



Patent #6,253,416 and other patents pending  
F902S, F902H, F1302H, F1802V

# BILLY GOAT FORCE BLOWER Owner's Manual

## Accessories

<b>HOLD DOWN KIT</b>
<i>To secure blower for transportation on trailer floors.</i>

<b>P/N 440120</b>

<b>SOLID FRONT TIRE</b>
<i>Solid flat-free front tire.</i>

<b>P/N 440279</b>

<b>PARKING BRAKE</b>
<i>Effective and Easy to use to prevent blower from rolling.</i>

<b>P/N 440140</b>

<b>CASTER KIT</b>
<i>For greater maneuverability on hard surfaces.</i>

<b>P/N 440293</b>



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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



## FORCE BLOWER PUSH Owner's Manual

### Specifications

	F902S	F902H	F1302H	F1802V
Engine: HP	9.0 HP (6.6kW)	9.0 HP (6.6kW)	13.0 HP (9.6kW)	18 HP (13.42kW)
Engine: Model	EX270D50021	GX270K1QA2	GX390K1QAA2	3564420224E9
Engine: Type	SUBARU OHC	HONDA OHV	HONDA OHV	B & S VANGUARD
Engine: Fuel Capacity	6.4 qt. (6.1L)	6.3 qt. (6.0L)	6.5 qt. (6.1L)	9 qt. (8.52L)
Engine: Oil Capacity	1.05 qt. (1.0L)	1.16 qt. (1.1L)	1.16 qt. (1.1L)	1.75 qt. (1.66L)
Total Unit Weight:	138 # (62.6Kg)	143 # (64.8Kg)	160 # (72.6Kg)	179 # (81.2Kg)
Overall Length:	58"(1.43m)	58"(1.43m)	58"(1.43m)	58"(1.43m)
Overall Width	29.25" (0.74m)	29.25" (0.74m)	29.25" (0.74m)	29.25" (0.74m)
Overall Height	45" (1.14m)	45" (1.14m)	45" (1.14m)	45" (1.14m)
In compliance with 2000/14/EEC standards	107dB(a) @3340 rpm	109dB(a) @ 3660 rpm	110dB(a) @ 3640 rpm	117dB(a)
Sound at Operator's ears	87dB(a) @ 3340 rpm	89dB(a) @ 3660 rpm	90dB(a) @ 3640 rpm	97dB(a)
Vibration at operator position	.96 g (9.44 m/s <sup>2</sup> )	1.05 g (10.30 m/s <sup>2</sup> )	.81 g (7.96 m/s <sup>2</sup> )	1.2 g (11.9 m/s <sup>2</sup> )

### SOUND



**117 dB** SOUND LEVEL 97 Db(a) at Operators Position

Sound tests were conducted in accordance with 2000/14/EC, as well as ISO 11094, and were performed on 12-12-2006 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:	40.4°F (4.7°C)
Wind Speed:	6.1 mph (9.9kph)
Wind Direction:	Southwest
Humidity:	93.6%
Barometric Pressure:	30Hg (101.85kpa)

### VIBRATION DATA

VIBRATION LEVEL 1.2g (11.9m/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 12-13-2006 under the conditions listed below.

General Conditions:	Sunny
Temperature:	57.2°F (14.3°C)
Wind Speed:	11.8 mph (19.1kph)
Wind Direction:	South
Humidity:	46.4%
Barometric Pressure:	30.1Hg (101.96kpa)



**INSTRUCTION LABELS**

The labels shown below were installed on your BILLY GOAT<sup>®</sup> FORCE Blower. 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 SPARK ARRESTOR**  
P/N 100252



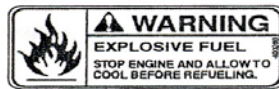
**LABEL READ OWNERS MANUAL**  
ITEM #44 P/N890301



**LABEL EAR EYE BREATHING**  
ITEM# 45 P/N890254



**DANGER FLYING DEBRIS**  
ITEM # 46 P/N 810736



**LABEL EXPLOSIVE FUEL**  
ITEM # 43 P/N 400268



**LABEL THROTTLE CONTROL**  
ITEM # 42 P/N 810656

**ENGINE LABELS**

**HONDA**



READ OWNER'S MANUAL BEFORE OPERATION.  
LIRE LE MANUEL D'UTILISATEUR AVANT USAGE.  
VOR INBETRIEBNAHME UNBEDINGT BEDIENUNGSANLEITUNG DURCHLESEN.  
NO UTILIZAR SINANTES NO HABER LEIDO EL MANUAL.  
HONDA MOTOR CO., LTD. MADE IN JAPAN

