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Image shown with optional accessories

BILLY GOAT QVSP VACUUM

Owner's Manual

QV550HSP, QV900HSP

Accessories

VACUUM HOSE KIT	DEBRIS BAG SKIRT	PARKING BRAKE
5" (127mm) x 10' (3m) collapsible hose for vacuuming in hard-to-reach areas	Directs dust away from the operator.	Locks the rear wheels to prevent freewheeling.
P/N 831018	P/N 831268	P/N 831609

Debris bags and Filter

STANDARD DEBRIS BAG	HOOD FILTER	DEBRIS AND DUST SOCK
Standard on QV models. For dusty conditions.	Filters out dust from vacuum exhaust.	Traps dust keeping it away from the operator.
P/N 831225	P/N 831226	P/N 831267



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Specifications

	QV550HSP	QV900HSP
HP	5.5 (4.1 kW)	9.0 HP (6.6kW)
Engine: Type	GX160T1QX2	GX270K1QA2
Engine: Fuel Capacity	3.88 qt. (3.6 L)	6.3 qt. (6.0L)
Engine: Oil Capacity	0.69 qt. (0.65 L)	1.16 qt. (1.1L)
Total Unit Weight:	226# (102.5 kg)	248# (112.5 kg)
Overall Length	63" (1.6m)	63" (1.6m)
Overall Width	33" (0.84m)	33" (0.84m)
Overall Height	51" (1.3 m)	51" (1.3 m)
Max. operating slope	20 ⁰	20 ⁰
Sound at operators ear	79 dBa	84 dBa
In accordance with 2000/14/EEC	99 dBa	104 dBa
Vibration at operator position	0.38g (3.73m/s ²)	0.47g (4.65m/s ²)

SOUND



SOUND LEVEL 84 dB(a) at Operator Position

Sound tests were conducted in accordance with 2000/14/EEC, and were performed on 4-12-12 under the conditions listed below.

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

General Conditions:	Sunny
Temperature:	46°F (8°C)
Wind Speed:	13 mph (21 kmh)
Wind Direction:	South East
Humidity:	55%
Barometric Pressure:	30.15"Hg (766 mm Hg)

VIBRATION DATA

VIBRATION LEVEL 0.47g (4.65 m/s²)

Vibration levels at the operator's handles were measured in the vertical, lateral and longitudinal directions using calibrated vibration test equipment. Tests were performed on 4-12-12 under the conditions listed below.

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QVSP Operator's Manual

INSTRUCTION LABELS

The labels shown below were installed on your BILLY GOAT® QVSP 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



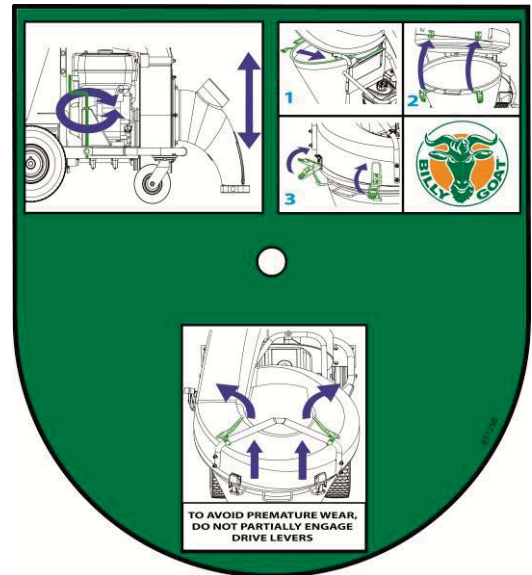
LABEL DANGER GUARDS
ITEM #106 P/N 900327



LABEL DRIVE DIRECTION
ITEM # 38 P/N 831270



INSTRUCTION LABEL
ITEM # 37 P/N 831258



ENGINE LABELS

HONDA

■ READ OWNER'S MANUALS BEFORE OPERATION.
■ LIRE LE MANUEL D'UTILISATEUR AVANT USAGE.
■ VOR INBETRIEBNAHME UNBEDINGT BEDIENUNGSANLEITUNG DURCHLESEN.
■ NO UTILIZAR SIN ANTES NO HABER LEIDO EL MANUAL.



