

POWER SPRAYERS

MPS9910



SAFETY & OPERATIONS MANUAL

Manual Part #: 075770 | Revision: -
Language: English | Original Instructions



NOTICE

This manual, or a copy of it, must be kept with the machine at all times.
There is a manual storage container located on the machine for your convenience.

POWER SPRAYER

SAFETY & OPERATIONS MANUAL

This manual covers the products listed below:

<u>Part No.</u>	<u>Description</u>
073600	SPRAYER, MPS9910

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Allen® Products are covered under one or more of the following patent numbers:

U.S. Design Patents: 344,736; 400,542; 400,544; 402,998; 402,999; 403,332; 404,041; 404,042; 410,931; 413,127; 416,564; 465,897; 466,909; 474,203.

U.S. Utility Patents: 5,108,220; 5,238,323; 5,328,295; 5,352,063; 5,405,216; 5,476,342; 5,480,257; 5,480,258; 5,533,831; 5,562,361; 5,567,075; 5,613,801; 5,658,089; 5,685,667; 5,803,658; 5,816,739; 5,816,740; 5,890,833; 5,934,823; 5,967,696; 5,988,938; 5,988,939; 6,019,433; 6,019,545; 6,048,130; 6,053,660; 6,089,786; 6,106,193; 6,857,815; 5,288,166; 6,582,153 B1, 7,108,449; 7,114,876; 7,316,523; 7,690,864 B2

Canadian Patents: 2,039,893.

With other Patents Pending.

Printed in U.S.A.

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General Information

Limited Warranty

Allen Engineering Corporation ("Allen") warrants its products to be free of defects in material or workmanship for:

TWO YEARS FROM END USER'S DATE OF PURCHASE

1. Warranty period begins on the date of purchase by the End User of the product. All warranty is based on the following limited warranty terms and conditions, including the disclaimer of implied warranties and consequential damages.
2. Allen's obligation and liability under this warranty is limited to repairing or replacing parts if, after Allen's inspection, there is determined to be a defect in material or workmanship. Allen reserves the choice to repair or replace.
3. If Allen chooses to replace the part, it will be at no cost to the customer and will be made available to the Allen Distributor, Dealer, or Rental Center from whom the End User purchased the product.
4. Replacement or repair parts, installed in the product, are warranted only for the remainder of warranty period of the product as though they were the original parts.
5. Allen does not warranty engines or batteries. Engine warranty claims should be made directly to an authorized factory service center for the particular engine manufacturer. Batteries are not warranted due to unknown treatment during transport, etc, and any battery claims should be directed to the battery manufacturer.
6. Allen's warranty does not cover the normal maintenance of products or its components (such as engine tuneups and oil & filter changes). The warranty also does not cover normal wear and tear items (such as belts and consumables).
7. Allen's warranty will be void if it is determined that the defect resulted from operator abuse, failure to perform normal maintenance on the product, modification to product, alterations or repairs made to the product without the written approval of Allen. Allen specifically excludes from warranty any damage to any trowels resulting from an impact to the rotors.
8. Impact damage to gear boxes is not covered under the Allen warranty and is deemed customer abuse.
9. Allen will pay shop labor on warranty items at the Allen Shop Labor Rate in existence on the date of the warranty claim. An Allen labor chart will determine the time allowed to complete a repair and will govern the shop labor hours that will be allowed.
10. Allen will pay freight on warranty replacement parts at worldwide standard ground rates. No warranty replacement parts will be shipped air freight at the expense of Allen. Allen only pays outbound freight charges when sending warranty replacement parts to the customer via ground service. Allen does not pay any inbound freight. However, if Allen determines this to be a warranted item, only then will Allen reimburse the customer for inbound freight at standard ground rates.
11. ALLEN ENGINEERING CORPORATION'S WARRANTY POLICY WILL NOT COVER THE FOLLOWING: TAXES;
 - A. SHOP SUPPLIES; ENVIRONMENTAL SURCHARGES; AIR FREIGHT; TRAVEL TIME; LOSS OF TIME; INCONVENIENCE; LOSS OF RENTAL REVENUE; RENTAL COSTS OF EQUIPMENT USED TO REPLACE THE PRODUCT BEING REPAIRED;
 - B. LOSS OF USE OF THE PRODUCT; COMMERCIAL LOSS; OR ANY OTHER CHARGES WHATSOEVER OR ANY LIABILITIES FOR DIRECT, INCIDENTAL, OR CONSEQUENTIAL DAMAGE OR DELAY.
 - C. ALLEN ENGINEERING CORPORATION MAKES NO OTHER WARRANTY, EXPRESSED OR IMPLIED. THIS LIMITED WARRANTY IS IN LIEU OF THE WARRANTY OF MERCHANTABILITY AND FITNESS. THERE ARE NO OTHER WARRANTIES THAT EXTEND BEYOND THE DESCRIPTION ON THIS DOCUMENT.
12. No Allen employee or representative is authorized to change this warranty in any way or grant any other warranty unless such change is made in writing and signed by an officer of Allen Engineering Corporation.

Information Contained In This Manual

General Information



This manual provides information and procedures to safely operate and maintain the Allen Machine.

For your own safety and protection from personal injury, carefully read, understand, and observe the safety instructions described in this manual. Keep this manual or a copy of it with the machine at all times.

ALWAYS operate this machine in accordance with the instructions described in this manual. A well maintained piece of equipment will provide many years of trouble free operation.

This manual is divided into the following sections:

SECTION 1 SAFETY

SECTION 2 OPERATIONS

SECTION 3 SERVICE

Complete any warranty requirements as specified by the engine manufacturer in their instructions found inside the tool box located on top of the trailer.

The engine and pump are not manufactured by Allen Engineering Corporation, Inc, and therefore are not covered under Allen Engineering Corporation, Inc warranty.

The engine and pump manufacturer should be contacted if you wish to purchase a parts manual or a repair manual.

Refer to enclosed owner manuals for complete O&M instructions.

General Information

Dealer Information

Your Dealer has Allen Engineering Corporation trained mechanics and original Allen replacement parts. Always contact the Allen Dealer who sold you this machine for Allen Certified repairs and replacement parts.

Place Allen Dealer information below for future reference.