**OIL ALERT**  
WHEN OIL LEVELLOW, ENGINE STOPS IMMEDIATELY.

**SUBARU**



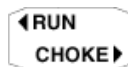
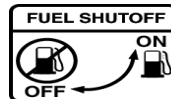
	Read the owner's manual.		
	Stay clear of the hot surface.		
	Exhaust gas is poisonous. Do not operate in an unventilated area.		
	Stop the engine before refueling.		
	Fire, open flame and smoking prohibited.		
	On (Run)	+	Plus ; Positive polarity
○	Off (Stop)		Battery
	Engine oil		Engine start (Electric start)
	Add oil		

**BRIGGS AND STRATTON VANGUARD**

**ENGINE MAINTENANCE**

1. CHECK OIL LEVEL	8 HOURS
2. CHECK & CLEAN AIR CLEANER	25 HOURS
3. CHANGE OIL	50 HOURS
4. REPLACE OIL FILTER	100 HOURS
5. CLEAN COOLING FINS	100 HOURS

See Operating and Maintenance Instructions





## PACKING CHECKLIST

These items should be included in your carton. If any of these parts are missing, contact your dealer. Your BILLY GOAT® *FORCE Blower* was shipped in one carton, completely assembled except for the Upper Handle Assembly and Front Diverter. Mounting hardware for the Upper Handle Assembly can be found in the parts bag.



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

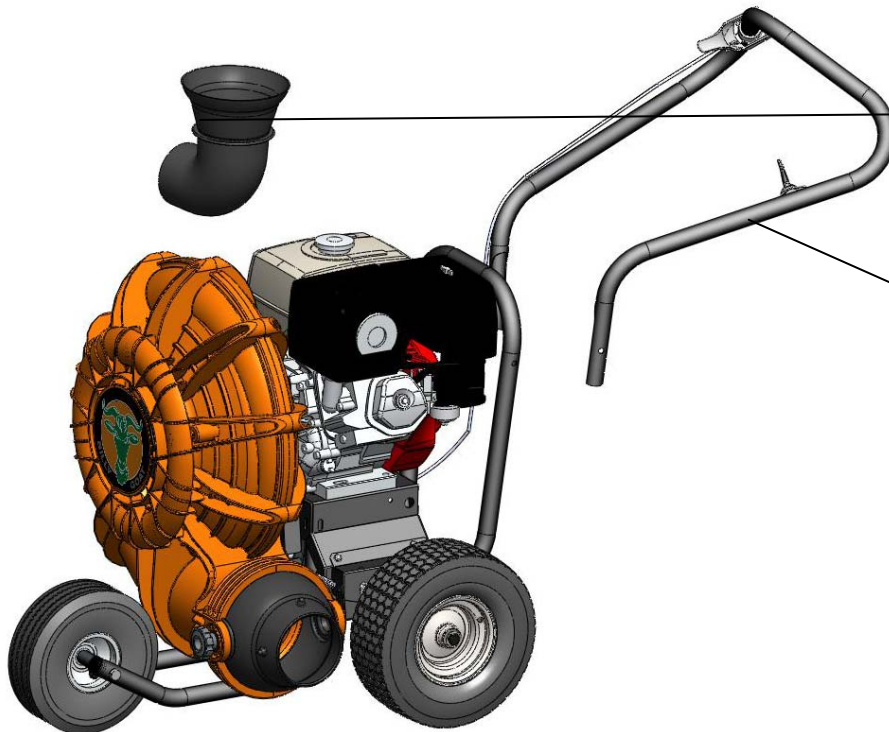
**TAKE CAUTION** when removing the unit from the box the Handle Assembly is attached to the unit by cables.



