G-320D Propane OPERATOR'S MANUAL





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SPECIAL THANKS

Dear Customer:

Thank you for choosing Concrete Polishing Solutions for your equipment needs. The experience of Polished Concrete is an incredible opportunity. We are excited about you joining the growing future of Polished Concrete.

Our G-320 Pro Grinder is the most practical and specifically tailored to be presented to the Polished Concrete provider or owner. Our representatives will be happy to inform you of any products or help assist you with your Polished Concrete needs.

We want you, as our customer to understand that while we do consider our company to be the leader in research and development in this industry, we are not above learning from you as you experience new and challenging obstacles on each floor surface that you deal with. If you have any questions or suggestions for us, please contact us and you will find that we are willing to continue our education with you as well as we all grow and learn in this industry.

We truly look forward to each and every partnership that we have the privilege to form with our customers. Thank you again for purchasing a CPS G-320 Pro grinder.

Best Regards, David Padget President and CEO Concrete Polishing Solutions



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GENERAL INFORMATION

Warranty

Concrete Polishing Solutions warrants to the purchaser that under normal use and service, the G-320DP purchased hereunder shall be free from defects in material and workmanship for a period of 1 year or 300 hours. Expendable or consumable items or parts are not covered under this warranty. This warranty does not cover equipment or parts which have been misused, altered, neglected, handled carelessly, or used for any purposes other than those for which they have been manufactured. This warranty also does not cover loss, damages resulting from accident, or damages resulting from an unauthorized service.

Our Return Policy

Please open and inspect your order upon receipt. If you have an issue, please contact a member of our sales and technical staff first so that we can resolve that issue in as short a time as possible.

Any returns must be made within 30 days of delivery and must be accompanied with a return authorization number and a copy of the original invoice. We will then review the complaint and inspect the merchandise before a credit can be processed. Any items that are returned because of obvious misuse will be shipped back to the sender at their expense and no credit shall be issued.

Any returned items, including items under warranty, must be sent at the customer's expense.

No authorization number is necessary if you are returning an item for repair that will be returned back to you. Before returning, please first call a member of our sales and technical staff and you will need to enclose your company name, address, telephone number, and a statement explaining the problem.

If an item was delivered to you in error, please let us know and we will pick up the item at our expense. If your order contains a shortage, report the shortage no later than 24 hours after receiving your shipment. Shortage claims will be honored only when reported promptly.

We cannot accept any products that have been either modified to a customer's specifications or is a non-stocking special order item. Any products, such as machines or other equipment, that sustain aftermarket alterations that have not been pre-approved by CPS are not returnable.

GENERAL INFORMATION

Damaged Shipments

CPS carefully inspects all orders before shipment and then packs shipments as carefully as possible. We advise that you thoroughly check all cartons before you sign for the order. Any claims for merchandise damaged in transit must be filed with the delivering carrier, not CPS.

Liability

Important notice: The following is made in lieu of all warranties, expressed or implied: CPS and/or manufacturer's only obligation shall be to replace such quantity of the product proved to be defective provided that such quarantees or replacement are a stated policy of the manufacturer. CPS and/or manufacturers shall not be liable for any injury, loss of damage, direct, incidental, or consequential, arising out of the negligence or misuse of the product. Before using, user shall determine the suitability of the product for its intended assumes all risk and liability whatsoever in and the user connection therewith. The foregoing may not be altered except by an agreement signed by at least two of the officers of Concrete Polishing Technologies, Inc. CPS will not be liable for delays in shipping due to circumstances beyond the control of CPS. Warranties will not apply if after market alterations, changes, or modifications have been made to the equipment.

Customer Service

Concrete Polishing Solutions has a well trained service department and our sales and technical staff have extensive knowledge on how to service our equipment. Being the manufacturer, we best understand our equipment and already have parts in stock. We can also send you the parts and help you to service your own equipment over the phone. In some locations, we can also provide you with information regarding an outside service person in your area that can assist you with parts and service.

If you need to contact the Service Department at Concrete Polishing Solutions, you will need to provide the product model and identification numbers.

24/7 Tech Support

We provide twenty-four hours a day, seven days per week technical service for our customers. Our trained representatives will be happy to help you with any questions you may have. Please feel free to contact us at any time, day or night by phone at 877-472-8200 or via e-mail at info@go2cps.com.

FORWARD

Special Symbols

Throughout your manual you will see several symbols that will enable you to recognize important information at a quick glance.

- WARNING! Avoid Death! This symbol and text highlight definite hazards or death to the operator or bystanders that will occur if the hazards or procedures are ignored.
- **CAUTION!** Avoid Injury! This symbol and text highlight potential hazards or death to the operator or bystanders that will occur if the hazards or procedures are ignored.

This text is used to tell the operator of actions or conditions that might result in damage to the machine.

NOTE!

General information is given throughout this manual that may help the operator in the operation or service of the machine.

This operator's manual provides instructions for safe, efficient, and trouble-free operation of your machine. You, and anyone else who will be using or maintaining the machine are required to read and understand the information contained in this manual.

Sections in your operator's manual are placed in a specific order to help you understand all the safety messages and learn the controls so you can operate this machine safely. You can also use this manual to answer any specific operating or servicing questions. A convenient index located at the end of this book will help you to find needed information quickly.

Owners and operators must keep the owner's manual available for frequent reference. Contact Concrete Polishing Solutions if you need any assistance, information, or additional copies.

NOTE: Please read all instructions carefully before you begin using your machine.

NOTE: Keep your manual with the machine at all times.

DELIVERY & SPECIFICATIONS

Your G-320DP was carefully inspected and protectively packaged to prevent damage in shipment. We suggest that upon removing the unit from its carton, you carefully inspect it for any possible damage in transit. If damage is discovered, immediately notify the transportation company who delivered your machine.

