AGR1300H Owner's Manual

Original Instructions
IMPORTANT- READ CAREFULLY BEFORE USE AND KEEP FOR FUTURE REFERENCE

Table of Contents

About this Manual

THANK YOU for purchasing a BILLY GOAT® Auger. Your new machine has been carefully designed and manufactured to provide years of reliable and productive service. This manual provides complete operating and maintenance instructions that will help to maintain your machine in top running order. Read this manual carefully before assembling, operating, or servicing your equipment.

Intended Use

The intended use of the BILLY GOAT® Auger is to drill holes into the ground. The Auger is capable of drilling holes up to 18" wide and 42" deep. For your own safety, do not use the Auger for any other purpose.

Specifications

	AGR1300H
Engine Make	Honda
Engine Model No.	GXV390
Engine Fuel Capacity	2.3L (2.4qt)
Engine Oil Capacity	1.1L (1.16qt)
Total Unit Weight	603lb
Length	103"
Width	34.5"
Height	55.0"
Maximum Operating Slope	15 °

Safety Statement

PROPOSITION 65 WARNING STATEMENT

This product can expose you to chemicals including gasoline engine exhaust, which is known to the State of California to cause cancer, and carbon monoxide, which is known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

Read the safety rules and follow them closely. Failure to obey these rules could result in loss of control of the unit, severe personal injury or death to you, or bystanders, or damage to property or equipment.

Safety and Warning Labels

The labels shown below were installed on your BILLY GOAT® Auger. If any labels are damaged or missing, replace them before operating this equipment. Part numbers are provided for convenience in ordering replacement labels.

DECAL, ENTANGLEMENT HAZARD (P/N 540505)

DECAL, WARNING, HAND IN BELT, ENG. ONLY (P/N 5103184)

DECAL, 811 WARNING (P/N 540507)

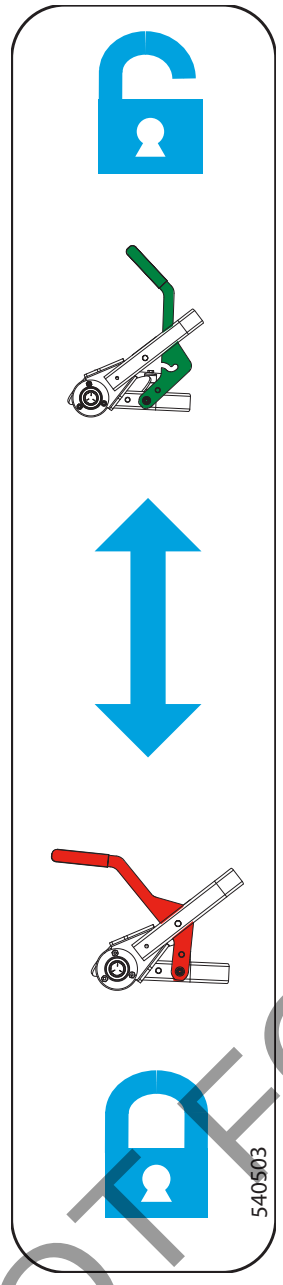
LABEL, SAFETY MEN (P/N 540501)

LABEL HIGH PRESSURE (P/N 362506)

LABEL CAUTION HOT SURFACE EN/SP (P/N 100258)

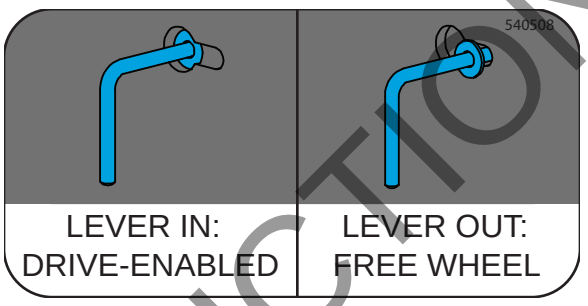
Instruction Labels

The labels shown below were installed on your BILLY GOAT® Auger. If any labels are damaged or missing, replace them before operating this equipment. Part numbers are provided for convenience in ordering replacement labels.

