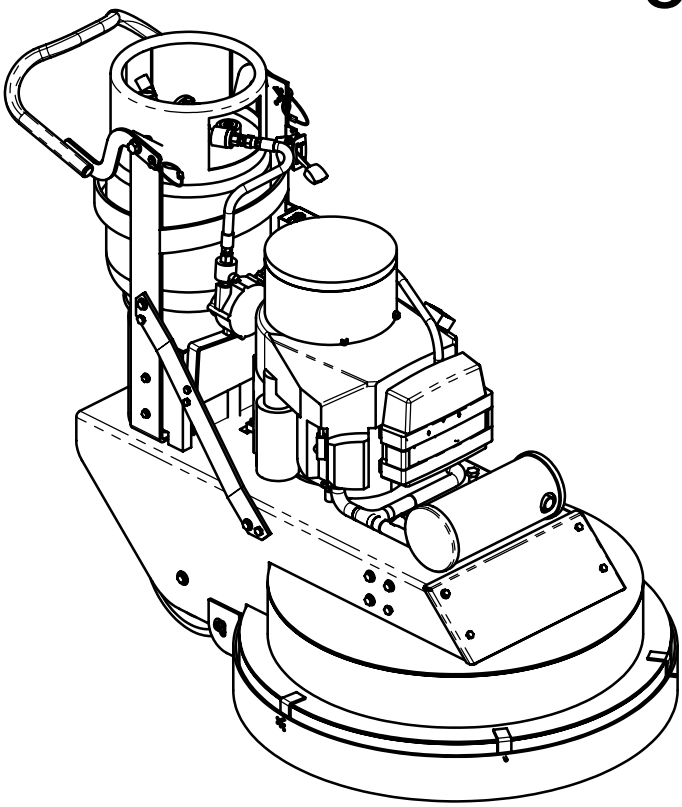
When Performance Counts. . .You Can Count on POWERBUFF!

Operator's Manual



Extreme Strip

! IMPORTANT ! … READ THIS MANUAL … ! IMPORTANT !

This manual contains important information about your machine. Read and understand all instructions before operating the machine. Failure to read and follow the instructions could result in injury to the person operating the machine or injury to others. Damage to the machine or other property could occur if instructions are not followed.

PowerBuff, Inc. • Phone 800-523-2833 • Stoneville, NC

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When Performance Counts. . .You Can Count on PowerBuff!

INTRODUCTION

Thank you for taking the time
to select the best
propane powered floor equipment
being manufactured today.

With the Extreme Strip, we offer the
"Best Built – Best Backed"
propane powered floor stripping
machine available.

WARNING

LETHAL EXHAUST GAS

NEVER RUN THE ENGINE IN A CLOSED BUILDING OR CONFINED AREA

Exhaust gases contain poisonous carbon monoxide. Carbon monoxide is odorless, colorless, and can cause death if inhaled.

SAFETY

General Safety Information

Keep hands, feet, strings and ties away from all moving parts while the machine is in operation. The exhaust system gets very hot so keep hands, clothing and any items that can burn away from the engine, engine manifold, and muffler while hot.

PowerBuff machines are built tough and durable, however do not abuse the machine and the machine won't abuse you. With proper care and maintenance this unit will give you trouble free operations for the years to come.

Warning: Lethal Exhaust Gases

Engine exhaust gases contain poisonous carbon monoxide. Carbon monoxide is odorless, colorless, tasteless, and can cause death if inhaled. Avoid inhaling exhaust fumes and never run the engine in a closed building or confined area without proper ventilation.

Although LPG burns more efficiently and emits less carbon monoxide than gasoline, some carbon monoxide is produced. Avoid inhaling exhaust gases - especially over prolonged periods of time. Do not allow engine to run unattended.

CARBON MONOXIDE DETECTOR

The “CO” carbon monoxide detector detects carbon monoxide before it reaches dangerous levels. This detector is a must for those who run propane powered equipment in or around enclosed areas.

- *The CO Detector is for everyone’s protection against Carbon Monoxide Poisoning.*
- *Effective for 30 days after package has been opened*
- *Mount with self-adhesive strip on the side of machine handle or locate it near the operator’s collar.*
- ***If the orange disk on the detector changes to gray or black - your Carbon Monoxide Levels are at a Dangerous Level. See (1) & (2)***

  (1) If the orange disk changes to gray or black you must turn your buffer off immediately and return it to your nearest authorized PowerBuff Inc. distributor for an emissions test.

  (2) Do Not Restart the machine until the emissions have been checked and corrected.

This is for your protection as well as your customers. CO detectors are a must for safe operation and maximum efficiency of your equipment.

For replacement CO detectors, contact your PowerBuff Inc. distributor. Ask for the carbon monoxide detector or part P1125.

Tank Storage and Maintenance

We at PowerBuff Inc., use the Worthington gas cylinders designed for vapor withdraw. The fuel lockoffs, regulators, and engines are also designed for vapor withdrawal. “Fuel freeze-ups” or “frozen regulators” are a result of liquid propane being introduced into the system. To prevent these “freeze-ups” from occurring follow this important procedure:

(1) Do not overfill - the best gauge is a scale - never allow tank to weigh over 36 pounds for an aluminum tank and 43 pounds for a steel tank.

(2) Store tanks outside in a well-ventilated area.

(3) Store tanks in the upright position (valves up).

INSTRUCTIONS

BEFORE STARTING THE MACHINE

Before any operation should begin, you first should read your Engine Operation Manual and your Owner's Manual.

Your machine is shipped ready for your operation, however there is no fuel in the tank. When having the tank filled, you must make sure the tank is never over filled.

The best way to do this is to tell the filling station to weigh the tank full. On an aluminum tank, it should weigh no more than 36 pounds and on a steel tank no more than 43 pounds.

Adjustable Handle: Adjust the handle for comfortable operation. Use two 3/4" wrenches and loosen handle. Adjust to comfortable height and re-tighten bolts to 40-50 ft/lbs.

- Check Oil Level: Starting the engine without the proper amount of oil will cause severe engine damage. Always keep the engine oil level between the full and add marks on the dipstick. Do not loosen oil fill cap or remove dipstick while engine is running.
    - Park your PB 17-V-Twin on a level surface.
    - Turn the oil fill cap counter clockwise and then lift from the fill tube.
    - Wipe the dip stick clean and push it back into the oil fill tube until the cap seats and then withdraw it to check: the oil level. (Do not screw cap on to check oil). Add if necessary. If the oil level is low, add API Class SG or SH oil having a SAE viscosity grade appropriate for the expected temperatures as indicated in the Operators Manual.
    - ***Important Note: DO NOT OVERFILL***
    - Replace oil cap.

- Inspect fuel hoses and fittings for leaks. Repair leaks immediately.

- Look and listen for exhaust leaks. Have all leaks repaired before operating.

- Check the carburetor filter and air filter for debris. Clean and replace if necessary.

- Connect fuel hose to tank by screwing the hose fitting to tank. You must tighten all the way down to make fuel connection. Turn tank knob slowly until you hear the flow of fuel into fuel system.

INSTRUCTIONS

STARTING THE ENGINE

The PB 17-V-Twin is equipped with a 12 volt starter and a key switch start.

(1) Start the Extreme Strip machine with the brushes in the running position, flat on the floor.

(2) Open propane tank valve (turn counterclockwise).

(3) Put throttle cable into the “slow” position.

Note: If starting is difficult, you can place throttle in the “fast” position, and after the engine starts, back off to the slow position before the centrifugal clutch engages.

(4) Turn the ignition - start switch to the “start” position and hold it there until the engine starts. Do not crank for more than 20 seconds at a time and wait at least one minute between tries when cranking. See troubleshooting guide if the engine does not start after several tries.

(5) After engine starts, set throttle so that the centrifugal clutch will not engage until the engine has warmed up. Do not operate machine until the engine has warmed up sufficiently. (3 to 5 minutes)

STOPPING THE ENGINE * * *

1. Turn propane tank valve to the closed position (turn clockwise) and allow the engine to continue running until it runs out of fuel. This can be done with the centrifugal engaged or not engaged. * * *

2. Turn key to the off position.

*** * *** In an emergency, immediately turn the key to the off position. Backfiring may occur when using this method.

INSTRUCTIONS

MACHINE OPERATION AND OTHER INSTRUCTIONS

Machine Operation:

- Prepare the floor as needed for the procedure that you are performing. Be sure the Extreme Strip is suitable for the task you are planning to use it for.
- Start the engine as instructed under “Starting the Engine” in the “Instructions”.
- After the engine is warmed up, engage the centrifugal clutch by moving the throttle to the run position.
- Push the machine at slow to medium walking speed. Be careful, the floor is wet and therefore is slick.
- When you need to stop, move the throttle to the slow position, which will disengage the centrifugal clutch. If you are going to be stopped for more than a minute, then shut off the engine as directed under “Stopping the Engine” in the “Instructions”.
- One pass should clean about anything that can be cleaned.
- Do not let the machine run in one place too long.

Transport:

Be careful. The Extreme Strip is very heavy machine.

- A lift gate or ramp is recommended for loading and unloading.
- It can be rolled by tilting back, so that it is balanced on it’s wheels. It may take two people to tilt it back.

Maintenance:

- To change brushes, lay the machine on it’s side. See the “Brush Replacement and Belt Tightening” page for more details.
- To tighten belts see the “Brush Replacement and Belt Tightening” page and other pages for more details.
- Important note: The machine will not stay in the tilted back position, unless the brush assembly is removed.

ENGINE MAINTENANCE

PERIODIC MAINTENANCE PLEASE REFER TO ENGINE OWNERS MANUAL FOR MORE INFORMATION	DAILY	EVERY 25 HOURS	EVERY 50 HOURS	EVERY 100 HOURS	EVERY 200 HOURS
• Check engine oil level and add if needed	*				
• Check and clean engine bonnet filter (replacement is P2304)	*				
• General check for loose or lost nuts and screws, oil leakage, etc...	*				
• Clean air cleaner foam element		*			
• Clean air cleaner paper element		*			
• Check belt tensions		*			
• Check battery electrolyte level		*			
• Change engine oil (1)			*		
• Change oil filter (1)				*	
• Clean dust and dirt from cylinder and cylinder head cooling fins				*	
• Tighten nuts and screws				*	
• Clean and regap sparkplugs				*	
• Replace air cleaner paper element (F11013-7006)					*
• Replace air cleaner foam element (F11013-7001)					*
• Replace spark plugs (F92070-7001)					*
• Check and adjust valve clearance					*
• Clean combustion chamber					*
• Clean and lap valve seating surface					*

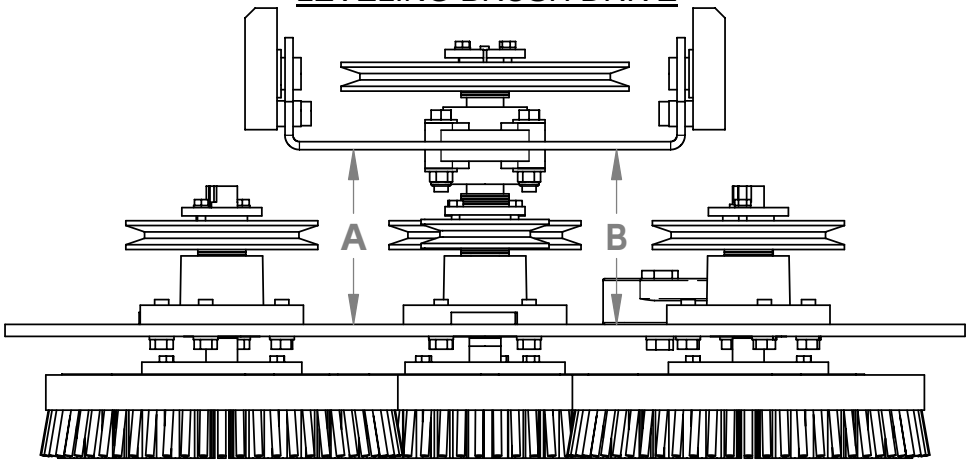
IMPORTANT NOTES:

- (1) Change engine oil and filter after first 8 hours of operation
- PLEASE REFER TO ENGINE OWNERS MANUAL FOR MORE INFORMATION

MAINTENANCE SHOULD BE DONE BY QUALIFIED PERSONNEL ONLY

MAINTENANCE NOTES

LEVELING BRUSH DRIVE

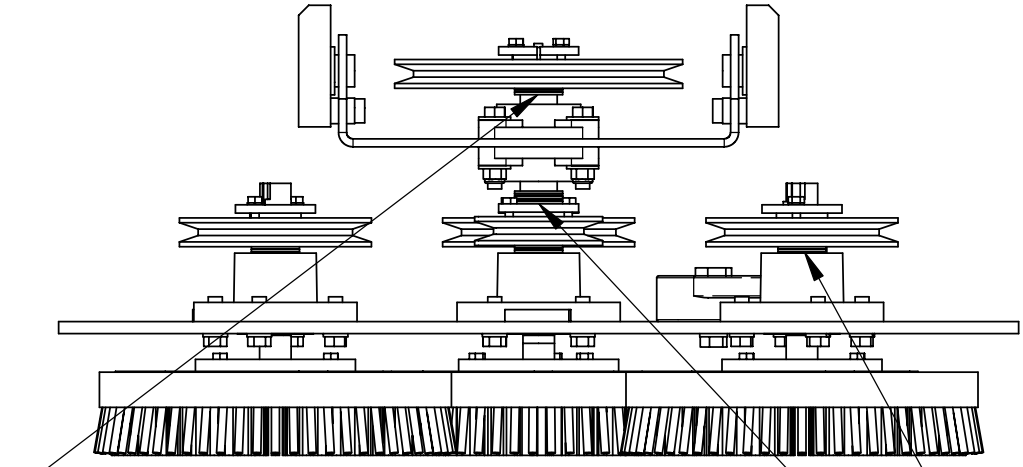


SYMPTOM: MACHINE PULLS OR PUSHES IN AN UNUSUAL WAY. NOTE THAT IT IS NATURAL FOR MACHINE TO PULL TO THE LEFT TO SOME EXTENT. MUCH LIKE A REGULAR BUFFER.

