QVSP Operator's Manual

Image shown with optional accessories

QVSPEU VACUUM Operator's Manual

QV550VSP

Beginning Serial #: 051522001

Accessories

ADJUSTABLE HANDLE	VACUUM HOSE KIT
Allows for the handle to be raised or lowered for comfort.	5" (127mm) x 10' (3m) collapsible hose for vacuuming in hard-to-reach areas
P/N 831614	**P/N 831018**

Debris bags and Filter

(INCLUDED)

DEBRIS BAG SKIRT	STANDARD DEBRIS BAG	HOOD FILTER	DEBRIS AND DUST SOCK
Directs dust away from the operator.	Standard on QV models. For dusty conditions.	Filters out dust from vacuum exhaust.	Traps dust keeping it away from the operator.
P/N 831268	**P/N 831613**	**P/N 831226**	**P/N 831282**

Original Instructions

IMPORTANT- READ CAREFULLY BEFORE USE AND KEEP FOR FUTURE REFERENCE.

CONTENTS

SPECIFICATIONS

QV550VSP

HP	5.0 (3.73 kW)
Engine: Type	10V3320003F1
Engine: Fuel Capacity	3.3 qt. (3.1 L)
Engine: Oil Capacity	0.63 qt. (0.60 L)
Total Unit Weight:	234 lbs (106 kg)
Overall Length	63" (1.6m)
Overall Width	33" (0.84m)
Overall Height	51" (1.3 m)
Max. operating slope	20^0

INSTRUCTION LABELS

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

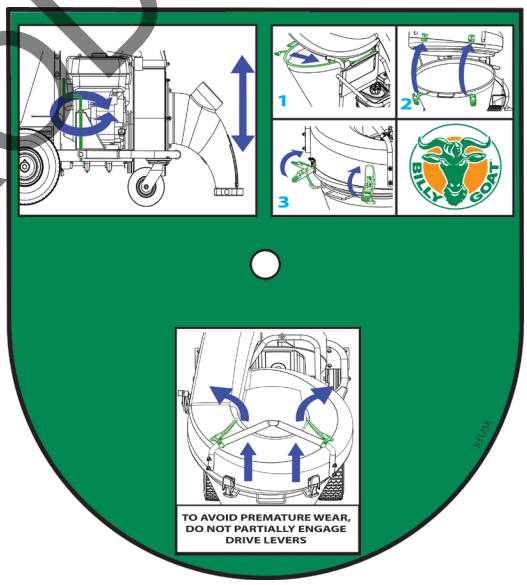
LABEL WARNING
ITEM #35 P/N 831265

LABEL THROTTLE
ITEM #106 P/N 810656

LABEL DANGER GUARDS
ITEM #106 P/N 900327

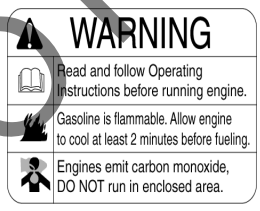
LABEL DRIVE DIRECTION
ITEM # 38 P/N 831270

