



SC181HEU Owner's Manual

CE



Sod Cutter Owner's Manual

SC181HEU, SC181HGEU
Beginning Serial #: 110116001

Original Instructions

IMPORTANT- READ CAREFULLY BEFORE USE AND KEEP FOR FUTURE REFERENCE

About this Manual

Thank you for purchasing a BILLY GOAT® Sod Cutter. 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.

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Specifications

	SC181HEU	SC181HGEU
Engine: HP	5.5 HP (4.1 kw)	5.5 HP (4.1 kw)
Engine: Model	GXV160UH2N1AH	GXV160UH2N1AH
Engine: Type	Honda	Honda
Engine: Fuel Capacity	1.6 qt. (1.5 L)	1.6 qt. (1.5 L)
Engine: Oil Capacity	0.69 qt. (0.65 L)	0.69 qt. (0.65 L)
Total Unit Weight	395 lb. (179 Kg)	395 lb. (179 Kg)
Max. Operating Slope	20°	20°
Overall Length	60" (1524 mm)	60" (1524 mm)
Overall Width	26.5" (673 mm)	26.5" (673 mm)
Overall Height	38.5" (978 mm)	38.5" (978 mm)
In accordance with 2000/14/EEC	107 dBa	107 dBa
Sound at Operator's Position	90 dBa	90 dBa
Vibration at Operator's Position	1.54 g (15.1 m/s ²)	1.54 g (15.1 m/s ²)

Intended Use

This machine may only be utilized for the purpose for which it was designed, i.e. to cut 18in (45.7 cm) wide strips of turf. Make sure that all operators of this equipment are trained in general machine use and safety.

WARNING: During operation the lawn and turf are cut into strips. Should the cutter's wheels skid during use it is advisable to adjust the cutting depth. If this operation does not prevent this occurrence check the state of the terrain. If it is too dry it should be wetted so that the blade encounters a slight resistance, thus making cutting operations easier.

Sound



L_{WA}

107 dB(a)

SOUND LEVEL 90 dB(a) at Operator Position

Sound tests were conducted in accordance with 2000/14/EEC, and were performed on 3-1-17 under the conditions listed below.

Sound power level listed is the highest value for any model covered in this manual. Please refer to serial plate on the unit for the sound power level for your model.

General Conditions:	Partly Cloudy
Temperature:	53°F (11.67°C)
Wind Speed:	13mph (20.92 kmh)
Wind Direction:	Northwest
Humidity:	32%
Barometric Pressure:	31.15 Hg (102.1 kPa)

Vibration Data

VIBRATION LEVEL 1.54 g (15.1 m/s²)

Vibration levels at the operator's handles were measured in the vertical, lateral and longitudinal directions using calibrated vibration test equipment. Tests were performed on 3-3-17 under the conditions listed below.

General Conditions:	Sunny
Temperature:	33.8°F (1.0°C)
Wind Speed:	10mph (16.1 kmh)
Wind Direction:	Southeast
Humidity:	66%
Barometric Pressure:	30.58 Hg (103.58 kPa)

Instruction Labels

The labels shown below were installed on your BILLY GOAT® Sod Cutter. If any labels are damaged or missing, replace them before operating this equipment. Item numbers from the Illustrated Parts List and part numbers are provided for convenience in ordering replacement labels. The correct position for each label may be determined by referring to the Figure and Item numbers shown.