OIL ALERT
■ WHEN OIL LEVEL LOW,
ENGINE STOPS IMMEDIATELY.



PACKING CHECKLIST

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



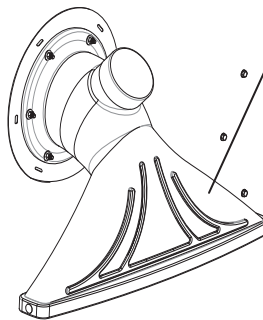
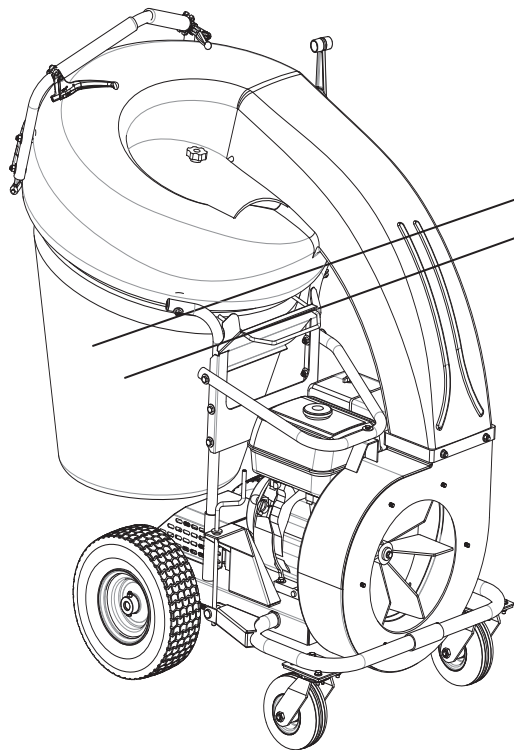
READ all safety instructions before assembling unit.
TAKE CAUTION when removing the unit from the box



PUT OIL IN ENGINE BEFORE STARTING

PARTS BAG & LITERATURE ASSY

Warranty card P/N- 400972, Operator's Manual P/N-831500, Declaration of Conformity P/N-831503.
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
- Honda 9 HP
- Honda 5.5 HP

ASSEMBLY

1. Remove the unit from the box. Be careful as cables could snag.
2. Attach the front nozzle (item 7) to the housing and secure it with the lock nuts (item 45) and washers (item 49) located in the parts bag.




OPERATION

VACUUMING OPERATION

VACUUM NOZZLE HEIGHT ADJUSTMENT: Is adjusted by turning the knob clockwise increases 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; 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.

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.

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.

PROPULSION

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 pulled 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.

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- 831267



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					•

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. *Using 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 drawing 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.

Grease: Wheels, Casters, and Shaft Bearings.

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

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.
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 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.



