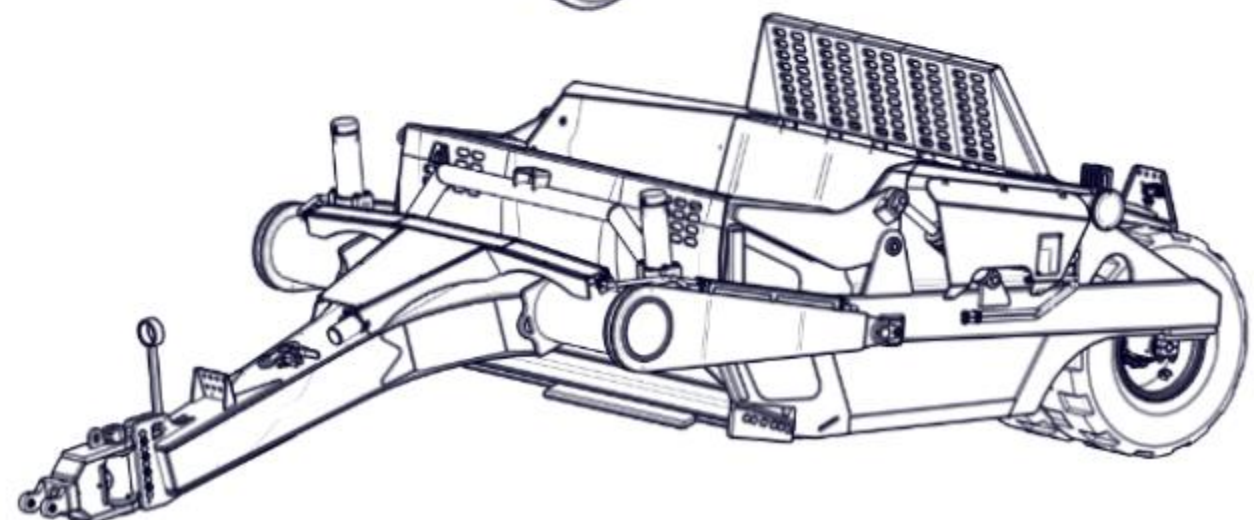
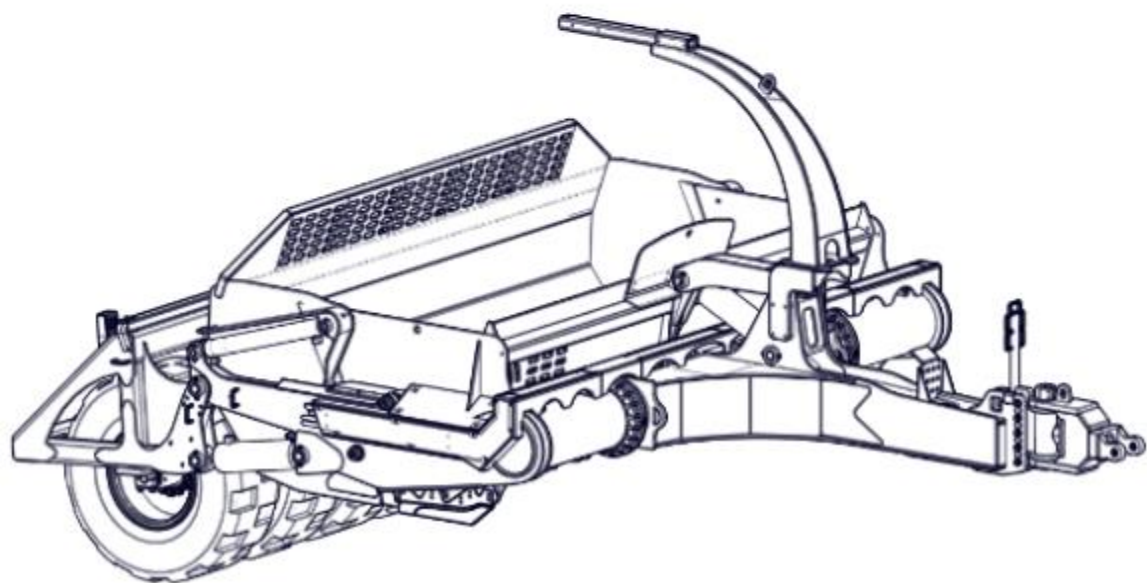
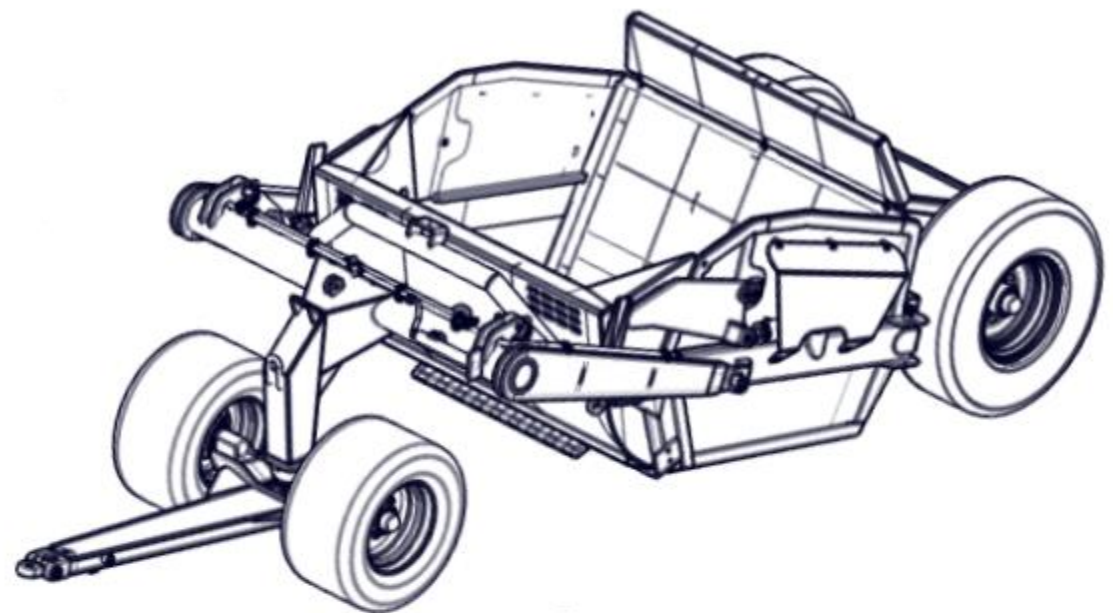
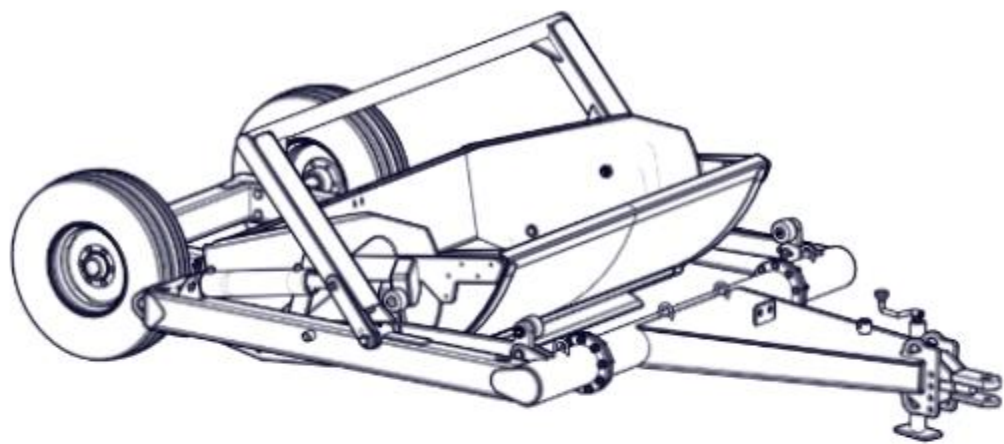




# Scraper Basics Owner's Manual



10-18

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Ashland, WI USA 54806**



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**[www.ashlandind.com](http://www.ashlandind.com)**

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Thank you for choosing an Ashland scraper for your earthmoving needs. Years of research, testing, and successful application have been spent to ensure quality and maximum performance for our customers.

## Quality Policy

It is our mission to exceed our customers' expectations in quality, delivery, and cost through continuous improvement and customer interaction.

Please read and understand this manual before attempting to attach or operate this scraper. This manual should always remain with the machine. Be sure and fill out and send in the owner's registration form at the beginning of this manual, or you may fill out the form on-line by going to [ashlandind.com](http://ashlandind.com) and click on "Owner Registration" in the Support drop-down tab. If you have questions, please feel free to call or email us. Owners that do not register their machine with Ashland Industries forfeit the ability to file for warranty claims. You can visit us on-line at [www.ashlandind.com](http://www.ashlandind.com).

Ashland Industries hours of operation are 8:00 a.m. to 5:00 p.m. CST. We can be reached toll free at: 877-634-4622.

## Scraper ID Number

You can find the serial number plate for **most** machines on the right side of the scraper in the top corner of the bowl. CS models will have plates on the front horse-head or front section. The letter and numbers stamped identify the serial number, model number, and capacity of the scraper. Please record this serial number for use in ordering parts, warranty issues, and to track your equipment if it is ever stolen.



## Important

Parts must be ordered through your local authorized ASHLAND dealer. Be sure to state MODEL and SERIAL NUMBER of your machine. Ashland Industries Weldable replacement parts are also available to rebuild, modify, or update your scraper to current factory specifications.



## Contact Information

To offer you the best service and support possible, please record the following reference information:

Ashland Model Number: \_\_\_\_\_

Serial Identification Number: \_\_\_\_\_

Local Dealer Name: \_\_\_\_\_

Address: \_\_\_\_\_

Phone Number: \_\_\_\_\_

## Product Description

The Ashland earthmover is a large transportable machine that attaches to a common four-wheel drive tractor. The scraper primarily consists of a main-frame assembly, bowl, front hitch assembly, and an ejector assembly. REFER TO YOUR PARTS MANUAL for a break down of the main assemblies.

The bowl assembly has a floor with forward-mounted cutting edges and side walls. It is attached to the frame including the rear wheels. The bowl frame can be pivoted hydraulically from the front hitch to lower and raise the cutting edge.

The apron assembly is a forward-mounted pivoting gate assembly and is hydraulically controlled to open widely as the blade is lowered to scrape earth into the bowl.

