

P-REX:

Pioneer Remover/Extractor

Instructions



4529 Industrial Parkway
Cleveland, OH 44135

800-877-1500
PioneerAthletics.com

WARNING

The engine exhaust from this product contains chemicals known to the state of California to cause cancer, birth defects or other reproductive harm.

NOTICE OF REQUIREMENT OF SPARK ARRESTER MUFFLER

This equipment may create sparks that can start fires around dry vegetation. California Public Resources Code Section 4442.6 provides that it is unlawful to use or operate an internal combustion engine on any forest-covered, brush-covered, or grass-covered land unless the engine is equipped with a spark arrester maintained in effective working order. A spark arrester is a device constructed of nonflammable materials specifically for the purpose of removing and retaining carbon and other flammable particles over 0.0232 of an inch in size from the exhaust flow of an internal combustion engine that uses hydrocarbon fuels or which is qualified and rated by the United States Forest Service. Other states or federal areas may have similar laws. The Operator Should Contact Local Fire Agencies for Laws or Regulations Relating to Fire Prevention Requirements. THIS EQUIPMENT DOES NOT HAVE A SPARK ARRESTER AND YOU SHOULD CONTACT YOUR AUTHORIZED DEALER FOR THE PURCHASE OF A SPARK ARRESTER.

Inspect spark arrester daily; replace every 500 hours or as needed.

The Engine Owner's Manual provides information regarding the U.S. Environmental Protection Agency (EPA) and the California Emission Control Regulation of emission systems, maintenance and warranty.

Keep Engine Owner's Manual with your unit. Should the Engine Owner's Manual become damaged or illegible, replace immediately. Replacements may be ordered per the information found in the Product Information section of the owner's manual.

Federal law and California State law prohibit the following acts or the causing thereof:

- 1. The removal or rendering inoperative by any person other than for purposes of maintenance, repair, replacement, of any device or element of design incorporated into any equipment for the purposes of emissions control prior to or after its sales or delivery to the ultimate purchaser or while it is in use, or**
- 2. The use of the equipment after such device or element of design has been removed or rendered inoperative by any person**

Table of Contents

General Information.....	1
GameLine Paint and the P-REX Removal System	1
To the New Owner	1
Warranty	1
Customer obligations	1
Model and Serial Number Information	2
Operations.....	3
Controls	3
Starting	3
Stopping.....	3
Engaging Vacuum Bar	4
Engaging Brushes.....	4
Water and Blitz Application.....	4
Water.....	4
Blitz	5
Paint Removal and Extractions Operation	8
Maintenance and Adjustments.....	9
Tires	9
Lubrication.....	9
Electrical System.....	9
Hydraulic System	11
Belts.....	11
Removing or replace Belts	12
Removing Belts	13
Remove Hydraulic Belt	13
Remove Generator Belt.....	13
Remove Drive Belt	14
Installing belts.....	14
Vacuum Bar	15
To clean	15
Vacuum Tank, Line and Filter	15
To clean:	15
Brushes.....	16
Brush removal	16
Brush Installation.....	17
Re-install brush.....	17
P-REX Maintenance Schedule	18
TROUBLESHOOTING GUIDE.....	19
Water Pump Issues.....	21
Switch or Ram Lift Issues	22
Hydraulic Drive Release.....	23
Blitz Pump.....	24
Engine Will Not Start	24
Engine stalled while running	25
Plugged Nozzles.....	25
STORAGE	26
Storage for long periods	26
PLUMBING DIAGRAM.....	27
P-REX Parts Data Sheet	28
P-REX Spare Parts List.....	29
INDEX.....	DD

General Information

The P-REX Extractor was specifically designed to remove GameLine Paint from synthetic turf infilled systems. Its innovative design turns synthetic turf paint removal into a one-person job for efficient line and logo removal without wear and tear to the turf fibers. By facilitating all the steps of the GameLine removal process – applying Blitz remover solution, agitating the paint/remover mix, applying rinse water and extracting; the P-REX saves time and man-hours.

GameLine Paint and the P-REX Removal System

GameLine paint is a durable, waterborne paint system that can withstand weather, wear and tear but, when needed, can be re-liquefied/dissolved when Blitz remover solution is applied. The Blitz remover solution activates the paint resins to make it breakdown. This “activation” is subject to a variety of conditions that may occur on any given field, including the temperature, the amount of paint to be removed or even the condition of the turf. The P-REX gives the user the tools to control their cleaning effectiveness while minimizing waste of materials and time.

The P-REX application system can apply Blitz remover solution evenly to a large area with its boom sprayer or a more focused application through the front brush sprayers. This dual action application approach allows the operator to more efficiently apply remover solution.

To the New Owner

The purpose of this manual is to assist owners in the operation and maintenance of the **Pioneer P-REX extractor**. Please review this portion of your manual for correct operation of the unit before you begin.

The Pioneer P-REX uses a Hustler Super HD as a base drive unit on which a complete vacuum system, a low-pressure water and Blitz spray system, and a hydraulic

brush system have been added to extract paint from synthetic turf. These portions of the unit are unique to the P-REX and will need special instructions, not found in the other manufacturer’s manual. The base unit of the P-REX paint extractor is a Hustler Super Z HD. This portion of your manual is an addendum to the operation and maintenance manual. It includes only the changes and modifications made to the original unit. Please follow the detailed instructions and recommendations for routine maintenance and procedures that apply to the central unit. It’s important that you read and understand the complete manual before using the P-REX.

Please read additional operation manuals supplied for correct operation & maintenance of that unit.

Warranty

Warranty for a period of one (1) year after equipment receipt, Pioneer Athletics warrants the P-REX synthetic turf extraction machine as free from defects in material and workmanship. Warranty includes non-wearable parts and shipping of parts and/or equipment to and from Pioneer Athletics.

Customer obligations

This warranty is expressly conditioned on the buyer’s obligation to perform regular maintenance on and care for any equipment and supplies in accordance with any operating instructions and maintenance, a copy of which the buyer acknowledges receiving and to which the buyer agrees to be bound. If the buyer does not comply with such instructions, and that failure results in the need for replacement parts, the buyer shall bear the full cost of such replacement parts at Pioneer’s discretion.

Model and Serial Number Information

Model

Serial #

Pioneer Serial #

Date of Purchase

Owner

Special Configuration

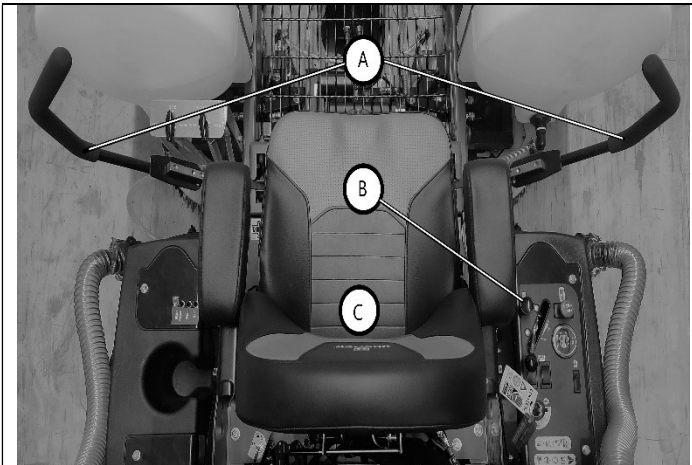
Notes:

Operations

Controls

There are three (3) components to the safety interlock system that must be in place to start the engine [Figure 1]

1. The steering arms must be in the parking brake position (all the way out) – (A)
2. The deck clutch knob must be in the off position (down) – (B)
3. The seat must be in the down position – (C)



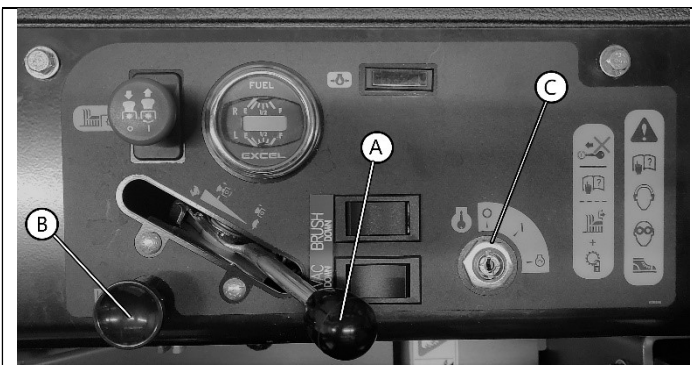
A – Steering Arms (2)
B – Choke Knob
C – Seat

Figure 1

Starting

Once the safety components are in place,

1. Pull up on choke knob – (A) [Figure 2]
2. Move throttle to 1/2 open run position – (B)
3. Turn key clockwise until engine starts – (C)

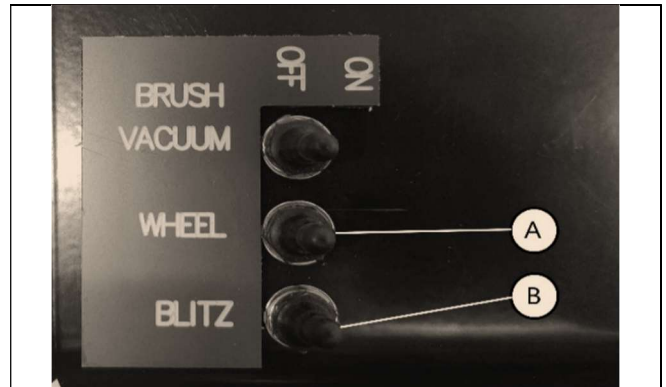


A – Throttle
B – Choke Knob
C – Ignition Key

Figure 2

Stopping

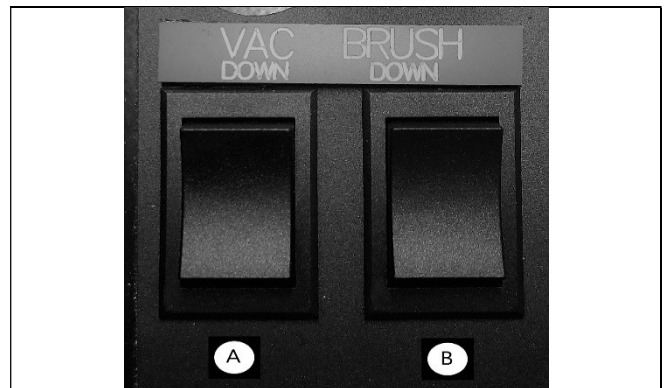
1. Turn off water and Blitz (A) & (B) [Figure 3]



A – Wheel Spray
B – Blitz Spray

Figure 3

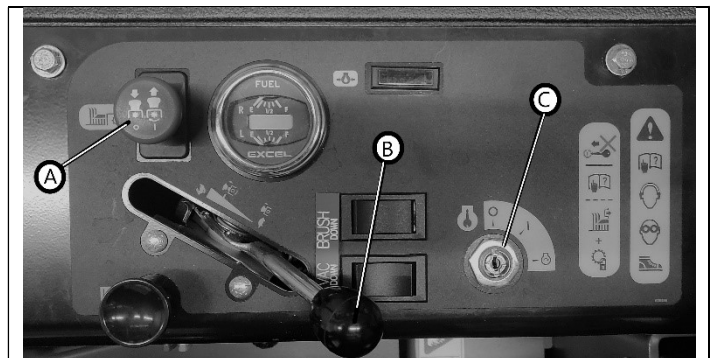
2. Raise brushes and vacuum bar (A) & (B) [Figure 4]



