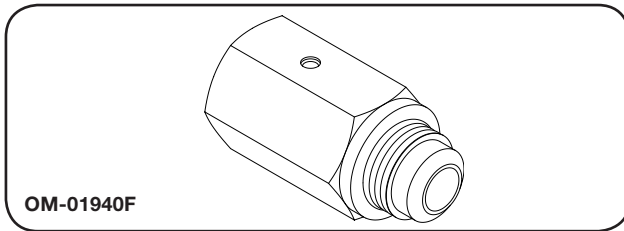
Box Auger — Parts

Optional Flow Control

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



ITEM	PART NO.	DESCRIPTION
	23421	Flow-Control Valve Kit
1	23420	Instruction Sheet
2	93599	90° Elbow
3	9390-011	Capscrew, 1/4-20UNC x 2 1/2
4	97189	Hex Nut, 1/4-20UNC
5	97625	Tee
6	97685	Valve/Flow Control



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



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