

MASTERFINISH

OPERATION MANUAL



MF836 RIDE ON TROWEL MACHINE



**Concrete Tool
Importers Ltd**

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DAILY PRE-OPERATION CHECKLIST

NOTE

Make copies of this checklist and use it on a daily basis.

1.	Engine Oil Level
2.	Gearbox Oil Level
3.	Engine Fuel Level
4.	Condition of Blades
5.	Blade Pitch Operation
6.	Safety Cut-Out Switch Operation
7.	Fasteners (Bolts & Nuts)

Comments:

SAFETY ALERT & HAZARD SYMBOLS

For your safety and the safety of OTHERS! Safety precautions should be followed at all times when operating this equipment. Failure to read and understand the Safety Messages and Operation could result in injury to yourself or others.

NOTE

This Owner's Manual has been developed to provide complete instructions for the safe and efficient operation of BOMAX Walk-Behind Power Trowel. Please refer to the engine manufacturers instructions for related safe operation and maintenance of the engine.

Before using this equipment, ensure that the operator has read and fully understands all instructions in this manual.

SAFETY ALERT SYMBOLS

The following safety alert symbols will inform you about potential hazards that could injure you or others. They represent the level of exposure to the operator, and are preceded by one of three words: **DANGER**, **WARNING**, or **CAUTION**.



DANGER: You **WILL** be **KILLED** or **SERIOUSLY** injured if you **DO NOT** follow directions.



WARNING: You **CAN** be **KILLED** or **SERIOUSLY** injured if you **DO NOT** follow directions.



CAUTION: You **CAN** be injured if you **DO NOT** follow directions.

Potential hazards associated with Pro-Series Trowel operation will be referenced with "**Hazard Symbols**" which appear throughout this manual, and

will be referenced in conjunction with “**Safety Alert Symbols**”.

HAZARD SYMBOLS

Lethal Exhaust Fumes



Engine exhaust fumes contain poisonous carbon monoxide. This fume is colorless and odorless, and can cause death if inhaled. **NEVER** operate this equipment in a confined area or enclosed structure that does not provide ample free flow air.

Explosive Fuel



Gasoline is extremely flammable, and its vapors can cause an explosion if ignited. **DO NOT** start the engine near spilled fuel or combustible fluids. **DO NOT** fill the fuel tank while the engine is running or hot. **DO NOT** overfill tank, since spilled fuel could ignite if it comes into contact with hot engine parts or sparks from the ignition system. Store fuel in approved containers, in well ventilated areas and away from sparks and flames. **NEVER** use fuel as a cleaning agent.

Burn Hazards




Engine components can generate extreme heat. To prevent burns, **DO NOT** touch these areas while the engine is running or immediately after operations. **NEVER** operate the engine with heat shields or heat guards removed.

Rotating Parts



NEVER operate equipment with covers, or guards removed. Keep **fingers, hands, hair** and **clothing** away from all moving parts to prevent injury.

 Accidental Starting



ALWAYS place the engine ON/OFF switch in the **"OFF"** position when the equipment is not in use.

 Over Speed Conditions



NEVER tamper with the factory settings of the engine governor or settings. Personal injury and damage to the engine or equipment can result if operating in speed ranges above maximum allowable.

NOTE

*This **equipment**, other property, or the surrounding environment could be damaged if you do not follow instructions.*

 Respiratory Hazard



ALWAYS wear approved respiratory protection.

 Sight and Hearing Hazard



ALWAYS wear approved eye and hearing protection.

 **Equipment Damage Messages**

Other important messages are provided throughout this manual to help prevent damage to your equipment, other property, or the surrounding environment.

SAFETY MESSAGES

CAUTION:



For your own personal safety and those around you, **YOU MUST READ** and ensure you **FULLY UNDERSTAND** the following safety information. It is the responsibility of the operator to ensure that he/she fully understands how to operate this equipment safely. In the event you are unsure about the safe and correct use of the Power Trowel, please consult your supervisor or nearest *Bomax* dealer or Bomax.