**PUT OIL IN ENGINE BEFORE STARTING**

## PARTS BAG & LITERATURE ASSY

Warranty card P/N- 400972, Owner's Manual P/N-440313, General Safety and Warnings Manual P/N-100294, Declaration of Conformity P/N-440022, Handle Hardware-Items #10, #11, #74, #71 and #36



### **Boxing Parts Checklist**

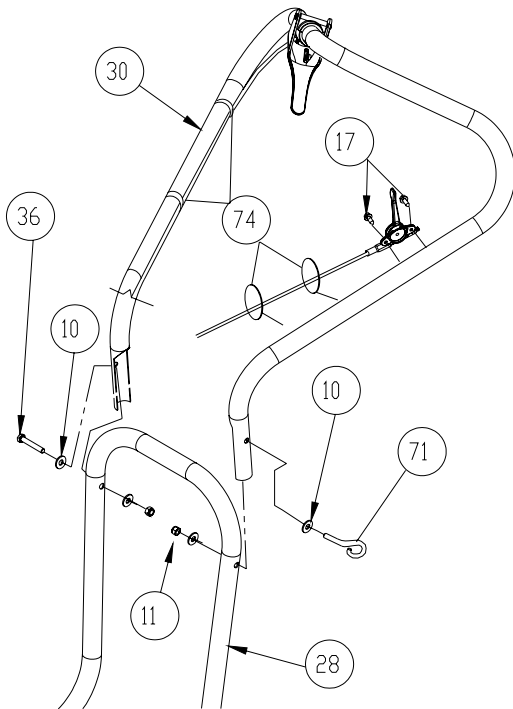
- Front Air Diverter  
(For F902S, F902H, and F1302H models only)  
Item#38  
F9 MODEL P/N-440045-4  
F13 MODEL P/N-440045-5
- Handle Upper Assembly  
Item #30 P/N-440035
- Parts Bag & Literature Assy  
P/N-440266
  
- Honda 9 or 13 hp
- Subaru 9 hp
- B & S Vanguard 18 hp

**ASSEMBLY**

1. Follow the steps in figures A and B, then securely tighten all hardware shown.
2. Connect spark plug wire.

**Figure A**

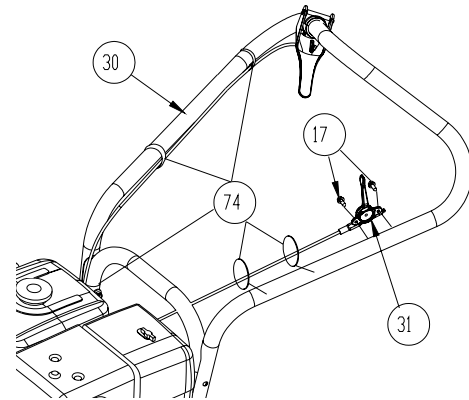
The hardware for attaching the upper handle to the lower is in the parts bag. Install upper handle (item 30), to preassembled lower handle (item 28) by sliding the upper over and down the outside of the lower handle. Using bolt (items #36 and 71), washers (item #10) & lock nut (item #11) to install upper handle to lower handle. **Note:** The Pigtail bolt should go on the side that the pull start is on and the open end should be facing down. Finish installing the other side of the upper handle assembly using screw and lock nut provided.



Two 1/2" open ended wrenches

**Figure B**

The throttle control will be attached to the throttle arm on the engine and wrapped around the engine for shipping. Unwrap and secure throttle control (item #31) to upper handle with screws (item #17). Screws will already be mounted in handle, simply remove and use to mount the throttle control securing the cable with two Ty-wraps. The Aim-and-Shoot™ is not attached, you will need to unroll the cable and attach the ball end to the lever and seat the cable end into the hole on the saddle clamp, with the cable running through the slot. To keep the cable from being damaged use three ty-wraps (item 74) to secure it to the handle as shown making sure that the cable is not rubbing against the tire. Note: the cable should be seated properly in the saddle and should follow the contours of the handle.



**Good routing**

**Bad routing**



One 5/16 open ended wrench



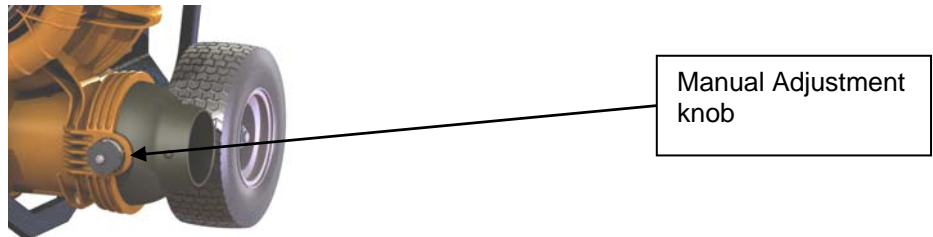
**BLOWING OPERATION**

Your Billy Goat Force blower is equipped with an air director cone and the patented Aim-N-Shoot™ control lever to allow the operator to direct the air stream up or down as required to assist in moving debris. This feature is extremely useful when debris has piled up to the point that it cannot be blown any farther. The air stream can be directed upward to blow the top of the debris pile over and allow the operator to continue moving more debris farther.