POSSIBLE CAUSE: BRUSH PIVOT YOKE IS NOT LEVEL. THIS CAN BE CHECKED BY MEASURING THE DISTANCE ON EACH SIDE OF THE YOKE, SUCH AS AT POSITIONS A and B. IF YOKE IS NOT LEVEL, PROCEED TO SOLUTION.

SOLUTION: LOOSEN THE BOLTS ON THE FLANGE BEARING AND LEVEL THE YOKE. TIGHTEN BOLTS AND RECHECK LEVEL.

USING THE SPACING WASHERS FOR BRUSH MOUNTING PLATE/DECK SPACING AND PULLEY ALIGNMENT

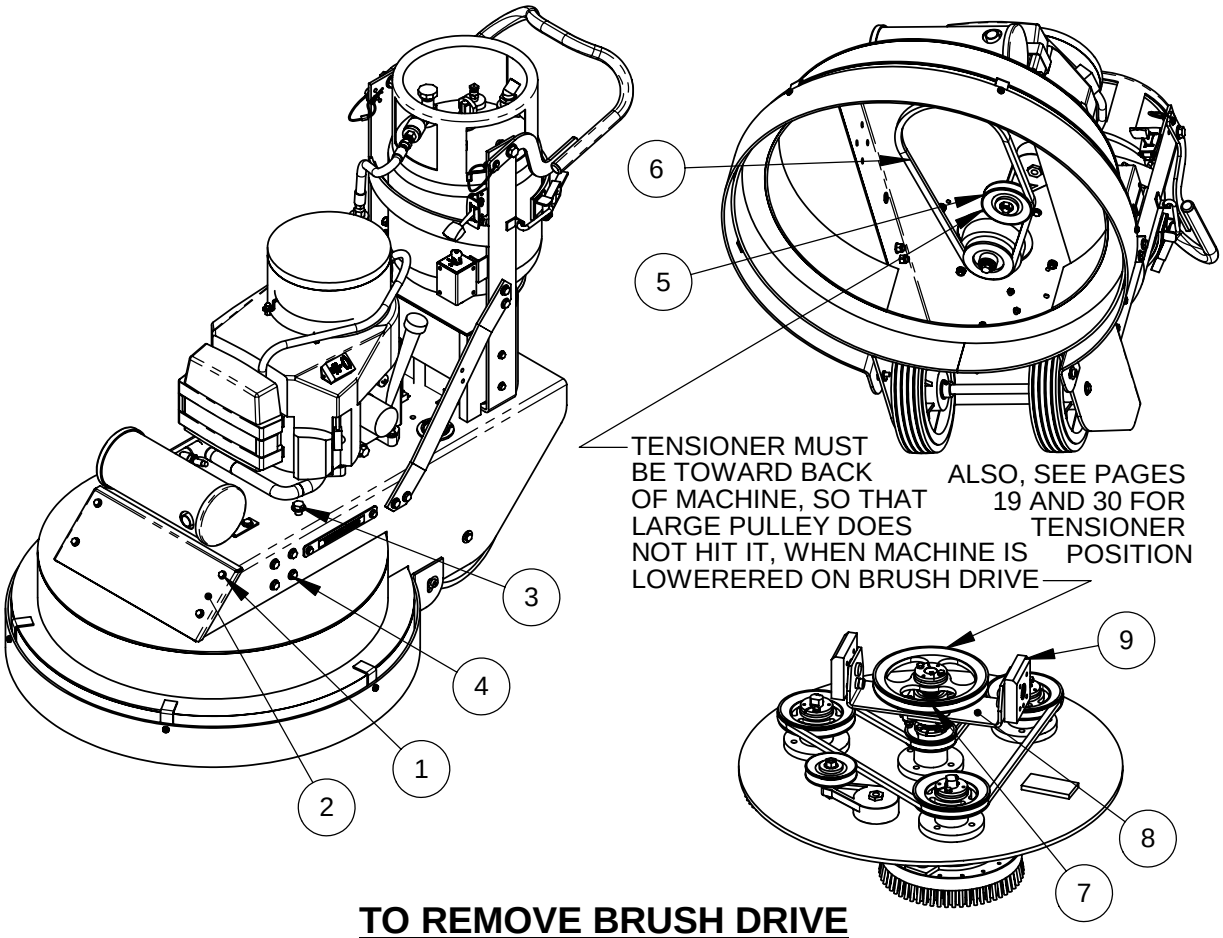


SPACER WASHERS ABOVE FLANGE BEARINGS (ABOUT 3 NEEDED) CONTROLS HOW THE LARGE PULLEY LINES UP WITH THE TENSIONER AND CLUTCH PULLEYS.

SPACER WASHERS BELOW FLANGE BEARINGS (ABOUT 5 NEEDED) CONTROL THE DISTANCE FROM TOP OF MOUNTING PLATE FOR BRUSHES TO THE MACHINE FRAME. THEY ALSO CONTRIBUTE TO HOW THE LARGE PULLEY LINES UP WITH THE TENSIONER AND CLUTCH PULLEYS.

THERE ARE 3 SPACING WASHERS UNDER EACH OF THE 4 PULLEYS (THE THREE 6" OUTER PULLEYS AND THE 4" CENTER PULLEY) BETWEEN THE PULLEY SHAFT BUSHING AND THE BEARING HUB

BRUSH DRIVE
REMOVAL AND INSTALLATION



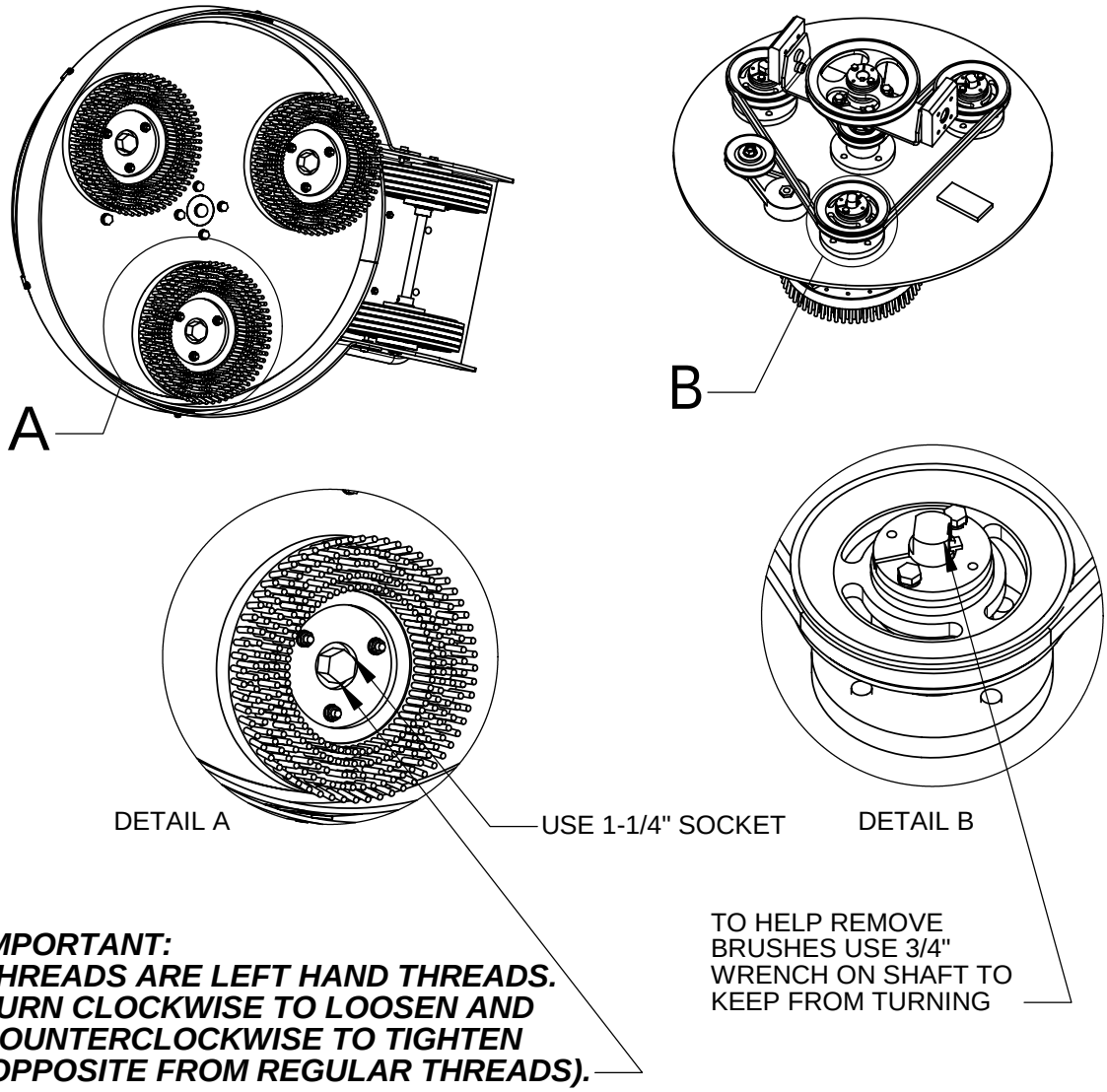
TO REMOVE BRUSH DRIVE

- REMOVE 4 BOLTS (ITEM 1) AND REMOVE FRONT ACCESS COVER (ITEM 2).
- LOOSEN TENSIONER BOLT (ITEM 3) TO RELIEVE CLUTCH BELT TENSION.
- REMOVE CLUTCH BELT (ITEM 6) FROM LARGE PULLEY (ITEM 7).
- REMOVE BOLTS (ITEM 4), 8 TOTAL, 4 EACH SIDE, WHICH WILL RELEASE THE BRUSH PIVOT MOUNTING BLOCKS.
- THE ENTIRE BRUSH DRIVE CAN NOW BE REMOVED BY TILTING THE MACHINE BACK.

TO INSTALL BRUSH DRIVE

- ALIGN BRUSH PIVOT YOKE (ITEM 8), SO THAT BRUSH PIVOT MOUNTING BLOCKS (ITEM 9) ARE IN THE POSITION THEY WILL BE IN WHEN ATTACHED TO THE MACHINE.
- IMPORTANT: BELT TENSIONER (ITEM 5) MUST BE TOWARD THE REAR OF THE MACHINE, SO THAT IT DOES NOT HIT THE LARGE PULLEY OR THE PIVOT YOKE, WHEN MACHINE IS LOWERED ONTO THE BRUSH DRIVE ASSEMBLY. (SEE NOTE ABOVE AND PAGES 19 & 30 FOR POSITION).
- LOWER MACHINE ONTO THE BRUSH DRIVE, SO FRAME DROPS AROUND THE BRUSH PIVOT MOUNTING BLOCKS (ITEM 9).
- REPLACE BOLTS (ITEM 4) THROUGH FRAME INTO THE BRUSH PIVOT MOUNTING BLOCKS (ITEM 9).
- REPLACE AND TENSION CLUTCH BELT AS DETAILED IN "BELT REPLACEMENT AND TENSIONING - ENGINE CLUTCH BELT" (PAGES 16 & 17).