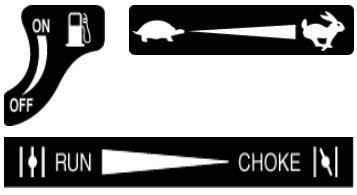
INSTRUCTION LABEL
ITEM # 37 P/N 831258



ENGINE LABELS

BRIGGS & STRATTON





PACKING CHECKLIST

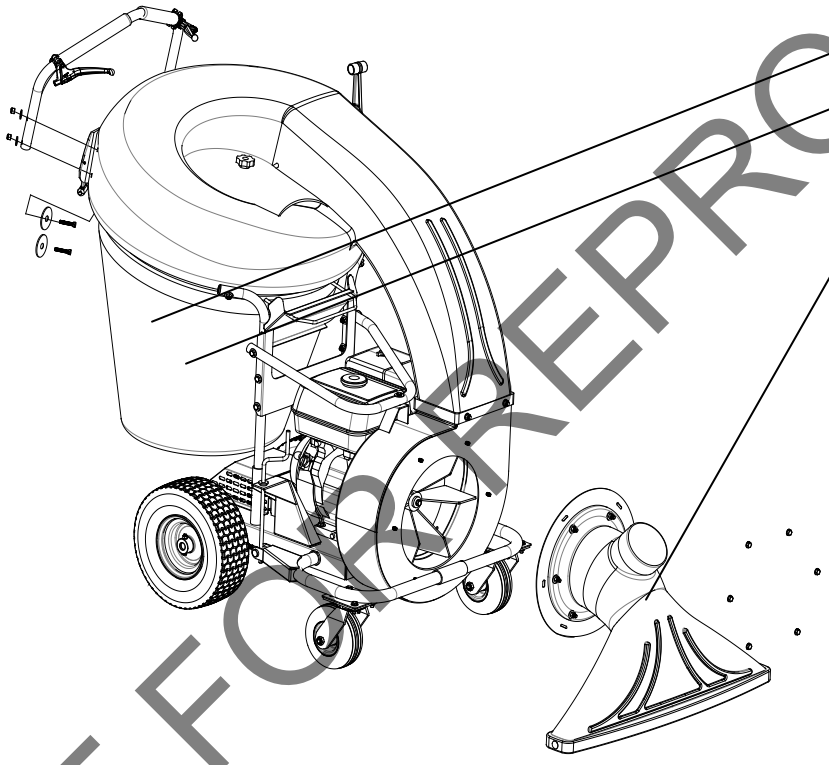
Your Billy Goat is shipped from the factory in one carton, completely assembled except for the nozzle and handle.

READ all safety instructions before assembling unit.
TAKE CAUTION when removing the unit from the box.

PUT OIL IN ENGINE BEFORE STARTING

PARTS BAG & LITERATURE ASSY

Warranty card P/N- 80102772, Operator's Manual P/N-27831517, Declaration of Conformity P/N-100506.
General Safety and Warnings Manual P/N-100294



Boxing Parts *Checklist*

- ☐ **Debris Bag P/N-831225**
- ☐ **Dust Sock P/N-831268**
- ☐ **Front Nozzle P/N-831606**
- ☐ **Literature Assy P/N-831019**
- **Screwcap 5/16"-18 x 1 3/4 qty 4 P/N-8041031**
- **Washer 2" OD x .344 ID qty 4 P/N-810652**
- **Washer 5/16" Flat qty 4 P/N-8171003**
- **Nut Lock 5/16" – 18 qty 4 P/N-8160002**
- ☐ **Briggs & Stratton 5.0 HP**

ASSEMBLY

NOTE: Items in ( ) can be referenced in the Parts Illustrations and Parts Lists on pages 10-13.

1. **REMOVE** the unit from the box. Be careful as cables could snag.
2. **REMOVE** the bag and attach the handle to the hood using the hardware from the parts bag. The large washer should be on the inside and the bolt should run from the inside of the hood out. The arch of the handle should be facing to the front of the machine and the cables shoud not be twisted around each other. *NOTE*: The left cable should run to the right side of the transmission and right cable to the left of the transmission. Cable twisting will interfere with the operation of the machine and will cause premature cable wear.
3. **ATTACH** the front nozzle (item 7) to the housing and secure it with the serrated hex nuts (item 58) located in the parts bag.

OPERATION

VACUUM OPERATION

⚠**WARNING: The maximum RPM's on the unit's engine are set. Altering them from the factory settings could potentially damage the unit and void warranty.**

VACUUM NOZZLE HEIGHT ADJUSTMENT: Adjust by turning the knob clockwise to increase height and counter-clockwise to lower it. 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. Adjust higher for uneven terrain and turf.

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.

PROPULSION

First set the forward or reverse lever to the desired position. (Having the lever straight up will put the unit into neutral). To drive in a straight path squeeze both levers, for turning right squeeze the right lever only and likewise to turn left, squeeze the left lever. When no levers are engaged the unit will freewheel. **DO NOT** partially engage the transmission when engaging the levers. The levers must be completely engaged. Prolonged use of partial engagement could cause internal damage to transmission.