A – Vacuum Bar
B – Brush Assembly

Figure 4

3. Disengage the brush clutch – (A) [Figure 5]



A – Brush Clutch
B – Throttle
C – Ignition Key

Figure 5

- Place the steering arms in the park break position (all the way away from operator) [Figure 6]
- Decrease throttle to idle, let engine run at low idle for a short time [Figure 5]
- Turn key counter-clockwise to stop position and remove key [Figure 5]



A – Steering Arms (2)

Figure 6

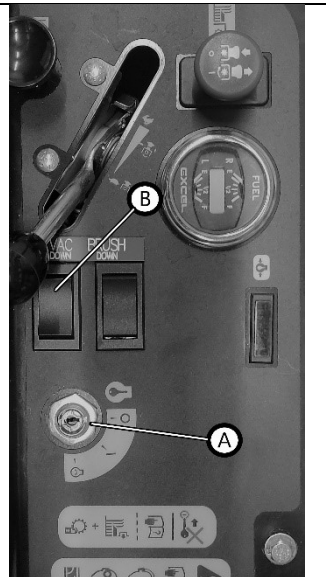
Engaging Vacuum Bar

- Turn the vacuum motors to the “ON” position [Figure 7]
- Start the engine (the vacuum will not run unless the throttle is in the full position) (A) [Figure 8]
- Lower the Vacuum bar to the turf surface with rocker switch – (B) [Figure 8]



Vacuum Switch

Figure 7

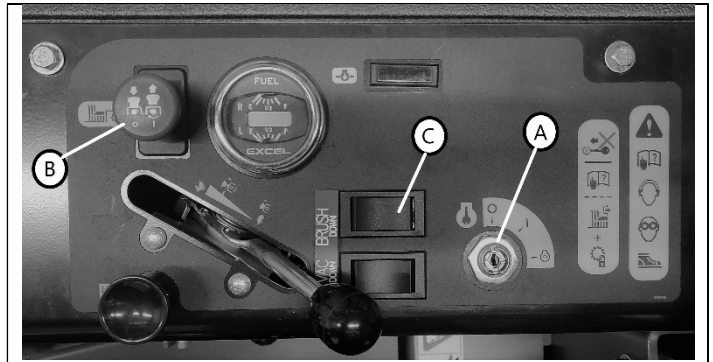


A. Ignition Key
B. Vacuum Switch (Down)

Figure 8

Engaging Brushes

- Start the engine (A) [Figure 9]
- With engine running and brushes raised, pull red deck clutch knob up (B) to the “ON” position to engage brushes
- Raise and lower brushes using rocker switch (C)
- Push deck knob down to disengage brushes and stop them from spinning (B)



A – Ignition Key
B – Brush Clutch
C – Brush Switch (Down)

Figure 9

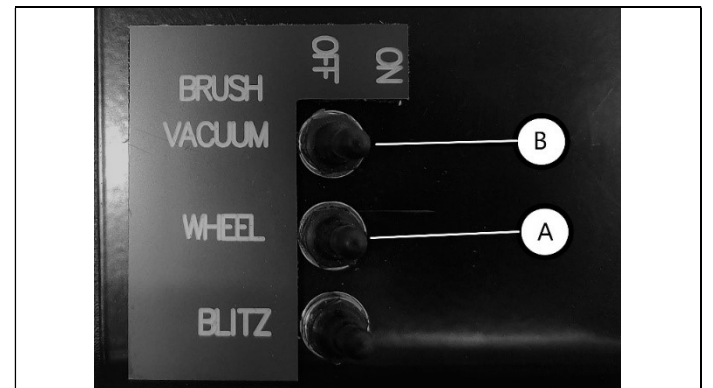
Water and Blitz Application

Water

The water system of the P-REX is adjustable and can run water to the individual components as needed (wheel spray, vacuum bar and brushes) **but** the machine must be running at **full throttle**,

Run water to the wheel spray/rinse nozzles

Move wheel switch to on position – (A) [Figure 10]



A – Wheel Spray
B – Blitz Spray

Figure 10

Run water to the vacuum bar nozzles

Move brush/vacuum switch to "On" position - (B)
[Figure 10]

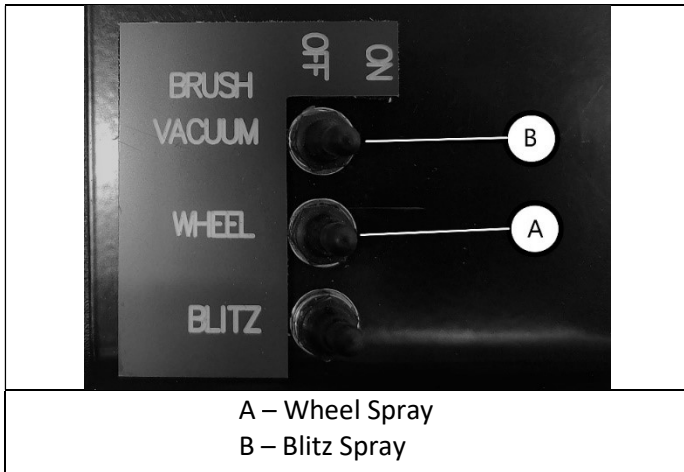


Figure 10

- a. The water to the vacuum bar can be turned on and off using the valve located below the left control valves – (A) [Figure 11]

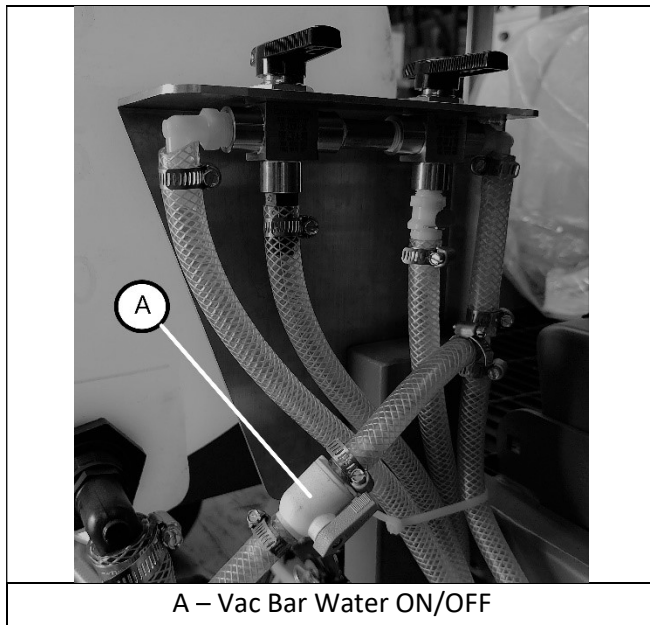


Figure 11

Run water through the brush nozzles:

- 1. Flip the brush vacuum switch to the "ON" position – (B) [Figure 10]

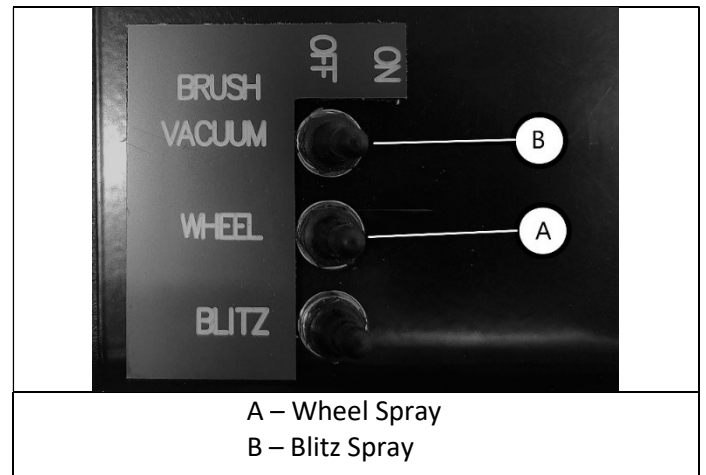


Figure 10

- 2. Turn selector knob to water position – (E)
[Figure 12]

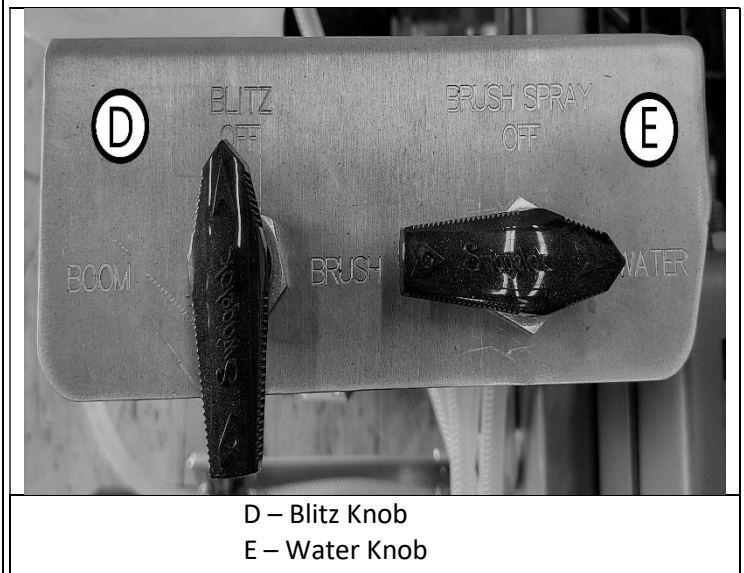


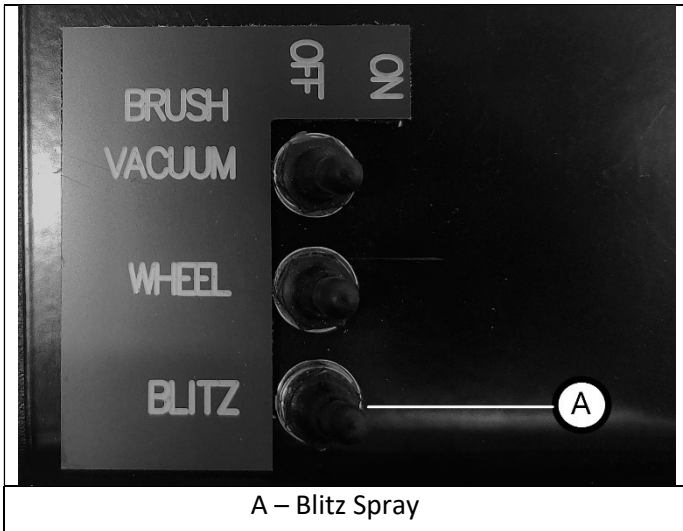
Figure 12

Blitz

Blitz remover can be delivered to the rear boom, all three (3) brushes or just the center brush

Rear Spray Boom

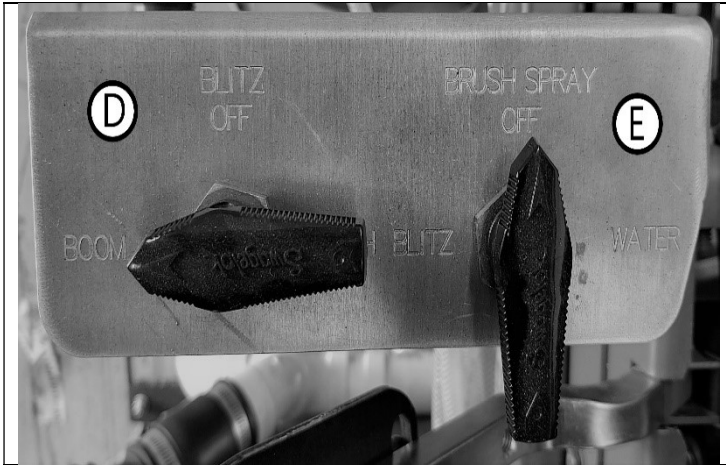
- 1. To run Blitz through the rear boom, turn Blitz switch to the "On" position (A) [Figure 13].