Fig. 1
DANGER KEEP HANDS
AND FEET AWAY
P/N 440424

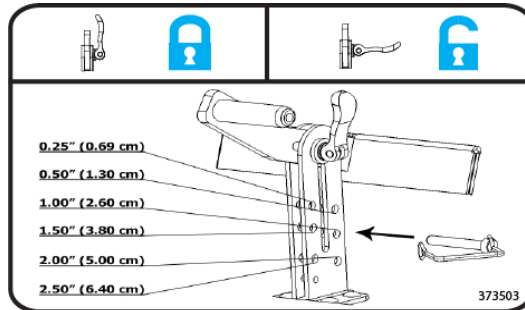


Fig. 2.
HEIGHT ADJUST P/N 373503

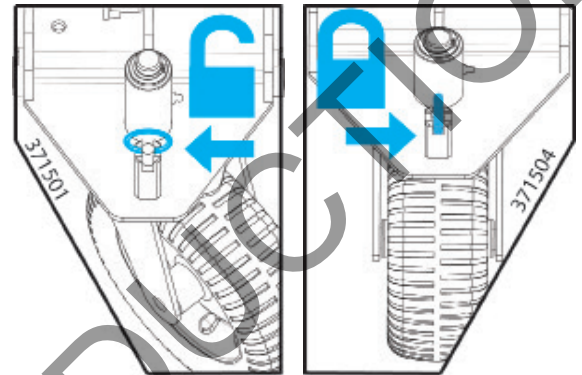


Fig. 3
LABELS CASTER LOCK P/N 371501 & 371504

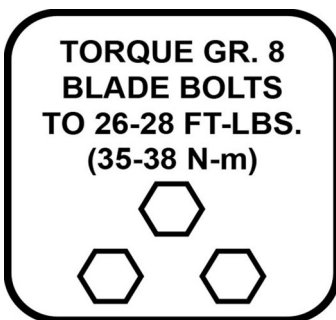


Fig. 4
BLADE ARM P/N 373501

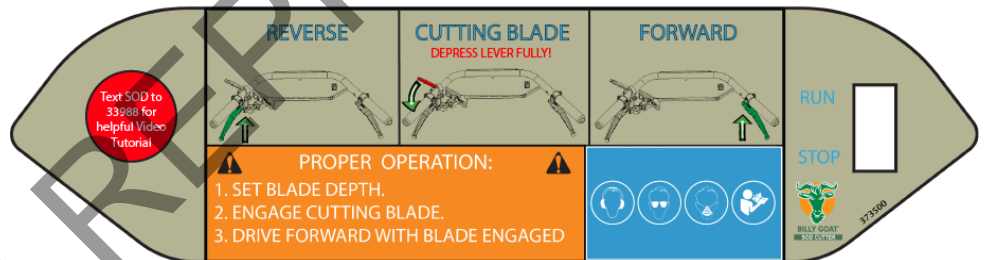


Fig. 5
CONSOLE P/N 373500

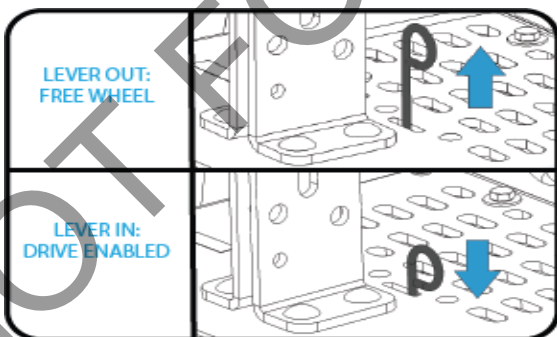


Fig. 6
DRIVE ENABLE P/N 373504

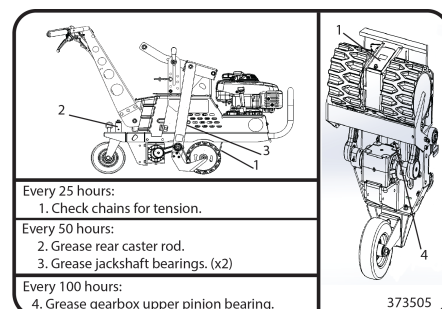


Fig. 7
SERVICE INSTRUCTIONS P/N 373505

Uncrating Instructions

Your Billy Goat Sod Cutter is shipped from the factory in one crate, completely assembled.

Be Sure To:

- Read all safety instructions before assembling unit.
- Take caution when removing the unit from the box.
- Put oil in engine before starting.
- Check grease in bearings per service label on unit. Add grease as required. Use only NLGL Grade 2 Multipurpose Lithium Base Grease in your machine.

