TRACK BUGGIES

AT16

SAFETY & OPERATIONS MANUAL

Manual Part #: 073424 | Revision: B
Language: English | Original Instructions

WHEEL BUGGY

SAFETY & OPERATIONS MANUAL

This manual covers the Trowel Parts listed below

Part No.	Description
074920	AT16, Allen Track Buggy, Kohler EZT740 Engine, Poly-Bucket, Filled Tires

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.

Allen Products are covered under one or more of the following patent numbers:
10,100,537; 9,068,301; 9,068,300; 8,360,680; 7,690,864; 7,114,876B1; 6,857,815B2; 6,582,153
With other Patents Pending.

Printed in U.S.A.

Table of Contents

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

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.

1. 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.
2. 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.
3. 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.
4. 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.
5. 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).
6. 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.
7. Impact damage to gear boxes is not covered under the Allen warranty and is deemed customer abuse.
8. 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.
9. 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.
10. ALLEN ENGINEERING CORPORATION'S WARRANTY POLICY WILL NOT COVER THE FOLLOWING: TAXES; 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; LOSS OF USE OF THE PRODUCT; COMMERCIAL LOSS; OR ANY OTHER CHARGES WHATSOEVER OR ANY LIABILITIES FOR DIRECT, INCIDENTAL, OR CONSEQUENTIAL DAMAGE OR DELAY.
11. 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

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
OPERATION

SECTION 3
SERVICE

Complete any warranty requirements as specified by the engine manufacturer in their instructions found inside the manual box located on the back of the riding trowel operator's seat.

Your engine and clutch is not manufactured by Allen Engineering Corporation, Inc, and therefore is not covered under Allen Engineering Corporation, Inc warranty.

Your engine manufacturer should be contacted if you wish to purchase a parts manual or a repair manual for your engine.

Refer to enclosed owners engine manual for complete OEM instructions. See your battery manufacturer for battery warranty.

Sound & Vibration Testing

Sound Pressure Level Information:
Sound pressure is “A” weighted . Measured at the operators ear position while the ride-on trowel is operating at full throttle on concrete in a manner most often experienced in “normal ” circumstances. Sound pressure may vary depending upon the condition of the concrete. Hearing protection is always recommended.

Vibration Level Information:
The vibration level indicated is the maximum RMS (Root Mean Square) velocity value obtained at the handle grip while operating the ride-on trowel on curing concrete in a manner most often experienced in “normal ” circumstances. Values were obtained from all three axes of motion. The values shown represent the maximum RMS value from these measurements.

Summary Data Of Sound And Vibration Testing			
Operator Ear SPL	Seat Vibration Average	Left Hand Vibration Average	Right Hand Vibration Average
- dB (A)	- m/sec²	- m/sec²	- m/sec²
This information was acquired from sound and vibration analysis tests conducted at Allen Engineering Corporation test facilities.			

PENDING INFORMATION

Dealer Information / Ordering Parts

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: _____ Dealer Phone #: (_____) - _____ - _____ Address: _____ City / State / Zip: _____	Salesman: _____ Salesman Phone #: _____ Additional Comments: _____ _____ _____

The "PARTS & DECALS MANUAL" contain illustrated parts lists for help in ordering replacement parts for your machine. Follow the instructions below when ordering parts to ensure prompt and accurate delivery:

1. All orders for service parts - include the serial number for the machine. Shipment will be delayed if this information is not available.
2. Include correct description and part number from the "PARTS & DECALS MANUAL"
3. Specify 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.

NOTE

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.

Model Number / Serial Number Unit Identification

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

AT 16

- **16ft³ - Bucket Capacity**
- **Allen Track**

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.

Serial Number Example

AT16 01 21 01

- **Sequence Number**
- **Year**
- **Month**
- **Model**

Unit Identification Plate Location:

An identification plate listing the model number and the serial number is attached to each unit and is located **on the inside behind the front door of the unit**. 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.

Model Number:_____

Serial Number:_____

Date Purchased:_____

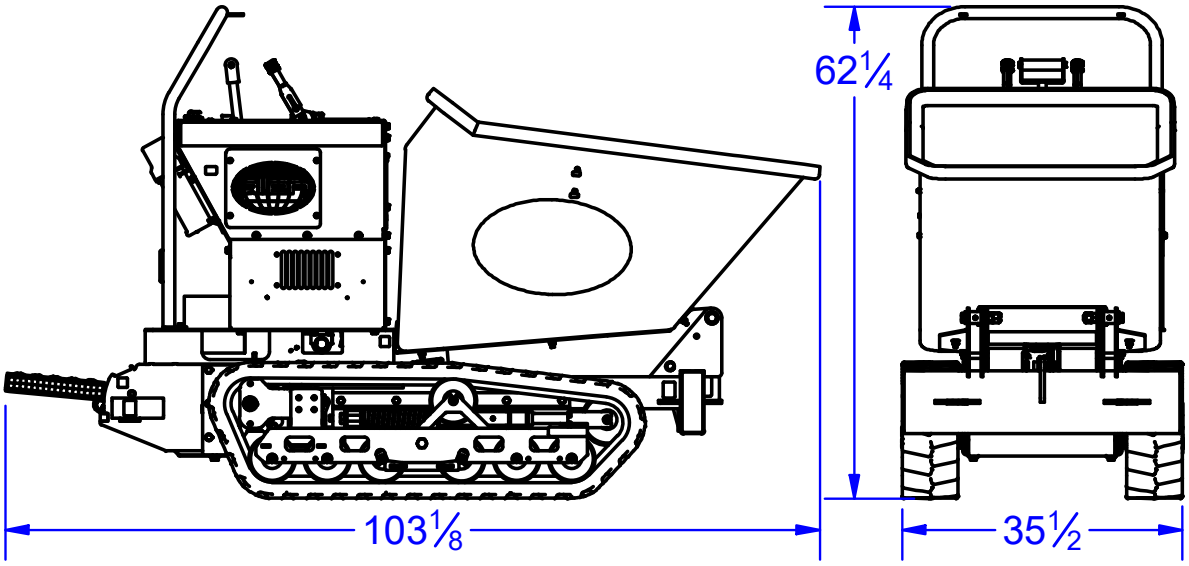
Purchased From:_____

Measurements in this manual are in standard units

Machine Features for:

- Horse Power.....25
- Fuel Capacity.....6 Gal
- Fuel Consumption (Approx.).....1.3 GPH
- Steering System.....Hydraulic
- Maximum Speed.....6 MPH
- Hydralic Capacity.....15 Gal
- No. of Lights.....2
- Height.....65-5/8”
- Length.....102-3/4”
- Width.....35-1/2”
- Dry Weight.....1600 lbs
- Full RPM.....3600

Dimensions



Engine Specifications

Kohler Engine Information

Model: EZT740

Fuel Type: . . . . . .Gasoline

Horsepower [KW]:. . . . . 25 [18.6]

Engine Type: . . . . . Air

Number of Cylinders: 2

Bore x Stroke, in. [mm]: . . . . . .3.3 x 2.7 [83 x 69]

Displacement (in^3): 45.6

Compression Ratio: 9.0:1

Cooling System: . . . . . .Fan

Direction of Rotation Rev.: . . . . . .CCW

Engine Oil Capacity in quarts: 2

Dry Weight, lbs: 91

Dimensions:

- Length, in.: 18.8
- Width, in.: 18.9
- Height, in.: 17.0

SECTION 1: SAFETY

Federal / State Warnings

⚠ WARNING

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

For more information reguarding Prop 65, please scan QR code.

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 Indicative of a 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

Hazard Symbols

Symbol	Safety Hazard
	Lethal exhaust gas hazards
	Explosive fuel hazards
	Burn hazards
 	Rotating parts/crush hazards
	Pressurized fluid hazards
	Hydraulic fluid hazards

⚠ WARNING

Potential hazards associated with the operation of this equipment will be referenced with hazard symbols which may appear throughout this manual in conjunction with safety notes.

⚠ WARNING

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.

