

Operator's



# Spray Star 5200

5220/5224 Radion 8140

5285/5286 Star Commnad II

5287/5288 Star Command I

**SN: 520G001**

**July 2020**

**Product Support:**

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Nozzle Charts

Reference

Thank you for purchasing a **Smithco** product.

Read this manual and all other manuals pertaining to the Spray Star 5200 carefully as they contain safety, operating, assembly and maintenance instructions. Failure to do so could result in personal injury or equipment damage. Use in conjunction with appropriate TeeJet Manuals.

Keep manuals in a safe place after operator and maintenance personnel have read them. Right and left sides are from the operator's seat, facing forward.

 **WARNING:**

Engine exhaust and some of its constituents are known to the State of California to cause cancer, birth defects, and other reproductive harm.  
For more information visit [www.P65Warning.ca.gov](http://www.P65Warning.ca.gov)

**WARNING**

Failure to follow cautious operating practices can result in serious injury to the operator or other persons. The owner must understand these instructions, and must allow only trained persons who understand these instructions to operate this vehicle.

All **Smithco** machines have a Serial Number and Model Number. Both numbers are needed when ordering parts. The serial number plate on the Spray Star 5200 is located on the right main frame, below the pump. Refer to engine manual for placement of engine serial number.

For product and accessory information, help finding a dealer, or to register your product please contact us at [www.Smithco.com](http://www.Smithco.com).

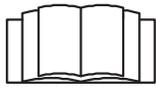
Information needed when ordering replacement parts:

1. Model Number of machine
2. Serial Number of machine
3. Name and Part Number of part
4. Quantity of parts

For easy access record your Serial and Model numbers here.

<b>SMITHCO</b> WAYNE, PENNSYLVANIA 19087 USA 610-688-4009 Fax 610-688-6069			
SERIAL NO. <input type="text"/>	kW/hp <input type="text"/>	DATE OF MFG. <input type="text"/>	
MODEL NO. <input type="text"/>	lb/kg Empty <input type="text"/>	lb/kg Full <input type="text"/>	

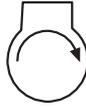
# SYMBOLS



Read Operator's Manual



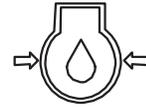
Engine Stop



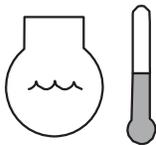
Engine Start



Engine Run



Engine Oil

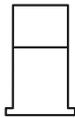


Water Temperature



1000/mi

RPM



Gasoline



Diesel



Glow Plug



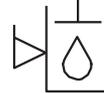
Hour Meter



Hand Throttle



Choke



Hydraulic Oil Level



Ground Speed



Park Brake



Park Brake Release



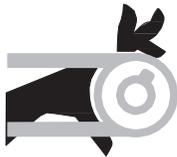
Fast



Slow



Lift Arm



Moving Parts



Pinch Point



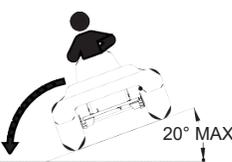
Hot Surface



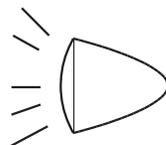
Hydraulic Fluid Penetration



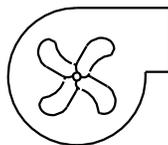
No Riders



Rollover Danger  
20° MAX



Headlamp



Blower



Warning  
Danger  
Caution



Seat Belt

Read and understand this manual and all safety signs before operating and maintaining. Review the safety instructions and precautions annually.

**TAKE NOTE! THIS SAFETY ALERT SYMBOL FOUND THROUGHOUT THIS MANUAL IS USED TO CALL YOUR ATTENTION TO INSTRUCTIONS INVOLVING YOUR PERSONAL SAFETY AND THE SAFETY OF OTHERS. FAILURE TO FOLLOW THESE INSTRUCTIONS CAN RESULT IN INJURY OR DEATH.**



## Safety Alert Symbol

This symbol with a warning statement means:  
**WARNING! BE ALERT!**  
**YOUR SAFETY IS INVOLVED!**  
Carefully read the message that follows

### SAFETY SIGNAL WORDS

Note the use of the signal words DANGER, WARNING and CAUTION with the safety messages. The appropriate signal word for each has been selected using the following guidelines:



**DANGER**

**DANGER:** Red. Indicates an imminently hazardous situation that, if not avoided, will result in death or serious injury. This signal word is to be limited to the most extreme situations typically for machine components which, for functional purposes, cannot be guarded.



**WARNING**

**WARNING:** Orange. Indicates a potentially hazardous situation that, if not avoided, could result in death or serious injury, and includes hazards that are exposed when guards are removed. It may also be used to alert against unsafe practices.



**CAUTION**

**CAUTION:** Yellow. Indicates a potentially hazardous situation that, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.



**IMPORTANT**

**IMPORTANT:** Blue. Indicates procedures which should be followed to avoid damage to the machine.

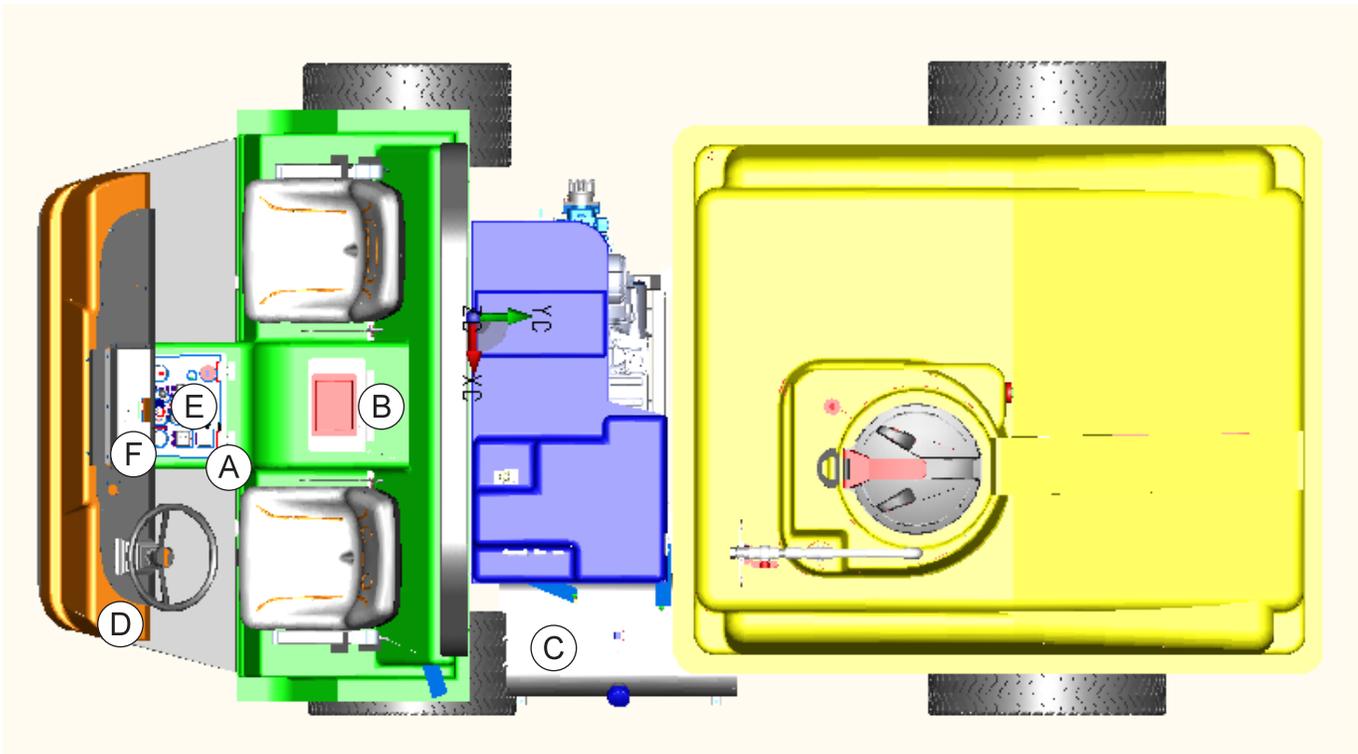
## SAFETY DECAL LOCATION

### ⚠ WARNING

REMEMBER: If Safety Decals have been damaged, removed, become illegible or parts replaced without decals, new decals must be applied. New decals are available from your authorized distributor.