When the machine is loaded, the operator can close the apron to capture the collected earth for transport to a second site. Once the operator has transported the earth, the apron assembly will hydraulically pivot until fully opened. With hydraulic control, flow is automatically diverted to the ejector end-wall assembly. For ejector-style scrapers, the push off wall moves forward between the side walls to allow the collected earth to be deposited. Dump-style machines function in a similar way, as the bottom of the bowl and apron open, material is dropped directly below the machine.

To increase tractor performance, some Ashland models transfer a portion of the machine attachment onto a special drawbar for the tractor. This provides the tractor with extra weight for better traction while loading the machine. Other Ashland models provide front dolly wheels for the machine attachment to support its own weight. This type of machine uses the standard double-lip drawbar that is usually provided with tractors from the manufacturer. Of course, skid steer front attachment machines use a mount plate.

Some machines may load, carry, and attach to a power unit differently, but the basic functions remain the same for earth moving scrapers.

## Parts

Use only Ashland replacement parts for needed repairs. Please refer to the corresponding Parts Manual to ensure the least amount of downtime. Do not use inferior replacement parts or modify the equipment in any way. Unauthorized modifications may affect function, safety, and life of the equipment. Custom factory modifications, implemented outside the purview of the original machines design, unique for an individual customer or machine, may create serviceability challenges. These alterations are completed at the customers discretion.





## Intended Use

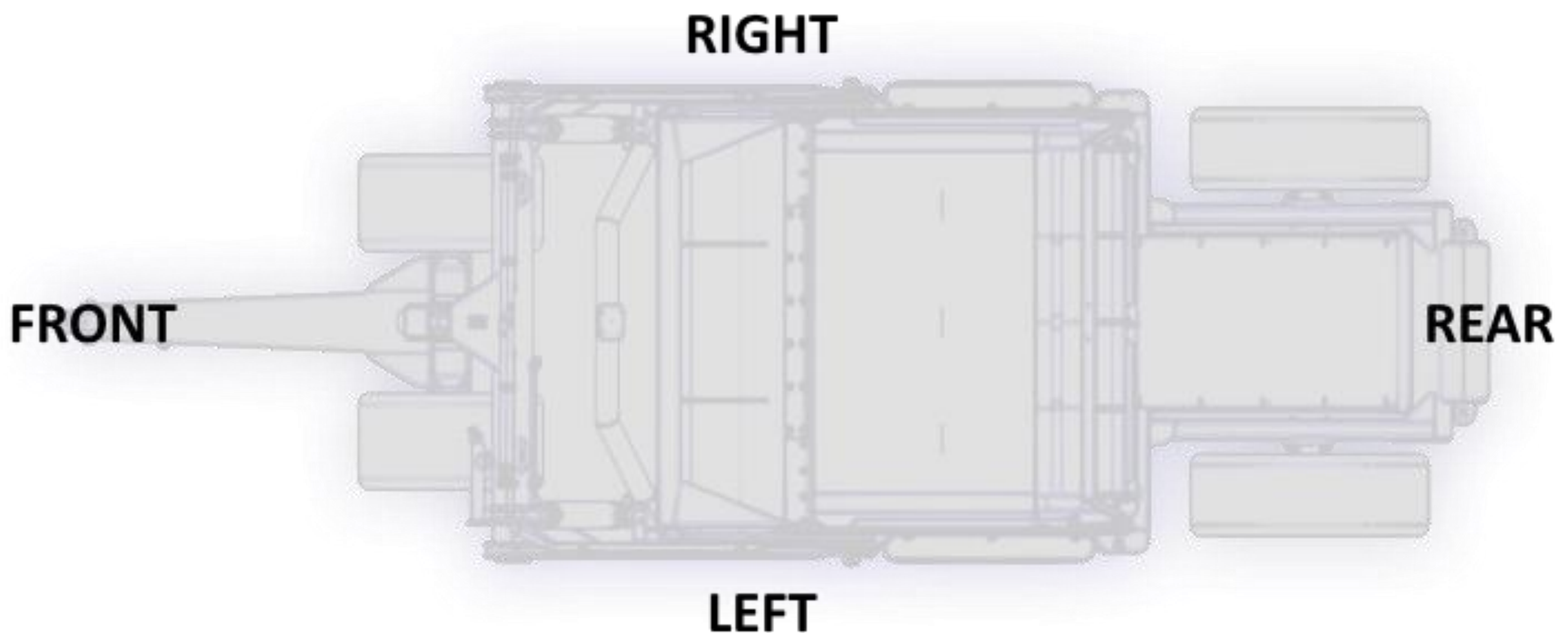
This machine attachment is intended to cut and collect material from a first site and transport in an efficient manner. Once the user has reached the second site, the collected material can be unloaded or deposited in a desired way.

This attachment is commonly used in areas that tractors can operate. Normally, tractors work well with larger scrapers in dry, arid soil conditions. If the application is in wet or soft conditions, the same size tractor must utilize a smaller size scraper. Flotation of the tractor and scraper within wet areas will dramatically affect speed and efficiency of this machine attachment.

Ashland Industries strongly recommends the operator knows the type of conditions they are operating in and size the scraper accordingly.

## Operator Orientation

The directions left, right, front, and rear are provided in orientation from the operator or pilot seat and facing the direction of travel. For example, a pull-type dolly wheel scraper is depicted below.





## Equipment Safety

- Familiarize yourself with all working components and power unit controls. Learn the limitations and capabilities of your equipment. Work carefully and slowly until you are accustomed to the scraper. Know how to stop the tractor and scraper quickly in an emergency.
- Learn where your equipment transport locks and guards are and make sure they are secured in place. If locks and guards are damaged or missing, replace them immediately before continuing work. Engage locks before working on the machine.
- Check that the machine is properly attached to the power unit.
- Check the machine for any loose or worn parts or leaks. Make necessary repairs before using the machine.
- Check that the tractor brakes are in good operating condition before using the scraper. If your power units foot brake pedal is split for left and right brake controls (common on MFWD tractors) lock both controls together.
- Do not modify the equipment in any way. Any modifications may affect function, safety, and life of the equipment.
- Always be aware of the total length of the power unit and attached scraper(s) while maneuvering on the job site.
- Before applying pressure to the hydraulic system, make sure any steel lines, hoses, and couplings are in good condition.
- Replace any safety decal or instruction sign that is not readable or missing. General safety and machine specific decals are indicated in the Parts Manual.
- Hydraulic hoses can fail due to physical damage, exposure, and age. Check hoses regularly and replace any damaged hoses.
- All hydraulic couplers MUST be clear of any debris or dust. Foreign material can damage the hydraulic system.
- When storing the scraper, park the machine in a dry and level area. Always park the machine with room for the power unit to maneuver. Never back the machine out of the parking spot unless supervised by a spotter. Always relieve the hydraulic pressure in all hydraulic circuits when putting the machine into storage.

## Operating Safety

- Read and understand the Owner's Manual and Parts Manual safety signs before using your equipment. Identify hazards and determine any potential risk for injury when coming near this hazard.
- It is the owners responsibility to provide operating instructions to employees or machine operators before allowing them to use the machine, at a minimum on an annual basis, per OSHA (Occupational Safety and Health Administration) regulation 1928.57.
- Do not operate an unsafe machine and do not service a machine in motion.
- Keep hands, feet, hair, and clothing away from all moving and/or rotating parts.



## Operating Safety (Cont'd)

- Do not allow riders on the scraper or tractor during operation or transport.
- Stay away from pinch points when raising or lowering the machine. Keep all others away.
- Do not operate on more than a 4-to-1 slope.
- Clear working area of debris or hidden obstacles that may cause damage or injury.
- Never try to exceed the limits of the power unit and the scraper. Familiarize yourself with the limits of the power unit and scraper, such as safe operation on side slopes, downhill and uphill with loaded scrapers, etc.
- If you require additional copies of this manual, please contact Ashland Industries.

## Power Unit Safety

The power unit(s) should be equipped with a Roll-Over Protection Structure (ROPS) and Fall Object Protection Structure (FOPS), and seat belt. Always wear the seat belt. If the cab of the power unit has a second seat, the passenger must also wear a seat belt. Review and understand all documentation associated with the safety and function of your power unit.

## AVOID HIGH PRESSURE FLUIDS

Escaping fluid under pressure can penetrate the skin causing serious injury. To avoid this hazard, relieve all hydraulic pressure from each of the hydraulic circuits. Consult your power unit owner's manual for instructions. Sudden changes in atmospheric temperatures can build pressure within hydraulic circuits. Always relieve pressure before working near the machine.

Protect hands and body parts from high pressure fluids. If you suspect a hydraulic leak, use a piece of cardboard or solid substrate to locate the leak. Always protect the body from high pressure fluids.

If an accident occurs and fluid is injected into the skin, seek medical attention immediately.

Carefully inspect each hydraulic hose and coupler for damage. Replace if necessary. Always clean the coupler with a clean cloth before hooking in the tractor or power unit.

## Personal Safety

While operating or servicing the scraper and power unit, the operator must have suitable clothing and safety equipment.

- Tight fitting, high visibility outer wear
- Hard hat
- Safety glasses
- Safety shoes (with slip resistant soles)
- Gloves
- Ear protection





## Develop Good Safety Habits

- Observe all signs and signals.
- Maintain control of equipment at all times. Never exceed the limits of the power unit and scraper.
- Obey safety regulations.
- Never use alcoholic beverages or drugs while operating this equipment. Consult your doctor before operating this machine while taking prescription medication.
- Do not attempt to send or receive text messages, emails, or cell phone calls unless fully stopped in a safe area. Do not use any mobile devices, computers, media or entertainment systems while operating this machine.

## In Case of Emergency

Always have an emergency contact. We have provided an area in the space below for the listings of all the proper contact names and phone numbers in case of an emergency.

Ambulance or Medical Service: \_\_\_\_\_

Police Department: \_\_\_\_\_

Fire Department: \_\_\_\_\_

Safety Manager: \_\_\_\_\_

Other: \_\_\_\_\_

## Signal Colors

A colored border or background is typically used around the symbol picture or work in safety decals to indicate hazard levels.

DANGER or WARNING safety signs are located near specific hazards. Precautions are pictured on CAUTION safety signs. This safety alert symbol calls attention to safety messages in this manual.

DANGER indicates an imminently hazardous situation that, if not avoided, WILL result in serious injury or death. A red border or word background with the safety alert symbol is for DANGER.

WARNING indicates a potentially hazardous situation which, if not avoided, COULD result in death or serious injury. An orange boarder or word background with the safety alert symbol is for WARNING.

CAUTION 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. A yellow border or word background with the safety alert symbol is for CAUTION.







## Safety Alert Signals



Throughout this manual, you will see the Safety Alert symbol. This means ATTENTION AND BE ALERT for your safety!

