

2 OPTIONAL ACCESSORIES

VACUUM HOSE KIT
P/N 830255 5" (127mm) x 8'
 (2.4m) For vacuuming in
 hard-to-reach areas.

HOSE COUPLER KIT
P/N 800334
 5" (127mm) For coupling
 multiple hoses together to
 increase vacuuming dis-
 tance.

RIDE ON CHARIOT KIT
P/N 830257
 Reduces operator fatigue.
 Operator stands while riding
 behind vacuum. Maximum
 load 300 lbs.(136 kg)

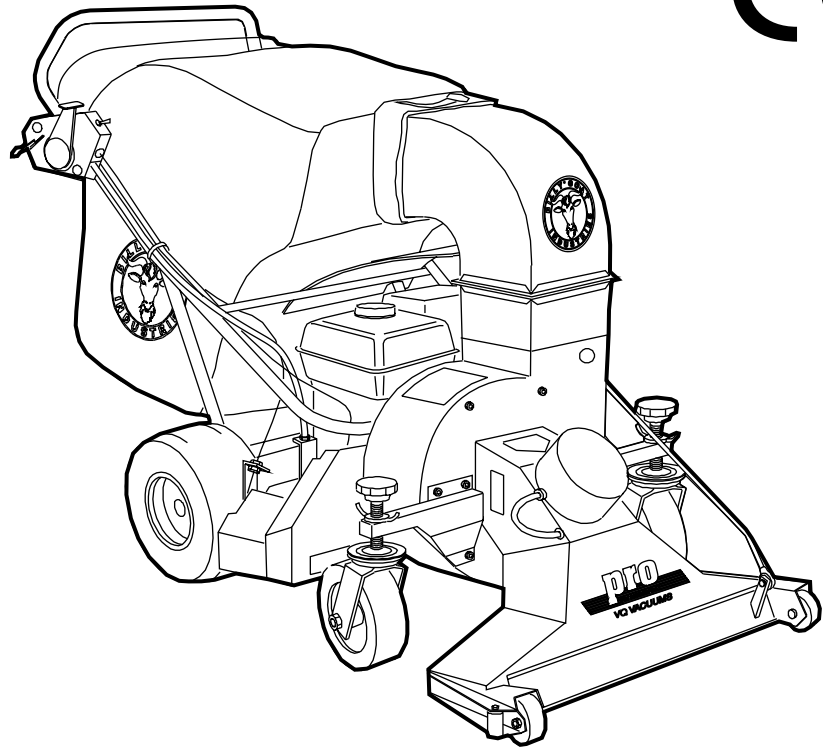
ALTERNATE DEBRIS BAGS

STANDARD DEBRIS BAG
 • **P/N 830320** Standard on
 VQ models. For dusty
 conditions.

• **TURF DEBRIS BAG**
P/N 830282 For use in
 leaves and grass in non-
 dusty conditions.

• **BAG COVER**
P/N 830284 Directs dust
 downward away from
 operator.

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Thank You for Selecting
The Powerful VQ QUIET VACUUM

Operator Owner's Manual

Self Propelled Models

VQ802SPH, VQ1002SP

3

Specifications

	VQ1002SP	VQ802SPH
ENGINE: HP	10 (7.45 kW)	8 (5.97 kW)
ENGINE: TYPE	B & S INTEK	HONDA OHV
ENGINE: FUEL CAP.	4 qt. (3.8 L)	6.4 qt. (6.1 L)
ENGINE: OIL CAP.	0.875 qt. (0.8 L)	1.16 qt. (1.1 L)
WEIGHT: UNIT	282 lb (127.9 kg)	278 lb (126.1 kg)
WEIGHT: SHIPPING	314 lb (142.4 kg)	310 lb (140.6 kg)
ENGINE: WEIGHT	52 lb (23.6 kg)	48.5 lb (22.0 kg)

UNIT SIZE: OVERALL LENGTH: 66" (1.68m) OVERALL WIDTH 32.75" (0.83m) OVERALL HEIGHT 43.5" (1.10m)

(Note: B&S = Briggs & Stratton, Honda = American Honda)

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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



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 & /or damage to unit.

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 2/14/2002 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 88 dBA at operator position



108 dB

MODEL: VQ1002SP

GENERAL CONDITION: Sunny

TEMPERATURE: 50° F (10° C)

WIND SPEED: 15 MPH (24.1 kmh)

WIND DIRECTION: North

HUMIDITY: 32 %

BAROMETRIC PRESSURE: 30.06" Hg (764mm Hg)

8

VIBRATION

VIBRATION LEVEL 1.9 g

Vibration levels at the operators handles were measured in the vertical, lateral, and longitudinal directions using calibrated vibration test equipment. Tests were performed on 07/02/97 under the conditions listed:

GENERAL CONDITION: Sunny

TEMPERATURE: 80° F (26.7° C)

WIND SPEED: 10 MPH (16.1 kmh)

WIND DIRECTION: East

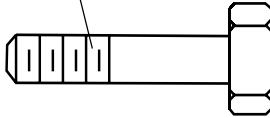

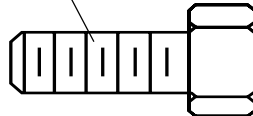

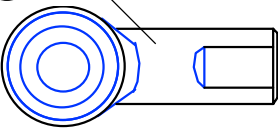
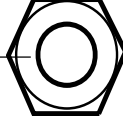
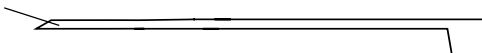
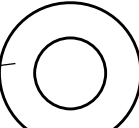

HUMIDITY: 43 %

BAROMETRIC PRESSURE: 29.91" Hg (760mm Hg)

12 PARTS BAG & LITERATURE ASSY P/N 830531

13 CONTROLS

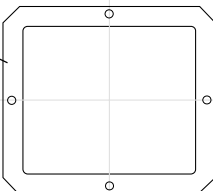
PARTS BAG ASSEMBLY CHECKLIST P/N 830204

<p>113 Screw Cap 1/4-20 x 1 1/4 8041007 Qty. 2</p> 	<p>131 Nut Lock 1/4-20 8160001 Qty. 2</p> 
<p>117 Screw Cap 5/16-18 x 3/4 8041026 Qty. 3</p> 	<p>132 Nut Lock 5/16-18 8160002 Qty. 3</p> 
<p>73 Rod End Ball Joint 5/16-24 400873 Qty. 2</p> 	<p>140 Washer 5/16 SAE 8172008 Qty. 3</p> 
<p>44 900407 TY-Wrap Cable 1" Qty. 4</p> 	<p>143 Washer 1/4 Flat Cut 8171002 Qty. 6</p> 
	<p>138 Nut Regular 5/16-24 (Fine Thread) 8149002 Qty. 2</p> 

Literature Checklist

Owner's Manual	<input type="checkbox"/> Check	Owner's Manual 830016
Literature VQ Accessories	<input type="checkbox"/> Check	Literature VQ Accessories 830209
Warranty Card	<input type="checkbox"/> Check	Warranty Card 400972
EU Declaration of Conformity & EU Distributor List	<input type="checkbox"/> Check	EU Declaration of Conformity & EU Distributor List 830321

35 Gasket Flange Transition VQ P/N 830160 (not to scale)

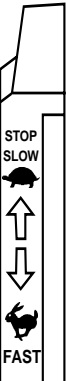


Throttle Control

Stop position

Briggs and HONDA engines have a choke type carburetor that is operated using choke lever on side of engine.

Start position



14 INSTRUCTION LABELS

These labels should be included on your Vacuum. 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..

