FORM NO. 3323–198

Universal Swivel Auger

Sitework Systems Attachment

Model No. 22801 – 990001 & Up

Operator's Manual

English (CE)

Contents

Introduction

We want you to be completely satisfied with your new product, so feel free to contact your local Authorized Service Dealer for help with service, genuine replacement parts, or other information you may require.

Whenever you contact your Authorized Service Dealer or the factory, always know the model and serial numbers of your product. These numbers will help the Service Dealer or Service Representative provide exact information about your specific product. You will find the model and serial number on a plate located on the auger drive head. On augers and extensions, the model and serial number plate is located on the upper portion of the shaft.

For your convenience, write the product model and serial numbers in the space below.

Model No: _____

Serial No. _____

The warning system in this manual identifies potential hazards and has special safety messages that help you and others avoid personal injury, even death. DANGER, WARNING and CAUTION are signal words used to identify the level of hazard. However, regardless of the hazard, be extremely careful.

DANGER signals an extreme hazard that will cause serious injury or death if the recommended precautions are not followed.

WARNING signals a hazard that may cause serious injury or death if the recommended precautions are not followed.

CAUTION signals a hazard that may cause minor or moderate injury if the recommended precautions are not followed.

Two other words are also used to highlight information. “Important” calls attention to special mechanical information and “Note” emphasizes general information worthy of special attention.

The left and right side of the machine is determined by sitting on the seat in the normal operator’s position.

8111 Lyndale Ave. South
Bloomington, MN 55420–1196

Safety

Improper use or maintenance by the operator or owner can result in injury. To reduce the potential for injury, comply with these safety instructions and those in the traction unit operator's manual. Always pay attention to the safety alert ⚠ symbol, which means CAUTION, WARNING, or DANGER—"personal safety instruction." Failure to comply with the instruction may result in personal injury or death.

DANGER

POTENTIAL HAZARD
- **Contact with a moving auger can cause entanglement, severe wounds, and/or death.**

WHAT CAN HAPPEN
- **Entangled arms and legs may be cut off or broken. Death may result.**

HOW TO AVOID THE HAZARD
- **Keep all others at least 10 feet away from the auger during operation. Also, do not replace the supplied bolt which secures the auger to the drive head with a longer bolt as this may increase the chance for entanglement.**

DANGER

POTENTIAL HAZARD
- **There may be buried power, gas, and/or telephone lines in the work area.**

WHAT CAN HAPPEN
- **Shock or explosion may occur.**

HOW TO AVOID THE HAZARD
- **Have the property or work area marked for buried lines and do not dig in marked areas.**

WARNING

POTENTIAL HAZARD
- **When going up or down hill, the machine could overturn if the heavy end is toward the downhill side.**

WHAT CAN HAPPEN
- **Someone may be pinned or seriously injured by the machine if it overturns.**

HOW TO AVOID THE HAZARD
- **Operate up and down slopes with the heavy end of the machine uphill. An attached auger bit will make the front end heavy.**

WARNING

POTENTIAL HAZARD
- **When the engine is off, attachments in the raised position can gradually lower.**

WHAT CAN HAPPEN
- **Someone nearby may be pinned or injured by the attachment as it lowers.**

HOW TO AVOID THE HAZARD
- **Always lower the attachment lift each time you shut off the traction unit.**

Safety Decals

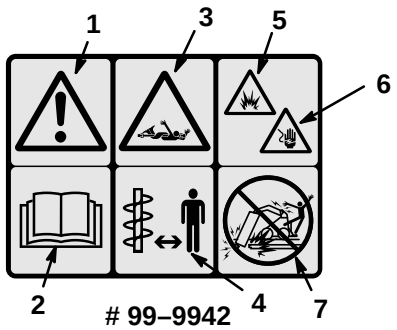


Figure 1

1. Safety alert symbol
2. Read operator's manual
3. Full body entanglement
4. Stay away from rotating shafts and augers
5. Explosion hazard
6. Electric shock hazard
7. Do not dig in areas with buried gas or power lines

Specifications

Note: Specifications and design are subject to change without notice.