The following safety guidelines should always be used when operating the ride-on Power Trowel.

CAUTION:



IMPROPER maintenance or use can be hazardous. **READ** and **FULLY UNDERSTAND** this section before you perform any maintenance, service or repairs.

- This equipment is to be used for its intended application only.
- This equipment must be operated only by well-trained personnel.
- The owner of this equipment must observe, and train the operator of the equipment to observe the effective Labor Protection Regulation in the country of application.

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- Use a suitable lifting equipment to lift the equipment.
 - Cordon off the work area and keep members of the public and unauthorized personnel at a safe distance, including animals.

- Keep **FINGERS, HANDS, HAIR** and **CLOTHING** away from moving parts.



- Never allow a person to act as a weight for this equipment.
- Personal Protective Equipment (PPE) must be worn by the operator whenever this equipment is being used.
- Make sure you know how to safely switch this equipment **OFF** before you switch it **ON** in case you get into difficulty.

- Always switch **OFF** the engine before servicing it.



- During use, the engine becomes very hot. Allow the engine to cool before touching it.



- Never leave the engine running and unattended.
- Never remove or tamper with any guards fitted, they are there for your protection. Always check guards for condition and security. If any are damaged or missing, **DO NOT USE THE EQUIPMENT** until the guard has been replaced or repaired.

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- Do not operate the machine when you are ill, feeling tired, or when under the influence of alcohol or drugs.



- This equipment is designed to eliminate the possible risks arising from the use of it. However, risks **DO** reside, and these risks are not clearly foreseeable, and may cause personal injury or property damage, even possible death. If such unpredictable and unforeseeable risks become apparent, the equipment must be stopped immediately, and operator or his supervisor must take appropriate measures to eliminate such risks. It is sometimes necessary to inform the manufacturer of such event for future counter measuring.

WARNING:



Fuel is highly flammable. It may cause injury, death or property damage. **SHUT DOWN** the engine, extinguish all open flames and **DO NOT** smoke while filling the fuel tank. **ALWAYS** wipe up any spilled fuel.

- Before refueling, switch off the engine and allow it to cool.

- When refueling, **DO NOT** smoke or allow naked flames in the area.



- When refueling, use proper funnel, and avoid spilling over the engine.

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- Spilt fuel must be made safe immediately, using sand. If fuel is spilt on your clothes, change them.
 - Store fuel in an approved, purpose made container away from heat and ignition source.

PPE (Personal Protective Equipment)

Suitable PPE must be worn when using this equipment i.e. Safety Goggles, Gloves, Ear Defenders, Dust Mask and Steel Toe capped footwear (with anti-slip soles for added protection). Wear clothing suitable for the work you are doing. Always protect skin from contact with concrete.



FUEL

Do not ingest fuel or inhale fuel vapors and avoid contact with your skin. Wash fuel splashes immediately. If you get fuel in your eyes, irrigate with copious amounts of water and seek medical attention as soon as possible.

EXHAUST FUMES

WARNING:



The exhaust fumes produced by the engine are **HIGHLY** toxic and **CAN KILL!**



Do not operate your Power Trowel indoors or in a confined space, make sure the work area is adequately ventilated.

GENERAL SAFETY GUIDELINES

Failure to follow instructions in this manual may lead to serious injury or even death! This equipment is to be used by qualified and trained personnel only. This equipment should not be operated by persons under 18 years of age.

Always use proper heavy lifting techniques when moving equipment.

Always make sure that machine is kept in proper operating condition.

Always have throttle position at idle while starting engine.

Always check to make sure that operating area is clear before starting engine.

Always test safety equipment including the safety engine kill mechanisms before operating equipment.

Never place feet on or inside the guard ring while starting the engine.

Never operate this equipment without proper protective clothing including footwear.

Always keep clear of rotating parts when operating.

Never operate with belt guard or any other guards removed.

Never leave machine unattended while running.