Dealer Name: _____

Phone #: (____) - ____ - _____

Address: _____

City: _____ **State:** _____ **Zip:** _____

Salesman: _____ **Mobile Phone** _____

Additional Comments: _____

The Parts and Decals manual contains illustrated parts lists for help in ordering replacement parts for your machine. Follow the instructions below when ordering parts to insure prompt and accurate delivery:

1. All orders for service parts must include the serial number for the machine. Shipment will be delayed if this information is not available.
2. Include the correct description and part number from the PARTS & DECALS manual.
3. Specify the exact shipping instructions, including the preferred routing and complete destination address.
4. **DO NOT** return parts to AEC without receiving written authorization from AEC. All authorized returns must be shipped pre-paid.
5. When placing an order, please contact the AEC dealer nearest you.



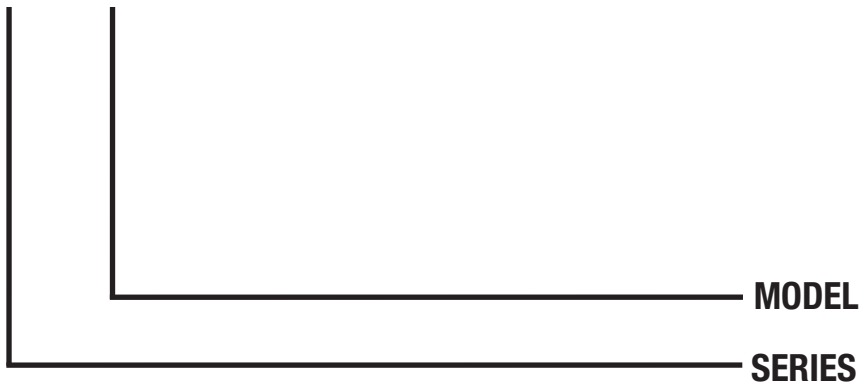
ALL INFORMATION, SPECIFICATIONS, AND ILLUSTRATIONS IN THIS MANUAL ARE SUBJECT TO CHANGE WITHOUT NOTICE AND ARE BASED ON THE LATEST INFORMATION AT THE TIME OF PUBLICATION.

Manufacturer's Codes:

When ordering parts or requesting service information, you will always be asked to specify the model and serial numbers of the machine. The legends below specifically defines each significant character or group of characters of the Model Number and Serial Number codes.

Model Number

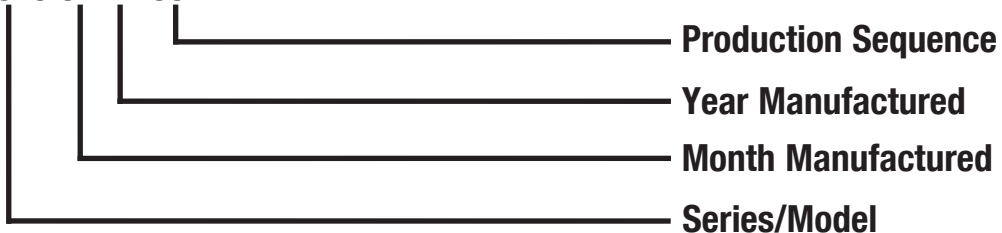
MPS 9910



Serial Number:

The serial number found on the identification plate is a ten digit format. The model number identifies your machine and will ensure that you receive the correct replacement parts.

9910 01 11 001



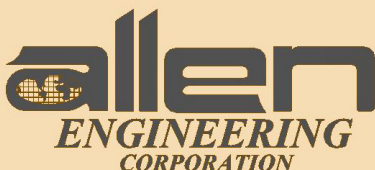
Unit Identification Plate Location:

An identification plate listing the model number and the serial number is attached to each unit. Refer to the Figure below for an example of the serial number and model number plate. This plate should not be removed at any time.

Please record the information found on this plate below so it will be available should the identification plate become lost or damaged. When ordering parts or requesting service information, you will ALWAYS be asked to specify the model and serial numbers of the machine.

FILL IN FOR FUTURE REFERENCE

Model Number: _____
Serial Number: _____
Date Purchased: _____
Purchased From: _____

MODEL	
PART NUMBER	
POWER	
WEIGHT	
SERIAL NO.	
PRODUCTION DATE {MM.DD.YYYY}	
P.O. BOX 819 PARAGOULD, AR. 72450, USA 800.643.0095 (USA ONLY) 870.236.7751 800.643.0097 (USA ONLY) 870.236.3934 WWW.ALLENENG.COM	

