

Operator's Manual

MEAN MACHINE

Propane Burnisher with Kawasaki Engine



Failure to read and understand this manual before operating this machine or performing service on this machine may result in injury to the operator or nearby personnel or result in damage to the machine or nearby property. Each operator must be trained in the operation of this machine before being allowed to use it. Contact Amano Pioneer Eclipse Customer Service at 1-800-367-3550 or 1-336-372-8080 or an authorized Amano Pioneer Eclipse Distributor to inquire about training or to request a replacement manual.

La falta de leer y de entender este manual antes de usar esta máquina o de realizar servicio en esta máquina puede dar lugar a lesión al operador o al personal próximo o a resultado en daño a la máquina o propiedad próxima. Cada operador debe ser entrenado en la operación de esta máquina antes de ser permitido utilizarla. Ponerse en contacto con el servicio de Amano Pioneer Eclipse 1-800-367-3550 o 1-336-372-8080 o un distribuidor autorizado por Amano Pioneer Eclipse para investigar sobre el entrenamiento o para solicitar un manual.

Manquer de lire et de comprendre ce manuel d'utilisation avant l'utilisation de cette machine ou avant faire de maintenance sur la machine peut être résulter en blessure à l'opérateur ou au personnel proche ou peut endommagé la machine ou la propriété proche. Chaque utilisateur doit être entraîné dans l'opération de cette polisseuse avant l'utilisation. Veuillez contacter le service après-vente de Amano Pioneer Eclipse à 1-800-367-3550 ou 1-336-372-8080 et/ou un distributeur de Amano Pioneer Eclipse pour vous renseigner concernant l'entraînement ou pour obtenir un autre manuel d'utilisation.



Models
ending
in "E"

Pioneer Eclipse®

FOR YOUR SAFETY IF YOU SMELL GAS:

1. Open window.
2. Don't touch electrical switches.
3. Extinguish any open flame.
4. Immediately call your gas supplier.

FOR YOUR SAFETY

**Do not store or use gasoline
or other flammable vapors and liquids
in the vicinity of this or any other appliance.**

Record This Important Information

Date of Purchase _____

Purchased From _____

Address _____

City _____ State _____ Zip _____

Phone _____ Contact _____

Machine Model _____

Machine Serial Number _____

Engine Type _____

Engine Serial Number _____

Important Phone Numbers

Medical Emergency _____

Police _____

Fire Department _____

In this Operation Manual you will find three statements that you must read and observe to ensure safe operation of this machine.

DANGER! indicates that the possibility of severe bodily injury or death can occur if **DANGER!** statements are ignored. Read and observe all **DANGER!** statements included in the Operation Manual and attached to the machine.

WARNING! indicates that the possibility of bodily injury to the operator and other people can occur if **WARNING!** statements are ignored. Read and observe all **WARNING!** statements included in the Operation Manual and attached to the machine.

CAUTION! indicates that the possibility of damage to the machine or other property can occur if **CAUTION!** statements are ignored. Read and observe all **CAUTION!** statements included in the Operation Manual and attached to the machine.

Operator Safety Instructions

DANGER! Operate this machine only in a well-ventilated area. It is the responsibility of the machine operator, machine owner, and site manager to ensure that the air exchange system where the machine is to be used is in compliance with local building codes and is operating properly. Failure to operate this machine in a well-ventilated area could lead to sickness, injury or death from carbon monoxide (CO) exposure.

DANGER! This machine emits carbon monoxide (CO) which is a colorless, odorless, non-irritating gas. The first symptoms of CO exposure include headache, drowsiness, dizziness and nausea. If you should experience any of these symptoms while operating this machine, shut off the machine and go outside to get fresh air. Have the machine tested for CO emissions by a qualified service technician before using it again.

DANGER! Prolonged or high exposure to CO may result in vomiting, confusion, and collapse in addition to loss of consciousness and muscle weakness. If such symptoms occur, call 911 for emergency medical attention. If you have experienced these symptoms, do not operate this machine or any other propane machine again until cleared by a physician. Excessive exposure to CO can result in death.

DANGER! Propane is a highly flammable fuel. If you smell propane, shut off the machine immediately and take it outside the building. Do not use the machine again until the propane leak has been corrected by a qualified service technician. Do not use or allow another person to use an ignition source such as a cigarette lighter near the propane machine. Do not smoke near the propane machine. Do not vent a propane cylinder inside a building. Do not store propane cylinders inside a building.

DANGER! This machine has parts including the pad and pad holder that can cause severe injury if these parts are contacted while they are moving. Do not allow any part of the body or clothing to come in contact with these parts while they are moving. Do not try to change the pad while the machine is running. Do not allow other people to come near the machine while it is in operation. Do not allow the machine to run unattended. Do not leave the machine in a place where unauthorized or untrained personnel could use the machine. Do not run the machine with the pad off center, damaged or missing. Do not operate the machine if the machine has loose parts such as the drive belt.

WARNING! Modifications or alterations to this machine can lead to personal injury or damage to the machine. Do not make unauthorized modifications or alterations to this machine. Amano Pioneer Eclipse assumes no liabilities for injury or damage resulting from an unauthorized modification or alteration to the machine. Any unauthorized modification or alteration to this machine voids all warranties.

WARNING! The muffler and the engine become hot enough while the machine is in operation, and for a long time after the machine is shut off, to cause severe burns. Do not touch these parts of the machine until they have cooled.

WARNING! Injury can occur to the eyes and body while using the machine. Safety goggles, safety shoes, and safety clothing are recommended while operating the machine.

WARNING! Continuous exposure to high noise levels can cause hearing loss. Hearing protection is recommended while the machine is in operation.

WARNING! Machine vibration may cause tingling or numbness in the fingers or hands. Gloves are recommended to reduce machine vibration. If tingling or numbness persists, shut off the machine. If the vibration is caused by loose parts such as the drive belt or an off center pad, adjust or tighten these parts before using the machine again.

CAUTION! Overfilled cylinders can damage fuel regulators. Do not overfill the cylinder. If the regulator freezes, stop the burnisher and carry the propane cylinder outside the building.

CAUTION! Overheating can be caused by a dirty engine filter which is also known as a bonnet or top hat filter.

CAUTION! Overheating can be caused by insufficient or low oil. Check oil before each use, and fill or change as needed.

CAUTION! Never over-fill with oil. Over-filling could cause irreparable damage to the engine.

CAUTION! Overheating can be caused by dirty oil. Check oil before each use and change regularly following recommended maintenance schedule.

CAUTION! Do not engage starter for more than 10 seconds. Allow a 60 second cool-down period for second failed start-up attempt.

CAUTION! Perform all recommended scheduled maintenance. Regular maintenance of your propane powered floor machine is necessary to keep it in safe working condition.

CAUTION! Do not allow the burnisher to operate without moving the machine. It may burn the floor and damage the floor covering.

This machine is manufactured for commercial use only.

Propane powered floor burnishers are designed and manufactured for ultra high speed commercial floor burnishing only. These machines are designed to burnish most modern types of floors including composition tile, stone, marble, terrazzo, and resilient floor covering using floor coatings designed for ultra high speed burnishing.

Even though NFPA 58 8-4.5 says ..."these machines shall be permitted to be used in buildings frequented by the public, including the times when such buildings are occupied by the public," Amano Pioneer Eclipse suggests usage when occupancy of a given work area is minimal.

These machines should not be used:

- in nursing homes, hospitals, day-care centers, etc.
- by unqualified or untrained personnel.
- unless properly maintained and adjusted.
- on areas with obstructions such as thresholds, floor outlet boxes, etc.
- in areas where loose tile or other objects are present.
- in rooms without proper ventilation.

Refueling and Storage of Fuel Cylinders

Amano Pioneer Eclipse uses the 20 lb. capacity aluminum or steel safe-fill cylinder which meets the DOT 4E240 standards. These cylinders are also listed by UL. Filling should be done **ONLY** by a qualified propane dealer. **FILL THROUGH THE SERVICE VALVE ONLY.** A properly filled cylinder should not exceed 80% of the rated capacity.

DO NOT attempt Safe-Fill cylinder repair. Return the cylinder to your propane dealer if repair is necessary. Please note that DOT regulations prohibit shipping of cylinders after the cylinder has been filled with propane.

When not in use, they always should be stored outside in an upright position in a secure, tamper-proof, steel mesh storage cabinet. This cabinet may be located next to the building but with at least five feet (1.5 m) of space between the cabinet and the nearest building opening (door or window).

The National Fire Protection Association (NFPA) Standard for Storage and Handling of LP Gas is the appropriate authority for safe propane use. A copy of this publication is available through the National Fire Protection Association in Quincy, Massachusetts (1-800-344-3555).

Canadian Safety Regulations

1. A sign indicating "NO SMOKING" shall be permanently displayed at the storage area. The sign shall be in accordance with the sign required in Clause 10.12.3 of CAN/CGA-B149.2-M91, Propane Installation Code.
2. When the cylinder is attached to the floor maintenance machine for use, the operator shall not leave the unit unattended except for short periods of time such as rest stops, washroom or meal stops.
3. The requirements of 1.10.1 (e) and (g) do not apply in industrial buildings.
4. A floor maintenance machine shall only be used in buildings:
 - a) provided with continuous mechanical ventilation that removes the products of combustion to the outdoors of not less than 300 CFM for each 10,000 Btu-hr input or fraction thereof.
 - b) provided with natural ventilation of not less than 300 CFM for each 10,000 Btu-hr input or fraction thereof, based on a maximum of one quarter air exchange per hour for the net building volume.
5. The owner of a floor maintenance machine shall ensure that the operator has participated in a course authorized by the manufacturer of the unit on the safe handling of propane and the safe operation of the machine.
6. The owner of a floor maintenance machine shall ensure that the unit is maintained in accordance with the manufacturer's recommended maintenance procedures in a safe operating condition and the owner shall maintain a record of the maintenance for a period of two years.
7. Before transporting a floor maintenance machine, the cylinder shall be securely fastened with the system valve closed, and the cylinder shall be located in a well ventilated space.

Machine Preparation

Adding Oil

When the burnisher is shipped by overland freight, the correct amount of oil is in the engine. Air freight shipments require the machine to be shipped without oil.

When filling a "dry" burnisher or changing oil, for the Kawasaki engine add no more than 1.6 quarts (1,5 L) when not changing the oil filter, or 1.8 US quarts (1,7 L) when the oil filter is changed, then check the dipstick in the fill cap. Add oil if necessary but **DO NOT OVERFILL! ALWAYS CHECK OIL BEFORE USING THE MACHINE.** Refer to the engine manual.

IMPORTANT: When checking oil on Kawasaki models, remove oil filler cap and clean dipstick with clean cloth, then insert

dipstick into tube without screwing in. Then check oil level. **ALWAYS** make sure the machine is sitting level when checking oil.

Connecting the Battery

For machines with 12 V Start:

1. Connect the RED positive battery cable FIRST.
2. Connect the BLACK negative battery cable LAST.

Adjusting the Handle and RokBak

The burnisher handle adjusts for comfort and optimum control. Height may be changed to suit the individual operator. The handle may also be adjusted to an full-up (about 45°) position to allow the burnisher to be rocked back for easy pad change. Rock the burnisher to the vertical position from the front of the unit. The burnisher must be off prior to using the RokBak Tilt System.

Propane Burnisher Daily Start-Up Routine

CHECK CYLINDER: Before bringing a propane cylinder indoors, always check it for over-filling.

ATTACH CYLINDER: Connect the fuel hose to the valve nozzle by turning it to the right. Hand tighten only to avoid leaks. Place the tank on the machine and secure by buckling the retaining strap. Remove slack by pulling on the loose end of the strap and securing with velcro. Connect the fuel hose coupling to the service valve by turning clockwise. **HAND TIGHTEN ONLY.** Make sure coupling is not cross threaded and check for leakage by noting any propane odors immediately after cylinder is connected. (It is sometimes easier to install if the connection to the service valve is made before strapping the cylinder in place.) **TO REMOVE THE SAFE-FILL CYLINDER,** reverse procedure. Always connect or change cylinders in a well ventilated area.