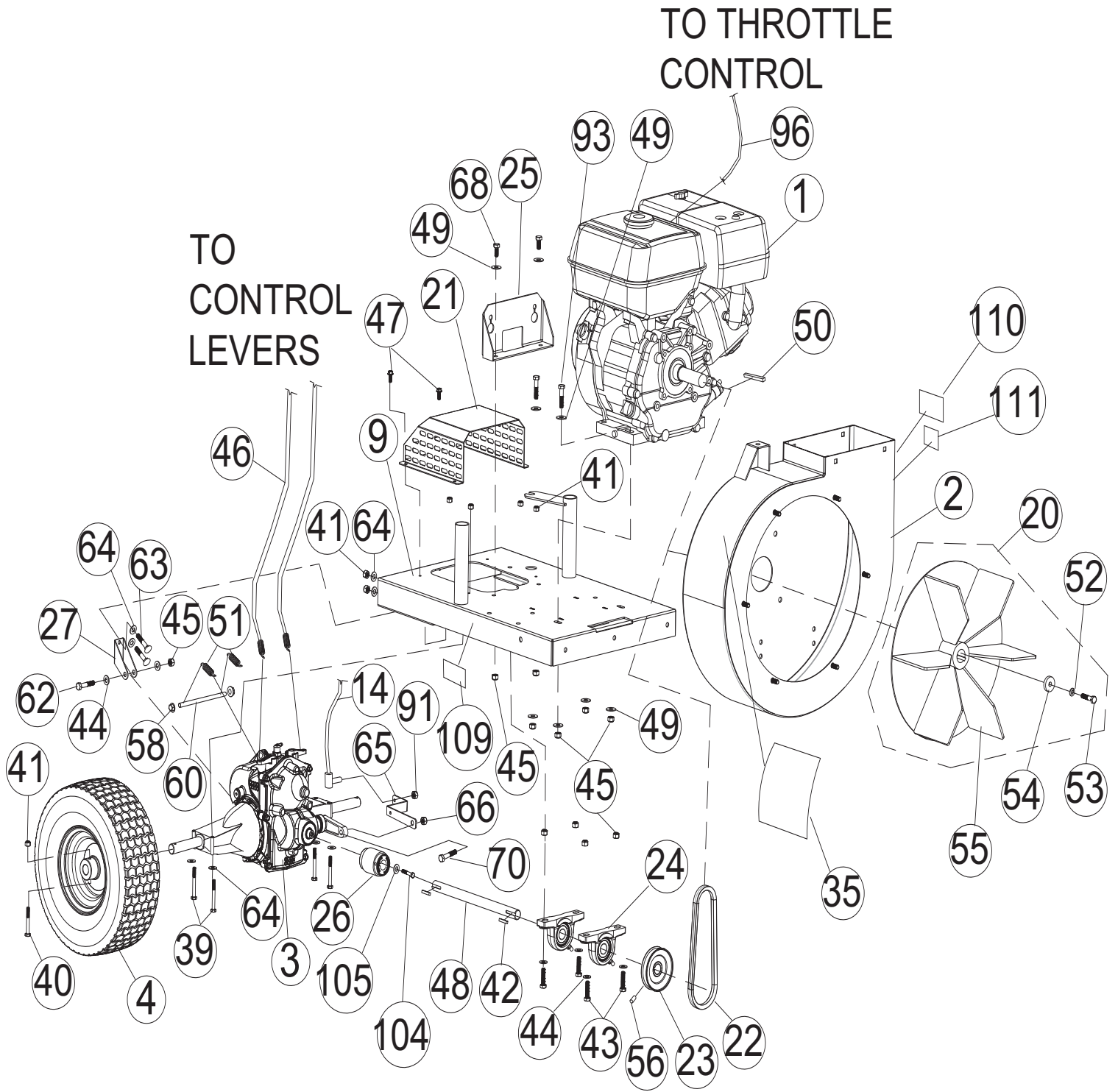
DRIVE CABLE ADJUSTMENT

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.