The Safety Alert symbol identifies important safety messages on the Ashland earthmover and in the manual.

Safety is important for many reasons. Accidents can disable or kill, cost you money, and can always be avoided.

Safety of operators and other persons is the most important issue. Accidents do occur that could have been avoided by better training or more careful operation. Review the safety instructions with all users annually.

## Training Operators

- The trainer must ensure that anyone else who is going to operate and service this machine must be familiar with the pre-operation inspections, operation, maintenance, safety, and local regulations.
- The trainer and the operators of this machine must fully read and understand the power unit operator's manual in conjunction with this manual.
- Most trainers prefer that all the hydraulic controls perform in a similar manner as other pieces of equipment. Reposition any front hydraulic connecting hoses that are best suited for the operator.
- New operators should run a SINGLE scraper for at least five full working days before connecting a second scraper and operating two units in tandem configuration.
- Trainers should be familiar with the job site and show the new operators all the underground hazards, loading area, haul road, and unloading site. It is the trainers responsibility to research all the local regulations for training and operating to establish firm policies for all people operating this machine.
- List all authorized operators who have been properly trained to use this machine. It is the owners responsibility to designate a qualified trainer to approve each person who will operate the machine.

Trainer Name: \_\_\_\_\_

Signature: \_\_\_\_\_

Operator 1 Name: \_\_\_\_\_

Date: \_\_\_\_\_

Operator 2 Name: \_\_\_\_\_

Date: \_\_\_\_\_

Operator 3 Name: \_\_\_\_\_

Date: \_\_\_\_\_

Operator 4 Name: \_\_\_\_\_

Date: \_\_\_\_\_



## **REMOVE PAINT BEFORE WELDING OR HEATING**

Unhealthy fumes are generated if the machine is welded or heated without first removing the paint. Paint should be removed by either grinding or sanding the area that will be heated or welded. Please wear an approved respirator and eye protection to avoid breathing paint dust. Paint remover or solvent should also be used in a well ventilated area. If you use solvent or paint stripper, thoroughly wash with soap and water before welding the area.

## **COLLECTION AND DISPOSAL OF WASTE**

Be considerate of the environment. While servicing your machinery, use large collection containers to capture any potentially harmful waste. Dispose of it properly as per your local governing regulations.

## **AVOID HEAT NEAR PRESSURIZED FLUID LINES**

Use extreme caution when welding, soldering, or using high temperature cutting devices near hydraulic lines. Any leak from a pressurized hydraulic line can create a dangerous flammable spray that will cause serious injury or even death.

## **STAY CLEAR WHEN STARTING THE MACHINE**

Be sure bystanders are clear of the power unit and scraper(s) before starting the engine or moving steering wheel. Sound the horn to alert bystanders that you are about to start the power unit. Even while the power unit is stationary, small movements of the steering wheel will cause the scraper to shift side-to-side. Remove any collected debris that is capable of falling.

## **CRUSHING OR SHEARING HAZARD**

The moving parts of the scraper, front section, apron, and ejector wall have crushing or shearing hazards. Please use safety and transport locks when appropriate.

Hooking the scraper hitch to the power unit drawbar usually requires two people. Extreme caution should be taken while hooking the machine up. Never allow a person to go between the power unit and the scraper while backing up. These hazards can lead to a crushing injury or even death.

**\*\*READ THE POWER UNIT OWNER'S MANUAL SECTION ON EMERGENCY EXIT OF THE CAB. ALWAYS BE PREPARED IF A FIRE STARTS – KEEP A FIRE EXTINGUISHER AND FIRST AID KIT NEAR BY.**





## Transport Locks

When you receive your scraper, the transport locks are in the stored position. The transport locks are located by the lift cylinders.

Depending on the style of your lock, implementation will vary. Various styles show below.

To use the traditional 'dog bone' style transport locks [A], retract lift cylinders and place transport locks on pins. Use safety snap pins to keep transport locks in place.

To store transport locks, retract lift cylinders, remove transport locks, put transport locks in storage position, and hold in place with safety snap pin.

Be sure you retract and DO NOT extend as damage may occur with 'dog bone' style locks.

For cylinder rod channel style locks [B], extend the lift cylinders and place the transport locks over the cylinder rod. Use the draw pins to keep the transport locks in place.

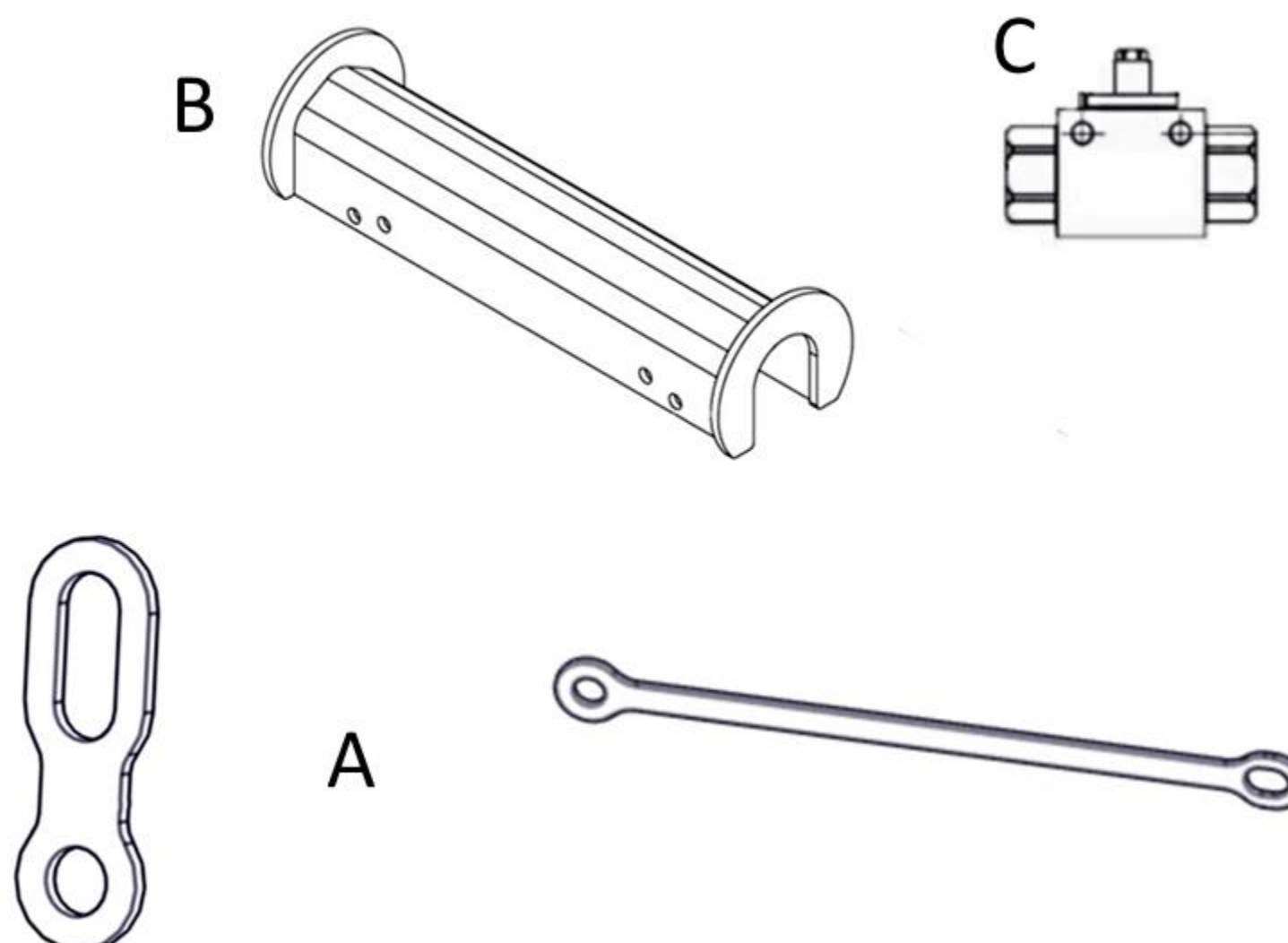
To store transport lock, extend lift cylinders, remove transport locks, put transport locks in storage position, and hold in place with draw pins.

To use a hydraulic cylinder shutoff valve [C], retract lift cylinders and turn OFF hydraulic flow of the valve with a combination wrench. To reengage the cylinder function, simply turn ON hydraulic flow of the valve.



**WARNING!** Transport locks MUST be in stored position before scraper operation begins. Transport locks are designed to keep the scraper from dropping if a hydraulic hose should burst during transport. They are NOT designed to withstand the force of the hydraulic cylinders.

Failure to place transport locks in the storage position before operations WILL result in catastrophic failure of the transport lock and could cause damage to pins, the front section, frame, and/or bowl. Transport locks and any damage due to misuse of transport locks are NOT covered by manufacturer warranty.





## Decal Information

Carefully read all safety messages and safety decal signs in the Owner's Manual. Keep safety signs clean and in good condition. Replace missing or damaged safety signs. The operator and trainer are responsible for the safe operation of this machine. The trainer must ensure that anyone else who is going to operate and service this machine must be familiar with the pre-operation inspections, operation, maintenance, safety, and local regulations included in, but not limited to, this manual. It is important to know that this manual is simply a step-by-step guide to familiarize you with the Ashland earthmover only. The trainer and operators of this machine must fully read and understand the power unit operator's manual in conjunction with this manual.

Look over the machine and understand Warning, Caution, and Hazard decals on all your machines. This machine may cause serious injury or death if not operated properly. It is the responsibility of the owner and the operator(s) of this machine to totally read and understand this manual before placing the machine into service. All the operators must follow all safety instruction within this manual and implement others as related to your specific project and/or governing agencies. Operators who have not read this manual are not qualified to operate the machine. It is the sole responsibility of the owner to investigate all safety measures outside of this manual.





