



FORCE™ 602V & 602X BLOWER Owner's Manual



FORCE BLOWER Owner's Manual F602V, F602X

ACCESSORIES

FRONT AIR DIRECTOR
Simple to attach, allowing air to be directed forward.

PN# 441130

HOSE KIT
Easily attached hose and nozzle for hard to reach places.

PN# 441166

Original Instructions

IMPORTANT- READ CAREFULLY BEFORE USE AND KEEP FOR FUTURE REFERENCE



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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.



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SPECIFICATIONS

	F602V	F602X
Engine HP	5.0 HP (kW)	4.74 HP (3.53kW)
Engine Model	10V3320003F1	130G320231F1
Engine Type	B & S VANGUARD	ENGINE B&S XR
Engine Fuel Capacity	3.3 qt. (3.1 L)	3.2 qt. (3.0 L)
Engine Oil Capacity	0.63 qt.(0.60 L)	0.63 qt. (0.60 L)
Total Unit Weight	89 lb (40.3 kg)	83 lb (38kg)
Overall Length	43.5" (1.1m)	43.5" (1.1m)
Overall Width	22" (0.56m)	22" (0.56m)
Overall Height	45" (1.14m)	45" (1.14m)
Max Operating Slope	20°	20°

SAFETY



WARNING



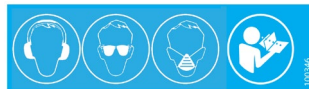
This product can expose you to chemicals including gasoline engine exhaust, which is known to the State of California to cause cancer, and carbon monoxide, which is known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

INSTRUCTION LABELS

The labels shown below were installed on your BILLY GOAT® FORCE™ Blower. If any labels are damaged or missing, replace them before operating this equipment. For your convenience in ordering replacement labels, part numbers are included in the Illustrated Parts List. 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 SAFETY PROTECT
ITEM # 36 P/N 100346



LABEL FLYING DEBRIS
ITEM # 37 P/N 810736



LABEL EXPLOSIVE FUEL
ITEM # 34 P/N 400268



LABEL READ OWNERS MANUAL
ITEM # 35 P/N 890301



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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 front wheel, upper handle assembly, and the Aim-N-Shoot™ cable.



READ all safety instructions before assembling unit.

TAKE CAUTION when removing the unit from the box as 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-441502, General Safety and Warnings Manual P/N-100294, Declaration of Conformity P/N-441249



Boxing Parts Checklist

- Handle Upper Assembly
Item 24 P/N-441408
- Parts Bag & Literature Assy
P/N-441406
- Vanguard 5.5
- B&S XR950



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ASSEMBLY

NOTE: All items referenced in () can be found in the Illustrated Parts Drawing and Parts List found at the back of the manual.

1. First, attach the front wheel. The hardware to secure the wheel (spacer, bolt, and nut) are included with your unit. Gently lower your Billy Goat Force™ Blower onto its back to access the front wheel bracket. Insert the spacer into the front wheel. Then, place the wheel into the front wheel bracket. Line up the wheel axle holes with the holes in the bracket. Insert the bolt into the bracket and front wheel, and then secure the wheel with the nut provided. Use 9/16" wrenches to tighten the hardware and further secure the front wheel assembly. See Figure 1. With the front wheel attached, gently lift your Billy Goat Force™ Blower into operating position. Chock the front wheel to keep the unit from moving while you assemble the handles.
2. Second, assemble the handles. Locate the upper handle assembly hardware, two bolts and two knobs. Line up the upper handle to the lower handles. Secure the upper handle to the lower handle with the bolt and knob. Tighten by hand. Note that the knob should be installed *inside* the handle assembly. See Figure 2. Secure the opposite side of the handle assembly with the remaining bolt and knob.
3. Finally, connect the Aim-N-Shoot™ cable. One end of the Aim-N-Shoot™ cable is connected to the air director cone, but you will need to connect the ball end of the cable to the Aim-N-Shoot™ control lever on the upper handle. First, locate the rolled up cable beneath the unit. Then unroll the cable, thread the cable to the outside of the machine and up to the handle. Push down on the air director cone to release extra length on the ball end of the cable. See Figure 3. With the extra length released, attach the Aim-N-Shoot™ cable to its holder on the Aim-N-Shoot™ control lever. See Figure 4. Finally, secure your Aim-N-Shoot™ cable to the unit with the zip ties provided.