The following items should be included with the delivery of your G-320DP; please contact Customer Service if anything is missing:

- a. Grinder
- b. Dust Skirt
- c. Propane Tank
- d. Operator's Manual

Specifications

- * Weight: 850 lbs.
- * Grinding Pressure: 550-700 lbs
- * Grinding Width: 32"
- * Power Required: Vapor Draw Propane Tank
- * Engine: 25 HP, conversion to 31 HP
- * RPM: 1,400-3,500

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Serial Number	
Sales Person	
Cell Number	

SAFETY MESSAGES

The G-320DP machines are designed to be used by a professional. The user is expected to have good knowledge and understanding of the user and safety instructions before operating, inspecting, or adjusting the machine. Following the safety instructions prevents damage to the operator and the machine.

*	This machine should only be used or repaired by those who have received proper training and have read the user manual
*	Secure the area around the worksite. Make sure any debris has been cleared. Debris could be flung out by the machine and cause personal injury.
*	Always use protective equipment such as safety shoes, goggles, gloves, breathing masking and ear protection, as required by OSHA.
*	The machine should be started with the grinding head down. All tools should be touching the floor evenly.
*	During grinding, tools may become hot. Tilt the machine back and allow for cooling before removing tools, using protective gloves.
*	Machine should only be used and moved on level surfaces. There is possible risk of injury if the machine starts to roll.
*	Do not clean the machine using a high-pressure washer. Moisture could penetrate and damage the machine's drive system.
*	This machine is not suitable for picking up hazardous dust.
*	Never operate while under the influence of drugs, alcohol, or any substance that could impair judgement.
•	Do not operate if machine is damaged
•	Do not use machine in areas where there is risk of fire or explosion. Put out any smoking materials and other open flames before use. Flames or sparks can trigger an explosion or a fire.
•	Do not attempt to perform any maintenance or repairs while machine is running. Before starting machine, ensure hose fitting is securely tightened to propane tank valve and that there are no leaks.
•	If you must start machine while head assembly is in upright position, be certain there are no plates mounted to the head.
•	Acceleration and vibration transmitted through the handlebars pending testing.
0	Temperature of fixed wiring pending testing
•	Sound level of this unit is pending testing

SAFETY MESSAGES

*	Always wear personal protective gear when operating the machine without a vacuum system. Wear a properly fitting particle mask, appropriate for this application, as specified by OSHA regulations.
⊗	Obey all safety signs and instructions when operating or maintaining equipment.
*	Keep children and pets away from your grinder and polisher at all times.
8	Always make sure to use the appropriate dust interceptor when performing dry grinding operations.
⇔	When filling the tank with water, use only water in the water tank. Any chemicals added may cause material breakdown, which may lead to leakage. Leaks can get into electrical components, creating hazards and causing potential injury.
•	The machine should only be used to grind and polish natural stone, terrazzo, concrete or other CPS approved materials.
*	If the machine has been in a cold location, it should be placed in a warm location for approximately 2 hours before use.
•	Keep the electrical parts of the machine dry. For best results, keep the machine in a dry, warm, enclosed building.
*	If you smell propane or suspect a propane leak, shut off the service valve on the propane cylinder. Then turn the machine off and move the machine to a

ATTENTION: This book has been prepared to provide information and suggestions for Operators in their operation of the G-320DP grinder & polisher.

well-ventilated area.

It is not intended that the suggestions in this booklet take precedence over existing job-site safety rules and regulations, or OSHA regulations. However, a thorough study of the following information should provide a better understanding of safety for people and machinery on the job-site.

It must be recognized that this is a booklet of suggestions for the Operator's use. It is the responsibility of the owner to make personnel aware of all federal, state, and local rules and codes and make certain operators are properly trained.

ABOUT YOUR MACHINE

The G-320DP has been designed by the engineers at Concrete Polishing Solutions to be the most innovative in grinding and polishing technology. We have used our experience in the industry to create a grinder/polisher that combines practicality and durability.

The grinding head assembly (A), contains the engine (A: 1), the grinding plates and the gear drive assembly. The grinding plates are part of the revolutionary three-head grinding system designed by CPS. This new system contours to the floor's surface, reducing rigidity, allowing your tools to more effectively follow with the floor's surface and lowering initial diamond costs. These drive plates can be fitted with a number of attachment tools (metal bonds, resin bonds, etc.), depending on the surface to be worked.

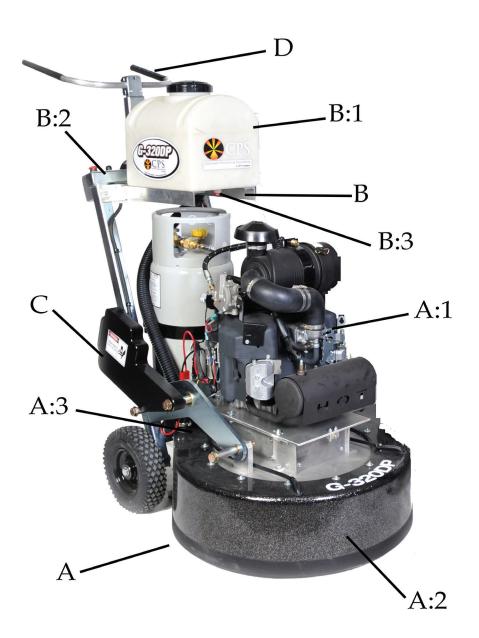
The gear drive system has been designed with a ring and pinion gear as well as a heavy duty belt that eliminates slipping and extends the life of the machine. We have paid special attention to the designing of the upper and lower external seals for the head, which prevents dust from getting into the internal seal and locking up the bearings. Both the grinding plates and the gear drive assembly are enclosed in a safety shroud (A: 2) which has two dust exhaust ports (A: 3) to be used when dry grinding.

