



# BILLY GOAT KV VACUUM

## Owner's Manual

KV600, KV650H, KV600FB, KV650HFB

### Accessories

| ON BOARD<br>VACUUM<br>HOSE KIT                                                | OPTIONAL<br>FELT/MESH<br>DEBRIS BAG                                                                                            | NOZZLE<br>WEAR<br>GUARD KIT                                                               | CASTER KIT                                                                    | SHREDDER<br>KIT                                | KV LINER KIT                                                                | PROTECTIVE<br>COVER                                                 |
|-------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|------------------------------------------------|-----------------------------------------------------------------------------|---------------------------------------------------------------------|
| 4"(102mm) x<br>7.5' (2.13m)<br>For<br>vacuuming in<br>hard to reach<br>areas. | For use in leaves<br>and grass in dusty<br>conditions.<br><br><u>P/N 891126 FELT<br/>BAG</u><br><u>P/N 891132<br/>MESH BAG</u> | For use in<br>increasing the<br>life of your<br>nozzle by<br>protecting it<br>from damage | To allow for<br>easy rolling and<br>maneuverability<br>on smooth<br>surfaces. | Shreds<br>leaves,<br>reducing total<br>volume. | Increases the<br>life of the<br>housing by<br>protecting it from<br>damage. | Protects the<br>machine from<br>the environment<br>when not in use. |
| <b>P/N 891125</b>                                                             |                                                                                                                                | <b>P/N 891127</b>                                                                         | <b>P/N 891128</b>                                                             | <b>P/N 891153</b>                              | <b>P/N 891134</b>                                                           | <b>P/N 891137</b>                                                   |



## *KV Push Owner's Manual*

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Go to <http://www.billygoat.com> for French-Canadian translations of the product manuals.

Visitez <http://www.billygoat.com> pour la version canadienne-française des manuels de produits



## KV Push Owner's Manual

### Specifications

|                                                | KV600                         | KV650H                         | KV600FB                       | KV650HFB                       |
|------------------------------------------------|-------------------------------|--------------------------------|-------------------------------|--------------------------------|
| Engine: HP                                     | 6.0 (4.47 kW)                 | 6.5 (4.85kW)                   | 6.0 (4.47 kW)                 | 6.5 (4.85kW)                   |
| Engine: Type                                   | B&S Quantum                   | HONDA                          | B&S Quantum                   | HONDA                          |
| Engine: Model                                  | 112K020124E1                  | GSV190AN1L                     | 112K020124E1                  | GSV190AN1L                     |
| Engine: Fuel Capacity                          | 1.5 qt. (1.4 L)               | 1.6 qt. (1.5 L)                | 1.5 qt. (1.4 L)               | 1.6 qt. (1.5 L)                |
| Engine: Oil Capacity                           | 0.63 qt. (0.6 L)              | 0.58 qt (0.54L)                | 0.63 qt. (0.6 L)              | 0.58 qt (0.54L)                |
| Total Unit Weight:                             | 112# (50.8kg)                 | 113# (51.3kg)                  | 112# (50.8kg)                 | 113# (51.3kg)                  |
| Overall Length                                 | 59" (1.5m)                    | 59" (1.5m)                     | 59" (1.5m)                    | 59" (1.5m)                     |
| Overall Width                                  | 26.5" (0.7m)                  | 26.5" (0.7m)                   | 26.5" (0.7m)                  | 26.5" (0.7m)                   |
| Overall Height                                 | 42.75" (1.1m)                 | 42.75" (1.1m)                  | 42.75" (1.1m)                 | 42.75" (1.1m)                  |
| Max. operating slope                           | 20°                           | 20°                            | 20°                           | 20°                            |
| Sound in accordance with 2000/14/EEC standards | 108 dBA                       | 109 dBA                        | 108 dBA                       | 109 dBA                        |
| Sound at operator's ear                        | 88 dBA                        | 89 dBA                         | 88 dBA                        | 89 dBA                         |
| Vibration at operator position                 | 0.5 g (4.95m/s <sup>2</sup> ) | 0.32 g (3.18m/s <sup>2</sup> ) | 0.5 g (4.95m/s <sup>2</sup> ) | 0.32 g (3.18m/s <sup>2</sup> ) |

### SOUND



SOUND LEVEL 97 dB(a) at Operator Position

Sound tests were conducted in accordance with 2000/14/EEC, and were performed on 7-25-07 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:  
Temperature:  
Wind Speed:  
Wind Direction:  
Humidity:  
Barometric Pressure:

Sunny  
88°F (31.1°C)  
2 mph (3.8 kmh)  
South South East  
44%  
30.07"Hg (764 mm Hg)

### VIBRATION DATA

VIBRATION LEVEL 0.5g (4.95m/s<sup>2</sup>)

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 12-20-2007 under the conditions listed below.