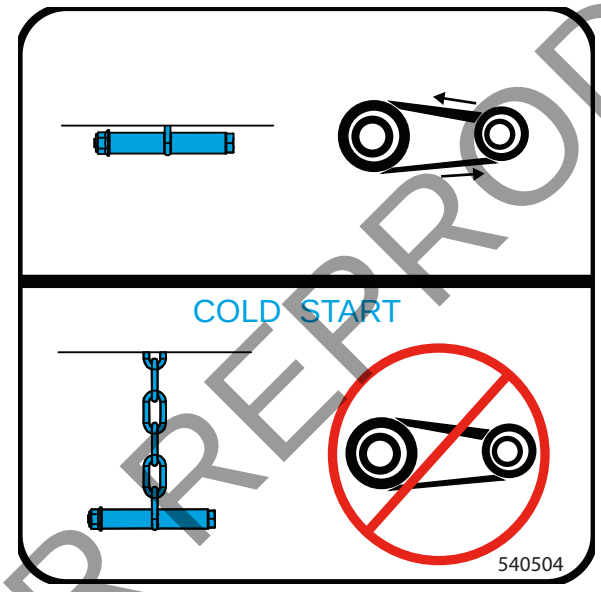


DECAL, TRANSPORT LOCK (P/N 540503)

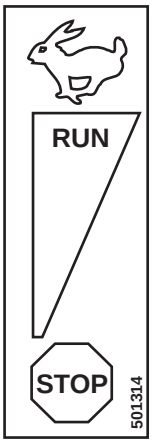
LABEL TIE DOWN (P/N 362510)



DECAL, TRANSAXLE BYPASS (P/N 540508)



DECAL, DRIVE DISENGAGE (P/N 540504)



LABEL THROTTLE BC (P/N 501314)

LABEL, LOCK SLIDE UNLOCK (P/N 540502)

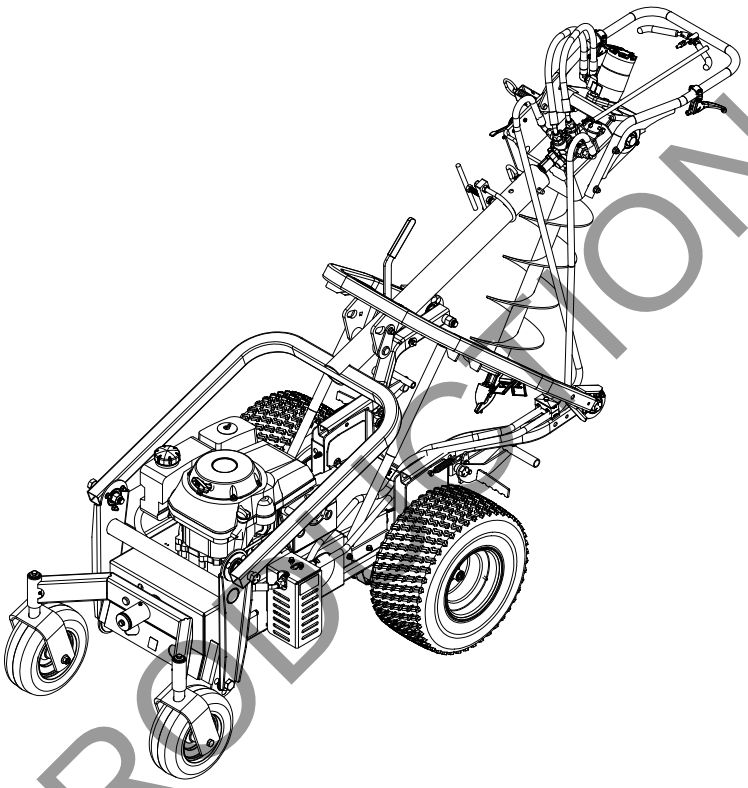
LABEL CHOKE (P/N 501511)

LABEL DRIVE DIRECTION BC2600 HYDRO (P/N 501502)

Packing Checklist

Boxing Parts Checklist

- ☐ General Safety and Warranty Manual (P/N 100295)
- ☐ Owners Manual (P/N 540510)
- ☐ Parts Illustrations Book (P/N 540511)
- ☐ Honda Engine Manual
- ☐ Warranty Card (P/N 400972)
- ☐ Warranty Registration Instructions (P/N 100305)
- ☐ Handlebar Hardware (P/N 8024062 - QTY 4, P/N 8165003 - QTY 4)
- ☐ Valve Control Hardware (P/N 8165102 - QTY 1)



Initial Set-Up Assembly

Your BILLY GOAT® Auger was shipped in one crate. Initial set-up assmebly will be required after unpacking your machine. Initial set-up assembly will include attaching the handlebar to the unit.