This is a list of decals located on the Spray Star 5200. Part number, description and location will help in reordering a decals.

- A 25-370 Decal, 88 dBA
- B 25-277 Decal, Battery Warning
- C 25-307 Decal, Fuel Only
- D 32-619 Decal, Dash Panel
- E 32-534 Decal, Control Panel
- F 15-463 Decal, Spray Pump



1. It is your responsibility to read this manual and all publications associated with this machine.
2. Never allow anyone to operate or service the machine or its optional equipment without proper training and instructions. Never allow minors to operate any equipment.
3. Learn the proper use of the machine, the location and purpose of all the controls and gages before you operate the equipment. Working with unfamiliar equipment can lead to accidents.
4. Wear all the necessary protective clothing and personal safety devices to protect your head, eyes, ears, hands and feet. Operate the machine only in daylight or in good artificial light.
5. Inspect the area where the equipment will be used. Pick up all debris you can find before operating. Beware of overhead obstructions and underground obstacles. Stay alert for hidden hazards.
6. Never operate equipment that is not in perfect working order or without decals, guards, shields, or other protective devices in place.
7. Never disconnect or bypass any switch.
8. Carbon monoxide in the exhaust fumes can be fatal when inhaled, never operate a machine without proper ventilation.
9. Fuel is highly flammable, handle with care. When filling tank stop 1 inch(2.54 cm) from top. Leave room for expansion. **DO NOT OVERFILL.**
10. Keep engine clean. Allow the engine to cool before storing and always remove the ignition key.
11. Disengage all drives and set park brake before starting the engine.
12. Never use your hands to search for oil leaks. Hydraulic fluid under pressure can penetrate the skin and cause serious injury.
13. This machine demands your attention. To prevent loss of control or tipping of the vehicle:
  - A. Use extra caution in backing up the vehicle. Ensure area is clear.
  - B. Do not stop or start suddenly on any slope.
  - C. Reduce speed on slopes and in sharp turns. Use caution when changing directions on slopes.
  - D. Stay alert for holes in the terrain and other hidden hazards.
14. Before leaving operator's position:
  - A. Disengage all drives.
  - B. Shut engine off and remove the ignition key.
  - C. If engine has to run to perform any maintenance keep hands, feet, clothing and all other parts of body away from moving parts.
15. Keep hands, feet and clothing away from moving parts. Wait for all movement to stop before you clean, adjust or service the machine.
16. Keep the area of operation clear of all bystanders.
17. Stop engine before making repairs/adjustments or checking/adding oil to the crankcase.
18. Use parts and materials supplied by **Smithco** only. Do not modify any function or part.
19. Use caution when booms are down as they extend out beyond the center line of the machine.
20. The spray tank is a confined space, take precaution.

***These machines are intended for professional maintenance on golf courses, sports turf, and any other area maintained turf and related trails, paths and lots. No guaranty as to the suitability for any task is expressed or implied.***

## SAFE SPRAYING PRACTICES

Persons engaged in the handling, preparation or application of chemicals must follow accepted practices to insure the safety of themselves and others,

1. **WEAR** protective clothing including: gloves, hat, respirator, eye protection and skin covering suitable for protection from chemicals being used.
  2. **BATHE** thoroughly after any exposure to chemicals, giving particular attention to eyes, nose, ears and mouth.
  3. **CLEAN** equipment and materials in accordance with employer, municipal and state regulations. Use only approved areas and drains.
  4. **DISPOSE** of chemicals and rinse solutions by approved and legal means.
  5. **PROVIDE** methods and materials for operators to wash eyes and hands immediately during the spraying process.
  6. **PROVIDE** methods and materials for control, safe dilution and neutralization of chemical spills during preparation, spraying, transporting and cleanup.
  7. Always check and follow the directions and safety warnings of the chemicals to be used.
  8. Secure the discharge lines before starting the pump. An unsecured discharge line may whip.
  9. Periodically inspect the pump and the system components.
  10. Check hoses for weak or worn condition before each use. Make certain that all connections are tight and secure.
  11. Do not operate unit with leaks, frayed, kinked hoses or tubing. Repair or replace immediately.
  12. Use only pipe, hose and fittings rated for maximum pressure or pressure at which pressure relief valve is set at. When replacing pipe, hose or fittings, use new product.
  13. Do not operate an engine in an enclosed area. Be sure the area is well ventilated.
  14. Do not use these pumps for pumping water or other liquids for human or animal consumption.
  15. **Do not pump flammable or explosive fluids such as gasoline, fuel oil, kerosene, etc.**  
**Do not use in explosive atmospheres. The pump should be used only with liquids compatible with the pump component materials.**
-  **WARNING**
16. Be sure all exposed moving parts are guarded and that all coupling devices are securely attached before applying power.
  17. Before servicing, disconnect all power, make sure all pressure in the system is relieved, drain all liquids from the system and flush.
  18. Protect pump from freezing conditions by draining liquid and pumping rust inhibiting antifreeze solution through the system, coating the pump interior.
  19. **TRANSPORT** - Machine **must be stopped** to raise or lower booms.
  20. **IMPORTANT** : If using Simulated Speed with a Radion 8140, one needs to change back to Ground Speed for proper rate control when spraying.