General Conditions:  
Temperature:  
Wind Speed:  
Wind Direction:  
Humidity:  
Barometric Pressure:

Sunny  
47.5°F (8.6°C)  
3 mph (4.8kph)  
West  
87%  
29.98 Hg (101.5kpa)



## KV Push Owner's Manual

### INSTRUCTION LABELS

The labels shown below were installed on your BILLY GOAT® KV 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.



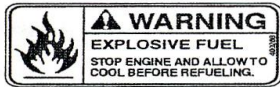
**LABEL DANGER KEEP HANDS  
AND FEET AWAY**  
ITEM #18 P/N 400424



**LABEL SAFETY PROTECT ITEM #20**  
P/N 100346



**DANGER FLYING DEBRIS**  
ITEM # 19 P/N 810736



**LABEL EXPLOSIVE FUEL**  
ITEM # 16 P/N 400268



**LABEL SPARK ARRESTOR**  
P/N 100252

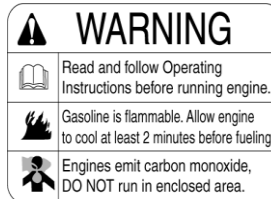
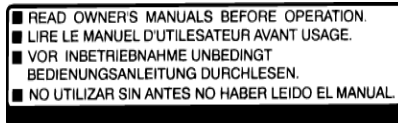
BAG ENCLOSURE INSTRUCTION:  
NOTE: IT IS IDEAL TO DO THIS PROCEDURE WITH THE BAG ON THE GROUND  
WITH BOTTOM PAD FACING UP.



**DEBRIS BAG FOLDING LABEL**  
LOCATED ON BAG

### ENGINE LABELS

#### HONDA



#### BRIGGS & STRATTON

Read Owner's Manual Before Operating.  
Lire le manuel d'utilisation avant la mise en route.  
Vor Inbetriebnahme Bedienungs- und Wartungsanleitung lesen.  
Favor leer las instrucciones de operacion antes de operar el motor.  
Consultare il Manuale Uso e Manutenzione prima dell'utilizzo.  
Las Skotselinstruktionen Innan Start.

### ENGINE CONTROLS



**Honda Throttle Control**



**Briggs Throttle Control**



## PACKING CHECKLIST

Your Billy Goat KV Vacuum is shipped from the factory in one carton, completely assembled except for the upper handle, debris bag, and bag quick disconnect.



**READ** all safety instructions before assembling unit.

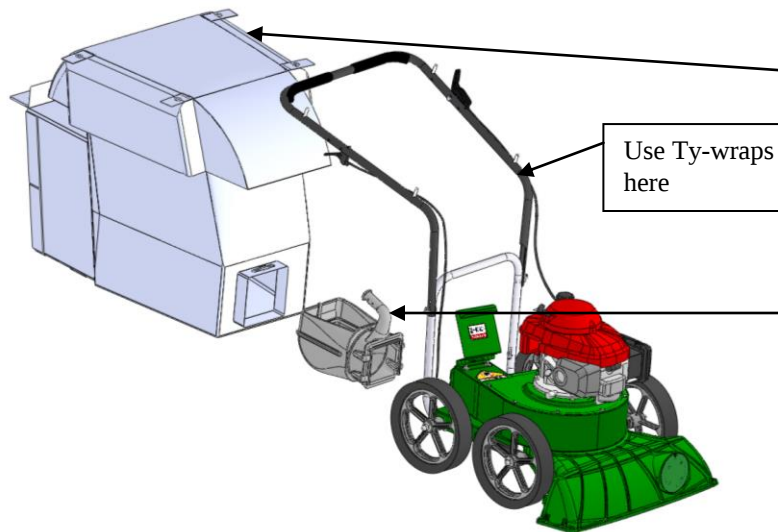
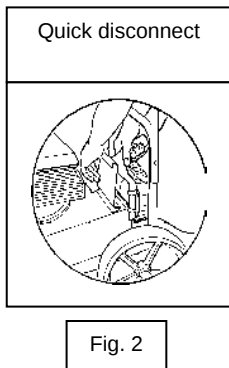
**TAKE CAUTION** when removing the unit from the box the Handle Assembly is attached by cables and folded over



