



PL25H Owner's Manual

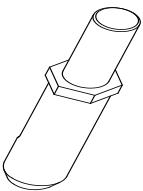


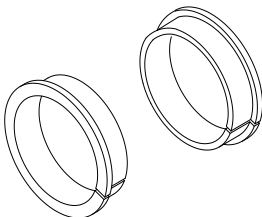
AERATOR Owner's Manual

PL2500H

U.S. PATENT #6892821

Replacement Parts

TINE REPLACEMENT
Replacement tip for aerating tines.

P/N 381057

TINE BUSHING REPLACEMENTS
Replacement bushings for the tines

P/N 380213



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SPECIFICATIONS

PL2500H

Engine: cc	163cc
Engine:	Honda GX160 w/Gearbox
Engine: Fuel Capacity	3.3 qt. (3.1 L)
Engine: Oil Capacity	0.61 qt. (0.58 L)
Total Unit Weight:	284# (128.8 Kg)
Length	67.5" (1.7m)
Width	32.5" (.83m)
Height	41.25" (1m)
Max. operating slope	15°
Sound test in accordance with 2000/14/EC	102
Sound at operators ear	82
Vibration at operator position	.2g (1.90m/s ²)

SOUND



L_{WA}

102

SOUND LEVEL 82 dB(a) at Operators Position

Sound tests were conducted in accordance with 2000/14/EC, and were performed on 9/26/14 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

66°F (18.9°C)

8 mph (12.8 kph)

South

78%

30 Hg (101.59 kpa)

VIBRATION DATA

VIBRATION LEVEL .2g (1.90 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 9/25/14 under the conditions listed below.

General Conditions:

Temperature:

Wind Speed:

Wind Direction:

Humidity:

Barometric Pressure:

Sunny

79°F (26°C)

13 mph (21 kph)

South

47%

30Hg (101.6 kpa)



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INTENDED USE


AERATOR


This machine is designed for aerating established lawns and large grass covered areas. The machine should not be used for any other purpose than that stated above.

⚠ DO NOT OPERATE IF EXCESSIVE VIBRATION OCCURS! If excessive vibration occurs, shut engine off immediately and check for damaged or worn reel, loose reel bearing, loose engine or lodged debris. To remove debris from the machine, see the machine specific trouble shooting section. **Note:** See parts list for proper bolt torque specifications.

HANDLING & TRANSPORTING

Always use two or more people to lift these machines. Lift holding on either side of the machine, using the handles and the frame. Secure in place during transportation. See specifications for unit weight.

 For safety use gloves when lifting.

 Never lift any machine while the engine is running.



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INSTRUCTION LABELS

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

CHECK OIL BEFORE EACH USE.
GREASE ALL FITTINGS EVERY 10 HOURS OF OPERATION.
WE RECOMMEND ALMAGARD® #3752 GREASE FROM LUBRICATION ENGINEERS® INC.

TO AERATE

1. Retract Tines With Center Control Lever.
2. Begin Forward Motion of Aerator Manually.
3. Engage Drive Lever With Aerator Already in Motion.

100354

LABEL PL INSTRUCTIONS
P/N 100354



LABEL GEAR SELECTION
P/N 100358

PULL TO ENGAGE TINES
JALE HACIA ARRIBA PARA ENGRANAR LOS DIENTES

100356

LABEL PULL TO ENGAGE
P/N 100356



LABEL WARNING GUARD
P/N 900327



LABEL DANGER
P/N 400424

**FORWARD TO LOWER TINES
BACK TO RAISE TINES**
AVANCE PARA BAJAR LOS DIENTES

100357

LABEL FORWARD TO LOWER TINES
P/N 100357

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.

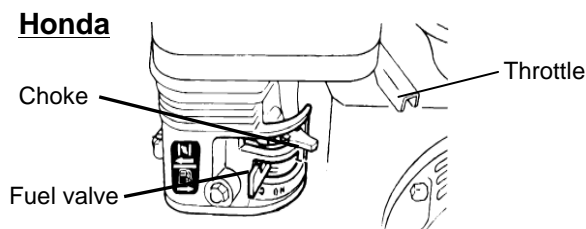
HONDA MOTOR CO., LTD. MADE IN JAPAN

OIL ALERT

- WHEN OIL LEVEL LOW, ENGINE STOPS IMMEDIATELY.