A – Blitz Spray

Figure 13

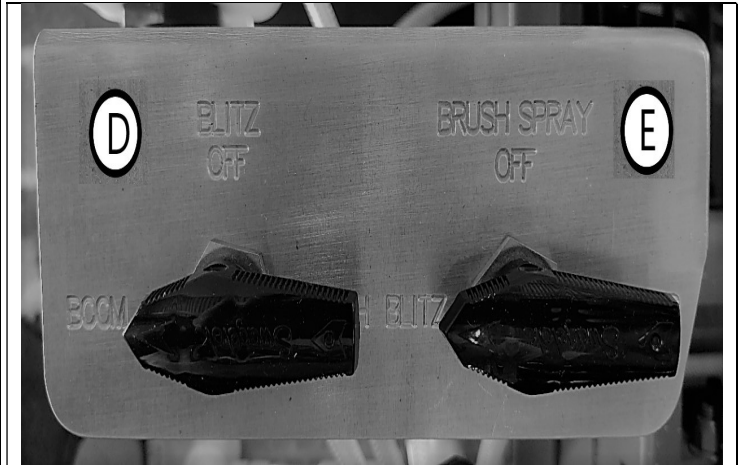
2. Turn the control knob (D) to “BOOM” [Figure 14]



D – Blitz Knob
E – Water Knob

Figure 14

3. Turn the control knob (E) to “BLITZ” [Figure 15]

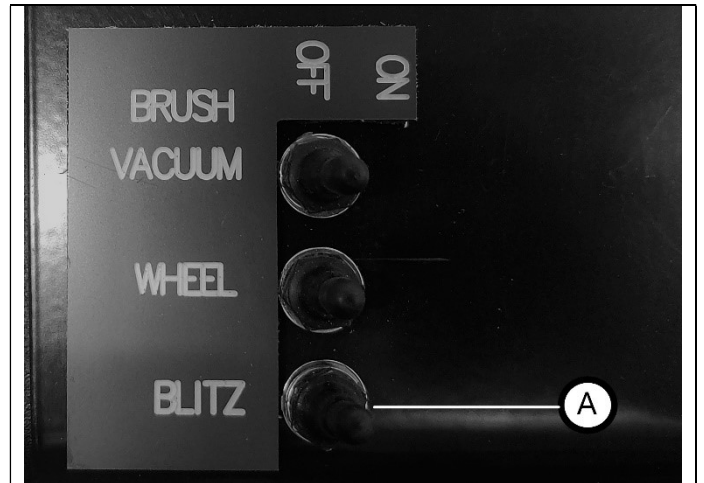


D – Blitz Knob
E – Water Knob

Figure 15

Front Brush

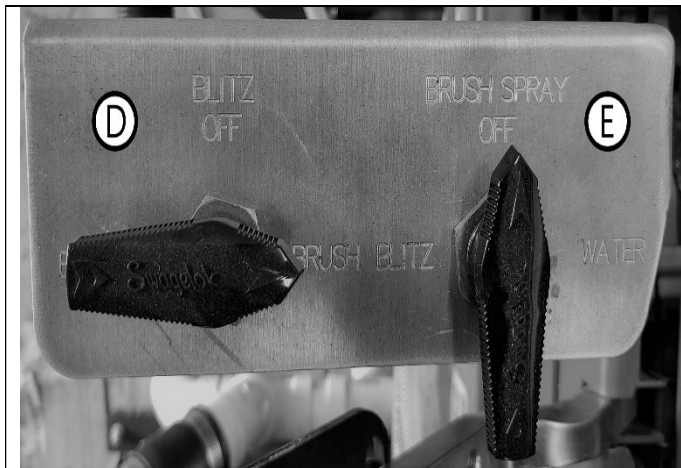
1. To run blitz through the front brushes, turn Blitz switch to the “On” position (A) [Figure 16].



A – Blitz Spray

Figure 16

2. Turn control knob (D) to “BRUSHES” [Figure 17]



D – Blitz Knob
E – Water Knob

Figure 17

3. Turn control knob (E) to “BLITZ” [Figure 18]

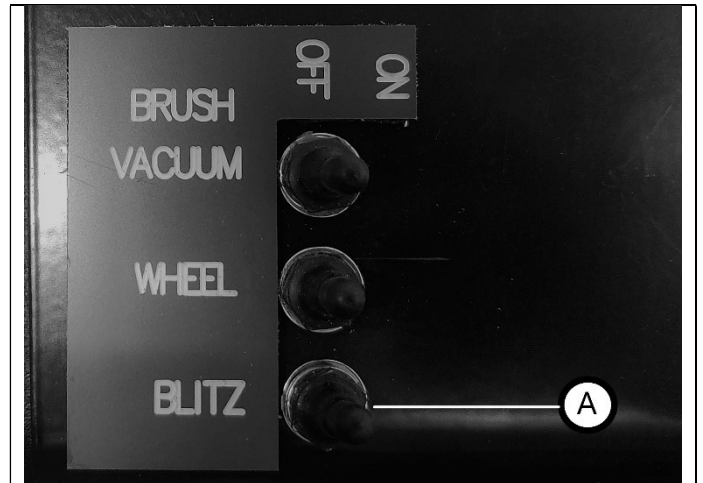


D – Blitz Knob
E – Water Knob

Figure 18

Center Brush

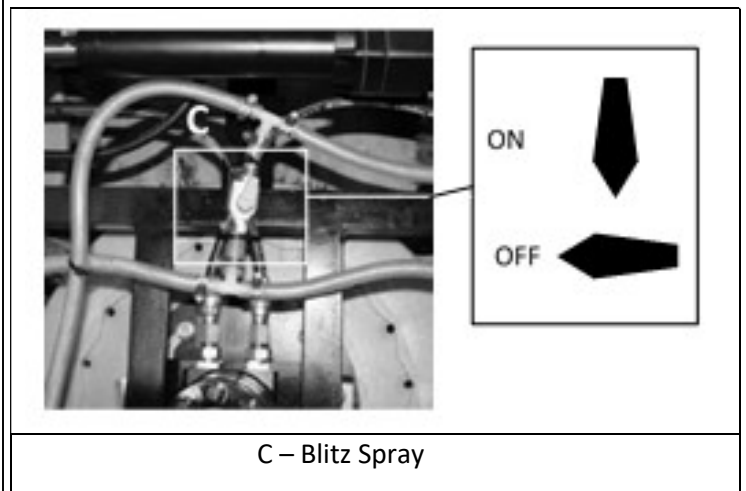
1. Center Brush - To run Blitz through just the center brush - turn Blitz switch to the “On” position (A) [Figure 18].



A – Blitz Spray

Figure 19

2. Turn the valve located under the foot grating, turn valve (C) to the “OFF” position [Figure 19]



C – Blitz Spray

Figure 19

Maintenance and Adjustments

The adjustments listed below include the additions to the base unit. Refer to the Operator's and General Service Manuals for more detailed information.

Tires

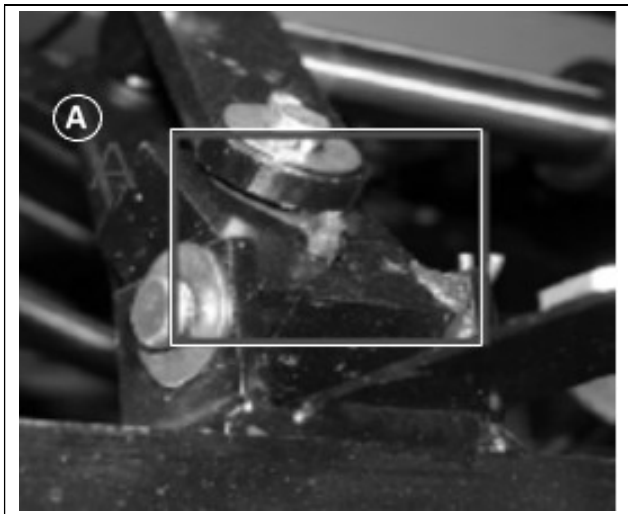
The P-REX brushes and vacuum bar require that the tires be inflated to equal amounts per side. Check tire pressure before each use.

1. Drive wheels 29 - 32 psi (200–220 KPa)
2. Front wheels 25 - 28 psi (172–193 KPa)

Lubrication

The P-REX has additional grease (zerk) fittings beyond the normal lubrication points of the base unit. The additional fitting can be found at each of the four (4) joints of the lower hanger (A) [Figure 20]

See the General Service Manual for more information



A – Grease (zerk) Fitting

Figure 20

Electrical System

The P-REX operates using 2 different electrical systems: a 120/240V AC and a 12V DC.

1. The 120/240V AC is created from the 5KW generator. The system operates the water pump, vacuum motors, solenoid valves and the 120V utility outlet.
2. The 12V DC is created from the battery. This system is protected through a 30A fuse and operates the spray valve control relays, Blitz

pump and the brush & vacuum bar actuators. The battery also powers the USB outlet through a separate 5A fuse.

Much of the electrical operations of the P-REX are managed through the gray electrical control box which contains 3 plug-in relays, a solid-state relay for the water pump and a terminal strip. The terminal strip is laid out as follows.

Terminal Strip

- Green/Yellow – ground
- #1- 120V AC power from generator
- #2- 120V neutral
- #3- 120V neutral
- #4- 120V to water pump

See [Figure 21] on next page

12 Volt DC system - To Turn on, start vehicle or turn ignition switch to on. DC is wire #20 coming from the Battery

120/240 Volt AC system - To Turn on, start vehicle and push throttle forward to maximum engine speed. AC is wire #1 coming from Generator.

MCR Power Relay - Turn ignition switch ON to activate MCR power relay (main control relay located to the right of the battery) to power on the +12V DC (wire 21) for switches and actuators. DC is wire #20 from the battery.

Power - Power (wire 1) coming in from the generator.

Solid State Relay - Solid state relay sends power through (wire 3) to the control relays

Brush/Vacuum – Brush/Vacuum Switch (wire 6) activates 1CR relay and brush/vacuum solenoid (wire 10) and the water pump (wire 4) through the solid-state relay.

Wheel Spray - Wheel Spray switch (wire 7) activates 2CR relay and the wheel solenoid (wire 11) and the water pump (wire 4) through the solid-state relay.