Never refuel while engine is running or while engine is hot.

Always refuel in a well ventilated area, away from sparks and open flames.

Never smoke while refueling.

Exhaust fumes are lethal! Operate machine in a well ventilated area, away from places where fumes can accumulate.

SAFETY INFORMATION

FOLLOW ALL SAFETY INSTRUCTION

Read All safety instructions carefully. Safety instructions will be found throughout this manual and on the machine. Keep all safety information in good, readable condition. If needed, replacement safety information is available.

Proper machine operation includes training for operators. Operators should be versed on machine safety and operation. Never allow a person who is not properly trained to operate this equipment.

Keep this machine in proper working condition. This includes keeping all safety decals on the machine clean and visible.

Do not modify this machine. Doing so may cause improper operation and may not be safe. This may also reduce machine life. Modifying this machine in any way will void the warranty.

OPERATE MACHINE SAFETY

Always be aware of the operational area of your machine. Operators need to be careful to keep bystanders and nearby objects at a safe distance from the machine. Never let someone who is untrained operate this machine.

Study the operational area carefully. Remove all dangerous objects from the finishing area. (i.e. protruding rebar or wood). Do not attempt to use the machine where operation appears to be dangerous.

Keep the machine properly maintained and in good working order. This mainly entails keeping the machine clean and serviced. This will allow the finisher to perform to its fullest potential and provide the longest operational lifetime. Check the safety kill switch before and after every operation. It is good practice to stop the machine with the safety kill switch, to ensure it is operating properly. Always try to do most work during daylight hours or with sufficient artificial lighting. Visibility must be good for this machine to be used effectively.

Never operate machinery when tired or ill. Operators must be alert and always looking for possible signs of danger or misuse of machinery. Do not operate the machine in dangerous surroundings.

PERSONAL PROTECTIVE EQUIPMENT

Always wear proper clothing while operating this equipment. Protective clothing includes (but is not limited to): boots, long sleeve shirt, long pants, gloves, hearing protection and safety eyeglasses. Consult with the construction site foreman to determine what protective clothing is required on the construction site.

HAZARDOUS MATERIALS

Exposure and mishandling of hazardous material can cause personal injury or damage the environment. Potentially hazardous material used on this machine may include the following: lubricant, fuel, paints and adhesives.

Take care to handle hazardous material properly. MSDS information sheets are available upon request.

MAINTENANCE SAFETY

Cautions! Disconnect spark plug wires before attempting service.

Before attempting maintenance on this machinery, know the procedure and have the correct tools. Always make sure that machine is stopped and the spark plug wires and battery are disconnected before attempting service.

Securely support any machine components that must be raised for service (i.e. trowel arms). Never lubricate the machine or attempt service on a running machine. Always allow the machine proper time to cool before servicing.

Keep machinery in proper running condition. Make sure that there is no buildup of concrete, grease, oil or debris. Keep all parts properly installed. Fix damage immediately and always replace worn or broken parts.

Dispose of potentially hazardous waste properly. Examples of potentially

hazardous waste are: motor oil, fuel and filters. Use rigid containers for trapping these items. Do not use old food or beverage containers, someone may be misled. Do not pour waste oil or fuel directly onto the ground, down a drain or into any water source.

Inquire what the proper disposal procedures are for waste fuel and oil in your local area.

TROWEL FINISHER SERIES---INSTUCTIONS

Putting Into Service

Before packing and shipping, this power Trowel was run and tested at the factory. If there are any problems, please let us know.

Before putting your new finisher into service, read all manuals and instructions carefully. Improper setup, use or maintenance of your equipment could result in personal injury or damage to equipment.

The purpose of this section of the manual is to explain the intend setup, use and maintenance of this equipment.

Assembly

BM836 ride-on trowel are full assembly in the factory. No need to assembly anything by end user!

DO NOT LIFT THE MACHINE BY GUARD RINGS.