<p>WARNING EXPLOSIVE FUEL STOP ENGINE AND ALLOW TO COOL BEFORE REFUELING</p> <p>Label Do Not Fill While Engine Is Hot Item 130 Part No. 400268</p>	<p>DANGER KEEP HANDS AND FEET AWAY</p> <p>Label Danger Keep Hands and Feet Away Item 100 Part No. 400424</p>	<p>Debris Bag Label item 50</p>
<p>Label Read Owner's Manual Item No. 181 Part No. 890301</p>	<p>CAUTION READ OWNER'S MANUAL</p> <p>USE PROTECTION</p> <p>BEFORE OPERATING, MAKE SURE:</p> <ul style="list-style-type: none"> - EXHAUST ELBOW IS ATTACHED. - EXHAUST IS DISCHARGING INTO ENCLOSED CONTAINER. - HOSE IS ATTACHED. - ALL GUARDS ARE ATTACHED. - OPERATING INSTRUCTION IS OBTAINED. <p>STOP ENGINE AND ALLOW TO COOL BEFORE REFUELING. KEEP ENGINE CLEAN OF DEBRIS.</p> <p>INSPECT MACHINE BEFORE EACH USE AND REPLACE ANY WORK AND DAMAGED PARTS. PROPERLY SECURE EQUIPMENT BEFORE TRANSPORTING. NEVER SERVICE UNIT WITHOUT DISCONNECTING SPARK PLUG WIRE. USE ONLY A QUALIFIED MECHANIC TO SER VICE THIS MACHINE. ABRASIVE DISKS WILL SHORTEN UNIT LIFE.</p> <p>Label Caution Item 159 Part No. 830138</p>	<p>DANGER</p> <p>Label Danger Flying Material Item 101 Part No. 810736</p>
<p>Label Ear Eye Breathing Item No. 180 Part No. 890254</p>	<p>Label Diverter Instructions Item 99 Part No. 830196</p>	
<p>RELEASE TO DISENGAGE CLUTCH PULL TO ENGAGE CLUTCH</p> <p>Label Clutch VQ Item 106 Part No. 830503</p>	<p>WARNING</p> <p>Label Danger Guards Item 89 Part No. 900327</p>	<p>Label Speed Control Item 150 Part No. 830237</p>
<p>OIL CHAIN EVERY 10 HOURS</p> <p>Label Oil Chain Item 111 Part No. 830502</p>	<p>Label On Off Item 112 Part No. 830276 SP Honda Models Only</p>	

15 ENGINE LABELS

Briggs & Stratton



THIS ENGINE EQUIPPED WITH LOW OIL SENSOR, IF ENGINE WILL NOT START, CHECK OIL LEVEL

WARNING

- Read and follow Operating Instructions before running engine.
- Gasoline is flammable. Allow engine to cool at least 2 minutes before fueling.
- Engines emit carbon monoxide. DO NOT run in enclosed area.

Honda

- READ OWNER'S MANUAL BEFORE OPERATION.
- LIRE LE MANUEL D'UTILISATEUR AVANT USAGE.
- VOR INBETRIEBNAHME UNBEDINGHT BETRIEBUNGSANLEITUNG DURCHLESEN.
- NO UTILIZAR SINANTES NO HABER LEIDO EL MANUAL

HONDA MOTOR CO., LTD. MADE IN JAPAN


OIL ALERT


WHEN OIL LEVEL LOW, ENGINE STOPS IMMEDIATELY.




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, especially in dry and dusty conditions. Optional bag cover directs dust toward ground, away from the operator.

- DO NOT place hands or feet inside nozzle intake opening, near debris outlet or near any moving parts.
- DO NOT start engine without debris bag and quick disconnect connected firmly in place to exhaust outlet.
- DO NOT start or operate machine with debris bag zipper open.

- DO NOT operate during excessive vibration.
- DO NOT remove bag until engine has been turned off and has come to a complete stop.
- DO NOT remove hose kit cap on nozzle until engine has been turned off and has come to a complete stop.
- DO NOT operate machine with hose cap, bag or hose removed.
- DO NOT use this machine for vacuuming **exclusively** sand, dust, fine dirt, rock, glass, string like material, grain, rags, cans, metal, bark or water.
- DO NOT operate this machine on slopes greater than 20%.
- DO NOT pick up any hot or burning debris, or any toxic or explosive material.
- DO NOT allow children to operate this equipment.

11 PACKING CHECKLIST

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

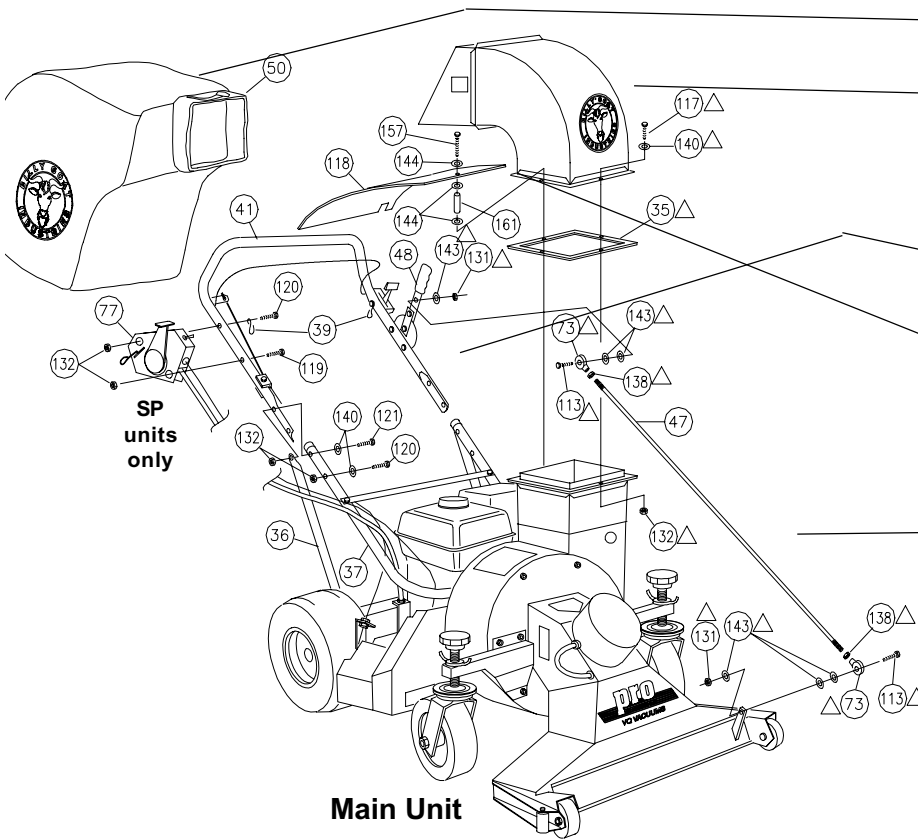


Fig. 5

△ Denotes parts found in Parts Bag Assembly (shown on page 4).

Boxing Checklist

- Check Debris Bag 830170A
- Check Elbow Assembly 830159
- Upper Handle Assy Per Model*
- Check • Briggs Models 830011.
- Check • Honda Models 830012.
- Check Deflector Assembly 830280
- Check Rod Door Nozzle 830286
- Check Parts Bag & Literature Assy 830531
- Per Model*
- Check Briggs & Stratton Intek 10 HP
- Check Honda 8 HP - GX240

Parts Bag & Literature Assy

Engine Manual Per Model

10 ASSEMBLY



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



PUT OIL IN ENGINE BEFORE STARTING.

Your Billy Goat is shipped from the factory in one carton, completely assembled except for the debris bag, deflector assy, upper handle assembly, rod nozzle door, elbow assy.

1. UPPER HANDLE (item 41). Assemble securely to lower handle stubs (item 37) and handle brace (item 36), using screws (item 120 & 121), so that screw heads are on inside of handle. Otherwise, premature bag wear could result.

2. NOZZLE DOOR CONTROLS. Assemble ball joints (item 73), jam nuts (item 138), to both ends of rod (item 47). *Do not fully tighten jam nuts.*

Using screw (item 113), washer (item 143) and lock nut (item 131), connect one end of rod (item 47) to nozzle door mounting. (See Figure 5). Using rod, pull nozzle door open horizontal to ground and hold opposite end of rod next to mounting hole on remote lever (item 48), already assembled onto upper handle. (See Figure 1). If necessary, adjust rod length using threads provided on rod. Adjust rod length to give a minimum of 1.0" (25.4 mm) hand clearance between lever & maximum forward throttle position when door is open. Assemble upper end of rod to lever on handle using same hardware item numbers as shown above. (See figure 1 & 2). Tighten jam nuts.