To Uncrate Sod Cutter:

- See *Fig. 8*
- Open the crate from back side (handles of machine should be visible).
- Set sod cutter to free wheel as shown in *Fig. 6* (see Instruction Labels on page 4 of manual)
- Roll the sod cutter out of crate from behind

Parts Bag & Literature Assy

Warranty card P/N- 400972

Owner's Manual P/N-373507

General Safety and Warranty manual P/N- 100295

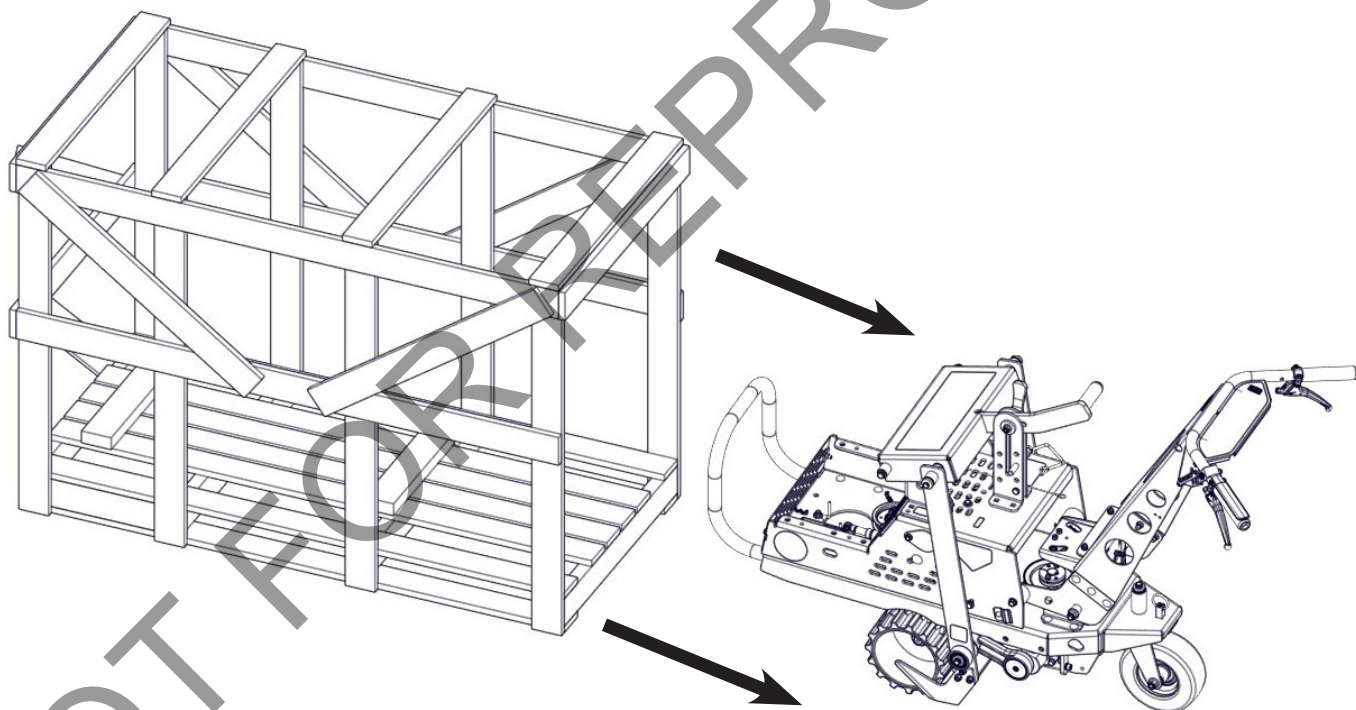


Fig. 8

Operator Controls

Drive Control: The ground drive controls are located on each handlebar of the machine. The right side lever control moves the machine forward at varying speeds depending on how far the operator engages the control. The left side lever control moves the machine in reverse at varying speeds depending on how far the operator engages the control. (While either control is engaged, the opposite control is “locked out”)

(See Fig. 5)

Blade Engage Lever: Located on the left hand side of the handle bar. It must be fully engaged when in use.

Blade Height Adjustment: : Pre-select cutting depth by inserting depth control pin in the hole which corresponds to the depth desired. A chart is provided on a placard near the blade depth control handle. To set depth while using the machine loosen cam lever clamping the depth control handle in the “up” position. Rock the machine forward to allow the cutting blade to drop to the pre-selected depth. (The depth control handle should rest against the depth control pin). You are now ready to start cutting sod.

