

2 ACCESSORIES
**NUT REPLACEMENT KIT
P/N 500208.**

To replace stripped or damaged insert nuts in engine base.

**BLADE BC2401/2402
P/N 500210.**

Original Equipment Blade for replacement.

**BELT TRACTION DRIVE
P/N 500119.**

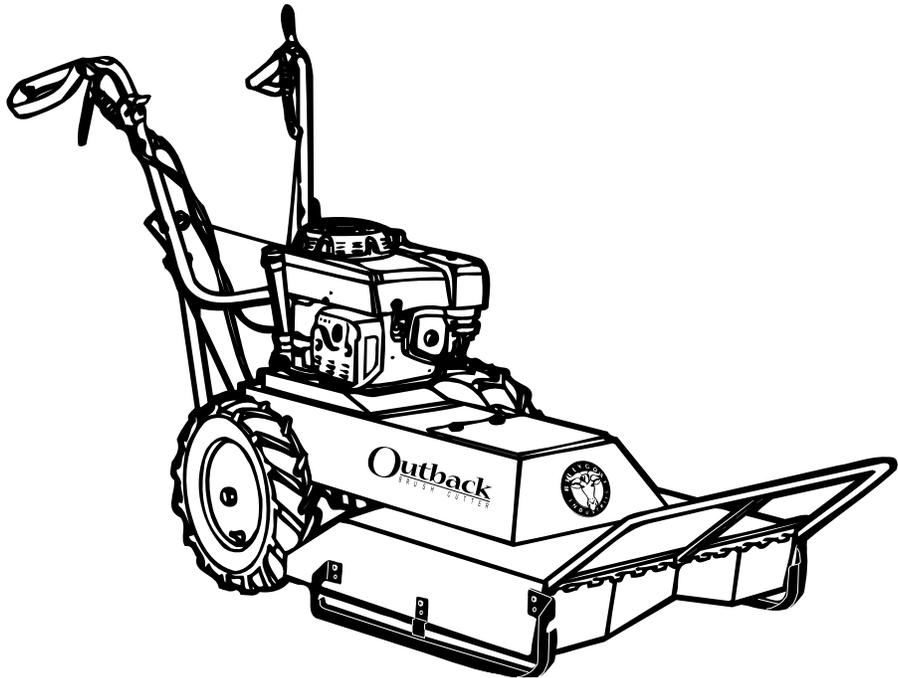
Traction Drive Belt for BC2401/2402

**BELT BLADE DRIVE
P/N 500237.**

Blade Drive Belt for BC2401/2402

**BLADE HIGH LIFT
BC2401/2402
P/N 500102.**

Optional blade for replacement



*Thank You for Selecting
The Powerful BC SELF-PROPELLED BRUSH CUTTER*

Operator Owner's Manual

BC2402IC, BC2402H, BC2402HE, BC2402ICE
Patent Number D386768

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Specifications

	BC2402IC	BC2402H	BC2402HE	BC2402ICE
ENGINE: H.P.	13 (9.70 kW)	13 (9.70 kW)	13 (9.70 kW)	13 (9.70 kW)
ENGINE: TYPE	B&S INTEK OHV	HONDA	HONDA	B&S INTEK OHV
ENGINE MODEL NO:	MODEL 21	GXV390	V390K1DE33	MODEL 21
ENGINE: FUEL CAP.	3.0 qt. (2.8 L)	2.3 qt. (2.18 L)	2.3 qt. (2.18 L)	3.0 qt. (2.8 L)
ENGINE: OIL CAP.	1.5 qt. (1.4 L)	1.20 qt. (1.13 L)	1.20 qt. (1.13 L)	1.5 qt. (1.4 L)
WEIGHT: UNIT	266# (120.7 kg)	278# (126.4 kg)	291# (132.3 kg)	273# (124.1 kg)
WEIGHT: SHIPPING	315# (143.2 kg)	330# (150.0 kg)	340# (154.7 kg)	325# (147.7 kg)
ENGINE WEIGHT:	58.0# (26.3 kg)	70.5# (32.0 kg)	72.5# (32.9 kg)	60.0# (27.3 kg)
MAX. OPERATING SLOPE	15°	20°	20°	15°
UNIT SIZE:	OVERALL LENGTH: 82.5"(2.09 m)	OVERALL WIDTH 32.0" (0.81m)	OVERALL HEIGHT 43" (1.09m)	

IN THE INTEREST OF SAFETY

BEFORE STARTING ENGINE, READ AND UNDERSTAND THE "ENTIRE OPERATOR'S MANUAL & ENGINE MANUAL."



THIS SYMBOL MEANS WARNING OR CAUTION. DEATH, PERSONAL INJURY AND/OR PROPERTY DAMAGE MAY OCCUR UNLESS INSTRUCTIONS ARE FOLLOWED CAREFULLY.



WARNING: The Engine Exhaust from this product contains chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

WARNING: DO NOT & /or damage to unit.

1. **DO NOT** run engine in an enclosed area. Exhaust gases contain carbon monoxide, an odorless and deadly poison.

2. **DO NOT** place hands or feet near moving or rotating parts.

3. **DO NOT** store, spill or use gasoline near an open flame, or devices such as a stove, furnace, or water heater which use a pilot light or devices which can create a spark.

4. **DO NOT** refuel indoors where area is not well ventilated. Outdoor refueling is recommended.

5. **DO NOT** fill fuel tank while engine is running. Allow engine to cool for 2 minutes before refueling. Store fuel in approved safety containers.

6. **DO NOT** remove fuel tank cap while engine is running.

7. **DO NOT** operate engine when smell of gasoline is present or other explosive conditions exist.

8. **DO NOT** operate engine if gasoline is spilled. Move machine away from the spill and avoid creating any ignition until the gasoline has evaporated.

9. **DO NOT** transport unit with fuel in tank.

10. **DO NOT** smoke when filling fuel tank.

11. **DO NOT** choke carburetor to stop engine. Whenever possible, gradually reduce engine speed before stopping.

12. **DO NOT** run engine at excessive speeds. This may result in injury

13. **DO NOT** tamper with governor springs, governor links or other parts which may change the governed engine speed.

14. **DO NOT** tamper with the engine speed selected by the engine manufacturer.

15. **DO NOT** check for spark with spark plug or spark plug wire removed. Use an approved tester.

16. **DO NOT** crank engine with spark plug removed. If engine is flooded, place throttle in "FAST" position and crank until engine starts.

17. **DO NOT** strike flywheel with a hard object or metal tool as this may cause flywheel to shatter in operation. Use proper tools to service engine.

18. **DO NOT** operate engine without a muffler. Inspect periodically and replace, if necessary. If engine is equipped with muffler deflector, inspect periodically and replace, if necessary, with correct deflector.

19. **DO NOT** operate engine with an accumulation of grass, leaves, dirt or other combustible material in the muffler area.

20. **DO NOT** use this engine on any forest covered, brush covered, or grass covered unimproved land unless a spark arrester is installed on the muffler. The arrester must be maintained in effective working order by the operator. In the State of California the above is required by law (Section 4442 of the California Public Resources Code). Other states may have similar laws. Federal

laws apply on federal lands.

21. **DO NOT** touch hot muffler, cylinder, or fins because contact may cause burns.

22. **DO NOT** run engine without air cleaner or air cleaner cover.

23. **DO NOT** operate during excessive vibration!

24. **DO NOT** leave machine unattended while in operation.

25. **DO NOT** park machine on a steep grade or slope.

WARNING: DO

1. **ALWAYS DO** remove the wire from the spark plug when servicing the engine or equipment TO PREVENT ACCIDENTAL STARTING.