Fig. 1

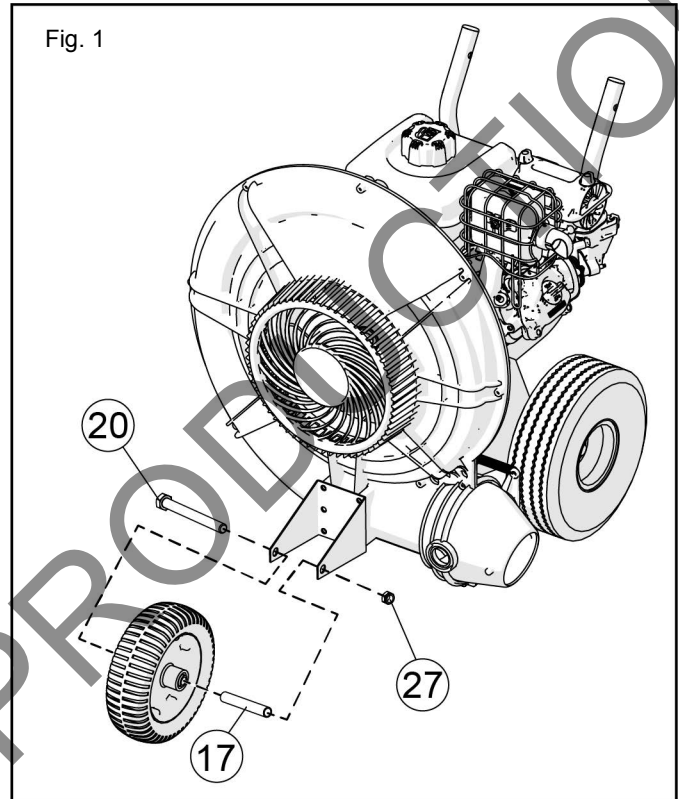
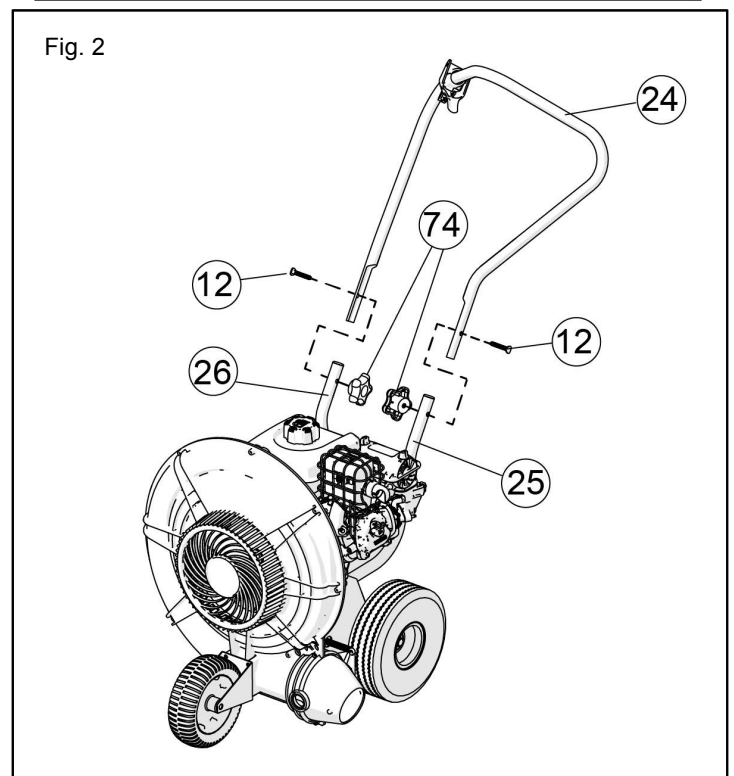