**ADJUSTING AIR DIRECTOR**

To adjust air direction, squeeze Aim-N-Shoot™ control lever. When you want to blow debris at the same angle for an extended period, choose a suitable position and use the finger controlled push button lock to lock the cone in position. For operations that do not require the use of the Aim-N-Shoot™ feature the manual adjustment knob, pictured below, can be used to permanently lock the cone into position. **NOTE:** be sure to release the knob when returning to using the Aim-N-Shoot™.

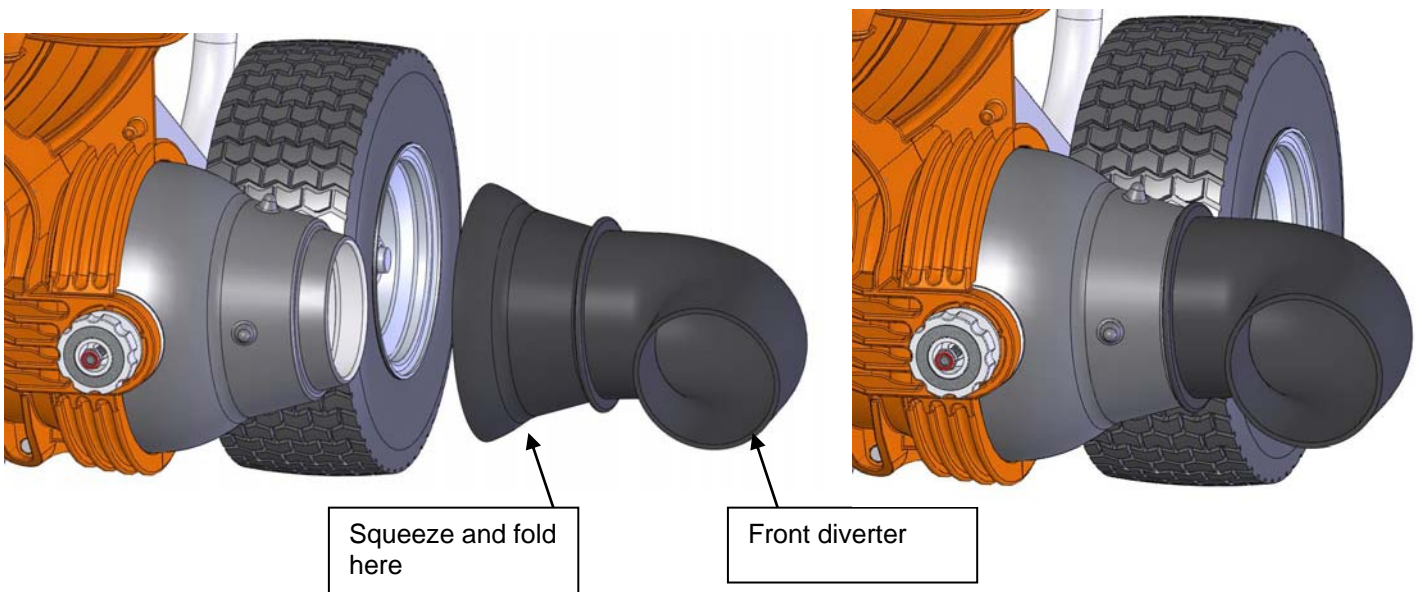
**⚠ DO NOT** position director cone to where it will blow debris towards people, vehicles or other objects in vicinity. Flying debris may damage, harm, or cause injury to people or objects in air flow range.



**FRONT DIVERTER POSITIONING (F9 and F13 models only)**

The removable front diverter adapter can be slipped inside the cone to direct the air stream forward. First turn off engine, and then simply collapse the fold in the larger opening of the diverter and slide inside the cone and allow it to expand. Then position to the desired angle by rotating the diverter. This option is extremely useful for cleaning out long cracks in pavement or for cleaning under bushes, building overhangs or along curbs.

**⚠ WARNING:** Unit will be more difficult to control due to the air exiting the unit. Keep hands on the unit at all times when using the front diverter. Please note that the Aim-N-Shoot™ feature will not function when the Front Diverter is installed.