2. **DO** keep cylinder fins and governor parts free of grass and other debris which can affect engine speed.

3. **DO** pull starter cord slowly until resistance is felt. Then pull cord rapidly to avoid kickback and prevent hand or arm injury.

4. **DO** examine muffler periodically to be sure it is functioning effectively. A worn or leaking muffler should be repaired or replaced as necessary.

5. **DO** use fresh gasoline. Stale fuel can gum carburetor and cause leakage.

6. **DO** check fuel lines and fittings frequently for cracks or leaks. Replace if necessary

7. **Follow** engine manufacturer operating and maintenance instructions.

8. **Inspect** machine and work area before starting unit.

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SOUND

Sound tests conducted were in accordance with 2000/14/EEC and were performed on 2/21/2002 under the conditions listed:

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

Sound level of 93 dBA at operator position



106 dB

(BC2402HE MODEL)

GENERAL CONDITION:	Sunny
TEMPERATURE:	80° F (25° C)
WIND SPEED:	2 MPH (3.2 kmh)
WIND DIRECTION:	South
HUMIDITY:	63.5 %
BAROMETRIC PRESSURE:	29.98" Hg (761mm Hg)

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VIBRATION

VIBRATION LEVEL 1.1g

Vibration levels at the operators handles were measured in the vertical, lateral, and longitudinal directions using calibrated vibration test equipment. Tests were performed on 05/19/95 under the conditions listed:

GENERAL CONDITION:	Sunny
TEMPERATURE:	72° F (22.2° C)
WIND SPEED:	5 MPH (8.0 kmh)
WIND DIRECTION:	South West
HUMIDITY:	67 %
BAROMETRIC PRESSURE:	30.06" Hg (763mm Hg)

GENERAL SAFETY

For your safety and the safety of others, these directions should be followed:

 **Do not operate this machine without first reading owner's manual and engine manufacturer's manual.**

 **Use of Ear Protection is recommended while operating this machine.**

 **Use of Eye and Breathing protection is recommended when using this machine.**

- **DO NOT** place hands or feet beneath cutting deck, near debris outlet or near any moving parts.
- **DO NOT** start engine or operate unit with bystanders in or near the work area.
- **DO NOT** start or operate machine with blade or drive clutch engaged.

- **DO NOT** operate during excessive vibration.
- **DO NOT** perform any maintenance or inspection until engine has been turned off and has come to a complete stop, and the spark plug has been removed
- **DO NOT** operate machine with guards removed.
- **DO NOT** use this machine for cutting areas containing rock, glass, string like material, wire, rags, cans, metal, or other non-organic material.
- **DO NOT** operate this machine on slopes greater than specified on page 1.
- **DO NOT** operate machine near any hot or burning debris, or any toxic or explosive material.
- **DO NOT** allow children to operate this equipment.

10 ASSEMBLY

 **Read all safety and operating instructions before assembling or starting this unit.**

 **PUT OIL IN ENGINE BEFORE STARTING.**

 **DISCONNECT SPARK PLUG WIRE BEFORE ASSEMBLING UNIT.**

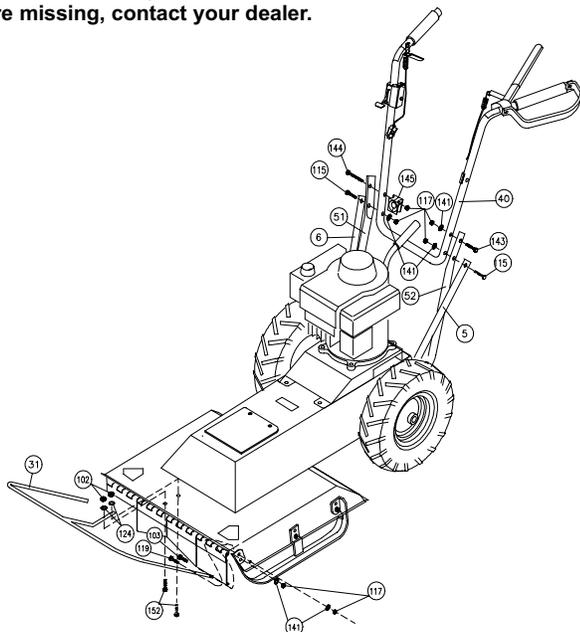
Your Billy Goat Brush Cutter is shipped from the factory in one carton, completely assembled except for the upper handle, and front guard bar.

NOTE: Electric start units are shipped without a battery. The battery bracket is designed to use CB18 series, C50 series, SC50 series, or MCB50 series dry or wet cell batteries with a 17.2 Ah minimum rating.

1. **REMOVE** unit from carton and allow upper handle (item 40) to lay on ground behind unit. Set guard bar (Item 31) to the side for now.
2. **REMOVE** hardware items 115, 117, 141, 143, & 144 from temporary storage positions on lower handle (items 51, & 52).
3. **ATTACH** upper handle to lower as shown below, and securely tighten all fasteners. For easy alignment of handles during installation, loosen the four screws that secure the lower handles. Line up and hand tighten all handle hardware before final tightening. Note: Be sure the engine starter rope is properly installed in the starter rope guide (item 145) before tightening the corresponding fasteners. NOTE: Be sure to tighten hardware that secures that handle braces (Item 5,6) to the transaxle.
4. **REMOVE** hardware items 102, 103, 117, 119, 124, 141, & 152 from temporary storage positions on deck and skid assy at front of unit (items 2, 155, & 156)
5. **ATTACH** guard bar (Item 31) to deck as shown below. Install the center bolts (Item 153) first, and install the bolts that fasten through the sides of the deck last. Securely tighten all fasteners. Note: Hardware items 117, 119, & 141 are used to secure both the front skid attachment and the sides of the guard bar. Be sure both are securely attached.
6. **CONNECT** spark plug wire to spark plug.

11 PACKING CHECKLIST

These items should be included in your carton. If any of these parts are missing, contact your dealer.



Literature
Assy

Engine
Manual

Per Model

- | | |
|--------------------------------|---|
| Check <input type="checkbox"/> | Handle Upper Assembly 500256 |
| Check <input type="checkbox"/> | Bar Guard WA 500235 |
| Check <input type="checkbox"/> | Literature Assy 500263 |
| Check <input type="checkbox"/> | Briggs & Stratton |
| Check <input type="checkbox"/> | Honda (English) |
| Check <input type="checkbox"/> | Honda W/Electric Start (English) |

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LITERATURE ASSY P/N 500263

Owner's
Manual

Check

Owner's
Manual
500264Warranty
Card

Check

Warranty
Card
400972Ty Wrap 900407
Qty: (4)

Literature Checklist

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CONTROLS

Throttle Control

BRIGGS &
STRATTON

Briggs engines have a choke type carburetor that is operated by moving the throttle control to the full start position. See STARTING section, see page 5.

START



STOP

HONDA

Honda engines have a separate choke lever that is operated by pulling back along with moving the throttle control to the full start position if necessary. See STARTING section, see page 5.

START



Pull to choke

STOP

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INSTRUCTION LABELS

These labels should be included on your Brush Cutter. If any of these labels are damaged, replace them before putting this equipment into operation. Item and part numbers are given to help in ordering replacement labels..