The chassis (B) comprises of a water tank (B: 1) and a start and E-stop control box (B: 2). The water tank is large enough to hold approximately 10.5 gallons of water. The water is gravity fed and released by using the water valve (B: 3) located at the bottom of the water tank.

The G-320DP is unique in that the weights (C) are attached to the frame, which prevents loss while maintaining an orderly job site. They provide 150 lbs (75 lbs each) of additional weight and are located on both sides of the machine. They can be lowered independently on either side to help cut the edge more efficiently.

The frame of the machine extends above the chassis and holds the adjustable handle bars (D) and the machine's throttle cable. It is connected by use of two (2) bolts to attach to the grinding head (A) with loose fitting hardware allowing the head to be free floating.

DIAGRAM



CONTROLS

Understanding Your Controls

The control box is mounted to the cross bar of the G-320DP. The throttle control is located on the left side upright of the frame.

The following controls are used to operate the machine on the job site:

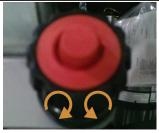


- 1. START- Depress this button to start the machine's engine. While starting the engine, it is IMPORTANT that the throttle is adjusted to the lowest RPM and then increase RPM once engine is running.
- 2. E-STOP— Utlize this button to turn the machine off. *IT IS RECOMMENED TO REDUCE THE MACHINE'S RPMs PRIOR TO DEPRESSING THE E-STOP BUTTON.
- 3. USB PORT- For your convience, there is a USB Port located on the bottom of the control box.

IMPORTANT! Do not leave the G-320DP standing in one place during the shut down phase. Always keep the machine in motion until the head has come to a full and complete stop to avoid creating a 'doughnut' or 'swirling' design on the floor.

CONTROLS

1. THROTTLE ADJUSTMENT KNOB-This knob adjusts your engine RPMs. Turning the knob counter clockwise will increase RPMs. Turning the knob clockwise will decrease RPMs.



OVER TORQUEING IN EITHER DIRECTION CAN CAUSE DAMAGE TO THE THROTTLE CABLE.

IN ORDER TO AVOID BURNING THE CENTRIFUGAL CLUTCH, NEVER ALLOW THE MACHINE TO SIT AND IDLE FOR LONGER THAN ONE (1) MINUTE.

2. TACHOMETER- This will display both the machine RPMs and total hours the machine has been in use. Depressing the button on the bottom right corner will toggle in between the readouts.



NOTES

PREPARING THE MACHINE

Preparing the Machine

Perform the steps listed below to prepare your machine for operation.

- 1. To attach appropriate grinding tools to G-320DP:
 - a. Make sure handle is in an upright "locked" position.
- b. Lay the machine on its back with the handle lying on the floor; this exposes the driving plate on the underside of the machine.
- CAUTION! Always place hands in center of handlebars when lowering and raising machine! This method increases stability and reduces the risk of machine tilting as its re-positioned.
 - NEVER kneel in front of upended machine to replace tools.
- c. From a standing position at side of machine put metal bond plate or resin plates on the cross-complete. Turn the cross-complete lock in either direction to lock the plate into place.



- NOTE: To remove plate: Lay the machine on it's back again and disengage cross-complete from driving plate by turning cross-complete, and lining up notches until plate slips free.
- WARNING: Increased heating of the grinding tooling and equipment may occur due to the increase of grinding speed, increase of pad diameter, or grinding with or without water.
- NOTE: Adding water to the machine will increase weight of machine.
- d. Return the machine to upright position and adjust handle to operating position. Lock the handle pin into position
- 2. If the dust skirt fell off while changing tools be certain to reinstall.

PREPARING THE MACHINE

3. If dry grinding, you will need to do the following: Locate vacuum and dust interceptor to location of grind. Hook hose up to join vacuum and dust interceptor. Run your machine hose to dust interceptor.

4. A propane tank was included with delivery of your G-320DP. This tank is a VAPOR-DRAW tank. When filling your tank make sure that it

is only filled to 80%.

IT IS RECOMMENED TO ONLY USE PROPANE TANKS PURCHASED THROUGH CPS. THE MACHINE CAN ONLY RUN ON VAPOR-DRAW. USE OF A LIQUID-DRAW TANK WILL CAUSE THE MACHINE TO MALFUNCTION.



- 5. Tightly connect the brass fitting of the propane hose to valve on top of the propane tank, and turn the knob to open the valve on the propane tank.
- WARNING: Be certain that you check all hoses for cracks and leaks. Propane is an odorless gas with a sulfur additive. If you recognize a strong odor, immediatley turn off valve on propane tank and contact CPS.
- 6. Clear your work area. Before you begin your job, walk the area and clear all debris. Injuries may occur from debris that is projected into the air by impact. Projected debris can cause injuries to operators, co-workers, and property.

NOTES

HOW TO OPERATE THE MACHINE

How to Operate the Machine

The G-320DP is intended for use by a professional. As such, this section is intended to guide the operator through the operation of the G-320DP. It is not intended as instruction on the grinding or polishing of floors. The term "plates" is used to mean any of the attachments (metal bond plates, resin plates, etc.) applicable to the process.

The following steps should be done after following the instructions in Preparing the Machine:

- 1. Adjust handlebars to desired height and grasp firmly.
- 2. Stand behind G-320DP with feet planted firmly on even ground.
- 3. Press the 'START' button to engage the engine while slowly turning the throttle counter clockwise.
- © CAUTION! Do not start the machine while the head is in the upright position.
- © CAUTION! Always check that dust skirt is properly attached and secured before starting the machine.
- 4. Select desired RPM using the throttle.