**MAINTENANCE**

**PERIODIC MAINTENANCE**

Periodic maintenance should be performed at the following intervals:

Maintenance Operation	Every Use	Daily or Every 5 Hours	Every 25 Hours	Every 50 Hours	Every 100-150 Hours
Inspect for worn or damaged parts.	•				
Check for excessive vibration		•			
Inspect Impeller for cracks or damage					•
Inspect for loose parts.		•			

**IMPELLER REMOVAL**

1. Wait for engine to cool and disconnect spark plug.
2. Remove housing front cover, by removing (11) bolts and nuts, items #13 & #14, around outside of front cover.
3. Remove impeller bolt (item #35), lock washer (item #86) and washer (item #34).
4. **DO NOT** pry on impeller. Pull on center hub area only of impeller. *Using a penetrating oil can help loosen a stuck impeller.*
5. Reinstall new impeller in reverse order of removal.
6. Tighten impeller bolt. Torque impeller bolt (see parts list on page 15 for proper impeller bolt torque specifications).

**TIRE AIR PRESSURE**

Check at regular intervals and maintain.

- Front Tires - 24 Psi (165 kPa).
- Rear Tires - 20 Psi (137 kPa).

**TROUBLESHOOTING**

Problem	Possible Cause	Solution
Abnormal vibration.	<ul style="list-style-type: none"> <li>Loose or out of balance impeller.</li> <li>Debris in impeller.</li> <li>Loose engine.</li> </ul>	<ul style="list-style-type: none"> <li>Check impeller and replace if required.</li> <li>Clear debris with compressed air or a backpack blower (see below pictures).*</li> <li>Check engine.</li> </ul>
Engine will not start.	<ul style="list-style-type: none"> <li>Engine not in full choke position.</li> <li>Out of gasoline or bad, old gasoline.</li> <li>Spark Plug wire disconnected.</li> <li>Gas valve off.</li> <li>Dirty air cleaner.</li> </ul>	<ul style="list-style-type: none"> <li>Check choke position.</li> <li>Check gasoline.</li> <li>Connect spark plug wire.</li> <li>Turn on gas valve.</li> <li>Clean or replace air cleaner. Contact a qualified service person.</li> </ul>
Engine is locked, will not pull over.	<ul style="list-style-type: none"> <li>Engine problem.</li> </ul>	<ul style="list-style-type: none"> <li>Contact an engine servicing dealer for engine problems.</li> </ul>
Aim-N-Shoot™ lever sticking	<ul style="list-style-type: none"> <li>Debris stuck around cone</li> <li>Cone adjustment knob too tight</li> <li>Adaptor mount nut (item 38) too tight</li> </ul>	<ul style="list-style-type: none"> <li>Clean debris</li> <li>Apply silicone based lubricant to pivot points</li> <li>Loosen manual adjustment knob</li> <li>Loosen nut</li> </ul>