Label Do Not Fill While Engine Is Hot
Item 63 Part No.400268



Label Ear Eye Breathing Item
No. 188 Part No. 890254



Label Warning Guards
Item 185 Part No.900327



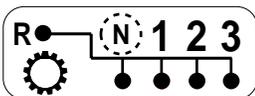
Label Danger Keep Hands and Feet Away
Item 180 PartNo.400424



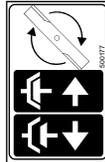
Label Danger Flying Material
Item 184 Part No.810736



Label Read Owner's Manual
Item No. 187 Part No. 890301



Label Shift BC2400
Item No. 186 Part No. 500202



Label Clutch Blade
Item 192 Part No.500177



Label Clutch Drive
Item 191 Part No.500176



Label Chock Wheels Item No. 189 Part No. 500168

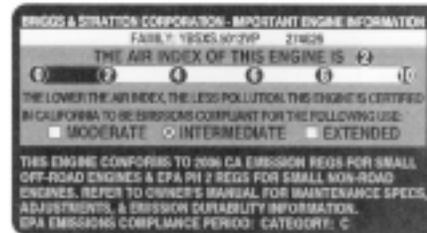


Label Patent No
Item 190 Part No.500279

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ENGINE LABELS

Briggs & Stratton



WARNING



Read and follow Operating Instructions before running engine.

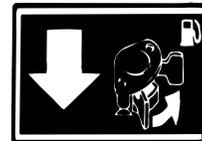


Gasoline is flammable. Allow engine to cool to at least 2 minutes before fueling.



Engines emit carbon monoxide, DO NOT run in enclosed area.

Honda



■ AIR CLEANER MAINTENANCE EVERY 50 HOURS (UNDER DUSTY CONDITION EVERY 10 HOURS)
■ ENTRETIEN DU FILTRE A AIR TOUTES LES 50 HEURES (TOUTES LES 10 HEURES EN MILIEU POUSSIEREUX)
■ LUFTFILTER PFLEGE ALLE 50 STUNDEN (UNTER BESONNERS STAUBIGEN BEDINGUNGEN ALLE 10 STUNDEN)

WARNING
GASOLINE IS FLAMMABLE
SHUT OFF ENGINE, AVOID HEAT,
SPARKS AND OPEN FLAME
WHEN REFUELING

INTENDED USE: This is not a lawn mower. The Brush Cutter is designed for cutting overgrown weeds, brush, and other types of organic growth to a height of 3-1/2". The unit may also be used to clear small saplings 1-1/2" in dia. or less. It does not provide the cut quality of a finish cut lawn mower. The unit is designed for use in rural areas, and should not be used in settings where conditions require that the unit be operated in tight or confined areas. Be sure to inspect work area and machine before operating. Make sure that all operators of this equipment are trained in general machine use and safety.



Like all mechanical tools, reasonable care must be used when operating machine. Do not operate unit in areas where bystanders may be present.



Do not operate if excessive vibration occurs. If excessive vibration occurs, shut engine off immediately and check for damaged or worn blade, loose blade bolt, loose blade adapter key, loose engine or lodged foreign objects. Note: See parts list for proper blade bolt torque specifications. (See trouble shooting section on page 12).

16.1 STARTING



PUT OIL IN ENGINE BEFORE STARTING.



ENGINE: 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: Controlled by throttle lever on the handle.

FUEL VALVE: Move fuel valve to "ON" position (when provided on engine).

CHOKE:

Briggs engines have a choke type carburetor that is operated by moving the throttle control to the full start position.

Honda engines have a separate choke lever that is operated by pulling back when starting. Push it back to its original position after the engine has started.

THROTTLE: Move remote throttle control to fast position. Pull starting rope to start engine.

ELECTRIC START: Choke the engine if necessary. Push and hold down on the rocker switch until engine starts, then release switch to run.

IF YOUR UNIT FAILS TO START:

See Troubleshooting on page 12.

16.2 CUTTING OPERATION

GENERAL OPERATION: To engage the blade, depress the operator's left hand control lever against operator's handle. The blade is disengaged by releasing this lever. (See Fig. 1.1) To engage the wheel drive, lift the operator's right hand control lever against operator's handle. The drive is disengaged by releasing this lever. (See Fig. 1.2) Ground speed can be varied by shifting gears as described on page 9. To begin cutting engage the blade lever, allow the blade to spin up to speed, and engage the wheel drive to begin moving forward into the material to be cut.

NOTE: Do not engage blade during transport between work sites. The blade should remain disengaged at all times when work is not being performed.

The best performance is achieved when cutting in dry conditions. If the deck becomes choked with grass or debris during operation, back unit off of debris allowing machine to clear itself and continue cutting, or shut the unit off and clear the clog by hand (See below). A drop in engine RPM or a noticeable change in engine sound is usually a good indicator of a clogged discharge or other interference.

Under most conditions cutting should be done in first or second gear. Third gear should be reserved for conditions where weeds and brush are thinned out or not as tall. The quality of the cut produced is directly related to the unit's ground speed during cutting. If the quality of the cut is not satisfactory (i.e. material left standing) you should shift into a lower gear during cutting. For improved control in confined areas, this machine can be pushed forward or backward by releasing the operator's clutch lever, placing the transaxle in neutral, and pushing the machine.



CLEARING A CLOGGED CUTTING DECK:

Turn engine off and wait for blade to stop completely. Disconnect spark plug wire. Wearing durable gloves, remove clog.



Danger, the clog may contain sharp materials. Reconnect spark plug wire.

BLADE CLUTCH

The Brush Cutter blade clutch is controlled by an operator presence control. To engage the blade, depress the operator's left hand control lever against operator's handle. The blade is disengaged by releasing this lever. (See Fig. 1.1)

NOTE: The blade clutch must be either fully engaged for cutting or fully disengaged to bring the blade to a stop. Do not operate the unit with the blade clutch partially engaged. Premature belt wear and clutch failure will result from improper operation of the clutch.



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.