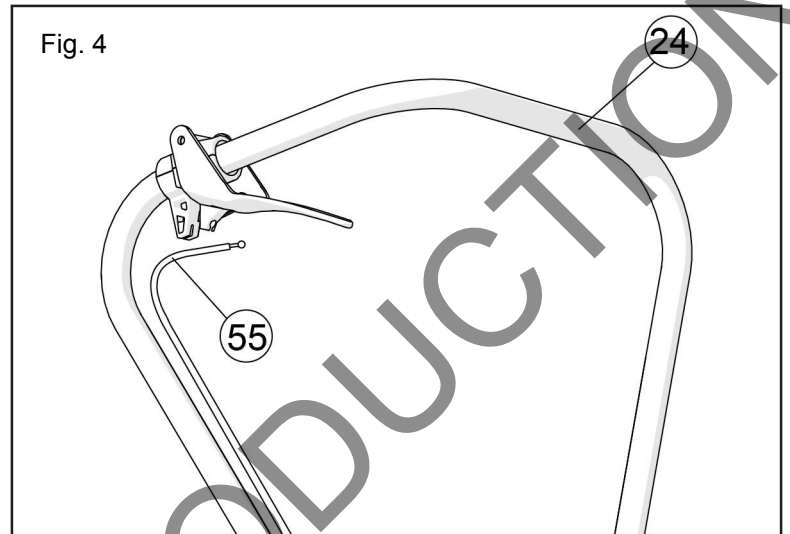
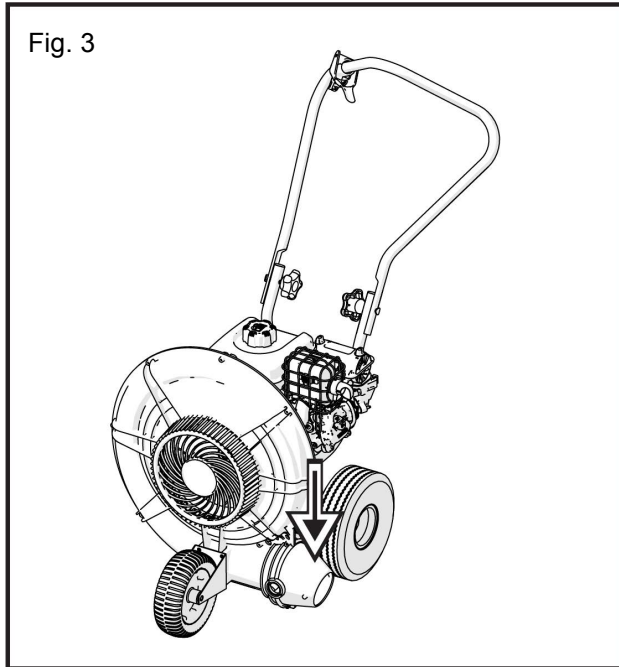