IMPORTANT! Never hold the machine in one place while the machine is on. The G-320DP must remain in constant motion. Holding machine still may cause "swirling" damage to floor.

HOW TO OPERATE THE MACHINE

- 5. Adjust weights by lowering them, as needed, to allow for more pressure when necessary.
- 6. When you are ready to stop using the machine turn the throttle knob clockwise completely to reduce RPMs before depressing the E-Stop button to turn off the machine.
- 7. Return any weights used to the upright position.
- IMPORTANT! Always make sure that the weights are returned to their original, upright position before transporting and/or storing the machine.
- 8. Tilt machine up and change tools or exchange plates. (See Photo and Warning below.)
- 9. Turn knob on propane valve completely to the off position and store as appropriate.
 - WARNING: Plates will be HOT!

Wear safety gloves when changing plates to prevent injury.



BEST PRACTICES

Best Practices

In order to optimize performance, CPS recommends the following:

When grinding with the G-320DP, one should do a forward pass followed by a back pass.

- 1. Using 40 grit metal bond diamonds
 - Run G-320DP between 2,400-2,500 RPMs.
 - Foot Speed Very Slow and Constant
- 2. Using 80 grit metal bond diamonds
 - Run G-320DP between 2,400-2,500 RPMs.
 - Foot Speed Very Slow and Constant
- 3. Using 150 grit metal bond diamonds:
 - Run G-320DP between 2,400-2,500 RPMs.
 - Foot Speed Slow and Easy, Natural walking pace
- 4. Using 100 grit resin bond diamonds
 - Run G-320DP between 2,800 2,900 RPMs.
 - Foot Speed Slow and Easy Natural walking pace
- 5. Using RD Disc Technology
 - Run G-320DP at full RPMs.
 - Foot Speed Slightly faster than resin bond tools.

NOTE: Use only CPS recommended grinding tooling and equipment. Contact CPS for any further information.

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Each floor is different and requires the operator to have a certain amount of expertise in determining which tools are appropriate for each iob.

However, CPS is happy to discuss any questions or concerns regarding the G-320DP and the grinding and polishing process.

Please feel free to contact our Customer Service Department.

MAINTENANCE, TRANSPORTING & STORAGE

Maintenance

The G-320DP has been designed to be low maintenance for the operator. As such, there are only a few things you need to do to ensure optimum function.

- Warning! Shut down before performing maintenance. Make sure that the machine is completely stopped and the engine is off before you begin your clean-up and maintenance procedures.
- 1. After the machine's initial run (8-10 hours), check to ensure belt tension is correct. If you have performed the initial check, you need only check the belt every 100 hours thereafter.
- 2. Be sure to follow all maintenance recommendations for the Kawasaki engine in the back of this manual.
- 3. Regrease the ring gear every 300 hours as referenced in the back of this manual.

By following the schedule above you can expect the G-320DP to operate as designed and perform consistently in the field.

Transporting the Machine

Place the handle in the upright position.
Lock the handle pin.
Tip the machine back and transport on the wheels.

© CAUTION! Always place hands in center of handlebars (see picture) when lowering and raising machine! This method increases stability and reduces the risk of machine tilting as its re-positioned.

Storage Store inside in dry conditions to prevent damage to your G-320DP.



TROUBLESHOOTING

The G-320DP is designed for long, trouble-free performance and should not require extensive troubleshooting in the field. If difficulty is encountered, check the following:

SYMPTOM	POSSIBLE CAUSES
Failure to start	Ensure there is adequate propane in the tank. Ensure the E-Stop button is raised. Check battery for charge. Check to ensure oil level is correct. Check the speed you are starting on – starting at a high speed is not recommended (see Best Practices).
Stops suddenly	Ensure there is adequate propane in the tank. Make sure that the propane tank is not over filled. (80% maximum) Make sure you are using a vapor draw tank. If you are cutting next to a wall, make sure that exhaust is pointed away from the wall. Ensure that there is adequate ventilation.
Vacuum Not Working	Check that hoses are fastened securely.
Head does not turn	Check belt tension. If the engine is running, and the head does not turn, the belt is slipping or is broke. Contact CPS for service.
Heads spin but housing doesn't	If the heads run but the housing doesn't the pinion gear shear pin has broken. Test it by turning one of the heads and the housing should turn. Contact CPS for service.

TROUBLESHOOTING

SYMPTOM	POSSIBLE CAUSES
Machine is vibrating or runs unevenly	Tilt machine on its back to check trueness of heads. If not running true, rebuild heads. (see Maintenance). Check for uneven wear on diamonds. A concentration of dirt causes the small driving plates to become hard and not elastic. Clean the machine between the housing and heads. Check that the grinding tools are not worn down and/or that they are properly positioned on the wheel.

If you have checked everything and still have questions, please feel free to contact our Customer Service Department and ask for Technical Support at 877-472-8200 twenty-four hours a day. We are more than happy to help you with any questions or concerns that you might have.

NOTES |

ACCESORIES

A large variety of accessories/parts are available for the G-320D Pro. For detailed information please refer to the Concrete Polishing Solutions Product Catalog or contact the customer service department. We will be more than happy to work with you to determine which accessories and/or parts are appropriate for your application.