(See Fig. 2)

Free Wheel Lever: Located on top of machine next to the height adjust. Pull the lever out to free wheel and push it in to allow the drive to be engaged. (See Fig. 6)

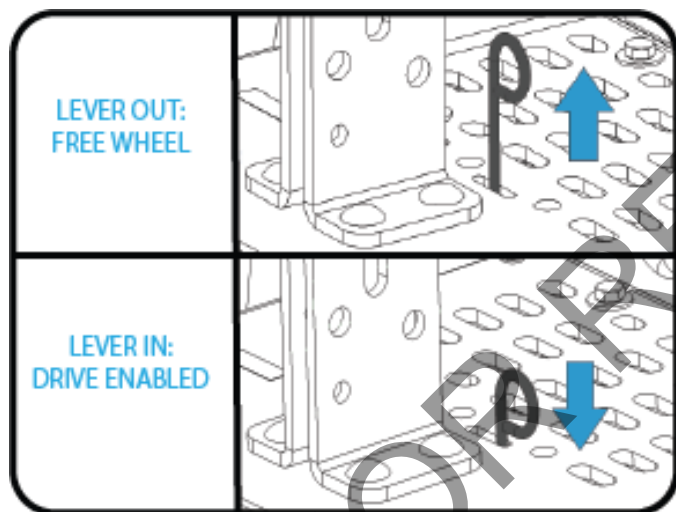


Fig. 6
DRIVE ENABLE P/N 373504

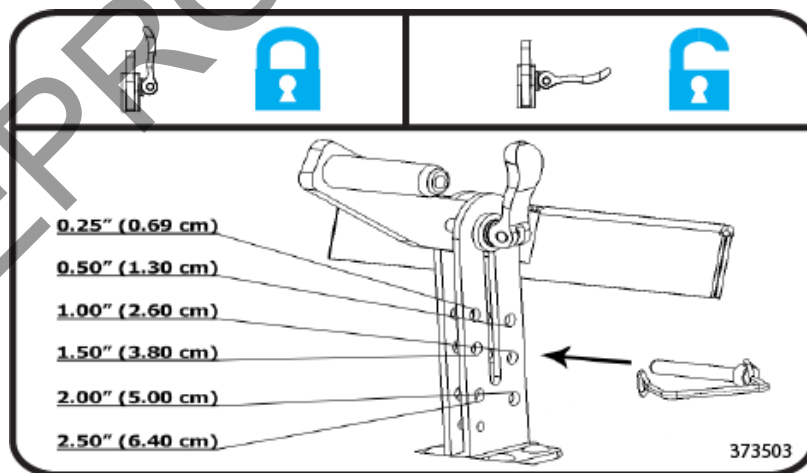


Fig. 2.
HEIGHT ADJUST P/N 373503

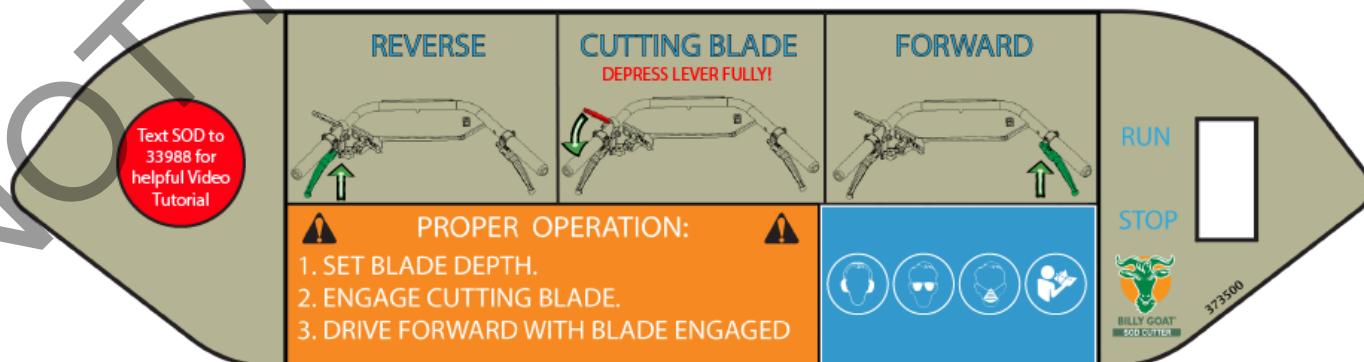


Fig. 5
CONSOLE P/N 373500

Note: Item numbers in () will be referenced in the Parts Illustration and Parts List on pages 16-34.

Like all mechanical tools, reasonable care must be used when operating machine. Inspect machine work area and machine before operating. Make sure that all operators of this equipment are trained in general machine use and safety.