DEBRIS BAG

Debris bags are normal replaceable wear items.

> *NOTE:* Frequently empty debris to prevent bag overloading with more weight than you can lift. Use the dust skirt when debris will be vacuumed in dusty conditions.

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 breathe to have good vacuum performance. Be sure engine has come to a complete stop before removing or emptying bag.

HOOD FILTER

Hood filters are normal replaceable wear items. The hood filter is for use in dry dusty conditions only. DO NOT get the filter wet. Clean with light compressed air only.

DUST SOCK

Dust socks are normal replaceable wear items. See dust sock care next page.

DUSTY CONDITIONS

This vacuum is designed for picking up trash, organic material and other similar debris. 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. 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.

DUST SOCK CARE AND MAINTENANCE

Purpose: The dust sock acts as a secondary filter lowering the amount of dust that escapes the bag.

Dust socks are to be used in dry and dusty conditions **ONLY**. Using the dust sock in damp or wet conditions may damage the dust sock and decrease the effectiveness of the filter.

The dust sock may be installed by simply attaching the mating Velcro strips between the bag and the dust sock. Over time the dust sock will begin to fill with dust during use. Periodically remove the dust sock, empty the loose dust out and clean the sock. For a light clean, simply shake the sock, for a deep clean, see below. To remove the sock, simply separate the Velcro.

Dust Sock Care Information:

DO NOT STRIKE THE BAG WITH OR AGAINST OBJECTS

DO NOT SNAG THE BAG

LIGHTLY CLEAN WITH COMPRESSED AIR ONLY, FROM THE OUTSIDE IN. KEEP THE NOZZLE 6-12 INCHES FROM FABRIC

DO NOT GET WET

Dust socks are normal replaceable wear items. Replacement P/N- 831282

MAINTENANCE

NOTE: Items in ( ) can be referenced in the Parts Illustrations and Parts Lists on pages 10-13.

PERIODIC MAINTENANCE

Periodic maintenance should be performed at the following intervals:

Maintenance Operation	Every Use (daily)	Every 5 hrs (daily)	Every 10 Hrs	Every 25 Hrs	Every 50 Hrs
Inspect for loose, worn or damaged parts		●			
Clean debris bag	●				
Check tire pressure	●			●	
Engine (See Engine Manual)					
Check for excessive vibration		●			
Check belt					●
Grease zerks					●

Grease: Wheels, Casters, and Shaft Bearings.

Tire air pressure: Check at regular intervals & maintain: Rear SP 13" tires at **20 psi.** (137.9 kPa).

IMPELLER REMOVAL

1. Disconnect spark plug wire.
2. Secure the unit to keep it from moving.
3. Remove the nozzle (item 7) from the housing, then remove the plate it was attached to (item 30).
4. Walk the belt (item 22) off of the lower pulley (item 23) and then slide it off of the impeller groove. If you cannot walk it off of the bottom pulley loosen the bearings (item 24) on the underside this will allow a little more play in the pulley.
5. Slide belt out of belt groove in impeller hub drive pulley.
6. Remove impeller bolt and lock washer.
7. If impeller slides off freely, proceed to (step 12). **(Do not drop impeller)**.
8. 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. *A penetrating oil can help loosen a stuck impeller.*
9. Slide impeller off of crank shaft and remove impeller from housing.
10. Reinstall new impeller, new impeller bolt and lock washer in reverse order of removal. (See the Parts Illustration on pages 10-13 for parts break-down and Parts List on page 11 for proper impeller bolt torque specifications.)
11. When impeller is installed, slide the belt back into the groove on the hub and walk it back onto the bottom pulley. Retighten the bearings if they were loosened.
12. Reattach nozzle plate and nozzle in reverse order of removal.
13. Reconnect spark plug wire.
14. Check for proper operation.

DRIVE

Belts are normal replaceable wear items.