Fig. 2





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OPERATION

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 (See Fig. 5).

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.

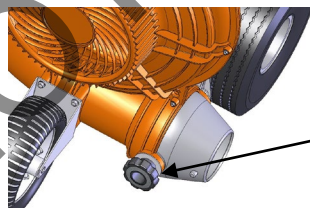


Fig. 5



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MAINTENANCE

PERIODIC MAINTENANCE

Periodic maintenance should be performed at the following intervals:

Maintenance Operation	Every Use	Daily or Every 5 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 the ten screws from around outside of front cover and the exhaust knob (item #22) and nut (item #14).
3. Remove impeller bolt (item #29), lock washer (item #7) and washer (item #28).
4. DO NOT pry on impeller. Pull on center hub area only of impeller. If impeller slides off freely, proceed to (step 6).
5. If the impeller does not loosen, use a pry bar against the back of the hub and the plate and apply pressure to separate the impeller from the shaft. **DO NOT** use the pry bar to apply pressure to any plastic part such as the impeller or the main housing. Using a penetrating oil can help loosen a stuck impeller.
6. Reinstall new impeller in reverse order of removal.
7. Tighten impeller bolt. Torque impeller bolt (see Parts List on page 10 for proper impeller bolt torque specifications).

TIRE AIR PRESSURE

Check at regular intervals and maintain.

Rear Tires - 20 Psi (137 kPa).



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TROUBLESHOOTING

Problem	Possible Cause	Solution
Abnormal vibration	Loose or out of balance impeller. Debris in impeller. Loose engine.	Check impeller and replace if required. Clear debris with compressed air or a backpack blower (See Fig. 6 and 7 below).* Check engine.
Engine will not start	Engine not in full choke position. Out of gasoline or bad, old gasoline. Spark plug wire disconnected. Gas valve off. Dirty air cleaner.	Check choke position. Check gasoline. Connect spark plug wire. Turn on gas valve. Clean or replace air cleaner. Contact a qualified service person.
Engine is locked, will not pull over	Engine problem.	Contact an engine servicing dealer for engine problems.
Aim-N-Shoot™ lever sticking	Debris stuck around cone. Cone adjustment knob too tight. Adaptor mount nut (item #43) too tight.	Clean debris. Apply silicone based lubricant to pivot points. Loosen manual adjustment knob. Loosen nut.

*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 spark plug when servicing.
(See Fig. 4 and 5)