General Information

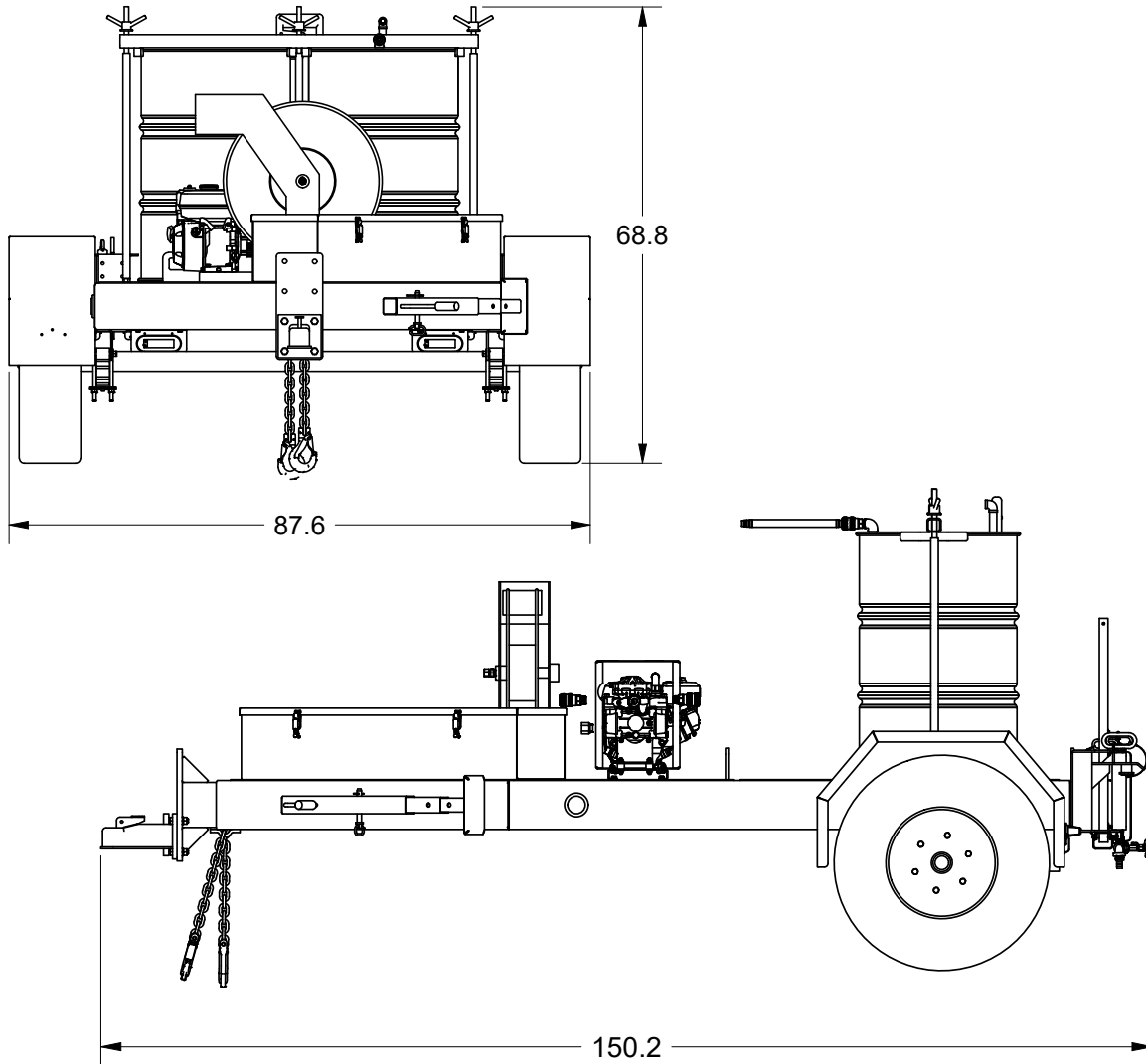
Technical Specifications

Measurements in this manual are in U.S. units and their customary metric units (i.e., metric units contained within brackets [cm]). The machine RIGHT-HAND and LEFT-HAND sides are determined by standing at the rear of machine facing in the direction the machine will travel when going forward.

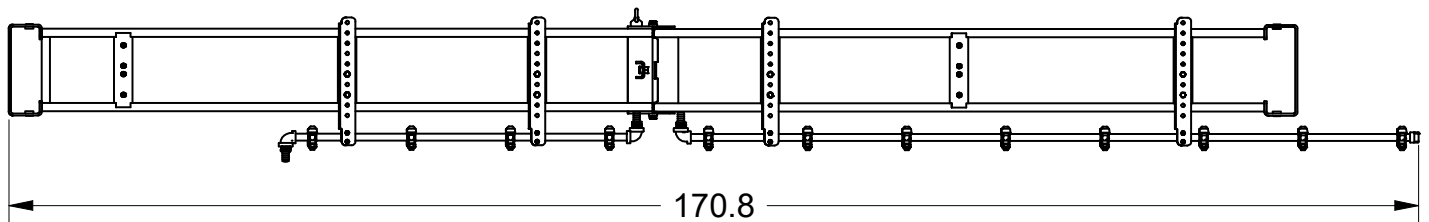
Machine Features:

Dimensions - (L x W x H) inch [cm]	150.2 x 87.6 x 68.8 [381.5 x 222.5 x 175]
Weight lb [kg]	1,940 [880]
Gross Axle Weight Rating lb [kg]	7,000 [3,175]
Gross Vehicle Weight Rating lb [kg]	6,540 [2,966]
Payload Capacity lb [kg]	4,600 [2,086]
Wheel Size.....	16"
Tire.....	ST235/80R16
Flat Mount Tow Ring.....	2-1/2"
Flat Mount Trailer Coupler	2-5/16", 21,000 lb MGTW
Trailer Electrical Wiring.....	4-Flat Connector
Maximum Flat Washer Flow Rate gpm [lpm]	9 [34]
Max Pressure psi [bar].....	580 [40]
Spray Boom Unfolded Length inch [cm]	170.8 [434]
Spray System Capacity	180 gal - 550 gal Tote or (2) 55 gal Barrel
Fuel Capacity gal [L]	0.825 [3.1]
Run Time (Approximate) hr	2.2

The illustrations shows the Tow Tote Sprayer with two 55 gal barrels



Spray Boom, Unfolded



General Information

Engine Specifications

Honda GX160 Engine Information

Horsepower [kW]	4.8 [3.6]
Air Cooled 4-Stroke OHV	Gasoline Engine
Shaft:	Horizontal
Cylinders:	1
Displacement [cc]:	163
Max Speed [RPM]:	3600
Peak Torque (ft.lb.) [@2500 RPM]	7.6
Bore x Stroke [mm]:	68 X 45
Compression Ratio:	9.0:1
Starter:	Recoil
Dry Weight lbs [kg]:	33 [15.1]
Length inches:	12.2
Width inches:	14.3
Height inches:	13.6
Fuel Capacity US qts [ltrs]:	3.3 [3.1]
Lube Type:	SAE 10W-30(40), 20W-40(50)
Oil Capacity US qts [ltrs]:	0.61 [0.58]
Air Cleaner:	Dual Element
Muffler [type]:	Standard
Ignition System:	Transistorized Magneto
Lube System:	Splash
Emission Rating:	EPA / Carb
Color:	Red
Fuel System:	Gravity



SECTION 1 SAFETY

SECTION 1 SAFETY

State / Federal Warning Regulations



RESPIRATORY HAZARDS

Grinding/cutting/drilling of masonry, concrete, metal and other materials can generate dust, mists and fumes containing chemicals known to cause serious or fatal injury or illness, such as respiratory disease, cancer, birth defects or other reproductive harm.

SILICOSIS WARNING

Grinding/cutting/drilling of masonry, concrete, metal and other materials with silica in their composition may give off dust or mists containing crystalline silica.

**WARNING**

Cancer and Reproductive Harm

www.P65Warnings.ca.gov

CALIFORNIA PROPOSITION 65 WARNING

Gasoline engine exhaust from this product contains chemicals known to the State of California to cause cancer, birth defects and other reproductive harm.

Safety-Alert Signs

This manual contains Safety-Alert Signs, as defined below, which must be followed to reduce the possibility of improper service damage to the equipment or personal injury. Read and follow all Safety-Alert Signs included in this manual.



NOTE defines an operating procedure, condition, etc. which is essential to highlight that contains useful or important information.



EMERGENCY is used for the identification of safety equipment, first aid, or emergency egress locations.



NOTICE used to convey safety information on labels and signs.