## Power Unit and Scraper Check List

- Clean all windows for better visibility.
- Check that all safety equipment is in the proper working order: fire extinguisher, emergency exit, emergency seat belt cutter, and other safety equipment.
- Proper operation of the scraper requires that each operator fully read this operator manual to provide the safest and most efficient use of your new scraper. A pre-operation checklist is provided for the operator. It is important that this checklist is followed for both the personal safety of the operator and maintaining good mechanical condition of the earthmover.
- Before operating the earthmover, and each time thereafter, the following areas should be checked:
  - Check the tractor brakes are in good condition and functioning properly. Do not use tractor unless brakes are functioning properly.
  - Make a walk-around or visible inspection of the tractor and remove any loose debris. Inspect and remove any dirt buildup between tires or within under carriages.
  - Check that the machine is properly attached to the tractor. Confirm that the hitch pin of the scraper is secured to the power unit.
  - Check that all the bolts securing the front hitch are not damaged or missing.
  - Read and follow your tractor owner's manual, lubrication, and service recommendations.
  - Use only a tractor with adequate horsepower and weight to safely use this machine.
  - Confirm with your tractor dealer that the power unit is approved for scraper operations. This will ensure that your tractors warranty is not in jeopardy.
- Before operating the earthmover, and each time thereafter, the following areas should be checked for condition and replacement, if needed:
  - Loose or missing bolts or pins, including the hitch pin
  - Blade cutting edge wear
  - Guards and covers
  - Structural cracks
  - Hydraulic fluids, hoses, fittings, couplers, and lines
  - Accumulator refill nozzle and hose
  - Proper equipment lubrication where necessary
  - Moving parts wear or damage
  - Wheels, rims, and tires
  - Operating controls
  - Safety decals affixed and visible
  - Check tire pressure
  - Inspect hydraulic cylinders for leaks or damage
  - For tandem units, confirm that the rear hitch is properly secured and tight. Inspect to see that the hydraulic couplers between the machines are properly coupled and free of leaks.



## Know the Job

It is important to know your job site requirements to ensure the power unit and scraper complies with all governing authorities before transporting and operating the machine(s); i.e. Occupational Safety and Health Administration, Environmental Protection Agency, Department of Natural Resources, Canadian Centre of Occupational Health and Safety, Mine Safety and Health Administration European Agency for Safety and Health at Work, and various other organizations depending on your specific location.

Before the project can begin, ensure the proper authorities have been contacted to locate any buried utilities or other hazards. No work must be done until ALL authorities have located the respective buried hazards. All operators must have knowledge of these hazards and operated the machine accordingly.

1. Know the weight of the material to be moved.
2. Lay the job out to take advantage of grades when loading.
3. Keep hauls as short as possible.
4. Keep haul roads smooth.
5. If more than one unit is in the job, make sure the haul roads are one-way and the operators understand the direction.
6. Brief the operators as to what the job consists of so there are no misunderstandings.
7. Know the moisture content of the material to be moved.
8. Will water be needed for proper compaction?
9. Will drainage be a problem?
10. How many units will be needed to efficiently complete the job?





## Common Accidents

It is important for all the people who will be operating the power unit to be familiar with all the controls. Improper operation can result in injury or death. Be aware of the hazards of your power unit operation. Understand the causes of accidents and take every precaution to avoid them.

### THE MOST COMMON ACCIDENTS:

- Bending loader arms
- Separation from power unit
- Material or debris in motion entering the cab
- Operator cab injuries
- Entanglement in PTO shafts
- Break kingpin spindle
- Tripping or falling from cab
- Scraper roll-over
- Crushing and pinching during hitching
- Sliding of material stock piles
- Tractor roll-over
- Unable to safely stop loading machines on slopes
- Unable to safely stop loaded machines on slopes
- Collisions with other motor vehicles

### Accident Prevention

- Before starting, walk around the entire machine, insure everyone is clear of power unit and scraper. Sound horn and start engine.
- Keep cab and exit area clean and clear of tripping hazards. Always fasten your seat belt.
- Operate the machine from the tractor seat only.
- Be sure that the tractor brakes are in good operating condition before using the earthmover.
- Always keep the fluid levels, transmission, brakes, and hydraulics system near the maximum levels to eliminate possible fluid shortage while operating. Low oil level might result in loss of steering and transmission engagement. If this should happen, apply and hold power units brakes, place transmission into park, apply parking brake, lower scraper(s) full to the ground, stop engine, and add appropriate fluid.
- We recommend always having the 4WD engaged for the best control while loading and transporting.



## Accident Prevention (cont'd)

- When driving on muddy or wet surfaces, reduce speed to avoid skidding, and loss of steering control. With the scraper(s) fully raised, drive slowly over uneven terrain.
- Avoid holes, ditches, and obstructions which cause the tractor to be unstable, especially on hillsides.
- Never drive near the edge of a gully or steep embankment. It may cave in.
- Before descending steep grades or hills, shift down to LOW gear and reduce engine RPM's to improve your control of the tractor with little or no braking, apply gentle but steady brake pressure to prevent skidding. Some power units have engine decompression controls to help slow the machine. We recommend that the operator practice safe brake applications with empty scrapers first before using loaded machines.
- Before exiting the tractor, place the transmission in park, lower implements to the ground, apply parking brake, turn off engine, and remove key.

## Working On or Near Side Slopes

- Never operate on more than a 4-to-1 slope.
- When transporting on or near slopes, only raise the scraper high enough to clear the ground. This will help lower the center of gravity and make it less prone to tipping.
- Never allow any other equipment or bystanders near slope.
- When operating multiple scrapers, always make large turns and stay away from side slopes. Due to reduced visibility when running multiple scrapers, we recommend staying at least 6.5 feet (2 meters) away from slopes. In nearly all cases, the rear scraper will slide off slopes before the lead scraper.
- We recommend that the operator always be prepared to fully lower the cutting edge to the ground to slow or stop the entire machine in case of an emergency.
- The power units that have split brake pedals should be latched together to react together.
- When uploading on slopes, we recommend lowering the blade between 4 inches and 6 inches above the ground before unloading.
- When unloading multiple scrapers on a slope, we recommend always unloading the rear scraper first before the lead scraper.
- Always use extreme caution while working on slopes near water. Natural water springs can make slopes very unstable.





## Scraper Limits: Sizing Scraper to Power Unit

The size of the scraper for the applicable power unit can change dramatically if you are working in extreme conditions.

Flotation of the power unit and the loaded scraper(s) in extreme conditions is most critical when sizing scrapers. Normally, power units will perform well with larger scrapers in normal dry conditions. However, in very wet and soft underfoot conditions, the same power unit will require a smaller sized scraper.

Consider the following items when selecting a scraper, based around your power unit.

## Scraper Limits: Scraper Tractors Weight

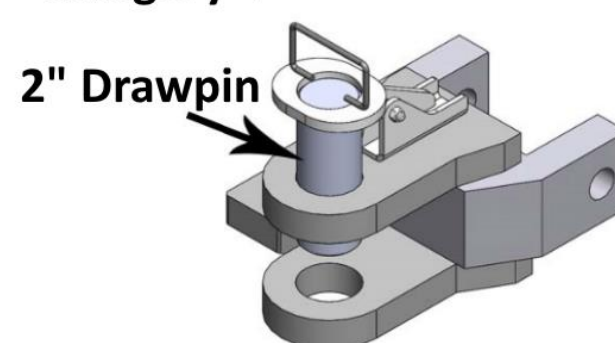
All leading manufacturers of tractors today have maximum weight limitation that can be placed onto the tractor or power unit. Any larger scraper design that exceeds this limitation will jeopardize the tractor or power unit warranty. Please contact your local tractor or power unit dealer and request what the allowable limits are for your power unit.

## Direct Mount Scrapers: Tractor Drawbar Adapter

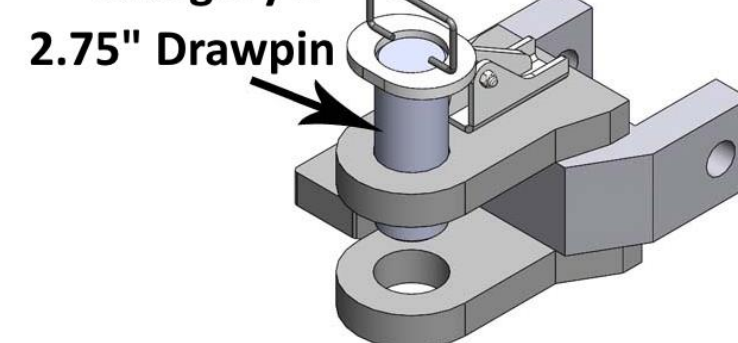
Ashland offers a removeable drawbar adapter to convert your specialized scraper drawbar to a conventional clevis-type drawbar capable of receiving a vertical drawbar pin.

Several types are available from you Ashland dealer. Contact them directly to determine what will work for your power unit. The adapter series is: DB-600366 (Cat. 4) and DB-600339 (Cat. 5).

DB-600366  
Category 4



DB-600339  
Category 5



## Tractor Setup: Tractor Ballasting

To receive the greatest performance, some scraper tractors require different ballasting, tires, and air pressure than for typical agricultural applications. Improper ballasting will lead to excessive tire wear, increased fuel consumption, poor performance, while creating additional stress for the operator.

All the major tractor companies will have detailed recommendations for proper weight ballasting for scraper applications.

## Hydraulic Requirements

The minimum tractor hydraulic system must be capable of a flow rate of 20 gallons per minute (76 lpm) and generate at least 2,500 pounds per square inch (17,236 kPa). The greater the flow rate, the quicker the hydraulics will respond. The standard agriculture and industrial scraper requires two remotes to control the function. While running tandem scrapers, a total of 4 hydraulic remotes will be required. For three scrapers, 6 hydraulic remotes will be required.

We recommend that hydraulic circuits are always connected to the tractor so the operator is comfortable with the controls. Accidents occur when operators are confused with the operation of the controls.



## Connecting: Scraper to Tractor

Tractor or power units transmissions (automatic, hydrostatic, or mechanical) will operate differently. The operator must be fully aware of the tractor operation. If not, read the tractor or power unit owner's manual before attempting to connect the scraper.

Connecting must be performed in a level, brightly lit area with no bystanders or other equipment operating.

If the operator requires an assistant to connect the scraper to the tractor, both must be wearing proper safety apparel and understand hand signals to safely position the machine.

Prior to starting the tractor, the assistant should have all necessary items required for installation nearby: hitch pin, nut, cotter pin, hammer, wrenches, etc.

- Remove any SAFETY LOCKS for the scraper and store in their appropriate areas.



**WARNING:** if you are unable to easily remove the safety locks, do not attempt to remove. Sometimes the pressure in the locks can change because of settling during extreme temperature changes. The assembly will usually need to be raised to remove the safety lock(s). Identify which lock needs to be removed to determine which hydraulic hose to connect.

- Before starting, walk around the entire machine, keep everyone clear of power unit and the scraper. Apply horn and start engine.
- Never attempt to connect the scraper to the tractor at an awkward angle. It is difficult and UNSAFE.
- Before backing up the tractor, the operator **MUST** reduce the throttle to idle, latch both brakes together, lock the seat into the center position, and have a clear and unobstructed view of the assistant. The assistant, or any other bystander, should **NEVER** be between the two scrapers while the tractor is in motion.
- Using hand signals, the assistant should direct the operator to slowly reverse the tractor within 10 inches (25cm) of the scraper hitch. The tractor operator should place the transmission in park, engages parking break, remove key, and exit the tractor. Connect hydraulic circuits and proceed with attaching the hitch to the drawbar.