ALIGN PIN: Make sure to align the locating pin with the slot in the top flange of the Safe-Fill cylinder.

ADJUST TOGGLE: Strap the Safe-Fill cylinder in place by clamping the toggle assembly to the cylinder band. Adjust the toggle assembly by screwing it in or out to keep the cylinder firmly in place.

CLEAN FILTER: The recoil dust filter should be cleaned or replaced after each use of the burnisher and after each hour of continuous operation. A dirty filter can cause the engine to overheat and carbon monoxide emissions could elevate.

CHECK OIL: Make sure the burnisher is level when checking the oil. Follow engine manufacturer's procedure for checking the oil as detailed in the operation manual. The oil level should

always be within the safe levels indicated on the dip stick. Add oil if necessary, but never over-fill. Over-filling could cause irreparable damage to the engine.

CHECK PAD: Clean the pad if it is dirty or replace it if it is torn or worn thin (less than 1/8" or 32mm). Having a clean pad in good condition is essential to burnishing performance.

CHECK STUDS: Check the velcro studs. Clean if necessary and replace worn or broken studs.

CHECK PAD HOLDER: Check the pad holder for cracks. Replace if necessary.

DEFLECTOR: Check the exhaust deflector. Make sure the deflector is aligned correctly and functioning properly to prevent hot motor exhaust from damaging merchandise.

BELT TENSIONER: Check the tensioner belt. Replace belt if it is frayed or cracked.

MAINTENANCE LOG: Record the daily maintenance routine. Fill in the date in the left hand column, put your initials in the next column and use check marks in all columns which correspond to the maintenance procedures performed.

Optional EcoSense Emissions Monitoring System

Machines with model numbers ending in "X" are equipped with the EcoSense Emissions Monitoring System. EcoSense is an emissions monitoring device that monitors the exhaust emissions and will shut the engine down if the emissions levels are too low or too high.

Why will the unit shut down if the levels are too low? The monitor must receive a signal from the oxygen sensor in order to function. If it did not have a minimum reading requirement it would be possible to disconnect the oxygen sensor and operate the unit, even if the emissions were out of limits. In order for the unit work as designed it must be able to read both low and high signals, with "not to exceed limits" of both.

The oxygen sensor must reach operating temperature before it will start to send signals to EcoSense module. This time is set at forty-five seconds. A unit may shut down at a cold start up after the forty-five seconds because the oxygen sensor did not reach required temperature to start to send signals. If this happens, turn the key to the off position several seconds to clear the EcoSense module and restart the engine. Once the engine has started, advance the throttle to full throttle position and start the operation. With the engine at full throttle under load, the signal from the oxygen sensor should be within the normal operating ranges for safe operation. If the engine's air intake filter

needs to be serviced, or an over-filled cylinder has been installed by mistake, or there is a problem with the fuel system that causes the oxygen sensor's signal to be out of range, EcoSense will shut the unit down in forty-five seconds. The unit can be re-started after clearing the module by turning off the key switch. If corrections have not been made to the unit, EcoSense will continue to shut the unit down after the forty-five second warm-up and forty-five second out of limit periods or the total of both periods if restarting and resuming operation, ninety seconds.

Engines tend to go to lean burn if allowed to idle for even short periods. Even at high idle speeds most engines will continue to lean downward. It is always best to shut the engine off when it is not being used to do work. Remember the engine is always creating emissions as long as it is running.

The best manner to operate a unit equipped with EcoSense is as follows.

1. With the throttle in the slow position, turn the key switch to the start position, once the engine starts, advance the throttle to full throttle and start operation.
2. When ready to stop operation, release clutch (if equipped) and move throttle to the slow position. If the unit will not be used within forty-five seconds, turn the key switch to the off position. If the unit will not be returned to service within a few minutes it is best to turn the gas valve on the tank off first and let the engine consume all fuel that is in lines. Once the engine dies, turn the key switch to off position.
3. When ready to restart, open the gas valve on the tank, put the throttle in slow position and turn key switch to the start position. Once the engine has started, move throttle to full position and return to operation.

Operating Instructions

Starting Instructions

1. Check oil and fuel levels.
2. Check and clean engine air filter.

CAUTION! Never run continuously for more than 1 hour without cleaning or changing engine dust filter.

3. Check carburetor air filter. Change if necessary. (See "Scheduled Maintenance")
4. Turn propane service valve counterclockwise to open.

CAUTION! Always open service valve slowly to allow pressure to equalize in hoses. Opening quickly may cause the flow check valve to engage, limiting fuel flow.

5. Allow machine to tilt backward (pad off floor) and move throttle to SLOW position.
6. For models with 110 V Start: Plug electric cord into 110 volt wall receptacle and

onto starter switch.

7. 110 V Start: Engage starter by pushing the RED starter button.

12 V Start: Engage starter by turning the key-switch to the starting position for up to 5 seconds.

If the machine fails to start, wait approximately 5 seconds and try again for another 5 seconds.

CAUTION! Do not engage starter for more than 10 seconds. Allow a 60 second cool-down period for second failed start-up attempt. Continue cycling through Step 7 until engine starts.

Operation

After engine has started, allow approximately 30 seconds for the engine to warm up. Advance the throttle to operating speed.

On machines with a clutch, grasp either one of the handle levers to engage the clutch.

When the pad begins to spin, lower the burnishing head to the floor while moving the machine forward slowly.

CAUTION! Do not run the burnisher without moving the machine. If the machine is allowed to run in one spot damage to the floor may occur.

To stop burnishing, push down on handle to raise the burnishing head off the floor and disengage the clutch if equipped by releasing the handle levers.

It is recommended to start burnishing on the right side of the aisle, turn and come back down the aisle in the opposite direction, overlapping the previous path slightly. Continue this pattern until the floor area to be burnished has been covered with the last pass being on the right side of the machine. The forward speed is generally at normal walking speed.

Idling and Stopping the Machine

On machines equipped with a clutch, if for any reason the machine needs to idle for a short period of time, simply raise the burnishing head and disengage the clutch by releasing the handle levers.

DANGER! Allowing the engine to idle excessively will increase carbon monoxide emissions!

To stop the engine, close the service valve on the fuel cylinder by turning it clockwise (the engine will stop when the fuel in the lines is used up).

Installing/Changing Burnishing Pad

1. With engine OFF, tilt the machine to the RokBak position.
2. Remove pad centering device and carefully pull the old pad off the velcro pad holding material.

CAUTION! Carefully inspect the pad holder for cracks or damage. Replace if necessary.

WARNING! A damaged pad holder rotating at high speeds may be an extreme hazard if it should come apart.

3. Pull center from new pad, center pad on pad holder and secure with centering device.
4. Press pad onto velcro.
5. Return machine to upright position.

Emptying the Dust Bag

1. Pull up on rear of dust bag to detach velcro from the support tab.
2. Pull dust bag downward off dust tube by holding at the front and pulling down and to the rear to remove.
3. Empty bag by rubbing or gently tapping on sides, in a downward motion, to loosen soil trapped on sides of bag. For heavy soil, turn bag inside out to clean.
4. Reinstall bag by hooking elastic edge onto back of dust tube lip, and fitting elastic around dust tube.
5. Pull rear of dust bag towards rear of machine and reattach to velcro on the support tab.

Storage

Only authorized, trained personnel should have access to propane cylinders and machines.

1. Remove propane fuel cylinder when not in use and store it outside in a storage cage in accordance with NFPA Section 5 or Subsection 9.5.2 of CAN/CGA B149.2. Do not release or bleed propane inside the building. Please consult your local Fire Marshal to ensure that you are in compliance with local fire codes.
2. Store machine away from objects that may fall and damage it.
3. Never store burnisher or fuel cylinders near an open flame or heat producing device.
4. Make sure burnisher is cleaned properly before storing.
5. Never store burnisher with cylinders installed, or store spare cylinders in an enclosed van or trailer.

Repacking

1. Use shipping and package information attached to packing slip to repack machine.
2. Store machine in a dry location, temperature not to exceed 120°F (50° C).

Transportation

When transporting a propane powered floor burnisher with the fuel cylinder installed, the cylinder should be securely fastened with the service valve closed and the burnisher should be secured in the vehicle. Any propane fuel cylinders not installed should be securely fastened to avoid movement and damage. The service valves should be closed. Never store burnishers with cylinders installed, or store spare cylinders in an enclosed van or trailer. It is a good practice to check propane cylinders for overfilling before transporting them. If overfilled, correct before loading them in the vehicle by venting the excess propane outside in a safe area using the fixed liquid level gauge.

Scheduled Maintenance

Following proper scheduled maintenance procedures as outlined here will provide years of uninterrupted service.

General Maintenance Procedures

Fuel System

The fuel system works from vacuum created by the engine running. Turning the fuel cylinder service valve ON pressurizes the system for flow to the carburetor once the engine starts to crank.

Adjusting the Regulator

NOTE: The regulator and carburetor have been factory preset and should not require any modification. Only Amano Pioneer Eclipse authorized personnel, trained and certified in propane systems, should modify or adjust the system or its setting.

NFPA 58 8-1.4 states, "In the interest of safety, each person engaged in installing, repairing, filling, or otherwise servicing an LP-Gas engine fuel system shall be properly trained in the necessary procedures."

Engine Dust Filter

The engine dust filter should be cleaned each hour and after each use by shaking out the dust and then rinsing with mild detergent. Squeeze out the excess water (do not wring). Allow the filter to air dry. Failure to maintain a clean engine filter will cause the engine to overheat. Also, it may cause the exhaust emissions to elevate to harmful levels.

Carburetor Air Filter

- Loosen toggle clamps on each side of the air cleaner cover.
- Remove foam pre-cleaner and paper filter element.
- Clean foam pre-cleaner.
- Clean filter seal, making sure no dust is allowed in the carburetor inlet.
- Inspect paper element. Replace if dirty, bent or damaged.
- Install the clean paper element, pre-cleaner, air filter cover and reclamp.

Fuel Hose and Connections

- Inspection
 - Inspect hoses for abrasions and other signs of wear; replace all worn or damaged hoses.
 - Check for gas leaks by spreading soapy water solution around all the connections while the service valve is turned ON and the fuel system is pressurized.
- Fixing Leaking Joints
 - Uncouple bad joint and clean it. Then apply pipe sealing compound (Loc-Tite Pipe Sealant with Teflon or equivalent) to the clean joint.
 - Recouple the joint finger tight plus 1/2 turn.

Kawasaki Engine

Regular Service

Item or Type of Service		Break in 8 hrs.	Each Use	25 hrs.
Engine Oil	Check Level		2	
	Change	2, 4, 5		
Oil Filter	Change			
Engine Dust Filter	Inspect		1	
	Clean/Change		1, 2	
Carburetor Air Cleaner	Inspect		2	
	Clean/Change Element			
	Clean Pre-Foam Element			2
Belt	Inspect	2	2	
	Adjust/Replace			As F
Fuel Hose & Connections	Inspect	2	2	
	Replace	If signs of wear are present (3		
Cooling Fins	Clean			
Burnishing Head Assembly	Inspect			
Pad Holder	Inspect		When changing p	
	Replace		If cracks appear (2	
Bolts & Connections	Inspect			
	Tighten			
Spark Plug	Clean/Replace			
Exhaust Emissions	Check			
Check & Adjust Valve Clearance Retorque Heads				

- Perform daily or after each use.
- Refer to "General Maintenance Procedures."
- These items should be serviced by an authorized Service Center.
- Refer to Engine Manufacturer's Owner's Manual for recommended replacement.
- Always enter maintenance performed in Service Log Book.
- Routine Maintenance

- Recheck for leaks using soapy water solution. Watch for bubbles at the joint with the fuel cylinder service valve turned on and the fuel system pressurized.

Engine Maintenance

Cooling Fin Maintenance

- Remove the blower housing and other cooling shrouds.
- Clean the cooling fins as necessary using compressed air or pressure washer.
- Reinstall all housings and shrouds.

Head Bolt Maintenance

Refer to Engine Manufacturer's Service Manual.

Changing Oil

- Run engine for 5 minutes to warm oil, then stop the engine by closing the fuel service valve, allowing the engine to stop by itself.
- Locate the oil drain pipe located on the right side of the machine.