CAUTION is indicative of a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.



WARNING indicates potentially hazardous situations that could result in death or serious injury



DANGER indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.

Laws Pertaining to Spark Arrestors

Some states require that in certain locations arrestors be used on internal combustion engines. A spark arrester is a device designed to prevent the discharge of spark or flames from the engine exhaust. It is often required when operating equipment on forested land to prevent the risk of fires. Consult the engine distributor or local authorities and make sure that you comply with regulations regarding spark arrestors.

CAUTION

- **NEVER** operate this equipment without proper protective clothing, safety glasses, respiratory protection, hearing protection, steel-toed boots and other protective devices required by the job or city and state regulations.



- Avoid wearing jewelry or loose fitting clothes that may get caught on the controls or moving parts as this can cause serious injury.

- **NEVER** operate this equipment when not feeling well due to fatigue, illness or when under medication.



- **NEVER** operate this equipment under the influence of drugs or alcohol.



- **ALWAYS** clear the work area of any debris, tools, etc. that would constitute a hazard while the equipment is in operation.
- No one other than the operator is to be in the working area when the equipment is in operation.
- **DO NOT** use the equipment for any purpose other than its intended purposes or applications.
- This equipment should only be operated by trained and qualified personnel 18 years of age and older.
- Whenever necessary, replace nameplate, operation and safety decals when they become difficult read.
- AEC does not assume responsibility for any accident due to equipment modifications. **Unauthorized equipment modification will void all warranties.**
- **NEVER** use accessories or attachments that are not recommended by AEC for this equipment. Damage to the equipment and/or injury to user may result.

SECTION 1 SAFETY

General Safety, continued

- **ALWAYS** know the location of the nearest fire extinguisher.



- **ALWAYS** know the location of the nearest first aid kit.



- **ALWAYS** know the location of the nearest phone or keep a phone on the job site. Also, know the phone numbers of the nearest ambulance, doctor and fire department. This information will be invaluable in the case of an emergency.



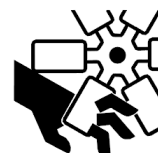
- Engine fuel exhaust gases contain very poisonous carbon monoxide. This gas is colorless and odorless, and can cause death if inhaled.
- The engine of this equipment requires an adequate free flow of cooling air. **NEVER** operate this equipment in any enclosed or narrow area where free flow of the air is restricted. If the air flow is restricted it will cause injury to people and property and serious damage to the equipment or engine.



- **NEVER** operate the equipment in an explosive atmosphere or near combustible materials. An explosion or fire could result causing severe bodily harm or even death.



- **ALWAYS** keep clear of rotating or moving parts while operating the Tow Tote Sprayer.



- **NEVER** disconnect any emergency or safety devices. These devices are intended for operator safety. Disconnection of these devices can cause severe injury, bodily harm or even death. Disconnection of any of these devices will void all warranties.

CAUTION

- **NEVER** stand on the trailer during operation.
- **NEVER** lubricate components or attempt service on a running machine.

NOTE

- **ALWAYS** keep the machine in proper running condition.
- Fix damage to machine and replace any broken parts immediately.
- **ALWAYS** store equipment properly when it is not being used. Equipment should be stored in a clean, dry location out of the reach of children and unauthorized personnel.

SECTION 1 SAFETY

Engine Safety

WARNING

- **DO NOT** place hands or fingers inside engine compartment when engine is running.
- **NEVER** operate the engine with heat shields or guards removed.
- Keep fingers, hands hair and clothing away from all moving parts to prevent injury.
- **DO NOT** remove the engine oil drain plug while the engine is hot. Hot oil will gush out of the oil tank and severely scald any persons in the general area of the engine.



CAUTION

- **NEVER** touch the hot exhaust manifold, muffler or cylinder. Allow these parts to cool before servicing equipment.
- **NEVER** run the engine without an air filter or with a dirty air filter. Severe engine damage may occur. Service air filter frequently to prevent engine malfunction.
- **NEVER** tamper with the factory settings of the engine or engine governor. Damage to the engine or equipment can result if operating in speed ranges above the maximum allowable.
- **ALWAYS** use extreme caution when working with flammable liquids.
- **DO NOT** start the engine near spilled fuel or combustible fluids. Fuel is extremely flammable and its vapors can cause an explosion if ignited.
- **ALWAYS** refuel in a well-ventilated area, away from sparks and open flames.
- **NEVER** use fuel as a cleaning agent.
- **DO NOT** smoke around or near the equipment. Fire or explosion could result from fuel vapors or if fuel is spilled on a hot engine.

Familiarity and proper training are required for the safe operation of this equipment! Equipment operated improperly or by untrained personnel can be dangerous! Read the operating instructions contained in both this manual and the engine manual and familiarize yourself with the location and proper use of all controls.

Safety Precautions

1. Read operating and safety instructions before using the High Pressure Sprayer. Operate the machine in accordance with the manufacturer's instructions.
2. Inspect your High Pressure Sprayer for damage or tampering that can sometimes occur during shipping.
3. If damage is found file a claim with your carrier immediately! Mark freight bill of lading as damaged shipment.
4. Do not operate High Pressure Sprayer if any guards have been removed
5. Only trained personnel should be allowed to operate your High Pressure Sprayer.
6. No foreign objects such as buckets, tools or materials should ever be attached to on the Sprayer during operation.
7. Do not attempt to fill fuel tank or oil sump while the engine is running. Allow engine to cool before refueling.
8. Do not use over the counter hardware to replace manufacturer's hardware.
9. **WARNING:** When operating machines with gas engines in confined areas. The fumes MUST be ventilated!
10. Always wear safety goggles, ear protection, and gloves when operating the High Pressure Sprayer.