BRUSH REPLACEMENT



BRUSH REPLACEMENT

- LAY MACHINE ON IT'S SIDE (MACHINE WILL NOT STAY IN THE UPRIGHT POSITION WITH THE BRUSH DRIVE IN PLACE).
- OR REMOVE THE BRUSH DRIVE ASSEMBLY AS SHOWN ON "BRUSH DRIVE - REMOVAL AND INSTALLATION" PAGE (PAGE 14).
- HOLD THE BRUSH SHAFT STILL WITH A 3/4" WRENCH, AS SHOWN IN DETAIL B.
- USE A 1-1/4 SOCKET ON THE BRUSH TO SHAFT COUPLING, AS SHOWN IN DETAIL A.
- IMPORTANT: TURN CLOCKWISE TO LOOSEN. THE THREADS ARE OPPOSITE COMPARED TO REGULAR THREADS.
- REVERSE PROCEDURE TO PUT ON BRUSHES.

ENGINE CLUTCH BELT
REPLACEMENT AND TENSIONING

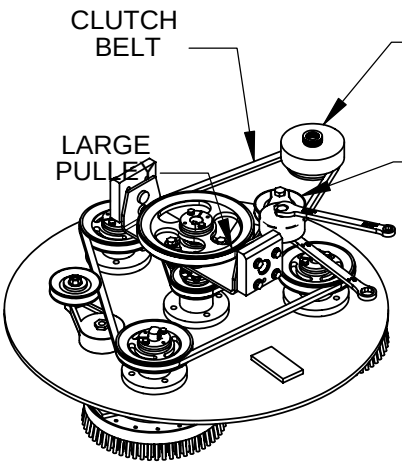


FIGURE 1
HIDDEN PARTS

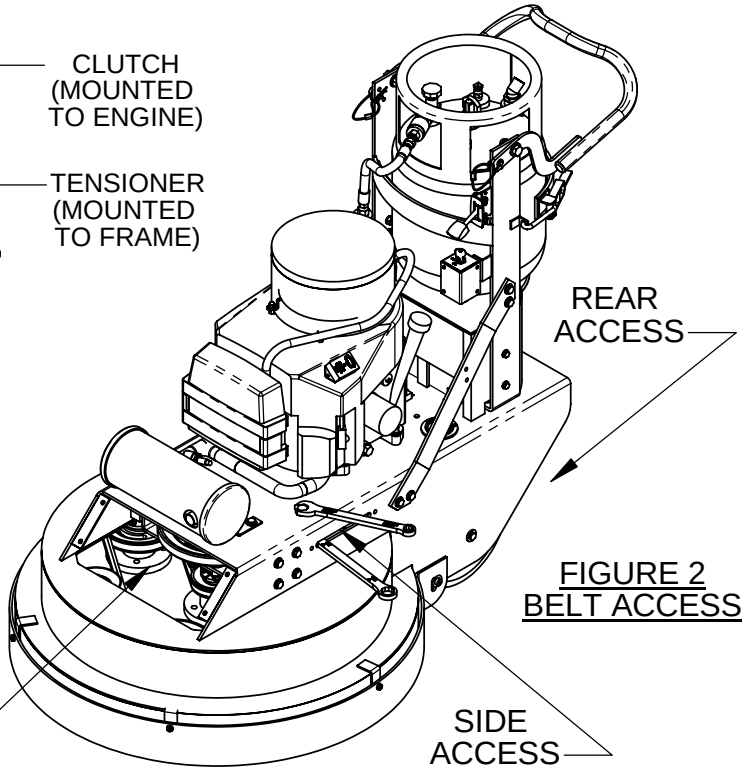


FIGURE 2
BELT ACCESS

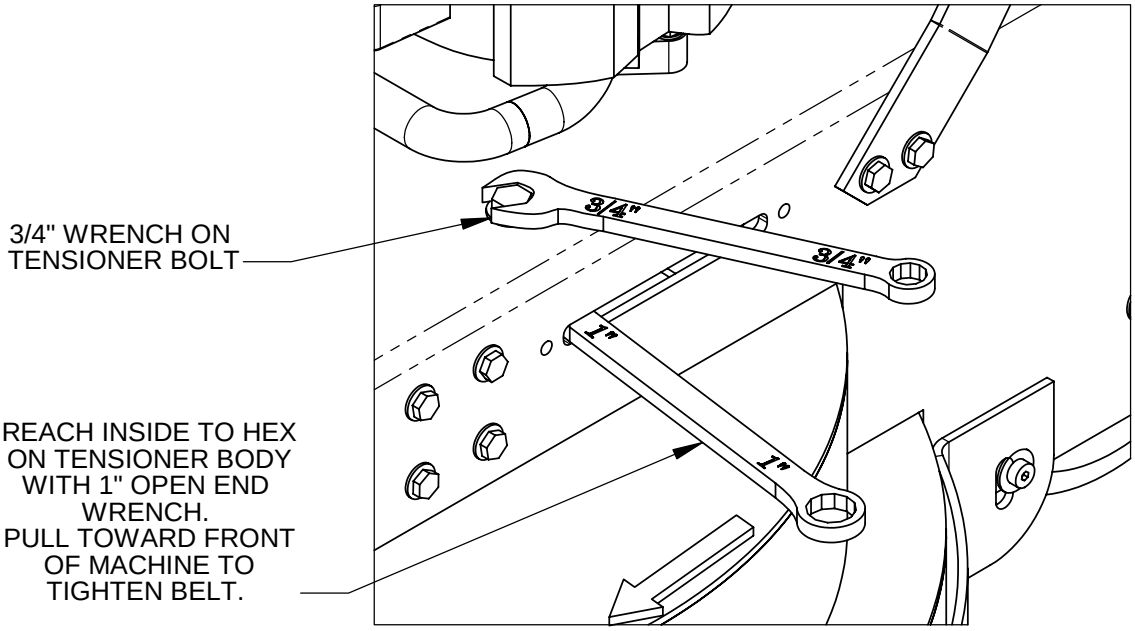


FIGURE 3
BELT TIGHTENING

ENGINE CLUTCH BELT REPLACEMENT AND TENSIONING

BELT REMOVAL

- REMOVE TENSIONER ACCESS PLATE (SHOWN REMOVED AT SIDE ACCESS IN FIGURE 2).
- REMOVE FRONT ACCESS PANEL.
- LOOSEN TENSIONER BOLT, USING A ¾" WRENCH, WHICH REMOVES TENSION FROM BELT.
- FROM THE FRONT ACCESS, CLUTCH BELT CAN BE REMOVED FROM LARGE PULLEY.
- FINISH REMOVING BELT FROM CLUTCH BY WAY OF THE REAR ACCESS.

BELT REPLACEMENT

- FROM THE REAR ACCESS OF THE MACHINE, PLACE THE BELT AROUND THE CLUTCH AND TENSIONER PULLEY, AND THEN PLACE IT ON TOP OF THE LARGE PULLEY, AS FAR FORWARD AS POSSIBLE.
- FROM THE FRONT ACCESS, PUT THE BELT ON THE LARGE PULLEY.

BELT TENSIONING

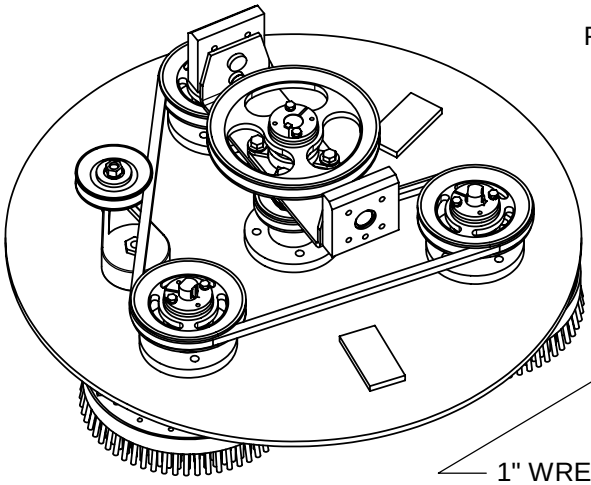
EASILY DONE WITHOUT REACHING UNDER THE MACHINE

- PUT A 1" OPEN END WRENCH THROUGH THE TENSIONER ACCESS SLOT, ONTO THE HEX ON THE TENSIONER BODY. START THE TIGHTENING STROKE AT THE REAR OF THE SLOT.
- PULL THE WRENCH FORWARD TO TIGHTEN THE BELT (FIGURE 3) AND HOLD.
- USING A ¾" WRENCH, SNUG UP THE TENSIONER BOLT TO HOLD TENSIONER IN PLACE.
- REPOSITION WRENCH ON TENSIONER BODY AND HOLD IN PLACE. LOOSEN TENSIONER BOLT SLIGHTLY. PULL AND HOLD TENSIONER. RETIGHTEN TENSIONER BOLT.
- REPEAT AS NECESSARY TO TIGHTEN THE BELT.
- WHEN BELT IS TIGHT, TIGHTEN TENSIONER BOLT SO TENSIONER WILL NOT SLIP.
- NOTE: OPEN END WRENCHES CAN BE FLIPPED OVER TO GIVE BETTER ACCESS TO A BOLT.

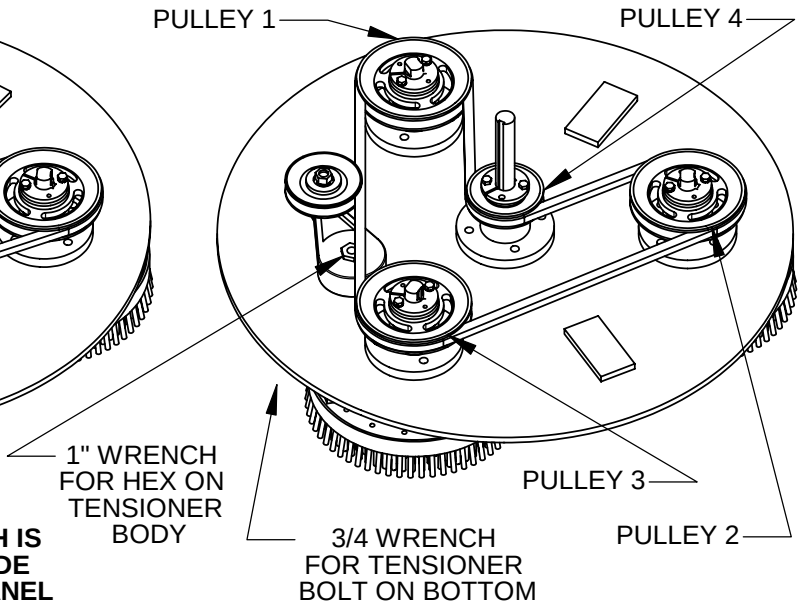
THIS PROCEDURE IS BROKEN DOWN TO
VIRTUALLY EVERY POSSIBLE STEP.
THIS BELT CAN BE
REMOVED, REPLACED, AND TIGHTENED -
IN LESS THAN 5 MINUTES.
TIGHTENING ONLY - TAKES ABOUT 2 MINUTES.