Starting the Engine

- Put oil in engine before starting!
- See engine manufacturer's instructions for type and amount of oil and gasoline used. Engine must be level when checking and filling oil and gasoline.

Engine Speed: Engine speed is fixed.

Fuel Valve: Move fuel valve to "ON" position.

Choke: Found on engine above fuel "ON" switch.

Pull: Pull the starting rope to start engine.

Forward/Reverse Controls: See page 6 "Operator's Controls".

WARNING: Do not operate if excessive vibration occurs. If excessive vibration occurs, shut engine off immediately and check for damaged or worn blade, loose blade bolts, loose engine or lodged foreign objects.

Handling and Transporting

- Use loading ramps to move unit into truck or trailer for transport.
- Do not operate the blade when loading.
- Never load this machine by hand.

Cutting Operation

The unit performs best when the ground is wet. If possible, sprinkle the work area several hours before starting.

CAUTION: Use extreme care when operating the blade. Inspect the work area for foreign objects that could cause damage to the unit or injure the operator if struck by the blade. Never operate the blade with bystanders in the work area.

General Operation

Position the turf cutter outdoors on sufficiently firm, flat soil. Read the instructions provided by the engine manufacturer in the relative manual and follow them carefully to prevent situations from arising which may endanger either persons or the machine.

TIP: When using the machine for the first time, execute maneuvers on flat ground free of foreign objects to become more comfortable with machine operation. After switching on the engine, follow the instructions given in the previous paragraph. Be mindful of the machine tipping forward (See Figure 9. on the following page).

WARNING: Do not adjust cutting depth while machine is in motion. Choose a cutting depth suitable for the type of terrain the machine is to be used on.

Operation Continued

1. Choose a depth of cut. See instruction label on the unit (see *Fig. 2*). Note: Sod should be cut leaving a minimum amount of dirt (1/4"-3/8") attached to the roots. This minimizes its weight for removal and encourages faster growth when reused.
2. Holding both handles, fully engage the blade clutch lever on the operator's left hand side. Rocking back on the handles, allow the blade to cut into the sod to your chosen depth. Keep the blade clutch lever fully engaged at all times when cutting (see *Fig. 9*).
3. As ground conditions allow, increase/decrease the ground speed by squeezing the drive lever more (increased speed) or less (slower speed). If the engine RPM drops significantly reduce forward speed until the engine comes back up to speed.
4. When you reach the end of the strip you are cutting, release both the clutch lever and the speed control until the unit stops. Using the blade depth adjustment handle raise the blade to the maximum height possible and lock it in place.
5. Fully engage both blade drive and forward ground drive levers and the unit will drive forward and complete the cut of the strip.
6. Release the blade lever and continue to drive the unit forward into position for the next cut, repeat the process above as required.