## WEIGHTS AND DIMENSIONS

Length	174" (4.42m)
Width	89" (2.26m)
Width w/ Booms Open	20' - 260" (6.6m) 24' - 308" (7.8m)
Height w/ ROPS	84" (2.1m)
Height w/ Booms Up	20' - 106" (2.7m) 24' - 118" (3.0m)
Wheel Base	88" (1.24m)
Weight Empty	4155 lbs (1884 kg)
Weight Full	8491 lbs (3851 kg)

## SOUND LEVEL (DBA)

At ear level	86 dBA
At 30 ft. (9.14 m)	76 dBA

## ENGINE

Make	Kubota
Model#	WG3800
Code / Spec#	G-E3-KEA-3
Rated Horsepower	87 hp (65kW) @2600RPM
Fuel (EMISSIONS)	Unleaded 87 Octane Gasoline Minimum
Cooling System	Liquid Cooled
Lubrication System	Full Pressure
Alternator	60 Amp

## WHEELS & TIRE

Front:	Two 27 x 10.50 x 15 Turf; 30 psi (2.0 bar)
Rear:	Two 33 x 16.00 x LL500 Multi-Trac; 30 psi (2.0 bar)

## SPEED

Infinitely Variable	0-10 m.p.h. (0-18 kph)
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## BATTERY

	Automotive type 24F - 12 volt
BCI Group	Size 24
Cold Cranking Amps	900 minimum
Ground Terminal Polarity	Negative (-)
Maximum Length	10.25" (26 cm)
Maximum Width	6.88" (17 cm)
Maximum Height	10" (25 cm)

## FLUID CAPACITY

Crankcase Oil	See Engine Manual
Fuel	20 gallon (75.7 liters)
Hydraulic Fluid	10 gallon (37.8 liters)
Grade of Hydraulic Fluid	SAE 10W-40 API Service SL or higher Motor Oil

# OPTIONAL EQUIPMENT

30-509	Manual Hose Reel	5220	TeeJet Radion 8140 w/ 20' HD Boom
30-510	Electric Hose Reel	5224	TeeJet Radion 8140 w/ 24' HD Boom
32-508	Foam Marker	5285	Star Command II w/ 20' HD Boom
15-618	Water Meter Kit(liters)	5286	Star Command II w/ 24' HD Boom
14-515	Water Meter Kit (gallons)	5287	Star Command I w/ 20' HD Boom
32-511	50Gal (189l) Wash System	5288	Star Command I w/ 24' HD Boom
32-512	Chemical Clean-load Safe Fill	32-505	20' HD Super Boom
32-514	Sonar Boom	32-565	24' HD Super Boom

## SETUP

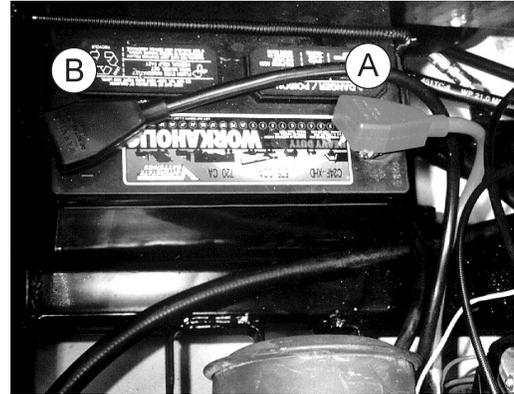
The Spray Star 5200 arrives from **Smithco** setup and ready for service. Depending on freight conditions battery installed.

The spray system is normally shipped attached to the 5200 Prime Mover. If a spray system is to be fitted to a Prime Mover by a dealer or factory, assemble and attach the components in accordance with the parts drawings in the *Spray Star 5200 Parts/Service Manual*.

1. Check the tire pressure. The front tires and rear tires are 30 psi (2.0 bar).
2. Battery is located under center console. Turn lock clockwise and raise console panel. This is a negative grounding system.

### ⚠ WARNING

**Connecting battery cables to the wrong post could result in personal injury and/or damage to the electrical system. Make sure battery and cables do not interfere or rub on any moving part. Connect red positive (+) cable (A) to battery first. When disconnecting remove black negative (-) cable (B) first.**



3. Check hydraulic fluid level in tank located under the seat. Remove cap and add SAE 10W-40 API Service SJ or higher motor oil if necessary. Fluid level should be about 2-2 1/2" (5-6.4 cm) from the top of the tank when cold. **DO NOT OVERFILL.**
4. Fill fuel tank, located on right side, with Unleaded 87 Octane Gasoline Minimum. When filling the fuel tank stop when the fuel reaches 1 inch (2.54cm) from the top. This space is necessary for fuel expansion. **DO NOT OVERFILL.**

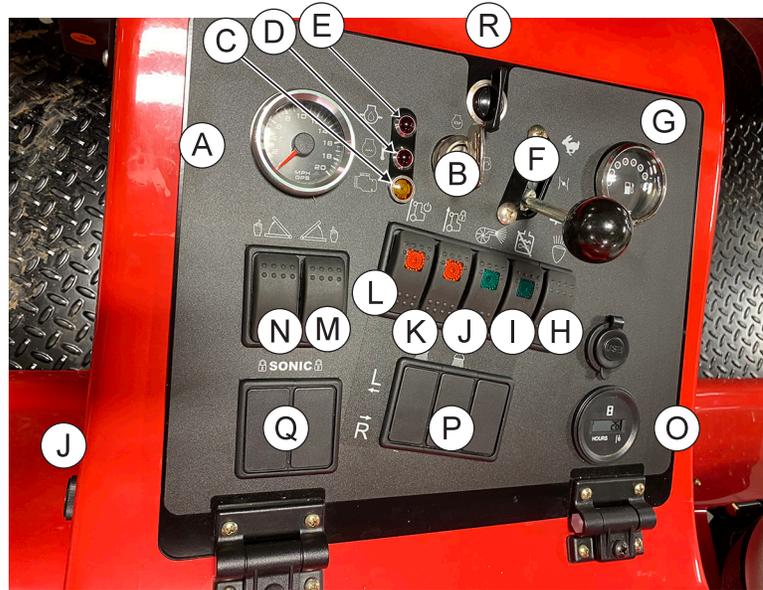
### ⚠ DANGER

**Fuel is flammable, caution must be used when storing or handling it. Do not fill fuel tank while engine is running or in an enclosed area, fumes are explosive and dangerous to inhale. DO NOT SMOKE while filling the fuel tank. DO NOT OVERFILL**

5. Machine should be greased before starting, refer to *Spray Star 5200 Parts/Service Manual* for location.
6. Attach the Spray Boom and any other Optional Equipment to the Prime Mover, in accordance with instructions in the *Spray Star 5200 Parts/Service Manual*. The nozzles must be the correct distance above the turf as described in *Turf Spraying Guide*. The spray boom must operate properly and the outer sections must break away safely if an object is struck by them, they must then return to normal operation position.
7. Be sure to double check boom heights, nozzle spacing and displacement before spraying.
8. Machine is shipped with windshield washer fluid in to prevent freezing. Flush system completely with clear water. Fill tank with water and re-tighten the four bolts used to hold the tank in place.
9. Read operating instructions before starting.

### ⚠ IMPORTANT

**Never allow pump to run dry! The valve on the suction side of the pump (between the pump and tank) must be fully open whenever the pump is operated.**