Before Starting

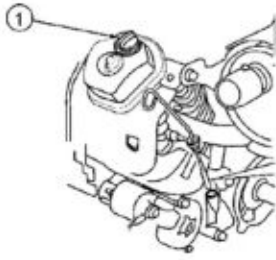
1. Read and follow the engine operation manual before running.
2. Add fuel and water into the tank. Stainless tank is for water.



3. Connect the battery wire. Red wire is to positive, black is to negative



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4. Add the oil to engine according to the engine manual. And check the gear-box oil level.



5. Check the stop panel working property.



6. Adjust the chair to the comfortable position for the operator



Machine Operations

Starting

1. put left feet on stop switch panel(left the foot will stop the engine)
2. open the engine choke

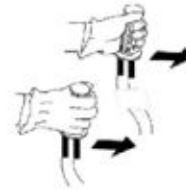


Honda

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3. Turn the key and starting the engine
 4. After running 3 minutes with idle speed then close the engine choke
 5. Trample the throttle with right feet operation the machine.

Operation

1. Trample the engine throttle panel increasing the blade speed
2. Moving direction
 - Forward: push 2 control bars forward
 - Reverse: push 2 control bars reserve
 - Right side: move 2 control bars to right side
 - Left side: move 2 control bars to right side
 - Turning: right hand control bar forward, left hand bar reserve to turn anticlockwise
 - Right hand control bar reserve, left hand bar forward to turn clockwise



Always look behind you to avoid hazards before moving backwards.

3. light switch: light switch locate close the chair
4. Water pump
Water pump install in the back side switch in on the left hand control bar



Cleanup

NEVER allow concrete to harden on the power trowel.

Immediately after use, wash any concrete off your trowel with water. Be careful not to spray water on the engine. An old paintbrush or broom may help loosen any concrete that has started to burden.

Coat the blades and blade arms with diesel fuel after cleaning. This should help prevent rusting and allow for easier cleanup in the future.

Maintenance (service, Adjustment and repair)

NOTE: See the engine manual supplied with your machine for appropriate engine maintenance schedule.

There is a "Daily Preparation Check List" at the end of this manual. Please feel free to make copies of it and use it on a daily basis.

Maintenance schedule

Daily (8-10 Hours)

Check the gearbox oil lever daily

Check the fluid levers in the engine and gearbox.

Check the connect link control for loosen



Weekly (50-60 Hours)

Re-lubrication arms, thrust collar and clutch.

Replace the blades if necessary.

Check and clean or replace the engine air filter as necessary.

Monthly (100-200 Hours)

Remove, clean, reinstall and re-lubrication the arms, thrust collar and clutch..

Adjust the blade arms.

Yearly (200-2500 Hours)

Check and replace if necessary the arm bushings, thrust collar bushing, shaft seals and belt.

Check pitch control cable for wear.

SERVICE PROCEDURES

Checking Belt Tension

The first indication of belt wear is a reduced blade speed despite the engine running at full speed. Inspect belts often for signs of damage or excessive wear.

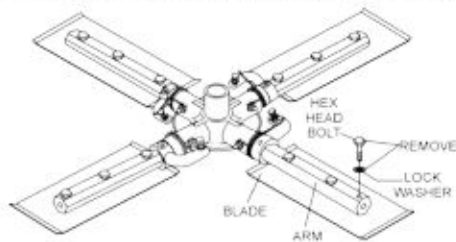
There is no method for manual adjustment of belt tension. Excessively worn belts must be replaced.

There are some things to look for when checking to see if adjustment is necessary. Is the machine wearing out blades unevenly (i.e. one blade is completely worn out while the others look new)? Does the machine have a perceptible rolling motion? Look at the machine while it is running, do the guard rings "rock up and down" relative to the ground? These are some indications that the blade pitch needs to be adjusted.

Changing a Blade

We recommend that all the blades be changed at the same time. The machine may wobble or bounce if only some of the blades are changed at one time.