SECTION 1 SAFETY

Transportation Safety

- Make sure the hitch and coupling of the towing vehicle are rated equal to, or greater than the trailer “gross vehicle weight rating.”
- **ALWAYS** inspect the hitch and coupling for wear. Never tow a trailer with defective hitches, couplings, chains, etc.
- Check the tire air pressure on both towing vehicle and trailer. Trailer tires should be inflated to 50 psi cold. Also check the tire tread wear on both vehicles.
- **ALWAYS** make sure the trailer is equipped with a safety chain.
- **ALWAYS** properly attach trailer’s safety chains to towing vehicle.
- **ALWAYS** make sure the vehicle and trailer directional, backup, brake and trailer lights are connected and working properly.
- DOT Requirements include the following:
 - Connect and test electric brake operation.
 - Secure portable power cables in cable tray with tie wraps.
- The maximum speed for highway towing is 55 MPH unless posted otherwise. Recommended off-road towing is not to exceed 15 MPH or less depending on type of terrain.
- Avoid sudden stops and starts. This can cause skidding, or jack-knifing. Smooth, gradual starts and stops will improve towing.
- Avoid sharp turns to prevent rolling.
- Trailer should be adjusted to a level position at all times when towing.
- Raise and lock trailer wheel stand in up position when towing.
- Place chock blocks underneath wheel to prevent rolling while parked.
- Place support blocks underneath the trailer’s bumper to prevent tipping while parked.
- Use the trailer’s swivel jack to adjust the trailer height to a level position while parked.
- Use tie downs to ensure the machine’s components do not move during transportation.

SECTION 2 OPERATIONS



NOTE

This machine is built with user safety in mind. However, it can present hazards if improperly operated and serviced. Follow operating instructions carefully.

If you have any questions about operating or servicing this equipment, please contact your Allen Engineering Dealer or AEC Customer Service at 800-643-0095 or 870-236-7751.

- The MPS9910 is a multipurpose sprayer. This machine has a retractable 12' spray boom, a spray gun with a 100' hose, and a toolbox to store the return and suction pipes.
- The pump's control unit allows the operator to switch the fluid flow between the spray boom and the spray gun.
- The bypass (return) line has a jet agitator to help ensure that the fluid in the storage container is properly mixed.
- Each nozzle on the spray boom has a shut off valve and they are spaced in 1' increments. This allows the operator to customize the operational length of the spray boom.
- The Tow Tote Sprayer can fit a 180 to 550 gallon tote or up to two 55 gallon drums.
- The suction line filter element can be changed, two filter mesh sizes (50 and 16 mesh) are provided. The filter element should match the conditions of the fluid.

Assembly of Power Sprayer to a barrel.

1. Using the barrel hold down bar (**A**) and the three hold down rods (**B**) supplied, fasten the barrel(s) down to the trailer. **NOTE:** If the hold down bar is not in use it can be fastened to the trailer, use the two holes on the top left side of the trailer.
2. After the barrel(s) are fastened to the trailer, take the OD 1.05" x ID 0.75" suction tube (**C**) and the filter (**D**) and fasten them together. Then, take the 5' X 3/4" hose (**E**) that is supplied and fasten them together. Put the suction tube in the larger hole of the barrel. Connect opposite end of suction hose to the 3/4" QDC connector located on the pump.
3. Take the OD 1.05" x ID 0.824" bypass tube (**F**) and the 5' X 1/2" hose (**G**) that is supplied and fasten them together. Put the bypass tube in the smaller hole of the barrel. Connect opposite end of the bypass hose to the 1/2" QDC connector on the pump located directly above the flow control valves. See Figure 2.5 page 31.
4. Locate the spray gun hose (**H**). Connect the end of the hose to the spray gun (**I**).