Blitz Pump – Blitz Pump Switch (wire 8) activates 3CR relay and the Blitz pump (wire 22).

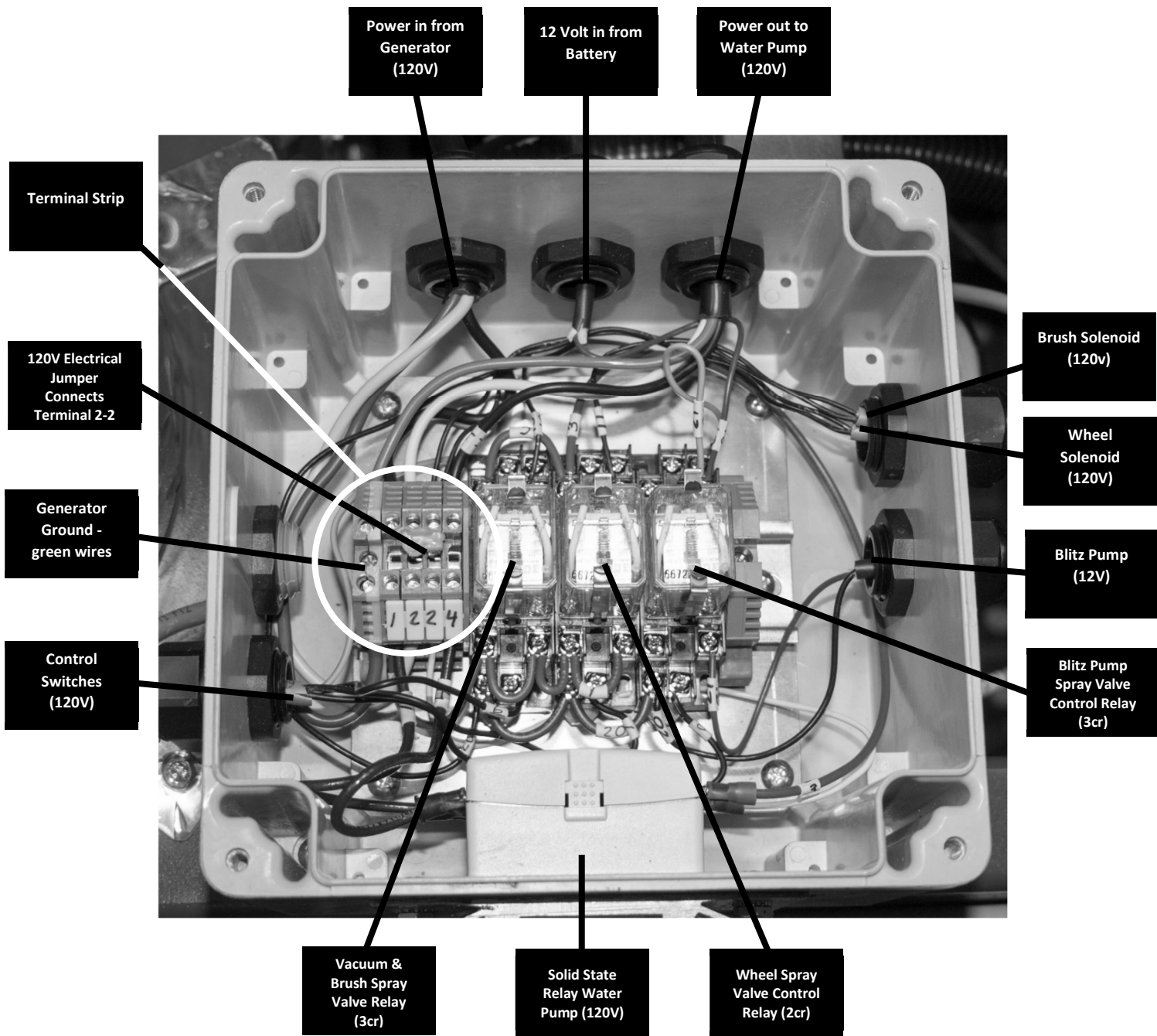


Figure 21

Hydraulic System

The hydraulic system of the P-REX is similar to the main unit with the addition of the three front brush motors and Hydraulic by-pass valve.

1. Check Hydraulic oil levels every 50 hours – Fluid levels should be 1 inch from top of reservoir, located under driver’s seat [Figure 23]
2. Use only **15W50 synthetic oil or 20W50 synthetic oil**. Full Synthetic 20W50 Hydrostatic Transmission Oil is recommended. [Figure 23]

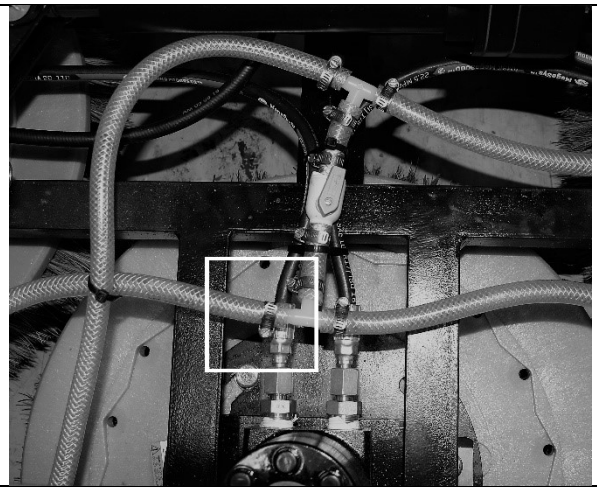
NOTE: The reservoir will require approximately 3.0 U.S. gallons (11.35 liter) of **15W50 synthetic oil or 20W50 synthetic oil** when replacing the oil after an oil and filter change. **Do not overfill the reservoir.**

3. The front brush hydraulic system can be disconnected from the hydraulic system at the quick release connections located under foot grate. [Figure 24]
4. Hydraulic by-pass valve (A) ([Figure 25] See Operator’s manual for more information



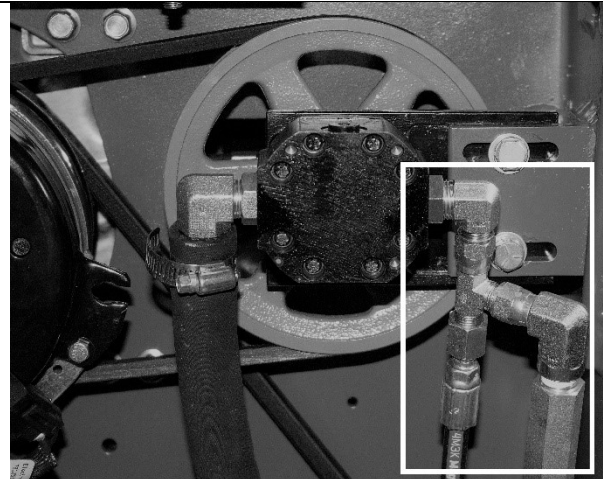
Hydraulic Tank

Figure 23



Hydraulic Quick Release

Figure 24



Hydraulic By-Pass Valve

Figure 25

Belts

The P-REX has three (3) belts, they should be checked regularly for wear.

Drive (Wheels) Belt – (A) [Figure 26]

Generator Drive Belt - (B) [Figure 26]

Hydraulic (Brushes) Drive Belt – (C) [Figure 26]

Belt part numbers:

Drive Belt - Part # P1048

Generator Belt - Part # P1048

Hydraulic Pump Belt - Part # P1040

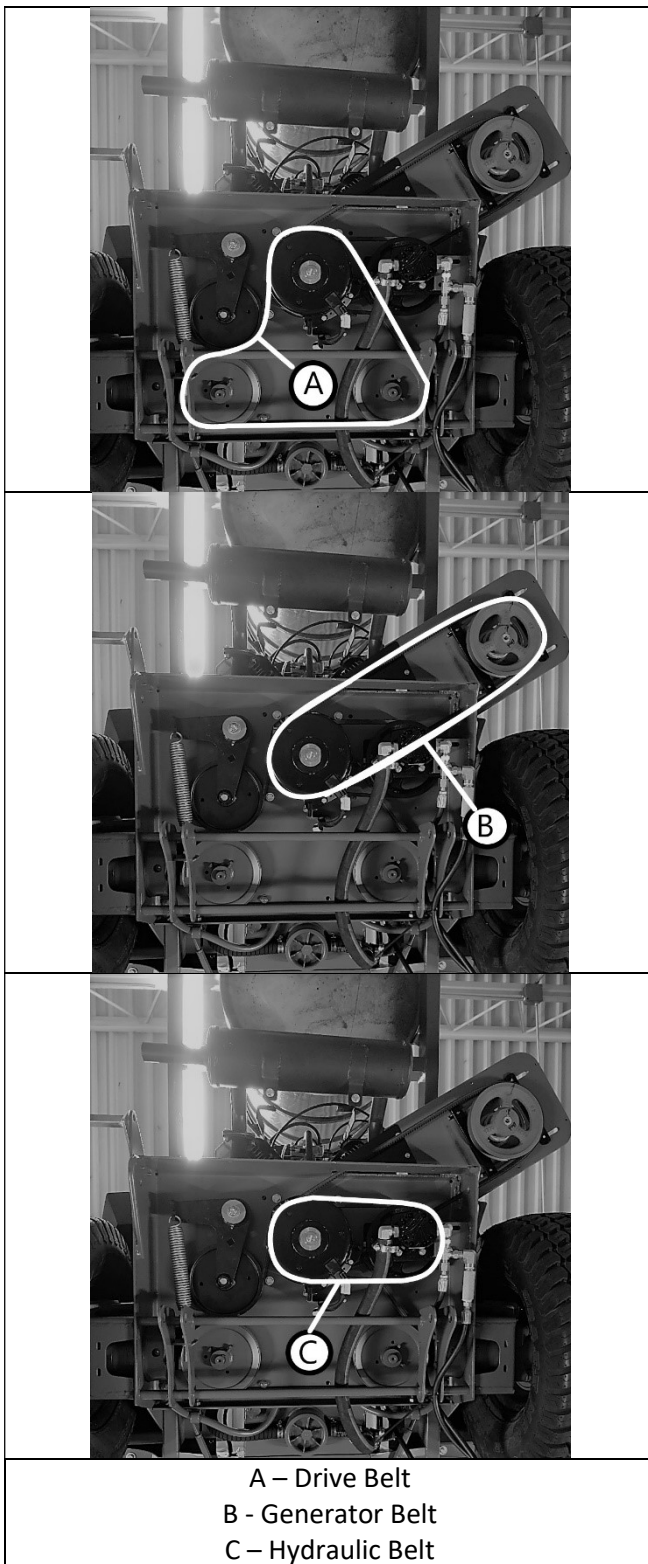


Figure 26

Removing or replace Belts
 Inspect belts frequently for wear and serviceability.

Replace a belt that shows signs of:

- severe cuts
- tears
- separation
- weather checking
- cracking
- burns caused by slipping.

Slight raveling of belt covering does not indicate failure, trim ravelings with a sharp knife. Inspect the belt pulley grooves and flanges for wear. A new belt, or one in good condition, should never run against the bottom of the groove. Replace the pulley when this is the case, otherwise, the belt will lose power and slip excessively. Never pry a belt to get it on a pulley as this will cut or damage the fibers of the belt covering. Keep oil and grease away from belts, and never use belt dressings. Any of these will destroy the belt composition in a very short time.