- A. **GPS Speedometer** - The speedometer indicates ground speed of the vehicle in miles per hour and kilometers per hour using GPS technology. The antenna is on top of the Roll Bar.
- B. **Ignition Switch** - The ignition switch has three positions: Off - Run - Start. Turn key to run, leave there until engine light goes out. Then turn key to start.
- C. **Engine Indicator Light** - Light flashes if there is an engine issue. If light is flashing. Shut off engine and refer to engine manual.
- D. **Water Temperature Light** - Temperature light will come on when the engine starts to overheat.
- E. **Oil Light** - The oil light should come on when the ignition is on without the engine running and go out when the engine is running. The oil light will light when the oil pressure is low. If oil light should come on, shut engine off immediately and find the cause.
- F. **Hand Throttle** - The hand throttle is used to regulate engine speed.
- G. **Fuel Gauge** - Electronic fuel gauge indicates level of fuel in tank.
- H. **Lights** - This rocker switch turns lights on by pushing on the top and off by pushing on the bottom. Lights are located under front floorboard.
- I. **Tank Agitation** - The rocker switch allows driver to turn on/off tank agitation without leaving driver seat.
- J. **Spray Pump** - This rocker switch turns the spray pump on by pushing on the top and off by pushing on the bottom. **The buzzer sounds if the pump is running dry.** Buzzer is located on left side center console.
- K. **Ground Speed (Cruise) Control Lock** - This rocker switch locks in ground speed once it is achieved.
- L. **Ground Speed (Cruise) Control** - This rocker switch initiates cruise control by pushing on the top and turning it off by pushing on the bottom. Works with ground Speed Control Lock switch.
- M. **Right Boom Switch** - This rocker switch lifts and lowers the right boom.
- N. **Left Boom Switch** - This rocker switch lifts and lowers the left boom.
- O. **Hour Meter** - The hour meter indicates hours of machine operation. It operates only when the ignition switch is on.
- P. **Accessory blanks for foamer switches.**
- Q. **Accessory blanks for sonic boom switches.**
- R. **Console Lock** - Turn clockwise and lift panel to access battery and wiring of gauges.

# CONTROLS & INSTRUMENTS

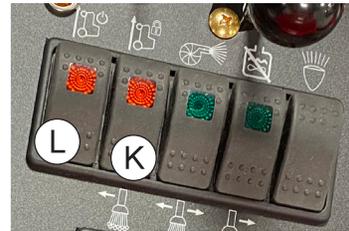
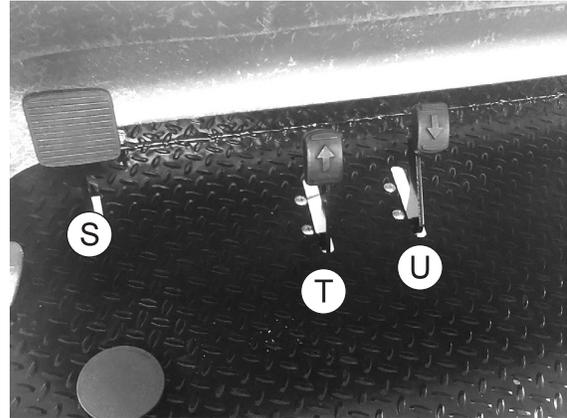
- S. Brake Pedal** - Brakes engaged when pedal pressed.
- T. Accelerator Pedal** - This pedal controls ground speed. Press pedal to increase speed. Varying the amount of movement of the pedal will vary the ground speed.
- U. Reverse Pedal** - This pedal controls reverse. Press pedal to move machine in reverse.

## GROUND SPEED CONTROL

The ground speed control works the same as an automotive type cruise. The ground speed control is located on the center console and is used to lock forward speed.

### TO ENGAGE:

1. Flip rocker switch (L) 'On' (orange light).
2. Obtain desired speed with accelerator pedal (T).
3. Flip rocker switch (K) "On" (orange light) to lock the ground speed.
4. Remove foot from accelerator pedal.
4. Flip rocker switch (L or K) to disengage.



### ⚠ CAUTION

To avoid abrupt stop, place foot on accelerator pedal before disengaging speed control.

## SPEEDOMETER

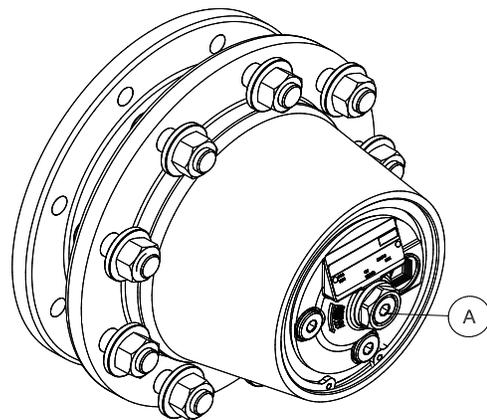
This machine is equipped with a GPS Speedometer. **Please note** that if the speedometer has been powered off longer than 4 hours, it could take up to 1 minute to acquire signal due to the satellites moving significantly from your location. This is normal. The current draw is extremely low and will have virtually zero impact on a battery's charge. Hot start wire should be connected directly to battery +12volts and should remain powered 100% of the time. When GPS gauge first receives power the needle will sweep full counter clockwise towards 0 mph. Pointer will stay at 0mph and oscillate slightly at zero to indicate the GPS is acquiring satellites. GPS is not yet functional to indicate speed. Once satellites are acquired (15-45 seconds), the pointer will swing full scale and then back toward 0 mph to indicate it is now ready for operation.

## BRAKE RELEASE

Run machine at half-throttle minimum, prior to operating traction pedal. This will ensure proper brake release.

## TOWING

Rear wheel brakes must be disengaged for towing. To disengage the brake, loosen the allen screw (A) in center of hub approximately 5 rotations. This will release the brake shaft. Must be done to both rear wheels. **Road speeds must not exceed 20 MPH.** When done towing, tighten the hex bolt on both wheels. Test machine before putting in operation.



### ⚠ WARNING

Machine is in free wheel mode when towing.  
Machine has no rear wheel braking capabilities when being towed.

Before operating the Spray Star 5200, become familiar with all controls and functions. Also complete all maintenance requirements and read all safety warnings. Knowing the Spray Star 5200 thoroughly, how it operates, and by doing the prescribed maintenance steps, you can expect trouble free operation for years to come.

## SAFETY

Safety needs to always be the concern of the operator on a moving vehicle or any machine with moving parts.

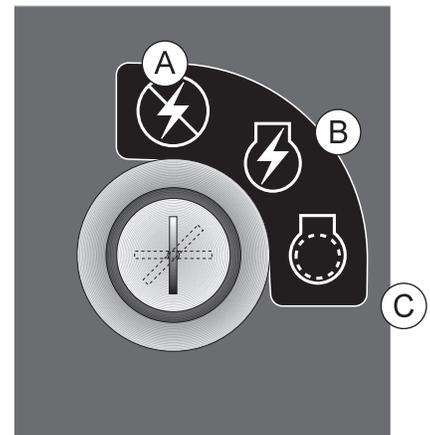
1. Keep all shields and guards in place.
2. Keep the parking brake engaged any time the operator is away from the vehicle or whenever service is performed.
3. Always wear the necessary protective clothing and equipment.
4. Turn engine off when refueling or performing maintenance not specifically requiring engine power.

## DAILY CHECKLIST

1. Check the engine oil level. Add as needed. **DO NOT OVERFILL.** Refer to engine owner's manual for oil grade and procedure.
2. Tire pressure should be 30 psi (2.0 bar) on all tires.
3. Inspect the electrical system and battery cables for loose connections or frayed wiring. Replace any faulty equipment or tighten if loose.
4. Check hardware for loose or missing nuts, bolts, screws, etc., and tighten or replace as needed.
5. Inspect hydraulic lines for damage or leaks. Never use hands to inspect for leaks.
6. Check the hydraulic fluid level. The hydraulic fluid tank is located under the seat. The fluid level should be 2"-2½" (5 - 6.4 cm) from the top of the tank when cold. Use only SAE 10W-40 API Service SJ or higher Motor Oil.
7. Inspect the steering, throttle and shift linkages for good hookups and clear travel.
8. Check controls for smooth, proper working operation. Lubricate as needed.
9. Check anti-vibration mounts on engine frame.