**PUT OIL IN ENGINE BEFORE STARTING**

## PARTS BAG & LITERATURE ASSY

Warranty card P/N- 400972, Owner's Manual P/N-891203, General Safety and Warnings Manual- 100294, Declaration of Conformity P/N-891057, Ty-Wraps 900407 (qty2).



### Boxing Parts Checklist

- ☐ Debris Bag  
P/N-891132  
OR  
Felt Bag  
P/N-891126
- ☐ Literature Assy  
P/N-891123
- ☐ Connector Quick  
Disconnect  
P/N-890630
- ☐ Honda 6.5  
GSV 190
- ☐ Briggs & Stratton  
6.0 HP Quantum

## KV push hardware

36 Washer 1/4 SAE  
8172007 qty. 2

32 Washer 5/16 FLAT  
8171003 qty. 4

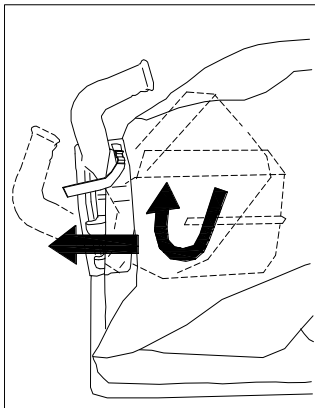
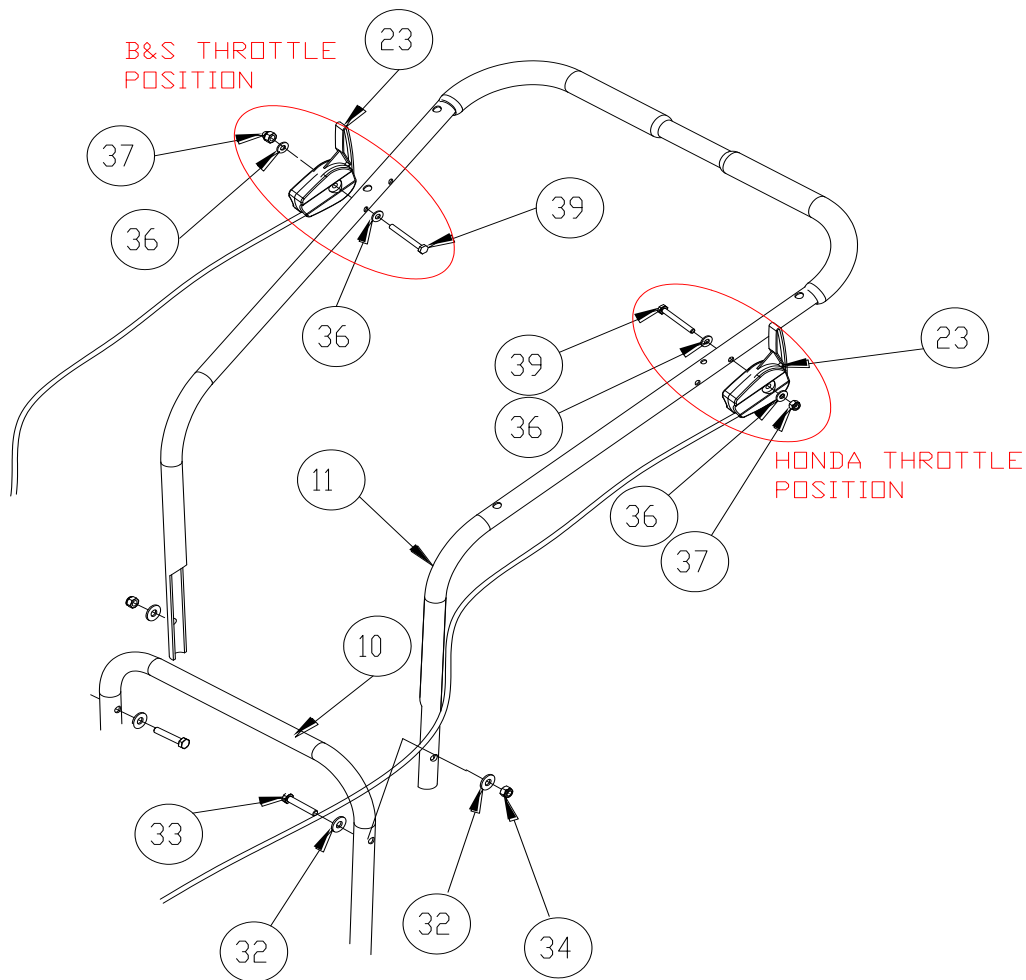
29 Nut Acorn High Crown  
840071 qty. 1