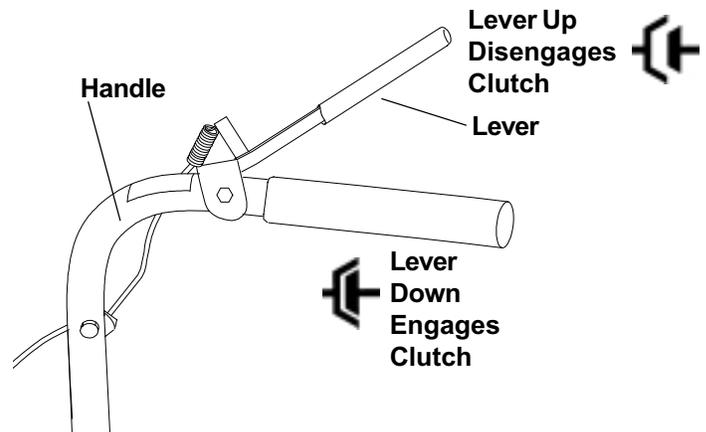
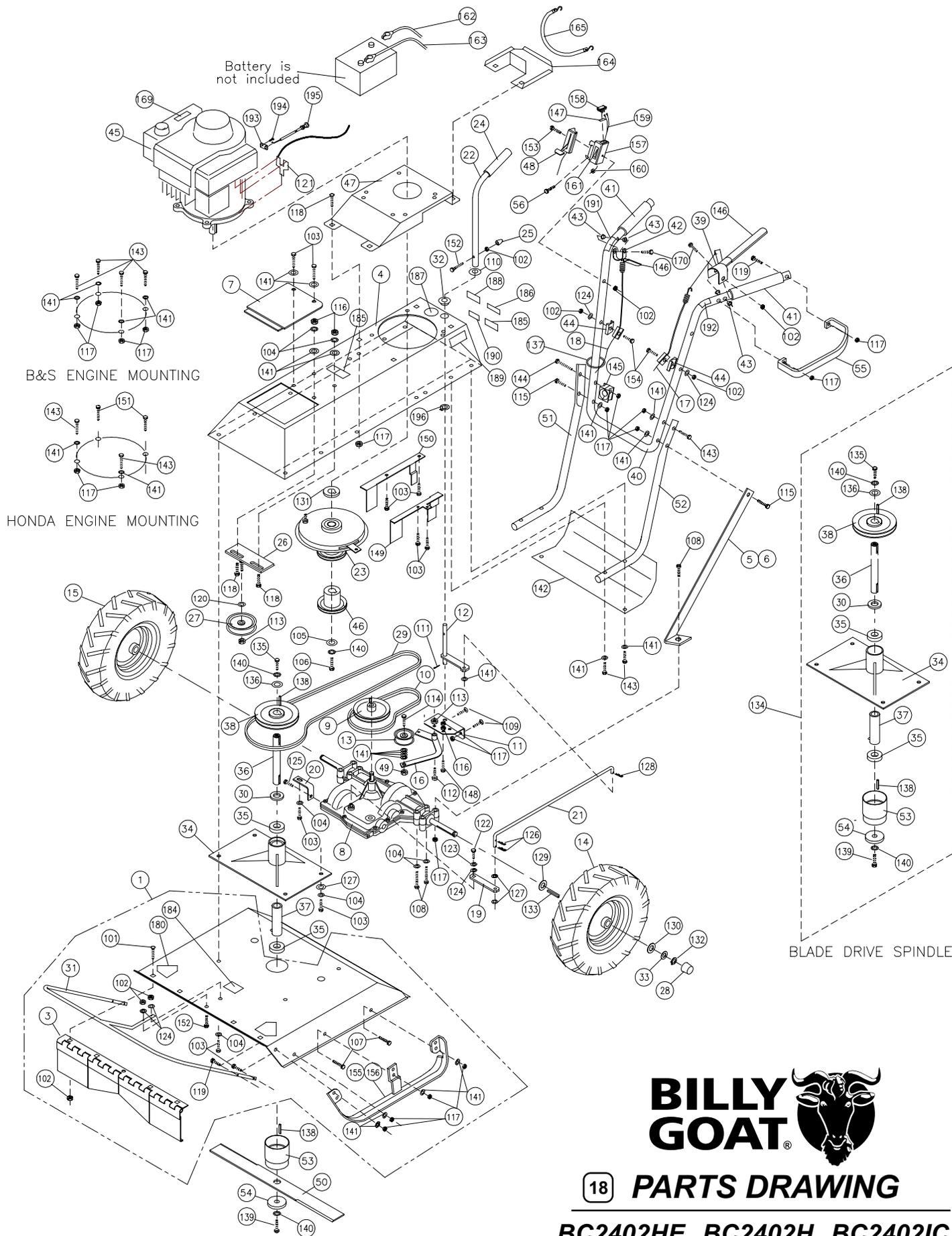


Fig. 1.1



18 PARTS DRAWING

**BC2402HE, BC2402H, BC2402IC,
BC2402ICE**

19 PARTS LIST

ITEM NO.	DESCRIPTION	BC2402HE Part No	QTY	BC2402H Part No	QTY	BC2402ICE Part No	QTY	BC2402IC Part No	QTY
1	Deck Assembly with labels	500239	1	500239	1	500239	1	500239	1
2	Deck WA BC2401	500266	1	500266	1	500266	1	500266	1
3	Deflector Front BC2400	500125	1	500125	1	500125	1	500125	1
4	Base Assembly with labels	500240	1	500240	1	500240	1	500240	1
5	Handle Brace Left	500196	1	500196	1	500196	1	500196	1
6	Handle Brace Right	500200	1	500200	1	500200	1	500200	1
7	Door Base Engine	500233	1	500233	1	500233	1	500233	1
8	Transaxle 3 SPD BC2400	500342	1	500342	1	500342	1	500342	1
9	Pulley 5.0" OD 'A' Sec.	830180	1	830180	1	830180	1	830180	1
10	Belt Traction Drive	500119	1	500119	1	500119	1	500119	1
11	Plate Pivot Idler / Shifter	500122	1	500122	1	500122	1	500122	1
12	Shifter Pivot WA	500169	1	500169	1	500169	1	500169	1
13	Pulley Idler	800260	1	800260	1	800260	1	800260	1
14	Wheel & Tire 16" AG SP LH	500343	1	500343	1	500343	1	500343	1
15	Wheel & Tire 16" AG SP RH	500344	1	500344	1	500344	1	500344	1
16	Arm Idler WA	500170	1	500170	1	500170	1	500170	1
17	Cable Clutch Blade BC2400	500259	1	500259	1	500259	1	500259	1
18	Cable Clutch Drive BC2400	500327	1	500327	1	500327	1	500327	1
19	Bar Shift T-axle	500121	1	500121	1	500121	1	500121	1
20	Angle Support T-axle	500127	1	500127	1	500127	1	500127	1
21	Rod Link Shifter	500144	1	500144	1	500144	1	500144	1
22	Tube Shift With Grip	500171	1	500171	1	500171	1	500171	1
23	Clutch Brake	500338	1	500338	1	500338	1	500338	1
24	Grip 3/4 ID - Black	610102	1	610102	1	610102	1	610102	1
25	Tube Pointer	500184	1	500184	1	500184	1	500184	1
26	Plate Mount Idler WA	500228	1	500228	1	500228	1	500228	1
27	Pulley Idler 4.5" OD X 3/8	500270	1	500270	1	500270	1	500270	1
28	Hub Cap	900486	2	900486	2	900486	2	900486	2
29	Belt Blade Drive	500237	1	500237	1	500237	1	500237	1
30	Spacer Spindle BC2401	500232	1	500232	1	500232	1	500232	1
31	Bar Guard WA BC2401	500235	1	500235	1	500235	1	500235	1
32	Bushing Shifter	500130	1	500130	1	500130	1	500130	1
33	Washer Hub Cap	850237	2	850237	2	850237	2	850237	2
34	Spindle WA BC2400	500174	1	500174	1	500174	1	500174	1
35	Bearing 7/8" ID Sealed Press	500101	2	500101	2	500101	2	500101	2
36	Shaft Drive Blade	500107	1	500107	1	500107	1	500107	1
37	Spacer Spindle Bearing	500115	1	500115	1	500115	1	500115	1
38	Pulley 7" OD x 7/8" BORE	500253	1	500253	1	500253	1	500253	1
39	Lever Control Blade	500312	1	500312	1	500312	1	500312	1
40	Handle Upper BC2400	500243-S	1	500243-S	1	500243-S	1	500243-S	1
41	Grip Handle 1 ID x 7.5	500267	2	500267	2	500267	2	500267	2
42	Lever Control Clutch	500142	1	500142	1	500142	1	500142	1
43	Bushing Lever Control	500152	4	500152	4	500152	4	500152	4
44	Fitting Mount Cable	500187	2	500187	2	500187	2	500187	2
45	Engine 13 HP Honda GXV390 Electric Start	500333	1	-	-	-	-	-	-
	Engine 13 HP Honda GXV390	-	-	500334	1	-	-	-	-
	Engine 13 HP OHV B & S	-	-	-	-	-	-	520046	1
	Engine 13 HP OHV Briggs Electric Start	-	-	-	-	520039	1	-	-
46	Pulley Drive Traction BC	500238	1	500238	1	500238	1	500238	1
47	Spacer Engine WA 2401	500262	1	500262	1	500262	1	500262	1
48	Control Throttle BC2400	500213	1	500213	1	500213	1	500213	1
49	Nut Lock 3/8-16 Thin	8161042	1	8161042	1	8161042	1	8161042	1
50	Blade 24" BC2400	500210	1	500210	1	500210	1	500210	1
51	Handle Lower RH BC2400	500140	1	500140	1	500140	1	500140	1
52	Handle Lower LH BC2400	500141	1	500141	1	500141	1	500141	1
53	Adapter Blade WA	500191	1	500191	1	500191	1	500191	1
54	Washer Friction Blade	500108	1	500108	1	500108	1	500108	1
55	Guard Hand BC2401	500339	2	500339	2	500339	2	500339	2
56	Screwcap 8x3/8 HWH Type B	100121	2	100121	2	100121	2	100121	2
100									
101	Bolt Carriage 1/4 - 20 x 3/4	8024021	4	8024021	4	8024021	4	8024021	4
102	Nut Lock 1/4 - 20	*8160001	13	*8160001	13	*8160001	12	*8160001	12
103	Screw Cap 5/16 - 18 x 1 1/4	*8041029	13	*8041029	13	*8041029	13	*8041029	13
104	Washer Lock 5/16 split	*8177011	11	*8177011	11	*8177011	11	*8177011	11
105	Plate Impeller Washer	850443	1	850443	1	850443	1	850443	1
106	Screw Cap 7/16-20 X 3"	500269	1	500269	1	500269	1	500269	1
107	SCREWCAP 5/16-18 X 1"	*8041028	9	*8041028	9	*8041028	9	*8041028	9
108	Screw Cap 5/16 - 18 x 2 3/4	*8041035	6	*8041035	6	*8041035	6	*8041035	6
109	Bolt Carriage 5/16 - 18 x 3/4	8024039	2	8024039	2	8024039	2	8024039	2
110	Washer Flat 1/2"	900230	1	900230	1	900230	1	900230	1
111	Pin Cotter 3/32 x 3/4"	*8197016	1	*8197016	1	*8197016	1	*8197016	1