WARNING ⚠ Untrained maintenance personnel should never attempt to make any adjustments or repairs to the drive system while the engine is running. **The following procedures should be performed by trained maintenance personnel only.**

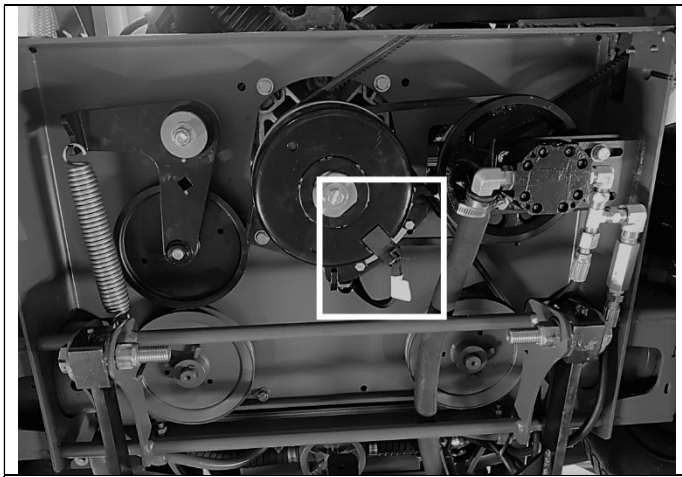
WARNING ⚠

- Potential for serious injury!
- Never work under the machine or attachment unless it is safely supported with jack stands.
- Make certain machine is secure when it is raised and placed on the jack stands.
- **Use only certified jack stands.** Use only appropriate jack stands, with a minimum weight rating of 3000 pounds (1360 kg) to block the unit up.
- Use in pairs only.
- Follow the instructions supplied with the jack stands.
- The jack stands should not allow the machine to move when the engine is running and the drive wheels are rotating.
- Do not allow the wheels to come in contact with the floor or any object that would permit the unit to propel itself.
- To prevent injury, stay clear and exercise caution when rotating the wheels.

Removing Belts

To remove any belt, first you must:

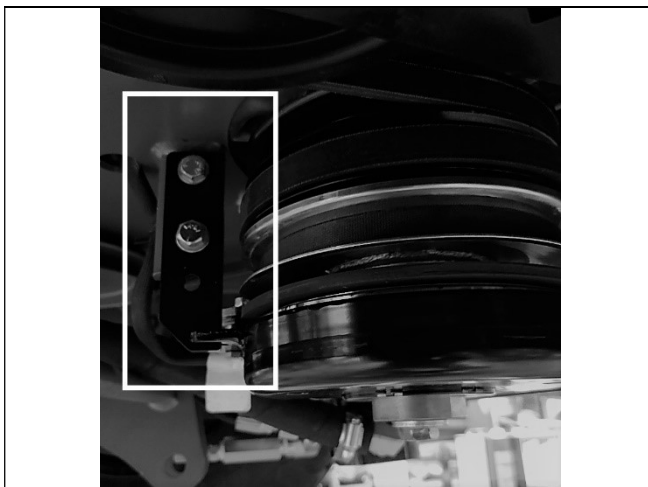
1. Unplug the electrical connection on the clutch housing. [Figure 27]



Clutch Electrical Connection

Figure 27

2. Remove the clutch mount using two (2) bolts. [Figure 28]

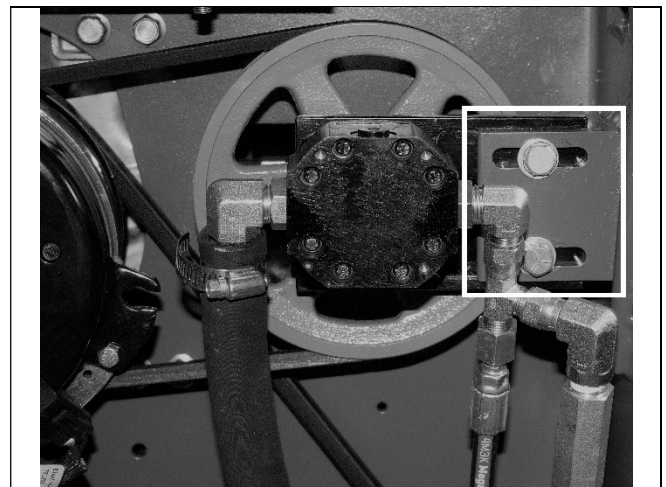


Clutch Mount

Figure 28

Remove Hydraulic Belt

3. Loosen the two (2) mounting screws. [Figure 29]



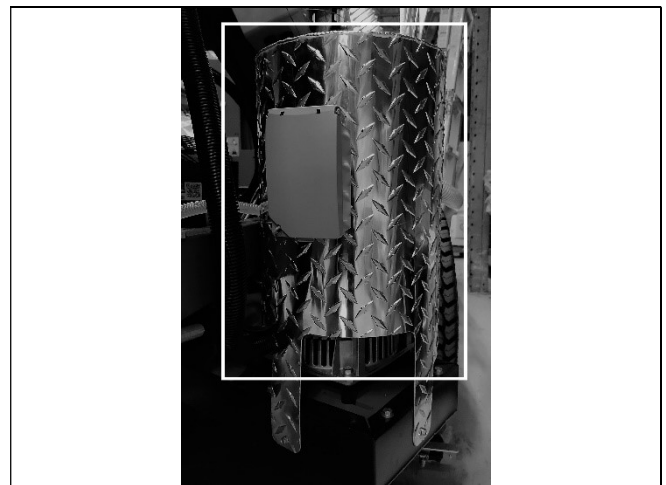
Hydraulic Motor Mount

Figure 29

4. Slide the generator toward the PTO/Clutch Assembly. This will remove tension on the belt.
5. Remove belt from pulleys.

Remove Generator Belt

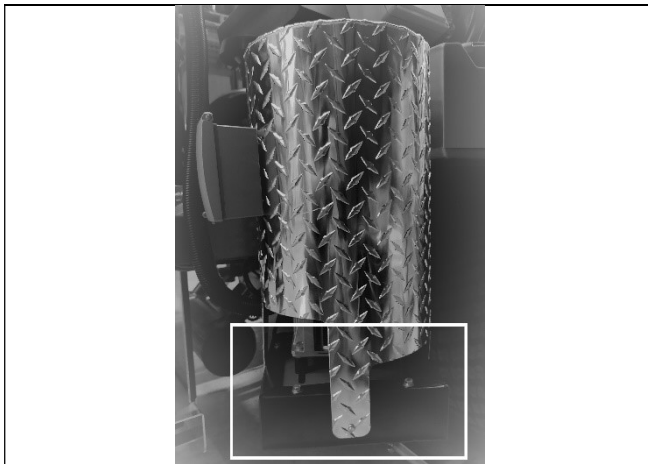
6. Remove Generator cover [Figure 30]



Generator Cover

Figure 30

7. Remove Generator belt cover Figure 31]



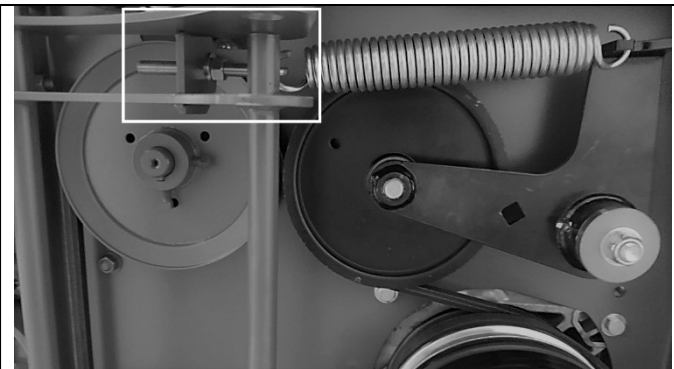
Generator Belt Cover

Figure 31

8. Loosen four (4) generator mounting bolts
9. Loosen two (2) generator tensioning jam nuts and bolts
10. Slide generator towards PTO/Clutch Assembly. This will remove the tension on the belt.
11. Remove belt from pulleys

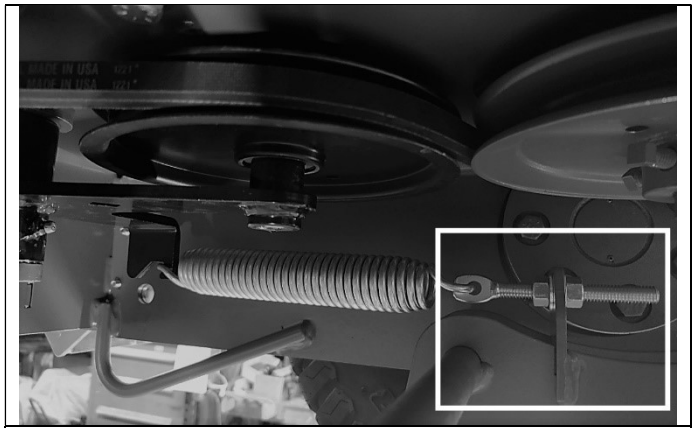
Remove Drive Belt

12. Loosen jam nuts on the spring holding eye tab bolt. This will release the tension on the Idler arm mount and pulley.
[Figure 32] & [Figure 33]



Spring Eye Tab Bolt

Figure 32



Spring Eye Tab Bolt

Figure 33

13. Remove the spring from the idler arm. This will take the tension on the belt.
14. Remove the belt from pulleys.

Installing belts

To install the belt, reverse the process listed above.

If any belt is removed:

1. Tension on belts should be returned to approximately 10 Lbs./in
2. Use a straight edge between the PTO/Clutch and the pulley to ensure they are lined up and on the same plane.
3. Adjust the tension on the belt using the idler arm (drive belt) or breaker bar (hydraulic and generator) and tighten the mounting screws.
4. Failure to do this will cause slipping and premature wearing to the belts.

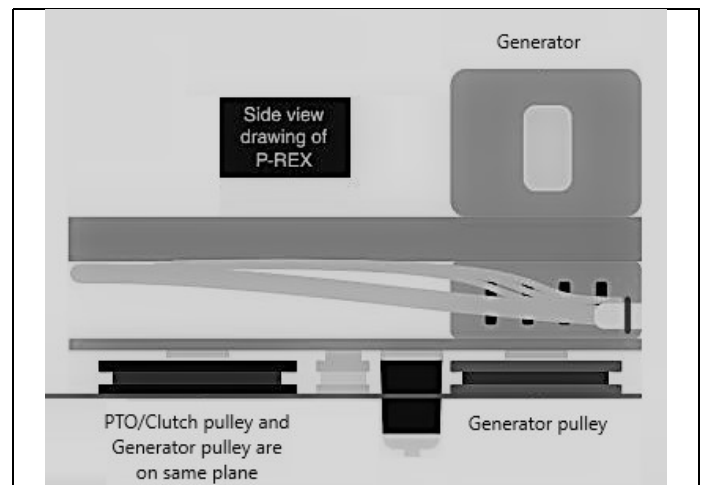


Figure 34

Vacuum Bar

1. The vacuum bar should be cleaned out after every use.



Never work under the machine or attachment unless it is safely supported with jack stands.