BRUSH DRIVE BELT
REPLACEMENT AND TENSIONING

BRUSH DRIVE ASSEMBLY
AS REMOVED FROM MACHINE



BRUSH DRIVE ASSEMBLY
WITH PIVOT ASSEMBLY REMOVED
TO SHOW BELT PATH MORE CLEARLY



NOTE THAT THE BELT PATH IS ALSO SHOWN ON THE INSIDE OF THE FRONT ACCESS PANEL

BELT REMOVAL, REPLACEMENT, AND TENSIONING

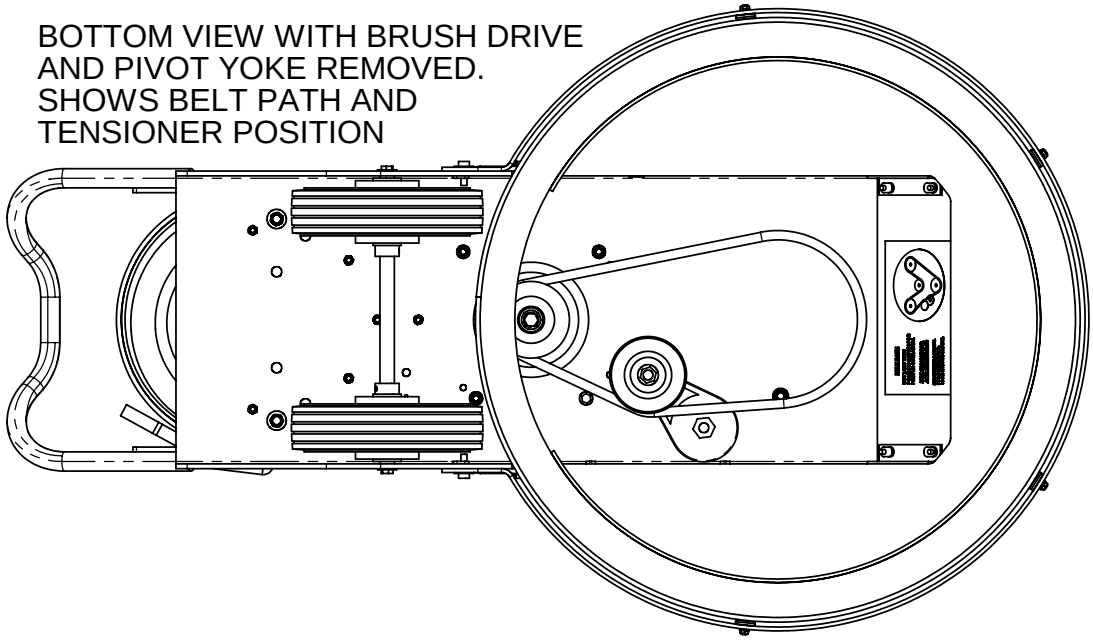
- REMOVE BRUSH DRIVE ASSEMBLY AS SHOWN IN "BRUSH DRIVE REMOVAL AND INSTALLATION".
  NOTE: BELT CAN BE REPLACED WITHOUT REMOVING BRUSH DRIVE ASSEMBLY, BUT IS DIFFICULT TO TIGHTEN PROPERLY.
- LOOSEN TENSIONER BOLT. IT IS ON THE ON BOTTOM AND REQUIRES A 3/4" WRENCH.
- REMOVE BELT FROM PULLEYS.
- REPLACE WITH NEW BELT. PLACE ON PULLEYS 1, 2, AND 4 FIRST.
- PLACE ON PULLEY 4 LAST.
- USE A 1" WRENCH, ON THE 1" HEX ON TENSIONER BODY, TO TIGHTEN TENSIONER AGAINST BELT.
- USE THE 3/4" WRENCH ON THE TENSIONER BOLT TO HOLD IN PLACE.
- BELT MUST BE TIGHT.
- BOLT MUST BE TIGHT TO HOLD TENSIONER IN PLACE.
- REPLACE BRUSH DRIVE ASSEMBLY AS SHOWN IN "BRUSH DRIVE REMOVAL AND INSTALLATION".

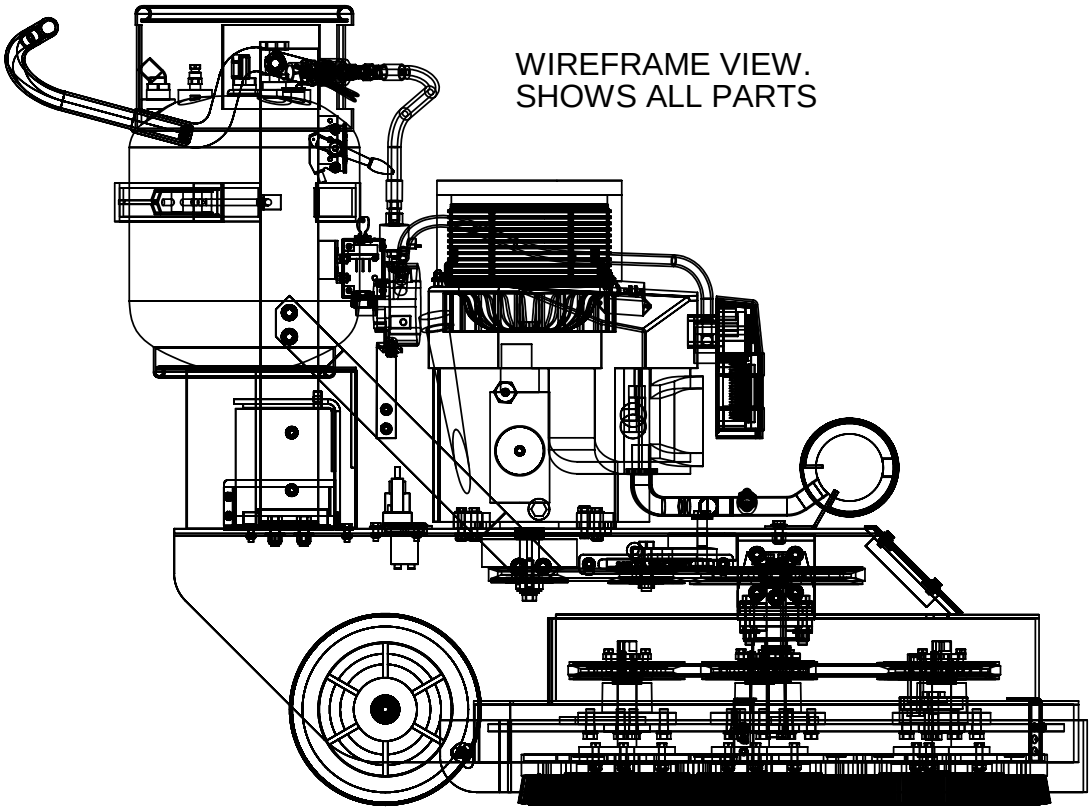
IMPORTANT

THE CORRECT BELT PATH IS CRITICAL, FOR THE TENSIONER TO WORK PROPERLY AND KEEP THE BELT FROM SLIPPING.

EXTRA VIEWS

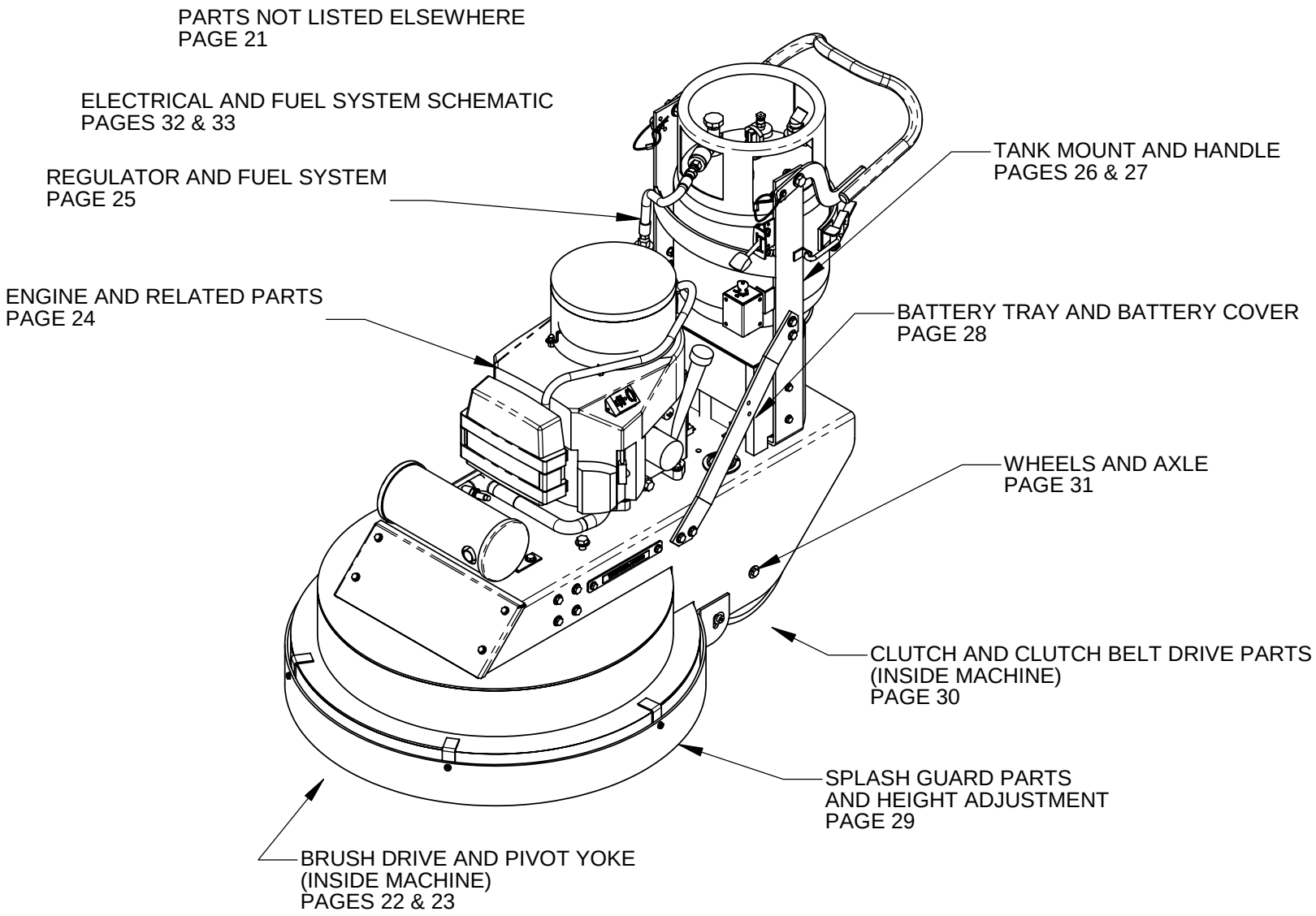
BOTTOM VIEW WITH BRUSH DRIVE
AND PIVOT YOKE REMOVED.
SHOWS BELT PATH AND
TENSIONER POSITION