3. EXHAUST ASSY. Place flange gasket (item 35) onto housing of main unit and assemble **exhaust elbow** to housing using screws (item 117), washers (item 140) and lock nuts (item 132), provided in parts bag. The rear hole mounts deflector (item 118), using screw assembly (already attached to deflector) and lock nut (item 132). Bend opposite end of deflector down until notch in rear of deflector catches onto handle brace (item 36) (see figure 3).

4. DEBRIS BAG (Item 50) (see figure 4).

4.1 Unfold and place mouth of bag over exhaust elbow, completely covering the discharge opening with bag neck straps, placing one on each side of elbow flange.

COMPLETELY TIGHTEN BAG NECK STRAPS

4.2 Attach rear hanger straps of bag to the hanger loops located one on each side of the upper handle.

5. CABLES AND WIRES. Attach to the handle using cable clamps (item 44).

6. Secure engine starter rope into starter rope guide (Item 177) using hardware that is preassembled to the lower handle.

7. INSPECT ALL PARTS & MECHANICAL FASTENERS for security and integrity.

8. Note: See debris bag conditioning under operation section on page 6).

▲ SELF PROPELLED ONLY (before starting unit).

9. CONTROL ASSY (item 77).

Before starting engine, check for neutral (N) by placing the control into neutral and engaging the bail, the unit has been adjusted at the factory and should free-wheel. If not, adjust as needed by placing the control (item 77) and transmission offset link (item 68) into neutral and adjust nuts on control cable (item 75).

10. Check tire pressure and lubricate all grease and oil points (see 17 MAINTENANCE).

11. Connect spark plug wire.

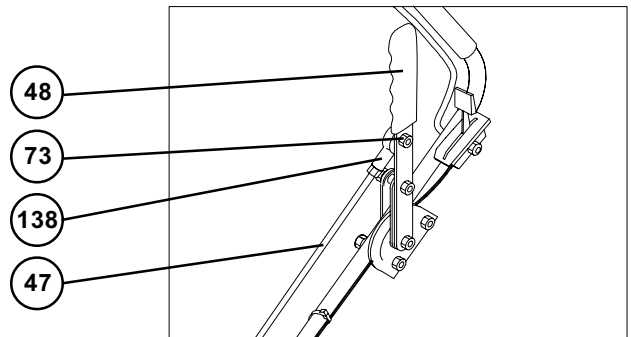


Fig. 1

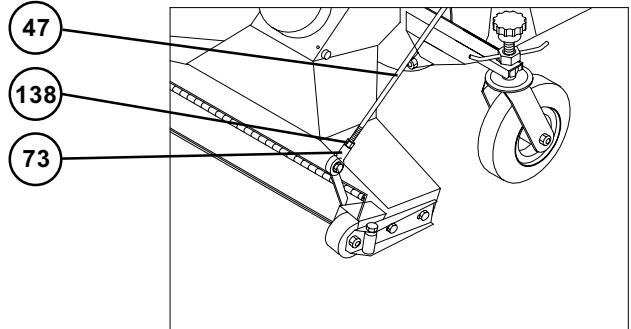


Fig. 2

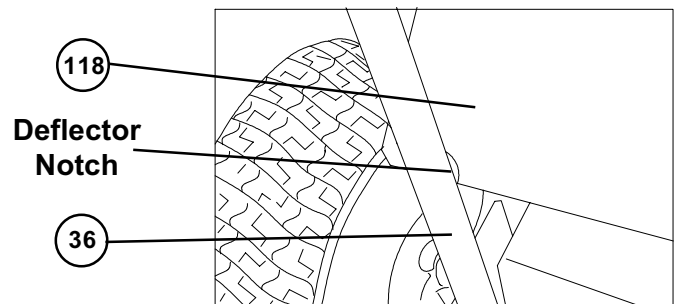


Fig. 3

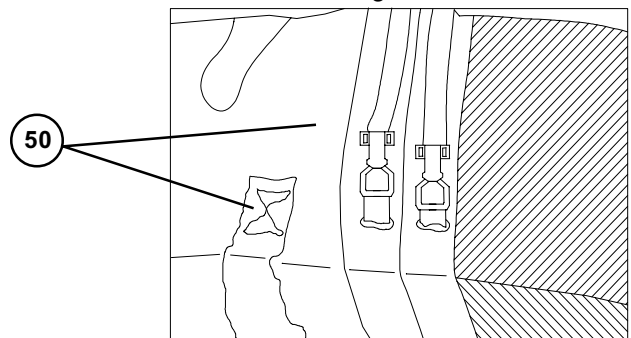


Fig. 4

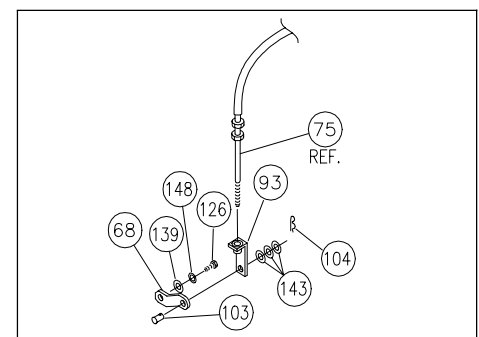


Fig. 6

OPERATION

INTENDED USE: This machine is designed for vacuuming leaves, grass clippings and other types of organic litter.

Debris mixed with cans, bottles and small amounts of sand can be vacuumed; however, it is not this machine's primary purpose. Vacuuming cans, bottles and sand will affect the longevity of your machine.

Self propelled unit is not intended for use with any ground engaging implements [maximum tow bar weight 300 lbs (136 kg)].

Do not operate if excessive vibration occurs. If excessive vibration occurs, shut engine off immediately and check for damaged or worn impeller, loose impeller bolt, loose impeller key, loose engine or lodged foreign objects.

Note: See parts list for proper impeller bolt torque specifications. (See trouble shooting section on page 16).



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.



PUT OIL IN ENGINE BEFORE STARTING.

16.1

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 left side of handle. Under normal conditions operate at minimum throttle to accomplish your current cleaning task. For Honda model, the stop switch is located on the switch panel on the engine & for SP Honda models only, on remote shift control panel.

NOTE: Before starting, check that all switches and fuel valves are on.

FUEL VALVE: Move fuel shutoff valve to "ON" position.

CHOKE: Located at lower rear area of carburetor bowl. Choke engine before starting when engine is cold.

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

IF YOUR UNIT FAILS TO START:

See Troubleshooting on page 16.

16.2

VACUUMING OPERATION

VACUUM NOZZLE HEIGHT ADJUSTMENT: Is adjusted by unlocking wing nut (item 32) and turning caster knob. Turning the knob clockwise increases height. Be sure the nozzle height is level (left to right) before tightening caster wing nuts.

Adjust nozzle height according to surface conditions and debris size; For vacuuming on flat surfaces, set nozzle 1/2" (12.7 mm) to 5/8" (15.8 mm) above ground; Higher for uneven terrain and turf. **Note: The nozzle side bogie wheels should be at least 1/8" (3.2mm) above the ground, or maneuverability will be reduced.**

FOR MAXIMUM PICKUP: Adjust nozzle close to debris, but without blocking airflow into the nozzle.

NOTE: Never bury nozzle into debris.



CLEARING A CLOGGED NOZZLE



& EXHAUST: Turn engine off and wait for impeller to stop completely and disconnect spark plug wire. Wearing durable gloves, remove clog. **Danger**, the clog may contain sharp materials. Reconnect spark plug wire.

NOZZLE GOBBLER DOOR.

Large debris can be vacuumed without readjusting nozzle height by temporarily opening the remote **Nozzle Gobbler Door**. For maximum pickup of small debris, the gobbler door must be down, flush with front face of nozzle.

16.3

DEBRIS BAG

Debris bags are normal replaceable wear items.



Note: Frequently empty debris to prevent bag overloading with more weight than you can lift.

An optional bag and dust cover is available for use where debris will be vacuumed in dusty conditions (**See Optional Accessories shown on page 1.**)

DO NOT place bag on or near hot surface, such as engine. Run engine at 1/2 throttle for first 1/2 hour to condition new bag. Your new bag requires a break-in period to condition the pores of the material against premature blockage. The entire bag surface serves as a filter, and must be able to breath to have good vacuum performance.