## STARTING THE ENGINE

1. The ignition switch is located on the control panel. Insert the key (A) and turn clockwise to (B), leave at this position until engine light goes out. Turn the key to position(C) until the engine starts. Release the key and it will return to the run position (B).
2. Allow engine to idle and warm up before selecting direction of travel.



## STOPPING THE ENGINE

### ⚠ IMPORTANT

**If the engine has been running under high power, let it run at slow idle speed a few minutes to cool the engine down, before turning the ignition switch to the OFF position.**

1. Disengage spray pump.
2. Move the throttle lever to "slow" and turn ignition key to the "off" position.
3. Remove the ignition key.

### ⚠ CAUTION

**Never leave the vehicle unattended with the engine running. Always bring the vehicle to a complete stop, engage park brake, turn key off and remove key.**

# OPERATION

Before using the Spray Star, the operator and spray technician must familiarize themselves with all of the information on chemical spraying contained in the *Turf Spray Guide*.

All testing and calibrating of sprayers is to be done with water, not chemicals. This insures the safety to all involved in performing the calibration operation. Only after all calibration procedures are completed should chemical be added to the sprayer.

## HILLSIDE OPERATION

**Do NOT** stop or start suddenly on any slope. Be especially cautious when changing direction. **Do NOT** operate on slopes greater than 10°.

## BATTERY

Batteries normally produce explosive gases which can cause personal injury. Do not allow flames, sparks or any ignited object to come near the battery. When charging or working near battery, always shield your eyes and always provide proper ventilation.

Battery cable should be disconnected before using "Fast Charge".

Charge battery at 15 amps for 10 minutes or 7 amps for 30 minutes. Do not exceed the recommended charging rate. If electrolyte starts boiling over, decrease charging.

Always remove grounded (-) battery clamp first and replace it last. Avoid hazards by:

1. Filling batteries in well-ventilated areas.
2. Wear eye protection and rubber gloves.
3. Avoid breathing fumes when electrolyte is added.
4. Avoid spilling or dripping electrolyte.

### WARNING

**Battery Electrolyte is an acidic solution and should be handled with care. If electrolyte is splashed on any part of your body, flush all contact areas immediately with liberal amounts of water. Get medical attention immediately.**

## JUMP STARTING

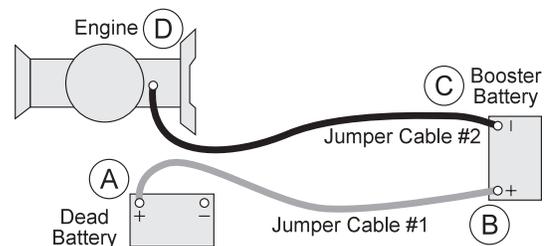
### WARNING

**Use of booster battery and jumper cables. Particular care should be used when connecting a booster battery. Use proper polarity in order to prevent sparks.**

To jump start (negative grounded battery):

1. Shield eyes.
2. Connect ends of one cable to positive (+) terminals of each battery, first (A) then (B).
3. Connect one end of other cable to negative (-) terminal of "good" battery (C).
4. Connect other end of cable (D) to engine block on unit being started (NOT to negative (-) terminal of battery)

To prevent damage to other electrical components on unit being started, make certain that engine is at idle speed before disconnecting jumper cables.



## SPRAYER VALVE SETTINGS AND SPRAY TANK AGITATION

The 3-way valve on the suction side of the pump, between the tank and the pump must be open before pump is engaged. Close this valve only when necessary to clean the filter with spray material in the spray tank.

There is one manual flow control valve on the discharge side of the spray system. This valve controls the agitator. This valve may be opened as much as necessary to provide hydraulic agitation through the quadra-jet agitator in the tank bottom. This valve may be partially closed to prevent or reduce foam buildup from the spray materials inside the tank. When the liquid level in the spray tank reaches a certain level (usually 1-25 gallons (3.8-95 Liters) depending on terrain and other conditions) it may be necessary to close the valve in the agitator line in order to prevent loss of suction prime.

If your Spray Star is fitted with a hose reel, there is a second ball valve on the discharge system to supply material to the hose reel.

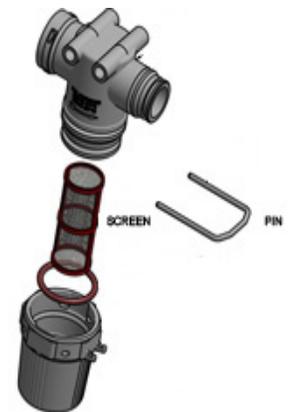
The Quadrajet agitation system operates with four venturi jets in the tank bottom. These jets have replaceable orifice discs which discharge the following amounts of spray material.

Nozzle Diameter	Input to Agitator in gpm	Input to Agitator in L/min	Agitator Pressure in psi	Agitator Pressure in bar	Agitator Output in gpm	Agitator Output in L/min
1/8"	1.9	7.2	25	1.7	6.3	23.8
1/8"	2.7	10.2	50	3.4	10.0	37.9
1/8"	3.8	14.4	100	6.9	15.0	56.8
5/32"	2.8	10.6	25	1.7	7.6	28.8
5/32"	4.2	15.9	50	3.4	12.2	46.2
5/32"	5.5	20.8	100	6.9	17.5	66.2
3/16"	3.6	13.6	25	1.7	9.1	34.4
3/16"	5.6	21.2	50	3.4	14.3	54.1
3/16"	7.9	29.9	100	6.9	18.7	70.8

You can change orifice disc sizes to enhance spray system performance. Smaller discs reduce amount of agitation (desirable in some foaming materials) and make more discharged liquid available for nozzles. Larger (or none) discs increase amount of agitation and make less discharged liquid available for nozzles.

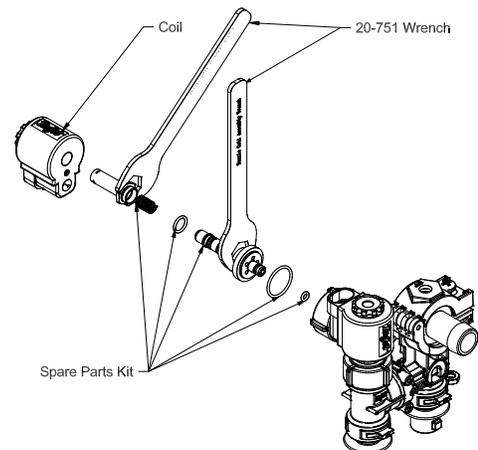
## AGITATION LINE STRAINER CLEANING

Agitation line strainer is located below the sprayer filter. This strainer catches impurities that go to the turbo-jet agitation system in the spray tank. It has a quick disconnect pin on it to remove the bowl. **After EVERY use**, remove bowl and clean screen. Replace screen as needed. We recommend a 50 Mesh screen.



## DYNAJET® NOZZLE CLEANING

The Nozzle Coil Assembly will need to be taken apart and cleaned on a regular basis. To take apart and clean you will need to use two wrenches provided with the DynaJet® System. Loosen the Nozzle assembly by placing a wrench on the tube assembly and one on the stainless cap. Hold one in place and turn the other wrench to loosen assembly. Once apart, clean with water and check for deteriorating parts. Replace parts as needed by ordering the Spare Parts Kit 20-673-01P.