BELT REPLACEMENT

1. Follow steps 1-9 in the impeller removal section. The impeller will need to be removed to replace the belt
2. Loosen the set screws on the pulley at the end of the shaft. This will allow the pulley to slide out of the way of the belt. Walk the old belt off the pulley.
3. Remove the old belt by feeding it through the housing and replace it with a new one, making sure to walk the belt around the bottom pulley.

Continued next page

4. Install the impeller and make sure the belt is in the groove on the hub. Use new hardware to attach the impeller. DO NOT reuse old impeller bolts.
5. Align the pulley so the belt will be running straight, then tighten the set screws. *NOTE*: make sure the key is in the lower pulley is still in place and hasn't fallen out.
6. Reattach the nozzle plate and nozzle in reverse order of removal.
7. Reconnect spark plug wire.
8. Check for proper operation.

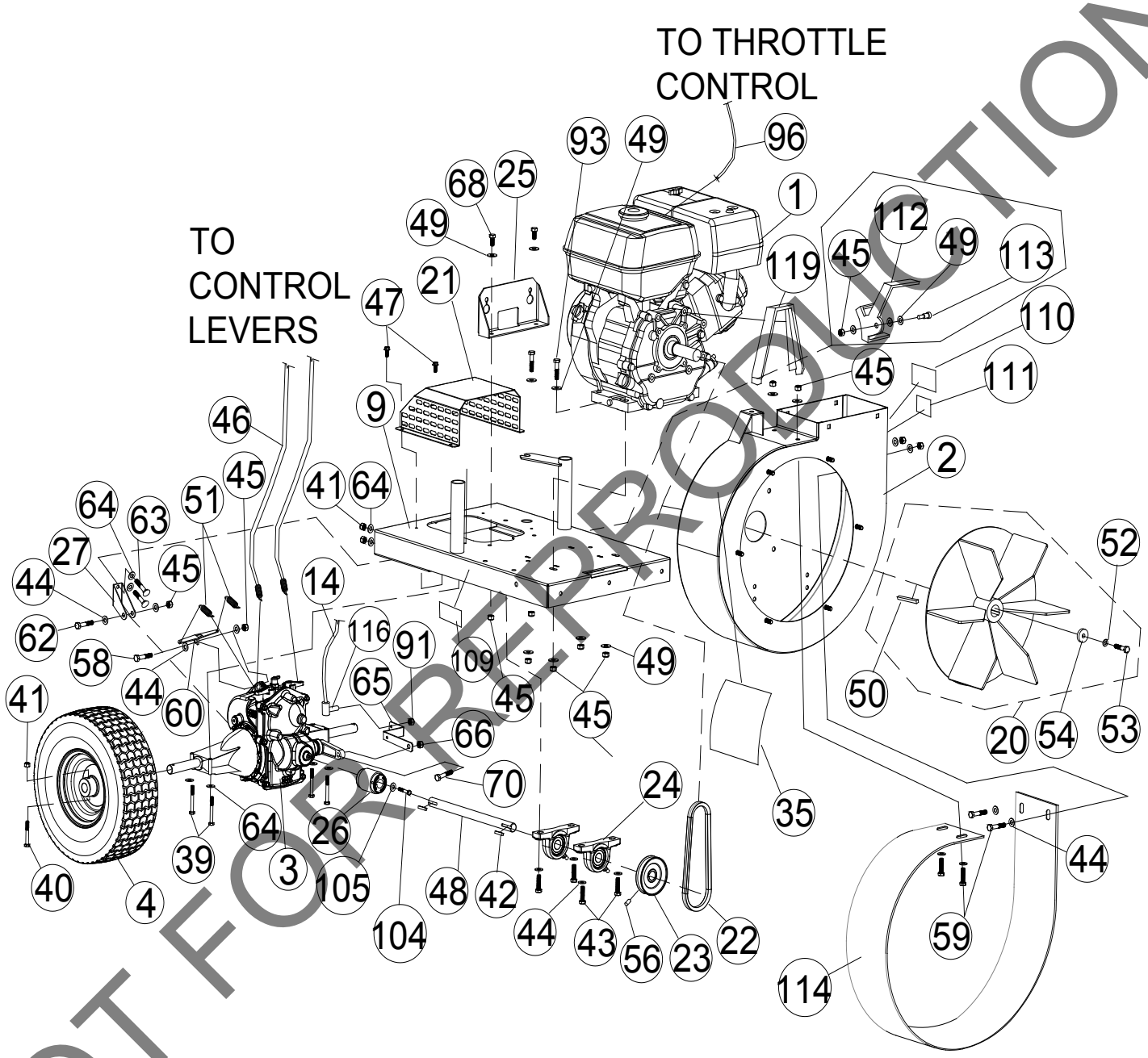
DRIVE CABLE ADJUSTMENT

1. Disconnect spark plug wire.
2. Remove the bag (item 5) and transmission cover (item 21) which will allow the transmission drive lever arms to be visible.
3. Loosen the two nuts on the barrel of the cable going into the drive levers.
4. Tension on the drive lever is reduced when the barrel of the cable is moved upwards towards the lever and tension is increased when the barrel is removed further away from the lever. NOTE: Moving the barrel too much in either direction will result in the drive lever constantly being engaged or not engaging at all.
5. When engaging the drive levers check the exposed transmission to make sure that the arms are properly engaging and returning to a disengaged position.
6. Reattach the transmission cover and bag.