- **NEVER** operate this machine in applications for which it is not intended.
- **NEVER** operate this machine while under the influence of drugs or alcohol.
- **NEVER** allow anyone to operate this equipment without proper training. People operating this equipment must be familiar with the risks and hazards associated with it.
- **NEVER** touch the engine or muffler while the engine is on or immediately after it has been turned off. These areas get hot and may cause burns.
- **NEVER** use accessories or attachments that are not recommended by AEC. Damage to equipment and injury to the user may result.
- **NEVER** operate the machine with the belt guard missing. Exposed drive belt and pulleys create potentially dangerous hazards that can cause serious injuries.
- **NEVER** leave machine running unattended.
- **DO NOT** run the machine indoors or in an enclosed area such as a deep trench unless adequate ventilation, through such items as exhaust fans or hoses, is provided. Exhaust gas from the engine contains poisonous carbon monoxide gas; exposure to carbon monoxide can cause loss of consciousness and may lead to death.
- **ALWAYS** remain aware of moving parts and keep hands, feet, and loose clothing away from the moving parts of the equipment.
- **ALWAYS** keep hands, feet, and loose clothing away from moving parts of the machine.
- **ALWAYS** read, understand, and follow procedures in the Operator's Manual before attempting to operate the equipment.
- **ALWAYS** be sure operator is familiar with proper safety precautions and operation techniques before using machine.
- **ALWAYS** close fuel valve on engines equipped with one when machine is not being operated.
- **ALWAYS** store the equipment properly when it is not being used. Equipment should be stored in a clean, dry location out of the reach of children.
- **ALWAYS** operate the machine with all safety devices and guards in place and in working order.

Engine Safety

⚠ DANGER

Internal combustion engines present special hazards during operation and fueling. Read and follow the warning instructions in the engine owner's manual and the safety guidelines below. Failure to follow the warnings and safety guidelines could result in severe injury or death.

- **DO NOT** run the machine indoors or in an enclosed area such as a deep trench unless adequate ventilation, through such items as exhaust fans or hoses, is provided. Exhaust gas from the engine contains poisonous carbon monoxide gas; exposure to carbon monoxide can cause loss of consciousness and may lead to death.
- **DO NOT** smoke while operating the machine.
- **DO NOT** smoke when refueling the engine.
- **DO NOT** use fuel that is more than 90 days old. Use of unmixed, improperly mixed, or fuel older than 90 days, (stale fuel), may cause hard starting, poor performance, or severe engine damage and void the product warranty.
- **DO NOT** refuel a hot or running engine.
- **DO NOT** refuel the engine near an open flame.
- **DO NOT** spill fuel when refueling the engine.
- **DO NOT** run the engine near open flames.
- **ALWAYS** refill the fuel tank in a well-ventilated area.
- **ALWAYS** replace the fuel tank cap after refueling.
- **ALWAYS** keep the area around the muffler free of debris such as leaves, paper, cartons, etc. A hot muffler could ignite the debris and start a fire.

⚠ WARNING

Poorly maintained equipment can become a safety hazard! In order for the equipment to operate safely and properly over a long period of time, periodic maintenance and occasional repairs are necessary.

- **ALWAYS** disconnect the battery before servicing the equipment.
- **DO NOT** attempt to clean or service the machine while it is running. Rotating parts can cause severe injury.
- **DO NOT** crank a flooded engine with the spark plug removed on gasoline-powered engines. Fuel trapped in the cylinder will squirt out the spark plug opening.
- **DO NOT** test for spark on gasoline-powered engines if the engine is flooded or the smell of gasoline is present. A stray spark could ignite the fumes.
- **DO NOT** use gasoline or other types of fuels or flammable solvents to clean parts, especially in enclosed areas. Fumes from fuels and solvents can become explosive.
- **ALWAYS** turn engine off and remove key from machine before performing maintenance or making repairs.
- **ALWAYS** keep the area around the muffler free of debris such as leaves, paper, cartons, etc. A hot muffler could ignite the debris and start a fire.
- **ALWAYS** replace worn or damaged components with spare parts designed and recommended by AEC Corporation.
- **ALWAYS** disconnect the spark plug on machines equipped with gasoline engines, before servicing, to avoid accidental start-up.
- **ALWAYS** switch off the power supply at the battery disconnect before adjusting or maintaining the electrical equipment.
- **ALWAYS** keep the machine clean and labels legible. Replace all missing and hard-to read labels. Labels provide important operating instructions and warn of dangers and hazards.

Lifting Safety

ALWAYS DO A THOROUGH INSPECTION OF THE SLINGS, CHAINS, AND HOOKS BEFORE ATTEMPTING TO LIFT THE MACHINE!

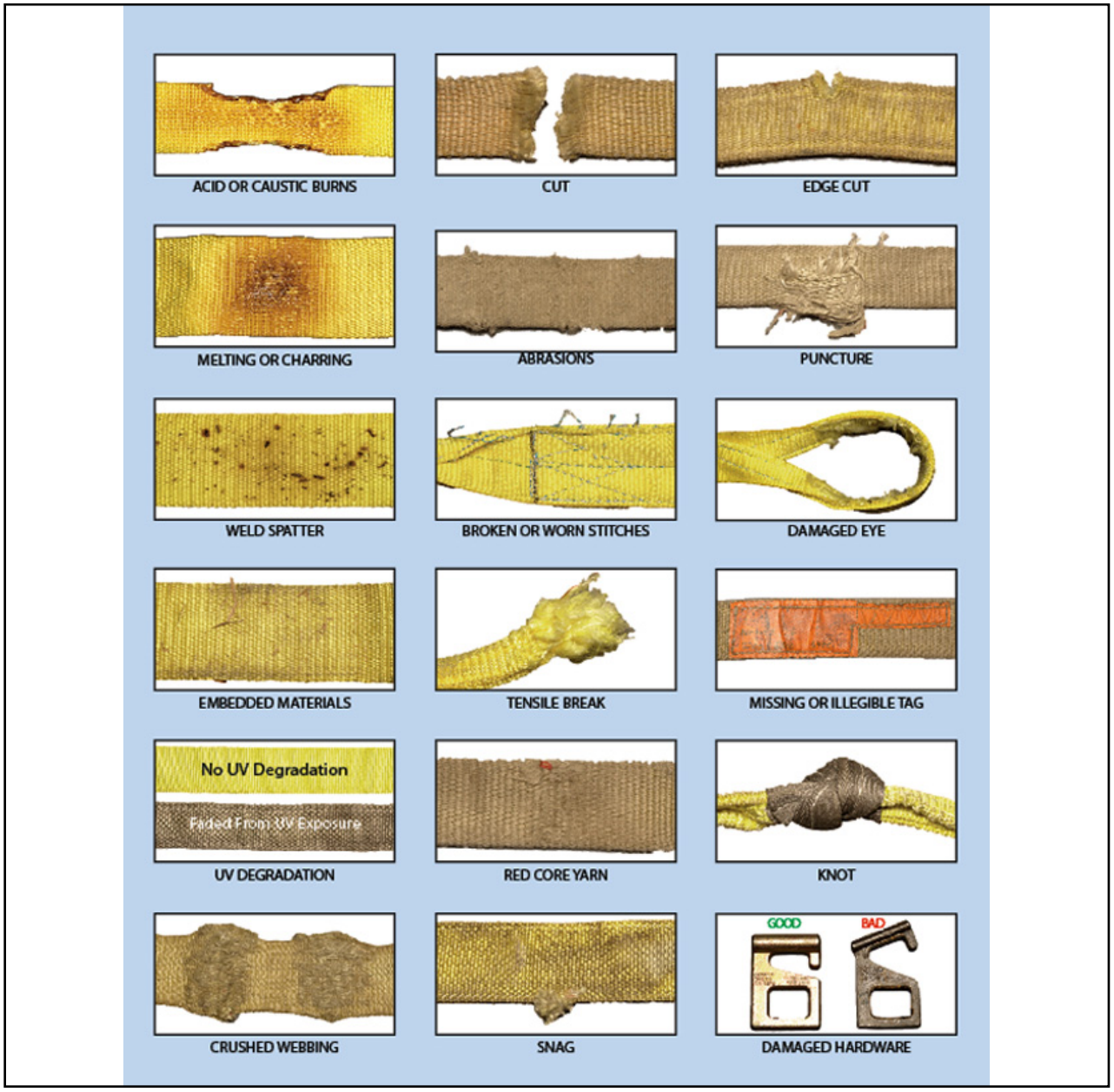
OSHA has set forth guidelines which detail the use of Rigging Equipment for Material handling. This guideline is found under

OSHA Standard Number: 1926.251

Please read and follow all guidelines found in this standard.