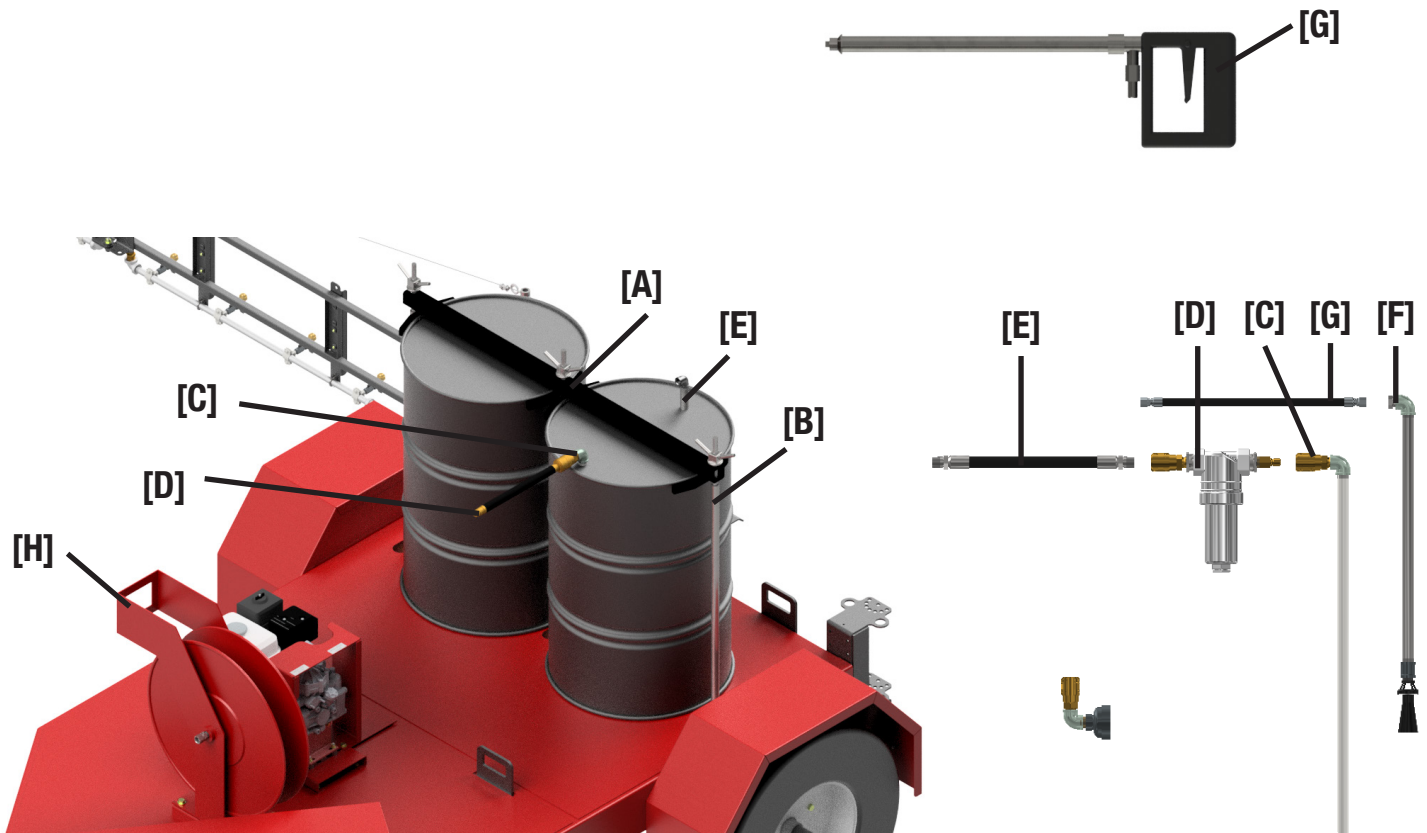


Figure 2.1: Barrel Assembly

Assembly of Power Sprayer to a tote tank

1. The Tow Tote Sprayer has four tie down points for a tote tank. Use straps that have sufficient weight bearing capacity to hold down the tote tank.
2. After the tank is fastened to the trailer, attach the tote container fitting (**J**) to the tank outlet and then attach the filter (**D**). Next, fasten the 5' X 3/4" hose (**E**) that is supplied together. Connect opposite end of suction hose to the 3/4" QDC connector located on the pump.
3. Take the OD 1.05" x ID 0.824" bypass tube (**F**) and the 5' X 1/2" hose (**G**) that is supplied and fasten them together. Put the bypass tube in the inlet hole of the tank. Connect opposite end of the bypass hose to the 1/2" QDC connector on the pump located directly above the flow control valves.
4. Locate the spray gun hose (**H**). Connect the end of the hose to the spray gun (**I**). See page 27.

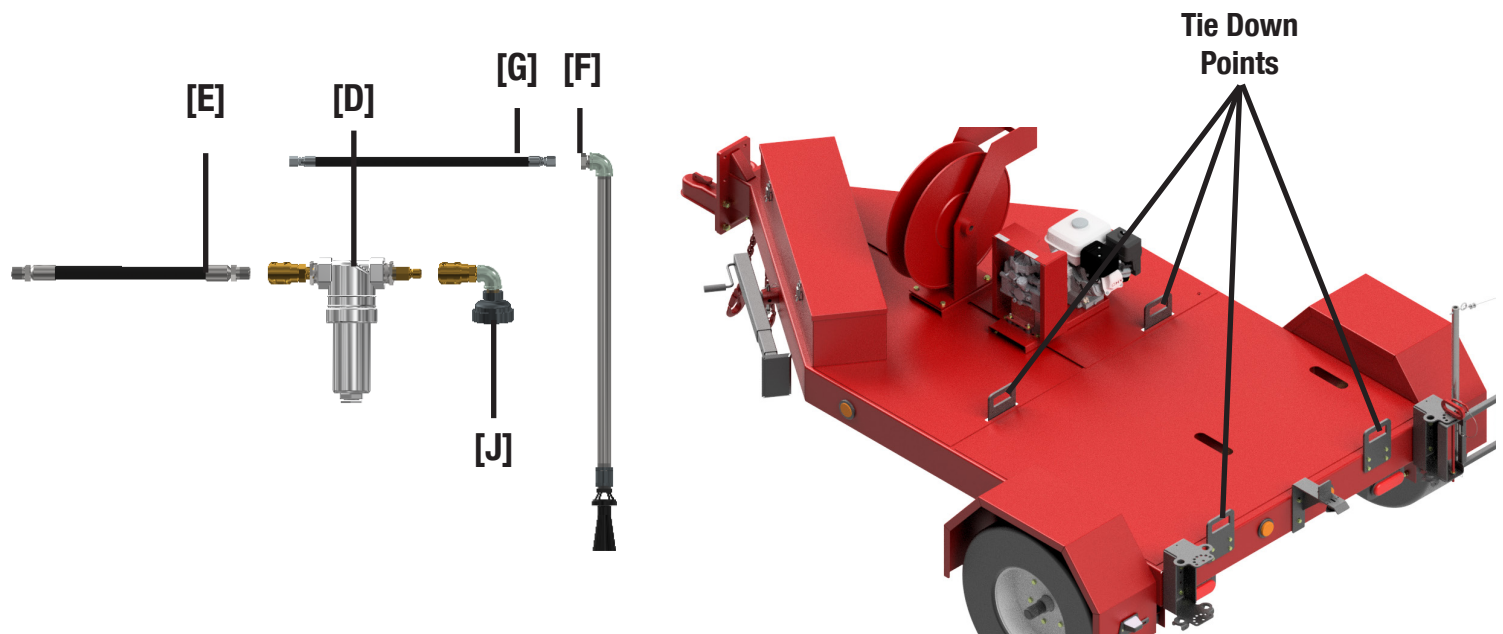


Figure 2.2: Tote Assembly

Before Starting Procedures

Before starting the power sprayer and/or towing check for the following:

1. Oil level in the engine and pump.
2. Fuel level in the fuel tank.
3. Condition of air cleaner on the engine.
4. Coupler is secured and locked to the hitch.
5. Verify that the safety chains are secured to the tow vehicle.
6. Verify that the jack is fully retracted and secured to the trailer.
7. Verify that the trailer lights are properly connected.
8. Verify that the load(s) are secured to the trailer.

Starting Procedures

Unfolding the Spray Boom:

- Before unfolding the boom make sure that the supplied support mast tube and cable are installed. Install the support mast to the outer most hole on the mounting bracket. Secure the mast tube with the clevis pin. See Figure 2.3.