For your convenience we have included a brief listing of common accessories/parts:



Resin Plates MTSP0130K 11" Resin/Drive Plate, with (6) Velcro Attachments



Magnetic Plate GPPT0601 Universal Magnetic Plate

Dust Skirt GPPT0077

Cross Complete- Replacement APMF1199



Metal Bond Plate APMF1477



Quick Change Metal Bond Plate GPPT0358

Part Number	Description
APMF1500	Main Grinding Head Assembly
APMF0246	G320DP Motor Shaft Adapter
APMF2232	Kawasaki Engine Converted for Propane
APMF1525	Catalytic Muffler with O2 Sensor
APMF0127	3/8-16x4 SHCS, ZP
APMF0133	3/8 Small OD Nordlock, ZP
APMF1433	Reducer 1-1/4" to 3/4"
APMF1396	T&BH 125A- 1-1/4" Box Sealed Entry Fitting
APMF1393	NHC1037- F-390 90 Degree
APMF1384	PM3004PA005
APMF1462	18-8 Stainless Steel Shim .10" thick, 3/8" ID, 5/8" OD
APMF0260	G320DP Slip Clutch Assembly w/o Pinion-One Flange
APMF1488	G320DP Slip Clutch Assembly w/o Pinion-Two Flange
APMF0263	G320DP Slip Clutch Assembly with Pinion
APMF0109	35mm snap ring, ZP
APMF0242	Idler & Tensioner Roller
APMF0245	Idler Shaft
APMF1225	6007 2RJEM Ball Bearing
APMF0306	Tensioner Assembly
APMF1168	Indoor/Outdoor Silicone Cart. 10.1 fl.oz.
APMF0003	3/8 O.D. x 5/8 lg SS Dowel
APMF1478	18-8 Stainless Steel Dowel Pin 1/4" Diameter, 1-1/4" Length
APMF0048	1/4-20 x 2 1/2 HHCS, ZP, gr 5
APMF0049	1/4-20 x1.00 HHCS, ZP, gr 5
APMF0088	3/8 lg x 1/4 l.D. Spacers, ZP
APMF0092	1/2-13 x 1 1/4 HHCS, ZP, gr 5
APMF0097	1/4 NordLok washer set NL1/4SP
APMF0098	3/8 NordLok washer set NL3/8SP
APMF0099	1/2 NordLok washer set NL1/2
APMF0156	3/4 pipe plus ZP Hex Socket
APMF0241	Head Pivot

Part Number	Description
APMF0254	Belt
APMF0255	Pulley
APMF0321	Sleeve
APMF1458	1/2" x 5/16" Keystock
APMF0271	Motor Plate
APMF1184	Ring Gear - Federal Gear
APMF1183	Ring Gear
APMF1108	1/2" id x 3/4"od Sanoprene Tube
APMF1153	1/2 x 1 x 1/8 Morton Finish Washers
APMF1166	85 mm Snap Ring
APMF1404	Head Mounting Ear
APMF1174	Motor Collar
GPPT0392	Flex Head Assembly
APMF1192	Cross Complete
APMF0272	Frame Assembly
APMF0002	1" Snap Ring
APMF1287	Frame
APMF0007	3/8-16 Nylon Lock Nut , ZP
APMF0094	5/16-18 x 1 1'2 FSHCS, ZP
APMF0119	1/4 x 3/4 Roll Pin, ZP
APMF0131	1/2 x 1 Neoprene Flat Washer
APMF0174	3/8 SAE Flat Washer, ZP
APMF0205	1/4-20 x 2 HHCS, ZP
APMF1289	Inner Weight
APMF1291	Outer Weight
APMF0248	Side Plate
APMF1416	Side Plate Side Pin
APMF1459	G320DP Inclined Tube
APMF0249	Axle
APMF0273	Cross Bar 9a
APMF0274	Cross Bar 9b

Part Number	Description
GPPT0190	Wheel Hub Assembly
APMF1157	1" ID Nylon Washer
APMF1317	Bar - Frame Mount - 5A
APMF1318	Bar - Frame Mount - 5B
APMF1319	Bar - Frame Mount - 5C
APMF1320	Stud - Frame
APMF1465	G320DP Shroud Stop
APMF1350	Radial Plate Weldment
APMF1467	3/4" Zinc Plated Split Lock Washer
APMF1468	3/4" USS Yellow Zinc Plated Thru-Hard Washer
APMF1469	3/4-10 Grade 8 Yellow Zinc Finished Hex Nut
APMF1470	3/4-10 x 5" Grade 5 Zinc Plated Hex Cap Screw
APMF1471	3/4-10 x 6" Grade 8 Yellow Zinc Hex Cap Screw
APMF0007	3/8-16 Nylon Lock Nut, ZP
APMF0028	1/2-16 x 5 1/4 Shoulder Bolt
APMF0033	1/2 Nylon Flat Washers
APMF0120	10-32 x 1/2 SS Flange Screw, ZP
APMF0158	GFI-0809-12 Bushing
APMF0175	1/2 I.D., 3/16 Panel, Grommets
APMF1331	Tiller Arm
APMF0158	Tiller Arm Bushing
APMF0113	Handle bar tightener
APMF1049	Molex 192700028/PFB 11-1BK 4'PC
APMF1207	T-Handle Kwik-Lok Pin
APMF1234	Heat Shrink Tubing .50 dia
APMF1368	Handle Bar Detail
APMF1216	Handle Bar End Cap
APMF1114	Shrink Wrap 1"
APMF0011	10-24 Nylock Nut, ZP
APMF0017	12 x 1 Drill & Tap Screw, ZP