- Remove the cap by turning it counterclockwise with a wrench.
 - Allow oil to drain completely into the receptacle.
 - Replace the cap by turning clockwise.
 - Remove oil fill cap. Slowly add no more than 1.6 quarts (1,5 L) of motor oil when not changing the oil filter, or 1.8 quarts (1,7 L) when the oil filter is changed. Refer to engine manual for recommended oil.
 - Check oil level with dipstick in oil fill cap. Add additional oil if necessary.
 - Replace fill cap. Hand tighten only.
- CAUTION!** Do not overfill and never run engine low on oil.

WARNING! Always make sure the machine is sitting level when checking the oil.

Battery Maintenance and Replacement

The battery supplied with this machine is a sealed, gelled electrolyte, maintenance free type. It never needs servicing.

When battery replacement becomes necessary, the replacement should have the same specifications as the original. If in doubt, contact Amano Pioneer Eclipse Customer Service at 1-800-367-3550 or 1-336-372-8080. To replace:

1. Remove the propane fuel cylinder from the machine.
2. Disconnect battery cables from terminals. Always disconnect the BLACK cable first.
3. Remove battery hold-down clamp.
4. Lift old battery out and replace with new battery.
5. Reinstall hold-down clamp.
6. Connect the RED positive battery cable first.
Connect the BLACK negative battery cable last.

Dispose of old battery in the proper manner. Most auto parts stores accept used batteries for recycling.

Belt Maintenance

To inspect the belt it is necessary to turn the machine over. The machine should be rocked back to the vertical position. If the belt is badly cracked or worn it should be replaced.

PROPOSITION 65 WARNING

- Battery posts, terminals, and related accessories contain lead and lead compounds, chemicals known to the State of California to cause cancer and reproductive harm.
- Batteries also contain other chemicals known to the State of California to cause cancer.
- Wash hands after handling.

SAFETY INSTRUCTIONS RECHARGEABLE BATTERY ! DANGER !

ALL BATTERIES CONTAIN CORROSIVE ACIDS AND PRODUCE EXPLOSIVE GASES DURING RECHARGING

GAS EXPLOSION
CAN CAUSE
BLINDNESS OR INJURY
SHIELD EYES

BATTERY ACID
CAN CAUSE
BLINDNESS OR
SEVERE BURNS

Do not make direct contact between battery terminals as this can cause an explosion or fire.

Batteries should not be stored in a discharged state.

Keep charger away from children. Only adults should recharge batteries.

Use only the charger provided by the equipment manufacturer.

Do not recharge batteries upside down.

Charging produces explosive gasses. Charge battery in a well ventilated area away from sparks, flames and smoking.

Disconnect charger from battery after 24 hours.

INTERNAL
TAKE MILK, EGG WHITES, AND
WATER.
DO NOT INDUCE VOMITING.

EXTERNAL
FLUSH IMMEDIATELY FOR
15 MINUTES IF ACID GETS
IN EYES OR ON SKIN.

CALL PHYSICIAN IMMEDIATELY

To check for the proper tightness squeeze the belt together. The belt should depress between 1/4" (0,6 cm) and 1/2" (1,3 cm). Always use the recommended belt size.

To change belt:

1. Remove the pad holder by holding the end of the shaft on the top of the machine with a 3/4" wrench and turn the pad holder counterclockwise.
2. Use the 3/4" wrench to turn the end of the spindle shaft on top of the machine while removing the old belt from the spindle pulley.
3. Finish removing the belt from the engine pulley, if necessary.
4. Check engine pulley for correct alignment with the spindle pulley. Check hardware attaching pulleys for proper tightness.
5. Install the new belt onto the engine pulley.
6. Reinstall the new belt onto the spindle pulley using the 3/4" wrench to turn the spindle clockwise. Make sure the belt is correctly placed on the idler pulley.
7. Reinstall the pad holder onto the spindle shaft.
8. Turn the machine upright in the burnishing position.
9. Check belt for correct operation. Check all hardware for proper tightness.

Adjusting the Handle and RokBak

1. With the engine OFF, loosen the handle adjustment lever on the side of the handle.
2. Move the handle to the full-up position (about a 45° angle) and retighten handle adjustment lever securely.
3. Lift up on the front of the deck, rocking the machine back until it rests on the handle grips.

Adjusting the Wheel Brackets

The burnisher is equipped with wheel brackets that allow the wheels to be moved forward or backward. To reduce weight on the pad, the wheels can be moved forward or to add weight, moved to the rear.

This feature aids the operator in adjusting the machine for different types of floor finish. It can also help in balancing the machine if a steel tank is used in place of an aluminum cylinder.

NOTE: Aluminum cylinders with safety devices for overfill prevention are recommended.

Troubleshooting

Symptom: Hard to start

Possible Causes:

- Opening propane cylinder too quickly (OPEN SLOWLY)
- Low oil
- Insufficient vacuum
- Coil, air gap needs adjusting
- Spark plug or head bolts loose
- Blown head gasket

Symptom: Will not start

Possible Causes:

- No fuel
- Low oil
- Wires broken or disconnected
- Incorrect spark plug gap (Gap should be .025)
- Insufficient vacuum
- Defective spark plug
- Defective coil
- Blown head gasket

Symptom: Engine lacks power

Possible Causes:

- Insufficient vacuum
- Dirty air filters
- Governor needs adjusting
- Leaking head gasket
- No compression - worn rings

Symptom: Smell of burned rubber

Possible Cause: Belt out of adjustment - check automatic tensioner

Symptom: Machine vibrates

Possible Causes:

- Loose nuts
- Pad not centered

Symptom: Machine "Bogs Down" when in use

Possible Causes:

- Operator bearing down too hard
- Dirty air filters

Symptom: Machine pulls to one side

Possible Causes:

- Bent wheel bracket or worn wheel
- Adjust wheels forward

Symptom: Engine stops running

Possible Causes:

- Out of fuel
- Low oil
- Dirty air filter

Machine Specifications

Starting	110 V Electric or 12 V Battery
Deck	Cast Aluminum
Sound Level	< 87 dB(A)
Engine	Kawasaki 13 HP or Kawasaki 17 HP
Engine Speed	3500 rpm

21" Machines

Pad Size	21" (53,3 cm)
Pad Speed	2000 RPM
Width	24.5" (62,2 cm)
Length	56" (142,4 cm)

24" Machines

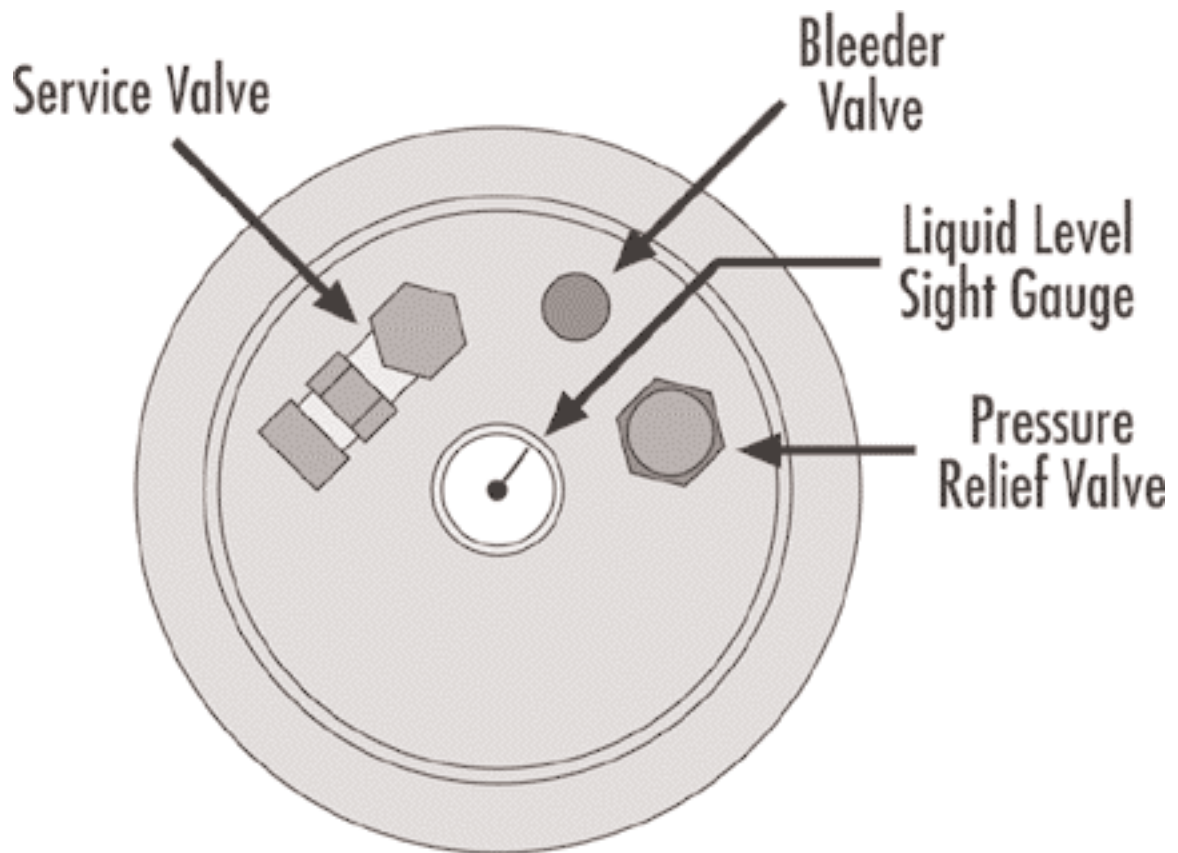
Pad Size	24" (61 cm)
Pad Speed	1800 RPM
Width	27.5" (69,9 cm)
Length	58.5" (148,6 cm)

28" Machines

Pad Size	28" (71,1 cm)
Pad Speed	1700 RPM
Width	31.5" (80 cm)
Length	61.5" (156,2 cm)