Be sure engine has come to a complete stop before removing or emptying bag.

This vacuum is designed for picking up trash, organic material and other similar debris (see Safety Warnings page 2-4). However, many vacuums are used where dust is mixed with trash. Your unit can intermittently vacuum in dusty areas. Dust is the greatest cause of lost vacuum performance. However, following these rules will help maintain your machine's ability to vacuum in dusty conditions:

- Run machine at idle to quarter throttle.
- The debris bag must be cleaned more frequently. A vacuum with a clean, pillow soft bag will have good pickup performance. One with a dirty, tight bag will have poor pickup performance. If dirty, empty debris and vigorously shake bag free of dust.
- Machine or pressure-wash debris bag if normal cleaning does not fully clean bag. Bag should be thoroughly dry before use.

Having one or more spare debris bags is a good way to reduce down time while dirty bags are being cleaned.

- DO NOT** leave debris in bag while in storage.

16.6

PROPULSION

PROPULSION: VQ self-propelled vacuums are equipped with 5 forward gears, neutral and reverse. With the engine running, the bail in released position and brake in on position, select desired drive gear. Pull bail against handle to engage drive (see figure 7). Smoothly engage the bail. Parking brake engages when the bail is released. To freewheel, set transmission control in neutral and pull back on bail.

Use good judgement when operating the self-propelled drive. Fifth gear is faster than walking speed and should normally be used only for moving quickly from place-to-place.

Using neutral, on level terrain is advisable when maneuvering in tight areas. This increases operator control, and can prevent bumping into nearby objects.

Do not force-shift gears of transmission. To assist gear meshing, it may be necessary to partially engage bail while shifting. To stop machine, release operator's bail (this engages the parking brake).

For reverse - Set Throttle to Idle.

With operator's bail released, pull shift lever back and depress wire stop (item 90) to continue to the reverse position. Then smoothly pull operator's bail against handle. Release bail to stop (see figure 7).