Width	25 inches (64 cm)
Length	18 inches (46 cm)
Height	21 inches (53 cm)
Weight (without auger)	217 lbs (99 Kg)
Maximum auger diameter	15 inches (38 cm)
Motor Displacement Rated pressure Flow range	 8.0 in^3/rev (130 cm^3/rev) 3000 psi continuous (211 Kg/cm^2) 0–20 gpm (38–76 Lpm)
Drive ratio	3.75:1
Output shaft diameter	2.56 inches (6.5 cm)
Bit speed	80 rpm at 11 gpm (60 Lpm), 95% efficiency
Torque	1060 ft.·lb (1437 Nm) at 11 gpm (60 Lpm), 3000 psi (211 Kg/cm^2)

Stability Ratings

To determine the degree of slope you can traverse with the auger installed on a traction unit, find the stability rating for the hill position you want to travel in the appropriate table below, then find the degree of slope for the same rating and hill position in the Stability Data section of the traction unit operator's manual.

Note: The auger drive head, with an auger smaller than 15 inches, is rated for use without the counterweight. If you use the counterweight, the traction unit will be less stable in the front and side uphill positions. Do not use augers over 15 inches in diameter, because they may cause instability and the drive head does not produce enough torque to safely turn them in the soil.

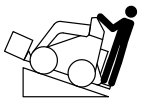
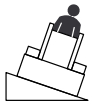
WARNING

POTENTIAL HAZARD
- **Exceeding the maximum slope can cause the traction unit to tip.**

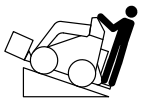
WHAT CAN HAPPEN
- **If the traction unit tips, you or bystanders could be crushed.**

HOW TO AVOID THE HAZARD
- **Do not drive the traction unit on a slope steeper than the maximum slope.**

Stability With a 15 inch Auger

Orientation	Stability Rating
Front Uphill 	D
Rear Uphill 	D
Side Uphill 	C

Stability Without an Auger

Orientation	Stability Rating
Front Uphill 	D
Rear Uphill 	C
Side Uphill 	B

Stability With Augers Less Than 15 Inches in Diameter

Augers smaller than 15 inches in diameter will have stabilities between the stability of the drive head alone and the drive head with the 15 inch auger.

Installation

Loose/Separate/Optional Parts

DESCRIPTION	QTY.	USE
Auger drive head	1	Install on traction unit
Auger (sold separately)	1	Install auger on drive head
Bolt, 7/8”–9 x 4–1/2”	1	
Nut, 7/8”–9	1	
Bolt, 5/8”–11 x 3–1/2”	4	
Nut, 5/8”–11	4	
Auger extensions (sold separately)	1	Install between drive head and auger

Installing the Drive Head on the Traction Unit

IMPORTANT: Before installing, ensure that the mount plates are free of any dirt or debris.

Note: Always use the traction unit to lift and move the drive head. To move an auger without the drive head, sling a strap over each end of the auger and hoist it to the desired location.

1. Ensure that the drive head is positioned on a level surface with enough space behind it to accommodate the traction unit.
2. Move the pump control lever to the slow (turtle) position the start the engine.
3. Slowly push the attachment tilt lever forward to tilt the mount plate forward.
4. Position the mount plate into the upper lip of the receiver plate on the drive head (Fig. 2).

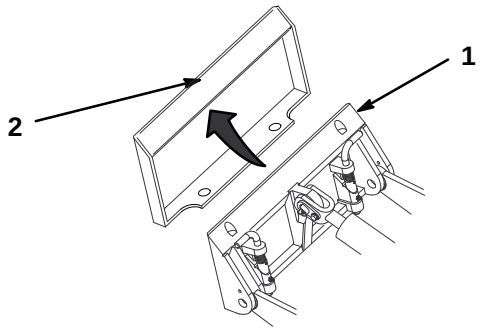


Figure 2

1. Mount plate
2. Receiver plate

5. Raise the loader arms while tilting back the mount plate at the same time.

IMPORTANT: The drive head should be raised enough to clear the ground and the mount plate should be tilted all the way back.