34 Nut Lock 5/16-18  
8160002 qty. 2

39 Screwcap 1/4-20 X 2 " HCS ZP  
8041010 qty. 1

33 Screwcap 5/16-18 X 1 3/4" GR 5  
HCS ZP 8041031 qty. 2

## ASSEMBLY



1. **ASSEMBLE** Lift upper handle (item 11), remove items 34, 32, and 33 The parts bag. Attach and secure upper handle as shown using same hardware.
2. **ATTACH** the throttle lever (item 23) to the handle either the right side or left depending on which model of engine you have (See image above). Attach the lever with the hardware (items 36, 37, and 39) found in the parts bag. Once attached use the ty-wrap to secure the cable to the handle
3. **UNFOLD** the debris bag (item 21) and fasten bag neck to bag quick disconnect (item 12). Attach firmly to housing exhaust (item 1) see fig. 2.
4. **ATTACH** bag hanger strap to bag supports (item 13), preassembled to upper handle.
5. **CONNECT** spark plug wire.

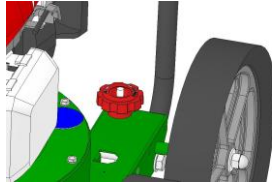
Insert the quick disconnect from the inside of the bag, tilt the handle so it can be fed through first. Then slide the connecting end through and tighten the strap



## **OPERATION**

### **VACUUMING OPERATION**

**VACUUM NOZZLE HEIGHT ADJUSTMENT:** Nozzle height is raised and lowered by rotating the red knob near the left rear wheel. Nozzle height should be adjusted based on the task being performed.



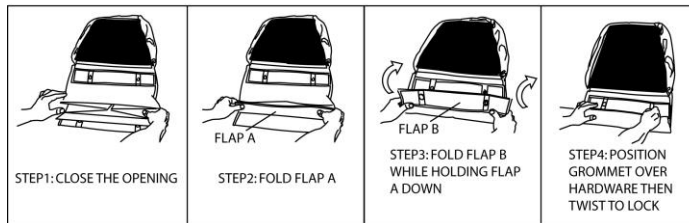
**FOR MAXIMUM PICKUP:** Adjust nozzle close to debris, but without blocking airflow into the nozzle. **NOTE:** Never bury nozzle into debris.

**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.



#### **BAG ENCLOSURE INSTRUCTION:**

**NOTE:** IT IS IDEAL TO DO THIS PROCEDURE WITH THE BAG ON THE GROUND WITH BOTTOM PAD FACING UP.



### **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 felt bag 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. 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 and General Operation manual).

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 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.
- Pressure-wash debris bag if normal cleaning does not fully clean bag. Bag should be thoroughly dry before use.

**NOTE:** 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.

### **COMPOST**

Vacuumed leaves, grass and other organic material from your own yard can be emptied into a pile or composter to provide enriched soil for later use as fertilizer in gardens and flower beds

**NOTE:** Allow green chips to dry before spreading around living plants.



## KV Push Owner's Manual

### MAINTENANCE

#### PERIODIC MAINTENANCE

Periodic maintenance should be performed at the following intervals:

| Maintenance Operation                     | Every Use (daily) | Every 5 hrs (daily) | Every 25 Hours |
|-------------------------------------------|-------------------|---------------------|----------------|
| Inspect for loose, worn or damaged parts. |                   | •                   |                |
| Clean Debris bag                          | •                 |                     |                |
| Check bag strap tightness                 | •                 |                     |                |
| Engine (See Engine Manual)                |                   |                     |                |
| Check for excessive vibration             |                   | •                   |                |