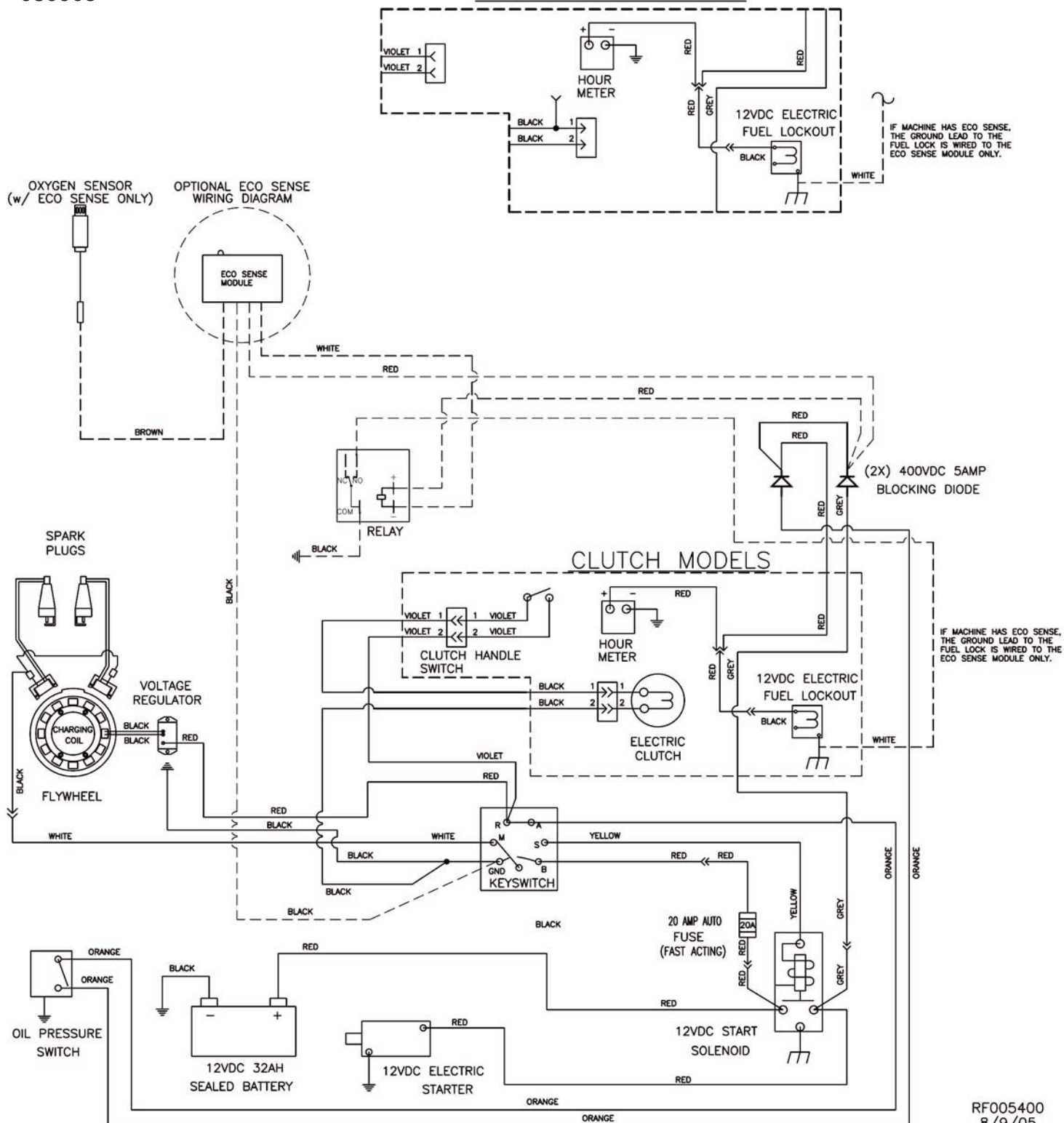
Machine Drawings & Parts Lists

Safe Fill Cylinder Head



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NON-CLUTCH MODELS



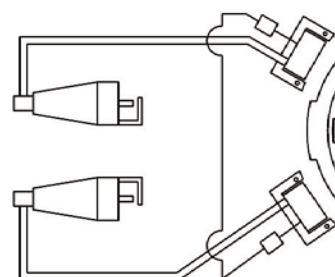
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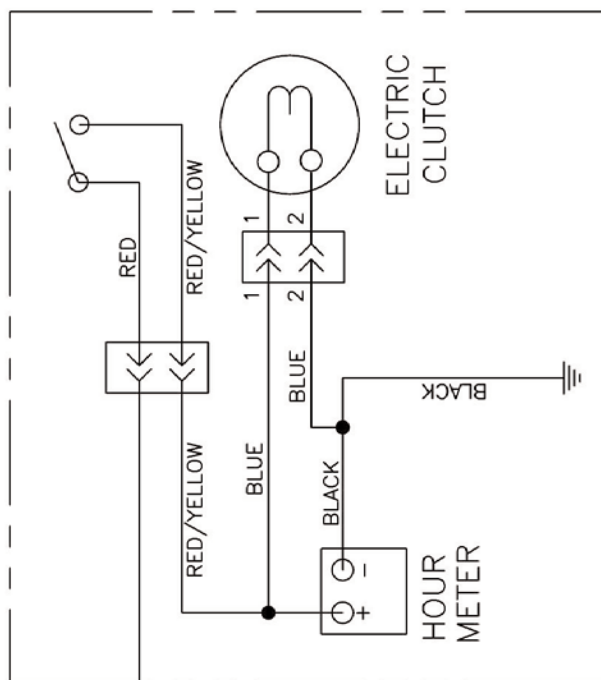
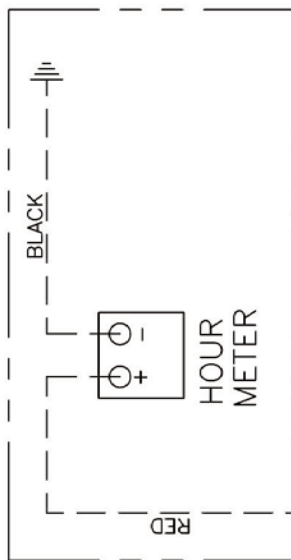
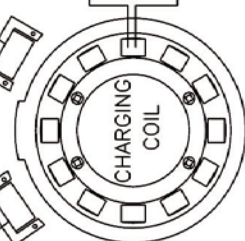
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NON-CLUTCH MODELS

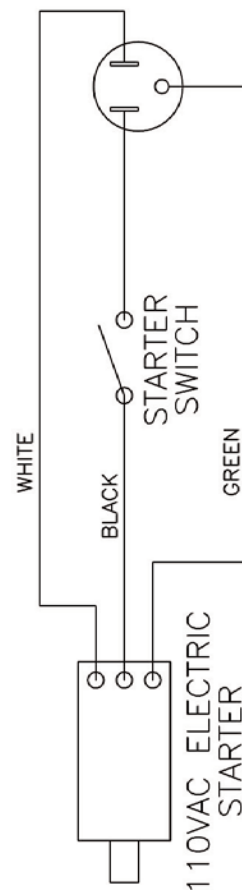
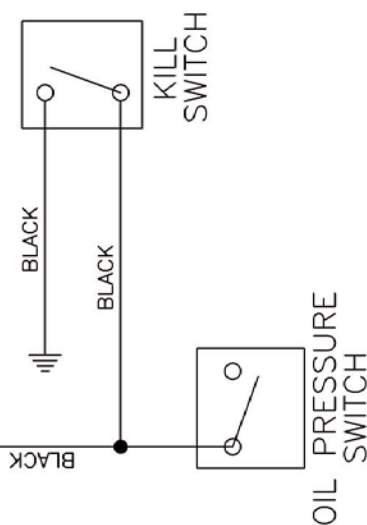
SPARK
PLUGS



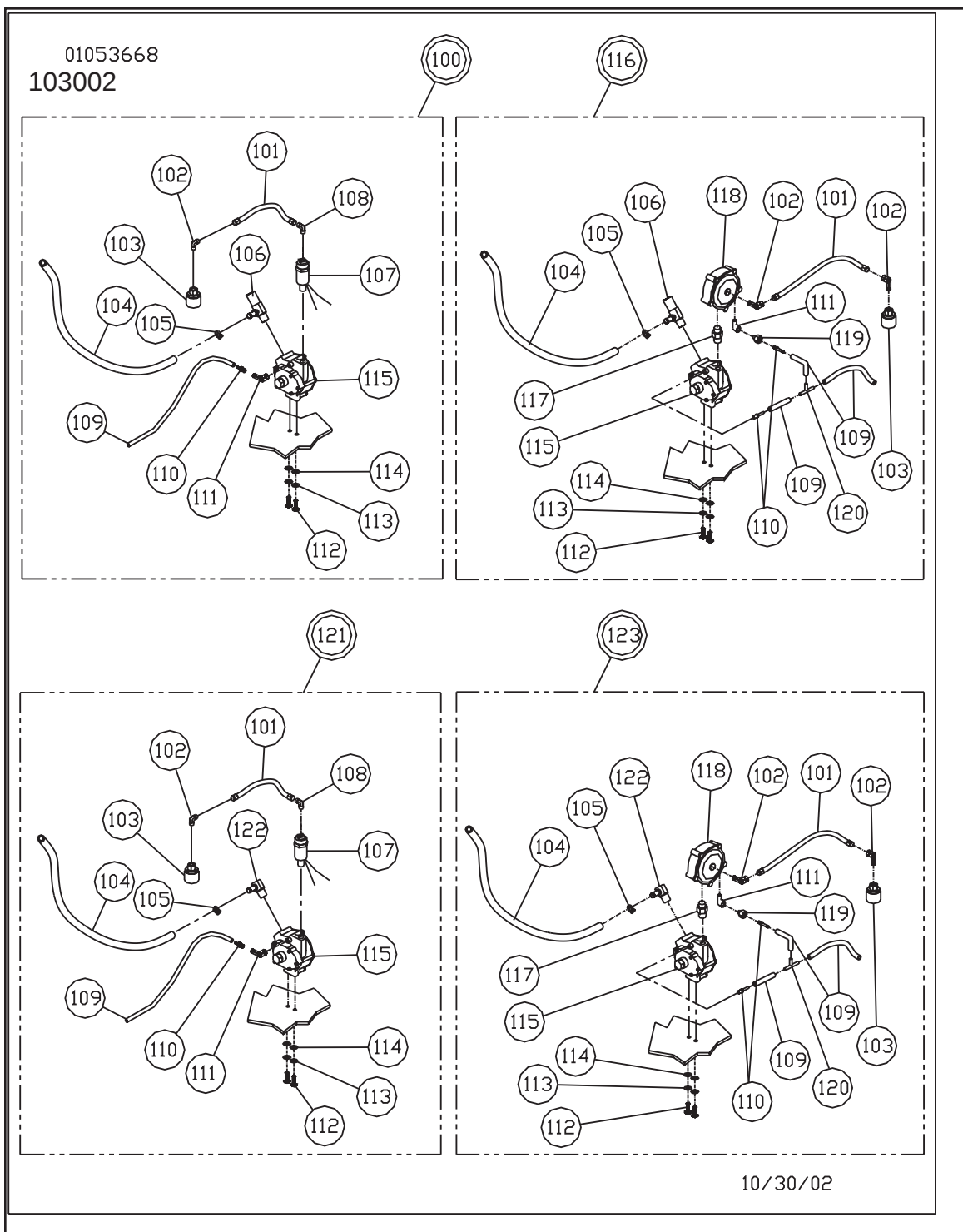
FLYWHEEL



CLUTCH MODELS



Regulator Sub-Assembly: Kawasaki Mean Machine



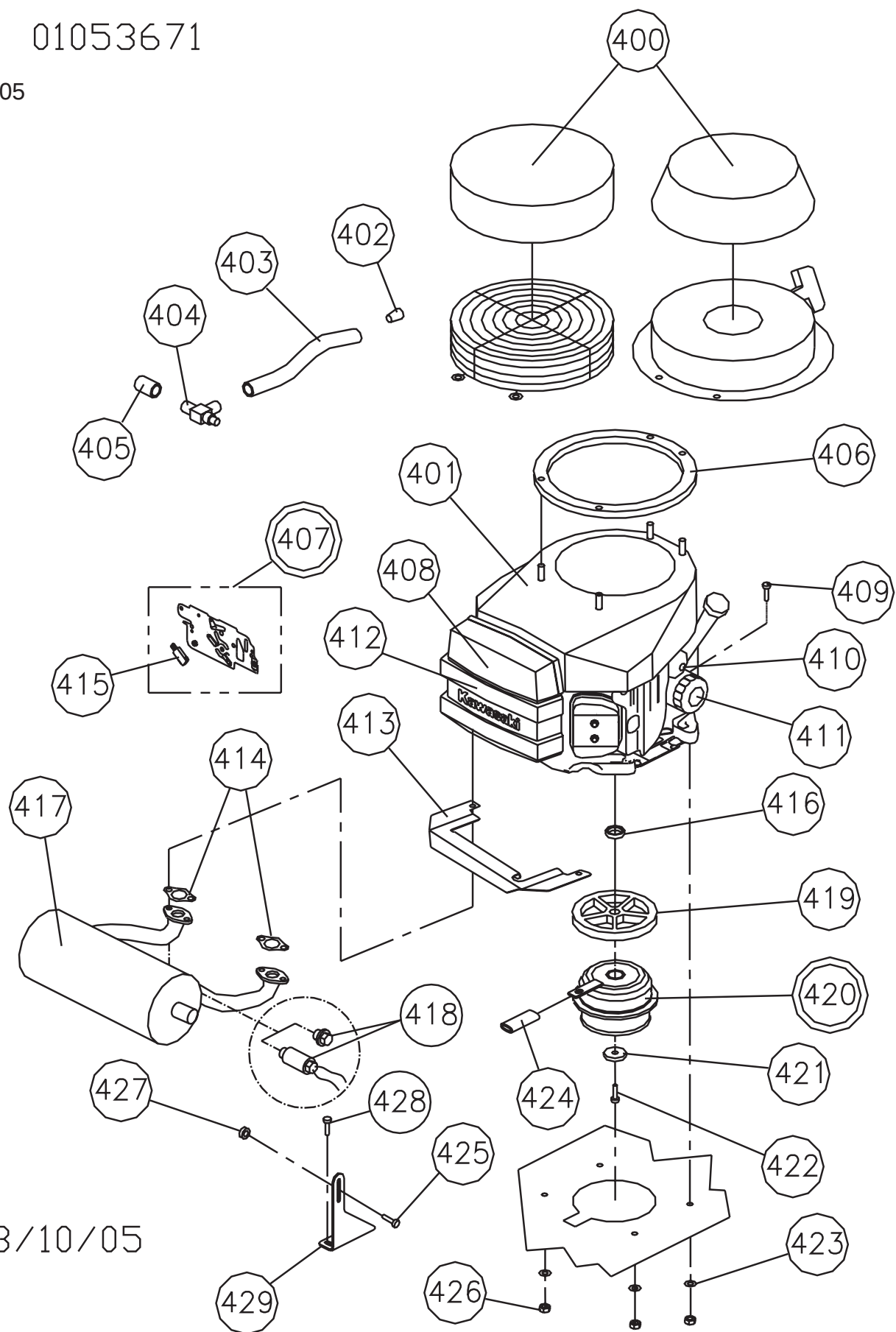
REF	PART#	DESCRIPTION	QTY
100	MP114100	Regulator Assy. 17 HP, 12 V, Kaw	1
101	MP4340	Hose, Regulator, 12"	1
102	MP4330	Fitting, 49 x 6, Reg to Fuellock	1
103	MP4500	Coupler, Quick Rego, Female	1
104	NB2470	Fuel Line, 3/8"	1.33'
105	NB7282	Clamp, Hose, No. 38	2
106	MP017900	Fuel, Adjustment Assy.	1
107	MP317500	Fuelock, 12 Volt, Asm.	1
108	MP4320	Fitting, 48 x 6	1
109	NB2460	Hose, Vacuum, 5/32	1.583'
110	MP019500	Hose Barb, 1/8 NPT - 1/4 BARB	1
111	MP098900	Fitting, 1/8" MPT x 1/8" FPT 90	1