7. Reconnect spark plug wire.
8. Check for proper operation.

TROUBLESHOOTING

Problem	Possible Cause	Solution
Abnormal vibration	Loose or out of balance impeller or loose engine.	Check impeller and replace if required. Check engine.
Will not vacuum or has poor vacuum performance	Dirty debris bag. Nozzle height set too high or low. Hose kit cap missing. Clogged nozzle or exhaust. Excessive quantity of debris.	Clean debris bag. Shake bag clean or wash. Adjust nozzle height. Check for hose kit cap. Unclog nozzle or exhaust. Allow air to feed with debris.
Engine will not start	Stop switch off. Throttle in off position. Engine not in full choke position. Out of gasoline. Bad or old gasoline. Sparkplug wire disconnected. Dirty air cleaner. Low oil (honda only).	Check stop switches, throttle, choke position and gasoline. Connect spark plug wire. Clean or replace air filter. Or contact a qualified service person.
Engine is locked, will not pull over	Debris locked in impeller. Engine problem.	See page 6. Contact a engine service dealer for engine problems.
Nozzle scrapes ground in lowest height setting	Nozzle height out of adjustment.	Adjust nozzle height (See Nozzle height fine adjustment for hard surfaces on page 6.
No self propelling	Transmission not in gear. Drive levers not engaging. Worn out, broken, or mispositioned belt. Return springs on transmission broken.	Check forward/reverse gear selection. Check drive lever cable adjustment and belt. Check return springs on transmission.
Self propelled drive will not release	Drive Levers adjusted too tight keeping the transmission engaged.	Adjust the barrels on the drive levers to decrease the tension on the transmission.