Removal from service. (OSHA 1926.251{e}{8})

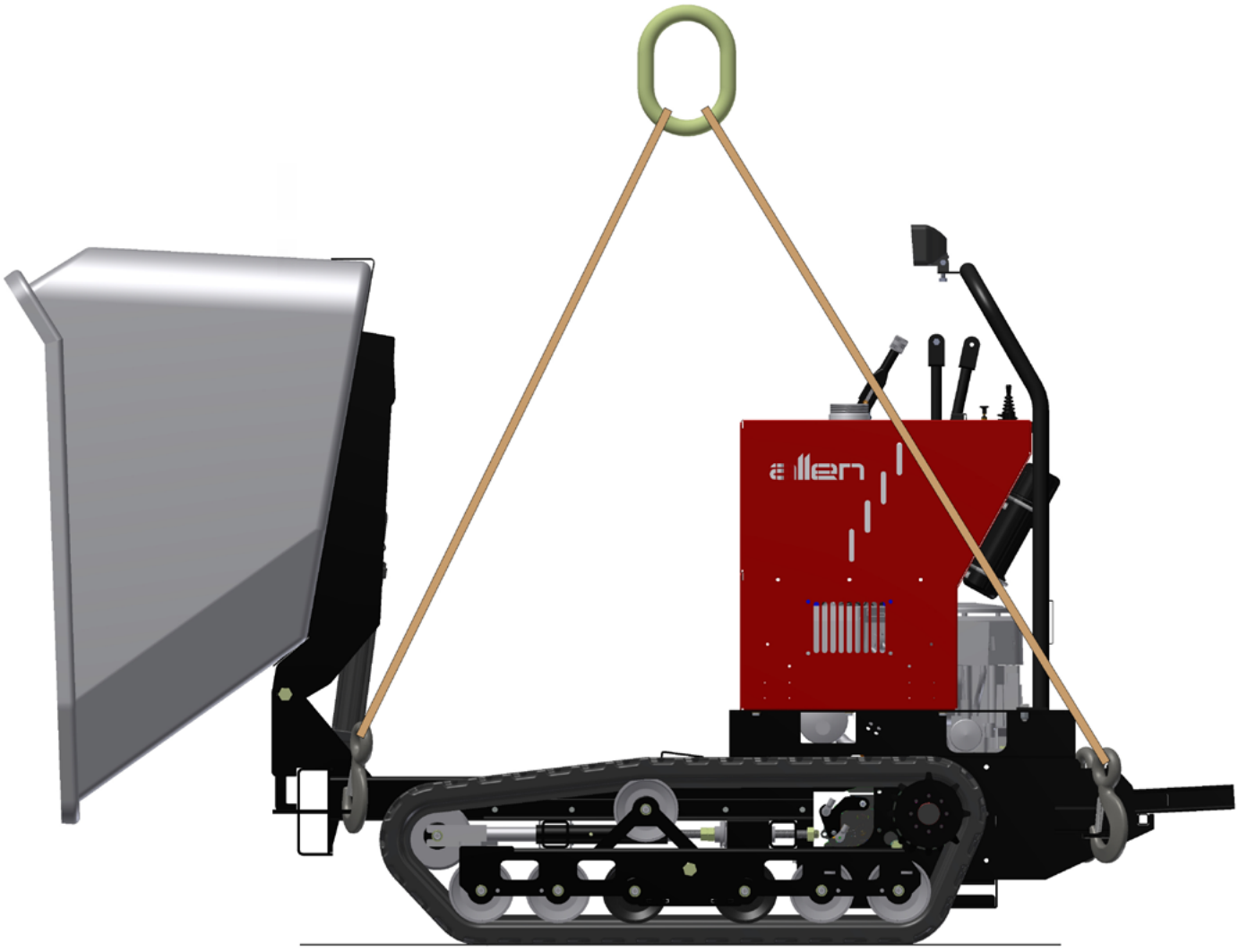
Synthetic web slings shall be immediately removed from service if any of the following conditions are present:



- When lifting the machine, all personnel must be clear of the machine.
- **DO NOT** stand near or under the machine while it is being lifted.

Lifting instructions using a hoist:

- Place slings, chains or hooks through each lifting point on the machine. Use a sling or chains connected to a central lifting device. Ensure that all lifting devices have sufficient weight-bearing capacity.
- **ALWAYS** shutdown engine before transporting.



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 machine does not move during transportation.

SECTION 2: OPERATION

Pre-Operation Instructions

Before operation each day ensure the following:

- All guards, side screens and panels are in place.
- All safety and information signs are in place and legible.
- Engine and hydraulic oil levels are correct.
- Check battery level
- Check for hydraulic leaks.
- Check all operating controls for proper operation and adjustment.
- Check speed control operation before and after starting engine for proper operation.
- Transmission oil level. Add oil as required.
- Rubber track is in good condition and working properly.
- Hand operated brake for proper operation.
- The steering, left and right.

NOTE: If there is any indication that faulty equipment exists, shutdown safely, inform the proper authority and **DO NOT** operate the power buggy until the problem has been fixed.

Remove loose objects that could interfere with operation.

Learn as much as possible about the work area before operation. Walk around the work site and inspect the terrain that you will be traveling on.

Make a note of surfaces to be avoided, including:

- Holes, Drop-offs, Banks, Ditches, Trenches, Slopes, or Undercut High Banks.
- Obstacles.
- Soft mud and standing water.
- Oil spills and slippery surfaces.

NOTE: If any of the above conditions exist in the work area, correct the condition before operating. If the condition cannot be corrected, avoid operation in the problem area. When operating on docks, ramps, or floors, check for weak spots. Clear away trash and debris. When required, check the power buggy's maximum fully loaded ground pressure weight if operating on a hollow floor system.

Pre-Operation Instructions

Watch for conditions that could cause:

- Loss of control
- A collision
- Tip-over

Check overhead clearances. Know the size of doorways and canopies. Know exactly how much clearance you have under power lines and telephone lines. All local, state/provincial, and federal regulations must be met before approaching power lines, overhead or underground cables or other power sources with any part of your power buggy. **DO NOT** operate the machine near energized power lines. **ALWAYS** contact the electrical power company when operating near power lines. The lines should be moved, insulated, disconnected, or de-energized and grounded before operating in the area. Keep all parts of the machine at least 50 feet away from power lines.

Before you operate, know how and where you will travel, turn, and pickup loads.

Choose a smooth level route to prevent possible tip over or loss of load. If possible, avoid crossing the following: Ruts, ditches, curbs, and exposed railroad tracks.

Note: When these conditions cannot be avoided travel very slowly and with extreme caution. Know where there are any blind corner conditions on the work site. Before turning a blind corner, stop, and then proceed slowly.

ALWAYS maintain safe distances between the power buggy and other equipment that may be on the work site.

Know the weights of all loads you may be expected to transport before attempting to load them. Avoid loads of loose material if possible. To avoid injury to personnel or damage to nearby equipment and fixtures watch front and rear machine clearance when driving straight and when turning.

Choose a level, parking area out of traffic to park the power buggy at the end of the day. If the area is on a slope or incline, position the power buggy at right angles to the slope, set the hand brake, lower the bucket onto the frame assembly.

For safe operation of the power buggy you must be a qualified and authorized operator. To be qualified, you must understand the written instructions supplied in the operator/maintenance manual, have training (including actual operation of this machine), and know the safety rules and regulations for the jobsite.