6. Stop the engine.
7. Engage the quick attach pins (Fig. 3).

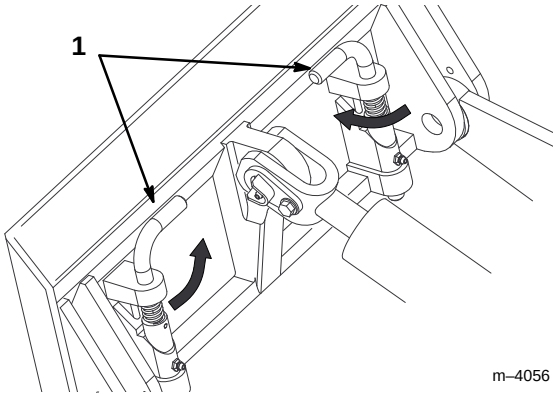


Figure 3

1. Quick attach pins (shown in engaged position)

Connecting the Hydraulic Hoses

WARNING

POTENTIAL HAZARD
- **Hydraulic fluid escaping under pressure can penetrate skin and cause injury.**

WHAT CAN HAPPEN
- **Fluid accidentally injected into the skin must be surgically removed within a few hours by a doctor familiar with this form of injury or gangrene may result.**

HOW TO AVOID THE HAZARD
- **Keep body and hands away from pin hole leaks or nozzles that eject high pressure hydraulic fluid.**
- **Use cardboard or paper to find hydraulic leaks, never use your hands.**

1. Stop the engine.

2. Move the auxiliary hydraulic lever forward, backward, and back to neutral position to relieve hydraulic pressure at the hydraulic couplers.

IMPORTANT: Ensure that all foreign matter is cleaned from hydraulic connections before making connections.

3. Remove the protective covers from the hydraulic couplers on the traction unit.

4. Connect the covers together to prevent contamination during operation.

5. Slide the collar back on the hydraulic coupler and connect the attachment couplers to the traction unit couplers.

6. Confirm that the connection is secure by pulling on the hoses.

Installing an Auger onto the Drive Head

WARNING

POTENTIAL HAZARD
- **The auger head swings freely in the cradle arms.**

WHAT CAN HAPPEN
- **Hands or fingers could get pinched and severely injured or amputated if they are caught between the cradle arms and the swinging drive head.**

HOW TO AVOID THE HAZARD
- **Keep hands and fingers away from the cradle arms.**

1. Raise the loader arms so the drive head clears the ground.

2. Stop the engine.

3. With the drive head in a vertical position, slide two 5/8”–11 x 3–1/2” bolts into the notches and holes in the front and back cradle arms and drive head (Fig. 5).

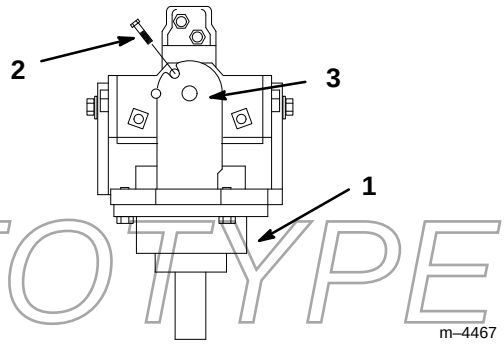


Figure 4

1. Drive head (front view)
2. Front cradle arm
3. Bolt (5/8”–11 x 3–1/2”)

4. Lightly secure each bolt with a 5/8”–11 nut.

5. Manually rotate the auger drive head up and slide two 5/8”–11 x 3–1/2” bolts through the holes in the left and right cradle arms (Fig. 5).