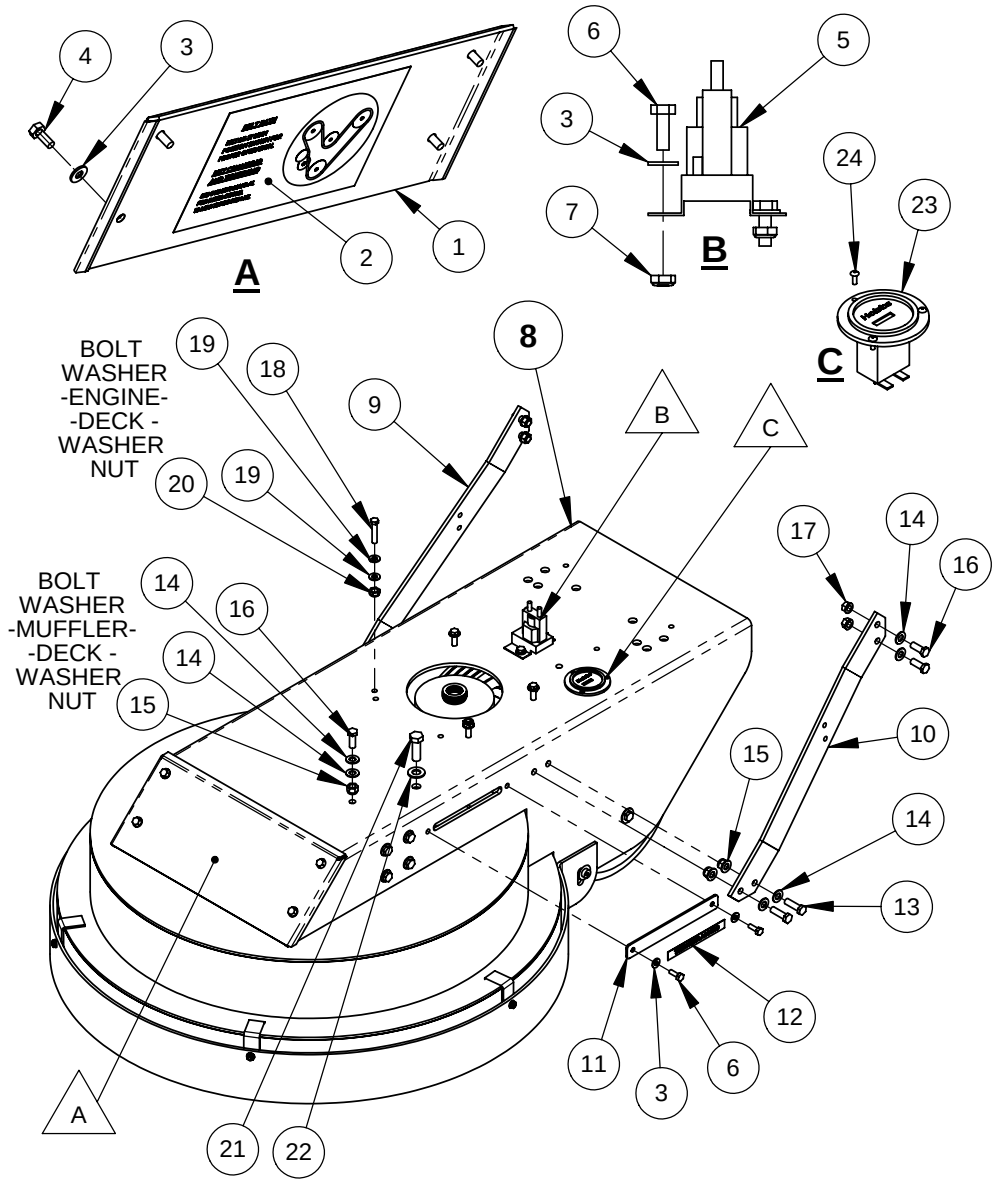


WIREFRAME VIEW.
SHOWS ALL PARTS

EXTREME STRIP - OVERVIEW

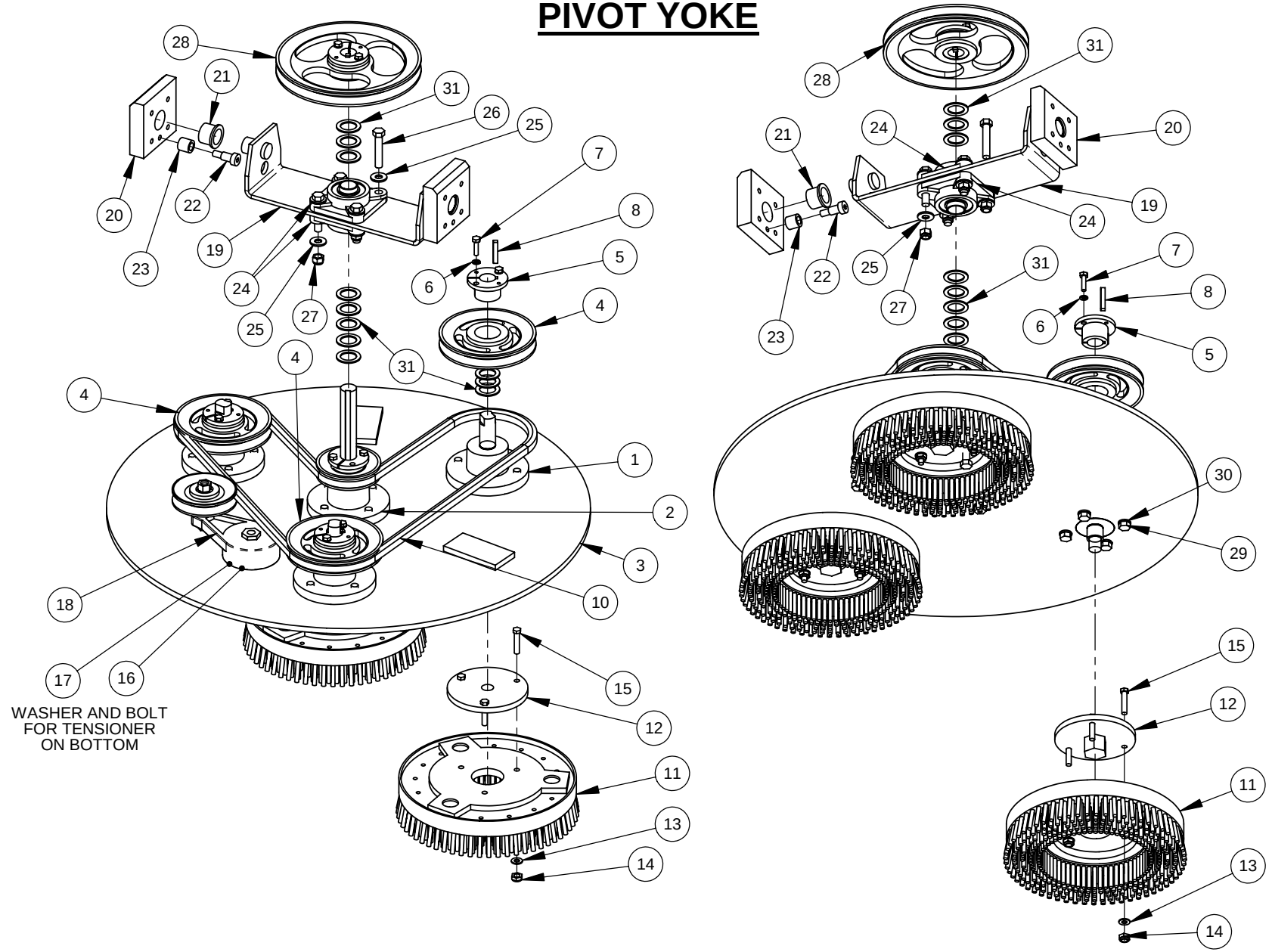


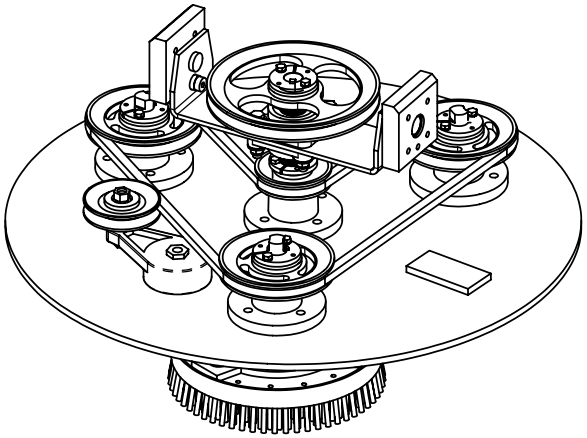
PARTS NOT LISTED ELSEWHERE IN THIS MANUAL

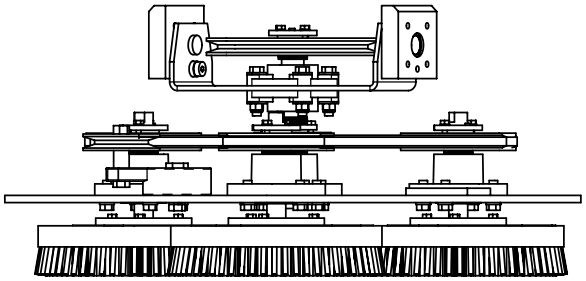


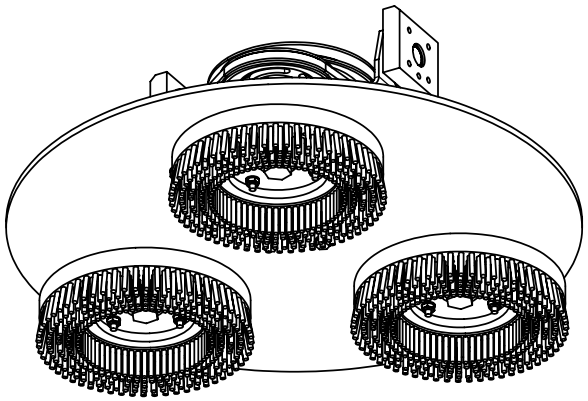
ITEM	QTY.	PART NO.	DESCRIPTION
1	1	ES2004	Front access cover
2	1	ES0002	Belt path label
3	8	P2098	Washer
4	4	P2021	Bolt
5	1	F0003	Solenoid
6	4	ES5003	Bolt
7	2	P2006	Nut
8	1	ES2008	Machine frame/deck
9	1	ES2003	Handle support - right side
10	1	ES2002	Handle support - left side
11	1	ES2000	Tensioner access cover
12	1	ES0001	Tensioner access label
13	2	ES5016	Bolt
14	4	ES5013	Washer
15	2	ES5017	Nut
16	3	ES5015	Bolt
17	2	ES5014	Nut
18	4	ES5009	Bolt
19	8	P2035	Washer
20	4	P2169	Nut
21	1	ES5005	Bolt
22	1	P2030	Washer
23	1	P1076	Hour meter
24	3	P2024	Rivet