# SPRAYER CLEANING

One of the most common causes for faulty-pump performance is corrosion inside the pump. Flush the pump and entire system with a solution that will chemically neutralize the liquid pumped. Mix according to manufacturer's directions. This will dissolve most residue remaining in the pump, leaving the inside of the pump clean for the next use.

## TO PREVENT CORROSION

After cleaning the pump as directed, flush it with a permanent type automobile antifreeze (Prestone, Zerex, etc.) containing a rust inhibitor. Use a 50% solution that is, half antifreeze and half water. Then coat the interior of the pump with a substance which will prevent corrosion such as Fluid Film or WD40. If unit will not be used for an extended period of time, disconnect hoses into and out of the pump, seal openings to the pump with caps or tape. Dispose of fluids according to all federal, state and local regulations.

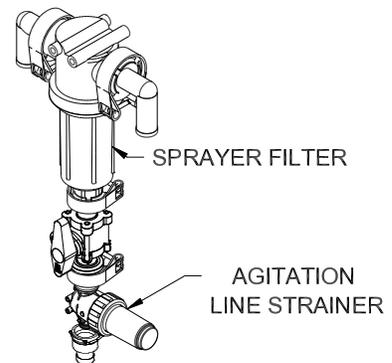
### IMPORTANT

**All chemicals and chemical residue must be removed after each use. Dispose of fluids and residue according to all federal, state and local regulations.**

## SPRAYER CLEANING

Empty tank and clean unit thoroughly after each use following these instructions:

1. Turn off 3-way valve and rinse inside of tank thoroughly with clean water, remove cap from valve to drain.
2. Fill tank ten percent full with clean water, Turn 3-way valve on and start pump and discharge water through spray hose or spray boom (with nozzles removed), until empty.
3. Turn off 3-way valve again and rinse tank interior thoroughly. Remove cap from 3-way valve to drain.
4. Rinse exterior of sprayer thoroughly with clean water.
5. This sprayer is equipped with a self cleaning strainer. The strainer uses the excess pump flow to bypass clogging particles back to the spray tank. There is a gap between the tapered inner cylinder and the screen face that causes the inlet fluid to flow at a high velocity past the screen face providing a continuous wash down of particles. For this wash down to occur a minimum of +GPM/23 l/min is required through the bypass line.



## AGITATION LINE STRAINER CLEANING

Agitation line strainer is located below the sprayer filter. This strainer catches impurities that go to the turbo-jet agitation system in the spray tank. It has a quick disconnect pin on it to remove the bowl. **After EVERY use**, remove bowl and clean screen. Replace screen as needed. We recommend a 50 Mesh screen.

## MANUAL HOSE REEL

Located at the back of the Spray Star on top of the tank. Open the ball valve located near the manifold valve to allow fluid to flow into the hose reel. Place the lockout pin in the unlocked position by pulling and turning it half a turn, this will allow you to pull out additional hose or to use the handle and wind up the hose. To prevent movement during transport or storage place the lockout pin in the locked position.

## ELECTRIC HOSE REEL

Located at the back of the Spray Star on top of the tank. Open the ball valve located near the manifold valve to allow fluid to flow into the hose reel. To unwind hose just pull on the hose to get the desired amount. To wind up the hose make sure the toggle switch is in the ON position, push the momentary push button switch until you have reeled in the amount of hose desire. Turn off the safety switch when not in use.

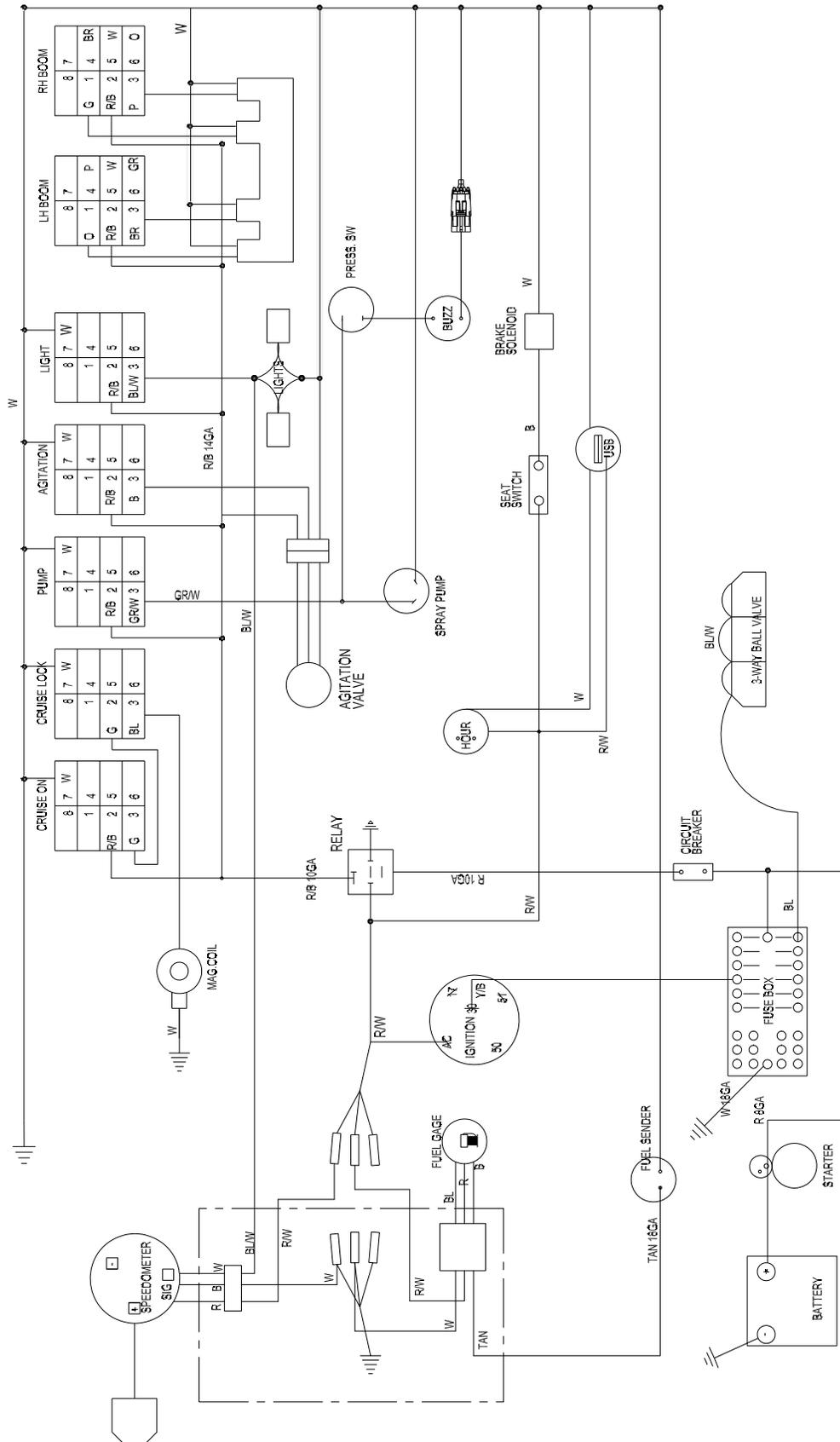
## FOAM MARKER SWITCH

Located to the control panel. Use the rocker switch designate to which boom is to be used to dispense foam. Use dial located on the foamer to adjust pressure for the amount of foam that will be dispensed. Switch on compressor also turns foamer on or off.