PARTS DRAWING QV

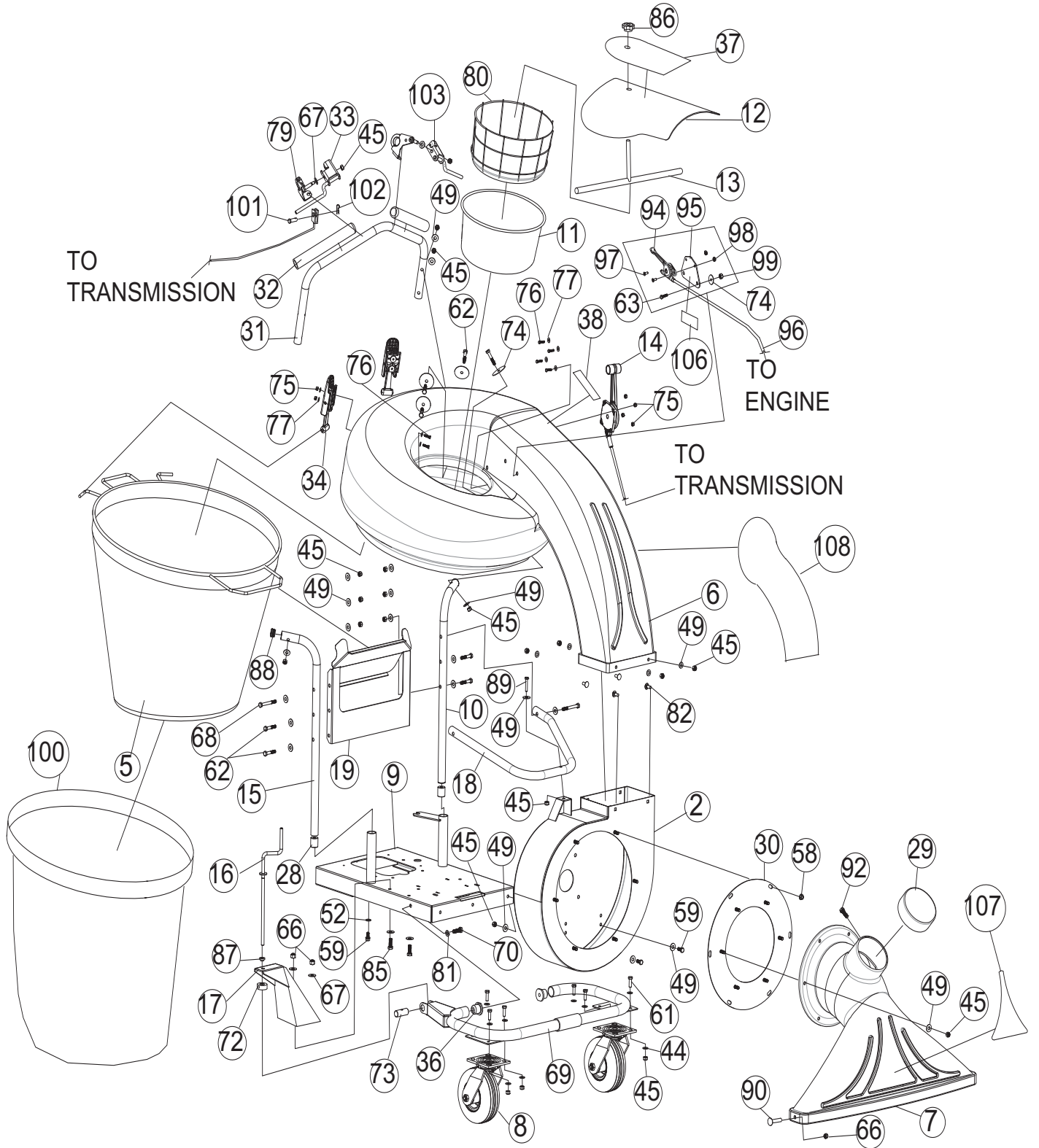




QVSP Operator's Manual

ITEM	DESCRIPTION	QV550HSP PART NO.	QTY	QV900HSP PART NO.	QTY
1	ENGINE HONDA 5.5 OHV GX160	600115	1	-	-
	ENGINE HONDA 9 OHV GX270	-	-	430287	1
2	HOUSING WA W/LABELS	831600	1	831600	1
3	TRANSAXLE HYDRO GEAR	831218	1	831218	1
4	WHEEL 13" X 5" PNEU	831203	2	831203	2
9	ENGINE BASE WA	831105	1	831108	1
14	CABLE SHIFTER CONTROL	831228	1	831228	1
20	IMPELLER ASSY	831607	1	831608	1
21	COVER TRANSAXLE WA	831114	1	831114	1
22	BELT GATES 6822	831219	1	-	-
	BELT GATES 6824	-	-	831280	1
23	PULLEY 3.25 X 3/4" BORE	610417	1	610417	1
24	BEARING 3/4" CAST P BLOCK	350133	2	350133	2
25	BRACKET MOUNT CONTROL CABLE	831113	1	831113	1
26	COUPLER TRANSAXLE	831205	1	831205	1
27	BRACKET ANTI ROTATION	831217	1	831217	1
35	LABEL WARNING QV	831265	1	831265	1
39	SCREWCAP 1/4"-20 X 2 1/4 HCS ZP	8041011	4	8041011	4
40	BOLT SHOULDER 1/4" X 1 1/2"	831255	2	831255	2
41	NUT LOCK 1/4"-20 HEX ZP	8160001	4	8160001	4
42	KEY 3/16" SQ X 1"	9201078	2	9201078	2
43	SCREWCAP 5/16"-18 X 1 1/4" HCS ZP	8041029	4	8041029	4
44	WASHER 5/16" SAE	8172008	8	8172008	8
45	NUT LOCK 5/16"-18 HEX ZP	8160002	9	8160002	9
46	CABLE CONTROL DRIVE	831227	2	831227	2
47	SCREW SELF TAP 1/4"-20 X 5/8" HWH TYPE F	890359	4	890359	4
48	SHAFT DRIVE 5HP QV	831206	1	-	-
	SHAFT DRIVE 9HP QV	-	-	831230	1