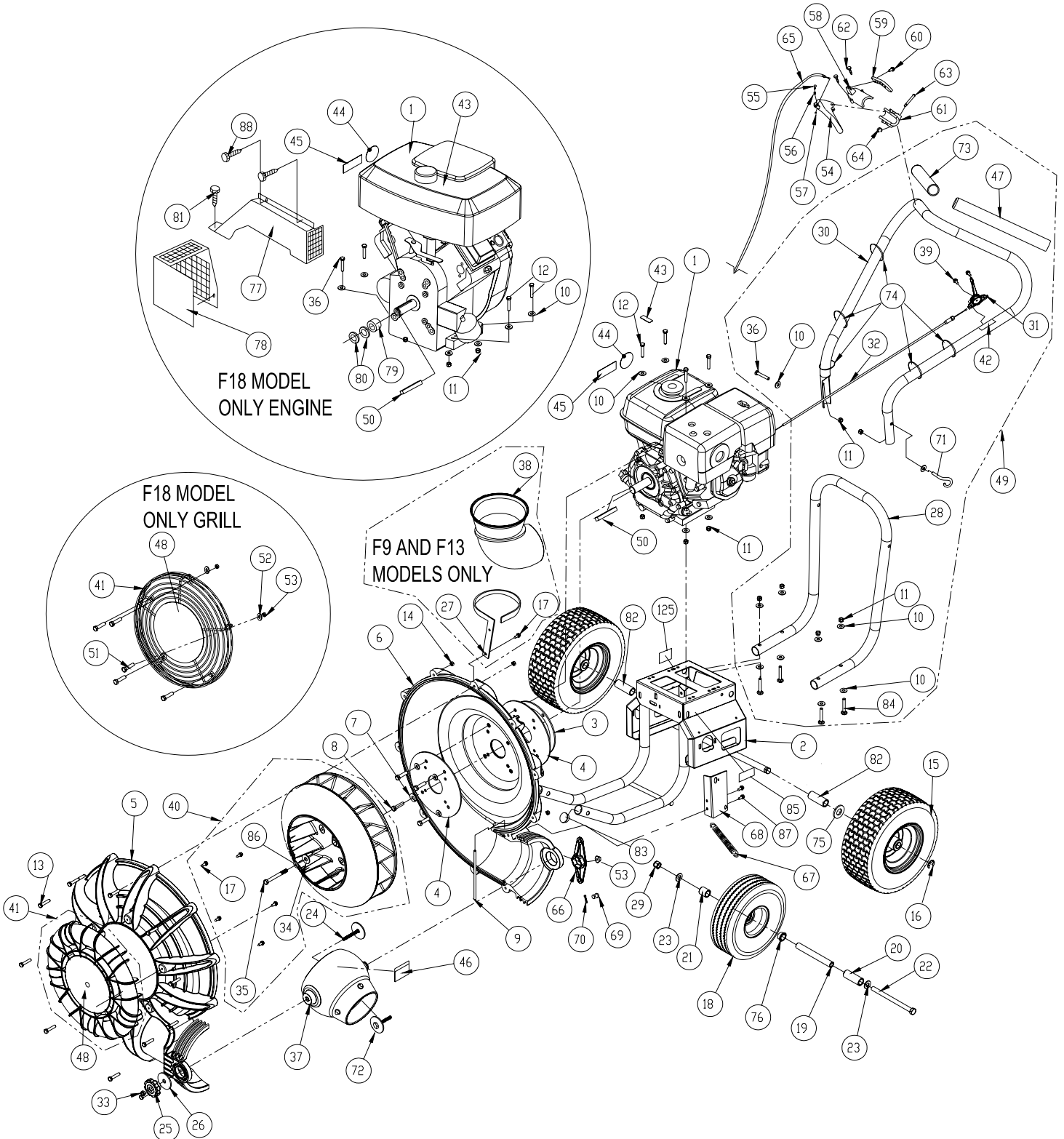
\*Using compressed air, or a Backpack blower, you can loosen or free debris easily from the impeller and housing, which can cause wear and tear on the machine. You can manually remove debris by taking off the front housing.  
 Note: Always disconnect the sparkplug when servicing.