Part Number	Description
APMF0187	8-32 x 2 Phillip Head Cap
APMF0188	Screw, ZP
APMF0257	8-32 Nylon Lock Nut, ZP
APMF1236	Finger Safe Box
APMF1237	Compact Cooling Fan
APMF1239	Filter Kit
APMF1240	Transformer S9070T50D1
APMF1125	Thompson 2520-2 1/2 2 Hole Connect
APMF0132	Male Brass Water Tank Fitting
APMF0015	1/2 SAE Flat Washer, ZP
APMF0253	Water Tank
APMF1389	Caution Label
APMF1397	Pinch Point Label
APMF0280	Leather Washer
APMF1206	1/4" ID Hose
APMF1342	1/4" Hose Barb Mini Ball Valve
APMF1218	1/4 x 1/4 Hose to Flare Swivel Fitting
APMF1219	1/4 Hose Barb Tee
APMF0282	Fiberglass Shroud Assembly
APMF0100	1/4-20 Nylon Lock Nut, ZP
APMF0131	1/2 x 1 Neoprene Flat Washer
APMF1179	Gasket
APMF1455	1-1/2" Hose Clamp
APMF1043	1-1/2"x2/2"x1 Y Hose Pipe
GPPT0290	1-1/2" ID Black Vac Hose
APMF1233	Rubber lined hose clamp
APMF0175	1/2 ID, 3/16 Panel Rubber Grommet
APMF1107	Velcro
GPMC0071	Decal - G320DP
APMF1152	1/4 x 1 Fender Washer

REGREASING THE RING GEAR

Instructions for Greasing Ring Gear Models G250, G320D, and G320DPro

We recommend re-greasing the ring gear every 300 hours or so of operation...

- 1. Unplug the machine.
- 2. Tip the machine on its back...we **strongly recommend** to either have someone hold down the handle bars or weigh them down as a safety precaution.
- 3. Remove the 6 bolts and inspection plate cover (round plate approximately 6 5/8 inch in diameter) so you can access the inside of the machine.
- Look inside the machine, you will see a plastic cap in the upper plate (about 3inches in diameter)
- 5. Using a flat head screw driver, pry the plastic cap out of the hole...be certain that nothing drops into the guts of the machine or into the hole while the cap is out of position...if so be sure to retrieve...just like you do not want to accidentally drop anything into the valve cover of a car engine when you change the oil.
- **6.** Using LubriTech 940 Synthetic Grease or equivalent, apply a good amount of grease on the teeth that can be seen through the hole.
- 7. Turn one of the heads a little bit so you can see more teeth of the ring gear which has not been greased and apply grease.
- **8.** Repeat step 7 until you have applied new grease all the way around the ring gear.
- 9. When the proper amount of grease is used. You will use up approximately 8oz of grease.
- 10. Put the plastic cap back in position being certain that the fit is snug.
- 11. While the inspection plate is off, this is a good time to inspect the belt for wear. A little fraying on either side is normal but if the belt appears to be severely worn, consult CPS for instructions.
- **12.** Also, while inspecting the belt visually, check the tightness. There should be no more than a ¼ inch deflection or movement up or down from center.
- 13. Listen to each hub to see if there is any noise indicating that bearings may be worn and in need of changing...they should be silent. If a slight grinding or clicking noise is heard, consult CPS for instructions.
- 14. After completing these tasks, re-seal the inspection plate by thoroughly cleaning the side that faces the bottom of the grinder as well as the perimeter of the inspection hole. If the original gasket is no longer useable, apply a small amount of silicone all the way around the plate where it overlaps the inspection hole and place cover back into position.
- **15.** Screw all 6 bolts to approximately 8 ft/lbs of pressure (replace if stripped)
- 16. Plug machine in and turn the speed dial all the way counter-clockwise (lowest setting) and turn on. Allow to run approximately 10 minutes to ensure new grease is thoroughly distributed.
- 17. Ready for work.

NEUFLOOR



Flex Head Assembly Instructions- Using ¼ " Diaphragm material

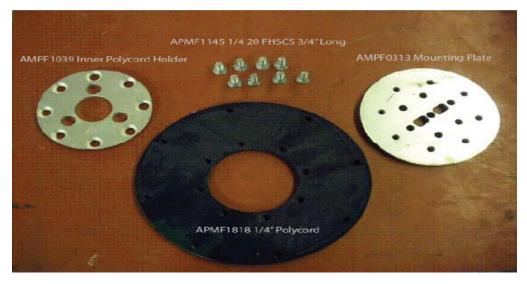
Note: Procedure is shown with 1/4" nylon lock nuts and 5/16" I.D. flat washers; 1/4" nylon flanged lock nuts may substitute.

Parts List:

- 1 Main Mounting Plate w/studs
- 1 Inner Polycord Holder
- 1- Outer Polycord Holder
- 1 Retainer
- 1 1/4" Polycord
- 8 ¼" x 20 x ¾" long Flat Head Socket Cap Screws
- 8 5/16" flat washers
- 8 1/4" x 20 Nylon Lock Nuts
- 1 Spring (Red)
- 1 Drive Shaft

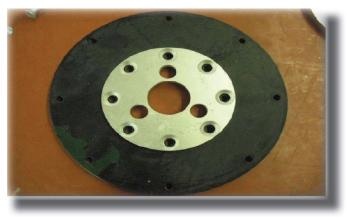
Components: First Assembly

- 1 Inner Polycord Holder
- 1 1/4" Polycord
- $8 \frac{1}{4}$ " x 20 x $\frac{3}{4}$ " long Flat Head Socket Cap Screws
- 1 Retainer



Step 1

Place inner Polycord holder on the Polycord and push through the 8 flat head screws. The screws heads should be flush with the surface of the inner Polycord holder.



Inner Polycord holder on the Polycord with counter-sink holes facing up.



Bottom view of assembly with screws in place

Step 2

With the assembly in the same position as previous picture shows, place the retainer on the screws insuring alignment is such that the 3 holes of the inner Polycord holder align with 3 of the 6 holes of the retainer. See pictures below for examples of both proper and improper alignment.

Properly aligned retainer and inner Polycord holder.

Note: Assembly has been turned over for both better view of alignment and to tighten the flat head screws.





Improperly aligned retainer and inner polycord holder.

Note: The 3 holes of the inner polycord holder do not align with holes of the retainer. Flex heads could not be mounted to the machine in this position!

Step 3

Tighten the 8 flat head socket head screws to a snug-fit using a criss-cross method.