1. Place the machine on a flat, level surface. Adjust the blade pitch control to make the blades as flat as possible. Note the blade orientation on the trowel arm.
2. Remove the bolts and lock washers on the trowel arm, then remove the blade.
3. 3. Scrape all concrete particles from the trowel arm,
4. 4. Install the new blade, maintaining the proper orientation for direction of rotation.
5. 5. Affix the bolts and lock washers.
6. Repeat steps 2-6 for all of the remaining blades.



Spare belt

Bomax ride-on power trowel is equipped with a replacement drive belt (spare) carrier, which is mounted on the side of the gear-box. Make sure that there is always a spare drive belt in the drive belt carrier before the trowel is placed on a slab to finish concrete.



Float Discs

We provide 2 models ride-on machine. One is pan machine, the other is overlap machine.

These round discs attach to the spider and allow the machine to “float” on “wet” concrete. The disc design allows early floating and easy movement from wet to dry areas. They are also quite effective in embedding large aggregates and surface hardeners.



STORAGE

WARNING:



Fuel is highly flammable. It may cause injury, death or property damage. **SHUT DOWN** the engine, extinguish all open flames and **DO NOT** smoke. **ALWAYS** wipe up any spilled fuel.



For long-term storage, empty the fuel in the carburetor by running the engine with the fuel tap being closed.

The chemical composition of the fuel will deteriorate after prolonged storage. When the Trowel needs to be stored for a long time, remove all the fuel from the fuel tank. Also remove the fuel from the float chamber of the carburetor by draining the fuel out from the drain plug.

Wash away cement/concrete accumulated on the Trowel. Clean the base and protection rings. Apply a light coat of oil to prevent rust formation. Cover the Trowel and store it in a dry place.

The Operation Handle can be disengaged for easy storage. Loosen the bolts on the connecting point on the base plate and release the Operation Handle from the slot.

Trouble shooting

Troubleshooting (engine)		
Sympto	possible problem	Solution
Difficult to start, fuel is available, but no spark at spark plug.	Spark plug bridging?	Check gap, insulation or replace spark plug.
	Carbon deposit on spark plug?	Clean or replace spark plug.
	Short circuit due to deficient plug insulation	Check spark plug insulation, replace if worn.
	Improper spark plug gap?	Set to proper gap.
	Fuel reaching carburetor?	Check fuel line.
	Water in fuel tank?	Flush or replace fuel tank.
	Fuel filter clogged?	Replace fuel filter.
	Stuck carburetor?	Check float mechanism.
	Spark plug is red?	Check transistor ignition unit.
	Spark plug is bluish white?	If insufficient compression, repair or replace engine. If injected air leaking, correct leak. If carburetor jets clogged,
	No spark present at tip of spark plug?	Check transistor ignition unit is broken, and replace defective unit. Check if voltage cord cracked or broken and replace.
	No oil?	Add oil as required.
	Oil pressure alarm lamp blinks upon starting? (if applicable)	Check automatic shutdown circuit, "oil sensor". (if applicable)
Difficult to start, fuel is available, and spark is present at the spark plug.	ON/OFF switch is shorted?	Check switch wiring, replace switch.
	Ignition coil defective?	Replace ignition coil.
	Improper spark gap, points dirty?	Set correct spark gap and clean points.
	Condenser insulation worn or short circuiting?	Replace condenser.
	Spark plug wire broken or short circuiting?	Replace defective spark plug wiring.
Difficult to start, fuel is available, spark is present and compression is normal.	Wrong fuel type?	Flush fuel system, and replace with correct type of fuel.
	Water or dust in fuel system?	Flush fuel system.
	Air cleaner dirty?	Clean or replace air cleaner.
	Choke open?	Close choke.
Difficult to start, fuel is available, spark is present and compression is low.	Suction/exhaust valve stuck or protruded?	Reseat valves.
	Piston ring and/or cylinder worn?	Replace piston rings and/or piston.
	Cylinder head and/or spark plug not tightened properly?	Torque cylinder head bolts and spark plug.
	Head gasket and/or spark plug gasket damaged?	Replace head and spark plug gaskets.
No fuel present at carburetor.	No fuel in fuel tank?	Fill with correct type of fuel.
	Fuel cock does not open properly?	Apply lubricant to loosen fuel cock <small>to be replaced if necessary.</small>
	Fuel filter/lines clogged?	Replace fuel filter.
	Fuel tank cap breather hole clogged?	Clean or replace fuel tank cap.
	Air in fuel line?	Bleed fuel line.