Fig. 6

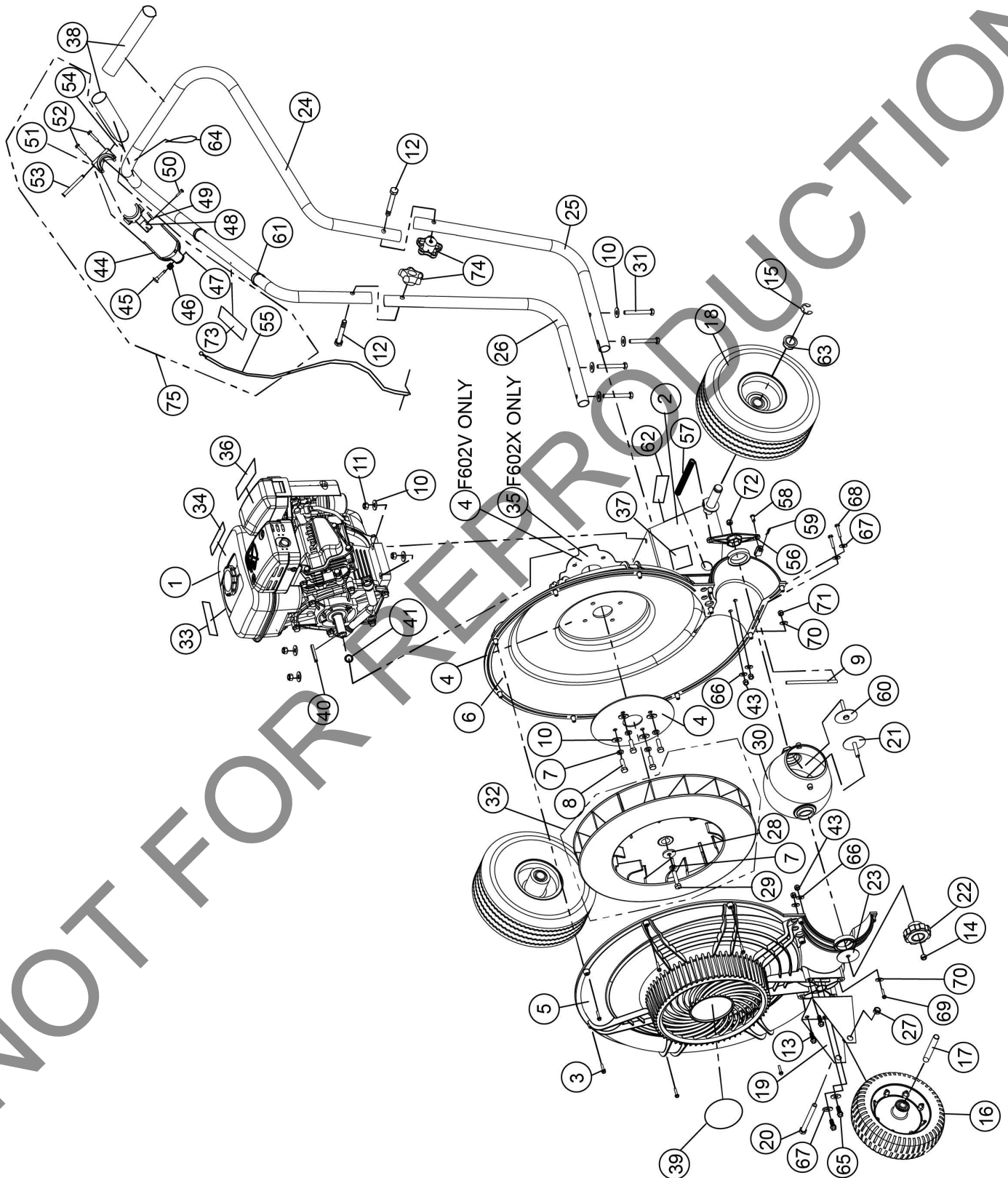


Fig. 7



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F601V and F601X PARTS DRAWING