1. Carefully remove all bubble wrap and other packing materials from the unit.

2. Use scissors to cut all **white** zip ties. **Do not cut any black zip ties that secure cables.** Note that when the arm zip ties are cut, the auger arms will rise. Also note that the handlebar is attached to the unit with zip ties.

3. Locate the handlebar and associated hardware (See Figure A). The handlebar will need to be attached to the machine. The handlebar hardware includes four 3/8”-16 x 2.00” carriage bolts and 3/8”-16 nylock flange nuts.

Figure A

4. Pull the motor-plate locking-pin to release the motor-plate. See Figure I in the Operation section of this manual. The motor-plate will now be able to swivel. Swing the motor-plate towards the operator position in order to attach the handlebars.

5. Line up the handlebars with the machine and insert the carriage bolts. See Figures B and C for correct handlebar placement.

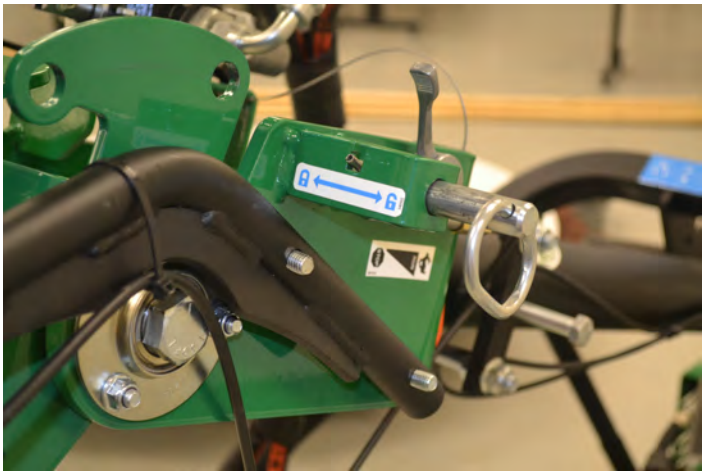


Figure B

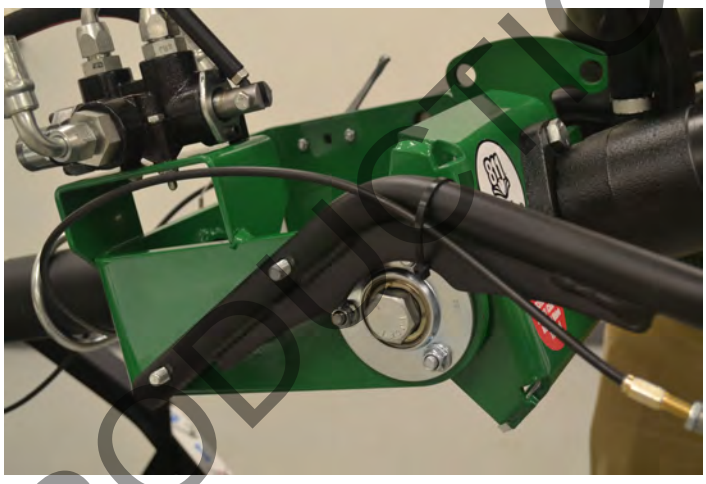


Figure C

6. Use an impact wrench fitted with a 9/16" socket on the nuts to attach the handlebars to the unit. See Figure D. Ensure the handle is fastened securely to avoid abnormal vibration.

Figure D

Figure E

7. Locate the valve control hardware, a single 5/16"-14 nylock flange nut. Use the impact wrench fitted with a 1/2" socket to attach the valve control rod to the drill controls. See Figure E.

Ground Conditions

The AGR1300H is designed to run safely and efficiently with certain ground conditions. Ideally, run your auger in damp or moist soil. The AGR1300H can also run efficiently in dry or sandy soil. NEVER operate the auger during a thunderstorm, snowstorm, or if the ground is frozen. Operating the auger in frozen soil can damage the flights and/or bit.