To clean:

- a. Park unit on a hard, flat surface
- b. Start vacuum and lower vacuum bar
- c. Using a steady stream of water from hose - direct water to the front, leading edge of the vacuum bar - this should flood the bar and remove excess material from inside the unit.
- d. Rinse any additional material from the top and sides of the vacuum bar

2. The vacuum bar should be periodically checked for proper adjustment.

Park the machine on the ground (preferably turf) with tires properly inflated.

Locate the four adjusting bolts behind and above the vacuum bar. [Figure 29]

Turning these bolts in or out will raise or lower the front and rear edge of the vacuum bar.

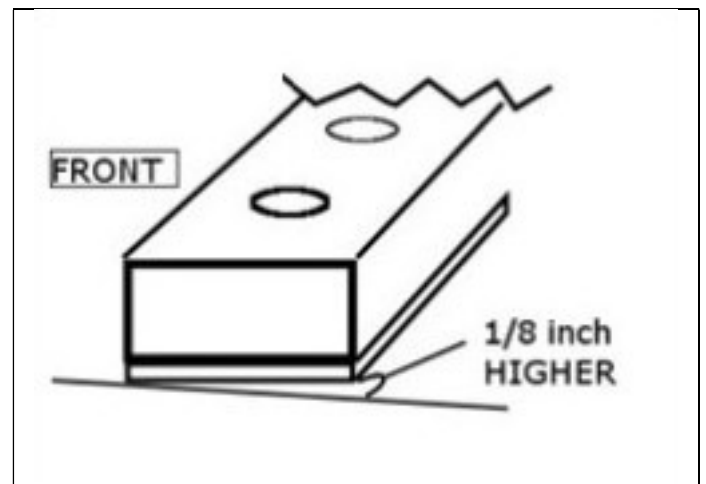
Be sure to adjust each side equally.

The trailing edge of the vacuum bar should be 1/8 inches higher than the front edge. [Figure 30]



Vacuum Bar Adjustment Bolts

Figure 29



Vacuum Bar Angle

Figure 30

Vacuum Tank, Line and Filter

The P-Rex vacuum tank should be cleaned completely after every use.

Be sure the valve is in the closed position while machine is running.

To clean:

1. Lift the vacuum lid and use kickstand to hold in place. [Figure 31]



Recovery Drum (Open)

Figure 31

2. Open drain valve on bottom of vacuum tank. [Figure 32]



Recovery Drum Valve (Open)

Figure 32

3. Use a hose to rinse out debris
4. If drain valve is plugged, use 'L' bar to clear debris - located near the rear of main frame. [Figure 33]
- Tip - leaving the lid in the up position when not in use will allow the foam filter to dry and extend its useful life.
5. Inspect filter for tears or paint saturation - replace if needed.
6. Close the valve.

Note: Periodically check vacuum hoses and fittings for loose connections, cracks or plugged lines - a leak or plug in the vacuum lines will dramatically decrease vacuum ability to extract.



Recovery Drum 'L' Bar

Figure 33

Brushes

The P-Rex brushes should be cleaned after every use or if they become full of infill, paint or debris. They can be easily removed without tools.

Brush removal

1. Lift spring clip and rotate brush anti-clockwise, approximately 1". By rotating the brush, this will unlock the lug from the spring clip. Line up the mounting lug with the access area on the hydraulic mounting plate.
2. Once lug is lined up with the access hole, the brush will disengage (drop) from the mounting plate. [Figure 34]



Brush Removal

Figure 34

3. Drop the brush, bristle side down, from approximately 12", onto concrete or other hard surface to dislodge infill, paint or debris.
4. Lean brushes on side edge and spray with hose until clean. Repeat until bristles are clean

Brush Installation

1. Clean top of brush.
2. Clean top and bottom of the hydraulic mounting plate and spring clips of all infill, paint and debris.
3. Line up brush lugs with the access holes in the hydraulic mounting plate, lift the brush up into the hydraulic mounting plate.
4. Rotate the brush clockwise. As brush rotates, the lug will push the spring clip up allowing the lug to pass into the locking position.

[Figure 35]



Brush Install

Figure 35

Brush Spring Clip Issues

1. If spring clip does not lock, there may be debris between the spring clip and hydraulic mounting plate
2. Remove brush and inspect for debris.
3. Remove spring clip from mounting plate using two (2) hex head screws.
4. Clean/remove debris from the spring clip.
5. Check the spring clip for straightness, wear or damage. Replace spring clip if necessary.
6. Clean hydraulic mounting plate
7. Re-install spring clip.
8. Clean the top of the brush, removing all infill, paint and debris.
9. Re-install brush (follow Brush Installation procedure).

P-REX Maintenance Schedule

Before Every Use

1. Check that water valve is in the open position
2. Check in-line water filter
3. Check that all nozzles are clear and spraying normally- wheel, brush, boom and vacuum
4. Fill water tanks
5. Check engine and hydraulic oil levels

After Every Use

1. Clean brushes after or during every use- recommended to clean out during every other water fill and waste dump- An extra set of brushes is recommended
2. Clean all loose debris from brushes, vacuum plate and hangers
3. Clean out vacuum plate after every use
4. Clean out vacuum tank and check vacuum filter for wear
5. Check water and blitz nozzles are clear
6. Flush Blitz tank with water if not going to be used for more than a week

Monthly Maintenance

1. Grease fittings on brush and vacuum hangers
2. Grease front wheel bearings
3. Grease pump idler pulley
4. Check engine oil
5. Check tire pressure with gauge
6. Check Belts for wear
7. Check pulley alignment if belts or pulleys have been replaced
8. Clean water inlet filter

Yearly or Seasonal Maintenance

1. Change fuel filter
2. Change oil and hydraulic fluids
3. Replace spark plugs
4. Replace fuel evaporation system filter
5. Grease Vacuum bar lift spring

TROUBLESHOOTING GUIDE

SYMPTOMS	PROBABLE CAUSES	SUGGESTED REMEDIES
Vacuum Bar not extracting paint No liquids are moving up vacuum lines	No power to the vacuum pump	Check generator
	Engine not fully throttled	Make sure throttle level is fully engaged
	Vacuum bar needs adjustment	Adjust vacuum bracket. (See Vacuum Bar Adjustment)
	Vacuum motors are turned off	Turn vacuum switch to "ON" position
	Recovery Drum "Dump" valve is open	Close Recovery Drum "Dump" valve
	Vacuum bar or lines are plugged	Clean and clear vacuum bar (See Vacuum Bar Adjustment)
Water not spraying	Water valve closed	Check Main Water Valve is in "ON" position (See Water Pump Issues)
	Blown fuse	Check Main Fuse (See Water Pump Issues)
	Pump is dry or not primed	Prime pump (See Water Pump Issues)
	Generator safety reset tripped	Reset safety switch (See Water Pump Issues)
Brush or vacuum bar won't lift	Faulty switch	Check switch – Reverse wires from brush and vacuum bar switch (See Switch or Ram Issues)
	Faulty actuator	Check actuator plugs from brush and vacuum bar actuator (See Switch or Ram Issues)
	Neither actuator will lift	Check main fuse (See Switch or Ram Issues)
Unit engine won't start; unit needs to be moved manually	Hydraulic system is sealed	Turn "RED" bolts 1/4 turn (See Hydraulic Drive Release)

SYMPTOMS	PROBABLE CAUSES	SUGGESTED REMEDIES	
Blitz pump stops working	Corroded wires	Clean and grease connections (See Blitz Pump Stops)	
Engine will not start	Engine has not been started recently	Turn ignition key for short time. (See Engine Starting – Operator’s Manual)	
	Steering control levers are not in park/lock position	Check if Steering control levers are all the way out	
	Steering control levers lock switches are still actuated (switch is located under seat, in front of the battery)	Move Steering control levers in and out of park/lock position to release stuck switch Manually release stuck switch by pulling button out	
	Blown fuse	Check fuses ((See Engine will not Start)	
	Brush clutch engaged	Check the Brush clutch position ((See Engine will not Start)	
	Engine stalls and will not start		Check fuel gage levels
			Check fuel shut off valve (See Fuel Shut-off Valve – Operator’s Manual)
	Kill switch under handle is stuck	Reach under and release by pushing in	
Brush falls off easily	Check spring clip	Remover rubber and re-install	
Brush won’t mount	Spring clip bent	Replace spring clip	

Water Pump Issues

If the water pump is not pumping.

1. Fill water tanks
2. Check if the main water valve (A) [Figure 36] is in the on position and the filter (B) [Figure 37] is clear of debris

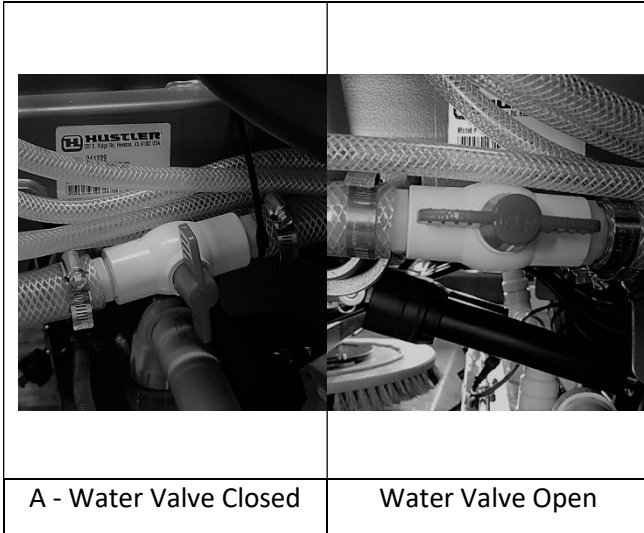


Figure 36

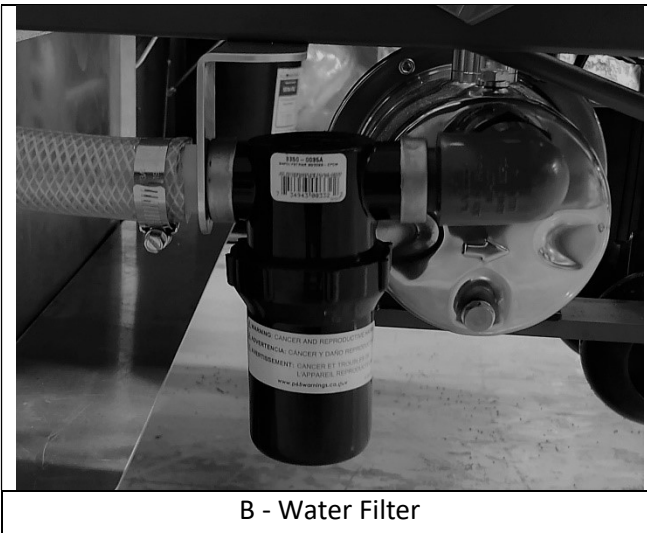


Figure 37

If water is not spraying

1. Check main fuses – (C) – [Figure 38]

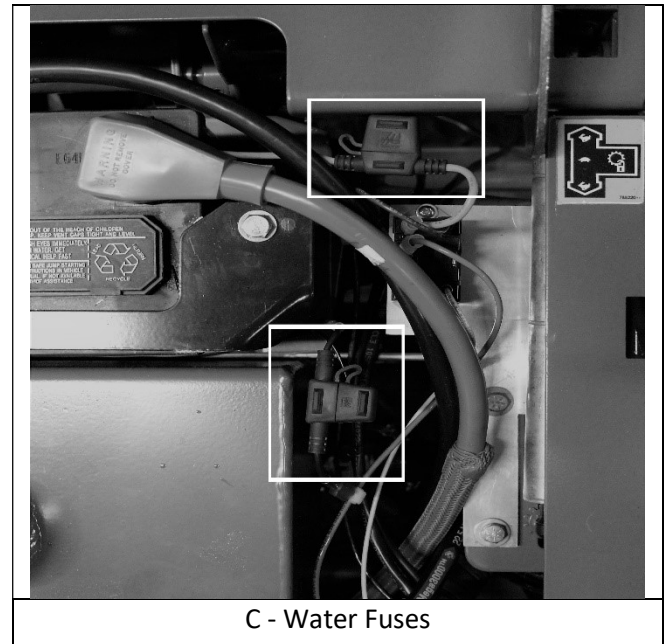


Figure 38

If the water pump will not prime and/or has been sitting dry for a long period of time.