49	WASHER 5/16" FLAT	8171003	4	8171003	4
50	KEY 3/16" SQ X 2 1/4"	9201087	1	-	-
	KEY 1/4" SQ X 2 1/8	-	-	9201122	1
51	SPRING RETURN	831210	2	831210	2
52	WASHER LOCK 5/16" SPLIT	8177011	1	-	-
	WASHER LOCK 7/16" ST MED	-	-	8177013	1
53	SCREWCAP 5/16 -24 X 2 1/4" GR. 8 W/PATCH	831272	1	-	-
	SCREWCAP 7/16-20 X 1 1/2" GR. 8 W/PATCH	-	-	831273	1
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	-	-	440176	1
55	IMPELLER 5HP WA (torque 17-22 ft. lbs [23-30 N.m])	831103	1	-	-
	IMPELLER 9HP WA (torque 55-60 ft. lbs [75-81 N.m.])	-	-	831102	1
56	SET SCREW 5/16"-18 X 5/16"	8084106	1	8084106	1
58	NUT 5/16"-18 SER HEX FLNG ZP	350346	2	350346	2
60	ROD SPRING RETAINER	831221	1	831221	1
62	SCREWCAP 5/16"-18 X 1 3/4" HCS ZP	8041031	1	8041031	1
63	CARRIAGE BOLT 1/4"-20 X 3/4" ZP	8024021	2	8024021	2
64	WASHER 1/4" SAE	8172007	8	8172007	8
65	BRACKET OFFSET SHIFT	831220	1	831220	1
66	NUT LOCK 3/8"-16 HEX	8160003	1	8160003	1
68	SCREWCAP 5/16-18 X 3/4 HCS ZP	8041035	2	8041035	2
70	SCREWCAP 3/8"-16 X 1 1/4" HCS ZP	8041051	1	8041051	1
91	NUT 1/4"-28 HEX	8149001	1	8149001	1
93	SCREWCAP 5/16"-18 X 1 1/2" HCS ZP	8041030	4	8041030	4
104	SCREWCAP 1/4"-20 X 3/4" W/PATCH	831263	1	831263	1
105	WASHER .266 X .750 X .156 THK	831264	1	831264	1
109	LABEL DANGER GUARD	900327	2	900327	2
110	LABEL MADE IN USA	520116	1	520116	1
111	LABEL PATENT PENDING	500183	1	500183	1