Before starting any project, ALWAYS call 811 in your state. By mapping out potential obstacles such as utility lines, 811 “Call Before You Dig” ensures your safety while drilling with your BILLY GOAT® Auger. Visit www.call811.com for more information about this invaluable resource. Know what’s below, call before you dig!

Operator Controls

A - Drill in reverse motion (counter-clockwise)
B - Drill in forward motion (clockwise)
C - Drive in reverse motion
D - Drive in forward motion

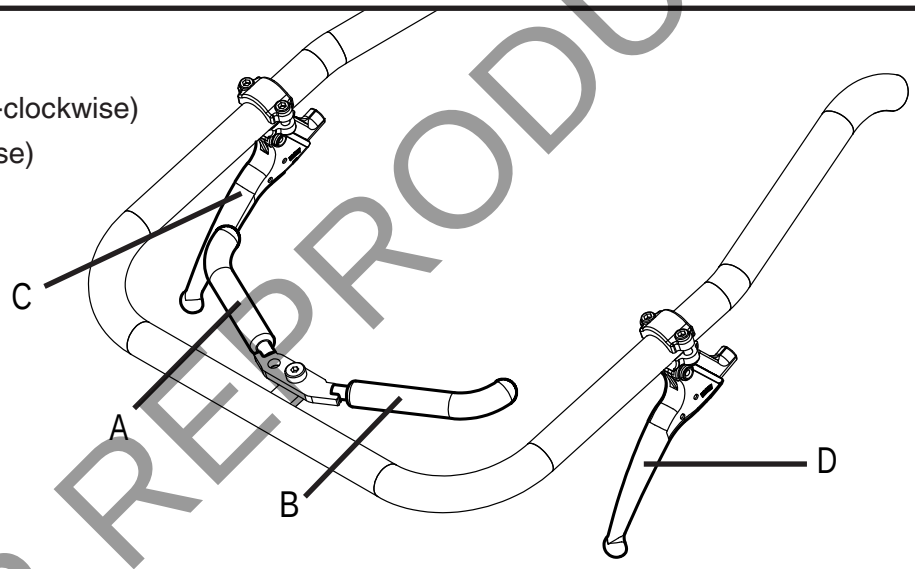


Figure F

Handling and Transporting

We recommend transporting your BILLY GOAT® Auger in a trailer or in the bed of a pick-up truck. Never tow your Auger. The machine is designed without a hitch assembly. The BILLY GOAT® Auger is not equipped to drive or be towed at typical road speeds. The operator should **never** attempt to couple the Auger to a vehicle.

To drive your BILLY GOAT® Auger safely to desired work location, familiarize yourself with the operator controls shown above. Always drive with the transport lock handle down in the locked position (See Figure B in the “Drilling a Hole” section). The transport lock handle locks the operator’s handles into a managable driving position. Engage both parking brakes to ensure the unit does not tip or slide while transporting in the trailer or pick-up truck bed.

Pre-Operation Checklist

Before starting any project with your BILLY GOAT® Auger, check off each item in the Pre-Operation Checklist.

	Read and ensure full understanding of the BILLY GOAT® Auger Owner's Manual.
	Call 811 in your state to ensure that all underground utilities are properly marked.
	Wear protective clothing, safety glasses, gloves, hearing protection, and work boots. Tie back long hair.
	Check the level of engine oil and fill if necessary (See your engine manual for engine maintenance procedures).
	Check the level of hydraulic oil and fill if necessary (See Maintenance section for hydraulic system maintenance procedures).
	Check entire machine for loose fittings or hardware
	Check all hydraulic hoses and fittings to ensure there are no leaks.
	Ensure the auger bit flights, pilot bit, and teeth are clean and free of debris.

Starting the Engine

Read the engine manual before operation. A Honda engine manual is included within the machine packaging.

 Never start the engine inside a building or other enclosed spaces.

 Always check the engine oil level and fill when necessary before starting!