BRUSH DRIVE AND PIVOT YOKE





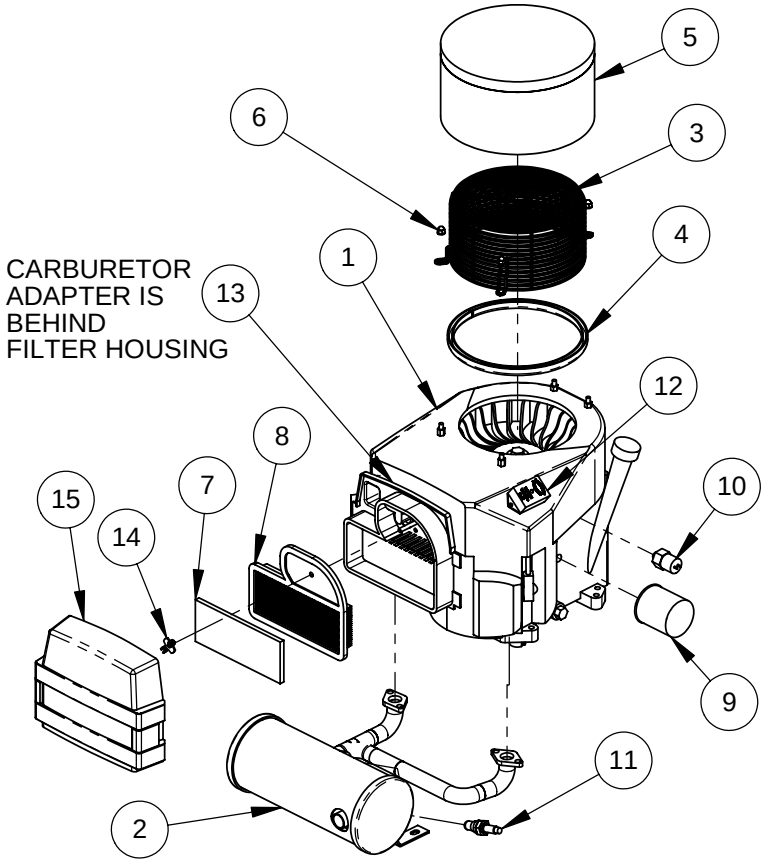




BRUSH DRIVE AND PIVOT YOKE

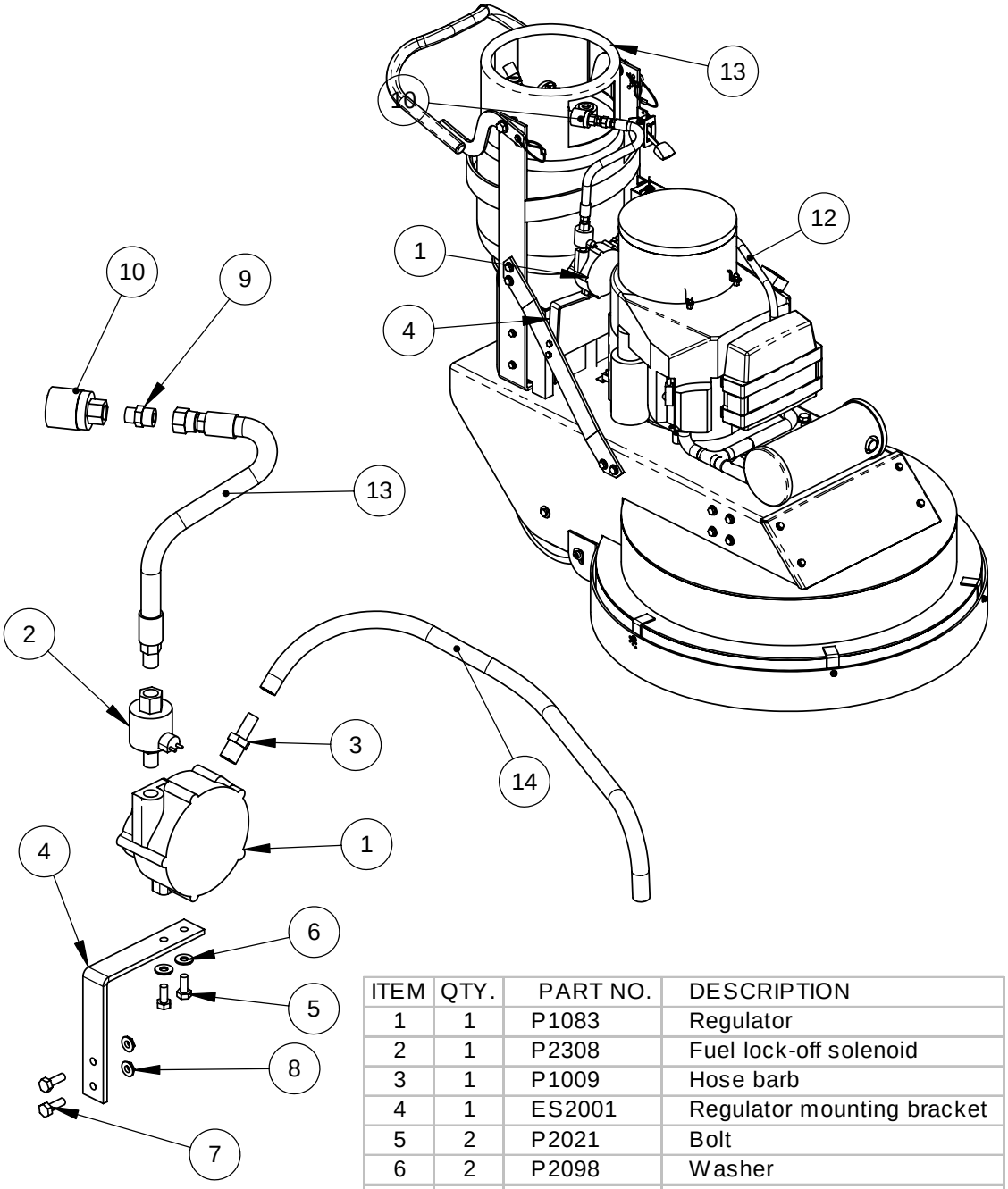
ITEM	QTY.	Part #	Alternate Name
1	3	ES2204	Brush drive shaft and bearing assembly
2	1	ES2203	Main shaft and bearing assembly
3	1	ES2007	Mounting plate for brushes
4	3	ES2303	Pulley
5	5	P1017	Pulley shaft bushing
6	10	P2022	Lock washer
7	10	P2040	Bolt
8	5	P1136	Key
9	1	ES2301	Pulley
10	1	ES2304	Double V belt
11	3	ES2400	Strip brush
12	3	ES2202	Brush to shaft coupling
13	9	P2035	Washer
14	9	P2169	Nut
15	9	ES5009	Bolt
16	1	ES5010	Bolt
17	1	P2008	Washer
18	1	P1071	Belt tensioner for brushes
19	1	ES2005	Brush pivot yoke
20	2	ES2201	Brush pivot mounting block
21	2	ES1100	Flange bushing
22	2	ES5011	Shoulder bolt
23	2	ES2450	Rubber bumper - .75" long
24	2	ES2302	Flange bearing
25	8	P2033	Washer
26	4	ES5012	Bolt
27	4	ES5000	Nut
28	3	ES2305	Pulley
29	16	P2031	Bolt
30	16	P2032	Lock washer
31	20	P2050	Spacer washer

ENGINE AND RELATED PARTS



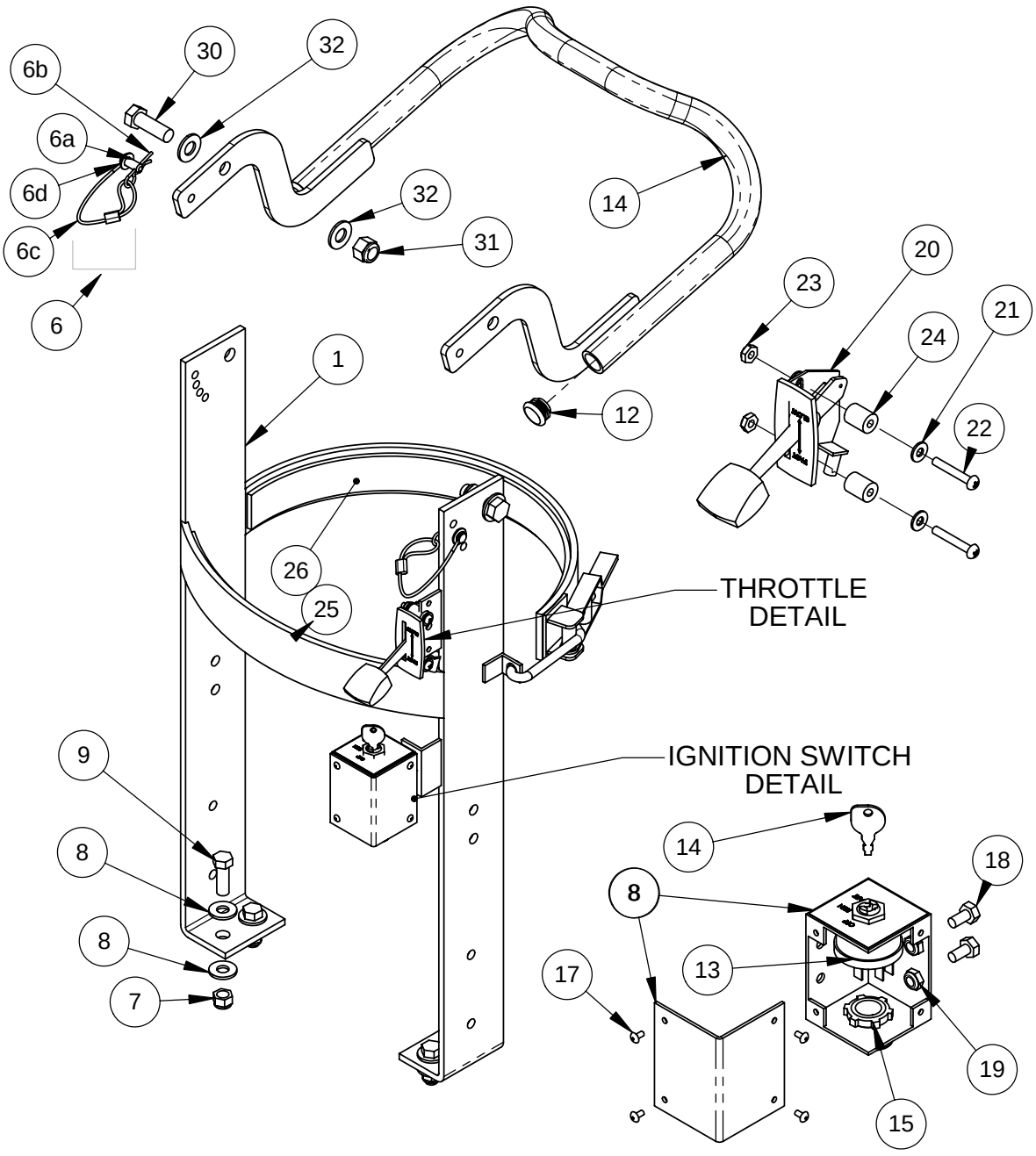
ITEM	QTY.	PART NO.	DESCRIPTION
1	1	FH500V	Kawasaki motor
2	1	P2300-1	Catalytic muffler
3	1	P2302	Cooling air intake guard
4	1	P2305	Edge trim
5	1	P2304	Bonnet air filter
6	4	Engine part	Acorn nut (6mm nut)
7	1	F11013-7001	Foam pre-filter
8	1	F11013-7006	Paper element air filter
9	1	F49065-2078	Oil filter
10	1	F0004	Oil pressure switch
11	1	P2311	O2 sensor
12	1	P2310 (a)	Emissions shutdown module (module only)
13	1	P2306	Carburetor adapter kit #2 (hidden in this view)
14	1	Engine part	Filter nut
15	1	Engine part	Air filter cover
(a)	1	P2303	Engine shutdown kit (includes 11, 12, and 16)
11	1	P2311	- O2 sensor
12	1	P2310	- Emissions shutdown module
16	1	P2308	- Fuel lockoff with fuel filter (not shown)

REGULATOR AND FUEL SYSTEM



ITEM	QTY.	PART NO.	DESCRIPTION
1	1	P1083	Regulator
2	1	P2308	Fuel lock-off solenoid
3	1	P1009	Hose barb
4	1	ES2001	Regulator mounting bracket
5	2	P2021	Bolt
6	2	P2098	Washer
7	2	ES5003	Bolt
8	2	ES5008	Nut
9	1	P1011	Union coupling
10	1	P1086	Tank coupling
11	1	P1006-2	Standard fuel hose
12	1	P2137	Fuel hose - 6LOLA
13	1	P1090	Propane tank