* Denotes standard hardware item, that may be purchased locally.

Item No.	Description	BC2402HE Part No.	Qty.	BC2402H Part No.	Qty.	BC2402ICE Part No.	Qty.	BC2402IC Part No.	Qty.
112	Bolt Shoulder 1/2 x 1	500114	1	500114	1	500114	1	500114	1
113	Nut Lock 3/8-16	*8160003	3	*8160003	3	*8160003	3	*8160003	3
114	Bolt Idler	800888	1	800888	1	800888	1	800888	1
115	Screw Cap 5/16 x 2"	*8041032	2	*8041032	2	*8041032	2	*8041032	2
116	Nut Jam 5/16 - 18	*8142002	2	*8142002	2	*8142002	2	*8142002	2
117	Nut Lock 5/16 - 18	*8160002	28	*8160002	28	*8160002	30	*8160002	30
118	Bolt Carriage 5/16 - 18 x 1	*8024040	6	*8024040	6	*8024040	6	*8024040	6
119	Screw Cap 5/16 x 1 1/2	*8041030	4	*8041030	4	*8041030	4	*8041030	4
120	Washer 3/8 FC	*8171004	1	*8171004	1	*8171004	1	*8171004	1
121	Terminal Piggyback 3/16	890010	1	890010	1	-	-	-	-
122	Screw Cap 1/4 - 28 x 1/2 GR5	850408	1	850408	1	850408	1	850408	1
123	Washer Lock 5/16 external tooth	8181008	1	8181008	1	8181008	1	8181008	1
124	Washer 1/4 FC	*8171002	5	*8171002	5	*8171002	5	*8171002	5
125	Screw Self Tap 5/16	*8123128	1	*8123128	1	*8123128	1	*8123128	1
126	Pin Hair Cotter	900471	2	900471	2	900471	2	900471	2
127	Washer 5/16 SAE	*8172008	2	*8172008	2	*8172008	2	*8172008	2
128	Pin Cotter 3/32 x 3/4	8197016	1	8197016	1	8197016	1	8197016	1
129	Washer 3/4 SAE	*8172015	2	*8172015	2	*8172015	2	*8172015	2
130	Washer 0.765 x 1.250 x 0.060	850238	2	850238	2	850238	2	850238	2
131	Spacer Engine	830113	1	830113	1	830113	1	830113	1
132	Ring Snap 0.750	850230	2	850230	2	850230	2	850230	2
133	Key 3/16 x 2 1/8	9201087	2	9201087	2	9201087	2	9201087	2
134	Spindle Assembly Complete	500242	1	500242	1	500242	1	500242	1
135	Screw Cap 7/16 - 20 x 1 1/4 GR8	800554	1	800554	1	800554	1	800554	1
136	Washer 1.25 x 0.882 x 0.125	500182	1	500182	1	500182	1	500182	1
137	Ty Wrap	900407	4	900407	4	900407	4	900407	4
138	Key Sq 3/16 x 5/8	9201072	2	9201072	2	9201072	2	9201072	2
139	Screw Cap 7/16 - 20 x 2 GR8	500188	1	500188	1	500188	1	500188	1
140	Washer Lock 7/16 Tw. Tooth	850132	3	850132	3	850132	3	850132	3
141	Washer 5/16 FC	*8171003	27	*8171003	27	*8171003	23	*8171003	23
142	Bracket Clutch Cable Guard	500321	1	500321	1	500321	1	500321	1
143	Screw Cap 5/16 - 18 x 1 3/4	*8041031	7	*8041031	7	*8041031	9	*8041031	9
144	Screw Cap 5/16 - 18 x 2 1/2	*8041034	1	*8041034	1	*8041034	1	*8041034	1
145	Guide Rope	830533	2	830533	2				
146	Grip Lever	500181	2	500181	2	500181	2	500181	2
147	Label Start/Stop Toggle	500329	1						
148	Screwcap 5/16-18 X 3/4"	8041026	1	8041026	1	8041026	1	8041026	1
149	Guide Belt LH	500230	1	500230	1	500230	1	500230	1
150	Guide Belt RH	500231	1	500231	1	500231	1	500231	1
151	Screw Cap 5/16 - 24 x 1	*400164	2	*400164	2	*400164	2	*400164	2
152	Screw Cap 1/4 - 20 x 1 1/4	*8041007	3	*8041007	3	*8041007	3	*8041007	3
153	Screw Cap 1/4 - 20 x 2 3/4	*8041013	1	*8041013	1	*8041013	1	*8041013	1
154	Screwcap 1/4-20 x 2"	*8041010	2	*8041010	2	*8041010	2	*8041010	2
155	Skid RH BC v-cup WA	500291	1	500291	1	500291	1	500291	1
156	Skid LH BC v-cup WA	500292	1	500292	1	500292	1	500292	1
157	Switch Box Assy BC	500318	1	500283	1	500283	1	500283	1
158	Switch Toggle	500307	1	500281	1	500307	1	500281	1
159	Harness Assy	500306	1	890442	1	520118	1	890442	1
160	Bushing Strain Relief	500282	1	500282	1	500282	1	500282	1
161	Label Throttle	810656	1	810656	1	810656	1	810656	1
162	Cable Battery Red W/Charge	500304	1	-	-	520111	-	-	-
163	Cable Battery Black 10"	790133	1	-	-	790133	1	-	-
164	Bracket Battery Rear	500347	1	-	-	500347	1	-	-
165	Strap Hold Down	790303	1	-	-	790303	1	-	-
166									
167									
168									
169	Label Hot Engine	400268	1	400268	1	400268	1	400268	1
170	Bolt Shoulder 5/16 x 1 1/2	500340	2	500340	2	500340	2	500340	2
180	Label OPEI	400424	2	400424	2	400424	2	400424	2
184	Label Flying Debris	810736	1	810736	1	810736	1	810736	1
185	Label Guards	900327	2	900327	2	900327	2	900327	2
186	Label Shift BC2400	500202	1	500202	1	500202	1	500202	1
187	Label Read	890301	1	890301	1	890301	1	890301	1
188	Label Ear Eye Breathe	890254	1	890254	1	890254	1	890254	1
189	Label Chock Wheels	500168	1	500168	1	500168	1	500168	1
190	Label Patent No	500279	1	500279	1	500279	1	500279	1
191	Label Clutch Drive	500176	1	500176	1	500176	1	500176	1
192	Label Clutch Blade	500177	1	500177	1	500177	1	500177	1
193	Plate Choke Mount BC	500325	1	500325	1				
194	Screw Machine 10-32 X 3/4"	430248	1	430248	1				
195	Control Cable Choke BC	500326	1	500326	1				
196	Ring Retaining External 3/4	520176	1	520176	1	520176	1	520176	1