1 millimeter (mm) = 0.039 inch

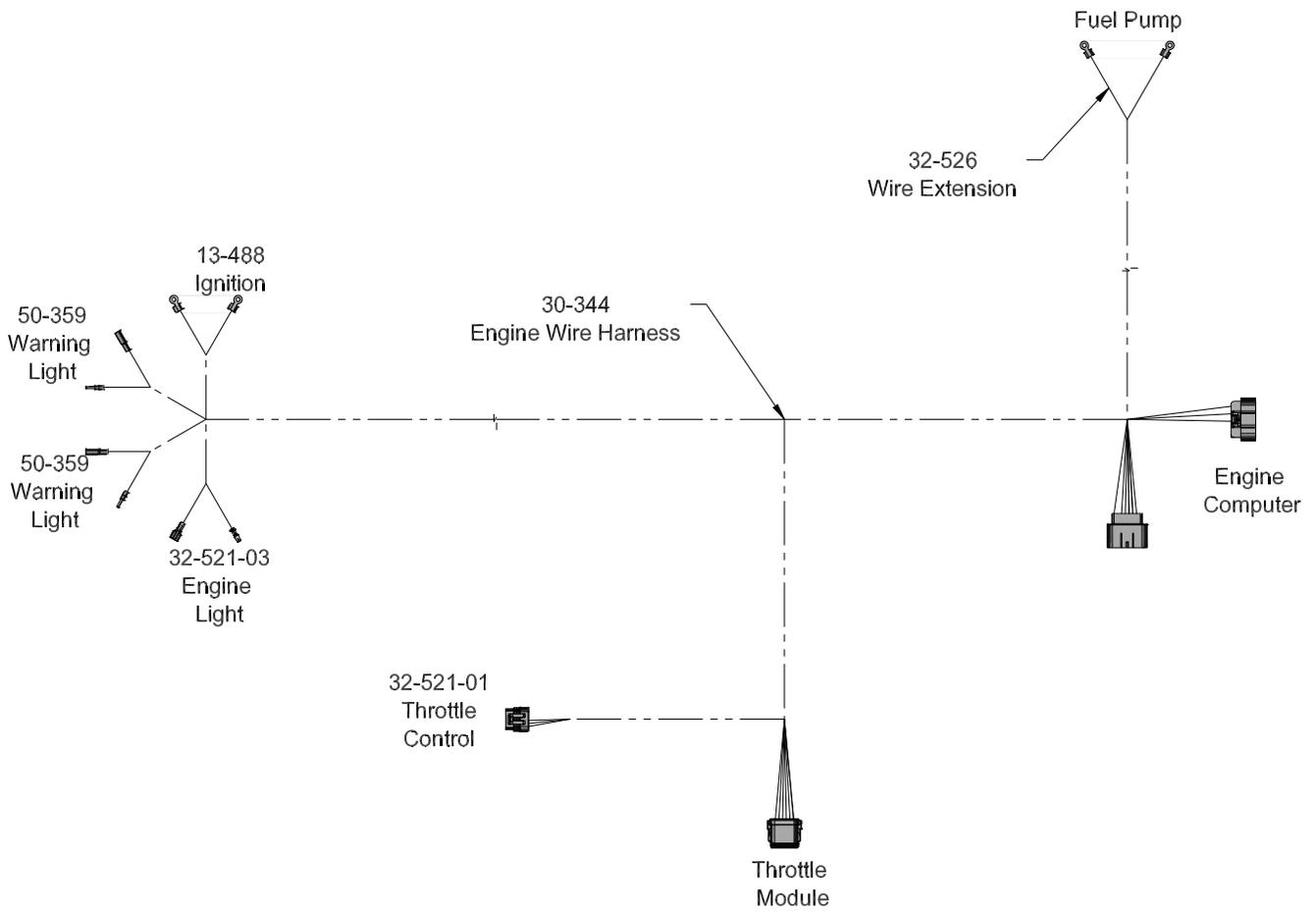
1 centimeter (cm) = 0.393 inch

# MAIN WIRING DIAGRAM

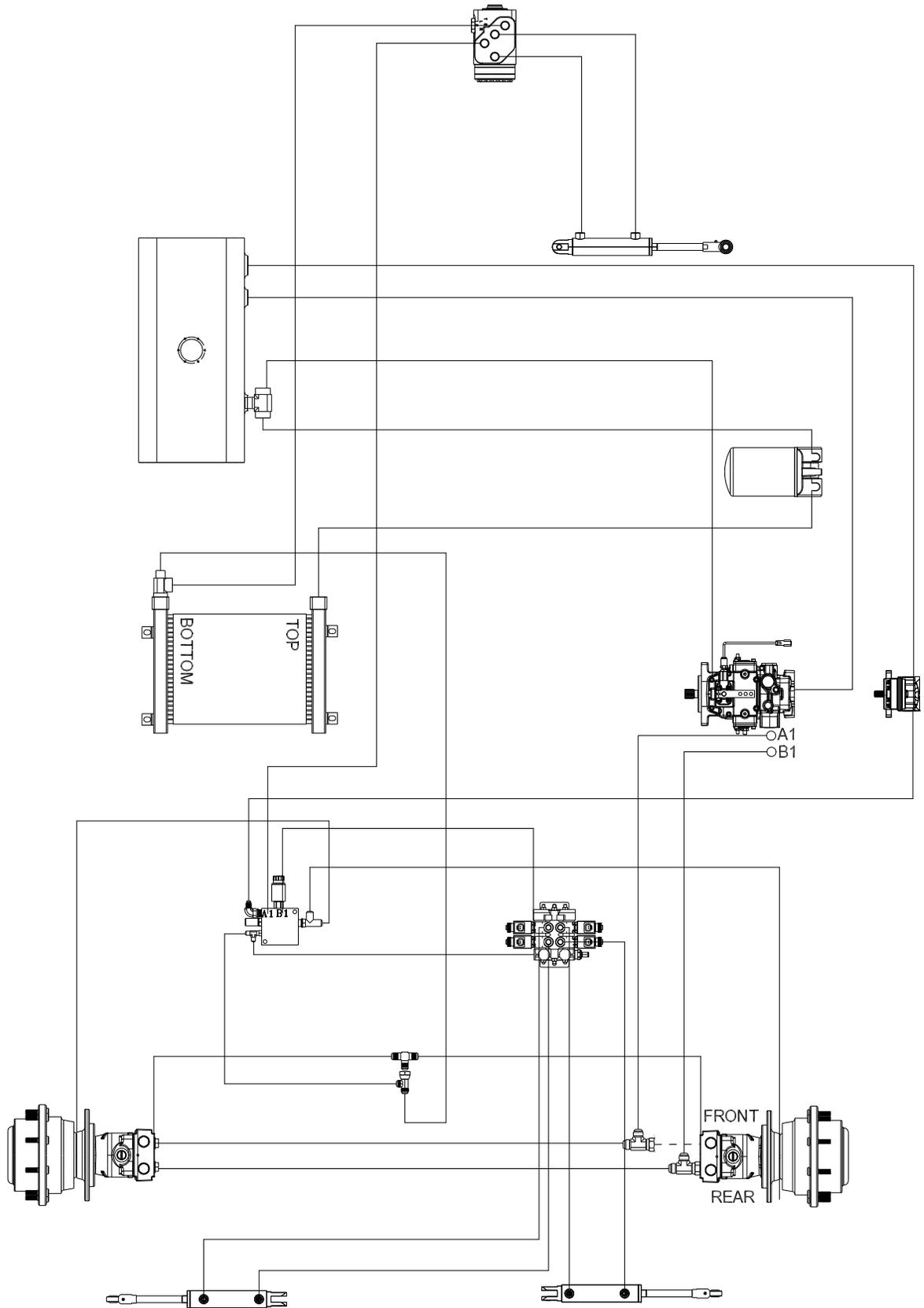


# ENGINE WIRING DIAGRAM

Diagrams



# HYDRAULIC DIAGRAM



Diagrams

# QUICK REFERENCE

## REPLACEMENT FILTERS

72-146	Hydraulic Oil Filter Assembly
60-334	Replacement Oil Filter Element
17-068	Ignition Switch
32-651-02	Outer Air Filter
32-651-03	Inner Air Filter
32-521-04	Fuel Filter Assembly
32-521-05	Muffler Gasket
30-042-09	Engine oil Filter Cartridge

## REPLACEMENT BELTS

32-575	Spray Pump V-Belt
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## SEAL KITS

13-406	Boom Cylinders
14-267	Seal Kit
15-301	Power Steering Orbital Motor
15-301-01	Seal Kit
15-839	Hydraulic Cylinder (steering)
14-531	Seal Kit
32-609	Hydrostatic Pump
32-609-01	Seal Kit
32-610	Rear Drive Assembly
32-610-01	Seal Kit
76-197	Gear Pump
76-197-08	Seal Kit

## FLUIDS

Engine Oil	SAE 10W-40 API Service SJ or higher Motor Oil
Hyd. Fluid	SAE 10W-40 API Service SJ or higher Motor Oil
Radiator	3.33Gal 50/50 Antifreeze/water mixture

## OTHER PARTS

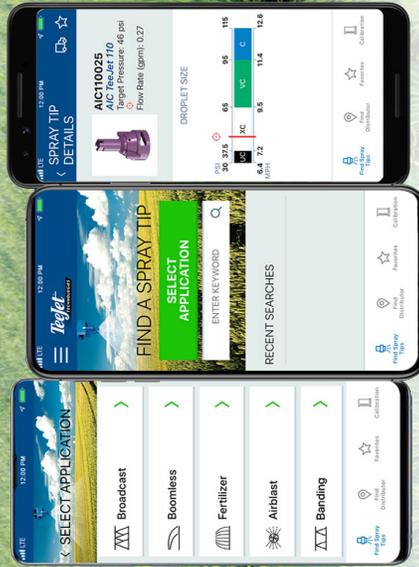
15-818	#75 Fitting O-ring
15-817	#50 Fitting O-ring
16-953	Hinged Cover On Tank with Gasket
16-953-01	Gasket For Cover
16-169	Strainer Basket
20-663	Tank Lid Gasket
77-261	Circuit Breaker 40Amp

# TeeJet<sup>®</sup>

## TECHNOLOGIES

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# The Smithco Commercial Products Two-Year Limited Warranty

Smithco, Inc. (Smithco) warrants your 2016 or newer Smithco Commercial Product (“Product”) purchased after October 1, 2016 to be free from defects in materials or workmanship for the period of time listed below. Where a warrantable condition exists, Smithco will repair the Product at no cost to you including diagnosis, labor (at the Smithco standard labor rate, subject to the Smithco flat rate schedule), and parts.

## Warranty Duration is:

- (1) Two years, 1500 operational hours\* from the date of delivery to the original purchaser or Five years from the date of original manufacturer of the product, whichever occurs first. (\*Products equipped with hour meter).
- (2) Products used in rental situations are covered for 90 days from date of delivery to original user/renter.

## Owner Responsibilities:

As the Product owner, you are responsible for required maintenance and adjustments stated in your Owner’s Manual. Failure to perform required maintenance and adjustments can be grounds for disallowing a warranty claim. **You are particularly responsible to train all present and future operators of this product on the safe operation of this product at your location.**

## Instructions for Obtaining Warranty Service:

You are responsible for notifying the Authorized Smithco Products Distributor from whom you purchased the Product as soon as you believe a warrantable condition exists and not later than 30 days from discovery of the condition.

If you need help locating an Authorized Smithco Distributor, or if you have questions regarding your warranty rights or responsibilities, you may contact us at:

Smithco Product Support Department  
200 West Poplar Ave.  
Cameron, Wisconsin 54822  