It is recommended to do one full turn of the Allen wrench only before moving to the next screw until snug.

After all screws are snug, use the criss-cross method and tighten all screws to 6 foot pounds of torque pressure (72 inch pounds).

The screws should protrude the retainer slightly when proper torque pressure has been reached.

***See picture below for example.

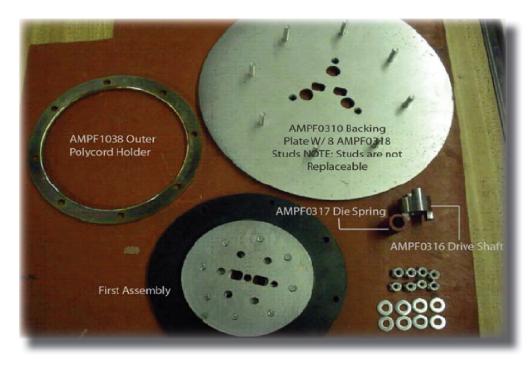


Note: The screw in the forefront is properly torqued while the screw to the left and right are over and under tightened respectively.

Components: Second Assembly

- * Outer Polycord holder
- * Completed first assembly
- * Main Mounting Plate
- * Spring (Red)
- * Drive shaft
- * 8 1/4" nylon lock nuts
- * 8 5/16" flat washers

☑ Note: 8 1/4:" nylon flange nuts may be substituted for the nylon lock nuts and washers.



Step 4

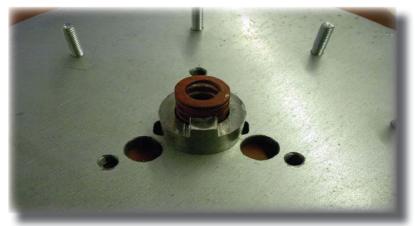
With the main Mounting Plate studs pointing up, place the grinding shaft in the center slots.

Then place the spring in the center hole of the grinding shaft.

Now place the first assembly on the grinding shaft making sure the through holes are properly aligned with the main Mounting Plate.

The prongs on the grinding shaft should be aligned to the retainer slots as well.

Place the outer Polycord holder on the Polycord.





Step 5

Move the loosely fit assemblies to the press making sure proper alignment stays in tact.

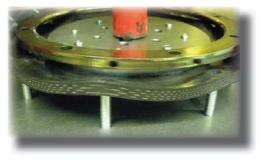
Start applying downward pressure with the ram of the press until the prongs of the grinding shaft slide into the slots of the retainer.

Very slight movement of the assembly may be needed to ensure proper alignment.

Do not force the grinding shaft prongs into the retainer with ram pressure! Start Polycord over the main Mounting Plate studs with even downward hand pressure until all studs protrude the Polycord slightly.

Note: Use of a hydraulic press could damage the assembly. A manual press as shown is recommended.







Recommended type of manual press.

Step 6

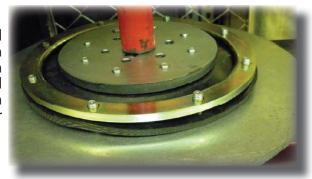
Continue to apply downward press pressure to the assembly, use your hands to push the Polycord holder down on the main Mounting Plate studs, do this until the outer Polycord holder can be placed on the studs far enough to place a flat washer and a loosely fit nut.

Do not over apply ram pressure as to completely bottom out the spring.

Tighten all the nuts to snug with a 7/16" wrench.

Remove ram pressure and remove assembly.

Note: Polycord is just touching main mounting plate enough to apply outer polycord holder and leave enough room to place flat washer and locking nut.



The assembly with flat washers and locking nuts in place prior to relieving ram pressure.

Note: For illustration only. Nuts have been properly torqued in this photo.



FLEX HEAD ASSEMBLY INSTRUCTIONS

Step 6 Con't

Using a criss-cross method torque all nuts to 6 foot pounds.

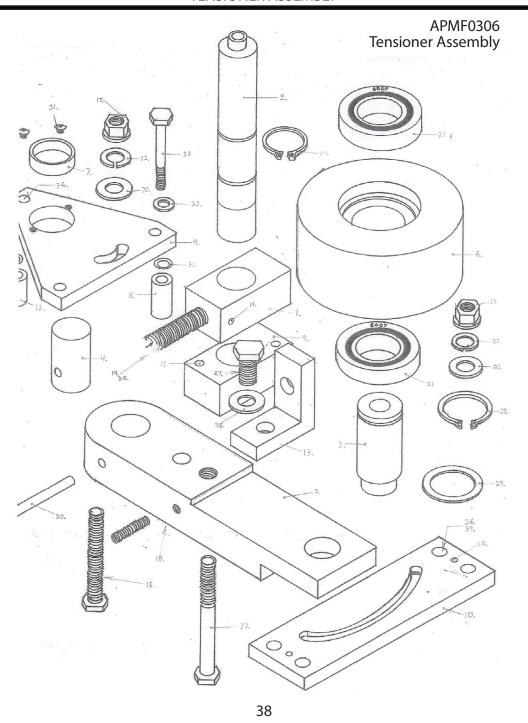
Final torque of lock nuts.