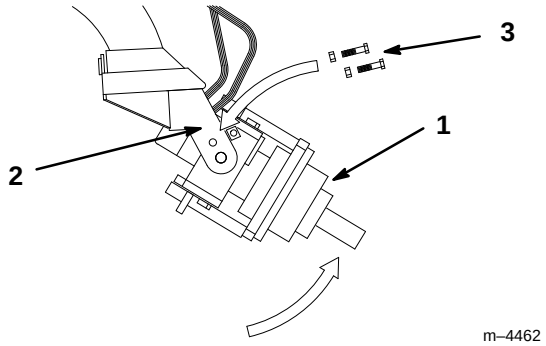


Figure 5

1. Drive head (right side view)
2. Right cradle arm
3. Bolts (5/8”–11 x 3–1/2”) and nuts (5/8”–11)

6. Lightly secure each bolt with a 5/8”–11 nut.

7. If using an extension with the auger, insert the end of the extension into the end of the auger and secure the auger to the drive head with the 7/8”–9 x 4–1/2” bolt and 7/8”–11 nut (Fig. 6).

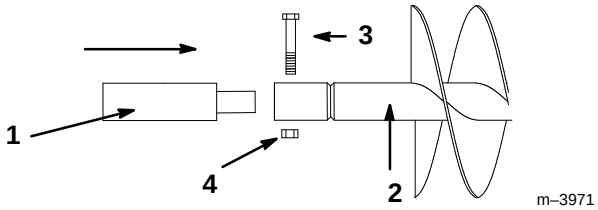


Figure 6

1. Extension
2. Auger shaft
3. Bolt (7/8”–9 x 4–1/2”)
4. Nut (7/8”–9)

8. Start the engine.

9. Maneuver the drive shaft into the end of the auger shaft or extension (if applicable) (Fig. 7).

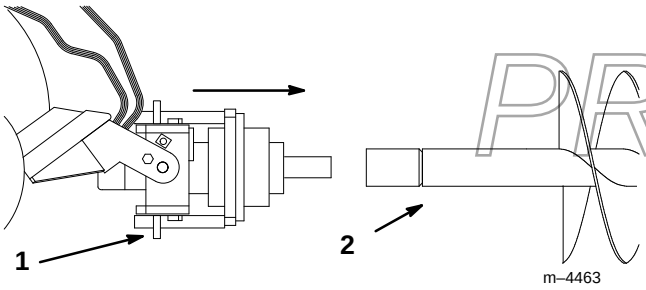


Figure 7

1. Drive head
2. Auger shaft

10. Stop the engine.

11. Secure the auger to the drive head with the 7/8”–9 x 4–1/2” bolt and 7/8”–11 nut (Fig. 8).

12. Remove the bolts and nuts from the cradle arms that were installed in step 3 and 5 (Fig. 8).

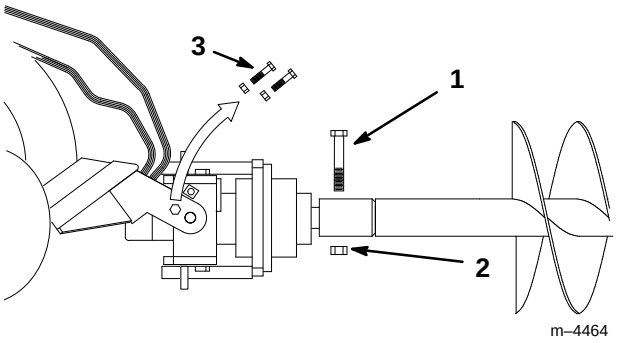


Figure 8

1. Bolt (7/8”–9 x 4–1/2”)
2. Nut (7/8”–9)
3. Bolts (5/8”–11 x 3–1/2”) and nuts (5/8”–11)

13. Start the engine.

14. Raise the auger free of the ground (Fig. 9).

15. When the auger is vertical, tilt the attachment plate rearward, until the drive head contacts the attachment plate to stabilize the auger and keep it from swinging freely (Fig. 9).