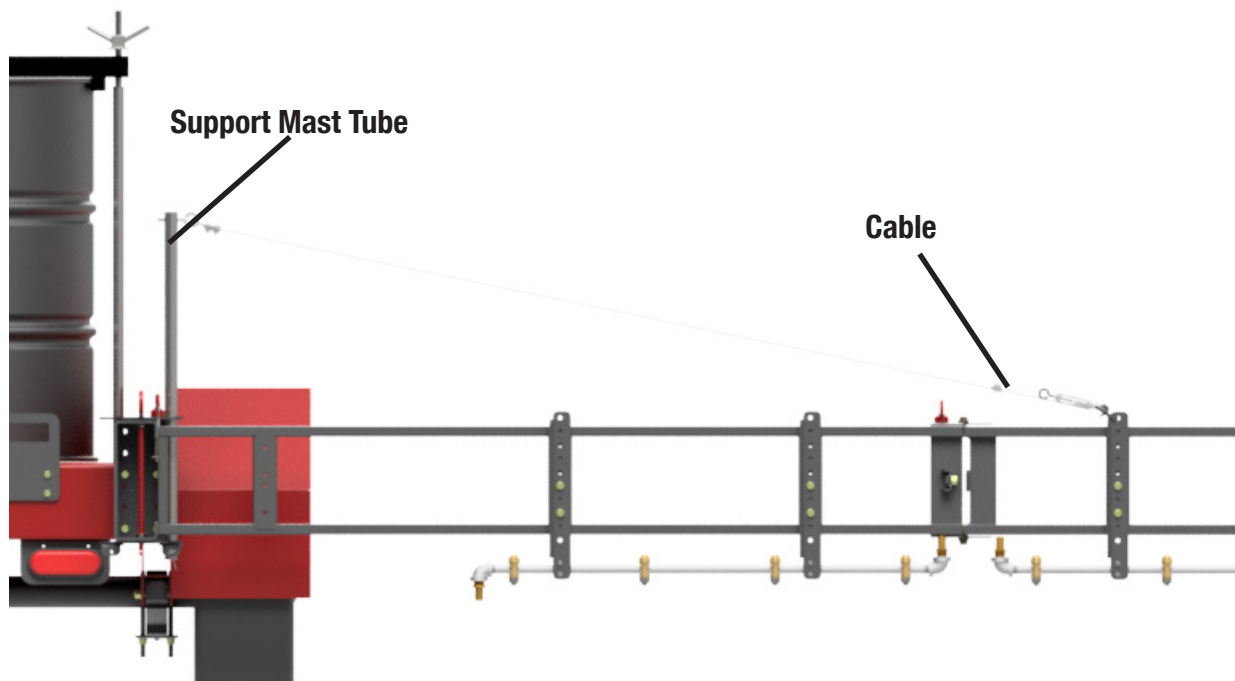


Figure 2.3: Support Mast and Cable

SECTION 2 OPERATIONS

Start-Up Procedure

Starting Procedures Continued

Unfolding the Spray Boom:

- Pull the two hitch pins and then unfold the boom. The spray boom is also reversible, there are mounting brackets on each side of the trailer that the spray boom can be fastened to.

NOTE: If the spray boom switches sides the nozzles will be facing a different direction. The operator can swap the nozzle tube assemblies to change their direction.



Figure 2.4: Spray Boom

Powered Sprayer Operation

Check that the two spray control valves are in the closed position and that the bypass and suction tubes are properly connected before attempting to start the engine. See Figure 2.5.

To start the power sprayer's engine (Refer to the engine manual for more details):

1. Turn the fuel valve to the ON position
2. Move the choke lever to the CLOSE position
3. Move the throttle lever slightly to the left
4. Pull the recoil starter on the engine.
5. Allow the engine to warm up, and then move the throttle all the way to the left.

Once the engine is running, turn the appropriate valve handle to the open position.

- To use the spray boom turn the handle labeled **L** to the right, make sure that the spray gun valve **R** is closed.
- To use the spray gun turn the handle labeled **R** to the left, make sure that the spray boom valve **L** is closed.

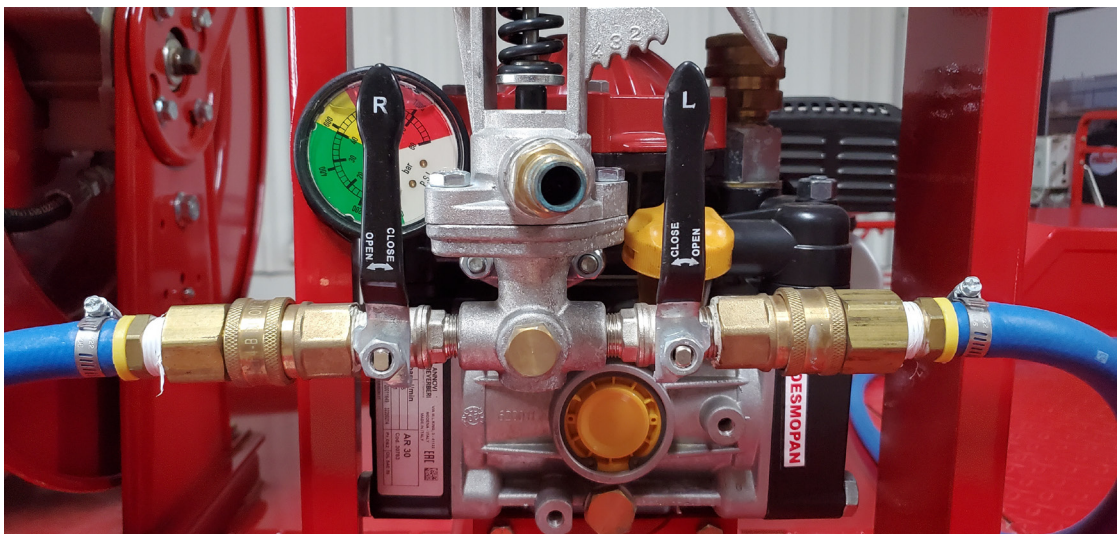


Figure 2.5: Spray Control Valves, closed

! NOTE

To turn off the engine, move the throttle lever fully to the right and move the fuel valve to the OFF position

SECTION 3 SERVICE

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SECTION 3 SERVICE

Periodic Maintenance

Periodic Maintenance

The list below contains basic sprayer and engine maintenance. Refer to engine manufacturer's Operation Manual for additional information on engine maintenance. A copy of the engine Operator's Manual was supplied with the machine when it was shipped.

Check Fuel Level	Daily
Check Air Filter- Replace as needed	Daily
Check and Tighten External Hardware	Daily
Change Engine Oil	100 hrs.
Replace Spark Plug	300 hrs.

Proper Maintenance and Operation for Gear Reducer, 9910 D30 Pump and Control Valve

1. When changing oil in the Gear Reducer, remove the drain plug (A) located on the bottom of the Reducer. (refer to Fig. 1) After the oil has completely drained, replace drain plug (A) and tighten. To fill, remove side level plug (B) and vent plug (C). (refer to Fig. 1) Fill until the gear lube is no higher than the mark on the dipstick. After proper oil level has been obtained replace plugs.