REF	PART#	DESCRIPTION	QTY
112	NB6530	Screw, HH Cap, 1/4 - 20 x 1	2
113	NB6110	Washer, Lock, 1/4	2
114	NB3350	Washer, Flat, 1/4	2
115	MP037900	Regulator, Nolf, N5I-A-C	1
116	MP106600	Regulator Assy. 17 HP, 110 V, Kaw	1
117	MP4325	Fitting, 3325 x 4, Reg to Fuellock	1
118	MP4750	Fuelock, Fuel Filter	1
119	MP021600	Ballcheck, 1/8 NPT	1
120	NB2300	Tee, 3/16 x 3/16 x 3/16, Nylon	1
121	MP114400	Regulator Assy. 13 HP, 12 V, Kaw	1
122	MP3375	Elbow, Brass, Large	1
123	MP114300	Regulator Assy. 13 HP, 110V, Kaw	1

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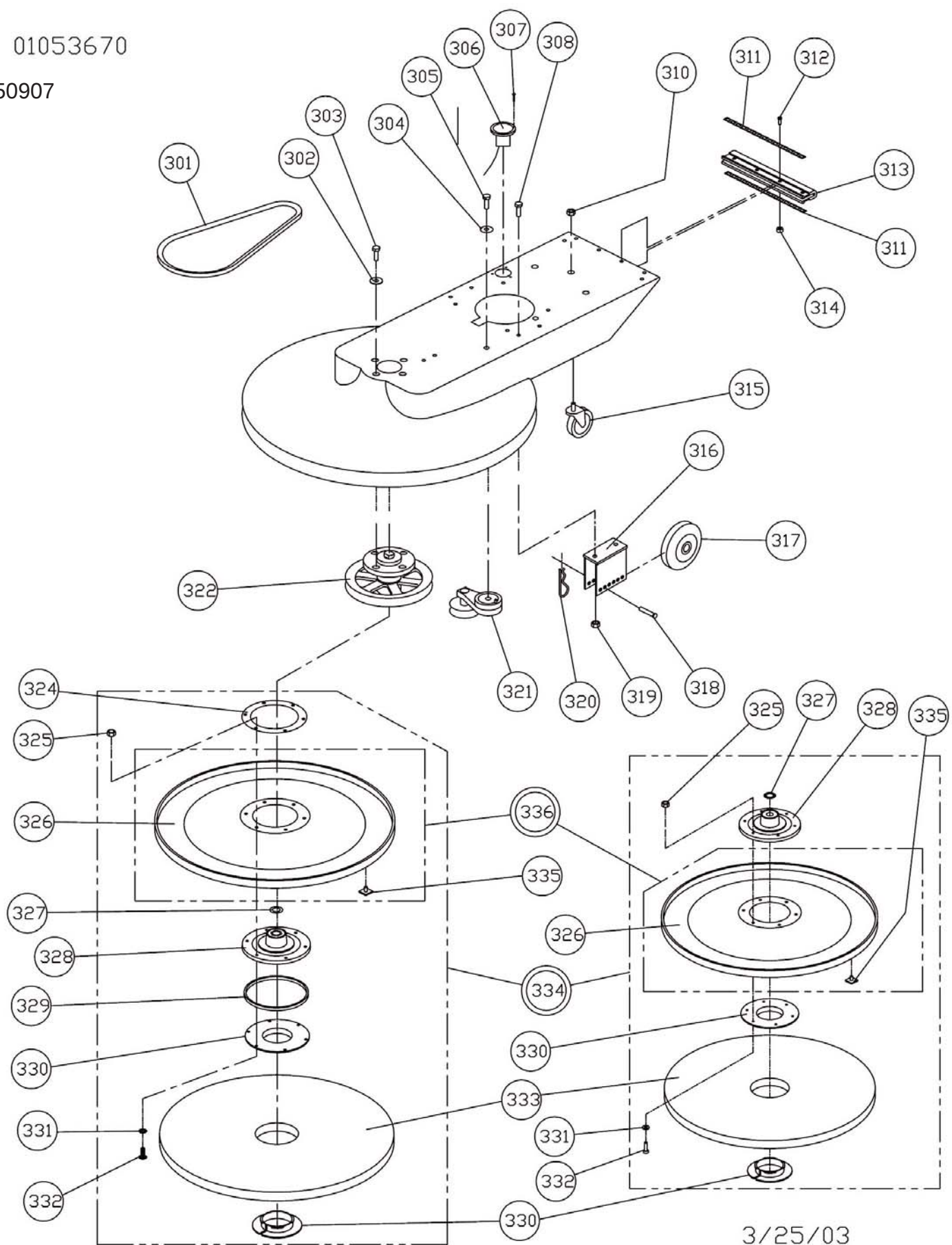
3/10/05

Engine Sub-Assembly: Kawasaki Mean Machine

REF	PART#	DESCRIPTION	QTY
400	MP109600	Filter, Recoil (13 HP)	1
	MP109700	Filter, Recoil (17 HP)	1
401	MP109200	Engine, Kawasaki, 13 HP, 12 V	1
	MP102900	Engine, Kawasaki, 13 HP, 110 V	1
	MP03000	Engine, Kawasaki, 17 HP, 12 V	1
	MP093200	Engine, Kawasaki, 17 Hp, 110 V	1
402	NB1621	Caplug, K8, Red	1
403	MP4515	Tubing, Oil Drain	1
404	MP072300	Valve, Oil Drain, Kawasaki	1
405	KA590717004	Oil Drain Adapter	1
406	MP109500	Seal, Foam (13 HP)	1
	MP043100	Engine Air Intake Seal (17 HP)	1
407	SA007900	Plate, Throttle, Repl., Bail Style Kit	1
408	KA110137016	Element, Air Filter - Foam (13 HP)	1
	KA110137001	Element, Air Filter - Foam (17 HP)	1
409	NB000100	Screw, HH, 5/16 - 18 x 1 3/4"	4
410	MP019200	Oil Pressure Switch	1
411	KA490652078	Oil Filter	1
412	KA110137017	Element, Air Filter - Main (13 HP)	1
	KA110137002	Element, Air Filter - Main (17 HP)	1
413	MP121900	Shield, Manifold (13 HP)	1
	MP043400	Shield, Manifold (17 HP)	1
414	KA110607006	Gasket - Exhaust	2
415	MP036200	Switch, Micro, 12 V, 15 A	1
416	MP4800	Spacer, Clutch, Top (models w/clutch)	1
417	MP107400	Muffler, Catalytic (13 HP)	1
	MP107300	Muffler, Catalytic (17 HP)	1
418	MP015200	Plug, Oxygen Sensor	1
	MP018000	Oxygen Sensor (models w/EcoSense)	1
419	MP023500	Pulley, 4", AB Sheave (models w/out clutch)	1
420	MP4787	Clutch Assy. (models w/clutch)	1
421	MP4805	Spacer, Clutch Bottom (models w/clutch)	1
422	NB005800	Screw, HH, 7/16 - 20 x 1 1/2	1
423	NB9267	Washer, Flat, 5/16	4
424	MP4790	Tubing (models w/clutch)	1
425	NB52816	Screw, BH, 1/4 - 20 x 1/2"	1
426	NB3265	Nut, Lock, 5/16 - 18	3
427	NB9545	Nut, Spin Lock, 1/4 - 20	1
428	NB5282	Bolt, BH, 5/16 - 18 x 1	2
429	MP120500	Bracket, Muffler	1
430	KA920707003	Plug, Spark, (RCJ8Y) (Not Shown)	2

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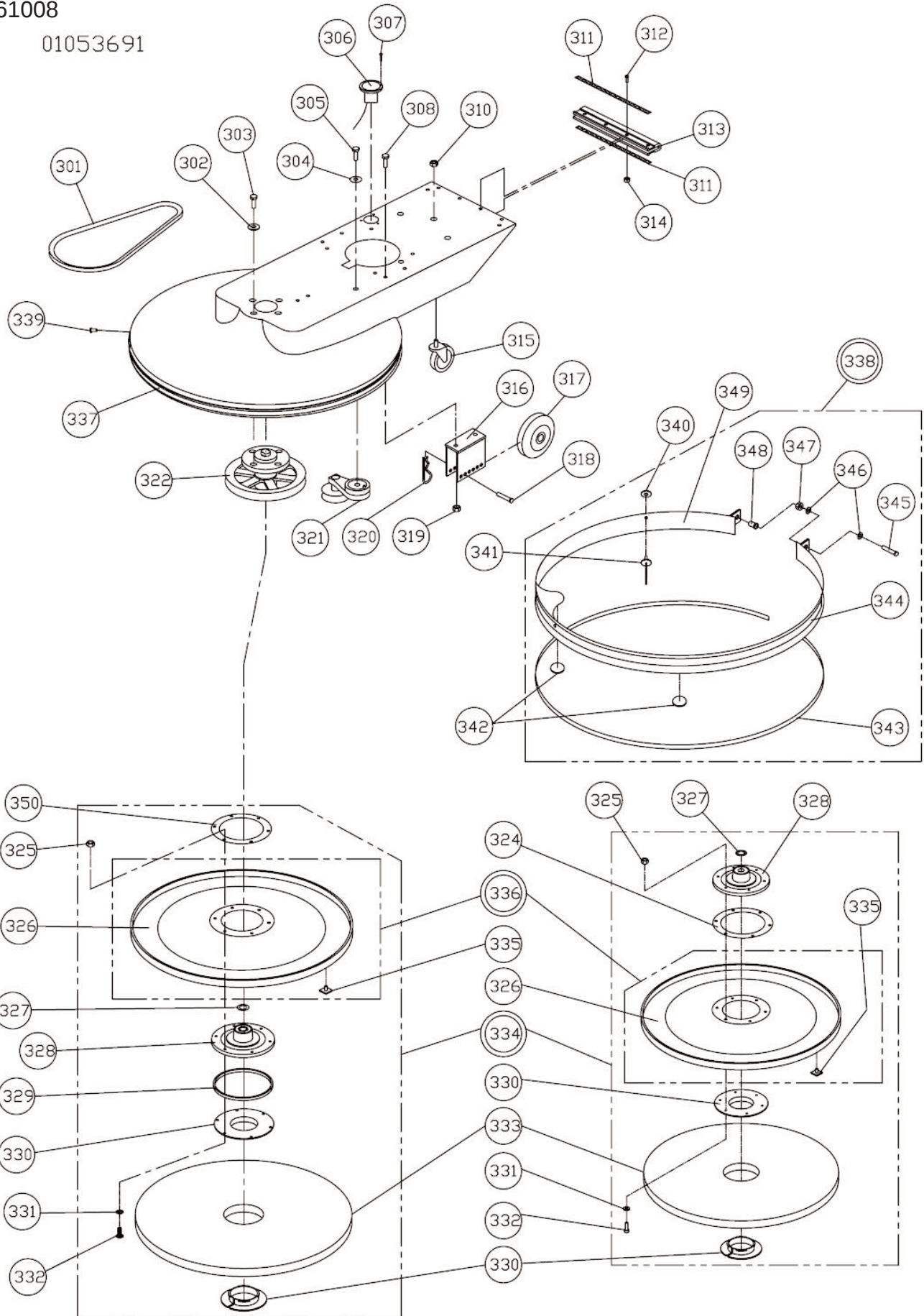
3/25/03