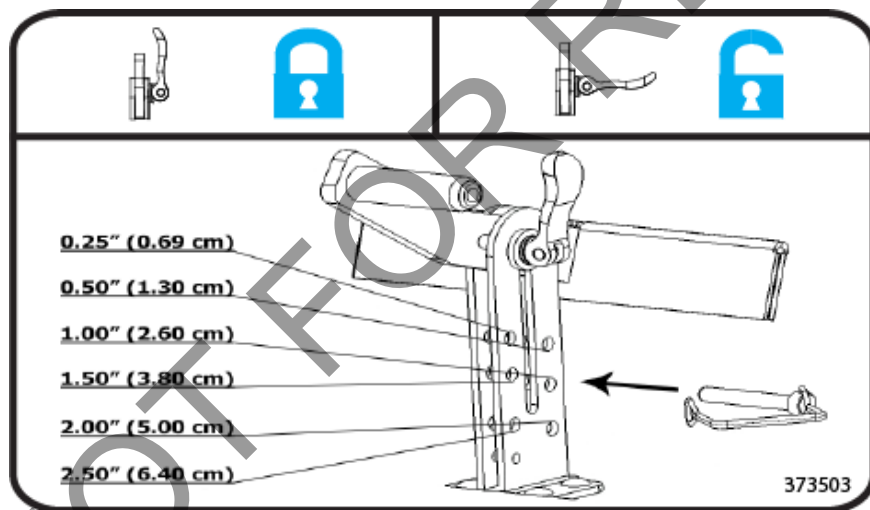


Fig 2.
HEIGHT ADJUST P/N 373503

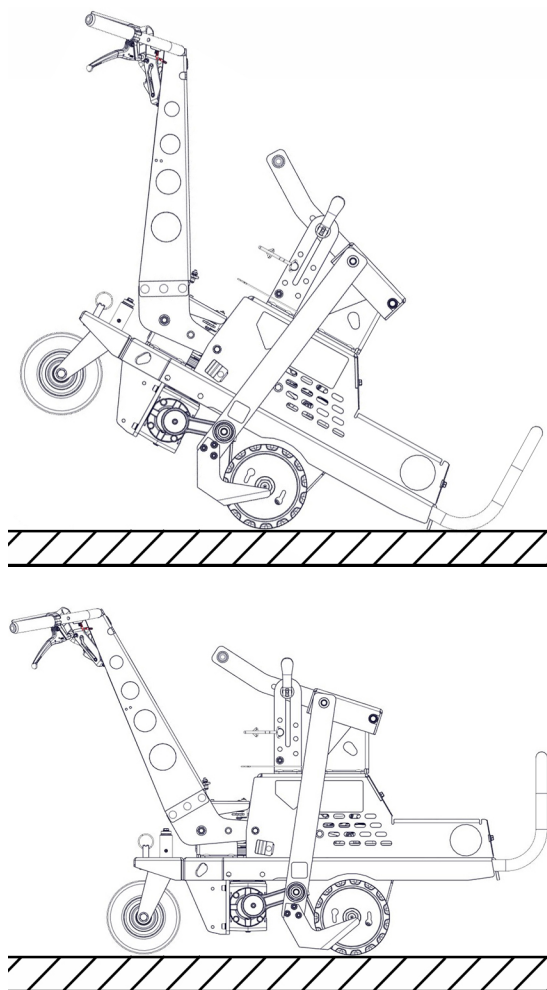


Fig 9.

Maintenance

Note: Item numbers in () will be referenced in the Parts Illustration and Parts List on pages 11-20.

Periodic Maintenance

	Maintenance operation to be performed at every indicated month or operating hour, whichever comes first.	Every Use	Every 25 Hrs	Every 50 Hrs	Every 100 Hrs	Every 200 Hrs	Every 300 Hrs
Engine Oil	Check engine oil (Add if necessary)	•					
	Change engine oil		•				
Air Filter	Check Air Filter (Clean if necessary)	•					
	Clean air filter			•			
	Replace air filter						•
Chains	Lubricate chains		•				
	Check chains for tension		•				
Spark Plug	Check and adjust sparkplug				•		
	Replace sparkplug						•
Blade	Replace cutting blade (If worn past 2.00" wide limit)					•	
	Sharpen cutting blade		•				
Belts	Check traction belts			•			
	Replace traction belts					•	
	Grease upper Pinion Bearing on Gear-box (Use MOBOLITH SHC 220 grease or equivalent)					•	
	Grease jackshaft bearings			•			
	Inspect for loose, worn or damaged parts	•					
	Check rear caster rod						
	Check for excessive vibration	•					
	Inspect drive cables for wear (adjust if necessary)			•			

Note: Blade, drive belts, and chains are normal wear items. See *Fig. 11* for Chain configuration. These should be inspected on a regular basis and replaced if worn. Also see your Billy Goat Dealer for servicing your machine.

Belt Replacement

Note: See *Fig. 10* for belt configuration.

Switch off the engine and disconnect the spark plug wire before carrying out any maintenance or repair work on the machine.

If a belt is worn or breaks it should be replaced as follows:

Note: see pages 16-34 for part illustrations

Blade Belt

1. Disconnect the spark plug, and then remove the guards.
2. Remove the master link on the lower drive chain to allow the belt to be slipped past.
3. Loosen the blade drive belt guides by loosening the nut and bolt holding them to the base. Do not completely remove the nut and bolt, just loosening it will allow the belt guide to be moved far enough back to remove the blade drive belt from the engine drive pulley.
4. Walk the old belt off of the engine drive pulley and the rear gearbox pulley.
5. In order to remove the belt from the machine you will need to remove the bolt holding the V-groove pulley onto the belt engagement arm and remove this pulley. In this way, you can now slip the belt out from under the blade engagement arm.
6. Install the new belt by reversing the steps used to remove the old belt.
7. Place the blade drive belt guides back in their original locations to insure proper operation
8. Reinstall the lower drive chain onto the jackshaft by reinserting the master link.
9. Reinstall the guards.
10. Check for proper operation.