Telephone: 800-891-9435 E-Mail: [ProductSupport@Smithco.com](mailto:ProductSupport@Smithco.com)

## Maintenance Parts:

Parts scheduled for replacement as required maintenance (“Maintenance Parts”), are warranted for the period of time up to the scheduled replacement time for that part.

## Items/Conditions Not Covered:

Not all product failures or malfunctions that occur during the warranty period are defects in materials or workmanship. The items/conditions listed below are not covered by this warranty:



Product failures which result from the use of non-Smithco replacement parts, or from installation and use of add-on, modified, or unapproved accessories are not covered.



Product failures which result from failure to perform required maintenance and/or adjustments are not covered.



Product failures that result from operating the Product in an abusive, negligent or reckless manner are not covered.



This warranty does not apply to parts subject to consumption through use, unless found to be defective. Examples of parts which are consumed, or used up, during normal Product operation include, but are not limited to: blades, tines, teeth, scarifiers, rakes, plates, wear plates, castor wheels, tires, batteries, filters, belts, nozzles, etc.



This warranty does not apply to failures caused by outside influence. Items considered to be outside influence include, but are not limited to, weather, storage practices, contamination, use of unapproved coolants, lubricants, additives, or chemicals, etc.



This warranty does not apply to normal “wear and tear” items. Normal “Wear and Tear” includes, but is not limited to, damage to seats due to wear or abrasion, worn painted surfaces, scratched decals or windows, etc.



Smithco may require the return of failed parts or components in order to determine the validity of any warranty claim.



Smithco will not be obligated to replace components of other manufacturers if inspection by the original component manufacturer indicates that failure was due to normal wear and tear, expected consumption through use or improper care or service.

#### **Other Legal Disclaimers:**

The above remedy for product defects through repair or replacement by an authorized Smithco distributor or dealer is the purchaser’s sole remedy for any defect. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

**THERE ARE NO OTHER EXPRESS WARRANTIES OTHER THAN THOSE SET FORTH ABOVE. ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR USE ARE LIMITED TO THE DURATION OF THE LIMITED WARRANTIES CONTAINED HEREIN.**

Some states may not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you.

**THE SMITHCO COMPANY IS NOT LIABLE FOR INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES IN CONNECTION WITH THE USE OF THE PRODUCT, INCLUDING ANY COST OR EXPENSE OF PROVIDING A SUBSTITUTE PRODUCT OR SERVICE DURING PERIODS OF MALFUNCTION OR NON-USE.**

Some states may not allow the exclusion of indirect, incidental or consequential damages, so the above exclusion may not apply to you.

**Smithco neither assumes, nor authorizes any person to assume for it, any other liability in connection with the sale or use of this product.**