ILLUSTRATED PARTS LIST





# FORCE BLOWER PUSH Owner's Manual

## PARTS LIST

ITEM NO.	DESCRIPTION	F1302H		F902H		F902S		F1802V	
		PART NUMBER	QTY.	PART NUMBER	QTY.	PART NUMBER	QTY.	PART NUMBER	QTY.
1	ENGINE 13 HP HONDA GX390	440018	1	-	-	-	-	-	-
	ENGINE 9 HP HONDA GX270	-	-	430287	1	-	-	-	-
	ENGINE 9 HP HORZ SUBARU OHC	-	-	-	-	430413	1	-	-
	ENGINE 18 VANGUARD	-	-	-	-	-	-	812240	1
2	BASE ENGINE WA FSP	440244-S	1	440244-S	1	440244-S	1	440244-S	1
3	SPACER RING ENGINE	440009	1	440009	1	440009	1	440174	1
4	PLATE REINFORCE HOUSING	440010	2	440010	2	440010	2	440010	2
5	HOUSING FRONT MOLDED	440023	1	440023	1	440023	1	440023	1
6	HOUSING BACK MOLDED	440024	1	440024	1	440024	1	440024	1
7	WASHER LOCK	8177012	5	8177013	5	8177013	5	8177013	5
8	SCREW CAP 3/8-16X1 1/2 ZP	8041052	4	8041052	4	8041052	4	-	-
	SCREW CAP 3/8-16X 2" ZP	-	-	-	-	-	-	8041054	4
9	ROD HAND STOP	440057	1	440057	1	440057	1	440057	1
10	WASHER 5/16 FLATWASHER Z/P	8171003	20	8171003	20	8171003	20	8171003	20
11	NYLON INSERT LOCKNUT 5/16-18	8160002	10	8160002	10	8160002	10	8160002	10
12	SCREWCAP 5/16-18 X 1.75 ZP	8041031	4	8041031	4	8041031	4	8041031	2
13	SCREWCAP 1/4-20 x 1 1/2	8041008	11	8041008	11	8041008	11	8041008	11
14	NUT FLANGE 1/4-20	900455	11	900455	11	900455	11	900455	11
15	WHEEL & TIRE 13" X 5" PNEUMATIC	440054	2	440054	2	440054	2	440054	2
16	RING RETAINING 3/4	850230	2	850230	2	850230	2	850230	2
17	SCREW SELF-TAP 5/16 NC X 3/4 HEX	8122082	7	8122082	7	8122082	7	-	-
18	WHEEL ASSY 10" PNEUMATIC	400295	1	400295	1	400295	1	400295	1
19	SPACER FRONT AXLE	440220	1	440220	1	440220	1	440220	1
20	SPACER LH WHEEL FRONT	440224	1	440224	1	440224	1	440224	1
21	SPACER RH WHEEL FRONT	440221	1	440221	1	440221	1	440221	1
22	SCREWCAP 1/2-13 x 9 1/2"	8041240	1	8041240	1	8041240	1	8041240	1
23	WASHER FLAT 1/2" SAE	8172011	2	8172011	2	8172011	2	8172011	2
24	WASHER W/BOLT WA	440075	1	440075	1	440075	1	440075	1
25	KNOB 3/8-16 SOLID HUB	811230	1	811230	1	811230	1	811230	1
26	WASHER 2.25 OD x .515 ID x .134 ZP	610308-P	1	610308-P	1	610308-P	1	610308-P	1
27	BRACKET HOLDER WA	440240	1	440240	1	440240	1	-	-
28	HANDLE LOWER	440034	1	440034	1	440034	1	440034	1
29	NYLON INSERT LOCKNUT 1/2-13	8160005	1	8160005	1	8160005	1	8160005	1
30	HANDLE UPPER	440035	1	440035	1	440035	1	440035	1
31	CONTROL THROTTLE	440013	1	440013	1	440013	1	440013	1
32	CABLE THROTTLE CONTROL	440014	1	440014	1	440014	1	440178	1
33	NUT LOCK 3/8-16 LT WT THIN ZP	8161042	1	8161042	1	8161042	1	8161042	1
34	WASHER 1.5 O.D.X 0.45 I.D. X 0.5	440176	1	440176	1	440176	1	440176	1
35	SCREWCAP 3/8-24 X 2 3/4" GR. 8 (38 +/- 2 ft-lbs.)	790167	1	-	-	-	-	-	-
	SCREWCAP 7/16-20 X 2 3/4" GR.8 (60 +/- 2 ft-lbs)	-	-	440285	1	440285	1	-	-
	SCREWCAP 3/8-24 X 4 GR.8 (38 +/- 2 ft-lbs)	-	-	-	-	-	-	8042062	1
36	SCREWCAP 5/16"-18 X 2" ZP	8041032	1	8041032	1	8041032	1	8041032	2
37	DIRECTOR CONE 5"	440044-S	1	-	-	-	-	-	-
	DIRECTOR CONE 4"	-	-	440046-S	1	440046-S	1	-	-
	DIRECTOR CONE 6"	-	-	-	-	-	-	440170-S	1
38	DIVERTER FRONT	440045-5	1	440045-4	1	440045-4	1	-	-
39	SCREW SM #10-24X1/2" DRILL POINT	8122064	2	8122064	2	8122064	2	8122064	2
40	IMPELLER ASSEMBLY 17"	440236	1	440236	1	440236	1	-	-
	IMPELLER SERVICE ASSY FORCE 18HP	-	-	-	-	-	-	440162	1
41	GRILL FRONT BLOWER	440067-1-S	1	440067-1-S	1	440067-1-S	1	440171-S	1
42	LABEL THROTTLE CONTROL	810656	1	810656	1	810656	1	810656	1
43	LABEL FUEL EN/SP	-	-	-	-	100261	1	100261	1
44	LABEL READ	890301	1	890301	1	890301	1	890301	1
45	LABEL EAR EYE BREATHING	890254	1	890254	1	890254	1	890254	1
46	LABEL DANGER FLYING DEBRIS	810736	1	810736	1	810736	1	810736	1
47	GRIP 1-1/4" ID x 13"	440012	1	440012	1	440012	1	440012	1
48	LABEL FORCE	440268	1	440268	1	440268	1	440268	1
49	HANDLE ASSY UPPER	440104	1	440104	1	440104	1	440104	1
50	KEY 1/4" SQ x 3.25	9201128	1	9201128	1	9201128	1	-	-
	KEY 1/4" SQ x 2.75	-	-	-	-	-	-	9201130	1
51	SCREWCAP 1/4-20 X 1"	-	-	-	-	-	-	8041006	7
52	WASHER FLAT 1/4	-	-	-	-	-	-	8171002	5
53	NUT LOCK 1/4"-20 HEX ZP	8160001	1	8160001	1	8160001	1	8160001	1
54	HANDLE DIVERTER FORCE	440119	1	440119	1	440119	1	440119	1
55	PIN LATCH DIVERTER	440118	1	440118	1	440118	1	440118	1
56	SPRING COMPRESSION 0.281 X 0.88	440129	1	440129	1	440129	1	440129	1
57	RING RETAINING .122 DIA	440125	1	440125	1	440125	1	440125	1
58	SADDLE UPPER DIVERTER	440115	1	440115	1	440115	1	440115	1
59	PLATE LOCK DIVERTER	440116	1	440116	1	440116	1	440116	1
60	SCREW PLASTITE #6-19 X 5/8"	440126	1	440126	1	440126	1	440126	1