PARTS DRAWING QV





QVSP Operator's Manual

PARTS LIST

ITEM	DESCRIPTION	QV550HSP PART NO.	QTY	QV900HSP PART NO.	QTY
2	HOUSING QV WA W/LABELS	831600	1	831600	1
5	BAG QV	831225	1	831225	1
6	HOOD QVSP W/LABELS	831603	1	831603	1
7	NOZZLE 32"	831606	1	831606	1
8	CASTER SWIVEL QV	831201	2	831201	2
9	ENGINE BASE 5 HP WA SP	831105	1	-	-
	ENGINE BASE 9 HP WA SP	-	-	831108	1
10	HANDLE LOWER LFT	831404	1	831404	1
11	HOOD FILTER	831223	1	831223	1
12	HOOD SCOOP QVSP W/LABEL	831602	1	831602	1
13	ROD FILTER HOLDER QV	831266	1	831266	1
14	SHIFTER CONTROL	831228	1	831228	1
15	HANDLE LOWER RT	831403	1	831403	1
16	HEIGHT ADJ ROD	831214	1	831214	1
17	HEIGHT ADJ BRACKET WA	831110	1	831110	1
18	HANDLE WISHBONE	831405	1	831405	1
19	BRACKET HANDLE SUPPORT	831222	1	831222	1
28	INSERT 5/16"-18 TUBE 14/16 GA	-	-	501243	2
29	CAP 5" VINYL BLACK	831211	1	831211	1
30	PLATE NOZZLE WA QV	831109	1	831109	1
31	HANDLE UPPER QV	831406	1	831406	1
32	GRIP 1" OD X 9.5"	430342	2	430342	2
33	ARM CLUTCH CONTROL QV WA	831116	2	831116	2
34	BAG LATCH	840016	2	840016	2
36	BUSHING FRAME PIVOT	831207	2	831207	2
37	LABEL INSTRUCTION QV	831258	1	831258	1
38	LABEL DRIVE DIRECTION	831270	1	831270	1
44	WASHER 5/16" SAE	8172008	12	8172008	12
45	NUT LOCK 5/16"-18 HEX ZP	8160002	33	8160002	33
49	WASHER 5/16" FLAT	8171003	33	8171003	33
52	WASHER LOCK 5/16" SPLIT	8177011	2	8177011	1
58	NUT 5/16-18 SER HEX WSHR FLNG ZP	350346	6	350346	6
59	SCREWCAP 5/16"-18 X 3/4" HCS ZP	8041026	4	8041026	4
61	SCREWCAP 5/16"-18 X 1" HCS ZP	8041028	6	8041028	6
62	SCREWCAP 5/16"-18 X 1 3/4" HCS ZP	8041031	12	8041031	12
63	SCREWCAP 1/4"-20 X 3/4"	8041004	2	8041004	2
66	NUT LOCK 3/8" -16 HEX	8160003	4	8160003	4
67	WASHER 3/8" FLAT	8171004	7	8171004	7
68	SCREWCAP 5/16"-18 2 3/4" HCS ZP	8041035	2	8041035	2
69	FRAME CASTER QV WA	831108	1	831108	1
70	SCREWCAP 3/8"-16 X 1 1/4" HCS ZP	8041051	2	8041051	2
72	STOP COLLAR	831216	1	831216	1
73	PIVOT HEIGHT ADJ QV	831209	1	831209	1
74	WASHER 2" OD X 0.344 ID X 16 GA	810652	8	810652	8
75	NUT LOCK #10-24 HEX	8155007	8	8155007	8
76	SCREW MACH #10-24 X 3/4"	8059136	8	8059136	8
77	WASHER #10 SAE	8172005	12	8172005	12
79	CONTROL MOUNT HANDLE WA	831115	2	831115	2
80	FILTER FRAME	831223	1	831223	1
81	WASHER LOCK 3/8" ST MED	8177012	2	8177012	2
82	BOLT CARRIAGE 5/16"-18 X 3/4" ZP	8024039	4	8024039	4
85	SCREWCAP 3/4"-16 X 1" HCS ZP	8041050	2	8041050	2
86	KNOB FLUTED 5/16"-18 X 5/8"	400339	1	400339	1
87	BUSING HEIGHT ADJ BRKT QV	831215	1	831215	1
88	PLUG TUBE INSERT 1" OD	890132	2	890132	2
89	SCREWCAP 5/16"-20 X 1 1/2"	8041030	1	8041030	1
90	BOLT CARRIAGE 3/8" -16 X 1"	8024058	2	8024058	2
92	SCREW PLASTITE 1/4"-20 X 3/4" HWH ZP	840082	1	840082	1
94	CONTROL THROTTLE	440013	1	440013	1
95	PLATE THROTTLE	500385	1	500385	1
96	CABLE THROTTLE	440178	1	440178	1
97	SCREW MACH HD PHIL #10-24	830514	2	830514	2
98	NUT LOCK LT #10-24	8164005	2	8164005	2
99	NUT FLANGE 1/4"-20	900453	2	900453	2
100	DUST SOCK	831267	1	831267	1
101	PIN CLEVIS 0.25 X 0.50	440124	2	440124	2
102	PIN CLIP HITCH .051 X 3/4"	440193	2	440193	2
103	ARM CONTROL WA	440277	1	440277	1
106	LABEL THROTTLE	810656	1	810656	1
107	LABEL NOZZLE QV	831261	1	831261	1
108	LABEL BADGING QV	831260	2	831260	2