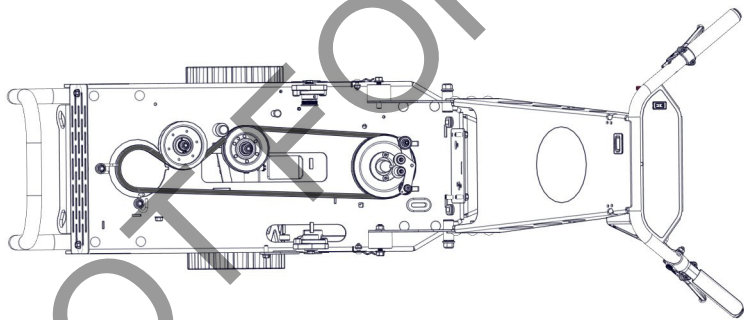


Fig 10. Belt Configuration

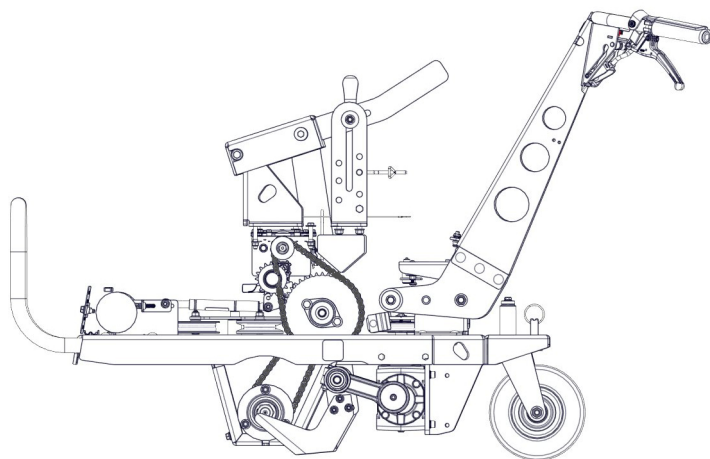


Fig 11. Chain Configuration

Maintenance Continued

Drive Belt

1. Disconnect the spark plug, and then remove the guards.
2. Loosen the blade drive belt guides by loosening the nut and bolt holding them to the base. Do not completely remove the nut and bolt, just loosening it will allow the belt guide to be moved far enough back to remove the blade drive belt from the engine drive pulley.
3. Using a 3/8" drive wrench handle, insert it into the transmission drive belt idler arm and turn the idler arm clockwise looking down from the top of the machine. This will provide enough leverage to remove the belt from the engine drive pulley.
4. Once the belt is removed from the engine drive pulley, there will be enough slack that the idler arm will swing free. The idler arm tension spring will most likely become loose from its anchor point.
5. Slip the transmission drive belt from around the transmission pulley and pull out of the front of the machine navigating the belt from around the idler arm.
6. Pull the belt out of the bottom of the machine through the hole under the engine drive pulley.
7. Install the new belt by reversing the steps used to remove the old belt.
8. Place the blade drive belt guides back in their original locations to insure proper operation
9. Reinstall the guards.
10. Check for proper operation.

Checking and Replacing the Blade

- Always check the state of the blade before commencing work. Do not forget to switch off the engine!
- Remove the sparkplug wire.
- During work operations if the blade strikes stones or stumps stop straightaway and make sure that it has not become bent or broken. A damaged blade must be replaced.
- If the blade is very worn, cracked or bent, it may snap and project objects outwards, risking serious injury.
- Use heavy-duty work gloves to check or replace the blade to avoid risk of injury to hands.
- The blade fixing screws and relative nuts are also subject to wear. Always replace them at the same time as the blade, using bolts and screws of the same grade and type. Torque the bolts to 26-28 ft. lbs. (35.25-37.96 N.m)
- The blade wears more quickly on dry, sandy ground. In these conditions it should be replaced more frequently.