QVSP ENGINE PARTS DRAWING

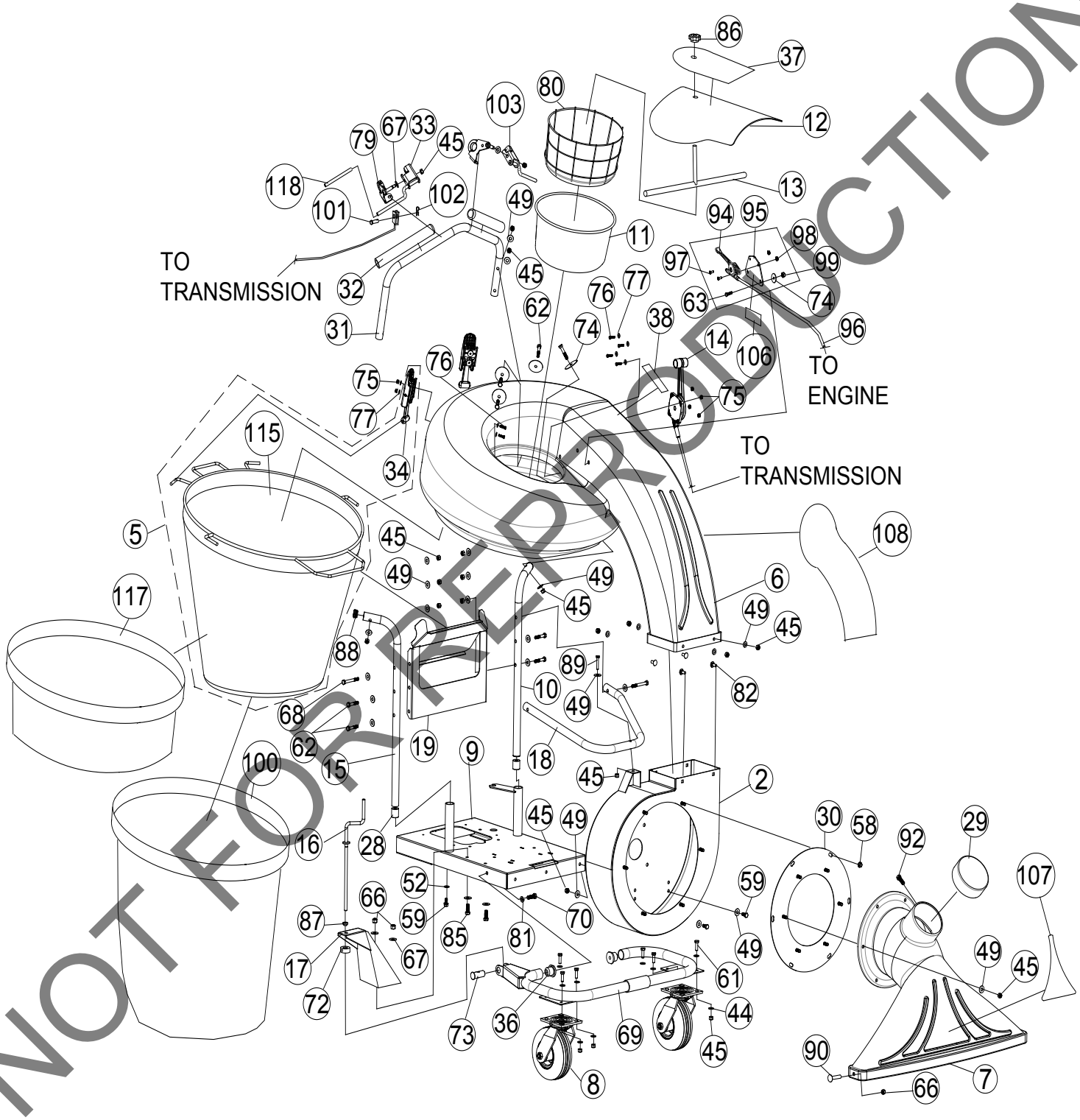


QVSP ENGINE PARTS LIST

ITEM	DESCRIPTION	QV550VSP P/N	QTY
1	ENGINE, 160CC, VANGUARD	382531	1
2	HOUSING WA W/LABELS	831600	1
3	TRANSAXLE HYDRO GEAR	831218	1
4	WHEEL 13" X 5" PNEU	831203	2
9	ENGINE BASE WA	831105	1
14	CABLE SHIFTER CONTROL	831228	1
20	IMPELLER ASSY 5HP (torque 17-22 ft.lbs [23-30 N.m])	831607	1
21	COVER TRANSAXLE WA	831114	1
22	BELT GATES 6822	831219	1
	BELT GATES 6824	-	-
23	PULLEY 3.25 X 3/4" BORE	610417	1
24	BEARING 3/4" CAST P BLOCK	350133	2
25	BRACKET MOUNT CONTROL CABLE	831113	1
26	COUPLER TRANSAXLE	831205	1
27	BRACKET ANTI ROTATION	831217	1
35	LABEL WARNING QV	831265	1
39	SCREWCAP 1/4"-20 X 2 1/4 HCS ZP	8041011	4
40	BOLT SHOULDER 1/4" X 1 1/2"	831255	2
41	NUT LOCK 1/4"-20 HEX ZP	8160001	4
42	KEY 3/16" SQ X 1"	9201078	2
43	SCREWCAP 5/16"-18 X 1 1/4" HCS ZP	8041029	4
44	WASHER 5/16" SAE	8172008	18
45	NUT LOCK 5/16"-18 HEX ZP	8160002	11
46	CABLE TRANS AXLE DRIVE	831309	2
47	SCREW SELF TAP 1/4"-20 X 5/8" HWH TYPE F	890359	4
48	SHAFT DRIVE 5HP QV	831206	1
	SHAFT DRIVE 9HP QV	-	-
49	WASHER 5/16" FLAT	8171003	7
50	KEY 3/16" SQ X 2 1/4"	9201087	1
	KEY 1/4" SQ X 2 1/8	-	-
51	SPRING RETURN	831210	2