## Connecting: Scraper to Tractor with Quick-Hitch

Larger Ashland scrapers are equipped with a 360° yoke type hitch which requires a special tractor drawbar. When properly matched with the hitch, the Ashland drawbar provides the correct tongue weight for hitching the scraper to the tractor.

Back the tractor to the scraper on a smooth flat surface. When the scraper hitch is directly above the drawbar hitch, the tractor operator places the transmission into park and activates the parking break.

Connect hydraulic circuits and slowly activate the lift circuit in the opposite direction to slowly lower the scraper hitch down into the tractor drawbar.

Once all the holes are aligned, insert drawbar pin, tighten nut, and insert/secure cotter pin. You can leave the drawbar pin secured into the scraper hitch and follow the steps above. Simply lower the hitch into the quick-hitch drawbar and secure the quick-hitch latch assembly.





## Connecting: Scraper to Scraper

- With hydraulic circuits connected, start the tractor and slowly lower the second scrapers blade to the ground. Continue to lower blade control until the center of the scraper hitch pin holes are slightly above the rear hitch of the lead scraper, roughly 22 inches to 26 inches (56cm to 66cm).
- Using hand signals, the assistant has confirmed is it safe to back up the tractor.
- The tractor operator sounds horn, activates clutch and wheel brakes, removes parking break, engages transmission into reverse, and carefully backs up.
- The assistant carefully guides the tractor operator so the second scrapers hitch enters the lead scraper hitch assembly.
- Once the scraper hitch is directly above the drawbar hitch, the tractor operator places the transmission into park and activates the parking brake.
- Slowly activate the lift circuit in the opposite directly to slowly guide the second hitch down into the lead scraper hitch assembly.
- Once all the holes are aligned inset hitch pin, tighten nut, and inset/secure cotter pin.
- You can leave the drawbar pin secured into the scraper hitch and follow the steps above. Simply lower the hitch into the quick-hitch drawbar and secure the quick-hitch latch assembly.

## Operating the Scraper: Explanation of Concept

The concept of using a pull-type scraper is much different than self-propelled scrapers. The operator will take longer and shallower cuts than self-propelled earthmovers. By traveling faster, it allows the material entering the bowl to maintain velocity, carrying it deeper, and allowing material to develop into a heaped payload.

This will keep your cut area smoother, providing the operator a gentle ride without hitting deep gouges, holes, or steep grade changes in the cut area.

The most important things to LOAD a pull-type scraper are: apron opening, ground speed or gear selection, and depth of cut.

## Gear Selection

Confirm what GEAR NUMBER is required to REACH THIS SPEED at full throttle.

Apply full throttle and advance the forward gears until you reach between 4 to 5 miles per hour (6 to 8kph). It is advisable to operate at a slower speed for two to three hours to familiarize yourself with the equipment and the environment. After the operator is comfortable with the operation of the machine, you will want to move up to a higher gear to achieve 6 to 8 miles per hour (9 to 12kph).

Gear #: \_\_\_\_\_ 4mph (6.4kph)

Gear #: \_\_\_\_\_ 7mph (11.3kph)

Gear #: \_\_\_\_\_ 5mph (8kph)

Gear #: \_\_\_\_\_ 8mph (12.9kph)

Gear #: \_\_\_\_\_ 6mph (9.7kph)

Gear #: \_\_\_\_\_ 9mph (14.5kph)





## Principles of the Apron

Two things that dramatically affect the ability to load are ground speed and apron opening. The faster your ground speed, the less you can cut at one time.

- As the scraper moves forward, a shallow layer of material is being cut by the blades and horizontally follows the floor to the rear of the scraper.
- As the material contacts the rear of the bowl, it changes direction and begins a vertical climb up the rear wall.
- Depending on ground speed, the vertically moving material will begin to collect at the rear and fall forward in a rotating motion, often referred to as “boiling”.
- When the scraper is nearly 50% loaded, material will boil forward. The curved portion of the apron bottom is designed to keep the boiling material within the scraper.

## Apron Opening Guidelines

You will need to determine the ideal opening for your soil condition. It is important to have the apron opened prior to loading. To receive the highest production possible, it is important to know the typical characteristics of the material that you will be loading. In heavier soils like clay or gumbo, the soil will slab up and remain together after being cut by the blades. In lighter soils, like sand or dry/loose top soil, the material will pile up or push after being cut by the blade. Use the suggestions listed below:

### **Topsoil with heavy vegetation (12” to 24” opening):**

- When cutting undisturbed soils, you will need to open the apron high enough to allow debris to easily enter the scraper bowl. If the apron is opened too high, the rolling up sod will fall out past the apron and hinder the incoming material. If the apron is not adjusted quick enough, the material will bunch or push ahead of the machine. If this happens, you should close the apron and pull out the cut quickly. If you wait too long, you may develop too large a pile to clear the scraper while rising out of the cut. This can cause the power unit to lose traction and possibly cause you to get stuck.

### **Clay or loamy material: (6” to 12” opening):**

- To cut clay or loam soils, lower the apron to approximately 6” to 12” between the blades and the bottom of the apron. When you first lower the bowl, you’ll see the material being cut by the blades and entering the bowl. As you continue to move forward, small clumps will fall past the apron and develop a small pile ahead of the apron. By limiting this apron opening, the small pile will “blade off” any loose material ahead of the machine. Adjustments should be made if large objects such as rocks or deep gouges are within the cut.

### **Sand or loose topsoil (15” to 30” topsoil):**

- Loading sand or loose top soil is the most difficult type of soil to load. In combination with the larger apron opening, you’ll want to operate at a faster ground speed. By traveling faster and lowering the blade deeper than normal, it forces the material into the scraper bowl.

We encourage you to experiment with different apron openings to determine the best condition for your job site. The apron is designed to capture material inside of the scraper bowl and should not be used as a leveling blade. Obstructions like large rocks or dense piles may cause the apron to bend inward after prolonged exposure to these conditions.



## Scraper Loading Cautions

Always follow all the items discussed in the “Accident Prevention” section before first attempting to load.

New operators should be trained properly by an approved trainer and listed as an approved operator in the “Training Operators” section, has at least five full working days of experience running a single scraper, demonstrates full control at all times, and the job site is large enough for easy maneuverability.

Never shift up into a higher gear while loading scraper(s).

In tandem scraper operation, the resistance and weight will be dramatically different than operating a single scraper. Extra safety precautions should be taken while operating tandem scrapers.

## Loading: Single Scraper

Experienced operators very seldom watch the scraper while loading, except for an occasional glance to see when the scraper is full. You should use the sound of the engine as an indication of how deep the scraper is cutting.

- When the operator is comfortable loading the machine at 5mph (8kph), try increasing your ground speed while beginning to load the machine.
- Move the apron to the recommended position on the scraper as per the “Apron Opening Guidelines” section of this manual.
- Apply full throttle to the tractor or power unit, noting the maximum engine revolutions per minute (RPM) from the display.
- While approaching the cut, keep the power unit and the scraper straight inline.
- Lower the blade into the ground slowly.
- Stop lowering the blade once the engine RPM had dropped 200 to 300 RPM.
  - When the scraper is 50% to 60% full, downshift one gear.
  - When the scraper is 75% to 90% full, downshift a second gear.
- Quickly activate the hydraulic controls to close the apron as the bowl fills.
- The most efficient way to load a scraper fully is best achieved by LISTENING to the sound of the engine and adjusting the depth of cut to keep the engine working at full power.
- When the scraper is fully loaded:
  - Raise the blade from the cut.
  - Quickly activate the hydraulic controls to close the apron.
  - Disengage the differential locks.

Experienced operators very seldom watch the scraper while loading, except for an occasional glance to see when the scraper is full. You should use the sound of the engine as an indication of how deep the scraper is cutting.



## Loading: Tandem Scraper

**IMPORTANT:** Adjust the apron opening on BOTH SCRAPERS before moving. In tandem operation, once the lead scraper is fully loaded, visibility of the rear scraper is dramatically reduced. A common mistake that is made while operating tandem scrapers is the operator fails to open the apron before attempting to load the scraper. This can result in damage to the apron assembly.

The experienced operator loads the lead scraper in the same manner as running a single scraper. Always load the front scraper first to provide additional weight on the power unit for increased traction.

When rear scraper is fully loaded:

- Simultaneously raise the blade of the rear scraper and close the apron quickly.
- Advance to the gear the operator used to load the first scraper.
- While remaining in the same gear, slowly lower the blade of the rear scraper until you notice the engine is under load. Adjust blade height as needed.
- Simultaneously raise the blade of the lead scraper and close the apron quickly.
- Disengage the differential locks.





## Uphill Operation



Extreme caution should be used when transporting loaded scraper(s) uphill. Slope, weight, and ground conditions will dramatically affect the ability of the tractor or power unit to climb uphill.

Lower the cutting edge to the ground if it is necessary to stop the machine in an emergency.

Use a tractor large enough to provide sufficient braking and control when transporting loaded scraper(s).

If the tractor and scraper(s) begin to have difficulty in climbing uphill, reduce the size of the payload accordingly.

When approaching an uphill slope, engage axle differential locks and maintain suitable ground speed.

If conditions of the surface change, make necessary changes to improve conditions or travel another route.

Once the tractor and scraper(s) have reached the top of the hill, disengage axle differential lock.

## Downhill Operation



Extreme caution should be used when transporting loaded scraper(s) downhill. Slope, weight, and ground conditions will dramatically affect the ability of the tractor or power unit to ride downhill.

Lower the cutting edge to the ground if it is necessary to stop the machine in an emergency.

Use a tractor large enough to provide sufficient braking and control when transporting loaded scraper(s).

Never leave items on the floor of the cab. While going downhill, items can shift if left on the floor and interfere with operating the foot controls.

Before the tractor or power unit begins to go downhill, downshift to a lower gear and dramatically reduce the engine throttle. On steeper grades or slopes, it might be necessary to reduce the throttle to the idle position. Failure to do so may cause engine over-speed, resulting in engine damage. Latch the tractor brake pedals together.

When operating tandem scrapers on steeper downhill grades or slopes, lower the cutting edge of the REAR scraper to drag on the ground. This will reduce the possibility of jack-knifing and losing control while going downhill.

The tractor or power unit **MUST ALWAYS BE IN GEAR** when going downhill.