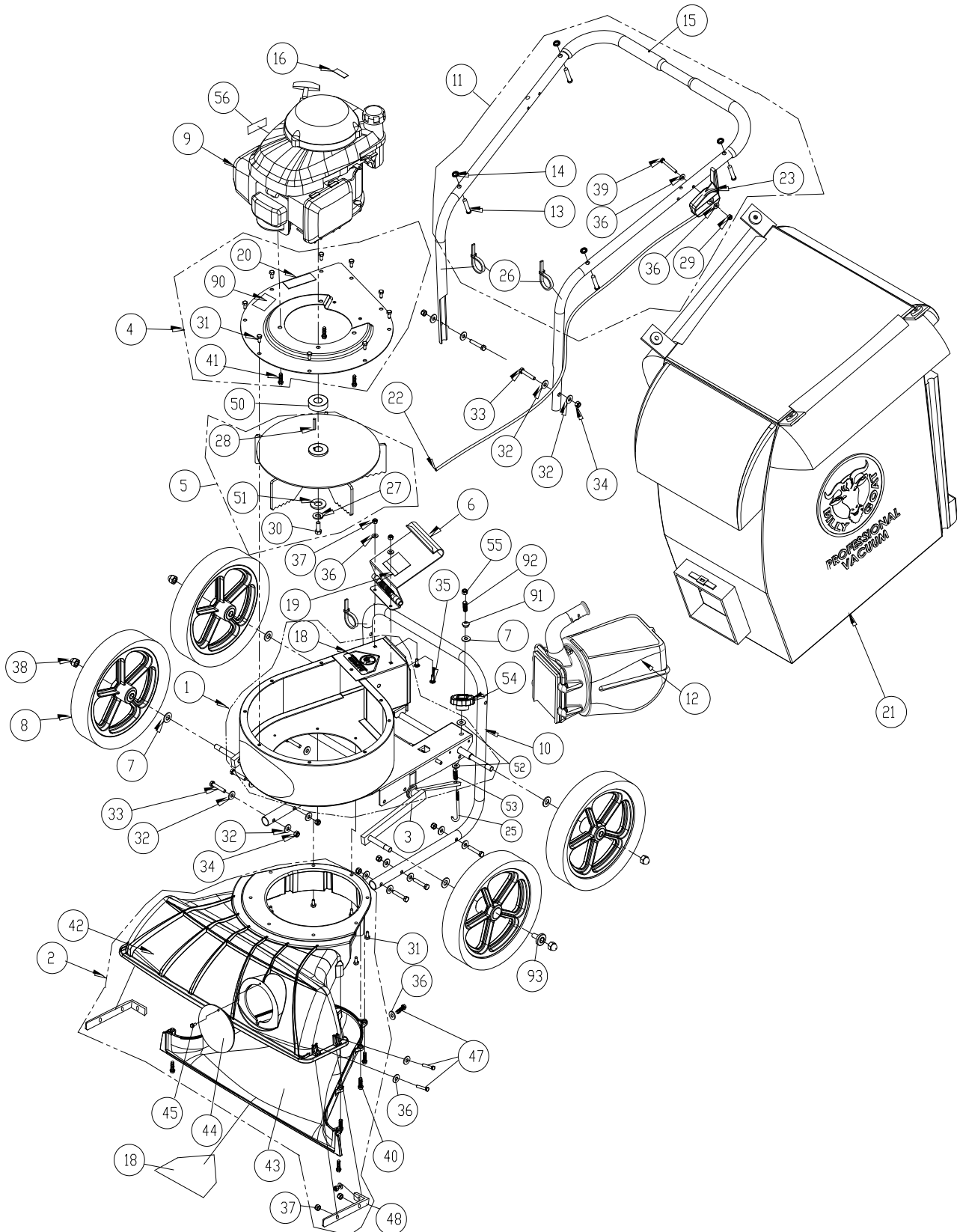
#### IMPELLER REMOVAL

1. Wait for engine to cool and disconnect spark plug.
2. Drain fuel and oil from the engine.
3. Remove bag, quick release, and upper handle. Do not kink, stretch, or break control cables, control housings, or end fittings while removing handles.
4. Remove housing top plate by removing bolts around outside of housing.
5. Leaving engine fastened to top plate, turn it upside down so the impeller is on top.
6. Remove impeller bolt and lock washer and washer.
7. Lift impeller upward. If impeller slides freely, proceed to (step 10).
8. 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. If the impeller does not loosen, use two pry bars and pull the impeller near the hub away from the engine, this should loosen it and allow you to remove the impeller from shaft. *Using a penetrating oil can help loosen a stuck impeller.*
10. Using a new impeller bolt and lockwasher and washer, reinstall new impeller in reverse order.
11. Tighten impeller bolt. Torque impeller bolt to 33-38 Ft. Lbs. (44-51 N.m) (see item 30 on page 15).
12. Reinstall engine onto housing in reverse order of removal.
13. Gas and oil.
14. Reinstall spark plug wire.

### 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. Hose kit cap missing.<br>• Clogged nozzle or exhaust. Excessive quantity of debris.<br>• Improper nozzle height                                  | • Clean debris bag. Shake bag clean or wash. 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 | • 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 5. 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 5                                                                        |
| Too much dust coming from bag.                  | • Vacuuming very dry, brittle or small debris                                                                                                                        | • Switch to felt bag (see page 1 accessories)                                                                                                              |