IMPORTANT ENGINE INFORMATION-HONDA MOTOR CO., LTD.
ENGINE FAMILY: TH163U-G1RA DISPLACEMENT: 163cm³ HONDA
TUNE UP SPECIFICATION: REFER TO OWNER'S MANUAL FOR
MAINTENANCE SPECIFICATIONS AND ADJUSTMENTS. THIS ENGINE
MEETS 1995 CALIFORNIA EMISSION REGULATIONS FOR
UTILITY AND LAWN AND GARDEN EQUIPMENT ENGINES. E M T E

THROTTLE CONTROLS





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PACKING CHECKLIST

Your Billy Goat is shipped from the factory in one carton with the handles and cables detached.



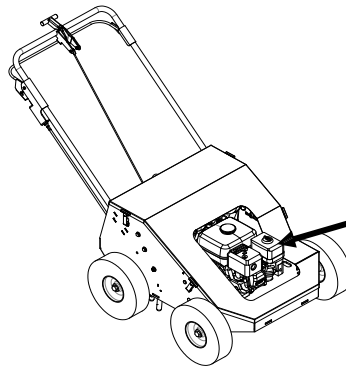
READ all safety instructions before assembling unit.
TAKE CAUTION when removing the unit from the box.



PUT OIL IN ENGINE BEFORE STARTING

PARTS BAG & LITERATURE ASSY

Warranty card P/N- 400972, Owner's Manual P/N-100382, Declaration of Conformity P/N-381503, General Safety and Warnings Renovation Manual P/N-100295



Boxing Parts Checklist

Owner's Manual
100382

Engine Manual Per Model
 Honda

ASSEMBLY

NOTE: Items in () can be referenced in the Parts Illustration and Parts List on pages 10-11.

- REMOVE** the two bolts and nuts from the hardware bag (item 4 and 38).
- ATTACH** the upper handle (item 73) into the side braces with the hardware (items 4 and 38). *NOTE:* The bail should be facing downward.
- ATTACH** the tine lift cable (item 16) to the Tine lever (item 30) upper hole on the handle (see *Fig. 1 handle* below and reference Parts Illustration page 10) by inserting the pin (item 55) into it in the hole closest to the end of the handle. Retain with Rue ring.
- ATTACH** the bail cable (item 54) to the bracket on the handle (item 74) by sandwiching the two nuts on the bracket and tightening. Install cable adjuster (item 52) by threading it on the end of the cable until thread begins to show. *NOTE:* **Protruding portion of the threaded adjuster must be facing the operator when installed.** Check to make sure the cables are functioning properly before operation and not binding. If adjustments are needed for belt tension on the bail cable, loosen the nuts and move the sandwiching position up or down for the desired tension. *NOTE:* if the tension is too loose the tines will not engage and if it is too tight premature wear could happen to the belt.
- CHECK** engine oil level and fill to proper level. Also check oil in gear reduction reservoir and fill if necessary. See engine owner's manual for type and amount of oil to use.
- SET** the engine stop switch. located on upper handle. to the **ON** position.

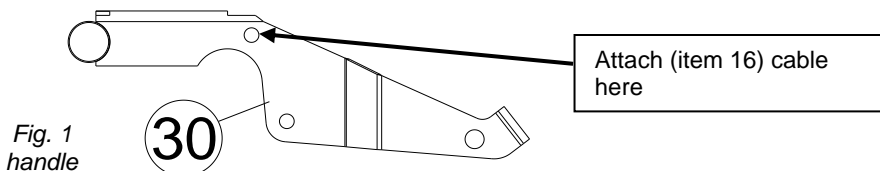


Fig. 1
handle



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OPERATION

STARTING ENGINE

See engine manufacturer's instructions for type and amount of oil and gasoline used. Engine must be level when checking and filling oil and gasoline.

ENGINE SPEED: Controlled by lever on the engine. Under normal conditions, operate at the minimum throttle speed to accomplish your task.

ON/OFF SWITCH: Set the On/Off switch to the on setting.

FUEL VALVE: Move fuel valve to "ON" position. (Honda: Located below the air cleaner on the engine.)

CHOKE: Engage the choke when starting a cold engine. (Honda: Located below the air cleaner on the engine.)