Deck Sub-Assembly: Kawasaki Mean Machine

REF	PART#	DESCRIPTION	QTY
301	MP107600	Belt, BX-47 (21" models w/out clutch)	1
	MP8070	Belt, BX-46 (21" models w/clutch)	1
	MP8150	Belt, BX-49 (24" models)	1
	MP041000	Belt, BX-56 (28" models)	1
302	NB001900	Washer, Fender, 1/2	4
303	NB6863	Screw, Hex HD, 1/2 x 1	4
304	NB3450	Washer, Flat, 3/8	5
305	NB6044	Screw, Cap, 3/8 x 1 1/4	1
306	MP9610	Meter, Hour	1
307	NB2643	Rivet, Pop 1/8 x 1/4	3
308	NB5282	Screw, BH, 5/16 - 18 x 1	4
310	NB003100	Nut, Hex, 1/2" - 13, JAM	1
311	MP035300	Band, Clamp, Skirt	2
312	NB020700	Screw, Phillips, Pan 6 - 32 x 1	4
313	MP084700	Molding, Bumper, RokBak	1
314	NB020800	Nut, Lock, Nylon, 6 - 32	4
315	MP012801	Caster, 2 1/2", Rear	1
316	MP068300	Bracket, Wheel (21" models)	2
	MP069000	Bracket, Wheel (24" & 28" models)	2
317	MP105300	Wheel, 5", Performa	2
318	MP038100	Pin, Clevis, 3/8 x 2 1/8	2
319	NB3265	Nut, Lock, 5/16	6
320	LX2105	Clip, Hitch, Pin	2
321	MP071800	Tensioner, Belt, w/4" Pulley	1
322	MP107700	Spindle, w/6.75" Pulley (21" models)	1
	MP7235	Spindle, w/7.25" Pulley (24" models)	1
	MP7240	Spindle, w/8.75" Pulley (28" models)	1
324	MP081300	Ring, Relief, Stress, Padholder	1
325	NB3275	Nut, Lock, 1/4	6
326	MP8275D	Padholder, 21"	1
	MP048300	Padholder, 24"	1
	SA004000	Padholder, 28"	1
327	NB5700	Washer, 0.755 x 1.005 x 0.060, SS	1
328	MP195800	Flexi Disc, w/out Lip, yellow, 80 duro	1
329	MP066300	Ring, Spacer, Center Loc II (24" & 28" models)	1
330	MP012700	Retainer, Pad, Center Loc II (24" & 28" models)	1
	MP8505	Pad Grab III (21" models)	1
331	NB3350	Washer, Flat, 1/4	6
332	NB9319	Screw, BH, 1/4 - 20 x 1 1/4	6
333	PD006021	Pad, 21" Blue Blend	1
	PD006024	Pad, 24", Blue Blend	1
	PD006028	Pad, 28", Blue Blend	1
334	MP095200	Padholder, 21", Complete Asm.	1
	MP047500	Padholder, 24", Complete Asm.	1
	MP032500	Padholder, 28", Complete Asm.	1
335	MP8310	Velcro, Hook, Studs (21" models)	50
		(24" models)	76
		(28" models)	68
336	SA003900	Padholder, w/studs, 21"	1
	SA007800	Padholder, w/studs, 24"	1
	SA004000	Padholder, w/studs, 28"	1

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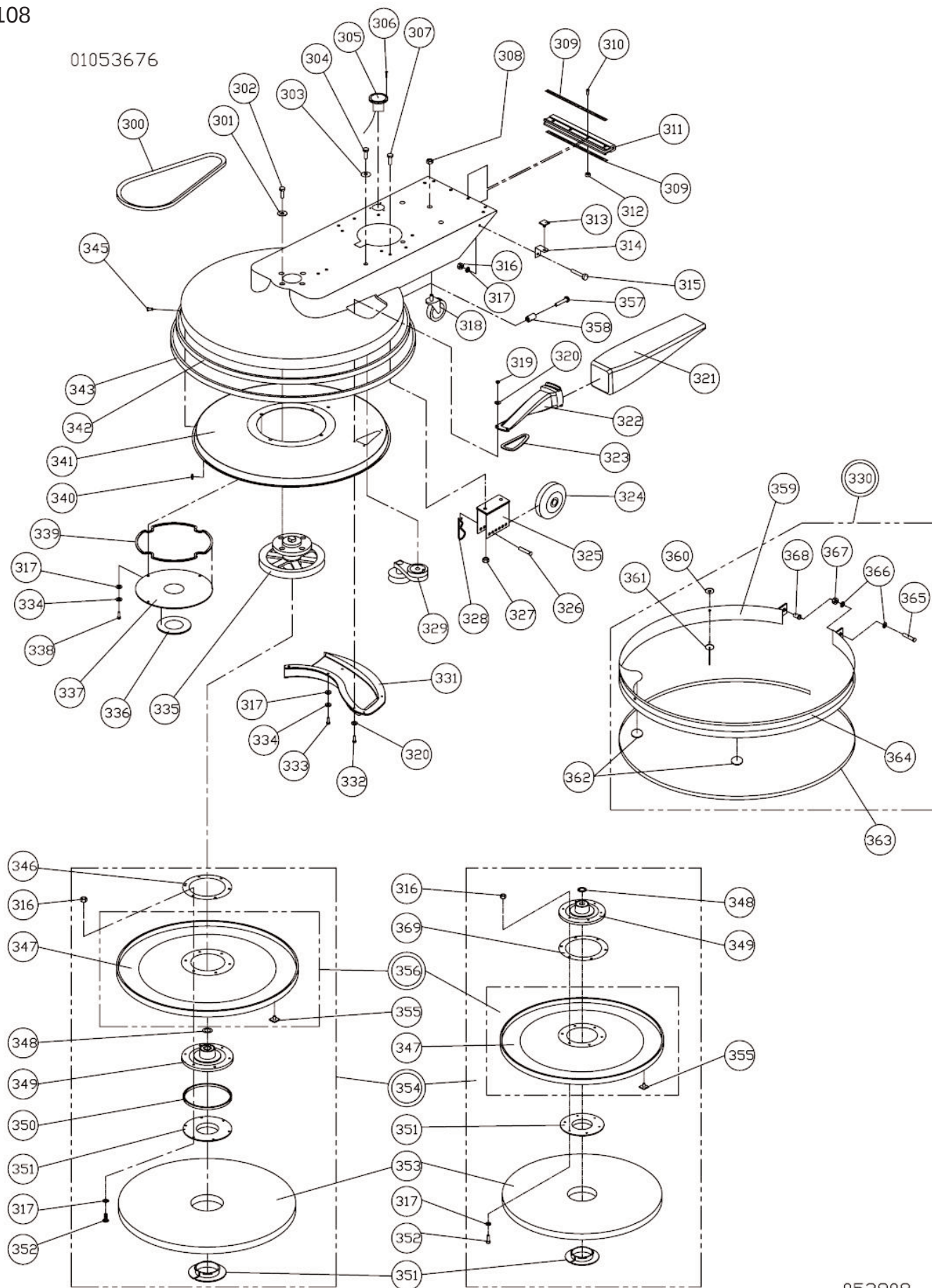
Deck Sub-Assembly: Machines with Steel Skirt

REF#	PART#	DESCRIPTION	QTY
301	MP8070	Belt, BX-46 (21" models)	1
	MP8150	Belt, BX-49 (24" models)	1
	MP041000	Belt, BX-56 (28" models)	1
302	NB001900	Washer, Fender, 1/2	4
303	NB6863	Screw, Hex HD, 1/2 x 1	4
304	NB3450	Washer, Flat, 3/8	5
305	NB6044	Screw, Cap, 3/8 x 1 1/4	1
306	MP9610	Meter, Hour	1
307	NB2643	Rivet, Pop 1/8 x 1/4	3
308	NB5282	Screw, BH, 5/16 - 18 x 1	4
309	MP120600	Pad, Tank	1
310	NB003100	Nut, Hex, 1/2" - 13, JAM	1
311	MP035300	Band, Clamp, Skirt	2
312	NB020700	Screw, Phillips, Pan 6 - 32 x 1	4
313	MP084700	Molding, Bumper, RokBak	1
314	NB020800	Nut, Lock, Nylon, 6 - 32	4
315	MP012801	Caster, 2 1/2", Rear	1
316	MP068300	Bracket, Wheel (21" models)	2
	MP069000	Bracket, Wheel (24" & 28" models)	2
317	MP105300	Wheel, 5", Performa	2
318	MP038100	Pin, Clevis, 3/8 x 2 1/8	2
319	NB3265	Nut, Lock, 5/16	6
320	LX2105	Clip, Hitch, Pin	2
321	MP071800	Tensioner, Belt, w/4" Pulley	1
322	MP107700	Spindle, w/6.75" Pulley (21" models)	1
	MP7235	Spindle, w/7.25" Pulley (24" models)	1
	MP7240	Spindle, w/8.75" Pulley (28" models)	1
324	MP081300	Ring, Relief, Stress, Padholder	1
325	NB3275	Nut, Lock, 1/4	6
326	MP8275D	Padholder, 21"	1
	MP048300	Padholder, 24"	1
	SA004000	Padholder, 28"	1
327	NB5700	Washer, 0.755 x 1.005 x 0.060, SS	1
328	MP195800	Flexi-Disc, w/o Lip, Yellow, 80 Duro.	1
329	MP066300	Ring, Spacer, Center Loc II (24" & 28" models)	1
330	MP012700	Retainer, Pad, Center Loc II (24" & 28" models)	1
	MP8505	Pad Grab III (21" models)	1

REF#	PART#	DESCRIPTION	QTY
331	NB3350	Washer, Flat, 1/4	6
332	NB9319	Screw, BH, 1/4 - 20 x 1 1/4	6
333	PD006021	Pad, 21" Blue Blend	1
	PD006024	Pad, 24", Blue Blend	1
	PD006028	Pad, 28", Blue Blend	1
334	MP095200	Padholder, 21", Complete Asm.	1
	MP047500	Padholder, 24", Complete Asm.	1
	MP032500	Padholder, 28", Complete Asm.	1
335	MP8310	Velcro, Hook, Studs (21" models)	50
		(24" models)	76
		(28" models)	68
336	SA003900	Padholder, w/studs, 21"	1
	SA007800	Padholder, w/studs, 24"	1
	SA004000	Padholder, w/studs, 28"	1
337	MP031802	Bumper, Shroud, Low Prof., 21"	1
	MP031800	Bumper, Shroud, Low Prof., 24"	1
	MP031801	Bumper, Shroud, Low Prof., 28"	1
338	MP139200	Skirt, Steel, 21", Asm.	1
	MP139300	Skirt, Steel, 24", Asm.	1
	MP139400	Skirt, Steel, 28", Asm.	1
339	NB008900	Rivet, Pop, 3/16", 3/18 HD (21")	10
		(24")	10
		(28")	12
340	NB044000	Washer, Flat, #10, Black	4
341	NB043900	Rivet, 3/16 x 1/2 x 5/8 HD, Black	4
342	MP140000	Felt, Dot	2
343	MP139800	Edging, Wear, Skirt, Steel (21")	6.03 ft.
		Edging, Wear, Skirt, Steel (24")	7.10 ft.
		Edging, Wear, Skirt, Steel (28")	8.14 ft.
344	MP139700	Molding, Bumper, Skirt, Steel (21")	4.08 ft.
		Molding, Bumper, Skirt, Steel (24")	5.02 ft.
		Molding, Bumper, Skirt, Steel (28")	6.07 ft.
345	NB050600	Bolt, Hex, Tap, 1/4-20 x 2 1/2"	1
346	NB3350	Washer, Flat, 1/4	2
347	MX1045	Nut, Hex, 1/4-20	1
348	NB6501	Insert, 1/4-20, .027-.165 Grip, Comp. Typ	1
349	MP247300	Skirt, Steel, 21", Tab., Painted	1
	MP247400	Skirt, Steel, 24", Tab., Painted	1
	MP246600	Skirt, Steel, 28", Tab., Painted	1
350	MP196300	Ring, Relief, Stress, Large, Padholder	1