An operator must not use drugs or alcohol which can affect his alertness and coordination. An operator on prescription or over-the-counter drugs needs medical approval to safely operate these machines.

Starting Instructions

- Make sure that the parking brake is fully applied and in the locked position.
- Make sure fuel valve is open on fuel tank.
- **Note:** If engine is cold, move choke lever to close position. If engine is hot, set choke to open position.
- Move the throttle lever slightly towards the bucket.
- Pull the E-stop button out.
- Turn the key switch to “ON” position.
- Hold switch in “START” position until engine starts. Do not hold switch in “START” position for more than 5 seconds.
- **Note:** If the engine does not start, wait 10 seconds, and turn switch to “START” again.
- When engine starts, allow switch to return to “ON” position.
- As the engine warms up, gradually move the choke lever to the OPEN position.
- Position the throttle lever to the maximum engine speed of 3600 rpm, release the parking brake and move into operation.
- Read the instructions in the Kohler engine manual located in the plastic tube on the front panel of the machine. When using this machine in cold weather, always allow the engine to run at idle speed for at least 5 minutes to warm the engine and hydraulic oil to operating temperatures.

Operating Instructions

To drive and stop equipment:

A. With parking brake engaged and directional control in center position, increase the engine speed to full throttle using the throttle lever on the left side of the control panel.

B. Release the parking brake.

C. Select the operating range by placing the control handle into either the **WORK** or **TRANSPORT** position. Use **TRANSPORT** position only when the machine is unloaded and operating on a smooth level surface.

D. Select the desired direction of travel with the **DIRECTIONAL CONTROL HANDLE** located in the center of the control panel. Push the handle forward to move forward or pull it toward you to move backward. The speed of the machine will be determined by how far you move the handle. Steer the machine by twisting the handle in the desired direction.

E. To slow or stop the machine, move the **DIRECTIONAL CONTROL HANDLE** toward the center position. When the machine is stopped for any reason, engage the parking brake.

To operate the bucket:

A. To dump the bucket, depress the front side of the dump control rocker switch and hold until the bucket has reached the desired angle.

B. To retract the bucket, depress the back side of the dump control rocker switch and hold until the bucket has returned to the down position.

To engage the parking brake, pull the handle back toward the operator until it locks. To disengage the brake, push the handle forward.

DO NOT TURN THE BUGGY WHEN TRAVELING ON A GRADE. TRAVEL IN A STRAIGHT LINE EITHER UP OR DOWN THE GRADE

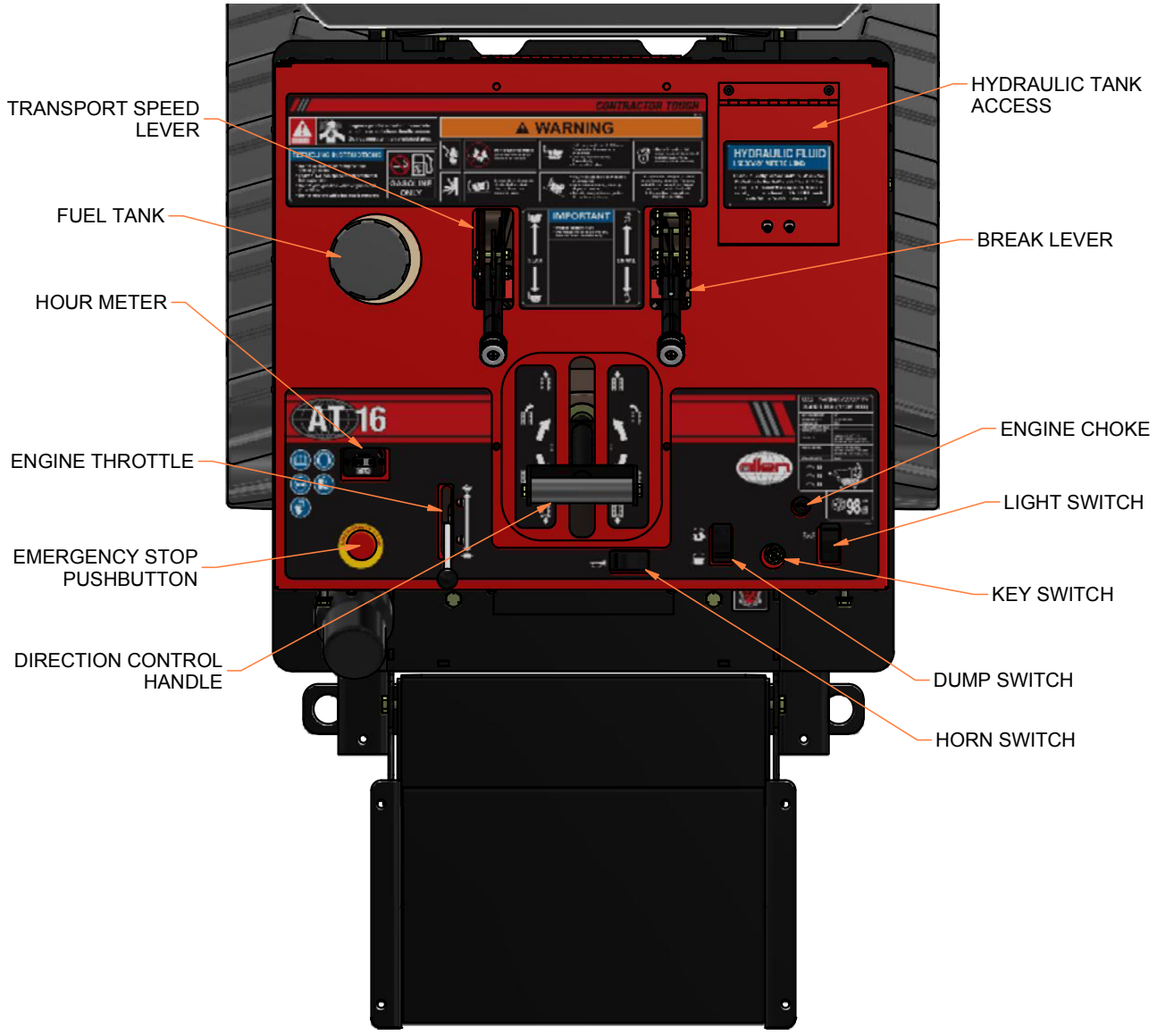
WHEN THE BUCKET IS EMPTY, TRAVEL UP GRADES BACKWARDS AND DOWN GRADES FORWARD KEEPING THE BUCKET ON THE DOWNHILL SIDE

WHEN THE BUCKET IS LOADED, TRAVEL UP GRADES FORWARD AND DOWN GRADES BACKWARDS KEEPING THE BUCKET ON THE UPHILL SIDE. NEVER ATTEMPT TO CLIMB GRADES GREATER THAN 20°

- Keep personnel clear of the buggy during travel.
- Do not allow anyone to stand/pass in front of the buggy during travel.
- Do not approach personnel standing in front of fixed objects. Do not allow others to ride on the buggy.
- Test the controls for proper operation. Be certain you can control both speed and direction before moving.
- Keep both hands on the steering handle during travel.
- Avoid sudden starts, stops and direction changes.
- Ensure that all surfaces are capable of supporting the buggy and load.
- Look for and avoid oil spills, wet or slippery surfaces that may cause loss of control.
- Maintain clearances from obstacles.
- Make sure aisle, ramps, doorways and passages are clear.
- Operate the controls smoothly. Don't jerk the steering control.
- **NEVER** cowboy or play games with the machine.
- **NEVER** attempt to work the controls except from operator's position at the rear of the machine.
- **NEVER** leave the power buggy unattended with a bucket or platform in the raised position.
- **IMPORTANT**: If the engine has been under heavy load, operate the engine at 1/2 to 3/4 throttle for three to five extra minutes before stopping the engine. Cool down applied when needed will extend engine life.
- Slow down for turns, ramps, dips, uneven, or slippery surfaces and in congested areas.
- Avoid excessively steep slopes or unstable surfaces. If you must drive on a slope, proceed with extreme caution. **DO NOT**, under any circumstances, drive across excessively steep slopes.
- If possible, plan to load, unload, and turn on flat, level ground.
- Be sure there is enough clearance for traveling. Watch the front and side clearances when turning.
- Handle only stable and properly arranged loads. When handling off-center loads which cannot be centered, operate with extra caution.
- Handle only loads within the capacity of the buggy.
- Buggy should be operated at full speed only when traveling on a flat and level surface. When traveling on surfaces that are not flat and level, **DO NOT** exceed a creep speed of 10 feet in 5 seconds (120 feet per minute or 1.36 miles per hour), because the buggy does not have a speedometer, always apply good judgment when determining a safe and proper creep speed.