THROTTLE: Move the throttle control lever on the engine to fast position. Pull starting rope to start engine

If your unit fails to start, check trouble shooting section in operator's manual and also see engine manual.

NOTE: Honda engines are equipped with a low oil sensor to prevent engine damage. When it senses a low oil condition (i.e. unit is operating or sitting on a steep slope) the engine shuts down. The low oil condition must be corrected before the engine can be restarted. See the engine owner's manual for more information.

AERATING OPERATION

NOTE: NEVER PARK THIS UNIT ON A SLOPE OF ANY KIND. Always keep tines in the up position when parking the unit.

TINES RAISING/LOWERING: The tines are raised or lowered into the ground by operating the tine engagement lever on the upper handle. Tine penetration is very dependent on surface preparation. READ the entire operation section before aerating.

SPEED ADJUSTMENT: There is an adjustable retractor lock found on the back panel of the machine. Hold the ball knob on the end of the lever and pull. Then move the lever up or down and lock it into one of the three settings H(igh), M(edium), or L(ow).

ENGAGE TINES: With the aerator in the work area, lower the tines by releasing the center lever on the handle. When the lever is in the forward position, pull up on the bail to engage the tines.

AERATION: Occurs when the tines are in the lowered position and the bail is engaged. **NOTE:** For maximum tine penetration apply downward pressure on the handle. In cold temperatures engage the tines in the up position for two minutes to warm the cam grease.

TURNING: At the end of an aerating run, release the bail and raise the tines out of the ground. Then reposition the unit for another pass and lower the tines to begin another run.

TRANSPORT: Be sure to raise tines out of the ground (disengaging the bail and then raising the tines with the center lever) before transporting away from the work area.

*****TIPS*****

MOW

Mow the lawn to its normal cut height.

WATER

For the best performance and maximum tine penetration the lawn should be thoroughly watered the day before aeration.

INSPECT

Check the lawn before beginning work. Remove all rocks, wire, string, or other objects that can present a hazard during work prior to starting.

IDENTIFY

Mark all fixed objects to be avoided during work, such as sprinkler heads, water valves, buried cables, or clothes line anchors, etc.

SLOPES

Do not operate the aerator on steep slopes (exceeding 15°). Use extreme caution when operating on any sloped surface. For lesser sloped areas operate the unit, traversing up and down at a 45 degree angle to the slope rather than straight across. Extended operation on steep slopes can cause engine damage. **NOTE:** Honda engines are equipped with a low oil sensor to prevent engine damage. When it senses a low oil condition (i.e. unit is operating or sitting on a steep slope) the engine shuts down. The low oil condition must be corrected before the engine can be restarted. See the engine owner's manual for more information.



MAINTENANCE

NOTE: Items in () can be referenced in the Parts Illustration and Parts List on pages 10-11.

PERIODIC MAINTENANCE

Periodic maintenance should be performed at the following intervals:

Maintenance Operation	Every Use (daily)	Every 10 hrs	Every 50 Hrs	Every 100 Hrs
Inspect for loose, worn or damaged parts		•		
Check engine oil	•			
Inspect belt for wear			•	
Engine (See engine manual)				
Grease Cam bearings (recommend using Almagard #3752)		•		
Thoroughly clean all debris from unit and tines	•			
Replace tine bushings				•
Grease shaft bearings and wheel bearings				•

ENGINE MUST BE LEVEL WHEN CHECKING OR FILLING OIL

INDIVIDUAL TINE REPLACEMENT

1. Wait for engine to cool and disconnect spark plug.
2. Loosen the jam nut (item 10) then unscrew the tine (item 11).
3. Replace the tine making sure to use the maximum amount of threads on the tine.

NOTE: Tines are a normal wear item and should be inspected regularly for signs of wear or damage.

ADJUSTING BELT TENSION

1. Adjust the clutch cable (item 54) by threading the cable adjuster (item 52) further onto the cable to tighten belt. The opposite direction will loosen the belt. Do not over tighten the v-belt. This puts a load on the engine gearbox bearings. The belt is tight enough when it does not slip during operation.
2. Also loosen engine and slide in slots to apply or relieve tension on belt.