16.3 PROPULSION

This Brush Cutter is self-propelled, and is controlled by an operator presence control. To engage the wheel drive, lift the operator's right hand control lever against operator's handle. The drive is disengaged by releasing this lever. (See Fig. 1.2)

GROUND SPEED can be varied by selecting a higher or lower gear using the gear shift lever at the rear of the machine (See Fig. 2), or by changing the engine rpm. To shift the Brush Cutter into reverse, release all controls and rotate the shift lever to the left, when the lever stops lift it up and continue to turn it to the left until it stops again.

Under most conditions cutting should be done in first or second gear. Third gear should be reserved for conditions where weeds and brush are thinned out or not as tall. The quality of the cut produced is directly related to the unit's ground speed during cutting. If the quality of the cut is not satisfactory (i.e. material left standing) you should shift into a lower gear during cutting. For improved control in confined areas, this machine can be pushed forward or backward by releasing the operator's clutch lever, placing the transaxle in neutral, and pushing the machine.

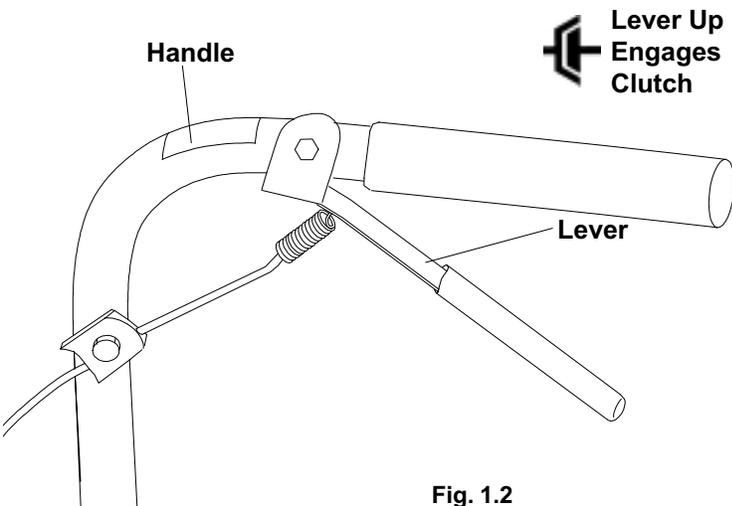


Fig. 1.2

16.4 CUTTING HEIGHT ADJUSTMENT

Cutting height can be adjusted to allow a 1" lower cutting height. This is particularly useful for cutting grasses that lay over when over grown. (i.e. Bermuda, Johnson, etc.)

Note: When cutting brush and normal field grasses it is strongly recommended that you operate your brush cutter at the standard (top) cutting height.

16.5 HANDLING & TRANSPORTING:

Using three people to lift machine is recommended. Lift holding the handle and front guard for deck. Secure in place during transport.

⚠ Never lift the unit with the engine running.

16.6 STORAGE

⚠ Never store engine indoors or in enclosed poorly ventilated areas with fuel in tank, where fuel fumes may reach an open flame, spark or pilot light, as on a furnace, water heater, clothes dryer or other gas appliance.

If engine is to be unused for 30 days or more, prepare as follows:

⚠ Be sure engine is cool. Do not smoke. Remove all gasoline from carburetor and fuel tank to prevent gum deposits from forming on these parts and causing possible malfunction of engine. Drain fuel outdoors, into an approved container, away from open flame. Run engine until fuel tank is empty and engine runs out of gasoline.

NOTE: Fuel stabilizer (such as Sta-Bil) is an acceptable alternative in minimizing the formation of fuel gum deposits during storage. Add stabilizer to gasoline in fuel tank or storage container. Always follow mix ratio found on stabilizer container. Run engine at least 10 min. after adding stabilizer to allow it to reach the carburetor.

⚠ CAUTION: Wheels must be chocked or blocked when unit is parked on a slope.

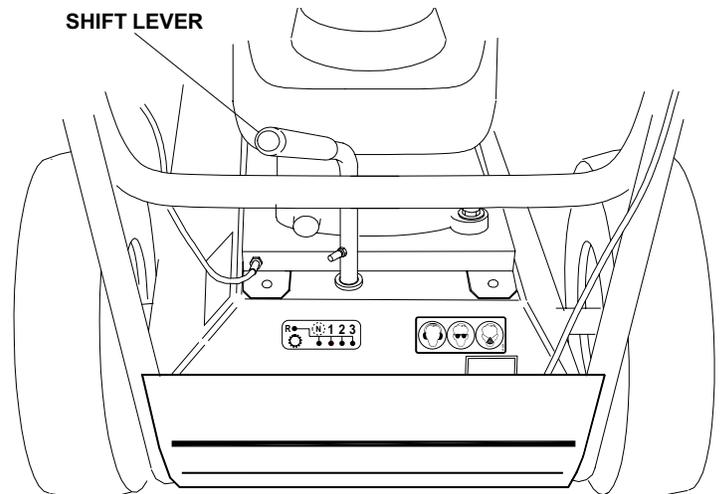


Fig. 2

ENGINE

When servicing engine refer to specific manufacturers 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 page 11). If you can not locate a servicing dealer in your area you can contact the manufacturers national service organization.

Briggs & Stratton: 800-233-3723

American Honda: 800-426-7701

MAINTENANCE



Use only a qualified mechanic for any adjustments, disassembly or any kind of repair .



WARNING: TO AVOID PERSONAL INJURY, ALWAYS TURN MACHINE OFF, MAKE SURE ALL MOVING PARTS COME TO A COMPLETE STOP.



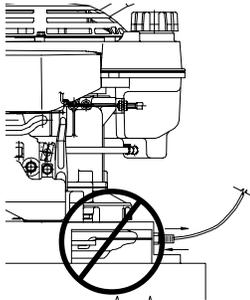
DISCONNECT SPARK PLUG WIRE BEFORE SERVICING UNIT.



RECONNECT SPARK PLUG WIRE, AND ALL GUARDS BEFORE STARTING ENGINE.



WHEN POWER WASHING, DO NOT SPRAY DIRECTLY ON THE BLADE CLUTCH.



Note: Blade, and drive belts are normal wear items. These should be inspected on a regular basis and replaced if worn.

Tip: To prevent wheels from seizing to axles remove them once per season and coat the axles with anti-seize compound. This should be done more often if using a pressure washer to clean the unit regularly.

17.1

BLADE REMOVAL / SHARPENING

NOTE: When sharpening the blade it is a good idea to check the balance of the blade. A properly balanced blade will increase life of the bearings and other components.

Tools required: 5/8 inch socket, torque wrench, adequate support.