Troubleshooting (engine) - continued		
Symptom	possible problem	Solution
Weak in power, compression is proper and does not misfire.	Air cleaner dirty?	Clean or replace air cleaner.
	Improper level in carburetor?	Check float adjustment, rebuild carburetor.
	Defective spark plug?	Clean or replace spark plug.
	Improper spark plug?	Set to proper gap.
Weak in power, compression is proper but misfires.	Water in fuel system?	Flush fuel system and replace with correct type of fuel.
	Dirty spark plug?	Clean or replace spark plug.
	Ignition coil defective?	Replace ignition coil.
Engine overheats.	Spark plug heat value incorrect?	Replace with correct type of spark plug.
	Wrong type of fuel?	Replace with correct type of fuel.
	Cooling fins dirty?	Clean cooling fins.
	Intake air restricted?	Clear intake of dirt and debris. Replace air cleaner elements as necessary.
	Oil level too low or too high?	Adjust oil to proper level.
Rotational speed fluctuates.	Governor adjusted incorrectly?	Adjust governor.
	Governor spring defective?	Replace governor spring.
	Fuel flow restricted?	Check entire fuel system for leaks or clogs.
Recoil starter malfunctions. (if applicable)	Recoil mechanism clogged with dust and debris?	Clean recoil assembly with soap and water.
	Spiral spring loose?	Replace spiral spring.
Starter malfunctions.	Loose, damaged wiring?	Ensure tight, clean connections on battery and starter.
	Battery insufficiently charged?	Recharge or replace battery.
	Starter damaged or internally shorted?	Replace starter.
Burns too much fuel.	Over-accumulation of exhaust products?	Check and clean valves. Check muffler and clean if necessary.
	Wrong spark plug?	Replace spark plug with manufacturer's suggested type.
Exhaust color is continuously "white".	Lubricating oil is wrong viscosity?	Replace lubricating oil with correct viscosity.
	Worn rings?	Replace rings.
Exhaust color is continuously "black".	Air cleaner clogged?	Clean or replace air cleaner.
	Choke valve set to incorrect position?	Adjust choke valve to correct position.
	Carburetor defective, seal on carburetor broken?	Replace carburetor or seal.
	Poor carburetor adjustment, engine runs too rich?	Adjust carburetor.
Will not start, no power with key "ON". (if applicable)	ON/OFF device not activated ON?	Turn on ON/OFF device.
	Battery disconnected or discharged?	Check cable connections. Charge or replace battery.
	Ignition switch/wiring defective?	Replace ignition switch. Check wiring.