Operating Instructions

- Do not ride on buggy if the buggy is to travel on uneven/rough terrain. Instead, raise and secure the platform and walk behind the buggy. Check to make certain that the mounting bolts are sufficiently tight to retain it in that position. Do not exceed creep speed.
- Do not dump buggy when facing downhill on slope.
- Do not stand in front of or alongside the buggy where you intend to unload.
- Do not dump buggy towards other personnel.
- Do not touch, lean on or reach through the dump mechanisms
- **NEVER** operate machine on side slopes. The machine may roll over, even on stable ground.



SECTION 3: SERVICE

SECTION 3
SERVICE

Maintenance Instructions

Maintenance described in this section represents minimum requirements for continuous satisfactory operation of the machine.

Because improperly maintained machines are hazardous, it is extremely important that only qualified mechanics perform maintenance work.

It is imperative that only genuine AEC parts are used if replacement is needed as substituted parts in critical areas may place the operator at risk.

It is recommended that a regular maintenance schedule be followed for mechanical adjustments as well as for lubrication.

Use a preventative maintenance program to catch and correct many serious problems before they occur. The preventative maintenance schedule contained herein gives a daily, weekly, monthly, semi-annually, annually, and break-in 100 hours minimum requirement to keep your buggy running for years. The lubrication chart contained herein is one part of buggy preventative maintenance.

Because regular maintenance cannot be controlled by the manufacturer or by the distributor, it must ultimately be the responsibility of the owner.

Your AEC dealer stands ready to assist in the event of operational difficulties. However, most adjustments and/or repair can be readily performed by the user.

The instructions provided in this section will facilitate the maintenance of the AEC equipment to operate at peak efficiency.

- **Engine Oil Level Check**
  ALWAYS check the engine oil dipstick before using the buggy. At a minimum check engine oil once per day. Follow the Maintenance and Lubrication Chart contained herein.
- ALWAYS use a good quality engine oil.
- The engine oil fill is the same as the oil dipstick hole and is located on the engine block opposite the crankcase drain hose and plug.
- Use oil grades appropriate to the surrounding temperature range as shown below. See **GRADE OF OIL CHART** under **CHANGING ENGINE OIL** section below.
- Remove engine oil dipstick to access oil fill hole. To fill engine with oil use a long funnel to avoid spilling or use an oil can filled with the proper weight small engine oil and squirt oil directly into fill hole. Check oil level with dipstick. Fill the crank case to the full mark on the dipstick. **DO NOT** overfill.
- Replace dipstick.

Change Engine Oil

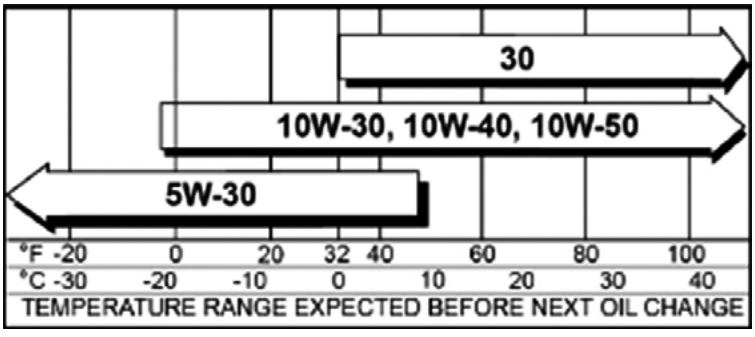
Important: Engine oil is best drained when the engine is warm. Warm oil flows freely and carries away more impurities than cold oil.

NOTE

Note: Change engine oil every **25 hours** of operation. On a new engine, change oil after the first **5 hours** of operation.

Note: Buggy must be on a level surface when changing and checking oil.
Apply and lock the parking brake and block each side of the track.

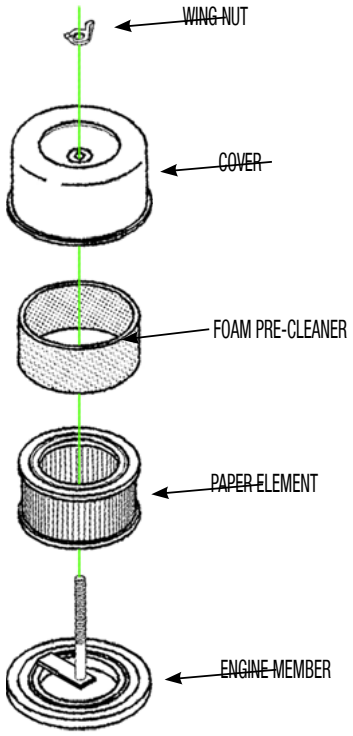
- Note: Viscosities shown in the chart below may be used when the average temperature in your area is within the indicated range.
- SAE 30 is recommended for general, all-temperature use (above 32°F (0°C)).



Air Filter Maintenance

Pre-Cleaner Maintenance Procedure

This engine is equipped with a large capacity, dual element air filter—an oiled, foam pre-cleaner surrounds a high density paper element.



Every **25 hours** of operating time (more often under extremely dusty or dirty conditions) the oiled, foam pre-cleaner needs washing and oiling. Remove, wash, dry and oil the pre-cleaner and replace as follows:

- Raise the bucket.
- Unbolt and remove the rear engine housing cover and access the air filter from the rear. Remove wing nut, air filter cover and paper element with foam pre-cleaner.
- Remove foam pre-cleaner from the paper element.
- Carefully check both elements for holes or tears and replace if damaged.
- Wash the foam pre-cleaner element in a solution of household detergent and warm water. Then, rinse thoroughly removing all soap and squeeze out excess water; **DO NOT** wring. Allow the element to dry thoroughly.

Note: The engine will smoke during initial start-up if too much oil is left in the foam.

- Soak the foam pre-cleaner element in a clean engine oil, and squeeze out the excess oil. (Use paper towel or similar absorbent tissue to blot/squeeze out excess oil.) **DO NOT** wring.
- Install pre-cleaner over paper air filter element.
- Install the air filter, air filter cover and wing nut. The wing nut must be finger tightened 1/2 to 1 full turn after the nut contacts cover. **DO NOT** over tighten.
- Install the engine housing cover.
- Lower the bucket.

Air Filter Maintenance

Paper Element Maintenance Procedure

Every **100 operating hours** (more often under extremely dusty or dirty conditions) clean or replace the paper element as follows:

- Raise the bucket.
- Unlatch and remove the engine housing cover and access the air filter from the front. Remove wing nut, air filter cover and paper element with foam pre-cleaner.
- Remove foam pre-cleaner from paper element.
- Clean the foam pre-cleaner following the Pre-Cleaner Maintenance Procedure.
- Tap the element lightly several times on a hard surface to remove excess dirt, or blow compressed air through the filter from the inside out. **NEVER** try to brush the dirt off; brushing will force dirt into the fibers. Replace the paper element if it is excessively dirty with **Part# 45 083 02**.
- When dirty or damaged, replace with the correct part number filter element. Carefully handle new element– **DO NOT** use if surfaces are damaged.
- With air filter disassembled, check the filter base plate to make sure it is secure, not bent or damaged. Check the cover and paper element seals. Damaged components could allow unfiltered air into engine causing premature wear and failure.
- Install the oiled, foam pre-cleaner around the paper filter element.
- Install the air filter, air filter cover and wing nut. The wing nut must be finger tightened 1/2 to 1 full turn after the nut contacts cover. **DO NOT** over-tighten.
- Install the engine housing cover.
- Lower the bucket.