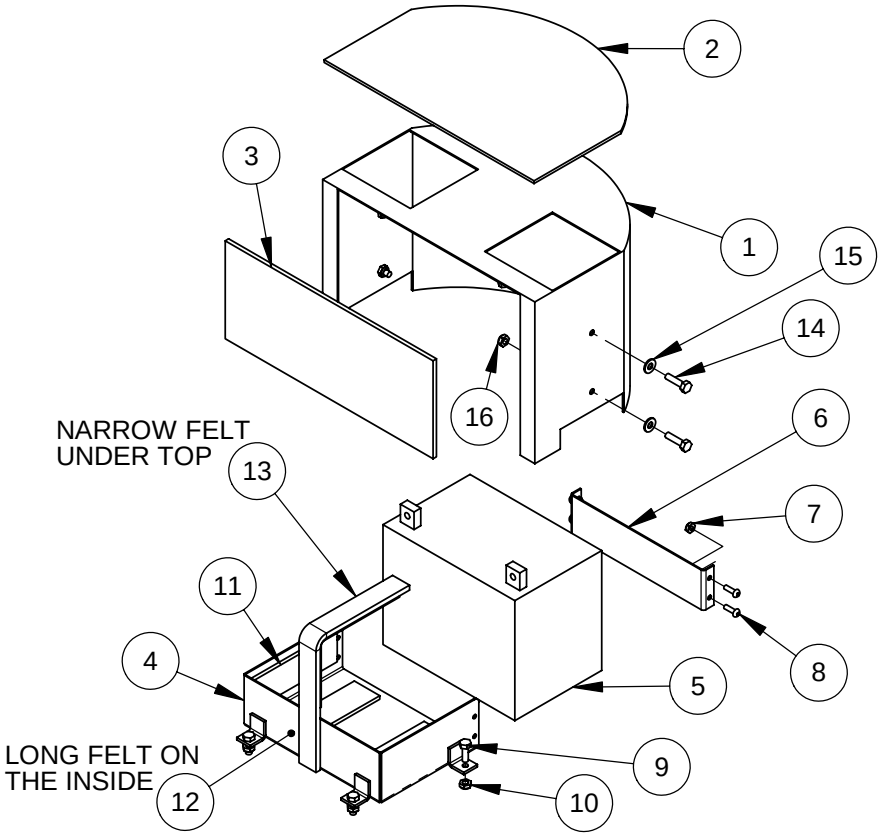
TANK MOUNT AND HANDLE



TANK MOUNT AND HANDLE

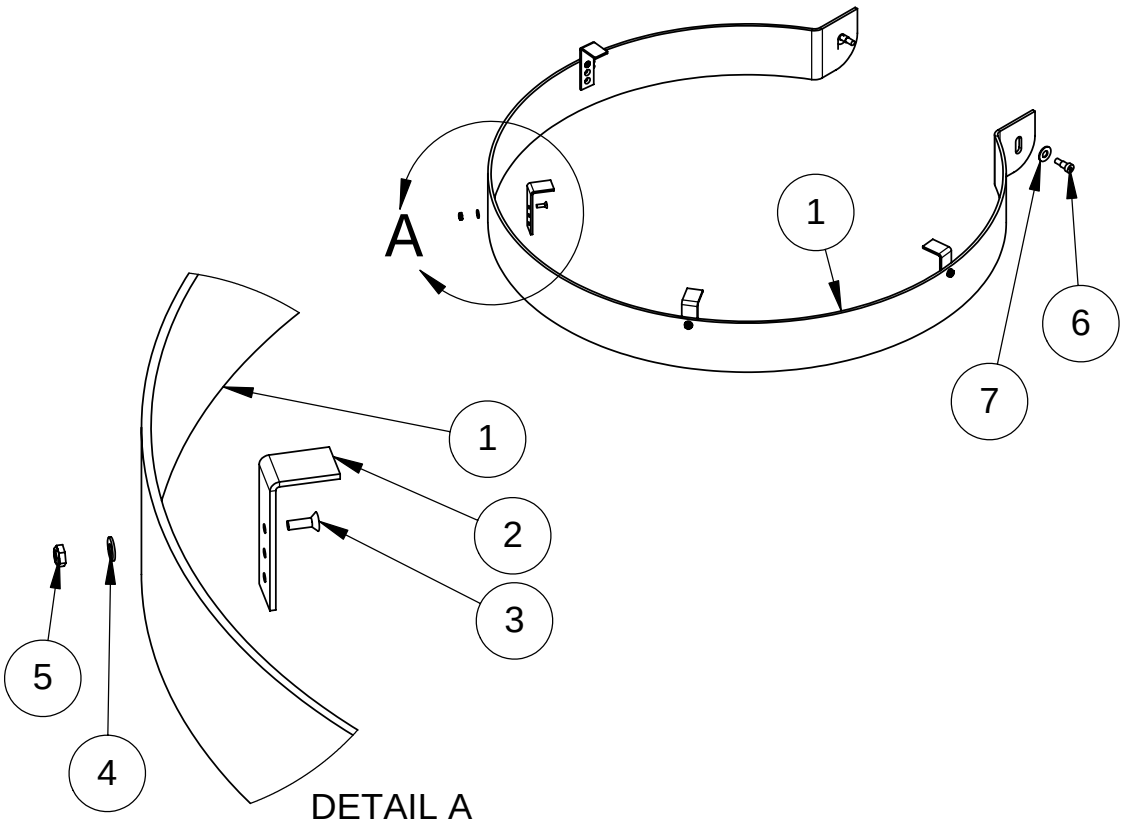
ITEM	QTY.	PART NO.	DESCRIPTION
1	1	ES2009	Lower tank and handle mount
2	1	P1090	Propane tank *(not shown)*
3	4	ES5000	Nut
4	8	P2033	Washer
5	4	P2031	Bolt
6	2	see description	Assembly includes items 6a, 6b, 6c, and 6d
6a	2	P2209	Clevis pin
6b	2	P2115	Hair pin cotter
6c	2	P2211	Retaining cable
6d	2	P2212	Push-on retainer
7	1	ES2006	Handle bars
8	1	P1055	Switch box and cover
9	2	ES5005	Bolt
10	2	P2009	Nut
11	4	P2030	Washer
12	2	P2500	Tubing plug
13	1	P2180	Ignition switch (includes label, but no keys)
14	1	P2179	Ignition switch key - 2 keys
15	1	P2195	Wire stabilizer clamp
16	1	P2076	On-off label
17	4	P2043	Rivet
18	2	ES5004	Bolt
19	2	P2006	Nut
20	1	P1068-36	Throttle cable
21	4	ES5002	Washer
22	2	ES5001	Screw
23	2	P2038	Nut
24	2	ES1150	Spacer
25	1	P2012	Short tank felt
26	1	P2011	Long tank felt

BATTERY TRAY AND BATTERY COVER



ITEM	QTY.	PART NO.	DESCRIPTION
1	1	P1053	Battery cover
2	1	P1053-2	Tank pad
3	1	P1053-1	Battery cover back
4	1	P1054	Battery tray
5	1	P1133-2	Battery
6	1	P1054-1	Battery tray retainer
7	4	P2038	Nut
8	4	P2039	Screw
9	4	ES5003	Bolt
10	4	P2006	Nut
11	4	P2094	Short felt for battery tray
12	1	P2095	Long felt for battery tray
13	1	P2096	Narrow felt for battery tray
14	4	P2040	Bolt
15	4	P2098	Washer
16	4	P2006	Nut

SPLASH GUARD PARTS AND HEIGHT ADJUSTMENT



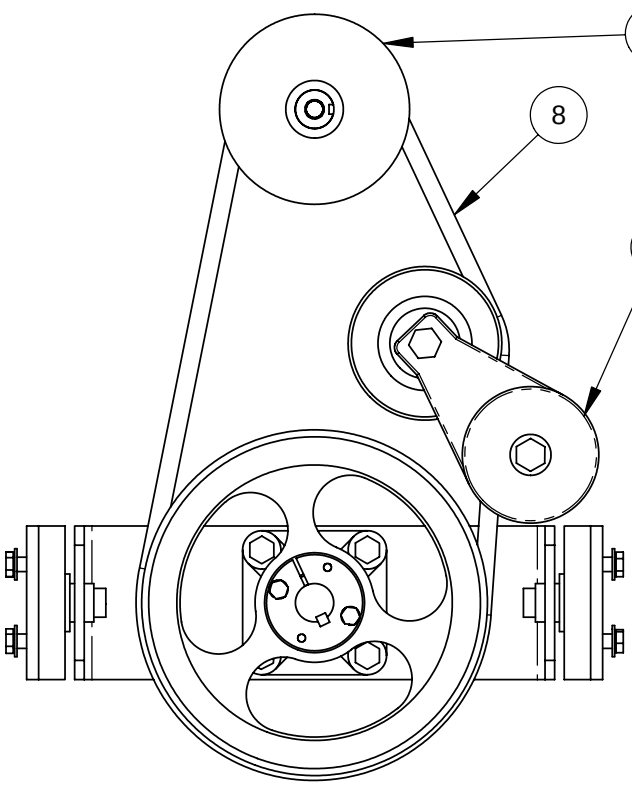
DETAIL A

SPLASH GUARD HEIGHT ADJUSTMENT

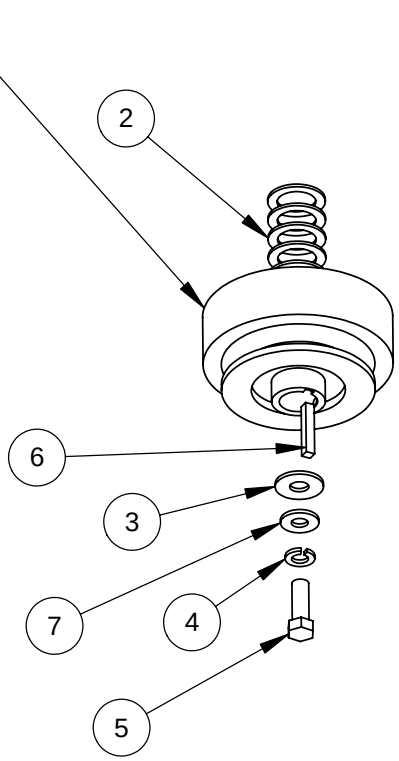
TO ADJUST THE HEIGHT OF THE
SPLASH SKIRT TO WHAT IS NEEDED:
CHANGE THE LOCATION OF THE SCREWS (ITEM 3)
IN THE SPLASH GUARD BRACKET (ITEM 2 - WHICH IS A MAJOR ADJUSTMENT),
AND/OR THE SPLASH GUARD PLASTIC (ITEM 1 - WHICH IS A MINOR ADJUSTMENT).

ITEM	QTY.	PART NO.	DESCRIPTION
1	1	ES1000	Splash guard plastic
2	4	ES2010	Splash guard bracket
3	4	ES5020	Screw
4	4	ES5002	Washer
5	4	P2038	Nut
6	2	ES5018	Shoulder bolt
7	2	P2148	Washer