To start the engine on your BILLY GOAT® Auger:

1. From the operator's position, push the throttle lever completely forward to the "RUN" position.
2. Walk around to the front of the machine where the engine is located. Locate the engine's choke lever. Pull out the choke lever.
3. Pull the recoil handle to start the engine.
4. With the engine running, push the choke lever back into place.
5. Adjust the throttle lever to dictate the desired ground speed.

Note that in colder temperatures, there may be too much load on the engine to start it quickly. Locate the belt-drive disengage chain on the left side of the machine (see decal P/N 540504 on the Instruction Labels page). Pull and lock the chain to disengage the belt drive. Start the engine, then re-engage the chain after a few minutes.

Drilling a Hole

To drill a hole with your BILLY GOAT® Auger:

1. Squeeze the forward drive handle (See Figure F, Item D) and steer to drive the Auger to desried hole location. Let up on the handle to stop the machine.

2. With both hands grasped on the handles, push the entire operator's handle straight down to release the transport lock handle (See Figure G). Then, release your grip on the operator's handle and allow the handle to rise to its natural position.

Figure G

3. Push in the motor plate handle to release pressure off the pin (See Figure H). Simultaneously, pull the motor-plate locking-pin and twist the pin away from yourself (See Figure I). The drill assembly is now unlocked.

Figure H

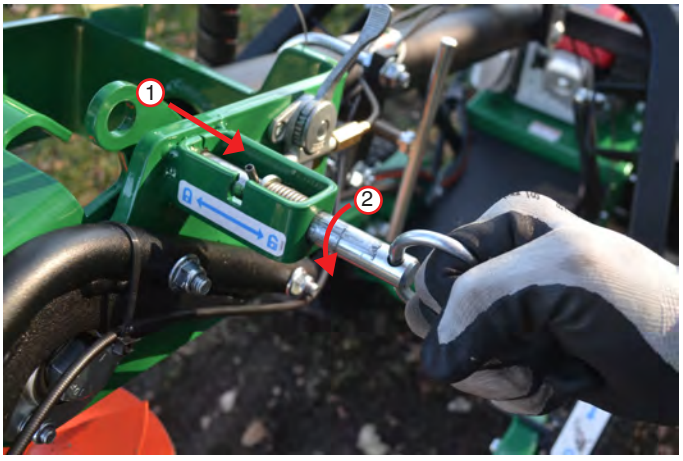


Figure I

Drilling a Hole Continued

4. Position the bit to desired hole location. Gently press down to create contact between the bit and the ground before activating the drill bit. See Figure J. Push the throttle lever completely forward to the “RUN” position before drilling.

Figure J

5. Engage right drill handle (See Figure F, Item B). Watch the drill bit spin clockwise. Squeeze the handle tighter for higher drill speed.

6. Push down on the operator’s handle to create a hole of desired depth.

7. Engage the left drill handle (See Figure F, Item A). The drill bit spins counter-clockwise. Simultaneously, lift up on the operator handle to remove drill bit from the freshly dug hole.

Engaging the Parking Brakes

For further stability while drilling or transporting your Auger, engage each parking brake.

1. Locate the parking brakes. They can be found on the frame slightly above each rear wheel. Use your foot to press the parking brakes down, one at a time, until contact is made with each rear wheel and the brake “clicks” into place. See Figure K.

Figure K

Releasing the Parking Brakes

1. Use your foot to press the parking brake release lever. See Figure L. Press until the parking brake releases. Repeat on the opposite rear wheel.

Figure L

Pivoting the Bit Head

To better align the auger bit while drilling on uneven slopes, pivot the bit head.

1. Locate the T-handle clamp and loosen it. See Figure M.
2. Locate the quick release pin. See Figure N. Pull the quick release pin from the horizontal pivot point.

Figure M

Figure N

Pivoting the Bit Head Continued

3. Insert the quick release pin into the vertical pivot port. See Figures O and P. The bit head will now pivot from left to right.

Figure O

Figure P

4. Select the desired bit position. Lock the bit head into position by tightening the T-handle clamp.

Replacing the Bit

1. To replace the bit, first unclamp the bit locking pin. See Figures Q and R.

Figure Q

Figure R

2. Gently slide the bit from the pin and carefully set aside. Attach the new bit by clamping it onto the adapter using the bit locking pin.