To remove the blade, proceed as follows:

1. Switch off the engine and disconnect the spark plug wire
2. Adjust the cutting height to maximum
3. Check the state of the blade. Check that the blade is not cracked, bent, excessively worn or broken
4. When replacement or inspection is completed, reattach spark plug

Checks

- Adjust the belt and cable control tension after the first few working hours to account for initial break-in.
- Briefly operate all the machine's components to detect any abnormal noises or overheating.
- During the initial running in period avoid heavy-duty usage to encourage proper break-in of mechanical parts.
- Never neglect maintenance operations after work and carry out all prescribed checks regularly.

Maintenance Continued

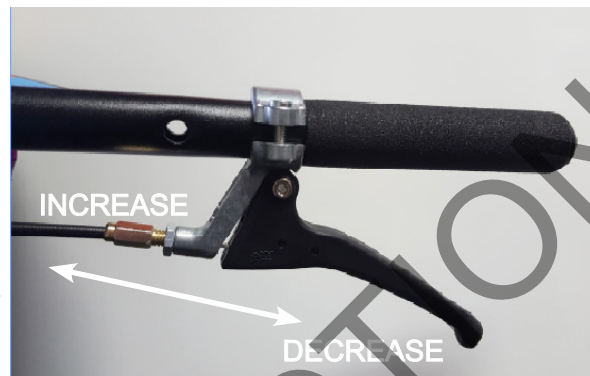
Cable Control Adjustment

To adjust the cables place the machine on flat ground, switch off the engine and disconnect the wire from the spark plug.

Blade and Drive Control Cables

Adjustments to the tension on the cables are made by adjusting the barrel length located on the handle. By extending the barrel out, more tension will be put on the cable. Make sure that you do not apply too much tension as this will cause premature failure or cause the lever to engage when it is not wanted.

Note: Apply lithium grease to the slots on the drive levers where the cable sits to avoid premature failure.



Troubleshooting

Problem	Possible Cause	Solution
Engine will not start.	<ul style="list-style-type: none"> • Rocker Stop switch on operators console is in “stop” position. • Choke not on. • Out of gasoline, bad or old gas. • Spark plug wire disconnected. • Dirty air cleaner. • Blade clutch is engaged 	<ul style="list-style-type: none"> • Move Rocker Stop switch on operators console to “run” position. • Check engine. • Check Gasoline. • Check for spark with an approved tester. • Clean or replace air cleaner. • Disengage the blade clutch lever.
Engine runs poorly	Spark plug wire loose. Carburetor out of adjustment. Water or dirt in fuel system. Spark plug fouled, faulty or wrong gap	Adjust carburetor (refer to engine manual). Reset gap or replace spark plug (refer to engine manual).
Belt slips	“Clutch cable out of adjustment. Belt worn. Trying to cut too deep for soil conditions.”	“Adjust clutch cable. Replace belt. Replace blade or irrigate sodded area.”
Abnormal vibration	“Loose cutting blade. Handlebar vibration mounts old or worn. Loose engine bolts”	“Stop work immediately. Check blade mounting bolts. Replace damaged or bent blade if required. Inspect handlebar vibration mounts. Check engine mounting.”
Will not cut or has poor cutting performance	“Dull or damaged Blade. Debris locked against blade. Engine running at too low RPM. Sod is too dry.”	“Sharpen or replace blade. Remove debris. Check engine RPM (refer to engine manual). Irrigate area where cutting sod.”
Drive will not engage	“Transmission by-pass rod is in neutral Drive cable out of adjustment. Broken drive cable. Worn or broken belt.”	“Dis-engage transmission by-pass rod. Adjust drive cable. Replace with new cable. Replace belt.”
Drive will not release	“RTN mechanism out of adjustment. Drive cable out of adjustment. Damaged drive lever.”	“Adjust RTN mechanism. Adjust drive cable. Replace drive lever.”
Engine is locked, will not pull over	“Oil in cylinder due to having engine tipped with head down too long. Damaged engine.”	“Remove sparkplug and turn engine over to clear oil. Clean sparkplug and replace. Refer to engine owner’s manual.”

Troubleshooting Continued

When servicing engine refer to specific manufacturer's engine owner's manual. All 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 table on page 3). If you cannot locate a servicing dealer in your area you can contact the manufacturer's national service organization: American Honda- 800-426-7701

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

Maintenance Record

[illegible]