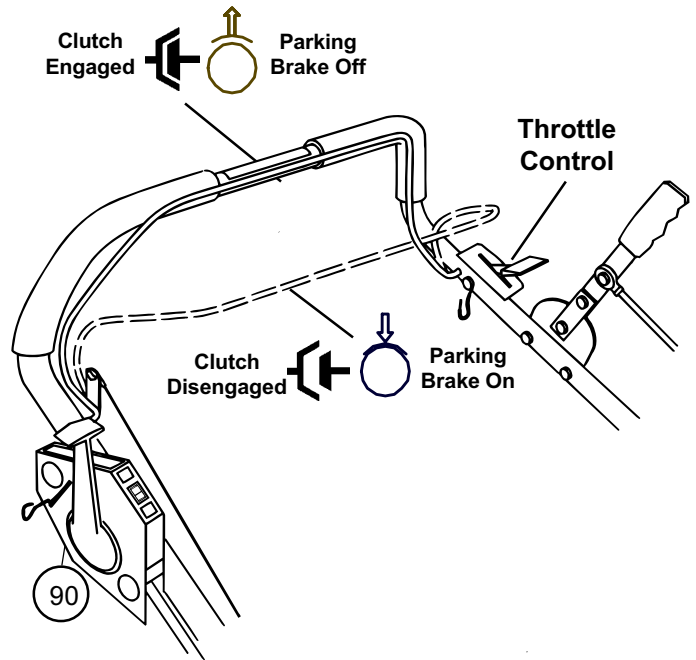

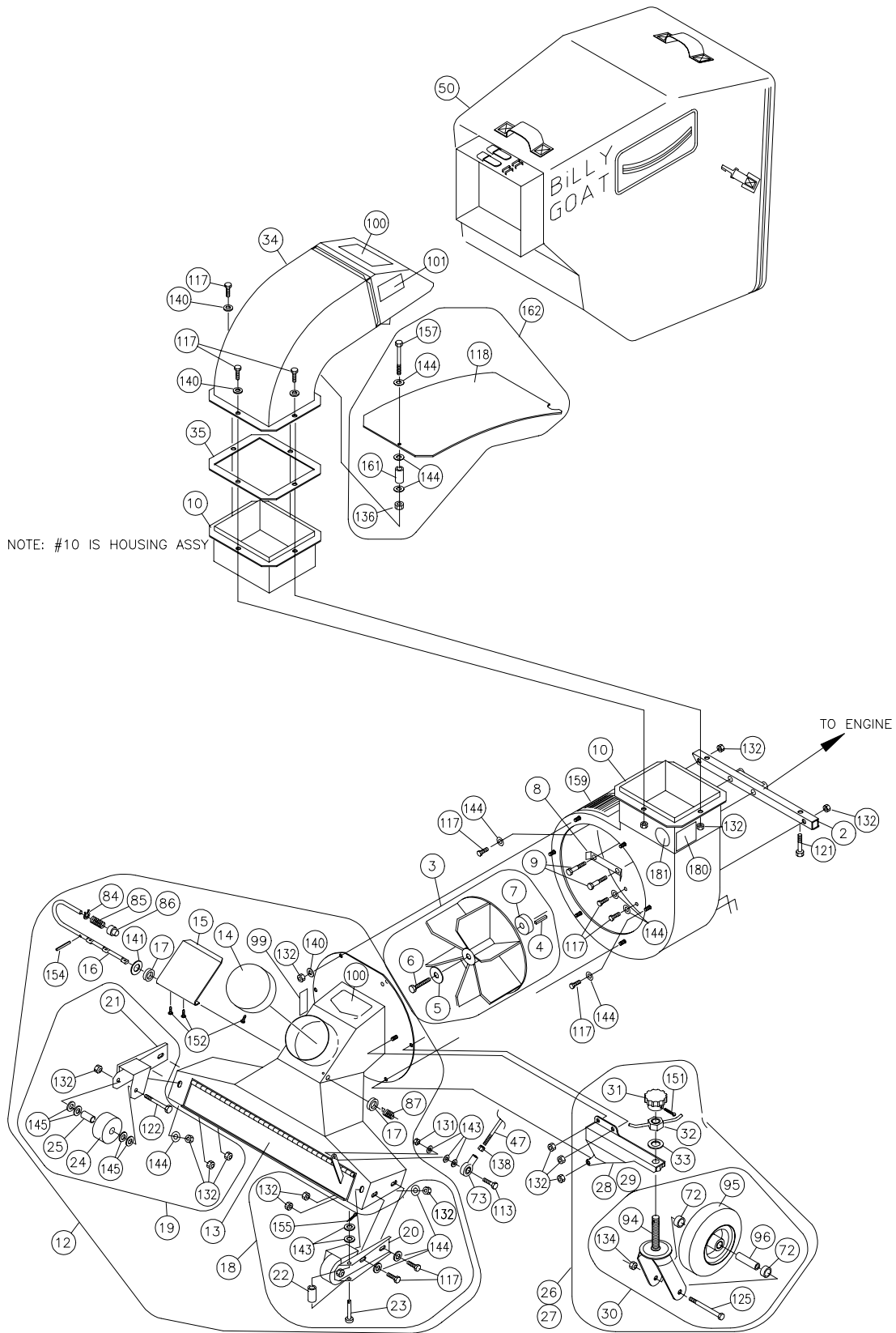


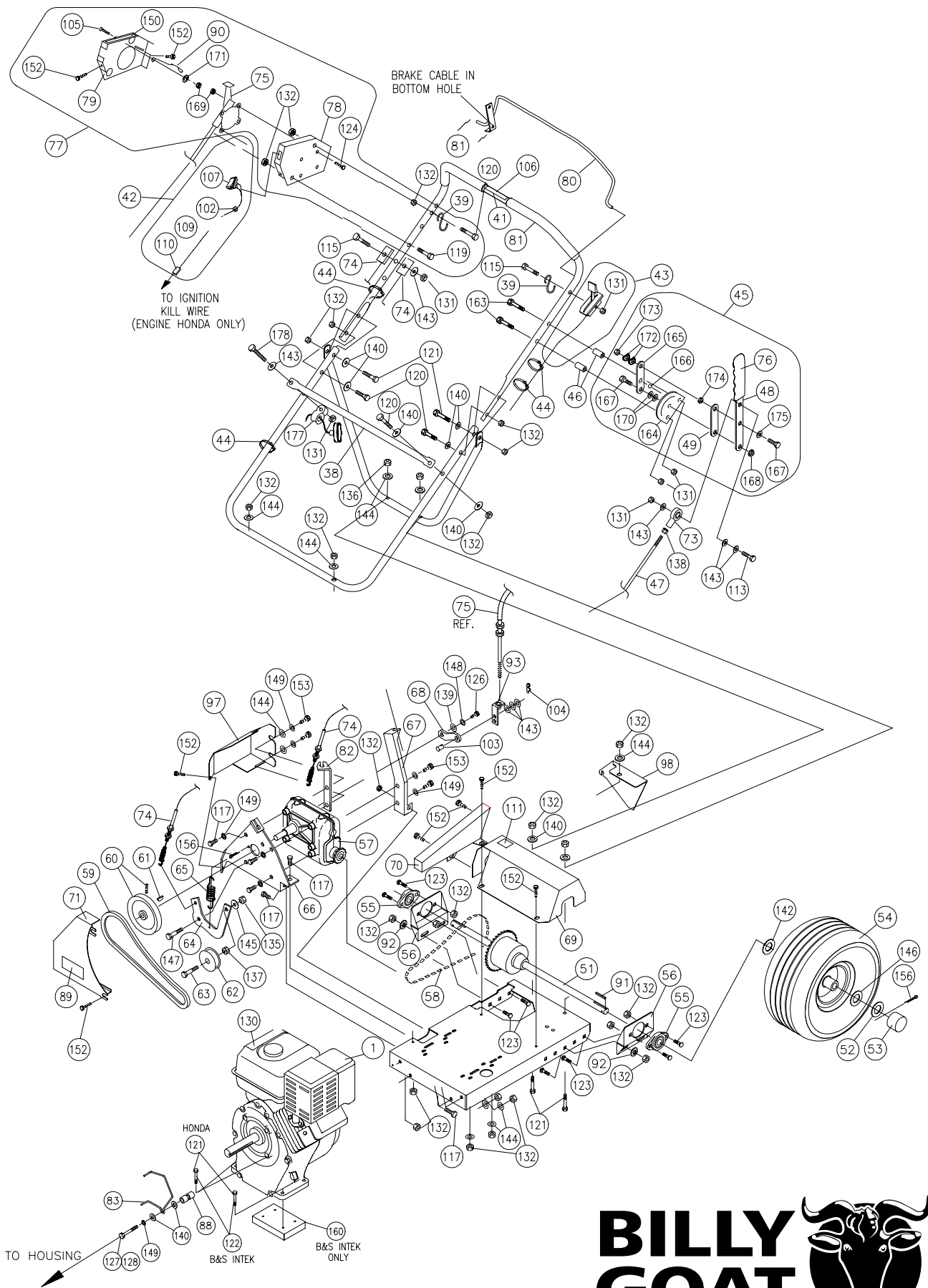
Fig. 7

 DRIVE GEAR SELECTION @ (3400 RPM)							
Position	Rev.	N	1	2	3	4	5
MPH	3.0	0	1.9	2.7	3.4	4.0	5.1
KPH	4.8	0	3.1	4.4	5.5	6.5	8.3



18 PARTS DRAWING

VQ802SPH, VQ1002SP



PARTS
LIST

ITEM	DESCRIPTION	VQ1002SP		VQ802SPH	
		PART NO.	QTY	PART NO.	QTY
1	ENGINE 10 HP INTEK B&S	430352	1	-	-
	ENGINE 8 HP HONDA	-	-	400937	1
2	ANGLE MOUNT HDLE WA	830126	1	830126	1
3	IMPELLER ASSY VQ (INCLUDES ITEM 4,5,6,7)	830244	1	830244	1
4	KEY 0.25 SQ. X 2.75"	9201125	1	9201125	1
5	WASHER LOCK 7/16 TWISTED TOOTH	850132	1	850132	1
6	SCREW CAP 7/16 NF x 2 1/4 GR8 TORQ 60 FT LBS (81.4 N.m)	830114	1	830114	1
7	SPACER ENGINE	830113	1	830113	1
8	CLIP LOCK	400591	1	400591	1
9	SCREW CAP 5/16 NF x 2 1/2 GRD. 8	830136	2	830136	2
10	HOUSING ASSEMBLY W/LABELS VQ	830153	1	830153	1
11	FRAME WA VQ	830171	1	830171	1
12	NOZZLE ASSEMBLY VQ	830010	1	830010	1
13	NOZZLE ASSY W/LABELS	830181	1	830181	1
14	CAP PLUG VQ	830232	1	830232	1
15	PLATE DOOR NOZZLE HOSE	830193	1	830193	1
16	ROD DIVERter VQ	830194	1	830194	1
17	GROMMET FLG. 1/2 MOLDED	830176	2	830176	2
18	BRKT BOGIE ASSY LH	830197	1	830197	1
19	BRKT BOGIE ASSY RH	830198	1	830198	1
20	BRKT BOGIE WA LH	830199	1	830199	1
21	BRKT BOGIE WA RH	830200	1	830200	1
22	ROLLER GUIDE	850204	2	850204	2
23	PIN ROLLER	850205	2	850205	2
24	WHEEL BOGIE 3"	850149	2	850149	2
25	SPACER 5/16 X 1 5/8	850150-03	2	850150-03	2
26	CASTER & BRKT LH ASSY SEMI-PNEU VQ	830540	1	830540	1
27	CASTER & BRKT RH ASSY SEMI-PNEUVQ	830541	1	830541	1
28	BRKT LH WA 8" CASTER	830147	1	830147	1
29	BRKT RH WA 8" CASTER	830148	1	830148	1
30	CASTER ASSY 8" SEMI-PNEU 3/4 NC (INCL ITEM 33 (4), 94, 95, 96, 125, 134)	830539	2	830539	2
31	KNOB HAND	850154	2	850154	2
32	NUT WING WA	800227	2	800227	2
33	WASHER 3/4 NYLON	800109	2	800109	2
34	ELBOW ASSY W/LABELS VQ	830159	1	830159	1
35	GASKET FLANGE TRANSITION VQ	830160	1	830160	1
36	HANDLE BRACE REAR	830162	1	830162	1
37	HANDLE LOWER VQ	830161	1	830161	1
38	TUBE HANDLE BAG SUPPORT	830163	1	830163	1
39	ROD BAG LOOP	800178	2	800178	2
40	CAP TUBE	800392	2	800392	2
41	HANDLE ASSY UPPER W/GRIP (39, 45, 46, 81, 114, 115, 131, 163)	890295	1	890295	1
42	SWITCH & WIRE ASSY (ITEMS 107, 109, 110)	-	-	830242	1
43	CONTROL THROTTLE ASSY VQ SERVICE	900514-00	1	830132	1
44	CLAMP CABLE 1"	900813	4	900813	4
45	DOOR NOZZLE FRICTION ASSY	830288	1	830288	1
46	SPACER	850198	2	850198	2
47	ROD DOOR NOZZLE	830286	1	830286	1
48	BAR LEVER DOOR	850189	1	850189	1
49	PLATE FRICTION LIFT	850191	1	850191	1
50	BAG ASSY VQ / TURF BAG 830282	830320	1	830320	1
51	AXLE REAR WA PUSH	-	-	-	-
	DIFFERENTIAL ASSY / SPROCK. ONLY 830021	830014	1	830014	1
52	WASHER HUB CAP	850237	2	850237	2
53	CAP HUB	900486	2	900486	2
54	WHEEL 13" x 6.5" PNEU. SP	830177	2	830177	2
55	BRG ASSY VQSP	850232	2	850232	2
56	BRKT MOUNT BEARING	830530	2	830530	2
57	TRANSMISSION 5 SPEED 1 REV W/BRAKE (TECUMSEH)	830179	1	830179	1
58	CHAIN #41 x 68P VQSP	830020	1	830020	1
59	BELT "V" 4L x 34" OUTSIDE LG.	830223	1	830223	1
60	PULLEY 5.0 DIA. A SEC 0.625 ID	830180	1	830180	1
61	KEY HIPRO 3/16 X 3/4	850234	1	850234	1
62	PULLEY IDLER	800260	1	800260	1
63	BOLT IDLER	800888	1	800888	1
64	ARM IDLER WA VQ	830527	1	830527	1
65	SPRING	400217	1	400217	1