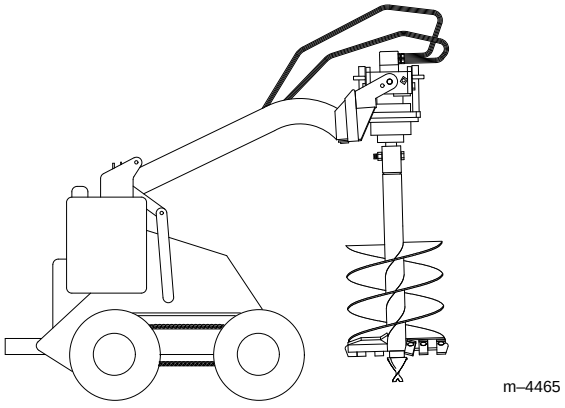


Figure 9

Removing an Auger/Extension from the Drive Head

1. Raise the loader arms so the auger comes out of the hole.

Note: If you have a 24 inch extension installed between the drive head and the auger, it may be necessary to raise the auger as high as possible and then move the traction unit backward to pull the auger the rest of the way out of the hole.

2. Set the auger down in its storage location.

3. While lowering the arms, drive slowly backwards until the auger is horizontal.
4. Stop the engine.
5. Remove the bolt and nut securing the drive head to the auger or extension.
6. Start the engine and back the traction unit away from the auger.
7. If an extension was used, remove the bolt securing it and pull it off of the auger.

Removing the Drive Head from the Traction Unit

1. Start the engine and lower the drive head to the ground or onto a trailer.
2. Stop the engine.
3. Disengage the quick attach pins by turning them to the outside.
4. Move the auxiliary hydraulic lever forward, backward, and back to neutral position to relieve hydraulic pressure at the hydraulic couplers.
5. Slide the collars back on the hydraulic couplers and disconnect them.

IMPORTANT: Connect the attachment hoses together to prevent hydraulic system contamination during storage.

6. Install the protective covers onto the hydraulic couplers on the traction unit.
7. Start the engine, tilt the mount plate forward, and back the traction unit away from the drive head.

Operation

Digging a Hole

DANGER

POTENTIAL HAZARD
- **There may be buried power, gas, and/or telephone lines in the work area.**

WHAT CAN HAPPEN
- **Shock or explosion may occur.**

HOW TO AVOID THE HAZARD
- **Have the property or work area marked for buried lines and do not dig in marked areas.**

IMPORTANT: Before digging, ensure that the ground is free of any trash or debris.

IMPORTANT: Only use the auger if the auger point and teeth are intact and in good condition.

1. Lower the auger to the soil at the site of the proposed hole.
2. Move the throttle lever to fast (rabbit), the pump selector lever to slow (turtle), and the flow divider control dial to the 10:00 o'clock position.
3. Pull the auxiliary hydraulics lever backward to begin drilling.
4. Lower the auger slowly as the soil is loosened. As you dig deeper, move the traction unit backward, forward, right, or left as required to keep the hole vertical (Fig. 10).

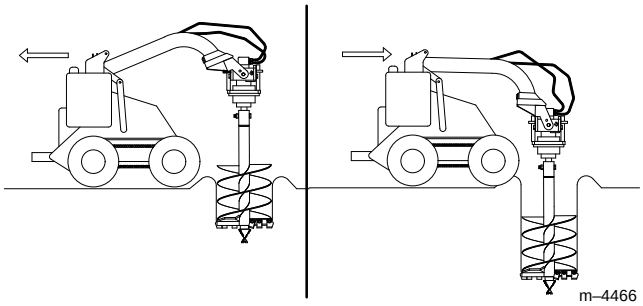


Figure 10

5. When the auger becomes full of soil, disengage the auger drive and lift the auger from the hole. Engage the auger drive to spin off the soil, then resume digging.

Note: Switching rapidly from forward to reverse will help to shake off the soil.