Replacing the Bit Adapter

1. Remove the bit as shown in the “Replacing a Bit” section of this manual. **Do not attempt to remove the adapter without first removing the bit.**

2. To replace the bit adapter, remove the shoulder bolt holding it in place. The head of the shoulder bolt is circled in Figure S. Use an allen wrench on the bolt head while simultaneously using a 1/2” wrench on the nut. Note that in Figure S, there is no bit attached to the adapter.

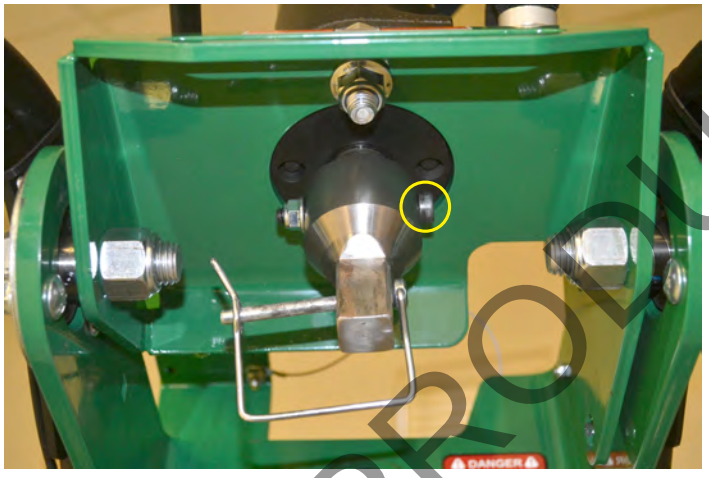


Figure S

3. After removing the hardware, the adapter can be removed. Replace the adapter as needed.

DO	DO NOT
DO Perform the Pre-Operation Checklist before beginning any project with your auger.	DO NOT neglect to perform the Pre-Operation Checklist.
DO Wear protective clothing, safety glasses, gloves, hearing protection, and work boots.	DO NOT Wear clothing that drapes or clothing that can get caught up in the bit and/or flights during operation. DO NOT Neglect to tie long hair back during operation. DO NOT Wear open-toed shoes during operation.
DO Call the 811 number in your state before drilling to ensure the ground is clear of obstructions such as, but not limited to: • Underground utility (fuel or gas) lines • Underground power lines • Utility (water or sewage) pipes • Landscaping fabric Punctures, tears, or other breakages to power lines, gas lines, and/or fuel lines can cause serious bodily injury (electrocution and/or serious burns) or death. Breakages to water or sewage pipes can cause serious bodily injury or death. Note that replacing these utility lines and pipes can be a great expense to the operator if breakage were to occur.	DO NOT Drill without calling 811 in your state. DO NOT Drill without knowing potential obstacles such as power lines, gas lines, fuel lines, and more.
DO Check engine oil level before operation.	DO NOT Start your auger without checking engine oil.
DO Transport your auger within a trailer or pick-up truck bed.	DO NOT Ever attempt to tow your auger.
DO Ensure ground conditions are ideal for operation.	DO NOT Operate your auger in freezing conditions.

Hydraulic System Maintenance

Draining Old Hydraulic Oil

1. First locate the hydraulic tank on the right side of the machine. Place a pan underneath the tank to catch old oil. Be sure that the pan can hold the machine capacity of three (3) gallons. See Figure AA.

Figure AA

Figure AB

2. To drain old hydraulic oil from the system, use a 1/4" allen socket to loosen the drain plug. See Figure AB. When remaining oil has completely drained out of the tank, use the allen socket to tighten the drain plug back to its original position.

Refilling Hydraulic Oil

1. Unscrew the cap on the hydraulic oil tank and set aside. See Figure AC. Place a funnel into the tank intake. Fill up the hydraulic tank with approximately 2.5 gallons hydraulic oil. See Figure AD. Screw the cap back onto the tank. Start the engine on the Auger to allow the oil to flow through the system for about 45 seconds. Shut the engine off. Return to the hydraulic tank and fill with remaining oil, or about 0.5gal. Screw the cap back on tightly.

Figure AC

Figure AD

Cycle the bit motor in both directions (forward and reverse) quite a few times to purge the system of air and to get fluid running throughout. Recheck fluid level and add if required.