1. Disconnect spark plug wire.
2. Support front of unit to allow access to the blade. Note: Unit is heavy. Be sure support is adequate to prevent personal injury.
3. Block the blade to prevent it from rotating during removal.
4. Remove the blade bolt (Item 139), lockwasher (140), and large friction washer (54).
5. Remove the blade (50) and, replace or sharpen the blade.

NOTE: When replacing the blade use only B.G.I. Part no. 500210.

6. Replace the blade using all fasteners in the exact order they were removed. Torque blade screw to 60 ft-lbs. NOTE: Before installing the fasteners inspect them for wear and replace as necessary.

17.2

BELT REPLACEMENT

When replacing one belt the other should be inspected for wear and replaced if worn. It is good practice to change both belts when either is worn beyond use. Use only original equipment belts for replacement. Billy Goat uses only premium quality, kevlar corded and coated belts in your unit. **Substitute belts do not meet the design and performance requirements for your unit, and will greatly reduce machine performance and belt life.**

TRANSAXLE DRIVE BELT

Tools required: 1/2 inch socket, 1/2 inch universal extension bar, pry bar or long screw driver, adequate support for machine.

1. Disconnect spark plug wire.
2. Support rear of unit to allow access to underside of the machine towards the rear. Note: Unit is heavy. Be sure support is adequate to prevent personal injury.
3. Loosen but do not remove the two nuts (116) holding the plate mount idler (item 26) in place. This will release the tension on the blade drive belt (29). NOTE: It may be necessary to apply some force to the pulley to slide it over from it's tight position and release the belt.
4. Working from the underside of the machine, loosen but do not remove the four screws (103) holding the two belt guides (Items 149 & 150) in place next to the crankshaft drive pulley (9) at the rear of the machine. This will loosen the belt guides (Items 149 & 150) and allow them to move to the side. NOTE: This step requires the use of a universal joint or universal extension bar to reach the screws (103) holding the belt guide (149). If universal joint is not available you may remove the "neutral stop bolt" (Item 115) and associated nuts (116 & 117) to allow the idler arm to swing back and allow access to the screws (103) holding the belt guide (149).
5. With the guides loose slip the transaxle drive belt (Item 10) out of the groove on the drive pulley and down past the pulley.
6. Slip the old belt (10) up and over the pulley on the transaxle (Item 9) and remove belt from machine.
7. Install new belt in groove on transaxle pulley (Item 9) and slip into groove on transaxle drive pulley (46).
8. Tighten four screws (103) to secure belt guides (149 & 150) in place. Note: With clutch levers engaged, be sure belt guides do not touch belts after installation.
9. Reconnect spark plug wire.

WHEEL DRIVE CLUTCH ADJUSTMENT

As the belt wears, adjustments may be required to maintain proper control cable tension, and clutch engagement. If the belt begins slipping or squealing during normal operation it may require an adjustment to increase the clutch cable (item 18) tension. A properly adjusted wheel drive clutch should require a minimum of 3 lbs. of force to completely depress the end of the clutch lever. Clutch cable tension adjustment is located at the back of the engine base. To increase tension adjust the cable so that more of the adjusting barrell is exposed on the outside of the machine. To decrease tension adjust the barrell in the opposite direction. When replacing a belt be sure to check that it is properly tensioned.

BLADE DRIVE BELT

Tools required: 1/2 inch socket, 1/2 inch universal extension bar, pry bar or long screw driver, adequate support for machine.

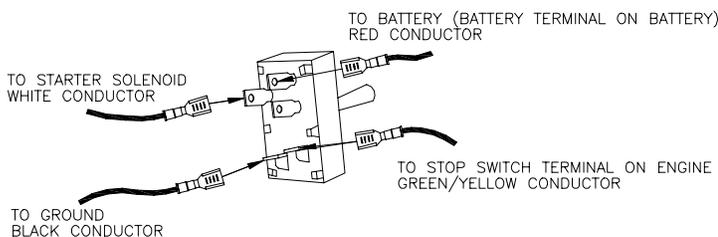
1. Disconnect spark plug wire.
2. Support rear of unit to allow access to underside of the machine towards the rear. Note: Unit is heavy. Be sure support is adequate to prevent personal injury.
3. Remove the two screws (103) and washers (141) holding the engine base door (7), and remove the door.
4. Loosen but do not remove the two nuts (116) holding the plate mount idler (item 26) in place. This will release the tension on the blade drive belt (29). NOTE: It may be necessary to apply some force to the pulley to slide it over from it's tight position and release the belt.
5. Working from the underside of the machine, loosen but do not remove the four screws (103) holding the two belt guides (Items 149 & 150) in place next to the crankshaft drive pulley (9) at the rear of the machine.

- 5.(cont) This will loosen the belt guides(Items 149 & 150) and allow them to move to the side. NOTE: This step requires the use of a universal joint or universal extension bar to reach the screws(103) holding the belt guide(149). If universal joint is not available you may remove the "neutral stop bolt"(Item 115) and associated nuts (116 & 117) to allow the idler arm to swing back and allow access to the screws(103) holding the belt guide(149).
6. With the guides loose slip the blade drive belt(29) out of the groove on the drive pulley and down past the pulley. Note: It is necessary to remove the transaxle drive belt(10) from its groove to allow removal of the blade drive belt.
7. Pull the belt back through the hole in the top of the engine base and remove it from the machine. NOTE: Removal of the belt from the blade drive pulley requires some force to walk the belt past the front portion of the pulley.
8. Install new belt into groove on blade drive pulley. Push remaining length of belt back through engine base toward clutch/brake drive pulley.
9. Reach through from rear of machine and pull new belt through and install it in the groove on the clutch/brake drive pulley. NOTE: Make sure the blade belt is properly seated in the clutch/brake drive pulley(Item 23) and not resting in the gap between the clutch/brake pulley(23) and the transaxle drive pulley(46)
10. Tighten four screws to secure belt guides (item 149 & 150) in place. NOTE: Be sure belt is correctly routed when replacing. (See Fig. 3)
11. Set tension on belt by reaching in through top of engine base with a long screwdriver or other pry bar and pushing the idler pulley over against the belt to increase tension. While holding the belt under tension tighten the two screws (107) that hold the idler arm in place. Note: Proper belt tension can be verified by checking the tight side (non-idler side)belt deflection. The belt should deflect 3/16"-1/4" with force applied perpendicular to the belt after tensioning.
12. Replace engine base door (item 7) and tighten screws to hold it in place
13. Reconnect spark plug.

BLADE DRIVE BELT TENSION ADJUSTMENT

1. Disconnect spark plug wire.
2. Remove the two screws holding the engine base door (item 7), and remove the door.
3. Examine the condition of the belt and note the position of the idler assembly and the amount of tension on the blade belt.
3. Loosen the two nuts (Item 117) on top of the engine base, holding the idler arm assembly (Item 26) in place .
4. Reset tension on belt by reaching in through top of engine base with a long screwdriver or other pry bar and pushing the idler pulley over against the belt to increase tension. While holding the belt under tension tighten the two screws that hold the idler arm in place.
5. Replace engine base door and verify blade belt tension setting by operating the unit in the conditions that caused it to slip originally.NOTE: If belt continues to slip it may be worn out and require replacement before proper operation can resume.