DANGER

POTENTIAL HAZARD
- **Excessive downward force may cause the bit to wobble uncontrollably.**

WHAT CAN HAPPEN
- **The machine may become unstable and tip over, crushing you or others.**

HOW TO AVOID THE HAZARD
- **Do not use excessive downward pressure on the bit. Allow the bit to pull itself into the soil.**

Maintenance

Service Interval Chart

Service Operation	Each Use	25 Hours	50 Hours	1000 Hours	Storage Service	Notes
Auger teeth–inspect	X				X	Replace if damaged or worn
Planetary gear case oil–check		X				
Planetary gear case oil–change				X		
Chipped surfaces—paint					X	

CAUTION

POTENTIAL HAZARD
- **If you leave the key in the ignition switch, someone could start the engine.**

WHAT CAN HAPPEN
- **Accidental starting of the engine could seriously injure you or other bystanders.**

HOW TO AVOID THE HAZARD
- **Remove the key from the ignition switch before you do any maintenance.**

Checking Planetary Gear Case Oil

Check the oil level in the planetary gear case every 25 hours and top off the oil if necessary.

1. Place the auger drive head on the ground so that the drive shaft is parallel with the ground.
2. Rotate the drive head so that the oil drain plug is located on top and the breather plug is on the bottom (Fig. 11).
3. Remove the oil drain plug (Fig. 11)
4. Rotate the auger drive head so that the drain opening is at the 2 o'clock position (Fig 11). Oil should just begin to come out of the opening.

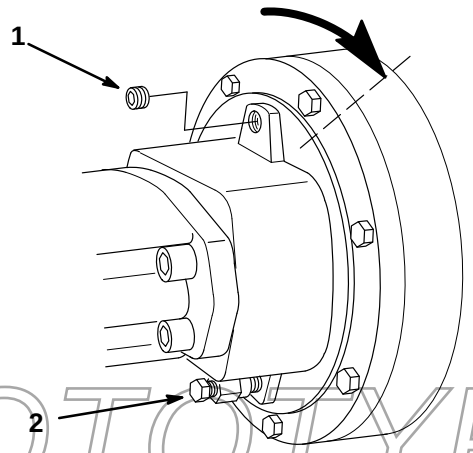


Figure 11

1. Drain plug
2. Breather plug

5. If no oil comes out of the opening, add oil (a mild, extreme pressure lubricant API–GL–5, number 80 or 90) until the oil starts to run out when the drain hole is at the 2 o'clock position.
6. Replace the drain plug.

Changing Planetary Gear Case Oil

Change the oil after the first 50 hours of operation and every 1000 hours thereafter. The planetary gear case requires 2 pints of a mild, extreme pressure lubricant, rated API–GL–5, number 80 or 90.

1. Support the drive head over an oil pan so that the oil drain plug (Fig. 11) is on the bottom of the drive head, facing the oil pan.
2. Remove the oil drain plug to drain the oil.
3. When the oil is completely drained, turn the drive head so that the oil drain opening is on the top of the drive head, facing the up.
4. Add 2 pints of a mild, extreme pressure lubricant, rated API–GL–5, number 80 or 90.
5. Replace the drain plug.

Storage

1. Before long term storage, wash the attachment with mild detergent and water.
2. Check and tighten all bolts, nuts, and screws. Repair or replace any damaged or worn part.
3. Ensure that all hydraulic couplers are connected together to prevent contamination of the hydraulic system.
4. Paint all scratched or bare metal surfaces. Paint is available from your Authorized Service Dealer.
5. Store the attachment in a clean, dry garage or storage area. Cover it to protect it and keep it clean.

Troubleshooting

PROBLEM	POSSIBLE CAUSES	CORRECTIVE ACTION
Drive head does not operate.	1. Hydraulic coupler not completely connected	1. Check and tighten all couplers.
	2. Damaged hydraulic coupler	2. Check couplers and replace any that are damaged.
	3. An obstruction in a hydraulic hose	3. Find and remove the obstruction.
	4. Kinked hydraulic hose	4. Replace the kinked hose
	5. Contamination in the gearbox	5. Refer to your authorized service dealer.

PROTOTYPE