CLUTCH AND CLUTCH BELT DRIVE PARTS



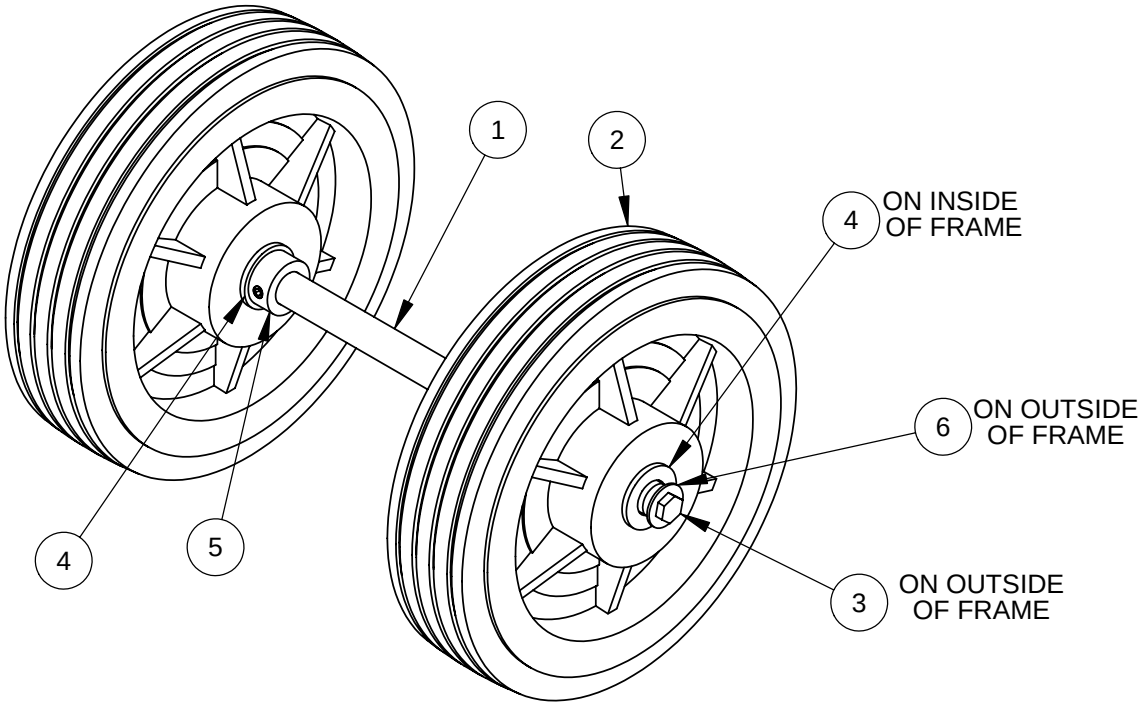
TOP VIEW WITH DECK REMOVED



CLUTCH ASSEMBLY

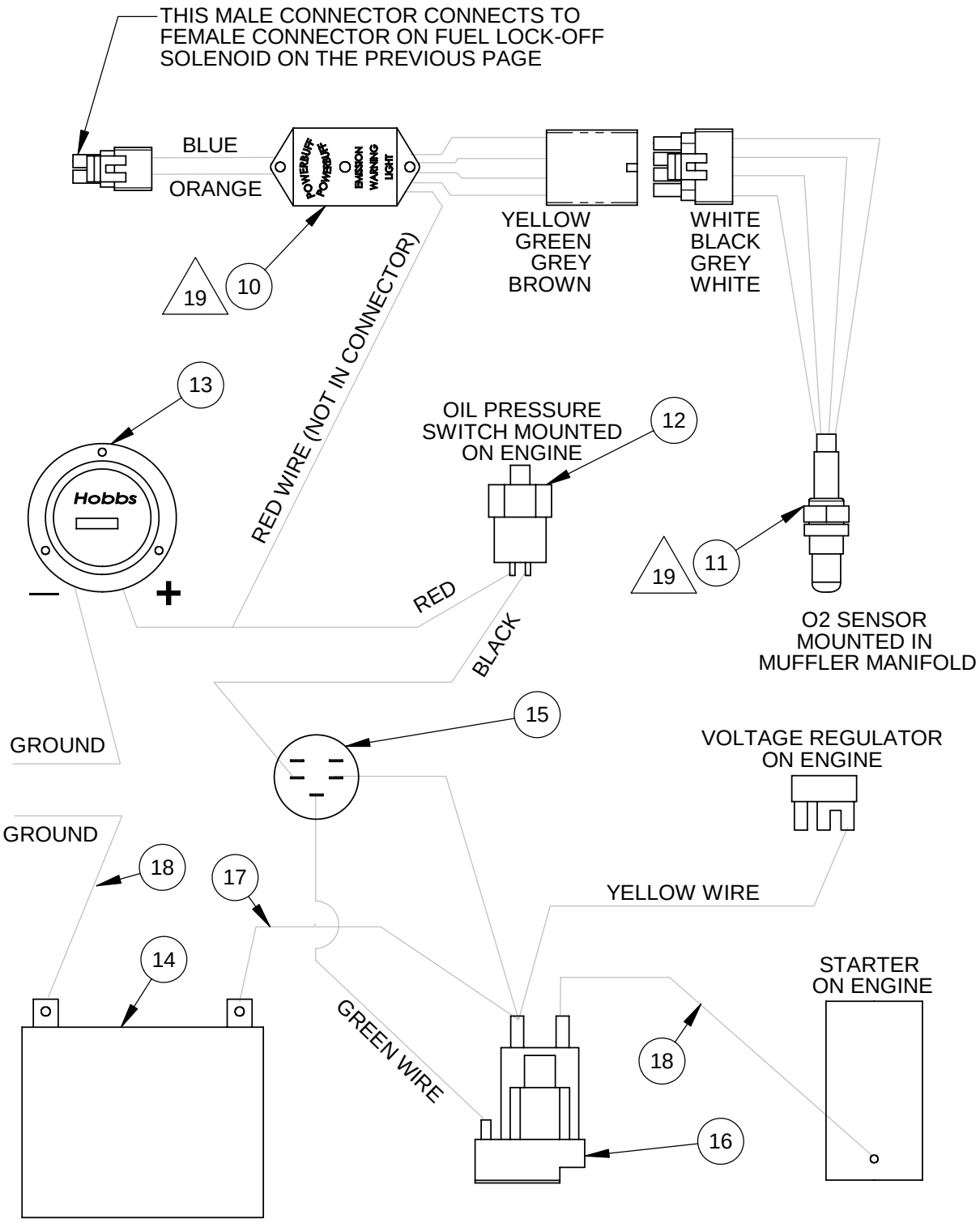
ITEM	QTY.	PART NO.	DESCRIPTION
1	1	P1067	Centrifugal clutch
2	6	P2050	Spacer washer
3	1	P2033	Washer
4	1	P2032	Lock washer
5	1	P2051	Bolt
6	1	P1135	Key
7	1	P2033	Washer
8	1	ES2300	V-belt
9	1	ES2600	Tensioner

WHEELS AND AXLE

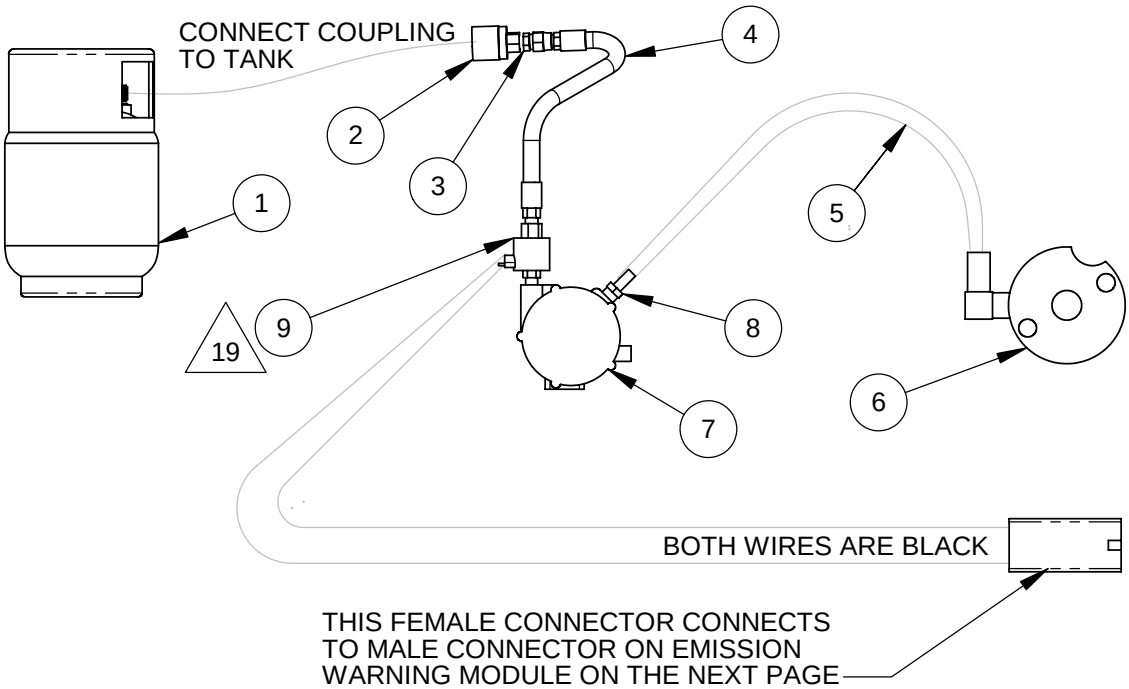


ITEM	QTY.	PART NO.	DESCRIPTION
1	1	ES2200	Wheel axle
2	2	AS261382	Wheel
3	2	ES5006	Bolt
4	4	ES5007	Washer
5	2	ES2306	Shaft collar
6	2	P2148	Washer

ELECTRICAL AND FUEL SYSTEM SCHEMATIC



ELECTRICAL AND FUEL SYSTEM SCHEMATIC



ITEM	QTY.	PART NO.	DESCRIPTION
1	1	P1090	Propane tank
2	1	P1086	Tank coupling
3	1	P1011	Union coupling
4	1	P1006-2	Standard fuel hose
5	1	P2137	Fuel hose to carburetor
6	1	P2306	Carburetor adapter kit #2
7	1	P1083	Regulator
8	1	P1009	Hose barb
9	1	P2308	Fuel lock-off solenoid (includes connector)
10	1	P2310	Emissions shutdown module (includes both connectors)
11	1	P2311	O2 sensor (includes connector)
12	1	F0004	Oil pressure switch
13	1	P1076	Hour meter
14	1	P1133-2	Battery
15	1	P2180	Ignition switch (includes label, but no keys)
16	1	F0003	Solenoid
17	1	P1133-20	Battery cable
18	2	P1133-9	Battery cable
19	***	P2303	Emissions shut-down kit: includes (P2308, P2311, P2310)

TROUBLE-SHOOTING THE MACHINE

PROBLEM	CAUSE	POSSIBLE SOLUTION
Cannot remove brushes	(a) Turning brushes the wrong way. They have left-hand threads. (b) Threads too tight.	(a) Turn clockwise to remove. See page 15 for details. (b) Use a socket on the brush and a wrench on the shaft. See page 15 for details.
Poor stripping performance. Leaves wax on floor.	(a) Problem with stripper. (b) Brushes worn to less than 3/4". (c) Brush drive belt or engine clutch belt slipping.	(a) Check dilution ratio. Find a better stripper. (b) Replace brushes. (c) Tighten belts. See pages 16, 17, 18.
Excessive splashing	Splash guard too high off floor.	Lower splashguard. Page 29.
Solution pushed by splash guard.	Splash guard touching floor.	Raise splash guard. Page 29.
Brushes not turning, brushes turning too slow, smell burning rubber.	(a) Engine clutch belt slipping or damaged. (b) Brush drive belt slipping or damaged. (c) Floor too rough for brushes to overcome the friction. Could happen on a rough concrete floor.	(a) Tighten or replace engine clutch belt. Pages 16, 17. (b) Tighten or replace brush drive belt. Page 18. (c) Tighten both belts. Put plenty of liquid on the floor.
Machine pulls excessively or in an unusual way.	Brush drive not level.	Level brush drive. Page 13.
Nothing I find here fixes the problem.	Problem could have several causes. Everything cannot be covered here.	Read IMPORTANT below.

IMPORTANT

- THE TROUBLE-SHOOTING TIPS ARE NOT INTENDED TO TAKE THE PLACE OF AUTHORIZED SERVICE PERSONNEL.
- IF YOU ARE UNSURE OF WHAT TO DO—THEN DO NOT DO ANYTHING, EXCEPT TO CONTACT AUTHORIZED SERVICE PERSONNEL.
- BEFORE WORKING ON THIS MACHINE, YOU MUST BE FAMILIAR WITH THE SAFETY INSTRUCTIONS IN THIS MANUAL.

TROUBLE-SHOOTING THE ENGINE

PROBLEM	CAUSE	POSSIBLE SOLUTION
Engine will not turn over.	(a) Battery is dead. (b) Loose wire or bad connection. (c) Bad electrical component.	(a) Recharge battery or replace if necessary. (b) Check wires and connections. (c) Replace bad component. (d) Refer to engine owner's manual and read IMPORTANT below.
Engine turns over, but will not start.	(a) Tank valve in off position. (b) Propane tank empty. (c) Engine problem.	(a) Turn on valve. (This is the first thing to check.) (b) Fill tank. (c) Refer to engine owner's manual and read IMPORTANT below
Hard to start.	Some type of engine problem.	Refer to engine owner's manual and read IMPORTANT below
Lacks power.	Some type of engine problem.	Refer to engine owner's manual and read IMPORTANT below
Engine stops suddenly and will not restart.	Out of fuel.	Get fuel.
Engine stops suddenly and will restart, but then stops again.	Emission shut-down system engaged.	Refer to engine owner's manual and read IMPORTANT below
Nothing I find here fixes the problem.	Problem could have several causes. Everything cannot be covered here.	Read IMPORTANT below.

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When Performance Counts. . .You Can Count on POWERBUFF!

PROPANE POWERED FLOOR EQUIPMENT LIMITED WARRANTY

PowerBuff, Inc. warrants new machines to be free from defects in material and workmanship under normal use and service to the original purchaser. The warranty period commences on the date of sale and is subject to the conditions stated below.

EQUIPMENT WARRANTY FOR PARTS AND SERVICE LABOR
Equipment is warranted for one (1) year. Please see other warranties and exclusions below.

ENGINE WARRANTY FOR PARTS AND SERVICE LABOR
Engine is warranted for two (2) years. Engine warranty will be assigned to the buyer. Please see other warranties and exclusions below.

EXTENDED WARRANTIES FOR THE "OPTIMA QT" MODEL
This "Optima QT" model buffer, including the engine, is warranted for three (3) years for parts and service labor. Engine warranty will be assigned to the buyer. Please see other warranties and exclusions below.

EMISSION WARRANTY
In California and the other 49 states your new engine must be designed, built, and equipped to meet stringent anti-smog standards. The emission control system is warranted to the original purchaser and each subsequent owner for two years. Please read the "Emission Control System Warranty" for an explanation of this warranty.

EXCLUSIONS
This warranty does not cover normal wear and maintenance items including, but not limited to: belts and hoses. This warranty does not cover paint or appearance items, or damage or failure which is the result of misuse, negligent operation, handling or repair, or which is the result of modification or repair by any person other than an authorized PowerBuff, Inc. service representative.

LIMITATIONS
STATED WARRANTIES ARE IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. PowerBuff's liability under this warranty is limited to repair of the product and/or replacement parts and is given to purchaser in lieu of all other remedies, including incidental and consequential damages.

WARRANTY DETAILS AND CLAIM PROCEDURES
PowerBuff, Inc. warrants to buyer that for the applicable shipment, such material will be free from defects in material and workmanship or failure to meet specifications (a defect) appears in the material; then seller will, at it's option, either repair or replace the defective goods without charge or credit or refund the purchase price of the defective material, provided that:

1) The defect appears within the applicable warranty period.
2) Buyer notifies seller in writing of the claimed defect promptly after buyer knows or reasonably should know of the claimed defect.
3) Seller's examination if the material discloses that the claimed defect actually exists.

Buyer shall follow seller's instruction regarding return of defective material, and no material will be accepted for repair, replacement, credit, or refund without the written authorization of and in accordance with seller's instructions. In the case of any such return, buyer shall bear the risk if in-transit loss or damage; and shall prepay all transportation charges to seller. Repaired or replacement material will be shipped prepaid by seller, and buyer shall bear the risk of in-transit loss or damage. The replaced material shall become the seller's property.