The tractor or power unit must **NEVER** be allowed to roll with the gear lever in neutral.



## Basics of Unloading

After reaching the dumping area or fill site, keep the machine(s) straight inline.

Reduce ground speed to 6 to 8mph (10 to 13.3kph).

Activate the hydraulic remote to fully raise the apron gate. Depending on the machine and circuit configuration, the automatic sequencing valve will move the pushoff or ejector wall forward. This deposits collected material out of the bowl.

Whenever possible, the operator should adjust gear selection, blade clearance, or hydraulic flow rate to unload the scraper(s) uniformly over the entire area of the unloading site.

When unloading skid steer mounted or single-circuit scrapers, the bowl rotation is fixed to the position of the scraper frame, similar to a dump-type scraper. TIP: via the skid steer tilt cylinders, the mainframe can be lowered (dropping the rear of the scraper) to help level off the payload being dumped.

If you are repeatedly unloading the scrapers in the same area, lower the blades to provide roughly 5" to 10" (12cm to 25cm) of ground clearance before opening the apron. As the unit continues its forward motion, the material will be leveled after it is unloaded from the bowl. This will provide a smoother ride when you unload in the same area later on.

Once the scraper is unloaded, reverse the hydraulic controls to retract the ejector wall fully and close the apron immediately. Never leave the apron fully open while transporting the empty scraper back to the cut area.

In tandem use, if the job site ground is soft, we recommend unloading the rear unit of the train first. If the job site is in good condition, once the front unit has fully unloaded, begin to unload the rear scraper immediately.



## Transporting Scrapers

Always take precautions when moving the power unit and the scraper to another site. Always follow the proper local regulations for moving equipment on roadways. To prevent accidents on public roads, frequently monitor traffic from front and rear. Extra caution should be taken while turning.

## Unloaded Scraper

- Always transport unloaded on public roads.
- Check that all lights are in working order.
- Clean all lighting assemblies for optimal luminance.
- Clean all cab windows for ideal visibility.
- Latch the tractor brakes together.
- Always clean debris from scraper before transporting.
- Always install the transport locks before moving the machine onto roadways.
- Always transport during daylight hours.
- Make sure all road rules are followed.
- Use proper lighting and flagging.
- Lower scraper bowl to provide just enough clearance over obstacles.
- Transport at a safe speed to avoid roll-over.
- When transporting on curves, down steep slopes or hills, shift the power unit to a lower gear.

## Loaded Scraper

- Never transport a loaded scraper on public roads.
- Always cut towards the direct of the dump site when possible to provide the shortest travel distance of the loaded scraper.
- Watch for the risk of dirt falling off while transporting the load.
- Traffic area or haul roads should be even without holes or dips.
- Reduce transport speed if haul roads are uneven or rough. Attempt to even the area.
- Do not forget to disengage all axle differential locks if you are working on firm surfaces.
- Always adapt speed to the road conditions and traffic situation in order to operate safely.
- With the additional transport weight, breaking distance is increased. Plan accordingly.
- Tandem scraper operation: rear scraper wheels will not follow the same path or offset from the lead scraper while turning. Use extreme caution when cornering!





## Lifting Machines

There are specially designed lift points for each machine. If you are uncertain of what constitutes a safe point to lift from, consult your Ashland dealer. Lifting the machine from an improper location will result in damage to the machine and potentially cause harm or death. Lifting and loading should be done in a flat area clear of moving equipment, bystanders, and heavy winds.

NEVER under any circumstance allow a person to stand underneath a machine while it is off the ground. Risk of crushing any objects under the scraper is a likely possibility. Only lift a machine with the suitable rigging equipment – always inspect equipment before use. Only lift a machine when absolutely necessary. The appropriate Standard of Care must be taken when lifting or moving any heavy machinery.

## Lifting Instructions

Remove hanging debris from the scraper and confirm the scraper is EMPTY before lifting.

Always install locks before lifting.

Secure a strong rope (30+ feet (9.1m)) to the front of the scraper to safely move once lifting.

With a helper maintaining the secured rope at a safe distance, slowly raise the machine slightly off the ground. Depending upon the direction of the wind and rigging, the scraper may begin to rotate after being lifted.

If necessary, the helper should change locations to prevent the machine from rotating.

If the scraper is being put onto a trailer, continue to lift the scraper to safely clear the deck. A second helper may need to guide the trailer into position.

Carefully lower the scraper and remove all rigging.

## Securing Scraper to Trailer

The direction a scraper is placed onto the trailer should be determined before the scraper is disconnected from the tractor or power unit.

Depending upon the model of the scraper, the tie-down locations may vary. D-rings, lifting point, front hitch, frame truss, axles, etc. are good options.

Make sure the machine is fully lowered, positioning as much mass onto the trailer deck as possible. Block the wheels and bottom surfaces where necessary to maximize scraper-to-trailer contact.

Always follow local regulations with tie-down devices for each machine. The load rating, quantity of tie-downs per machine, and type of binders will vary between state, province, or countries.

Ashland Industries and its dealers are not liable for any accidents or damage while transporting your machinery. It is the sole responsibility of the operator transporting the machine that it is tightly and properly secured. As the load is being moved, the operator should periodically stop and check that the rigging is tight and secure.



Your Ashland scraper is a durable piece of equipment and with proper care will yield many years of trouble-free operation. However, the life of your scraper can be severely shortened by poor maintenance. You must follow consistent maintenance practices and use superior quality grease and hydraulic oil (compatible with the power unit's hydraulic system) to insure the longest, most productive use from your scraper.

Your scraper should be greased at all points where grease fittings are provided. REMOVE TRANSPORT LOCKS prior to operation. Next, extend and retract all cylinders several times to force out any air from the hydraulic cylinders and lines. Check the oil levels in the tractor hydraulic system and add to maintain the proper level. Care should be used when adding oil or when disconnecting any oil line to keep all dirt out of the oil as dirt is a major factor in the failure of hydraulic components.

When your scraper is placed into operation, the operator will have to “feel out” the amount of depth of cut to obtain maximum loading efficiency. This is usually accomplished by taking a lesser and more uniform cut; however, some soil conditions such as loose sand may require a “pumping action” obtained by taking successive deep cuts and lifting out of cut as the tractor begins to lose power or traction.

After 8 hours of operation, all bolts should be checked and tightened if necessary and all grease fittings lubricated. Check tire pressures daily. Also, check pins and cutting edges for signs of wear.

After 50 hours work, all bolts should be rechecked and tightened if necessary. Check wheel bearings and adjust if necessary.

Only use tools appropriate for the job. Have the proper safety equipment and adequate light.

## **SCRAPER DAMAGE CAN OCCUR IF:**

1. The scraper is running over the haul road with the bowl fully raised. On scrapers that have factory installed nitrogen over hydraulic accumulators, the lift cylinders should be lowered 3 to 4 inches to allow the cushioned ride to work properly.
2. The heaped payload repeatedly exceeds the design ISO 6485 Earth-moving machinery-Tractor-scraper volumetric rating.
3. The fully loaded scraper exceeds the 10 mph on smooth haul roads and dramatically less on uneven haul roads.
4. The scraper is being top-loaded without the bowl being fully lowered to the ground prior to placing the material into the bowl.
5. The scraper is being used to level haul roads with the apron closed, not allowing material to enter the bowl.
6. The scraper is being used to load rock.
7. The scraper is being aggressively push loaded with a dozer.
8. A power unit that is above the horsepower rating is pulling the scraper.

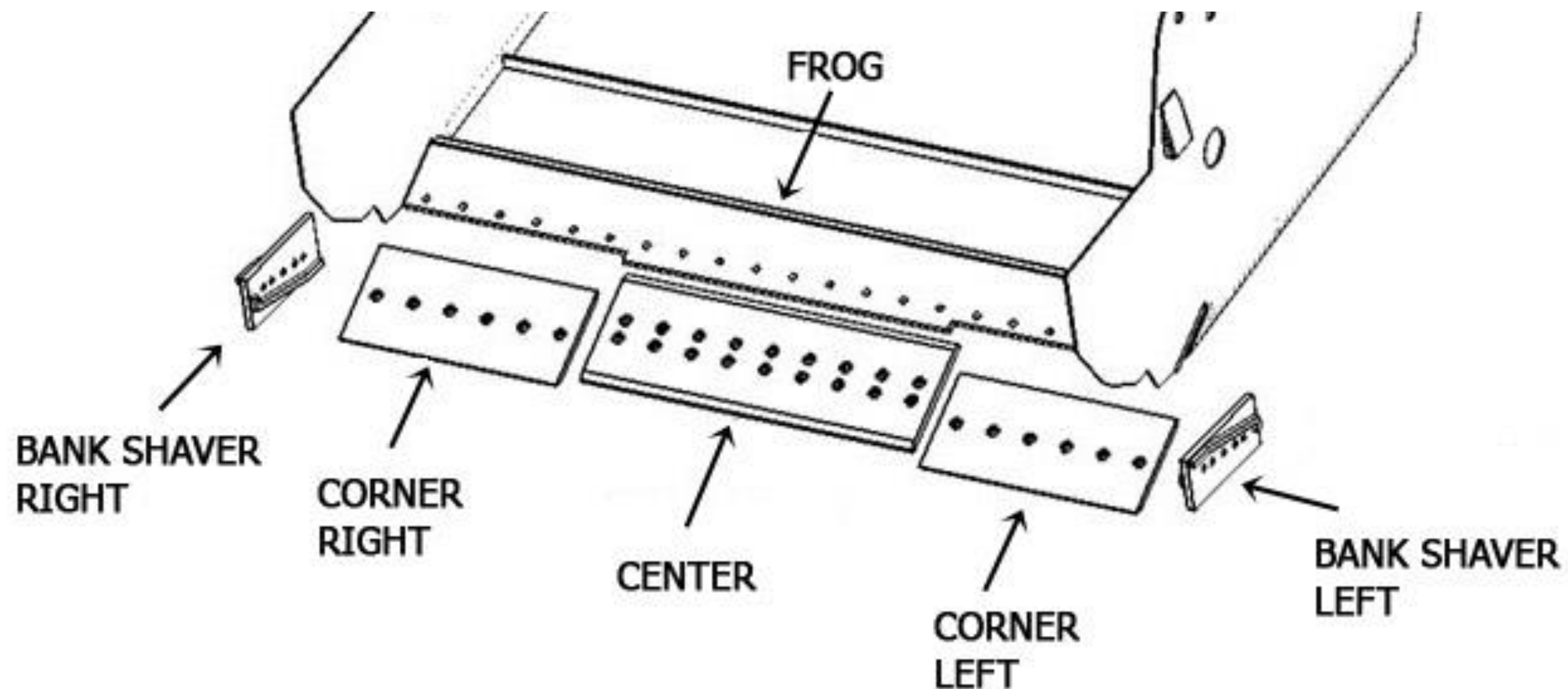
**These types of damage are not covered under warranty. Warranty only covers defects in material or workmanship, not abuse because of improper use.**



## Blade Replacement

Failure to replace worn cutting edges may result in unnecessary wear to the machines sides and floor.