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F601V and F601X PARTS LIST

ITEM NO.	DESCRIPTION	F602V		F602X	
		PART NUMBER	QTY.	PART NUMBER	QTY.
1	ENGINE, 160CC, VANGUARD	382351	1	-	-
	ENGINE B&S XR	-	-	441210	1
2	BASE ENGINE WA	441151-S	1	441151-S	1
3	SCREW PLASTITE #8-16 X 3/4" HWH	441155	10	441155	10
4	PLATE REINFORCE HOUSING	441102	2	441102	1
5	HOUSING FRONT MOLDED	441101-1-S	1	441101-1-S	1
6	HOUSING BACK MOLDED	441101-2	1	441101-2	1
7	WASHER LOCK 5/16 ST MED	8177011	5	8177011	5
8	SCREW CAP 5/16-24 X 1" GR. 5 ZP	400164	4	400164	4
9	ROD HAND STOP	441154	1	441154	1
10	WASHER 5/16 FLATWASHER Z/P	8171003	12	8171003	12
11	NYLON INSERT LOCKNUT 5/16-18	8160002	4	8160002	4
12	BOLT CARRIAGE 5/16-18 X 2" CONE HEAD ZP	80003918	2	80003918	2
13	SCREW PLASTITE 1/4-10 X 3/4 HWH	840082	4	840082	4
14	NUT LOCK 5/16-18 LT WT TH ZP	8161041	1	8161041	1
15	RING RETAINING 3/4	850230	2	850230	2
16	WHEEL 8" X 0.5	441123	1	441123	1
17	SPACER FRONT AXLE	441162	1	441162	1
18	WHEEL ASSY 10"	400295	2	400295	2
19	FRONT WHEEL BRACKET	441122	1	441122	1
20	SCREWCAP 3/8-16 X 3 3/4 HCS ZP	8041061	1	8041061	1
21	WASHER W/BOLT WA	441156	1	441156	1
22	KNOB 5/16-18 X 5/8 FLUTED	400339	1	400339	1
23	WASHER EXTENSION	810652	1	810652	1
24	HANDLE UPPER	441157-S	1	441157-S	1
25	HANDLE LOWER LH	441158	1	441158	1
26	HANDLE LOWER RH	441159	1	441159	1
27	NUT LOCK 3/8-16 LT WT THIN ZP	8161042	1	8161042	1
28	WASHER 1.125 OD X 0.344 ID X 10 GA.	441150	1	441150	1
29	SCREWCAP 5/16-24 X 1 1/2 GR 8 24-28 Ft. lbs. (33-38 N.m)	830135	1	830135	1
30	DIRECTOR CONE 3.5"	441120-01	1	441120-01	1
31	SCREWCAP 5/16-18 X 2 1/2	8041034	4	8041034	4
32	IMPELLER ASSEMBLY 16"	441202-S	1	441202-S	1
33	LABEL SPARK ARRESTOR	100252	1	100252	1
34	LABEL WARNING FUEL EN/SP	100261	1	100261	1
35	PLATE ENGINE XR 950	-	-	441255	1
36	LABEL SAFETY PROTECT READ MANUAL	100346	1	100346	1
37	LABEL DANGER FLYING DEBRIS	810736	1	810736	1
38	GRIP 1" ID x 13"	400570	2	400570	2
39	LABEL LOGO SMALL FRAME	441234	1	441234	1
40	KEY 3/16" SQ x 1 3/4	9201084	1	9201084	1
41	SPACER ENGINE BRIGGS XR	-	-	441254	1
43	NUT LOCK 1/4"-20 HEX ZP	8160001	4	8160001	4
44	HANDLE DIVERTER FORCE	440119	1	440119	1
45	PIN LATCH DIVERTER	440118	1	440118	1
46	SPRING COMPRESSION 0.281 X 0.88	440129	1	440129	1
47	RING RETAINING .122 DIA	440125	1	440125	1
48	SADDLE LOWER DIVERTER	440115	1	440115	1
49	PLATE LOCK DIVERTER	440116	1	440116	1
50	SCREW PLASTITE #6-19 X 5/8"	440132	1	440132	1
51	SADDLE UPPER DIVERTER	440114	1	440114	1
52	SCREW PLASTITE #10-14 X 1"	440126	2	440126	2
53	PIN PIVOT DIVERTER CONTROL	440123	1	440123	1
54	RING RETAINING 5/16	430327	1	430327	1
55	CABLE ASSY	441163	1	441163	1
56	DIVERTER PIVOT ADAPTOR	440121	1	440121	1
57	SPRING EXTENSION 0.468 X 5.25	440130	1	440130	1
58	PIN CLEVIS 1/4 X 3/4	440124	1	440124	1
59	.051 X 3/4" HITCH PIN CLIP	440193	1	440193	1
60	ADAPTOR MOUNT WA	440122	1	440122	1
61	TY-WRAP	900407	3	900407	3
62	LABEL VIBRATION WARNING	440191	1	440191	1
63	FORCE WHEEL BEARING .751 ID	440055	2	440055	2
64	ELASTIC LOOP BLACK 5.5"	100267	1	100267	1
65	SCREWCAP 1/4-20 X 1 1/4" HCS ZP	8041007	2	8041007	2
66	FENDER WASHER 5/16	8172020	4	8172020	4
67	WASHER 1/4" SAE	8172007	4	8172007	4
68	SCREWCAP 1/4"-20 1 1/2" HCS ZP	8041008	2	8041008	2
69	SCREWCAP #10-24 X 1 1/4" HWH ZP	8059140	1	8059140	1
70	WASHER #10 SAE	8172005	2	8172005	2
71	NUT LOCK LT #10 - 24 HEX	8164005	1	8164005	1
72	NUT LOCK 1/4"-20 2 WAY	8142004	1	8142004	1
73	LABEL AIM AND SHOOT	440332	1	440332	1
74	KNOB, 5-LOBE 5/16"-18 FEMALE	441258	2	441258	1
75	DIVERTER ASSY	440312	1	440312	1