1. Fill water tanks
2. Remove one of the left rear wheel spray quick release nozzles – (D) [Figure 39]



Figure 39

3. Start unit and run water pump until water comes out
4. Turn off pump
5. Re-install nozzle

If you suspect the water pump isn't operating or receiving electricity from the generator.

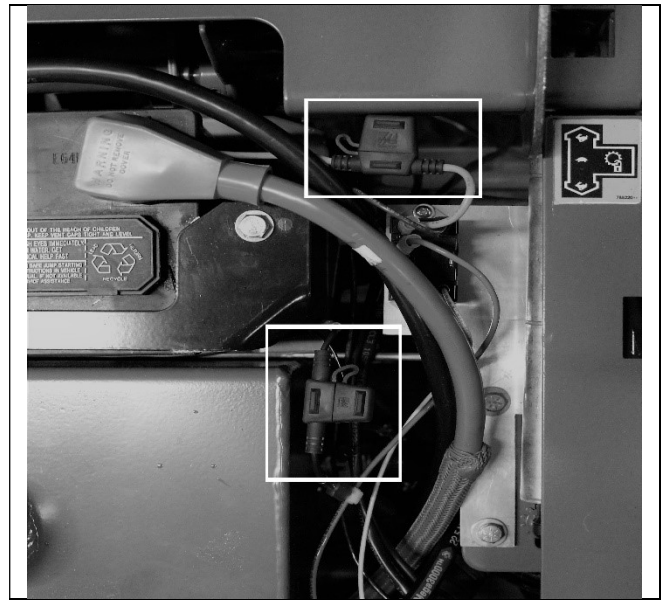
1. Remove generator cover – [Figure 40]



E – Generator Cover

Figure 40

2. Unplug water pump from generator – (F) [Figure 41]



G - Main Fuses

Figure 42

If either the brushes or vacuum bar will not raise or lower-you can either “Test at the Switches” or “Test Actuator” connections.

Test at Switches – (H) & (J) [Figure 43]



F - Water Pump Plug

Figure 41

3. Plug water pump into 110V standard plug
4. Turn on water pump

Switch or Ram Lift Issues

If neither the brushes or the vacuum bar will raise or lower - check main fuse. (G) – [Figure 42]



H – Vacuum Bar

J – Brush Assembly

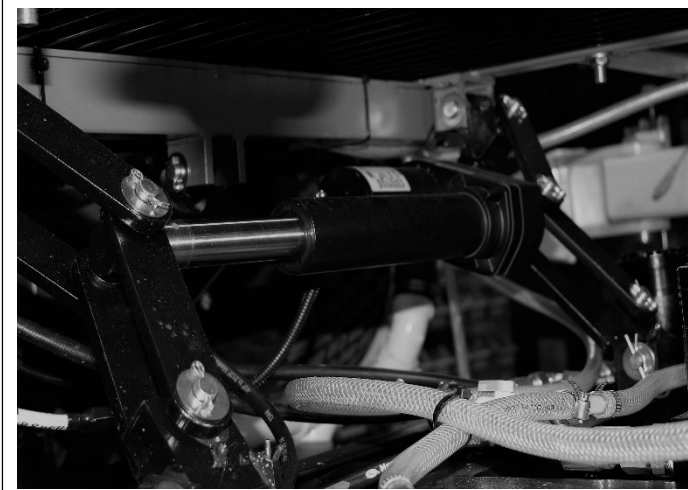
Figure 43

1. Carefully remove the vacuum and brush lift switches
2. Move connections from vac switch and the brush switch and vice versa
3. Try both switches

Test at Actuators

1. Remove the quick connections from Brush actuator (K) – [Figure 44] and Vacuum actuator (L) – [Figure 45]
2. Switch the input connections
3. Try to raise and lower both actuators

If this does not solve the issue, the actuator is faulty



K - Brush Actuator

Figure 44

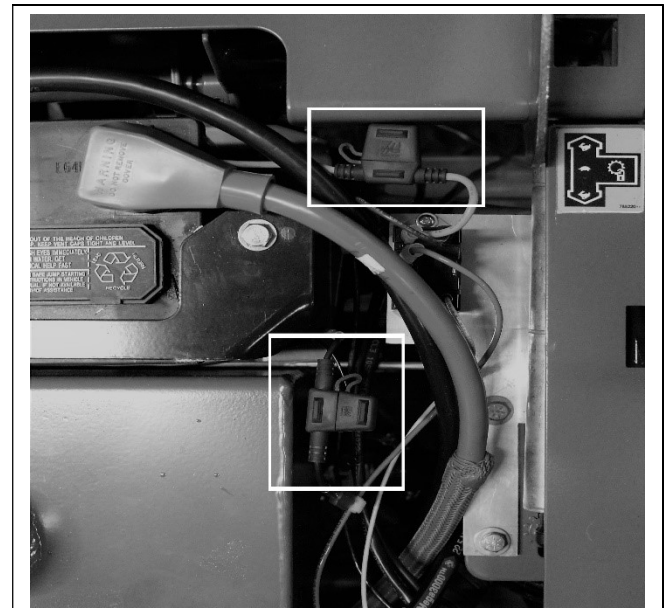


L – Vacuum Bar Actuator

Figure 45

Neither actuator will lift or lower

1. Check main fuse – (M) - [Figure 46]



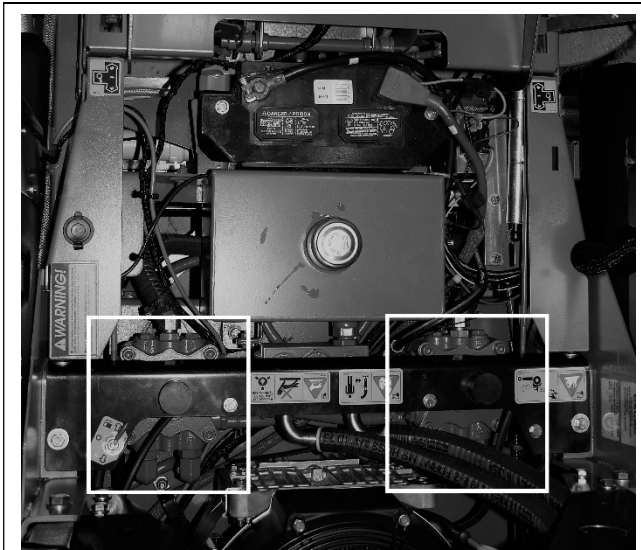
M - Main Fuses

Figure 46

Hydraulic Drive Release

To release pressure to the drive wheels so the unit can be moved manually.

1. Locate the two hydraulic drive manifolds under the seat. (M) - [Figure 47]
2. Find the red bolt on the left side of each. (N) - [Figure 48]
3. Turn each out 1/4 turn – **DO NOT REMOVE BOLT**
4. Move machine to desired location
5. Re-tighten bolts
6. **DO NOT RUN EQUIPMENT OR ENGAGE HYDRAULIC SYSTEM WITH THESE BOLTS IN THE LOOSENED POSITION**
7. Be sure to loosen the red bolt for both wheel manifolds before trying to move



M – Hydraulic Drive Manifolds

Figure 47



N - Hydraulic Drive By pass Bolt

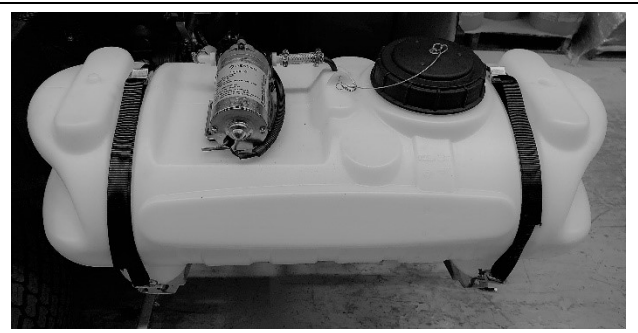
Figure 48

Blitz Pump

If Blitz solution stops spraying out of the brush or boom nozzles

Check pump connections

1. Check the connections on the Blitz tank pump—located on top of the tank. (P) – [Figure 49]
2. Remove any corrosion and coat with a Dielectric grease and reinstall. (Q) – [Figure 50]



P – Blitz Tank Pump

Figure 49



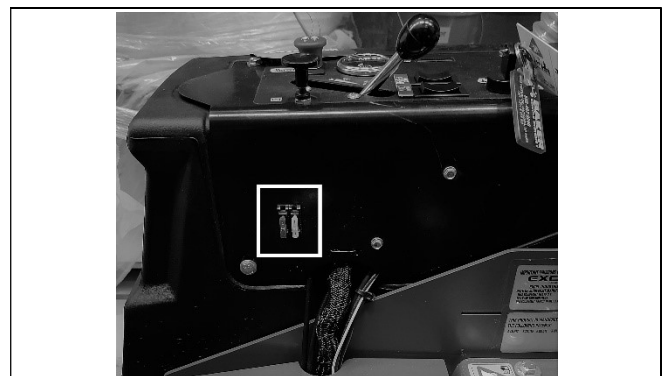
Q – Blitz Tank Pump Connections

Figure 50

Engine Will Not Start

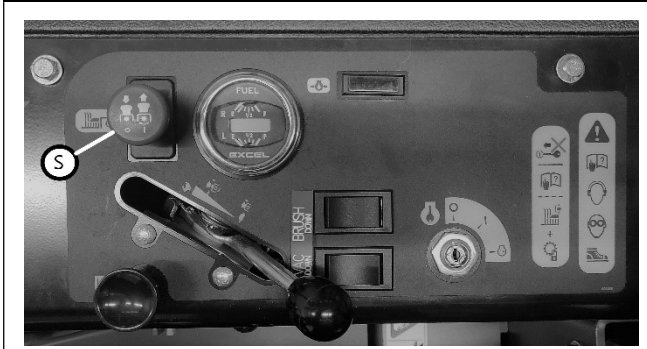
If the engine has not been started or is being restarted but won't turn over