52	WASHER LOCK 5/16" SPLIT	8177011	1
	WASHER LOCK 7/16" ST MED	-	-
53	SCREWCAP 5/16 -24 X 2 1/4" GR. 8 W/PATCH	831272	1
	SCREWCAP 7/16-20 X 2" GR. 8 ZP	-	-
54	WASHER 1.125 OD X 0.344 ID X0.25	441150	1
	WASHER 1.5 OD X 0.45 ID X 0.5 THK	-	-
56	SET SCREW 5/16"-18 X 5/16"	8084106	2
58	SCREWCAP 5/16"-18 X 1 3/4" HCS ZP	8041030	1
59	SCREWCAP 5/16-18 X 3/4 GR 5 HCS ZP	8041026	4
60	BRACKET RETURN SPRING MOUNT	831310	1

ITEM	DESCRIPTION	QV550VSP PART NO.	QTY
62	SCREWCAP 5/16"-18 X 1 3/4" HCS ZP	8041031	1
63	CARRIAGE BOLT 1/4"-20 X 3/4" ZP	8024021	2
64	WASHER 1/4" SAE	8172007	8
65	BRACKET OFFSET SHIFT	831220	1
66	NUT LOCK 3/8"-16 HEX	8160003	1
68	SCREWCAP 5/16-18 X 3/4 HCS ZP	8041035	2
70	SCREWCAP 3/8"-16 X 1 1/4" HCS ZP	8041051	1
91	NUT 1/4"-28 HEX	8149001	1
93	SCREWCAP 5/16"-18 X 1 1/2" HCS ZP	8041030	4
	SCREWCAP 5/16"-18 X 1 3/4" HCS ZP	-	-
96	CABLE THROTTLE	440178	1
104	SCREWCAP 1/4"-20 X 3/4" W/PATCH	831263	1
105	WASHER .266 X .750 X .156 THK	831264	1
109	LABEL DANGER GUARD	900327	2
110	LABEL MADE IN USA	520116	1
111	LABEL PATENT PENDING	500183	1
112	BRACKET BRAKE QV	831295	1
113	BOLT SHOULDER 3/8" X 1/2"	830528	1
114	LINER QV	831283	1
116	BALL JOINT DETACHABLE	831615	1
119	BELT GUIDE QV	831302	1