DRIVE BELT REPLACEMENT

1. Disconnect the spark plug.
2. Remove the lower and upper tensioner brackets (items 47 and 48) on both sides of the pulley (item 3).
3. Walk the belts (item 59) off of the engine pulley.
4. Attach a hoist mechanism to the cam shaft (item 42), and then remove the four bolts, washers, and nuts (items 57, 7 and 6) that attach the bearing (item 6) of the cam shaft to the frame.
5. Raise the cam shaft out of the frame and remove the old belts.
6. To replace the belts, simply slide the new belts onto the pulley when the cam shaft is raised then follow the previous steps in reverse to install.



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TROUBLESHOOTING

Problem	Possible Cause	Solution
Engine will not start	Stop switch off. Throttle in off position. Engine not in full choke position. Out of gasoline. Bad or old gasoline. Spark plug wire disconnected. Dirty air cleaner. Engine oil level too low (Honda only).	Check stop switches, throttle, choke position and gasoline. Connect spark plug wire. Clean or replace air cleaner. Or contact a qualified service person. Check and fill engine oil.
Abnormal vibration	Damaged or missing tines. Loose handle bolts. Loose engine bolts.	Stop work immediately. Replace any damaged or missing tines. Tighten all loose bolts and nuts.
Engine stalls or labors when aerating	Working on too steep of a slope. Not enough oil in the engine.	Work at 45 degrees to the slope moving up and down instead of across. Check and add engine oil.
Engine is locked, will not pull over	Debris locked against reel, or drive pulleys. Engine problem.	Pull spark plug wire and remove debris. Contact an engine servicing dealer for engine problems.
Unit does not move when clutch is engaged	Belt drive out of adjustment. Worn drive belt. Loose or damaged pulleys. Damaged or broken clutch cable.	See maintenance on pg. 10 of this manual. Contact a qualified servicing dealer.

WARRANTY INFORMATION

When servicing engine refer to specific manufacturer's engine owner's manual. Engine warranty is covered by the specific engine manufacturer. If your engine requires warranty or other repair work contact your local servicing engine dealer. When contacting a dealer for service it is a good idea to have your engine model number available for reference (See table page 3). If you cannot locate a servicing dealer in your area you can contact the manufacturer's national service organization. To reach:

American Honda: 800-426-7701
Briggs and Stratton: 414-479-8008

WARRANTY CLAIM PROCEDURE

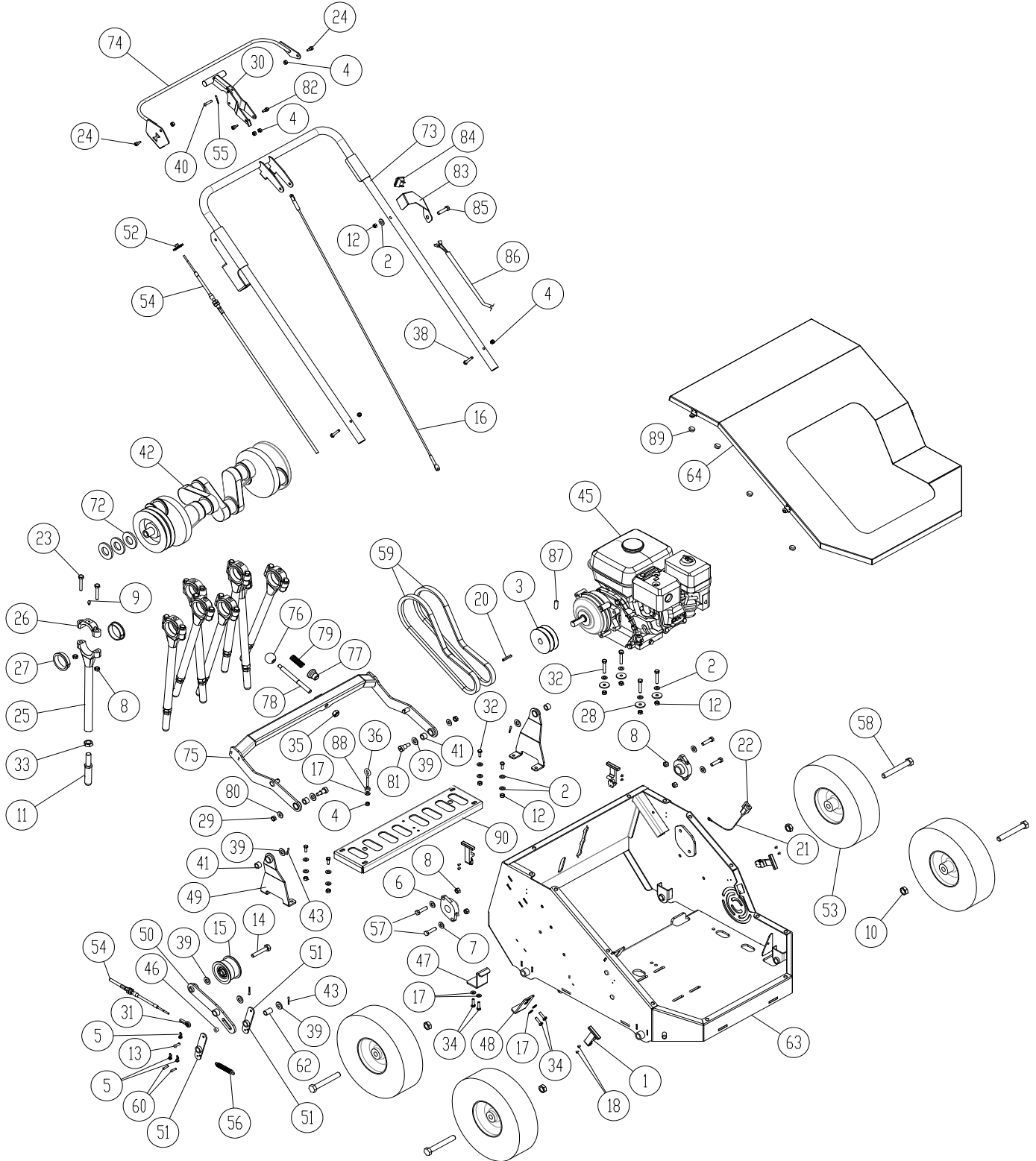
Should a BILLY GOAT[®] machine fail due to a defect in material and/or workmanship, the owner should make a warranty claim as follows:

- The machine must be taken to the dealer from whom it was purchased or to an authorized Servicing BILLY GOAT Dealer.
- The owner must present the remaining half of the Warranty Registration Card, or, if this is not available, the invoice or receipt.
- The Warranty Claim will be completed by the authorized BILLY GOAT Dealer and submitted to their respective BILLY GOAT Distributor for their territory Attention: Service Manager. Any parts replaced under warranty must be tagged and retained for 90 days. The model number and serial number of the unit must be stated in the Warranty Claim.
- The distributor service manager will sign off on the claim and submit it to BILLY GOAT for consideration.
- The Technical Service Department at BILLY GOAT will study the claim and may request parts to be returned for examination. BILLY GOAT will notify their conclusions to the distributor service manager from whom the claim was received.
- The decision by the Technical Service Department at BILLY GOAT to approve or reject a Warranty Claim is final and binding.

For online product registration go to www.billygoat.com



PL2500H PARTS DRAWING





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PL2500H PARTS LIST

ITEM #	PART #	DESCRIPTION	PL2500H QTY	ITEM #	PART #	DESCRIPTION	PL2500H QTY
1	381003-01	RUBBER LATCH KIT	4	62	381694	BUSHING 1/2" UD X 5/8" OD X 1"	2
2	8171003	WASHER 5/16" FLAT	12	63	381711	800 SERIES FRAME	1
3	380200	ENGINE PULLEY 3.5 DIA	1	64	381712-WA	COVER WA PL2500SP	1
4	8160001	NUTLOCK 1/4"-20 HEX ZP	3	72	362205	MACHINERY BUSHING 1" X 1 1/2 X 14 GA	15
5	371275	1/4" RUE RING	3	73	381722	800 SERIES HANDLE	1
6	381042	CARTRIDGE BEARING 1"	2	74	381723	800 SERIES CLUTCH LEVER	1
7	8171004	WASHER 3/8" FLAT	4	75	381747	ADJUSTABLE RETRACTOR YOKE	1
8	8160003	NUTLOCK 3/8"-16 HEX	20	76	381748	PHENOLIC BALL KNOB	1
9	381052	GREASE FITTING 1/4"-28	8	77	381750	ADJUSTABLE RETRACTOR LOCK PLUG	1
10	381110	NUT JAM 5/8"-11 2 WAY LOCKNUT ZP	4	78	381751	RETRACTOR ADJUSTMENT LEVER	1
11	381057	TINE 5/8"	8	79	381753	SPRING .72 X 2" -.6"	1
12	8160002	NUTLOCK 5/16"-18 HEX ZP	8	80	381757	WASHER 5/16" USS THRU-HARDENED ZINC YELLOW	2