Scheduled Maintenance Times

Maintenance Schedule					
Item	**Daily**	**Weekly**	**Monthly**	**Annually**	**100 Hours**
Check external hardware	X				
Check hydraulic oil level	X				
Check hydraulic fittings and hoses	X				
Apply grease to track rollers	X				
Apply grease to bucket hinge			X		
Check all operational controls	X				
Tighten all bolts and nuts.			X		
Grease steering assembly cartridge bearing					
Tighten any loose bolts, nuts, etc					X
Inspect visually for loose or missing parts	X				
Wash wet concrete of machine	X				
Clean fuel sediment bowl		X			
Inspect battery (fill with water if needed)		X			
Change transmission oil				X	
Inspect drive belts			X		
Inspect all rollers and tracks				X	
Check all adjustments					X
Change the engine oil				X	
Check paper air cleaner element		X			
Thoroughly clean machine				X	
Change the hydraulic oil					X

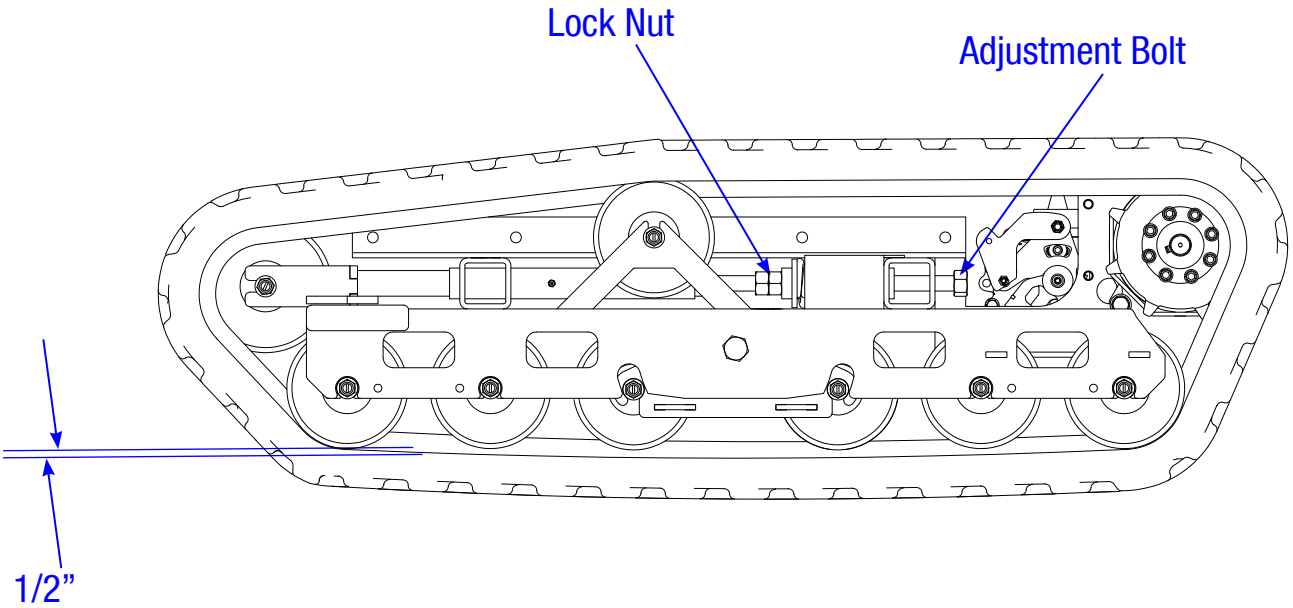
Track Tension Adjustment

NOTE *The track stretches during its life cycle and needs to be adjusted regularly.*

Hoist one side of the machine so that the buggy is parallel to the ground.

Inspect the clearance between the track and the second wheel to be approximately 1/2” [12.7mm]. Adjust the tracks by loosening the lock nuts and tightening the adjustment bolt to the desired dimension. After the desired adjustment has been made, re-tighten the lock nut.

Lower the machine.



Filter Replacement

AIR CLEANER PAPER ELEMENT
PART #: -

ENGINE OIL FILTER
PART #: -

ENGINE FUEL FILTER
PART #: -

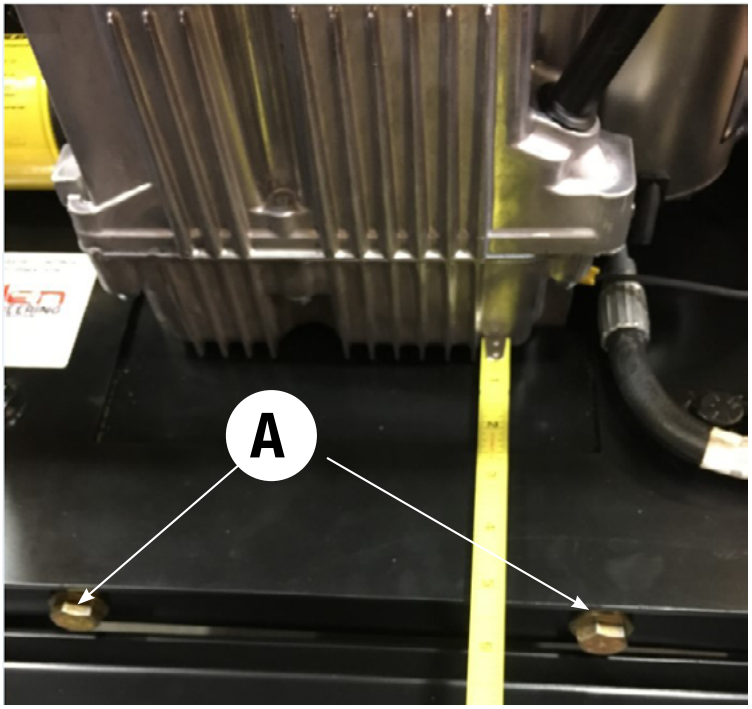
HYDRAULIC OIL FILTER
PART #: 046730

FILTER MAINTENANCE KIT

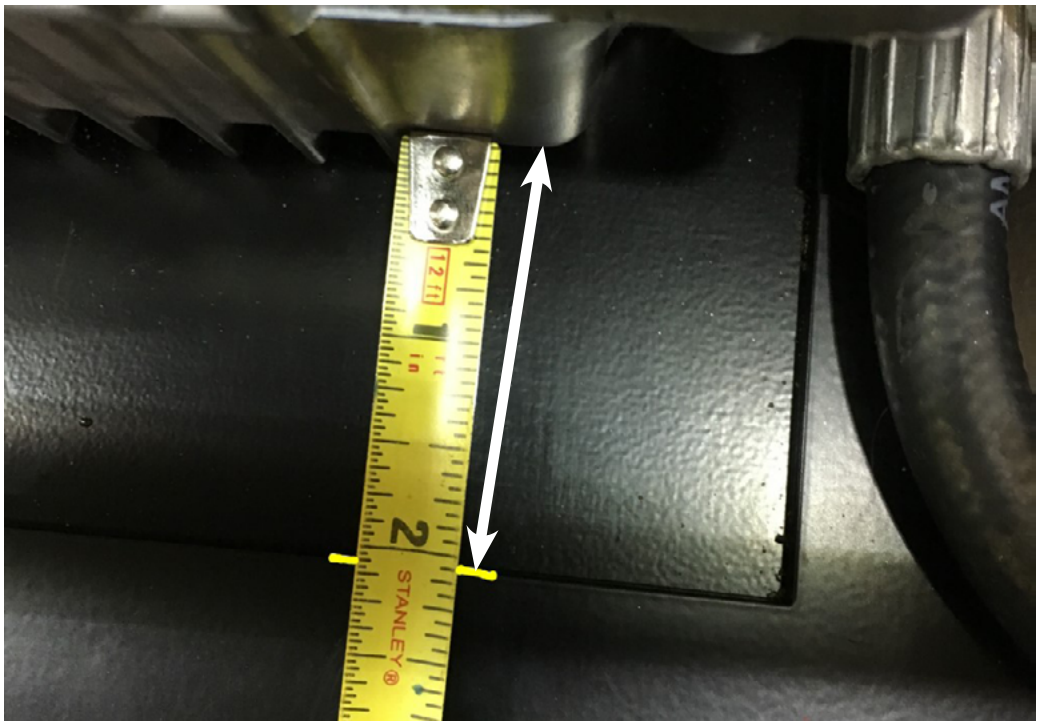
Includes:

- Air filter: Part # - 057991
- Pre-cleaner: Part # - 057992
- Oil filter: Part # - 057994
- Fuel Filter: Part # - 057993
- 10W-30 Oil: Part # - N/A (qty: 2-quarts)
- Spark Plug: Part # - 12 132 02 (qty: 2)

Engine Belt Tension Adjustment

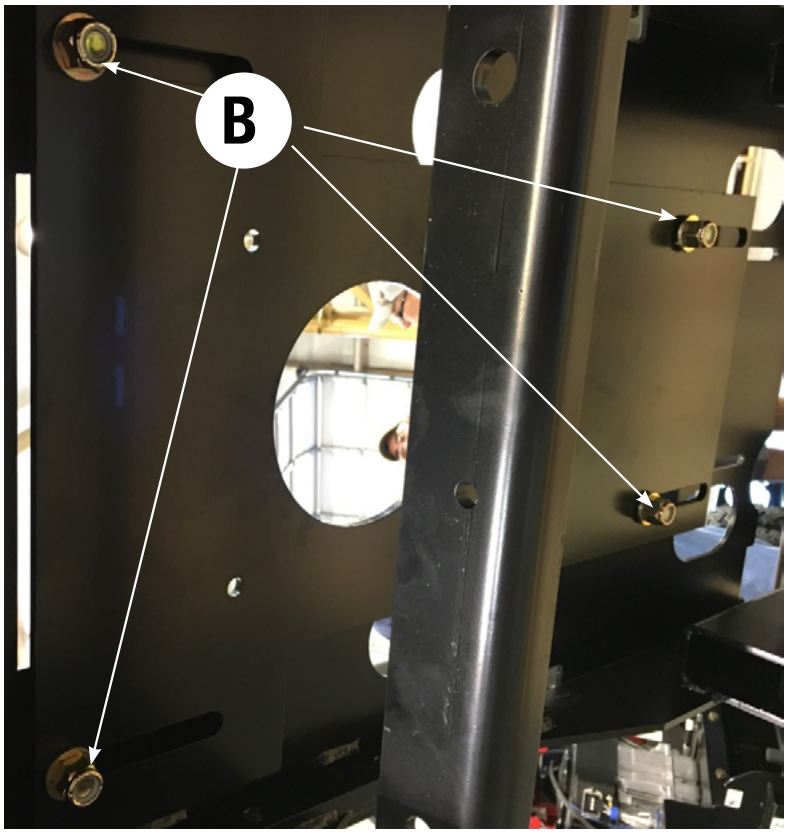


1. To tension engine belts use the 2 engine belt tensioning bolts. (A)
2. Engine Belt Tensioning Specifications are 2-1/8”.



Engine Belt Tension Adjustment

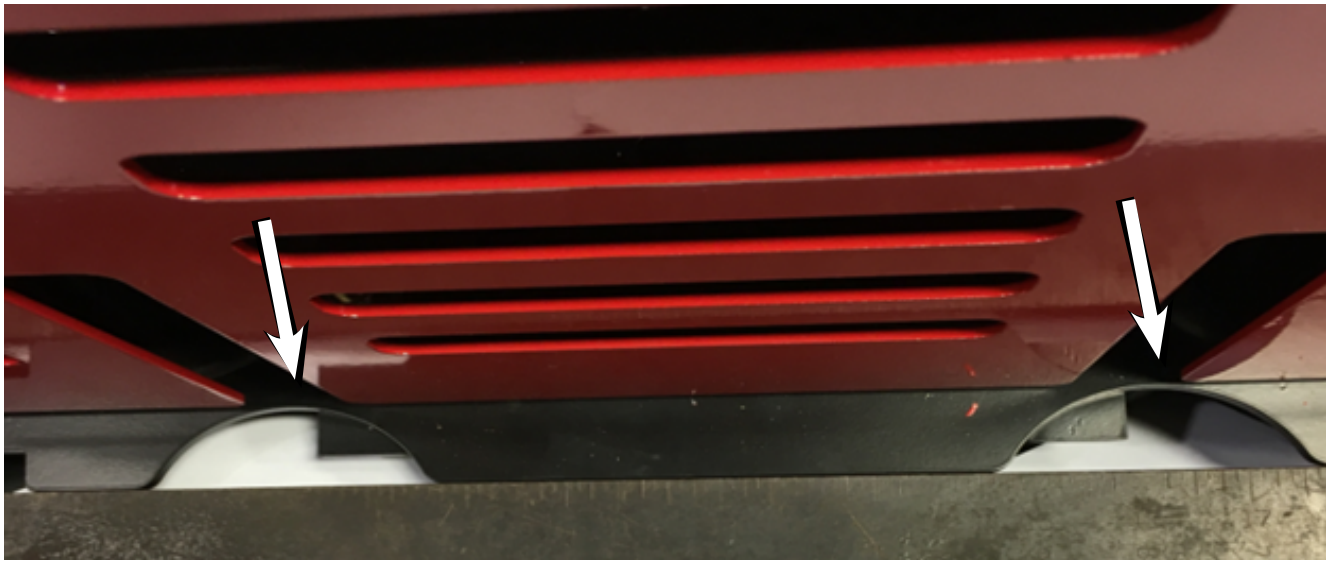
1. When tensioning engine belts place a tape measure on the Main Frame as pictured above. The end of the tape measure will rest against the engine block.
2. There is a recess in the Main Frame for the Engine plate as indicated in picture above with a yellow line. This is where you will get your tensioning specification of 2 1/8”.
3. After setting Engine belt tension to 2-1/8” you will then tighten up the engine plate adjustment bolts (B) at the bottom of the Engine Mount Plate using a ¾” wrench. After tightening nuts on plate you will then tighten up the Jam nuts on the inside of frame for Belt Tensioning Bolts.



4. Belt Tensioning Procedure is complete.

Reverse Procedure for belt removal.

Auxiliary Belt Tension Adjustment



1. Place straight edge on the edge of the framework. Notice the arrows that point to the two half moon cut-outs in the framework, use the cut-outs as a guideline for tensioning the Auxiliary Pump.
2. The arrows in picture above point to the corner edges of the pump mounting