**PARTS DRAWING KV**





## KV Push Owner's Manual

### PARTS LIST

| ITEM NO. | DESCRIPTION                        | KV600/KV600FB<br>PART<br>NUMBER | QTY | KV650H/KV650HFB<br>PART<br>NUMBER | QTY |
|----------|------------------------------------|---------------------------------|-----|-----------------------------------|-----|
| 1        | MAIN FRAME HOUSING NEW KD          | 891100-S                        | 1   | 891100-S                          | 1   |
| 2        | NOZZLE ASSEMBLY TKV                | 891110-S                        | 1   | 891110-S                          | 1   |
| 3        | AXLE W/A KV MICRO                  | 891138                          | 1   | 891138                            | 1   |
| 4        | PLATE TOP ENGINE KV                | 891007-1-S                      | 1   | 891007-1-S                        | 1   |
| 5        | IMPELLER 12.75 W/A PUSH VAC        | 891108-S                        | 1   | 891108-S                          | 1   |
| 6        | DOOR EXHAUST ASSY RAW              | 890148                          | 1   | 890148                            | 1   |
| 7        | WASHER 1/2" SAE Z/P                | 8172011                         | 5   | 8172011                           | 5   |
| 8        | WHEEL ASSY 12" X 2.5" TREAD        | 900509                          | 4   | 900509                            | 4   |
| 9        | ENGINE 6.5 HP HONDA GSV190AN1L     | -                               | -   | 840069                            | 1   |
|          | ENGINE 6.0 HP B&S                  | 890622                          | 1   | -                                 | -   |
| 10       | LOWER HANDLE KV                    | 891050                          | 1   | 891050                            | 1   |
| 11       | HANDLE UPPER KV                    | 891054-S                        | 1   | 891054-S                          | 1   |
| 12       | QUICK DISCONNECT                   | 890630                          | 1   | 890630                            | 1   |
| 13       | PIN CLEVIS 3/8" x 2.125" LONG      | 520120                          | 4   | 520120                            | 4   |
| 14       | RETAINER                           | 360279                          | 4   | 360279                            | 4   |
| 15       | GRIP HANDLE 1" X 9.5" LG           | 430342                          | 2   | 430342                            | 2   |
| 16       | LABEL WARNING FUEL EN/SP           | 100261                          | 1   | -                                 | -   |
| 17       |                                    |                                 |     |                                   |     |
| 18       | LABEL WARNING DANGER               | 400424                          | 2   | 400424                            | 2   |
| 19       | LABEL DANGER FLYING DEBRIS         | 810736                          | 1   | 810736                            | 1   |
| 20       | LABEL SAFETY PROTECT READ MANUAL   | 100346                          | 1   | 100346                            | 1   |
| 21       | BAG DEBRIS NO ZIPPER KV            | 891132                          | 1   | 891132                            | 1   |
|          | BAG FELT W/SKIRT (FB MODELS)       | 891211                          | 1   | 891211                            | 1   |
| 23       | CABLE THROTTLE ASSY 42" W/CHOKE    | 891036                          | 1   | 891027                            | 1   |
| 25       | BOLT J 3/8-16 X 6"                 | 891071                          | 1   | 891071                            | 1   |
| 26       | TY WRAP                            | 900407                          | 3   | 900407                            | 3   |
| 27       | WASHER LOCK 3/8" ST MED            | 8177012                         | 1   | 8177012                           | 1   |
| 28       | KEY 3/16 S.Q. X 1.25               | 9201080                         | 1   | 9201080                           | 1   |
| 29       | NUT 1/4-20 ACORN                   | 840071                          | 1   | 840071                            | 1   |
| 30       | SCREW CAP 3/8-24X1 LOCKTITE        | 900154                          | 1   | -                                 | -   |