USE 90W GEAR LUBE TO FILL GEAR CASE

2. Check oil level in pump daily. Be sure oil is halfway up to the clear oil sight tube (D). If it is not, fill to the correct level using a high-grade, non-detergent, SAE 30 weight oil. This will help prolong the pump life. (refer to Fig. 2)
3. Check the charge pressure (E) on the pulsation dampener before starting the pump. The pressure is checked with a standard automotive air gauge. The pressure should be at approximately 20% of the maximum operating pressure. (refer to Fig. 3)
4. On the pump you can adjust the pressure by clamping the relief valve adjustment lever (F) down. With the bale hook in the number one position the pressure is about 100 psi; number two is about 250 psi; number three is about 450 psi; number four is about 550 psi. These pressures can be adjusted by using the fine adjustment knob (G) located on top of the relief valve spring. The fine adjustment knob can be rotated when the relief valve lever is in the up position. (refer to Fig. 3)

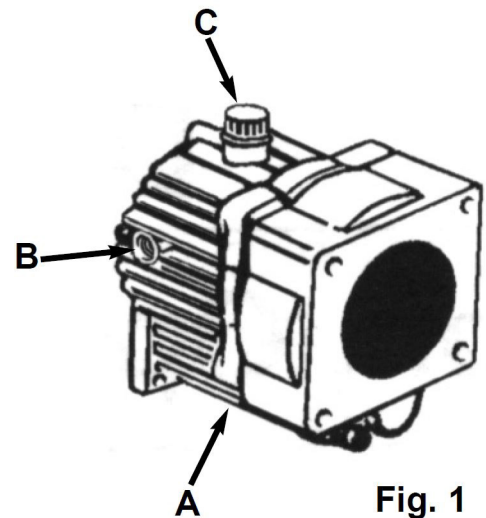


Fig. 1

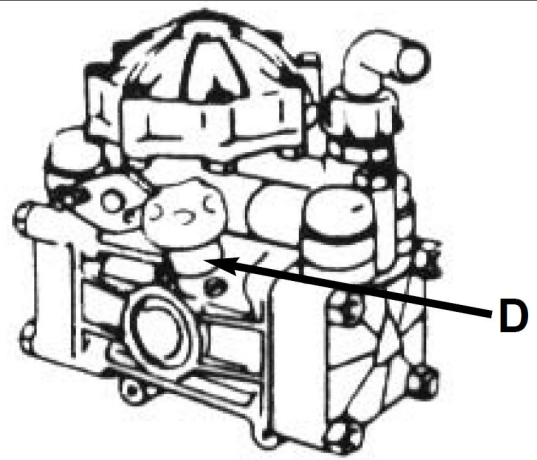


Fig. 2

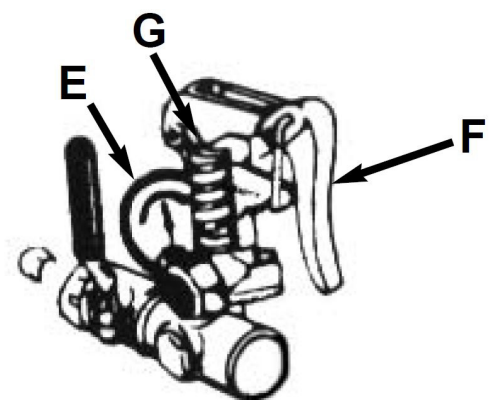


Fig. 3

SECTION 3 SERVICE

Troubleshooting

Area	Malfunction	Possible Cause	Corrective Measure	Ref.
Engine	Engine does not start, or is difficult to start	Blown fuse	- Replace fuse	
		Bad connection or breakage in the wiring	- Contact your AEC dealer	
		Out of fuel	- Fill fuel	
		Air is in fuel	- Contact your AEC dealer	
		Engine fouled	- Wait a while and try starting again	
		Insufficient or wrong oil	- Fill or change oil	
		Dirty or damaged spark plug	- Clean or replace spark plug	
		Contamination in fuel system	- Contact your AEC dealer	
		Other (other than above)	- Contact your AEC dealer	
	Engine stalls	Out of fuel	- Fill fuel	
		Cold engine	- Warm up the engine	
		Other (other than above)	- Contact your AEC dealer	
	Engine stops abruptly	Out of fuel	- Fill fuel	
		Piston seizure due to insufficient or bad oil	- Contact your AEC dealer	
		Other (other than above)	- Contact your AEC dealer	
	Engine does not stop	Electrical malfunction	- Contact your AEC dealer	
		Other (other than above)	- Contact your AEC dealer	
	Idling is not stable	Insufficient intake air (clogged air cleaner)	- Clean or replace the air cleaner	
		Other (other than above)	- Contact your AEC dealer	
	Poor power or acceleration	Bad fuel	- Change fuel	
		Wrong oil (improper viscosity)	- Change to suitable oil	
		Accelerator (throttle) is not properly adjusted	- Contact your AEC dealer	
		Insufficient intake air (clogged air cleaner)	- Clean or replace the air cleaner	
		Excessive load	- Reduce load	
		Other (other than above)	- Contact your AEC dealer	
	Irregular noise or vibration from or around the engine		- Contact your AEC dealer	
	Excessive oil consumption		- Contact your AEC dealer	
	Engine overheats	Insufficient amount of engine oil	- Fill oil	
		Cooling fan is clogged or blocked	- Clean	
		Other (other than above)	- Contact your AEC dealer	
	Excessive fuel consumption	Clogged air cleaner	- Clean or replace air cleaner	
		Other (other than above)	- Contact your AEC dealer	

Area	Malfunction	Possible Cause	Corrective Measure	Ref.
Engine	Black smoke comes out of exhaust	Bad fuel	- Change fuel	
		Clogged air cleaner	- Clean or replace the air cleaner	
		Choke is not fully open	- Open the choke fully	
		Other (other than above)	- Contact your AEC dealer	
	White or blue smoke comes out of exhaust	Engine oil level is too high	- Adjust the oil level	
		Other (other than above)	- Contact your AEC dealer	
Safety Devices	Lamp does not light	Blown bulb	- Replace	
		Blown fuse	- Replace	
		Other (other than above)	- Contact your AEC dealer	
Hydraulic System	Pump does not work	Insufficient or deteriorated hydraulic fluid	- Add or change fluid	
		Other (other than above)	- Contact your AEC dealer	

Parts Manual

In order to provide a premier experience to our customers, we have moved the “Parts” section out of this manual and placed it in a separate “Parts & Decals Manual”. This will allow us to provide any changes or other important information quicker to you, the customer. See below for ways to access the “Parts & Decals Manual”.

Mobile Device:

Scan this QR code with a compatible device (cellular phone, tablet, etc.)

Computer:

Mail:

A physical copy of the parts manual can also be mailed to you upon request. Please contact Allen Engineering service department and one can be sent to you.

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MANUAL REVISION DETAIL

REVISION #	REVISION DATE	REVISION REFERENCE #	REVISION BY
-	1/22	Initial Release	MK



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