Troubleshooting (Ride-On mechanical Trowel)		
Symptom	possible problem	Solution
Engine running rough or not at all.	Stop switch malfunction?	Make sure that the stop switch is functioning when the operator is seated. Replace switch if necessary.
	Fuel?	Look at the fuel system. Make sure there is fuel being supplied to the engine. Check to ensure that the fuel
	Ignition?	Check to ensure that the ignition switch has power and is functioning correctly.
Safety stop switch not functioning.	Bad contacts?	Replace switch.
	Loose wire connections?	Check wiring. Replace as necessary.
	Other problems?	Consult engine manufacturer's manual.
Trowel bounces, rolls concrete, or makes uneven swirls in concrete.	Blades?	Make sure blades are in good condition, not excessively worn. Finish blades should measure no less than 2 inches (50mm) from the blade bar to the trailing edge, combo blades should measure no less than 3.5 inches
	Pitch Adjustment?	Check that all blades are set at the same pitch angle as measured at the spider. A field adjustment tool is available for height adjustment of the trowel arms
	Bent trowel arms?	Check the spider assembly for bent trowel arms. If one of the arms is even slightly bent, replace it immediately.
	Trowel arm bushings?(if equipped)	Check the trowel arm bushings for tightness. This can be done by moving the trowel arms up and down. If there is more than 1/8 inch (3.2 mm) of travel at the tip of the arm, the bushings should be replaced. All
	Thrust collar?	Check the flatness of the thrust collar by rotating it on the spider. If it varies by more than 0.02 inch (0.5 mm)
	Thrust collar bushing?	Check the thrust collar by rocking it on the spider. If it can tilt more than 1/16 inch (1.6 mm) - as measured at the thrust collar O.D., replace the bushing in the thrust
	Thrust bearing worn?	Check the thrust bearing to see that it is spinning freely. Replace if necessary.
Machine has a perceptible rolling motion while running.	Main shaft?	The main output shaft of the gearbox assembly should be checked for straightness. The main shaft must run straight and cannot be more than 0.003 inch (0.08 mm) out of round at the spider attachment point.
	Yoke?	Check to make sure that both fingers of the yoke press evenly on the wear cap. Replace yoke as necessary.

	Blade Pitch?	Check to ensure that each blade is adjusted to have the same pitch as all other blades. Adjust per maintenance section in manual.
Troubleshooting (Ride-On mechanical Trowel) - continued		
Symptom	possible problem	Solution
Lights (optional) not working.	Wiring?	Check all electrical connections in the lighting circuit. Verify wiring is in good condition with no shorts. Replace defective wiring or components immediately.
	Lights?	If +12VDC is present at light fixture connector when light switch is activated and light does not turn on, replace light bulb.
	Bad switch?	Check the continuity of light switch. Replace light switch if defective.
	Bad fuse?	Check fuse. Replace fuse if defective.
Retardant spray (optional) not working.	Retardant?	Check retardant level in tank. Fill tank as required.
	Wiring?	Check all electrical connections in the spray pump circuit. Verify wiring is in good condition with no
	Bad switch?	Check the continuity of both left and right spray switches (palm handles). Replace spray switch if defective.
	Bad spray pump?	If +12VDC is present at pump connector when spray switch is activated and pump does not operate, replace spray pump.
	Bad fuse?	Check fuse. Replace fuse if defective.
Steering is unresponsive.	Blade speed out of adjustment?	See section on blade speed adjustment.
	Steering linkage out of adjustment?	Adjust the connecting linkage found at the base of the handle. Contact your field service manager for instructions.
	Worn components?	Check for wear of steering bearings and linkage components. Replace if necessary.
Operating position is uncomfortable.	Seat adjusted for operator?	Adjust seat with lever located on the front of the seat.
Power head on Electric Pitch (optional) not working.	Broken or loose parts?	If the motor runs and the pitch is not affected, parts inside the power head may be loose or broken. Return power head to dealer for service.
	Wiring?	Check all electrical connections and wiring. Check the continuity at the power head unit. Verify that there is voltage present at the power head switch with the key

	Switch?	Check the continuity of the switch. If switch is malfunctioning, replace immediately.
Linkage on Twin Pitch not working.	Crank handles?	Make sure that both crank handles are pushed down as far as possible to ensure that the linkage is engaged.
	Broken part?	Replace all broken parts immediately.
Clutch slipping or sluggish response to engine speed change.	Worn belts?	Replace belt.
	Clutch out of adjustment?	Adjust per instructions in maintenance section of this manual.
	Worn or defective clutch parts?	Replace parts as necessary.
	Worn bearings in gearbox?	Rotate input shaft by hand. If shaft rotates with difficulty, check the input and output shaft bearings. Replace as necessary.
	Worn or broken gear in gearbox	Verify that the gearbox shaft rotates when the input shaft