1. Check Operations Manual.
2. Be sure the steering handles are in the full out position. Check the switch
3. Check the fuses. (R) – [Figure 51]
4. Check that the Brush Clutch switch is in the down/ off position. (S) – [Figure 52]



R – Fuses

Figure 51

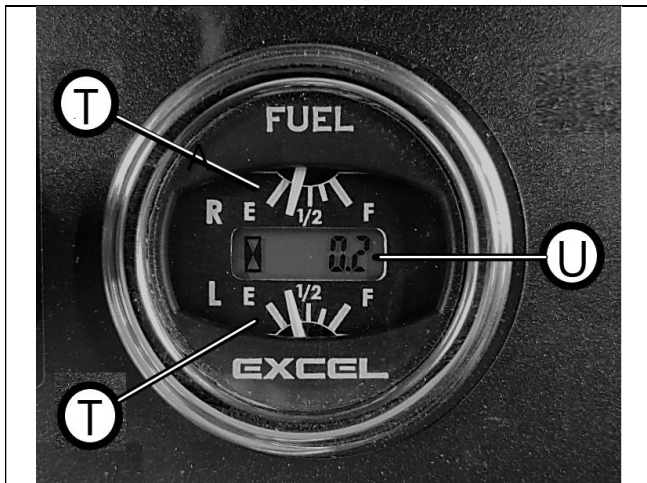


S – Brush Clutch Switch

Figure 52

Engine stalled while running

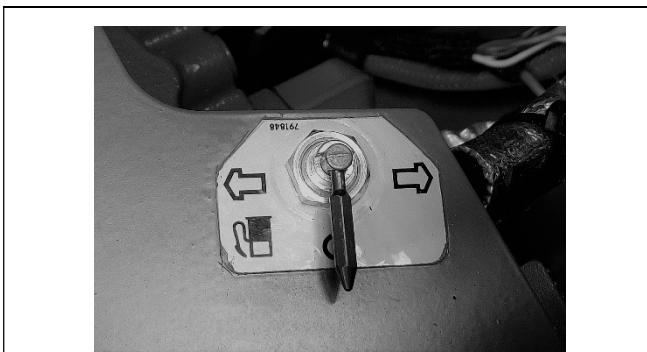
1. Check the fuel gauge. (T) – [Figure 53]
2. Check fuel tap position. (U) – [Figure 54]



T. Fuel gauge - Left Tank
U. Hour Meter

T. Fuel gauge - Right Tank

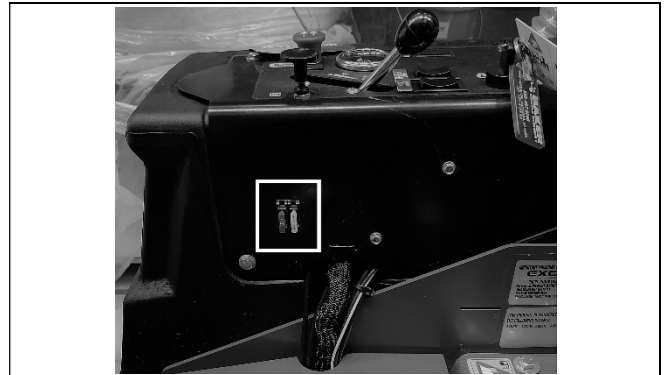
Figure 53



U – Fuel Tap Level

Figure 54

3. If tank was run dry, switch to the other tank, be sure to engage choke before trying to restart
4. Check Fuses. (V) – [Figure 55]



V – Fuses

Figure 55

Plugged Nozzles

If you notice a nozzle not spraying well or at all

1. Remove head (V) – [Figure 56]



V – Spray Head Removal

Figure 56

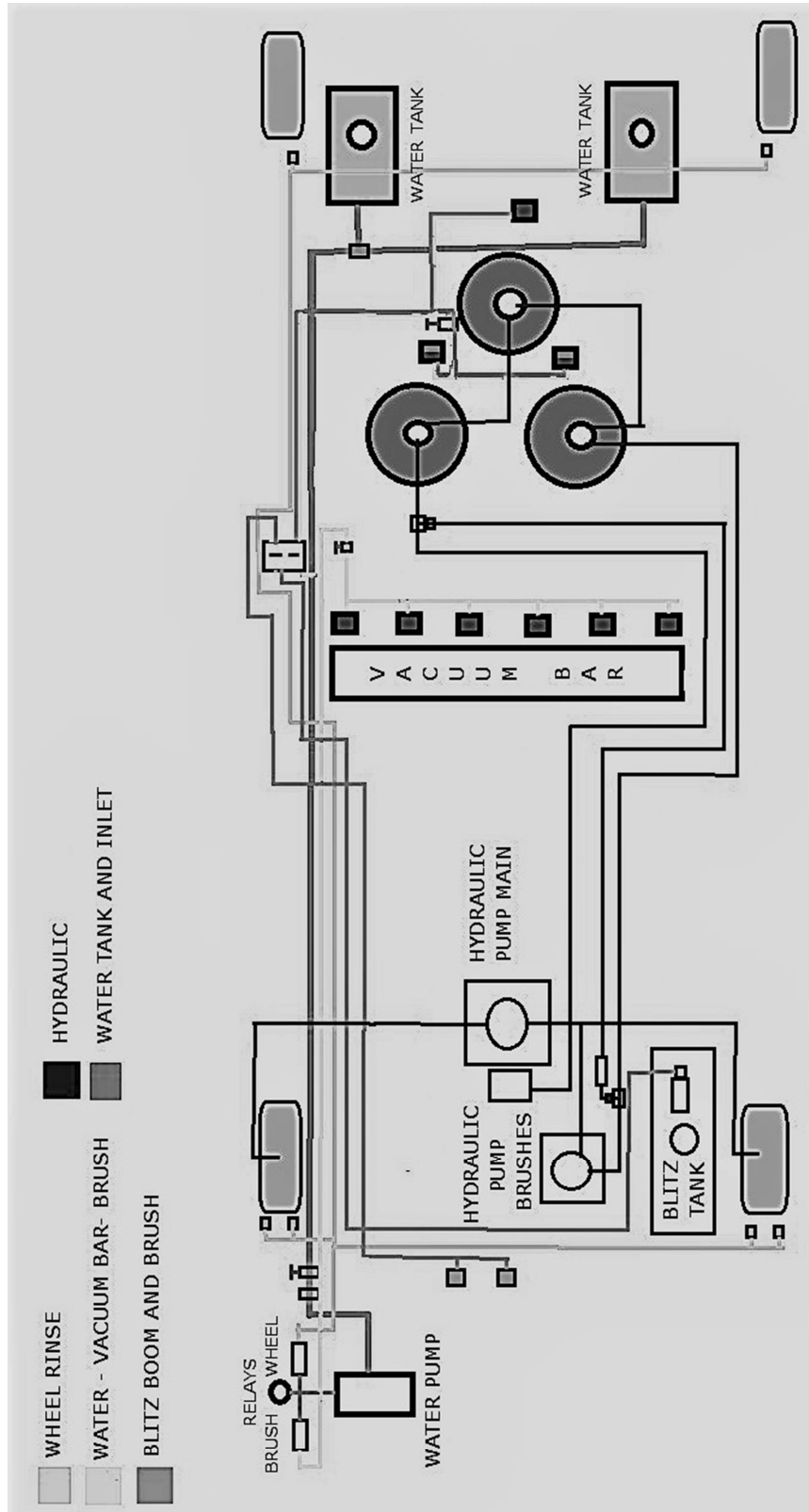
2. Clear debris from nozzle or replace nozzle tip
3. Remove and clean. Check screen filter, replace (if needed)
4. Reinstall (W) – [Figure 57]



W – Spray Head Install

Figure 57

PLUMBING DIAGRAM



P-REX Parts Data Sheet

Hydraulic pump:	10565	
Hydraulic Belt:	4L-380	
Hydraulic Motor:	BMP(H)-160-H4-K-P	
Inlet Hose:	1/4"ID 1/4 NPTM – 3/8 NPTM Swivel 64" Long	
Outlet Hose:	1/4"ID #4 JIC Swivel – 1/4 NPTM 64" Long	
Interconnector Hoses:	1/4"ID #4 JIC Swivel both ends 22" Long	
Actuators		
Brush Linkage:	LACT6-1000B	
Vacuum Bar:	Linkage LACT8-500A	
Generator:	165913H	
Generator Serial:	_____	
Generator Belt:	P1041	
Spray Sol Valve:	Nitra DVD-2AC3A-120	
Blitz Sol Valve:	Nitra DVM-2BC2E-120a	
Diverter Valve:	Swagelok SS-43GXF	
Water Pump#	Country Line CLSS5	P1070
Filter#	3350-0034A ¾ "	
Spray Nozzles		
Wheel:	Yellow V	P1089
Brushes:	Yellow V	P1089
Vacuum Bar:	Red, Flat	P1086
Boom:	Grey, Flat	P1087
Nozzle Screen:	Blue – 100	P1088
Brush Diameter:	3 ea. @ 20"	
Brush Connection:	4 ea. 5/16" bolts	
Vacuum:	Nikro DP55DUAL	S/N_____
Blitz Pump:	Surflow 8000-443-236	P1003

P-REX Spare Parts List

PART NUMBER	PART DESCRIPTION	QTY PER UNIT
P1051	HYDRAULIC MOTOR	3
PRB20QR	20 INCH DUAL FIBER FLAT BRUSH	3
P2010	LINEAR ACTUATOR-BRUSHES	1
P2011	LINEAR ACTUATOR-VAC	1
P2002	LIFT/LOWER ROCKER SWITCH	2
P2005	ON/OFF TOGGLE SWITCH	3
P1010	ELECTRIC RELAY/SOLINOID	3
P1087	LOW PRESSURE QR NOZZLES-BOOM	4
P1086	LOW PRESSURE QR NOZZLES-VAC	5
P1089	LOW PRESSURE QR NOZZLES BRUSH	3
P2019	30 AMP FUSE	1
P1048	DRIVE BELT	1
P1048	GENERATOR BELT	1
P1040	HYDRAULIC PUMP BELT	1

INDEX

Belts.....	11	Plugged Nozzles	25
Blitz.....	5	Plumbing Diagram.....	27
Blitz Pump	24	Ram Lift Issues	22
Brush Nozzles	5	Rear Spray Boom.....	5
Brushes.....	16	Removing Belts	12
Center Brush	7	Spare Parts List.....	29
Controls.....	3	Starting.....	3
Customer obligations.....	1	Stopping	3
Data Sheet.....	28	Storage	26
Electrical System	9	Tires.....	9
Engaging Brushes	4	To the New Owner	1
Engaging Vacuum Bar	4	Troubleshooting.....	19
Engine stalled while running.....	25	Vacuum Bar.....	15
Engine Will Not Start.....	24	Vacuum Nozzles	5
Front Brush	6	Vacuum Tank, Line and Filter.....	15
Hydraulic Drive Release	23	Warranty	1
Hydraulic System.....	11	Water and Blitz Application	4
Lubrication	9	Water Pump Issues	21
Maintenance Schedule	18	Wheel Nozzles.....	4
Paint Removal and Extractions Operation..	8		



4529 Industrial Parkway
Cleveland, OH 44135

800-877-1500
PioneerAthletics.com