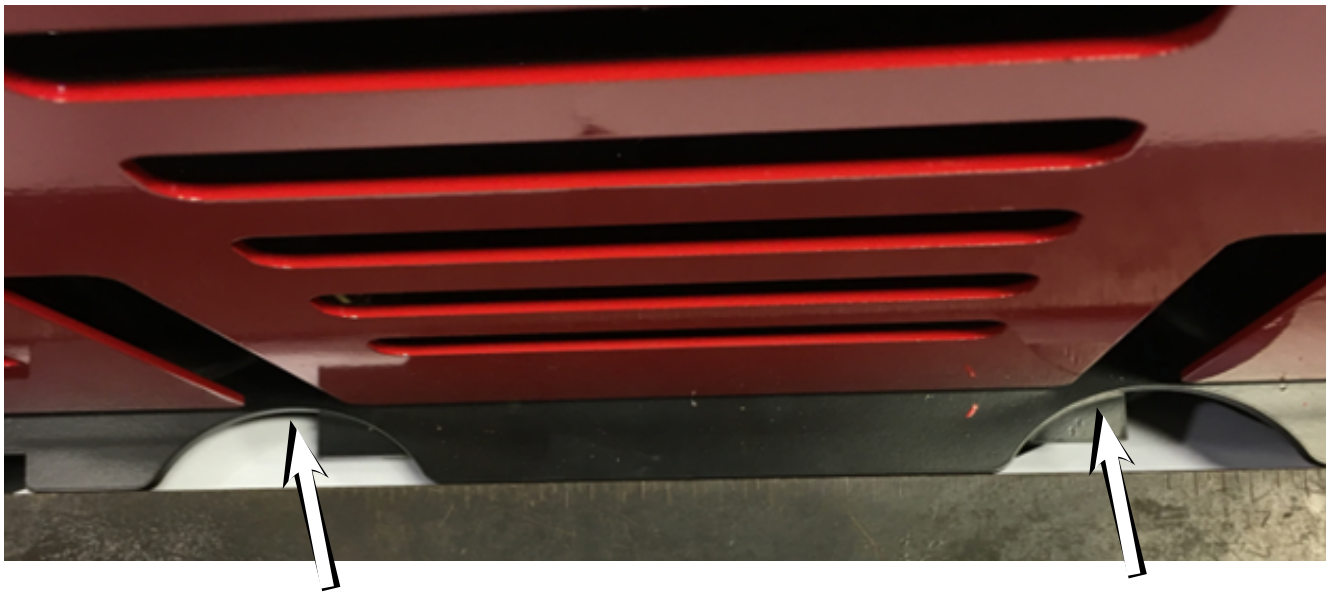
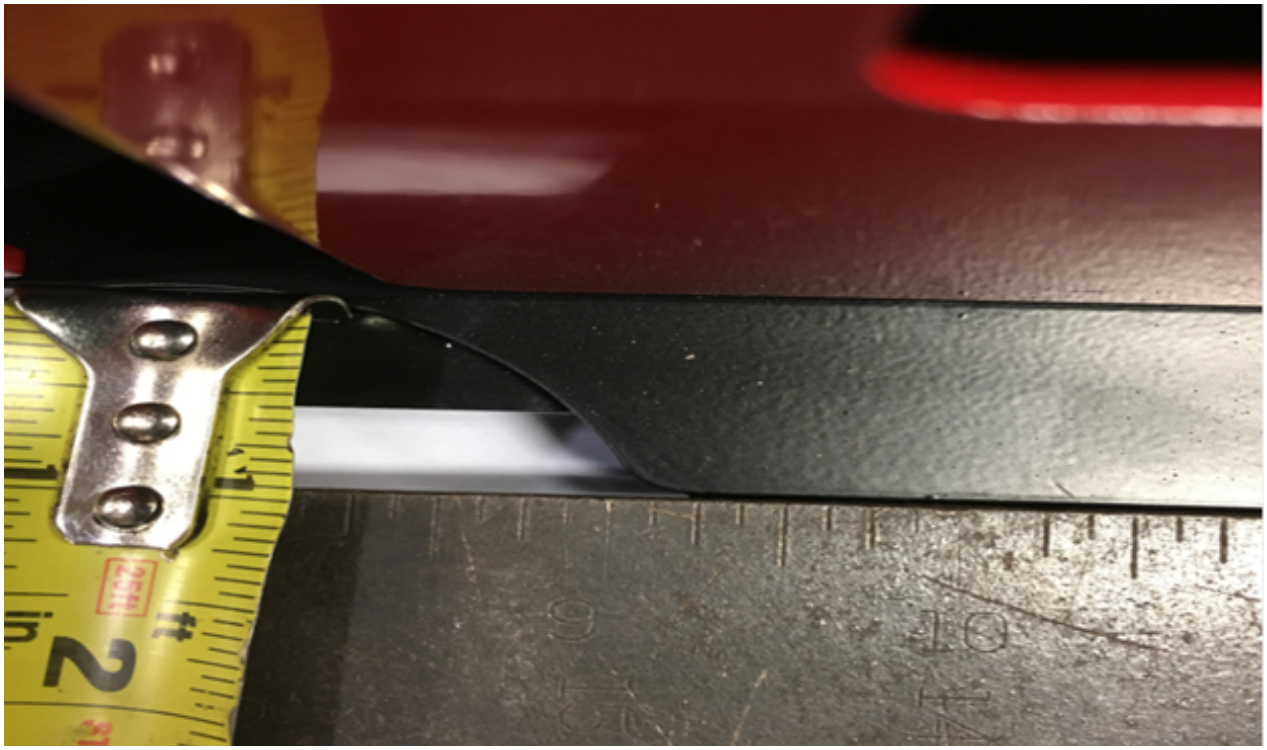


plate.

Auxiliary Belt Tension Adjustment



1. Place a tape measure against the back side of cut-out and measure ½” to the corner edge of the pump mounting plate for desired Auxiliary Pump belt tension.
2. **Auxiliary Pump Belt tension must be set before setting Engine / Transmission Drive belt tension.**

Troubleshooting

Area	Malfunction	Possible Cause	Corrective Measure	Ref.
Engine	Engine does not start, or is difficult to start	Battery is discharged	- Add battery fluid - Charge the battery - Replace the battery	
		Battery cable is disconnected	- Connect battery cable	
		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	
		Parking brake is not engaged	- Engage brake lever into the “lock” position	
		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 siezure 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	
		Loose drive belt	- Adjust	
		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	
Drive Train	Machine does not move	Parking brake is applied	- Release the parking brake	
		Excessive load	- Reduce load	
		Other (other than above)	- Contact your AEC dealer	
	Irregular noise or heat is observed around the track		- Contact your AEC dealer	
Brake	Brake does not work well	Not properly adjusted	- Adjust	
		Brake is wet with water	- Apply brake a few times to dry	
		Other (other than above)	- Contact your AEC dealer	
Track	Track does not move smoothly	Not properly adjusted	- Adjust	
		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	Dump does not work	Insufficient or deteriorated hydraulic fluid	- Add or change fluid	
		Loose hydraulics belt	- Adjust	
		Other (other than above)	- Contact your AEC dealer	

Cleaning Procedure

Machine Cleaning Procedure

When cleaning the machine, please adhere to the following information to ensure proper cleaning and to keep the machine in the best condition possible.

Power Washing Procedure:

NOTICE

- Ensure that the water pressure is below 2000 PSI (14 MPa)
- Always keep the water temperature below 180°F (80°C)
- Use a spray nozzle with at minimum 40° wide spray angle
- Keep the nozzle at least 1 foot (300mm) away from the machine
- Avoid spraying water on the engine and electronic components. Examples include electronic displays, lights, switches, wiring, etc. The electronic components may be damaged if water is sprayed on them.
- Keep a perpendicular angle (90°) when cleaning over a decal.
  - Holding nozzle of a pressure washer at an angle different from 90° may lift the decal from the machine.
- Recommended using a safe cement dissolver, **BACK-SET** or similar**,** to remove hardened concrete.
- It is **NOT** recommended to use chemicals such as:
  - Muriatic Acid
  - Hydrochloric Acid
  - Hydrofluoric Acid
  - Sulfuric Acid
  - Phosphoric Acid
- To prevent build-up of concrete on the machine, use **BODY GUARD** or similar protection wax.

Filter Cleaning Procedure:

- Remove air filters and blow out with compressed air, **NOT** to exceed 80 PSI.

Revision Detail

MANUAL REVISION DETAIL			
REVISION #	**REVISION DATE**	**REVISION REFERENCE #**	**REVISION BY**
-	04/21	Initial Release	MW
A	01/22	Updated Covers	MK
B	06/22	Manual Corrections	MK

Parts Manual

NOTICE

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:

Click the link, or go to the following website

https://www.alleneng.com/at16

Mail:

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

Allen Engineering
P.O. Box 819
Paragould, Ar.
72451, USA

Phone: 1.800.643.0095 (USA Only) / 1.870.236.7751
Fax: 1.800.643.0097 (USA Only) / 1.870.263.3934

AEC FACTORY & HEADQUARTERS

819 S. 5TH STREET
PARAGOULD, ARKANSAS 72450
870.236.7751
800.643.0095 (TOLL FREE (USA ONLY)

MAILING

PO BOX 819
PARAGOULD, ARKANSAS 72451

ALLENENG.COM

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