13	381077	CLEVIS PIN 1/4" X 3/4"	1	81	381758	SHOULDER BOLT 1/2" X 5/8"	2
14	8041098	SCREWCAP 1/2"-13 X 2 GR5 ZP	1	82	381158	SHOULDER BOLT 5/16" X 1/4"	2
15	380203	IDLER PULLEY 2.75 X 1.50 DIA	1	83	500281	SWITCH LKG RKR	1
16	381089	RETRACTOR PLATE CABLE	1	84	430141	BRACKET MOUNT SWITCH	1
17	8171002	WASHER 1/4" FLAT	5	85	8041030	SCREWCAP 5/16"-18 X 1 1/2" GR 5 HCS ZP	1
18	381115	STAINLESS RIVET 1/8" X 1/4"	8	86	360316	HARNES WIRE 60"	1
20	9201087	KEY 3/16" X 2 1/8"	1	87	380218	SCREW SET 3/8"-16 X 3/4" CUP POINT TORQUE TO 22-24 FT-LBS.	1
21	380227	WIRE HARNES PL HOOD SWITCH	1	88	381625	ROLLER 0.5" OD X 0.25 ID X 0.313	1
22	840058	SWITCH INTERLOCK	1	89	380224	RUBBER BUMPER PUSH IN	1
23	8041054	SCREWCAP 3/8"-16 X 2" HCS ZP	16	90	381147	8 TINE RETRACTOR PLATE	1
24	381247	SHOULDER BOLT 5/16" X 3/8"	2				
25	381776	TINE ROD	8				
26	381173	TINE ROD CAP	8				
27	380213	JOURNAL BEARING 2"	16				
28	8172020	FENDER WASHER 5/16"	4				
29	8142006	LOCK NUT 3/8"-16 HEX	2				
30	381201	RETRACTOR HANDLE	1				
31	381237	SPHERICAL ROD END 10-32 UNF	1				
32	8041031	SCREWCAP 5/16"-18 X 1 3/4" HCS ZP	8				
33	8143007	NUT JAM 5/8"-11 ZP	8				
34	8041004	SCREWCAP 1/4"-20 X 3/4" GR 5 HCS ZP	4				
35	8160005	NUTLOCK 1/2"-13 HEX ZP	1				
36	381272	EYEBOLT 1/4"-20	1				
38	8041009	SCREWCAP 1/4"-20 X 1 3/4" HCS ZP	2				
39	8171006	WASHER 1/2" FLAT	5				
40	381345	CLEVIS PIN 1/4" X 1 1/8"	1				
41	381512	BUSHING 1/2" ID X 3/4" OD X 1/2"	4				
42	381522	8 TINE CRANKSHAFT	1				
43	8197031	COTTER PIN 1/8" X 1"	2				
45	360126	GX160 HONDA ENGINE W/GEARBOX	1				
46	381625	PREHARD ROLLER	1				
47	381629	LOWER BELT TENSION BRACKET	1				
48	381630	UPPER BELT TENSION BRACKET	1				
49	381632	RETRACTOR PLATE ARM	2				
50	380004	ARM IDLER W/BUSHINGS PL2500SPH	1				
51	381634	CLUTCH CAM ARM	2				
52	381637	CABLE ADJUSTMENT SPOOL	1				
53	381768	WHEEL 12" W 5/8" BEARING HUB	4				
54	381655	PUSH PULL CABLE 55"	1				
55	8197016	COTTER PIN 3/32 X 3/4"	2				
56	381663	EXTENSION SPRING 1/2" X 3" - 5"	1				
57	8041052	SCREWCAP 3/8"-16 X 1 1/2" HCS ZP	4				
58	8041151	SCREWCAP 5/8"-11 X 4 1/2" HCS ZP	4				
59	381019	COGGED V BELT B 35"	2				
60	381675	CLEVIS PIN 3/16" X 3/4"	2				