19 PARTS LIST

Continued

ITEM	DESCRIPTION	VQ1002SP		VQ802SPH	
		PART NO.	QTY	PART NO.	QTY
66	BRKT TRANSMISSION WA VQ	830222	1	830222	1
67	BRKT TRANSMISSION REAR WELD LONG	830520	1	830520	1
68	BAR LINK SHIFT OFFSET VQ	830508	1	830508	1
69	GUARD DIFFERENTIAL VQ WELD	830253	1	830253	1
70	GUARD CHAIN VQ WELD	830254	1	830254	1
71	GUARD PULLEY W/LABEL	830252	1	830252	1
72	SPACER 3/4" x 0.421"	830537	4	830537	4
73	ROD END BALL JOINT 5/16 NF	400873	2	400873	2
74	CABLE CLUTCH ASSY	830210	2	830210	2
75	CONTROL SHIFT	830504	1	830504	1
76	GRIP	850190	1	850190	1
77	CONTROL ASSY VQSP	830518	1	830519	1
78	BRACKET CONTROL SHIFT	830505	1	830505	1
79	COVER CONTROL SHIFT	830506	1	830506	1
80	ROD BAIL CLUTCH	830235	1	830235	1
81	GRIP HANDLE 1" x 16"	830166	2	830166	2
82	BAR BRAKE CABLE MOUNT	830225	1	830225	1
83	WIRE BELT GUIDE VQ	830133	1	830133	1
84	GRIP RING	400340	1	400340	1
85	SPRING COMPRESSION	400332	1	400332	1
86	SPACER	400330	1	400330	1
87	SPRING DOOR	890142	1	890142	1
88	SPACER			830134	2
89	LABEL DANGER GUARDS	900327	1	900327	1
90	WIRE STOP GEAR SELECTOR	830507	1	830507	1
91	KEY SQ 3/16 X 1 3/4	9201084	2	9201084	2
92	WASHER 5/16 TWISTED TOOTH	800177	4	800177	4
93	CLIP ASSY GEAR SELECTOR	830512	1	830512	1
94	FORK CASTER 8" 3/4 NC	830142	2	830142	2
95	WHEEL & TIRE ASSY 8",3/4" BRG. (SEMI- PNEU)	830538	2	830538	2
96	SPACER SPANNER	830144	2	830144	2
97	GUARD BRAKE VQ	830227	1	830227	1
98	GUARD BELT VQ	830228	1	830228	1
99	LABEL DIVERTER INSTRUCTIONS	830196	1	830196	1
100	LABEL DANGER	400424	2	400424	2
101	LABEL DANGER FLYING MATERIAL	810736	2	810736	2
102	GROMMETT	-	-	830515	1
103	PIN CLEVIS	830513	1	830513	1
104	PIN HAIR	900471	1	900471	1
105	SCREW MACH FLAT HD PHILLIP #10-24 X 1/2	830514	1	830514	1
106	LABEL CLUTCH VQ	830503	1	830503	1
107	SWITCH ROCKER	-	-	500281	1
108	CABLE ASSY SWITCH GROUND			400786	1
109	CABLE ASSY SWITCH	-	-	830278	1
110	CONNECTOR TAP	-	-	810673	1
111	LABEL OIL	830502	1	830502	1
112	LABEL ON OFF (CUT TO MAKE)	-	-	830276	1
113	SCREW CAP 1/4-20 x 1 1/4"	*8041007	2	*8041007	2
114					
115	SCREW CAP 1/4-20 x 2"	*8041010	2	*8041010	2
116	SCREW CAP MACH 10-18X3/4 WF ZP	*8059136	2	*8059136	2
117	SCREW CAP 5/16-18 x 3/4"	*8041026	14	*8041026	14
118	PLATE DEBRIS DEFLECTOR	830279	1	830279	1
119	SCREW CAP 5/16-18 x 1 1/4"	*8041029	3	*8041029	3
120	SCREW CAP 5/16-18 x 1 1/2"	*8041030	2	*8041030	2
121	SCREW CAP 5/16-18 x 1 3/4"	*8041031	8	*8041031	12
122	SCREW CAP 5/16-18 x 2 1/2"	*8041034	6	*8041034	2
123	BOLT CARRIAGE 5/16-18 X 3/4	*8024039	8	*8024039	8
124	SCREW #10-24NC X 5/8 HEX	*8059135	4	*8059135	4
125	SCREW CAP 1/2-10 x 4 1/2"	*8041107	2	*8041107	2
126	SCREW CAP 1/4 NF x 1/2 GR. 5"	850408	1	850408	1
127	SCREW CAP 5/16 NF x 3/4"	*8042026	1	-	-
128	SCREW CAP 5/16 NF x 1 1/2"	-	-	*8042030	1
129					
130	LABEL DO NOT FILL WHEN ENGINE IS HOT	400268	1	400268	1
131	NUT LOCK 1/4 NC	*8160001	8	*8160001	8
132	NUT LOCK 5/16 NC	*8160002	49	*8160002	49
133	NUT LOCK 3/8 NC	*8160003	4	*8160003	4
134	NUT LOCK 1/2 NC	*8160005	2	*8160005	2
135	NUT LOCK 3/8 NC THIN HT.	*8161042	1	*8161042	1

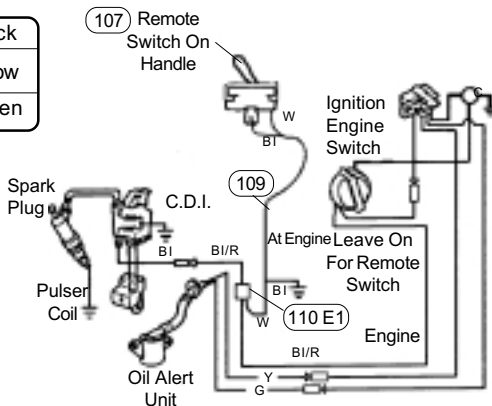
19 PARTS LIST
Continued

ITEM	DESCRIPTION	VQ1002SP PART NO.	QTY	VQ802SPH PART NO.	QTY
138	NUT REG. 5/16 NF	*8149002	2	*8149002	2
139	WASHER SAE 1/4	*8172007	1	*8172007	1
140	WASHER SAE 5/16	*8172008	19	*8172008	19
141	WASHER SAE 3/8	*8172009	1	*8172009	1
142	WASHER SAE 3/4	*8172015	2	*8172015	2
143	WASHER FLAT CUT 1/4	*8171002	18	*8171002	18
144	WASHER FLAT CUT 5/16	*8171003	31	*8171003	31
145	WASHER FLAT CUT 3/8	*8171004	9	*8171004	9
146	WASHER 3/4 (0.765 x 1.25 x 0.06)	850238	2	850238	2
147	BOLT SHOULDER 3/8 X 1/2	830528	1	830528	1
148	WASHER LOCK 1/4	*8177010	1	*8177010	1
149	WASHER LOCK 5/16	*8177011	8	*8177011	9
150	LABEL SPEED CONTROL (CUT TO MAKE)	830237	1	830237	1
151	SCREW MACH #10-24 x 2"	*8059143	2	*8059143	2
152	SCREW SHT. MTL 1/4 AB x 3/4	*8122082	11	*8122082	11
153	SCREW SELF-TAP 5/16 NC x 3/4 HEX	*8123128	4	*8123128	4
154	PIN ROLL 1/8 x 3/4	*8195100	1	*8195100	1
155	PIN COTTER 3/32 x 3/4	*8197016	2	*8197016	2
156	PIN COTTER 1/8 x 1"	*8197031	3	*8197031	3
157	SCREW CAP 5/16-18 x 2 3/4	*8041035	5	*8041035	1
158	LOOSE PARTS BAG ASSY VQ	830204	1	830204	1
159	LABEL DANGER INSTRUCTIONS	830138	1	830138	1
160	SPACER ENGINE INTEK	430353	1	-	-
161	SPACER	900724	1	900724	1
162	DEFLECTOR DEBRIS ASSY	830280	1	830280	1
163	SCREW CAP 1/4-20 x 2"	*8041010	2	*8041010	2
164	PLATE QUAD LIFT	850192	1	850192	1
165	PLATE CLAMP LIFT	850193	1	850193	1
166	BALL 1/4"	850194	1	850194	1
167	SCREW CAP 1/4-28 x 1"	*8042006	2	*8042006	2
168	NUT 1/4-20 WASHER FACE	900455	1	900455	1
169	NUT LOCK #10-24 NC LT	*8164005	5	*8164005	5
170	WASHER 1/4 FLAT CUT	*8171002	2	*8171002	2
171	WASHER #10 FLAT SAE	*8172005	1	*8172005	1
172	WASHER - BELVILLE 1/4"	850207	2	850207	2
173	NUT LOCK 1/4-28	*8161001	1	*8161001	1
174	NUT JAM 1/4-28	*8150001	1	*8150001	1
175	WASHER LOCK - EXT 1/4	*8181007	1	*8181007	1
176					
177	GUIDE STARTER ROPE	830533	2	830533	2
178	SCREW CAP 1/4 - 20 x 2 1/4	*8041011	1	*8041011	1
179					
180	LABEL EAR EYE BREATHING	890254	1	890254	1
181	LABEL READ OWNER'S MANUAL	890301	1	890301	1