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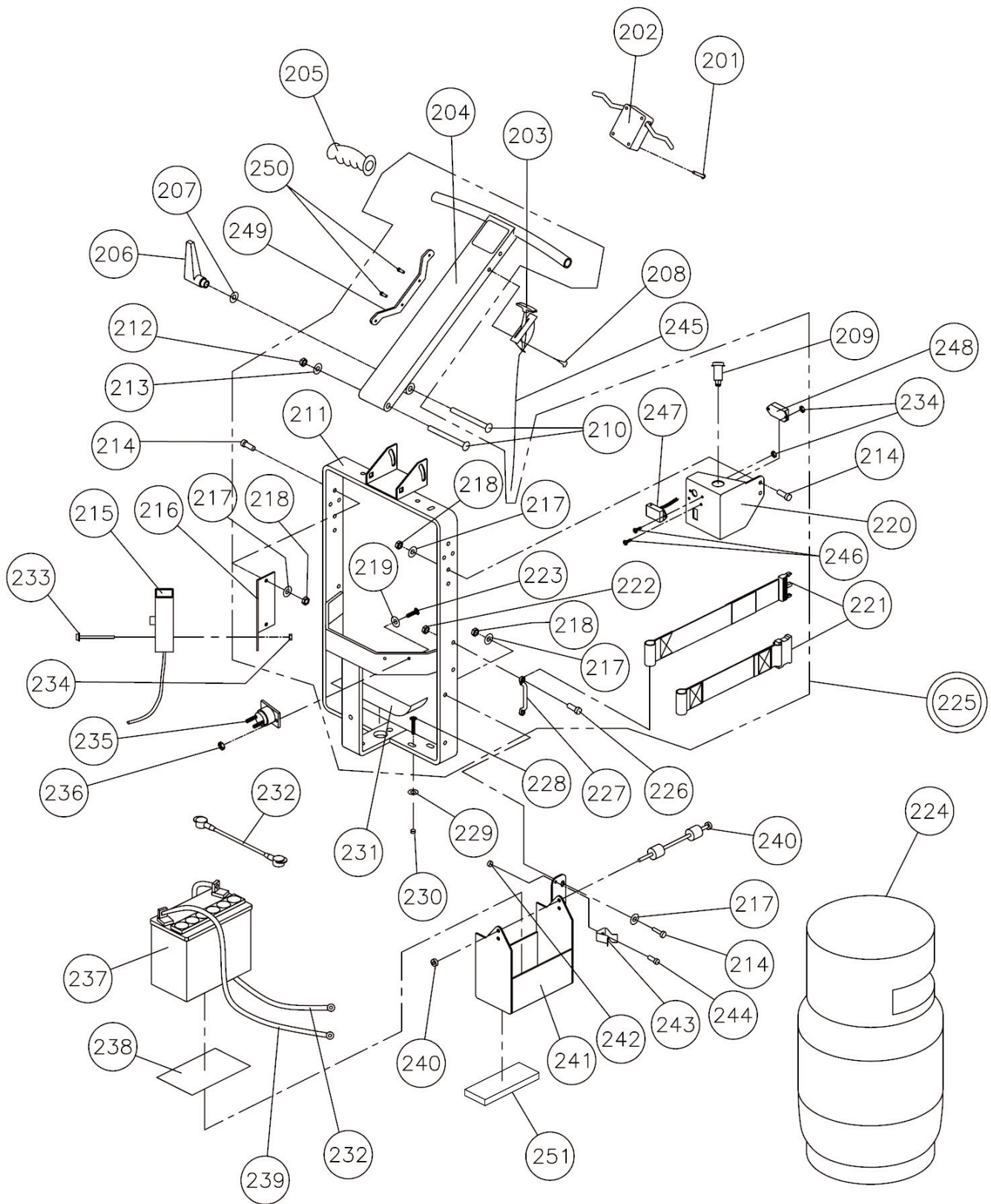
Deck Sub-Assembly: Machines with Dust Control

REF#	PART#	DESCRIPTION	QTY
300	MP107600	Belt, BX-47 (21" models w/out clutch)	1
	MP8070	Belt, BX-46 (21" models w/clutch)	1
	MP8150	Belt, BX-49 (24" models)	1
	MP041000	Belt, BX-56 (28" models)	1
301	NB001900	Washer, Fender, 1/2	4
302	NB6863	Screw, Hex HD, 1/2 x 1	4
303	NB3450	Washer, Flat, 3/8	5
304	NB6044	Screw, Cap, 3/8 x 1 1/4	1
305	MP9610	Meter, Hour	1
306	NB2643	Rivet, Pop 1/8 x 1/4	3
307	NB5282	Screw, BH, 5/16 - 18 x 1	4
308	NB003100	Nut, Hex, 1/2" - 13, JAM	1
309	MP035300	Band, Clamp, Skirt	2
310	NB020700	Screw, Phillips, Pan 6 - 32 x 1	4
311	MP084700	Molding, Bumper, RokBak	1
312	NB020800	Nut, Lock, Nylon, 6 - 32	4
313	MP8310	Velcro, Hook, Stud	1
314	MP124800	Bracket, Retainer, Bag, Vacuum	1
315	NB9308	Scw, BH, 1/4 - 20 x 1	1
316	NB3275	Nut, Lock, 1/4	8
317	NB3350	Washer, Flat, 1/4	15
318	MP012801	Caster, 2 1/2", Rear	1
319	NB9735	Nut, Lock, 10 - 24, Nylon	3
320	NB9645	Washer, flat, #10	6
321	MP124700	Bag, Vacuum	1
322	MP067600	Tube, Dust	1
323	MP065200	Seal, Tube, Dust	1
324	MP105300	Wheel, 5", Performa	2
325	MP068300	Bracket, Wheel (21" models)	2
	MP069000	Bracket, Wheel (24" & 28" models)	2
326	MP038100	Pin, Clevis, 3/8 x 2 1/8	2
327	NB3265	Nut, Lock, 5/16	6
328	LX2105	Clip, Hitch, Pin	2
329	MP071800	Tensioner, Belt, w/4" Pulley	1
330	MP139200	Skirt, 21", Steel, Asm	1
	MP139300	Skirt, 24", Steel, Asm	1
	MP139400	Skirt, 28", Steel, Asm	1
331	MP064600	Scoop, Vacuum, 21"	1
	MP064700	Scoop, Vacuum, 24"	1
	MP064800	Scoop, Vacuum, 28"	1
332	MX1025	Screw, Pan HD, 10 - 24 x 3/4	3
333	NB6530	Screw, Cap, HH, 1/4 - 20 x 1	3
334	NB6110	Washer, Lock, 1/4"	7
335	MP107700	Spindle, w/6.75" Pulley (21" models)	1
	MP034600	Spindle, w/7.25" Pulley (24" models)	1
	MP7240	Spindle, w/8.75" Pulley (28" models)	1
336	MP065000	Seal, Spindle, 1.01" I.D. x 3.75" O.D. (21" models)	1
	MP065100	Seal, Spindle, 2.415" I.D. x 4.5" O.D. (24" & 28" models)	1
337	MP125300	Cover, Pulley (21" models)	1
	MP073400	Cover, Pulley (24" models)	1
	MP068600	Cover, Pulley (28" models)	1
338	NB3001	Scw, BH, 1/4 - 20 x 3/4	4
339	MP075200	Foam, Skinned, 1/2" x 38" x 1/4"	1
340	NB9645	Washer, Flat, #10	4

REF#	PART#	DESCRIPTION	QTY
341	MP125200	Liner, Shroud (21" models)	1
	MP073300	Liner, Shroud (24" models)	1
	MP066801	Liner, Shroud (28" models)	1
342	MP8300	Velcro Hook 1" w/ Adhesive -21"	2.1 yd
		24"	2.3 yd
		28"	2.8 yd
343	MP139600	Felt, Polyester, 29 oz Black- 21"	6.25 ft
		24"	7 ft
		28"	8 ft
345	NB038700	Rivet, Pop, 3/16 x 1/2" x 3/8 HD	4
346	MP196300	Ring, Relief, Stress, Large, Padholder	1
347	MP8275D	Padholder, 21"	1
	MP048300	Padholder, 24"	1
	SA004000	Padholder, 28"	1
348	NB5700	Washer, 0.755 x 1.005 x 0.060, SS	1
349	MP195800	Flexi-Disc, w/o Lip, Yellow, 80 Duro.	1
350	MP066300	Ring, Spacer, Center Loc II (24" & 28" models)	1
351	MP012700	Retainer, Pad, Center Loc II (24" & 28" models)	1
	MP8505	Pad Grab III (21" models)	1
352	NB9319	Screw, BH, 1/4 - 20 x 1 1/4	6
353	PD006021	Pad, 21" Blue Blend	1
	PD006024	Pad, 24", Blue Blend	1
	PD006028	Pad, 28", Blue Blend	1
354	MP095200	Padholder, 21", Complete Asm.	1
	MP047500	Padholder, 24", Complete Asm.	1
	MP032500	Padholder, 28", Complete Asm.	1
355	MP8310	Velcro, Hook, Studs (21" models)	50
		(24" models)	76
		(28" models)	68
356	SA003900	Padholder, w/studs, 21"	1
	SA007800	Padholder, w/studs, 24"	1
	SA004000	Padholder, w/studs, 28"	1
357	NB038800	Screw, Socket, HD, 1/4 - 20 x 1 1/4 w/Loctite	1
358	MP139900	Bushing, Skirt, Steel	1
359	MP247300	Skirt, Steel, 21", Tab., Painted	1
	MP247400	Skirt, Steel, 24", Tab., Painted	1
	MP246600	Skirt, Steel, 28", Tab., Painted	1
360	NB044000	Washer, Flat, 3/16, Black	4
361	NB043900	Rivet, 3/16 x 1/2 x 5/8 HD, Black	4
362	MP140000	Felt, Dot	2
363	MP139800	Bottom, Skirt, Edging - 21"	6.03 ft
		24"	7.10 ft
		28"	8.14 ft
364	MP139700	Top, Skirt, Edging - 21"	4.08 ft
		24"	5.02 ft
		28"	6.07 ft
365	NB050600	Bolt, Hex, Tap, 1/4-20 x 2 1/2"	1
366	NB3350	Washer, Flat, 1/4	2
367	MX1045	Nut, Hex, 1/4-20	1
368	NB6501	Insert, 1/4-20, .027-.165 Grip, Comp. Typ	1
369	MP081300	Ring, Relief, Stress, Padholder, 21"	1