|          | SCREW CAP 3/8-24X1 1/2" GR. 8      | -                               | -   | 900344                            | 1   |
| 31       | SCREW CAP 1/4 - 20 x 5/8 HWH       | 890359                          | 16  | 890359                            | 16  |
| 32       | WASHER 5/16 FLAT WASHER Z/P        | 8171003                         | 16  | 8171003                           | 16  |
| 33       | SCREW CAP 5/16-18 X 1.75 ZP        | 8041031                         | 8   | 8041031                           | 8   |
| 34       | NUT LOCK 5/16-18                   | 8160002                         | 8   | 8160002                           | 8   |
| 35       | SCREW CAP 1/4-20 X 3/4"            | 8041004                         | 2   | 8041004                           | 2   |
| 36       | WASHER 1/4" SAE ZP                 | 8172007                         | 10  | 8172007                           | 10  |
| 37       | NYLON INSERT LOCKNUT, 1/4-20 UNC   | 8160001                         | 8   | 8160001                           | 8   |
| 38       | 1/2-13 CAP NUT NP W/PATCH          | 890530                          | 4   | 890530                            | 4   |
| 39       | SCREW CAP 1/4-20x2" HCS ZP         | 8041010                         | 1   | 8041010                           | 1   |
| 40       | SCREW PLASTIC 1/4-10 X 1           | 891039                          | 8   | 891039                            | 8   |
| 41       | SCREW 3/8 x 1 1/2 TAPTITE          | 890408                          | 3   | 890408                            | 3   |
| 42       | NOZZLE TOP HALF KV                 | 891002                          | 1   | 891002                            | 1   |
| 43       | NOZZLE BOTTOM HALF KV              | 891003                          | 1   | 891003                            | 1   |
| 44       | PLUG HOUSING KD LB                 | 900146-01                       | 1   | 900146-01                         | 1   |
| 45       | SCREW SELF TAPPING 10-24 X 1/2     | 891043                          | 1   | 891043                            | 1   |
| 46       | LABEL KV PUSH                      | 891045                          | 1   | 891045                            | 1   |
| 47       | SCREWCAP 1/4-20 X 1"               | 8041006                         | 6   | 8041006                           | 6   |
| 48       | BRACKET NOZZLE KV                  | 891208                          | 2   | 891208                            | 2   |
| 49       |                                    |                                 |     |                                   |     |
| 50       | SPACER 1.5 OD X .875 ID X .975 THK | -                               | -   | 890616                            | 1   |
| 51       | WASHER 1.5 OD X .453 ID X .25 THK  | 440153                          | 1   | 440153                            | 1   |
| 52       | WASHER 1/2" FC                     | 8171006                         | 2   | 8171006                           | 2   |
| 53       | SPRING COMPRESSION                 | 891072                          | 1   | 891072                            | 1   |
| 54       | KNOB 3/8-16 RED                    | 891070                          | 1   | 891070                            | 1   |
| 55       | NUT LOCK 3/8-16 THIN               | 8161042                         | 1   | 8161042                           | 1   |
| 56       | LABEL SPARK ARRESTOR EN/SP         | -                               | -   | 100252                            | 1   |
| 57       |                                    |                                 |     |                                   |     |
| 90       | LABEL MADE IN U.S.A.               | 520116                          | 1   | 520116                            | 1   |
| 91       | GROMMET FLANGE 1/2" MOLDED         | 830176                          | 1   | 830176                            | 1   |
| 92       | SPRING COMPRESSION                 | 400332                          | 1   | 400332                            | 1   |
| 93       | BEARING BALL FLANGED               | 900774                          | 4   | 900774                            | 4   |