## FORCE BLOWER PUSH Owner's Manual

ITEM NO.	DESCRIPTION	F1301H		F901H		F901S		F1801V	
		PART NUMBER	QTY.	PART NUMBER	QTY.	PART NUMBER	QTY.	PART NUMBER	QTY.
61	SADDLE LOWER DIVERTER	440114	1	440114	1	440114	1	440114	1
62	SCREW PLASTITE #10-14 X 1"	440132	2	440132	2	440132	2	440132	2
63	PIN PIVOT DIVERTER CONTROL	440123	1	440123	1	440123	1	440123	1
64	RING RETAINING 5/16	430327	1	430327	1	430327	1	430327	1
65	CABLE ASSY	440117	1	440117	1	440117	1	440117	1
66	DIVERTER PIVOT ADAPTOR	440121	1	440121	1	440121	1	440121	1
67	SPRING EXTENSION 0.468 X 5.25	440130	1	440130	1	440130	1	440130	1
68	BRACKET DIVERTER FORCE	440212	1	440212	1	440212	1	440212	1
69	PIN CLEVIS 1/4 X 3/4	440124	1	440124	1	440124	1	440124	1
70	.051 X 3/4" HITCH PIN CLIP	440193	1	440193	1	440193	1	440193	1
71	EYEBOLT PIGTAIL 5/16"-18 X 1 1/4"	440280	1	440280	1	440280	1	440280	1
72	ADAPTOR MOUNT WA	440122	1	440122	1	440122	1	440122	1
73	GRIP 1-1/4" ID x 9.5" LONG	440146	1	440146	1	440146	1	440146	1
74	TY-WRAP	900407	5	900407	5	900407	5	900407	5
75	WASHER .765 ID X 1.25 OD X 0.6"	850238	2	850238	2	850238	2	850238	2
76	FORCE WHEEL BEARING .751 ID	440055	2	440055	2	440055	2	440055	2
77	GUARD MANIFOLD	-	-	-	-	-	-	812243	1
78	GUARD MUFFLER	-	-	-	-	-	-	812242	1
79	SPACER 1" ID X 2" OD X 0.890 TK	-	-	-	-	-	-	830112	1
80	SPACER 1" ID X 2" OD X 0.265 TK	-	-	-	-	-	-	830113	2
81	SCREW SELF TAP 1/4"-20 X 5/8"	-	-	-	-	-	-	890359	2
82	SPACER REAR WHEEL PUSH	440226	2	440226	2	440226	2	440226	2
83	PLUG	791056	2	791056	2	791056	2	791056	2
84	CARRIAGE BOLT 3/8"-16 X 2" ZP	8024062	4	8024062	4	8024062	4	8024062	4
85	SPARK ARRESTOR LABEL	100252	1	100252	1	100252	1	100252	1
86	WASHER LOCK 3/8 ST MED	8177012	1	-	-	-	-	8177012	1
	WASHER LOCK 7/16 ST MED	-	-	8177013	-	8177013	1	-	-
87	SCREW PLASTITE 1/4"-10 X 3/4" HWH ZP	840082	2	840082	2	840082	2	840082	2
88	SCREW SM 1/4 X 1" DRILL PT	-	-	-	-	-	-	430208	2
125	LABEL MADE IN U.S.A.	520116	1	520116	1	520116	1	520116	1