STARTER SWITCH WIRING



Blade Drive Belt

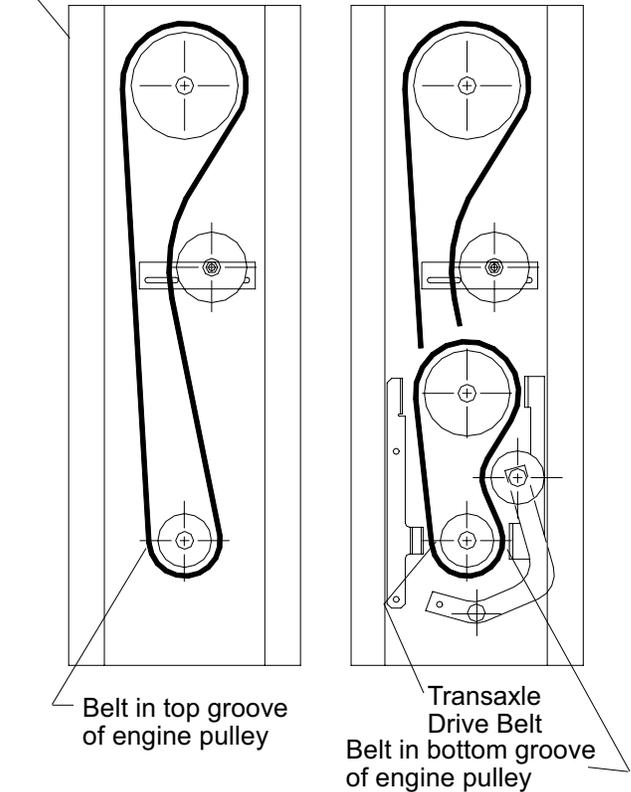


Fig. 3

Maintenance Operation	Follow these hourly maintenance intervals.				
	Every Use	Every 5 hrs or (Daily)	Every 25 hrs	Every 50 hrs	Every 100-150 hrs
Engine (See Engine Manual)					
Check for excessive vibration		●			
Inspect for loose parts		●			
Inspect for worn or damaged parts	●				
Sharpen Blade			●		
Inspect belts for wear			●		
Check blade clutch cable tension				●	
Replace blade and traction belts					●
Inspect battery for damage or leak				●	
Check battery terminal for corrosion					●
Lubricate throttle control cable and linkage.			●		

MAINTENANCE HISTORY

Date of Service	Service Performed

17 MAINTENANCE continued

17.3 CLUTCH ADJUSTMENT

Clutch/Brake Adjustment:

As the clutch/brake wears, adjustments may be required to maintain proper control cable tension, and clutch engagement. If the clutch/brake begins slipping or squealing during normal operation it may require an adjustment to increase the clutch cable tension. A properly adjusted blade clutch should require a minimum of 10 lbs. of force to completely depress the end of the clutch lever. (See Fig. 4) Adjust by tightening or by loosening clutch cable adjusting nut as required, located at the rear of the engine base. When adjusting cable tension on blade control cable be sure to leave slack in cable to allow for engagement of blade brake. Replacement of cable or clutch/brake may be necessary if adjustment will not allow for proper clutch and brake engagement.

WARNING: If the clutch begins to squeal or slip, do not continue to operate your unit until adequate adjustment or repair has been performed.

Improper adjustment can cause clutch to slip and overheat, greatly reducing machine performance and clutch life.

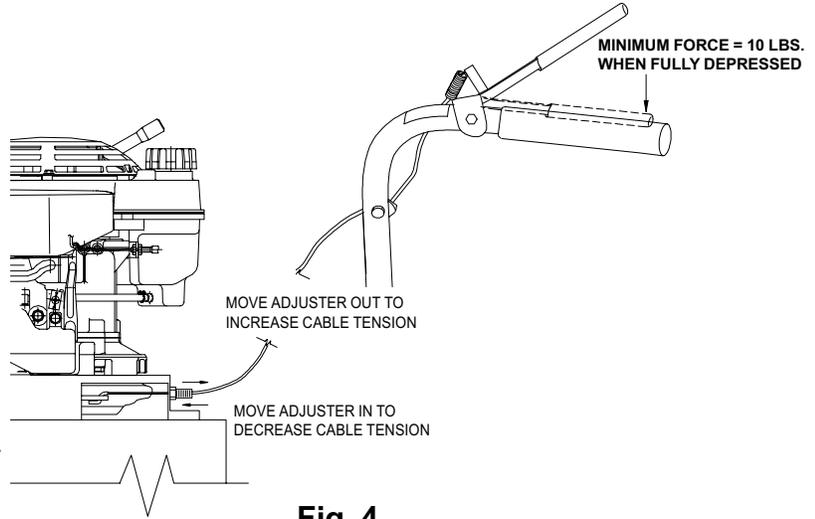


Fig. 4

20 TROUBLESHOOTING *Before Requesting Service Review These Suggestions*

Problem	Possible Cause	Solution
The engine will not start	Stop switch is off. Throttle is not in ON position. Out of gasoline. Bad or old gasoline. Spark plug wire disconnected. Dirty air cleaner.	Check switch, throttle, & gasoline. Check for spark with an approved tester. Clean or replace air cleaner. Contact service dealer.
Starter does not turn (Electric start unit only)	Battery is too low or dead. Battery cable is disconnected or battery terminal is corroded. Bad starter switch or wire harness. Bad starter.	Charge battery or replace with a new one. Clean battery terminals. Replace starter switch. Replace Wire harness. Contact service dealer.
The engine will not stop	Damaged stop switch. Stop switch wire is disconnected. Stop switch wire is worn or damaged.	Replace stop switch. Connect stop switch wire. Replace stop switch wire.
Will not cut or has poor cutting performance.	Dull Blade. Clogged deck. Excessive quantity of debris built up or blocking blade. Engine RPM set too low.	Unclog deck (see page 5). Sharpen blade. Check engine RPM.(see page 11 for settings)
Abnormal vibration.	Loose or out of balance blade or loose engine.	Check blade and replace if required. Check Engine.
Belt slips or smokes.	Belt tension too low . Belt worn or stretched. Pulleys worn or damaged.	Increase tension at idler(see page 11). Replace belt. Replace pulleys
Clutch slips or squeals.	Clutch cable tension too low . Clutch worn or damaged.	Increase clutch cable tension (see above). Replace clutch/brake
Blade brake will not engage.	Inadequate slack in clutch cable . Clutch worn or damaged.	Adjust or replace cable (see above). Replace clutch/brake
No self propelling.	Operator's clutch lever not releasing clutch. Broken or out of adjustment clutch cable. Worn or broken belt.	Adjust clutch cable. Replace any worn, damaged or malfunctioning parts.
Self propelled drive will not release .	Clutch cable out of adjustment.	Adjust clutch cable. See page 10 Wheel Drive Clutch Adjustment.
Engine is locked, will not pull over.	Debris locked against blade. Engine problem.	Remove debris (see page 5). Contact an engine servicing dealer for engine problems.(see page 10)

22.1 Engine Service and Warranty
Contact your nearest engine manufacturer's authorized servicing dealer.

21 Serial Plate *Record your machine model, serial number and date-of-purchase and where purchased*

1803 S.W. Jefferson
 Lee's Summit,
 MO 64082 / USA
 Tel (816) 524-9666
 Fax (816) 524-6983

106 dB

Model	Serial No.
Unit(Weight)	Engine Power
<input type="text"/> lbs. <input type="text"/> kg	<input type="text"/> kW <input type="text"/> rpm

Purchase Date _____ **Purchased from** _____

WARRANTY 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 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 Quality / Service department at Billy Goat to approve or reject a Warranty claim is final and binding.

Note: To process a Warranty Claim, it is necessary to quote the Model & Serial Number which are printed on the Billy Goat Serial Plate (See owner's manual).

BILLY GOAT INDUSTRIES INC.
 1803 S.W. JEFFERSON STREET LEE'S SUMMIT, MO 64082 / USA
 PHONE: 816-524-9666 FAX: 816-524-6983 www.billygoat.com

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