19 Switch & Wire Assembly Parts List (Honda SP only)			
107	Switch Toggle 6A/125V	830239	1
108	Cable Ass'y Switch Ground	400278	1
109	Cable Ass'y Switch VQ	830278	1
110	Connector-Tap in Squeeze	810673	1
E-1	Wire to Engine Stop Switch	----	--

* Denotes standard hardware item that may be purchased locally.

B1	Black
Y	Yellow
G	Green



16.4

HANDLING & TRANSPORTING:

Do not lift by hand. Use loading ramps or other mechanical assistance. Secure in place during transport.

16.5

STORAGE

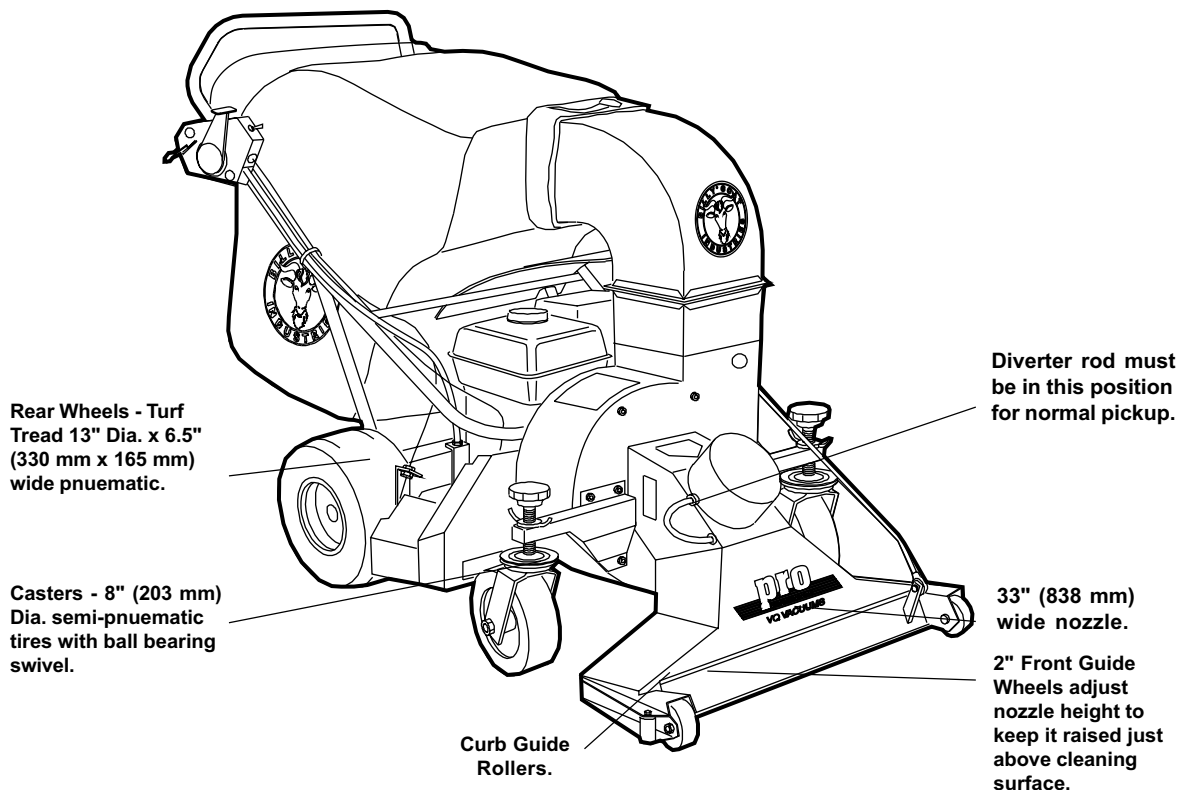
⚠ Never store engine indoors or in enclosed poorly ventilated areas with fuel in tank, where fuel fumes may reach an open flame, spark or pilot light, as on a furnace, water heater, clothes dryer or other gas appliance.

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.

⚠ See **16.3 DEBRIS BAG** on page 6.





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.



ENGINE: See engine manufacturer operator's instructions.

DEBRIS BAG: See page 6.



RECONNECT SPARK PLUG WIRE, GUARDS, BAG, CAPS AND / OR HOSE BEFORE STARTING ENGINE.

Inspect machine for loose bolts before starting engine.

Maximum Vacuum: See Maximum Pickup found in Operation section on page 6. The debris Bag can be washed.



Lubrication: Using S.A.E. 30 weight oil or equivalent. See maintenance schedule.

Grease: Wheels, Casters, and Rear Axle Bearings.

Tire air pressure: Check at regular intervals & maintain: Rear SP 13" tires at **14 psi**. (9.8 kPa).

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. If you can not locate a servicing dealer in your area you can contact the manufacturers national service organization.

To reach:

Briggs & Stratton: 800-233-3723

American Honda: 800-426-7701

17.1

IMPELLER REMOVAL

1. Disconnect spark plug wire.
2. Disconnect remote control rod from nozzle gobble door.
3. Elevate front of machine using stable support blocks between housing and ground so that front caster wheels are not touching ground.
4. Remove nozzle and caster wheel brackets from the housing.
5. Remove both the top and side belt guards between housing and transmission.
6. Loosen wire belt guide located on front face of engine on left side of unit between housing and engine.
7. Slide belt toward engine, out of belt groove in impeller hub drive pulley.
8. Remove impeller bolt and lock washer.
9. If impeller slides off freely, proceed to (step 12). **(Do not drop impeller).**
10. If impeller does not slide off crankshaft, place two crowbars between impeller and housing on opposite sides. Pry impeller away from engine until it loosens. *Using a penetrating oil can help loosen a stuck impeller.*
11. If the impeller cannot be loosened, obtain a 1" (25.4mm) longer bolt of the same diameter and thread type as the impeller bolt. Invert engine and impeller and support engine above ground to prevent recoil damage. Thread longer bolt by hand into the crankshaft until bolt bottoms. Using a suitable gear or wheel puller against the bolt head and the impeller back-plate (near the blades), remove impeller from shaft.
12. Slide impeller off of crank shaft and remove impeller from housing.
13. Reinstall new impeller and all applicable spacers, new impeller bolt and lockwasher in reverse order of removal. *(See the parts drawing on pages 8 and 9 for parts breakdown and parts list on page 10 for proper impeller bolt torque specifications and proper spacer for Honda engine only.)*
14. When impeller is installed, slide belt into drive pulley and adjust wire belt guide as shown on page 15 (see fig. 10 & 11).
15. Reattach nozzle and both caster brackets in reverse order of removal.
16. Check operator's bail to ensure that it operates properly. If not, see drive adjustments on page 15). *Note: Drive must completely disengage with bail released and must engage when bail is depressed within 1.0" (25.4mm) of the operator's handle.*
17. Reinstall all belt guards.
18. Reconnect spark plug wire.