Hydraulic System Maintenance Continued

Replacing Hydraulic Oil Filter

1. First locate the hydraulic filter on the left side of the machine. See Figure AE. Use an oil filter wrench to rotate the filter counterclockwise to remove. See Figure AF. Screw your new hydraulic filter clockwise onto the fitting.

Figure AE

Figure AF

Tip:

Dip your finger into the new container of oil and apply the oil from your finger onto the filter's seal. This will help seal the filter, make the filter easier to remove later on, and will make the filter less likely to sieze.

Drive System Maintenance

Replacing the Belt

1. First locate the cold-start/drive disengage chain located next to the hydraulic filter. Pull the chain and slide it to the right into the slot. See Figures AG and AH.

Figure AG

Figure AH

Drive System Maintenance Continued

Replacing the Belt Continued

2. Loosen the auger shield. Use an impact wrench fitted with a 1/2” socket to remove the rear center shield bolt. See the bolt circled in Figure AI. Use the impact and 1/2” socket to remove the side shield bolts. The side shield bolts are located on each side of the unit next to the gas struts. See Figure AJ.

After removing these bolts, you can lift up the shield slightly. This will give you enough clearance to remove the drive belt from the pulleys.

Figure AI

Figure AJ

2. Remove the old, worn, or broken belt from the drive system. See Figure AK to better understand how the belt routes through the drive system.

3. Route the new belt through the drive system. Again, refer to Figure AK. Note that in Figure AK, some parts of the machine are hidden.

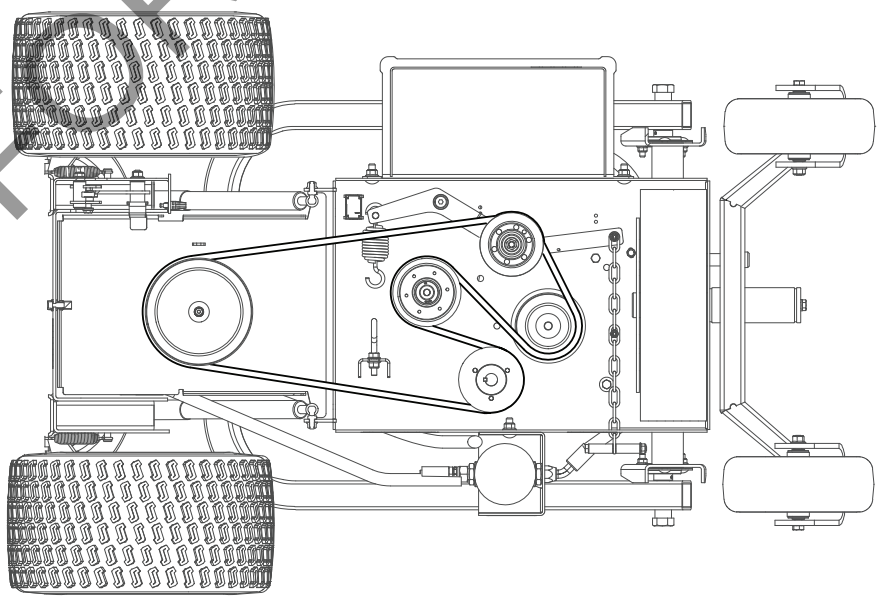


Figure AK

Drive System Maintenance Continued

Replacing the Belt Continued

4. Reverse Step 2. to re-tighten the bolts securing the auger shield. Ensure that the bolts are tight enough to keep the shield in place during operation.

5. Reverse Step 1. to release the tension on the drive system and ensure that the new belt is fitted properly.

Wheel Maintenance

Replacing Rear Wheels

1. Support and stabilize the auger using jackstands.

2. Use pliers to remove the e-clip and washer from the wheel. See Figures AL and AM. Set aside the e-clip and washer to reattach.

Figure AL

Figure AM

3. Slide the wheel off the axle shaft. Note that a key is inserted between the axle shaft and the wheel hub. Once the wheel is removed, the key will become dislodged. See Figure AN. Set aside the key to reattach later.

Figure AN

Wheel Maintenance Continued

Replacing Rear Wheels Continued

4. Slide the new wheel onto the axle shaft with the valve stem facing outward. Insert the key. See Figure AO. Replace the washer and the e-clip.