Blades must be replaced before damage occurs to the frog. TIP: when plow bolts leave trails in the cut or the underside of the blade is encroaching on the frog, replace blade immediately.



## Blade Removal

- Raise bowl off ground and lock
- Open apron and lock
- Relieve pressure in hydraulic system
- Disconnect all hydraulic hoses from tractor and lock out tractor
- Loosen but do NOT remove end bolts
- Remove all other bolts
- Remove end bolts and carefully lower blade to the ground

## Blade Installation

- Lift new blade into position
- Install but do NOT tighten end bolts and nuts
- Install remaining bolts and nuts – snug them, do not tighten
- Once all the bolts and nuts are installed, torque them to 900 foot pounds (1,220Nm)





**WARNING: Never lubricate or service machine while it is moving.** Keep hands, feet, and clothing away from power-driven parts. Lower equipment to the ground. Stop the engine, remove the key, and allow machine to cool.

## Hydraulic Oil

Always follow your tractor manual for auxiliary hydraulic oil levels and oil specifications. All operators should check oil levels and refill as needed on a regular schedule.

If you are unable to determine the oil specification from your power unit manual, Ashland recommends that the hydraulic oil meets or exceeds the API GL-4 Specification.

## Scraper Lubrication

Grease with lithium based lubricant with EP additives and consistency No. NLGI-2 without molybdenum disulphide additive (MoS<sub>2</sub>).

Lubrication is an important part of preventive maintenance. The service life of bushings, bearings, and bearing pins can be extended considerably if the machine is lubricated in the correct manner, where required.

Wipe off grease zerks and grease gun before using to avoid introduction of sand and dirt particles with the new grease.

While greasing the scraper at recommended intervals, pump 2-3 strokes or until the grease comes out and becomes visible by the joint.

'Daily' Grease Points will include yoke hitch assembly, properly marked pin assemblies in a 10-hour interval. 'Daily' grease points must be greased at 10-hours or the end of every work day, whichever is the shortest amount of time.

**NEVER GREASE ANY PTFE FIBER 'GREASELESS' COMPOSITE BUSHINGS OR PTFE LINED SPHERICAL BUSHINGS.** Introduction of oil/grease, lubricant, abrasive, etc. will ruin the composite material and cause pre-mature failure. The plated steel surface in contact with the composite bushings is a self-lubricating system that must remain dirt, rust, and contaminant free. TIP: if there are no grease zerks at a bearing surface joint it will not require lubrication. Do not attempt to introduce contaminants to these locations.



## Retorquing Wheels

On new machines, the wheels should be retorqued after the first two hours of use.

Torque Ft-lbs	Bolt Diameter
12	1/4"
25	5/16"
45	3/8"
70	7/16"
110	1/2"
150	9/16"
220	5/8"
380	3/4"
600	7/8"

## Tire Pressure

Check tires daily to ensure correct inflation levels. Tire pressure ranges can be found in the corresponding Parts Manual. For a fully loaded machine, the maximum PSI is listed for an ideal load rating.

Check tire pressure with an accurate gauge having 6.9 kPa [(0.07 bar) 1 PSI] gradations.

Tire pressure recommendations vary based on environment, load weight, speed, and other variables. There is no single tire pressure reference for every condition. **ALWAYS CONSULT THE TIRE MANUFACTURER** for exact PSI recommendations for your specific tire series and job site situation. IF manufacturer recommendations are not followed it may void the tire manufacturers warranty. All warranty claims on tires are to be filed with the tire manufacturer or service center directly and are not covered under Ashland Industries warranty policy.

TIP: for tandem scrapers the front unit should have between 5 PSI and 15 PSI more than the rear unit, not exceeding maximum PSI.

Also check for:

- Tire Damage
- Loose or missing wheel lugs, nuts, or caps
- Uneven wear
- Damaged rims



**The task of servicing tires and wheels can be extremely dangerous and should be performed by trained personnel only, using the correct tools and following best-practice. Do not attempt to mount, demount, or inflate a tire if you do not have the proper equipment and experience to perform the job. Call a qualified repair service to inspect the assembly and make necessary repairs. Failure to heed warnings could lead to serious injury or death.**

Visually inspect tires and wheels daily. Carefully inspect any rim and tire assembly that has been run underinflated or flat before reinflating the tire to make sure there is no damage to either the rim or tire.

- ALWAYS wear personal protection equipment such as gloves, footwear, eye protection, hearing protection, and head gear when servicing tire and wheel components.
- DO NOT operate with damaged rims, tire cuts or bubbles, missing lug bolts, or nuts or damaged rims.
- ALWAYS maintain the correct tire pressure. NEVER exceed maximum tire inflation pressure.
- INSPECT any rim and tire assembly that has been run flat or severely underinflated before reinflating the tire. Damage to the rim and tire may have developed.
- NEVER reinflate a tire that has lost air pressure or has been run flat without determining and correcting the problem.
- NEVER try to repair wheel, rim, or tire components parts. Parts that are cracked, worn, pitted with corrosion, or damaged must be discarded and replaced with good parts.
- ALWAYS use approved tire and rim combinations for the model scraper that you have and verify that part numbers of components are correctly matched for the assembly.
- ALWAYS exhaust all air from the tire prior to demounting.
- ALWAYS place wheel and tire assemblies in restraining devices (safety cage) when inflating tires. Use a clip-on chuck and long extension hose to allow you to stand to the side of the tire and not in front of it.
- NEVER weld or cut on an inflated tire assembly. Welding heat can cause increased pressure which could result in tire explosion.
- ALWAYS use proper lifting techniques and mechanized lifting aids to move heavy components and assemblies.
- NEVER leave a tire, wheel, or assembly unsecured in a vertical position.
- ALWAYS take care when moving tires and wheels, making sure that other people in the area are not endangered.





## Grease Maintenance Schedule

- 5 pumps every 50 hours of operation
- Inspect/ re-pack wheel bearings after initial 300 hours of operation
- Complete cleaning and inspection every 2,000 hours

The bearings within the hubs of the scraper are fully greased with a Mobilith SHC™ 460 grease at the factory. Ashland uses a special bearing grease packer to ensure the bearing is effectively and evenly lubricated. Generous amounts of additional grease are added on both sides of the bearing prior to install within the hub.

### Mobilith SHC™ 460

Mobilith SHC™ Series high-performance, lithium complex synthetic greases are developed to protect equipment in severe applications operating at extreme temperatures. Their excellent adhesion, structural stability, and resistance to water conditions found in wet environments make them suitable for use in a wide variety of machinery and components. This grease exhibits excellent wear, rust, and corrosion protection, to help with mechanical efficiency, enhance bearing and equipment life, and extended grease life. Resulting in reduced maintenance costs, energy consumption, starting torque, and provided protection at high and low temperatures.

### Reinstalling Hubs

Before installing or re-installing the hub, follow this procedure to ensure spindle machined surfaces are clean and undamaged.

- Remove old lubricant and thoroughly clean spindle.
- Inspect machined spindle seal surface for nicks, scratches, burrs or marks. If needed, use crocus cloth or emery cloth to repair damaged areas.
- Clean spindle threads thoroughly with a wire brush to avoid false bearing adjustments and to avoid introduction of contaminants into the hub.
- Thoroughly clean spindle machined surfaces of rust, dirt, grease, or other contaminants that could damage the hub seal and cause it to leak.

### Caution

Too much grease volume (over-greasing) in a bearing cavity will cause the rotating bearing elements to begin churning the grease, pushing it out of the way, resulting an increase of bearing component temperatures. This leads to rapid oxidation (chemical degradation) of the grease as well as an accelerated rate of oil bleed, which is a separation of the oil from the thickener. The heat that has been generated over time along with the oil bleed eventually will cook the grease thickener into a hard, crusty build-up that can impair proper lubrication and even block new grease from reaching the core of the bearing. This can result in accelerated wear of the rolling elements and then component failure.



## Hydraulic System Purge

Hook your scraper up to the tractor and cycle it through several times on both circuits to ensure all air has been purged from the system and to check the apron pushoff sequence where applicable. The apron should reach the top before the pushoff starts to move forward for ejector style machines.

After the pushoff reaches the front and you start to retract the pushoff, the apron should not drop or drift closed until the pushoff has completely retracted. If drop or drifting occurs, adjust the valve as needed. Contact your Ashland Industries dealer if you are not familiar with this process for your specific machine.

Check the oil in the tractor hydraulic system to ensure proper operation.

## Cylinder Maintenance

Refer to the parts manual for location, description, and ordering information for cylinder repair parts.

### **Removal: use appropriate container to prevent oil spillage!**

- Lower bowl to the ground.
- Relieve hydraulic pressure, by actuating hydraulic control valve lever in both directions to neutralize pressure.
- Plug cylinder ports.
- Loosen hydraulic line connections at the cylinder.
- Remove hoses and cap/plug hose ends to prevent contamination of hydraulic oil.
- Remove rod end cylinder pointed pin.

### **WARNING: Oil may be hot!! Cylinder may fall when pin is removed!**

- Remove butt end mounting pin.
- Remove cylinder from scraper.

For installation, follow removal procedure in reverse order. Discard all hydraulic fluid collected in appropriate containers.

## Cylinder Leakage

Internal leakage:

- Definition: Concealed leakage past piston seal.
- Indication: No visual indication, but cylinder will not hold position when valve is closed.

External leakage:

- Definition: Oil leaking from rod seal or gland seal.
- Indication: Visible oil leaking from cylinder.

Both conditions require removal, disassembly, and repair of cylinder.



## Machine Problems

With proper care and maintenance, your Ashland Scraper will give many years of reliable service. When a situation arises where the earthmover performance is not satisfactory, this section will give some pointers on finding and correcting the problem.

### Grease zerk will not take grease:

- Grease zerk plugged.
  - Remove and replace grease zerk.
- Pin is frozen.
  - Remove, clean, and inspect pin.
  - Replace pin if necessary.
- Bushing grease passage is not aligned with grease zerk.
  - Remove, clean, inspect, and realign bushing.
  - Replace bushing if necessary and realign.