17.3

DRIVE

Chains and Belts are normal replaceable wear items. A new chain should not be used on worn sprockets. Sprockets should be replaced when replacing chains.

MAINTENANCE

Brake Adjustment: As parking brake wears, the brake discs may eventually require adjustment. To adjust belt, remove brake guard and tighten mounting nut that connects brake arm onto transmission. Adjust cable as required. Unit must freewheel with brake off. **DO NOT OVER ADJUST.**

CHAIN ADJUSTMENTS (see figure 9)

1. Remove guards.
2. Inspect chain and sprockets for wear, lubrication and tension. Replace if badly worn or damaged.

CHAIN TENSION AND ALIGNMENT (see figure 9)

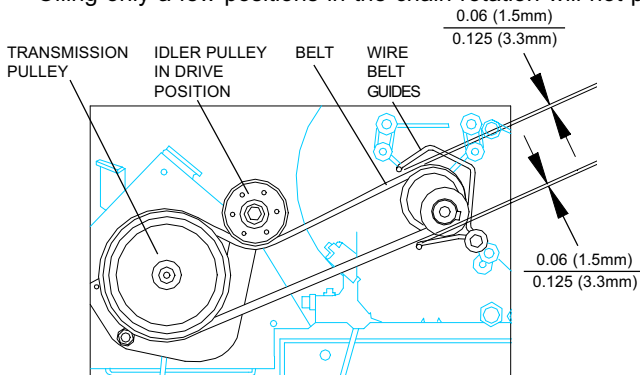
3. Install new chain, locating keeper clip of chain connecting link on inboard side of chain.
4. Reinstall bearings onto axle and assemble bearing mounting screws. Leave screws only partially tightened.
5. Push bearings outward against each rear wheel, fully spreading wheels to both ends of axle.
6. With bearings pressed fully outward against wheels, keeping axle square with engine base, align and tension chain as shown below and slightly tighten front bearing screws first. Then slightly tighten rear bearings. (Note: Tightening front bearing screws first, helps keep chain tight.)
7. Recheck chain alignment, tension and axle squareness. If ok, fully tighten front and then rear bearing screws. Repeat adjustment steps if necessary.
8. Check chain tension and roll wheels to be sure there are no excessively tight areas in the chain. Readjust if necessary. A slightly loose chain is better than an over tightened one.
9. Reinstall chain guard and differential guard.
10. Reinstall spark plug wire.

17.2

Maintenance Schedule		Follow these hourly maintenance intervals.		
More frequent service is required for extremely dusty conditions.				
Maintenance Operation	Every Use	Every 5 hrs or (Daily)	Every 25 hours	Every 50 hours
Engine (See Engine Manual)				
Check for excessive vibration		●		
Clean Debris Bag	●			
Check bag strap tightness	●			
Inspect for loose parts		●		
Inspect for damaged parts		●		
Check tire pressure (p. 15)			●	
Oil control pivot points			●	
Lubricate Drive Chain			●	
Check belt adjustment (p.15)				●
Grease wheel zerks				●

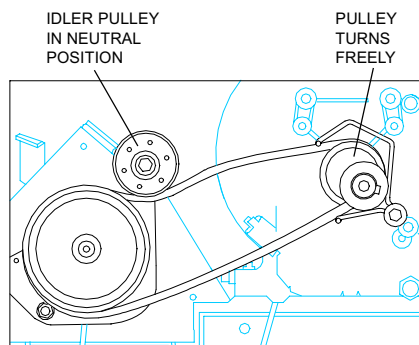
Belt Adjustment: As V-belt wears, adjustments may be required. Adjust by tightening or by loosening clutch cable nut as required. When replacing the belt, the impeller must be removed. See instructions on page 14. See parts list for impeller bolt torque specifications. See figure 10 & 11 for proper belt tension adjustment. If cable cannot be adjusted to provide proper belt tension then belt must be replaced. **DO NOT OVER ADJUST.**

Chain Lubrication: With machine not running, oil chain using general S.A.E. 30 weight oil every 25 hours or as needed. Chain oiling hole is located in rear axle cover. Note: Be sure that entire length of chain is properly oiled. Oiling only a few positions in the chain rotation will not properly oil the chain.



ENGAGED DRIVE POSITION: WIRE BELT GUIDES SHOULD CLEAR BELT BY 0.06" - 0.125" (1.5mm - 3.3mm)

Fig. 10




NEUTRAL POSITION


Fig. 11

Problem	Possible Cause	Solution
Will not vacuum or has poor vacuum performance.	Dirty debris bag. Nozzle height set too high or too low. Nozzle gobble door not in correct position. Hose kit door not in correct position. Clogged nozzle or exhaust elbow. Excessive quantity of debris.	Clean debris bag. Shake bag clean or wash. Adjust nozzle height with caster adjustment. Adjust nozzle gobble and hose kit door position. Unclog nozzle or exhaust (see page 6). Allow air to feed with debris.
Machine is difficult to maneuver.	Low tire air pressure. Nozzle too close to ground.	Inflate rear tires to correct pressure. (See tire pressures on page 15.) Nozzle Bogie Wheels touching or too close to ground.
Abnormal vibration	Loose or out of balance impeller or loose engine.	Check impeller and replace if required. Check Engine.
Engine will not start	Stop switches off. Choke lever not in on position. Out of gasoline. Low oil (Honda only). Bad or old gasoline. Spark Plug wire disconnected. Dirty air cleaner.	Check switches, choke, gasoline and oil. Or contact qualified service person. Check for spark with an approved tester. Clean or replace air cleaner.
Engine is locked, will not pull over.	Debris locked inside impeller. Engine problem.	See page 6, Clearing a clogged nozzle and exhaust. Contact an engine servicing dealer for engine problems.
No self-propelling	Transmission not in gear. Operator's bail not engaging belt or out of adjustment. Worn out or broken belt. Broken or mispositioned belt.	Check transmission gear selection. Check bail cable adjustment and belt and chain (See page 15).
Self propelled drive will not release	Sticking belt idler arm. Belt fingers out of adjustment, bent or broken.	Check idler. Idler arm mounting screw may be too tight or too loose. Check wire belt guide adjustment. Replace if broken. (see fig. 10 & 11 adjustment on page 15).
Noisy or broken chain	No chain lubrication. Chain out of alignment or over tensioned.	See Chain Adjustments on page 15.


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. Jefferson P.O. Box 308
 Lee's Summit, MO 64063 / USA
 (816) 524-9666 FAX (816) 524-6983



108 dB

Model

Serial No

Unit (weight)

 lbs kg

Engine Power

 kW @ min⁻¹


Purchase Date _____ **Purchased from** _____

22 WARRANTY PROCEDURE

Please fill in the WARRANTY CARD and send the upper part to Billy Goat. The WARRANTY terms are stated on the lower part which remains with the user. Whenever a Billy Goat Machine is faulty due to a defect in material and / or workmanship, the owner should make a warranty claim as follows:

- The Machine should be taken to the dealer from whom it was purchased or to an authorized Billy Goat dealer.
- The owner should present the remaining half of the Warranty Registration Card, or, if this is not available, the invoice or receipt.
- The Warranty Claim will be filled in by the authorized Billy Goat Dealer, who will send it with the faulty part to Billy Goat headquarters.
- The Quality / Service department at Billy Goat headquarters will study the claim and parts and will notify their conclusions.
- The decision by the Quality / Service department at Billy Goat headquarters 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 who are printed on the Billy Goat Serial Plate.



BILLY GOAT INDUSTRIES INC.
 1803 S.W. JEFFERSON STREET
 LEE'S SUMMIT, MO 64082-2312 / USA
 PHONE: 816-524-9666 FAX: 816-524-6983 www.billygoat.com