5. Repeat Steps 1-4 on the opposite side of the unit to replace both rear wheels.

Figure AO

Gas Strut Maintenance

Replacing Gas Struts

1. Ensure the arms are stable and supported. You may need assistance to ensure the arms and operator's handles do not fall while replacing the gas struts. **Replace the struts one at a time. Do not attempt to replace the struts simultaneously.**

2. Remove the security clips from the old strut. See Figures AP and AQ. Note that there is a clip on each end of the strut.

Figure AP

Figure AQ

Gas Strut Maintenance Continued

Replacing Gas Struts Continued

4. “Pop” the strut out of place. The strut is held in place using a ball and socket joint. See Figure AR.

Figure AR

5. Insert the new gas struts by reversing Steps 3 and 4. Carefully test the new struts by releasing the arms and the operator handles. Then, lock/engage the transport lock handle.

Note: Ensure the strut is oriented so that the covered end points down. This will ensure optimal performance and will assist in future removal. See the AGR1300H parts book for correct strut orientation.

Periodic Maintenance

Periodic maintenance should be performed at the following intervals:

Maintenance Operation	Every Use	Every 10 Hrs	Every 25 Hrs	Every 50 Hrs
Inspect for worn or damaged parts.	•			
Check for loose parts.	•			
Check engine oil.	•			
Clean all debris from unit.	•			
Lubricate speed control cables and linkage.		•		
Check hydraulic oil.			•	
Visually inspect hydraulic hoses for damage.			•	
Grease front caster assembly.			•	
Grease arm assembly.			•	
Inspect belt for wear.				•
Check rear tire pressure.				•

Troubleshooting

Problem	Possible Cause	Solution
Engine will not start.	Throttle is in “OFF” position.	Push throttle lever forward.
	Engine is not in full choke position.	Press in the engine choke lever.
	Temperature is too cold.	Use the belt-drive disengage chain. See “Starting the Engine” within the Operation section of this manual for more information.
	Engine is out of gasoline.	Check gasoline in engine.
	Gasoline in engine is bad or old.	
	Engine oil level is too low.	Check engine oil level and fill if necessary.
Engine stalls or labors while drilling.	Not enough oil in the engine.	
	Machine is working on too steep of a slope.	Move the machine to a gentler slope.
	Hydraulic oil is not warm enough for operation.	Allow hydraulic oil to reach operating temperature.
Abnormal vibration	Loose handlebar hardware.	Stop work immediately. Tighten all loose nuts and bolts.
	Loose drill hub hardware.	
	Loose engine hardware.	

Warranty Information

When servicing the engine, refer to specific manufacturer's engine owner's manual. Engine warranty is covered by the specific engine manufacturer. If your engine requires warranty or other repair work contact your local servicing engine dealer. When contacting a dealer for service it is a good idea to have your engine model number available for reference (See the Specifications section of this manual). If you cannot locate a servicing dealer in your area you can contact the manufacturer's national service organization.

American Honda: 800-426-7701
Briggs and Stratton: 414-479-8008

Warranty Claim Procedure
Should a BILLY GOAT® machine fail due to a defect in material and/or workmanship, the owner should make a warranty claim as follows:

- The machine must be taken to the dealer from whom it was purchased or to an authorized Servicing BILLY GOAT® Dealer.
- The owner must present the remaining half of the Warranty Registration Card, or, if this is not available, the invoice or receipt.
- The Warranty Claim will be completed by the authorized BILLY GOAT® Dealer and submitted to their respective BILLY GOAT® Distributor for their territory Attention: Service Manager. Any parts replaced under warranty must be tagged and retained for 90 days. The model number and serial number of the unit must be stated in the Warranty Claim.
- The distributor service manager will sign off on the claim and submit it to BILLY GOAT® for consideration.
- The Technical Service Department at BILLY GOAT® will study the claim and may request parts to be returned for examination. BILLY GOAT® will notify their conclusions to the distributor service manager from whom the claim was received.
- The decision by the Technical Service Department at BILLY GOAT® to approve or reject a Warranty Claim is final and binding.

For online product registration go to www.billygoat.com