### Rollers do not roll:

- The rollers need lubrication.
  - Check zerk hole and grease, if applicable.
  - Remove pin, clean, inspect, and replace if necessary.
- The roller bushing is worn out.
  - Remove roller assembly and replace bushings.

### Cylinder will not hold in present position, i.e. the cylinder creeps:

- Seals leaking internally.
  - Remove and replace seal kit.

### Machine cuts unevenly:

- Cutting edges worn unevenly.
  - Replace cutting edges.
- Improperly inflated tires.
  - Check air pressure in tires.





## Report Theft

Report the theft or vandalism of your scraper to the local authorities immediately.

Always keep proof of ownership documents and a serial number log separate from the machine.

Take several high quality photographs periodically of the machine and store in a location away from the machine.

Maintain an up-to-date inventory of all your equipment.

Whenever possible, park the machine in a manner that makes it difficult to move or be loaded onto a trailer.

Always park in a well lighted area.



**The warranty of this product applies only to defects in material and workmanship and does not cover parts that fail because of poor maintenance or improper use.**

## **Warranty Voids**

- Adding or extending to the size or shape of the scraper to increase yardage capacity.
- Damage to hydraulic components due to high pressure spikes beyond the designed limitation.
- Pulling a scraper by a tractor above the horsepower rating.
- Operating above rated tire load capacity or running tires with low air pressure.
- Loading rock or large minerals.
- Top loading scraper(s) with frame cylinders in raised position.
- Using excavator or wheel loader to pack material in the scraper bowl.
- Transporting the scraper at high speeds over rough terrain.
- Transporting empty scraper at a high rate of speed with the apron gate raised.
- Excessive transport speed of a loaded scraper that bounces or duck-walks excessively.
- Leveling haul roads/fields with the apron gate closed.
- Use of equipment beyond the purview of original design or intent, explicitly or implicitly disclosed by Ashland Industries' engineering group.



## The Purpose of Warranty

Ashland Industries, Inc. warrants each new product to be free from defects in material and workmanship. This warranty is applicable only for the normal service life expectancy of the product or components, not to exceed one year from the date of delivery of the new Ashland Industries product to the original purchaser, or the date the product is first put into service via a rental agreement or other means, whichever occurs first.

## Dealers Responsibilities

The following responsibilities are to be performed when the dealer delivers a product to the purchaser or otherwise places it into warranty service:

- Complete the Warranty Registration Form and forward it to Ashland Industries within 30 days of the sale, rental or other use of the product. Warranty reimbursement is contingent upon product registration.
- Review the warranty statement and operator's manual with purchaser to assure understanding of purchaser's responsibilities as related to warranty, service, and the proper and safe operation of the product. Purchasers/Renters should be advised to have failed parts repaired or replaced immediately upon failure, as continued use will result in additional damage, excessive wear, and may result in personal injury.
- Contact Ashland Industries prior to beginning repair or replacement of failed parts to make certain that the cost of repairs are consistent with the value of the product being sold.
- Warranty requests for units in dealer's inventory may be submitted to Ashland Industries when defects are noted in products prior to the retail sale or rental of that unit.
- Provide warranty and service repairs as directed by Ashland Industries' "Service Repairs Bulletins" or other instructions.
- All warranty work must be completed within 30 days of failure. Notify Ashland Industries' warranty department if repairs will require more than 30 days after failure for an extension. No claim will be accepted for warranties that exceed this 30 day period.
- No warranty will be allowed on units delivered to the retail customer prior to the full payment of that unit to the manufacturer by the dealer.
- If diagnostic time is required, contact Ashland Industries prior to beginning the warranty repair for approval. Ashland Industries must approve travel time reimbursement prior to beginning the warranty repair.

## Ashland Industries Responsibilities

- Reimbursement for parts used in warranty repair will be credited only when the parts are purchased from Ashland Industries Inc. Parts will be credited at dealer's net cost. No warranty will be allowed on parts that are past due.
- Dealer should use parts from their parts inventory first. In the event that parts must be shipped from Ashland Industries Inc., freight will be paid by Ashland Industries and will be shipped by the most economical means to arrive in the shortest possible time. Air, Next Day Air, Priority and other special shipment methods requested by the dealer will be at the customer's expense.





## Ashland Industries Responsibilities (Cont'd)

- Warranty Labor Reimbursement for labor expense to the dealer is made by payment of the established hourly shop rate.
- Repair times will be reviewed by Ashland Industries and may be adjusted to average repair time required by other dealers to make similar repairs. Labor is not paid on the warranty associated with repair parts purchased by the retail customer that are used on a product that is not currently in warranty time frame.
- Reimbursements for repairs made by an outside source (not dealer personnel) will be made for those services deemed necessary for the resolution of the warranty by Ashland Industries' warranty department. Outside repair invoices must have prior approval from Ashland Industries' service department and must be attached to the warranty claim after approval.

## Other Warranty Provisions

The following guidelines are to be followed when performing warranty repairs:

- In all cases, the most economical repair should be performed unless otherwise directed. Credit will not be allowed for assemblies or groups if it is practical to make the repair with individual parts. In some cases, the assembly or group price may be less than the total of the parts and labor required to complete the repair. In those cases, an assembly or group may be used.
- Only those parts provided by Ashland Industries are covered under Warranty. The use of parts from other sources will not be eligible for warranty consideration.
- All parts removed during warranty repair should be held for a period of 90 days after the warranty claim has been submitted to Ashland Industries. These parts can be discarded if disposition or return request has not been made during this period. Parts that are requested must be returned within 30 days of claim disposition. These parts will be discarded after the 30 day period.
- Ashland Industries reserves the right to deny or reverse any and all warranty claims for parts, labor, or miscellaneous charges when errors are found, warranty provisions are abused, or fraudulent claims are submitted.

## Warranty Reimbursement is Not Possible

- When failure falls under the "limitations" as identified in Ashland's Limited Warranty Statement.
- When Ashland Industries has requested the return of certain parts, assemblies, or information and has not received the material with 30 days of date posted on return request.
- On claims due to damage or shortage that are obviously the responsibility of dealer or the delivering carrier.
- On the entire claim when warranty policy and provisions are not followed.

**All dealers will warranty their technician's work to the purchaser and will indemnify Ashland Industries Inc. from such claims.**



## Service Bulletins

Service Bulletins will be issued when necessary to alert dealers of special repairs. Each bulletin will give detailed directions and procedures to complete the service.

## Procedures For Completion Of Warranty Form

Complete the warranty form available at [www.ashlandind.com](http://www.ashlandind.com) or in your dealer's yellow Ashland Sales Book. Return this form to Ashland Industries within 30 days of failure.

## Use of Photographs

Pictures of the failure are recommended but not required. Photos should be attached to dealer's claim when their inclusion will help identify the condition of the part being repaired or replaced, and thus assisting in approval of the claim. In many cases, the use of photos may eliminate the need to return parts for evaluation. Photos will not be returned unless specifically requested. Digital photos are preferred and can be email to [warranty@ashlandind.com](mailto:warranty@ashlandind.com).

## Delayed Warranty Repairs

Warranty repairs should be scheduled and performed as soon as possible after notifying your dealer and Ashland Industries. There may be circumstances that require the use of the product for a short period of time by the retail customer, or the availability of repair parts may require the work to extend past a 30 day period. In these cases, the dealer must notify Ashland Industries in writing of the extenuating circumstance and advise that the continued use of the product will not enlarge the warranty claim. These claims will then be processed as if the product is still within the warranty period.

## Denied Claim

Dealers will be notified of a denied claim and notification will state the reason for denial. A dealer has the right to appeal this claim and must do so within 30 days of notification of denial. If there has been no appeal within the 30 day period, the claim will be considered closed.

## Limited Warranty Statement

Ashland Industries, Inc. warrants each new product to be free from defects in material and workmanship. This warranty is applicable only for the normal service life expectancy of the product or components, not to exceed one year from the date of delivery of the new Ashland Industries, Inc. product to the original purchaser, or the date the product is first put into service via a rental agreement or other means, whichever occurs first.

The major components of swivel hitches used on scrapers are warranted for three consecutive months from the date of delivery of the new Ashland Industries, Inc. product to the purchaser, or the date the product is first put into service via a rental agreement or other means, whichever occurs first, except those components described below.

Genuine Ashland Industries, Inc. replacement parts and components will be warranted for 30 days from date of purchase, or the remainder of the original equipment warranty period, whichever is longer.

Under no circumstances will it cover any merchandise or components thereof, which in the opinion of the company, has been subjected to misuse, unauthorized modification, alterations, an accident, or if repairs have been made with parts other than those obtained through Ashland Industries, Inc.



## Limited Warranty Statement (Cont'd)

Ashland Industries, Inc. in no way warrants tires since their respective manufacturer warrants these items separately. Please call Ashland Industries, Inc. to receive phone numbers of tire suppliers. Ashland Industries, Inc. in no way warrants wearable items such as cutting edges, front dolly wheel balls, sockets, rollers, bushings, yoke hitch pins, hitch bushings, etc.

Our obligation under this warranty shall be limited to repairing or replacing, free of charge to the original purchaser, any part that, in our judgement, shall show evidence of such defect, provided further that such part shall be returned within 30 days from the date of failure to Ashland Industries, Inc. routed through the dealer and distributor from whom the purchase was made, transportation charges prepaid. Upon warranty approval, proper credits will be reimbursed for transportation.

This warranty shall not be interpreted to render Ashland Industries, Inc. liable for injury or damages of any kind or nature to person or property. This warranty does not extend to the loss revenue, extra labor cost associated with downtime, substitute machinery, rental, or for any other reason.

Except as set forth above, Ashland Industries, Inc. shall have no obligation or liability of any kind on account of any of its equipment and shall not be liable for special or consequential damages.

Ashland Industries, Inc. makes no other warranty, expressed or implied, and, specifically, Ashland Industries, Inc. disclaims any implied warrant or merchantability or fitness for a particular purpose. Some states or provinces do not permit limitations or exclusions of implied warranties or incidental or consequential damages, so the limitations or exclusion in this warranty may not apply.

This warranty is subject to any existing conditions of supply which may directly affect our ability to obtain materials or manufacture replacement parts.

Ashland Industries, Inc. reserves the right to make improvements in design or changes in specifications at any time, without incurring any obligation to owners of units previously sold. No one is authorized to alter, modify, or enlarge this warranty nor the exclusion, limitations, and reservations.

## Owner Registration

Be sure to complete the Owner Registration form that you received with your machine and return it to Ashland Industries within 30 days of the sale, rental, or other use of your product. Warranty reimbursement is contingent upon product registration. If your product is not registered, it is NOT covered under warranty.