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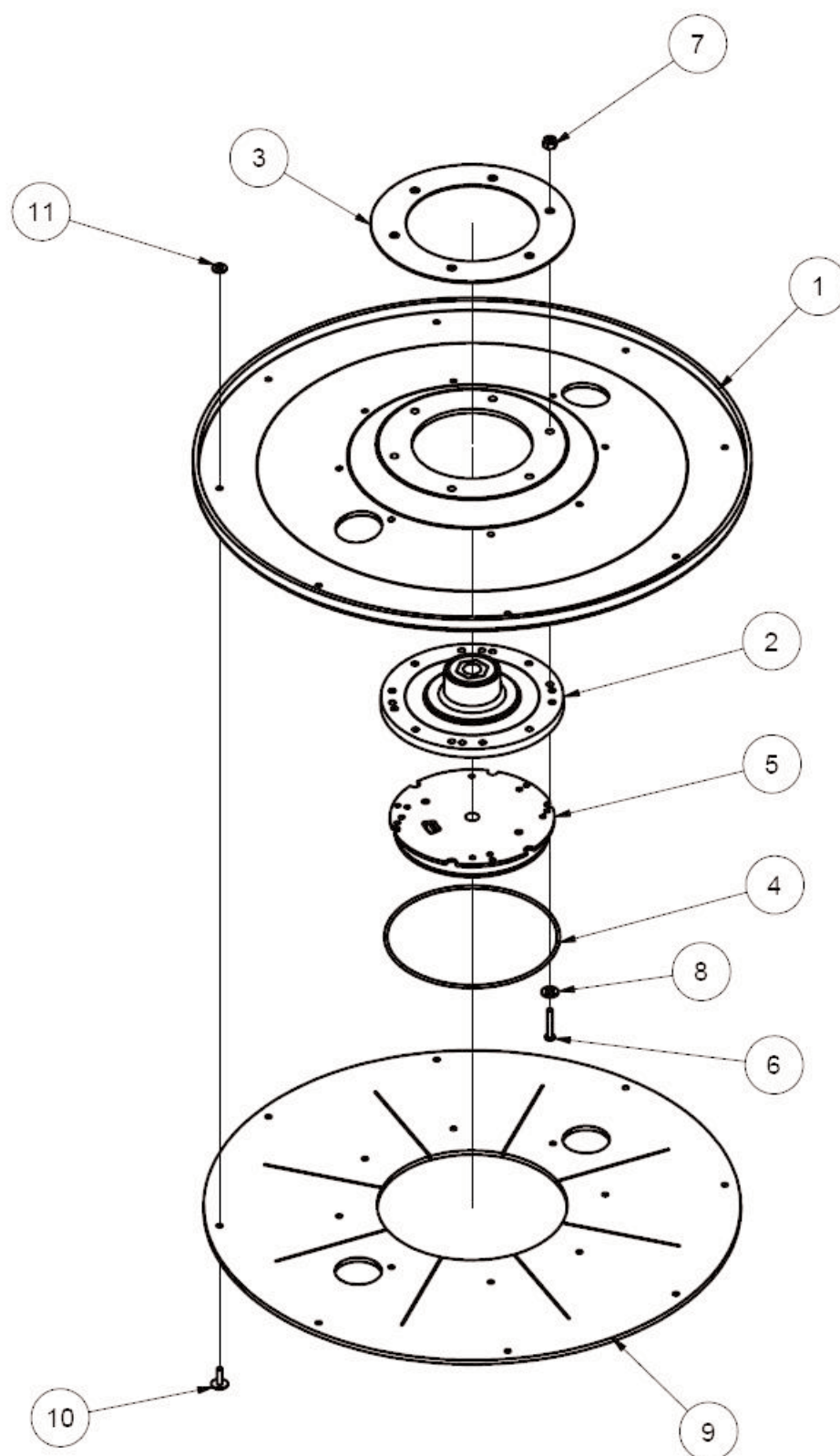
Handle Sub-Assembly: Kawasaki Mean Machine

REF	PART#	DESCRIPTION	QTY
201	NB5366	Screw, Sheet Metal, 8 x 1 1/4	4
202	LX2102	Box, Switch, Complete (models w/clutch)	1
203	MP013800	Knob, Handle, Tee	1
204	MP022500	Handle, Top, 12 V Start	1
205	MP6300	Grip, Handle	2
206	MP5950	Handle, Adjustable Lever	1
207	NB9267	Washer, Flat, 5/16	1
208	NB4382	Screw, Drill Kwik, 8 - 18 x 1/2	2
209	KC2509904	Switch, Start (12 V models)	1
210	NB9460	Bolt, Carriage, 3/8 - 16 x 4	2
211	MP114000	Handle, Painted Complete (12 V models)	1
	MP105500	Handle, Painted Complete (110 V models)	1
212	NB9470	Nut, Acorn, 3/8 - 16	1
213	NB3450	Washer, Flat, 3/8	1
214	NB5282	Screw, BH, 5/16 - 18 x 1	2
		(110 V models)	4
		(12 V models)	4
215	KA211637009	Starter Motor & Switch, 110V	1
216	MP103900	Bracket, Starter (110 V models)	1
217	NB9267	Washer, Flat, 5/16	2
		(110 V models)	6
		(12 V models)	6
218	NB3265	Nut, Lock, 5/16 - 18 NC	2
		(110 V models)	4
		(12 V models)	4
219	MX1115	Washer, Star Lock, 1/4	2
220	MP108800	Bracket, Switch (12 V models)	1
221	MP108100	Strap, Tank	1
222	NB9510	Nut, Spin Lock, 10 - 24	4
223	NB52816	Screw, BH, 1/4 - 20 x 1/2	2
224	MP021702	Cylinder, Safety Fill, Aluminum	1
	MP106000	Cylinder, Safety Fill, Steel	1
225	MP105800	Handle Assy. (110 V models)	1
	MP104100	Handle Assy. (110 V models w/clutch)	1
	MP108400	Handle Assy. (12 V models)	1
226	NB033200	Screw, Socket, 10 - 24 x 3/4	4
227	RV009500	Footman Loop	2
228	NB5520	Bolt, Carriage, 3/8 - 16 x 1 1/4	5
229	NB9267	Washer, Flat, 5/16	5
230	NB3267	Nut, Lock, 3/8 NC	5
231	MP6600	Velcro, Felt, Black	1
232	MP120900	Cable, Battery, Positive, 14"	2
233	NB028100	Screw, Machine, 8 - 32 x 2	2
234	NB9710	Nut, Keps, 8 - 32	6
235	MP113600	Solenoid, 12 V, Side Terminal	1
236	NB3275	Nut, Lock, 1/4	2
237	MP120800	Battery, 12 V	1
238	MP120700	Pad, Battery	1
239	IN2012	Cable, Battery, Negative	1
240	MP040400	Battery, Retainer, Asm.	1
241	MP108300	Tray, Battery, Mean Machine	1
242	NB9530	Nut, Lock/Washer, 6 - 32	1
243	MP4511	Clip, Oil Drain	1
244	NB9200	Screw, Machine 6 - 32 x 5/8	1
245	MP044600	Cable, Throttle, 46"	1
246	NB007400	Bolt, Phillips, Pan HO #8-32 x 1/2	4
247	MP111500	Module, EcoSense, Sub Asm.	1
		(models w/EcoSense)	1
248	MP151500	Relay, Board, Circuit, Printed, 12v,	1
		(Model w/ EcoSense)	1
249	MP262201	Bracket, Cord Wrap, Black, Formed	1
	MP262202	Bracket, Cord Wrap, Hammer-Tone,	1
		Formed	1
250	NB4381	Screw, Drill Kwik, 8 x 3/4	2
251	MP280900	Pad, Vibration, Box, Battery	1

042007

Optional Padholder: Kawasaki Mean Machine
Standard on "QDF" Models

010209



RF025100

121108

Optional Padholder: Kawasaki Mean Machine**Standard on “QDF” Models**

REF#	PART#	DESCRIPTION	QTY
1A	MP8275R	PADHOLDER, 21", PLASTIC, RAW	1
1B	MP047300	PADHOLDER, 24", PLASTIC, RAW	1
1C	MP8280R	PADHOLDER, 28", PLASTIC, RAW	1
2	MP195800	FLEXI-DISC, W/O LIP, YELLOW, 80 DURO	1
3	MP196300	RING, RELIEF, STRESS, LARGE, PADHOLDER	1
4	MP066300	RING, SPACER, CENTER LOK II	1
5	MP012700	RETAINER, PAD, CENTER-LOK 11 (SCREW-IN)	2
6	NB9319	SCREW, BH, 1/4-20 X 1 1/4"	6
7	NB3275	NUT, LOCK, 1/4"	6
8	NB3350	WASHER, FLAT, 1/4"	6
9A	MP330201	PADFACE, 20" MIGHTY-LOK II, SLIT	1
9B	MP330301	PADFACE, 23" MIGHTY-LOK II, SLIT	1
9C	MP330401	PADFACE, 27" MIGHTY-LOK II, SLIT	1
10	NB002300	RIVET, POP, 3/16", ALUMINUM MANDREL	16
11	NB9645	WASHER, FLAT, #10	16

Limited Warranty

Mean Machine Burnishers

To Qualify for this warranty:

- 1) Machine must be registered at the time of purchase on a form provided by Amano Pioneer Eclipse® Corporation. Your Amano Pioneer Eclipse Distributor is responsible for the registration of your machine. Please cooperate with your Distributor in supplying necessary information on the card.
- 2) The machine must have been purchased from Amano Pioneer Eclipse or an authorized Amano Pioneer Eclipse Distributor.
- 3) This warranty extends to the original purchaser only and is not transferable to subsequent owners.

TIME PERIODS

ONE (1) YEAR WARRANTY - For the models MM and MB.

Warranted to be free from defects in material and workmanship for a period of one (1) year from the date of purchase by the original owners. (See Exclusions.)

EXCLUSIONS (Not Covered by Warranty)

- 1) Parts that fail through normal wear by reason of their characteristics (cords, pads, brushes, belts, bumpers, body molding, skirting, squeegees or other consumable parts).
- 2) This warranty does not extend to parts affected by misuse, neglect, abuse or improper maintenance. All defective parts must be returned to the Distributor for credit.
- 3) Batteries warranted by battery manufacturer for (1) year.
- 4) Propane Engine warranted by engine manufacturer for *2 years (*Note: The engine warranty period for Kawasaki engines can be extended to a four (4) years providing the customer uses only approved Kawasaki oil. Contact your Amano Pioneer Eclipse distributor for more information regarding this optional extended warranty program.)
- 5) Valve train warranted by Amano Pioneer Eclipse for (1) year.
- 6) Electric motors warranted by motor manufacturer.
- 7) Deck Frame warranted by Amano Pioneer Eclipse for (5) years.

THE OBLIGATION OF AMANO PIONEER ECLIPSE CORPORATION

- 1) The obligation of Amano Pioneer Eclipse under this warranty is limited to repairing or replacing, at its option, any part which is proven to be defective in material or workmanship under normal use for the applicable period stated above.
- 2) Warranty repairs will be made by your Amano Pioneer Eclipse Distributor without charge for parts and labor.
- 3) Parts repaired or replaced under this warranty are warranted only during the balance of the original warranty period. All defective parts replaced under these warranties become the property of Amano Pioneer Eclipse.

WARRANTY SERVICE

To obtain warranty service, take your machine and proof of purchase to any authorized Amano Pioneer Eclipse Distributor. Amano Pioneer Eclipse will not reimburse expenses for service calls or travel. For the Distributor in your area, call Amano Pioneer Eclipse Customer Service Department at 800-367-3550 or 1-336-372-8080. If you are dissatisfied with the service that you receive, call or write Amano Pioneer Eclipse Customer Service Department for further assistance.

DISCLAIMER OF CONSEQUENTIAL

AMANO PIONEER ECLIPSE DISCLAIMS ANY RESPONSIBILITY FOR LOSS OF USER TIME OF THE AMANO PIONEER ECLIPSE MACHINE OR ANY OTHER INCIDENTAL OR CONSEQUENTIAL DAMAGE EXCEPT AS STATED IN THE WARRANTY APPLICABLE TO EACH MACHINE. EXCEPT AS STATED IN SUCH WARRANTIES, THE COMPANY DOES NOT OTHERWISE WARRANT ANY MACHINE AND NO WARRANTY, EXPRESS, IMPLIED OR STATUTORY IS MADE BY THE COMPANY.

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www.pioneer-eclipse.com

Article #: _____

Serial #: _____

DOM: _____

Built in NC, USA