QVSP HOOD PARTS DRAWING



QVSP HOOD PARTS LIST

ITEM	DESCRIPTION	QV550VSP P/N	QTY
2	HOUSING QV WA W/LABELS	831600	1
5	QV BAG AND RING KIT - w/4 LATCH	831617	1
6	HOOD QVSP W/LABELS	831603	1
7	NOZZLE 32"	831606	1
8	CASTER SWIVEL QV	831201	2
9	ENGINE BASE 5 HP WA SP	831105	1
	ENGINE BASE 9 HP WA SP	-	-
10	HANDLE LOWER LFT	831404	1
11	HOOD FILTER	831226	1
12	HOOD SCOOP QVSP W/LABEL	831602	1
13	ROD FILTER HOLDER QV	831266	1
14	SHIFTER CONTROL	831228	1
15	HANDLE LOWER RT	831403	1
16	HEIGHT ADJ ROD	831214	1
17	HEIGHT ADJ BRACKET WA	831110	1
18	HANDLE WISHBONE	831405	1
19	BRACKET HANDLE SUPPORT	831222	1
28	N/A	-	-
29	CAP 5" VINYL BLACK	831211	1
30	PLATE NOZZLE WA QV	831109	1
31	HANDLE UPPER QV	831406	1
32	GRIP 1" OD X 9.5"	430342	2
33	ARM CLUTCH CONTROL QV WA	831116	2
34	BAG LATCH	840016	2
36	BUSHING FRAME PIVOT	831207	2
37	LABEL INSTRUCTION QV	831258	1
38	LABEL DRIVE DIRECTION	831270	1
44	WASHER 5/16" SAE	8172008	12
45	NUT LOCK 5/16"-18 HEX ZP	8160002	33
49	WASHER 5/16" FLAT	8171003	33
52	WASHER LOCK 5/16" SPLIT	8177011	2
58	NUT 5/16-18 SER HEX WSHR FLNG ZP	350346	6
59	SCREWCAP 5/16"-18 X 3/4" HCS ZP	8041026	4
61	SCREWCAP 5/16"-18 X 1" HCS ZP	8041028	6
62	SCREWCAP 5/16"-18 X 1 3/4" HCS ZP	8041031	12
63	SCREWCAP 1/4"-20 X 3/4"	8041004	2
66	NUT LOCK 3/8" -16 HEX	8160003	4
67	WASHER 3/8" FLAT	8171004	7
68	SCREWCAP 5/16"-18 2 3/4" HCS ZP	8041035	2
69	FRAME CASTER QV WA	831108	1
70	SCREWCAP 3/8"-16 X 1 1/4" HCS ZP	8041051	2
72	STOP COLLAR	831216	1
73	PIVOT HEIGHT ADJ WA	831117	1
74	WASHER 2" OD X 0.344 ID X 16 GA	810652	8
75	NUT LOCK #10-24 HEX	8155007	8
76	SCREW MACH #10-24 X 3/4"	8059136	8
77	WASHER #10 SAE	8172005	12
79	CONTROL MOUNT HANDLE WA	831115	2
80	FILTER FRAME	831223	1
81	WASHER LOCK 3/8" ST MED	8177012	2
82	BOLT CARRIAGE 5/16"-18 X 3/4" ZP	8024039	4
85	SCREWCAP 3/4"-16 X 1" HCS ZP	8041050	2
86	KNOB 3/8" - 18 SOLID HUB	811230	1
87	BUSING HEIGHT ADJ BRKT QV	831215	1
88	PLUG TUBE INSERT 1" OD	890132	2
89	SCREWCAP 5/16"-20 X 1 1/2"	8041030	1
90	BOLT CARRIAGE 3/8" -16 X 1"	8024058	2

ITEM	DESCRIPTION	QV550VSP	QTY
92	SCREW PLASTITE 1/4"-20 X 3/4" HWH ZP	840082	1
94	CONTROL THROTTLE	440013	1
95	PLATE THROTTLE	500385	1
96	CABLE THROTTLE	440178	1
97	SCREW MACH HD PHIL #10-24	830514	2
98	NUT LOCK LT #10-24	8164005	2
99	NUT FLANGE 1/4"-20	900453	2
100	DUST SOCK DOUBLE LAYER QV	831282	1
101	PIN CLEVIS 0.25 X 0.50	440124	2
102	PIN CLIP HITCH .051 X 3/4"	440193	2
103	ARM CONTROL WA	440277	1
106	LABEL THROTTLE	810656	1
107	LABEL NOZZLE QV	831261	1
108	LABEL BADGING QV	831260	2
115	BAG QV NO CLASPS SERVICE	831613	1
117	DUST SKIRT	831268	1
118	GRIP CLUTCH CONTROL	440242	2