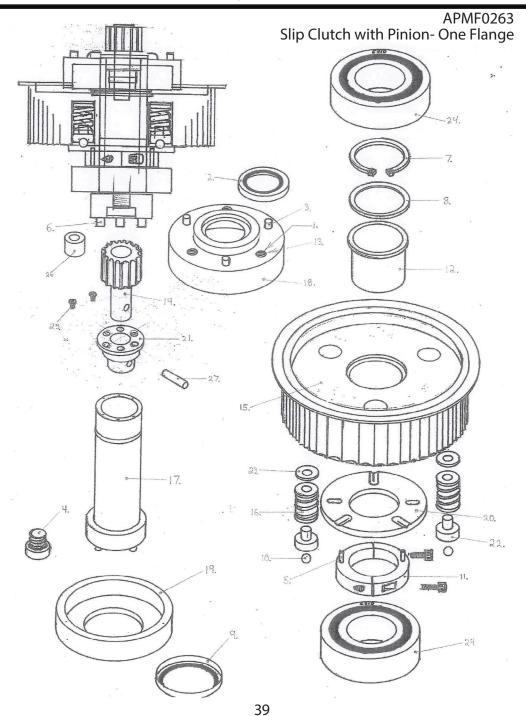
Final assembly as viewed from the main mounting plate side showing proper alignment of holes.



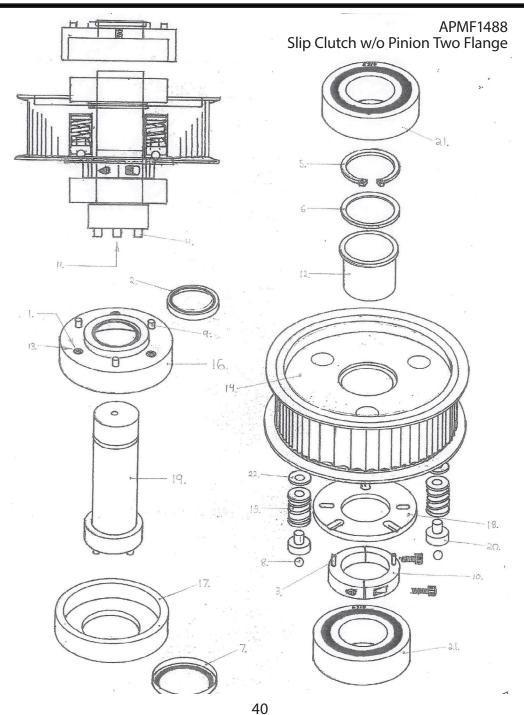
TENSIONER ASSEMBLY



SLIP CLUTCH W/PINION- ONE FLANGE

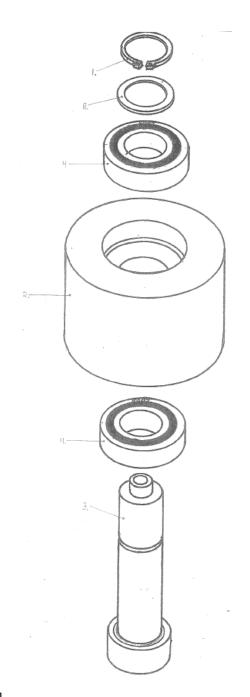


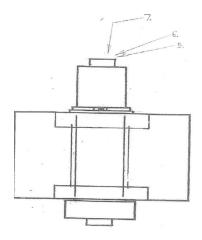
SLIP CLUTCH w/o PINION TWO FLANGE



IDLER SHAFT ASSEMBLY

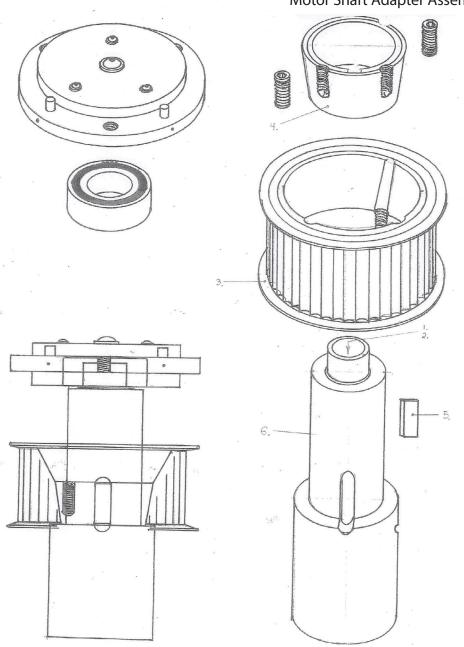
Idler Shaft Assembly APMF0265





MOTOR SHAFT ADAPTER ASSEMBLY

APMF0259 Motor Shaft Adapter Assembly



■ Kawasaki

FX850V FX801V, FX751V

4 stroke air-cooled V-twin gasoline engine



OWNERS MANUAL Part No. 99920-2231-03

SAFETY AWARENESS

Whenever you see the symbols shown below, heed their instructions! Always follow safe operating and maintenance practices.

WARNING

This warning symbol identifies special instructions or procedures which, if not correctly followed, could result in personal injury, or loss of life.

CAUTION

This caution symbol identifies special instructions or procedures which, if not strictly observed, could result in damage to, or destruction of equipment.

NOTE

 This note symbol indicates points of particular interest for more efficient and convenient operation.

READ THIS FIRST

For your safety, read this Owner's Manual and understand it thoroughly before operating this ENGINE.

A WARNING

DO NOT run the engine in a closed area. Exhaust gas contains carbon monoxide, an odorless and deadly poison.

Gasoline is extremely flammable and can be explosive under certain condition.

Stop engine and allow the engine to cool before refueling.

DO NOT smoke. Make sure area is well ventilated and free from any source of flame or sparks including the pilot light of any appliance while refueling, servicing fuel system, draining gasoline and/or adjusting carburetor.

DO NOT fill the tank so the fuel level rises into the filler neck or level surface of level gauge. If the tank is overfilled, heat may cause the fuel to expand and overflow through the vents in the tank cap. Wipe off any spilled gasoline immediately.

To prevent fire hazard:

Keep the engine at least 1 m (3.3 ft) away from buildings, obstructions and other burnable objects.

DO NOT place flammable objects close to the engine.

DO NOT expose combustible materials to the engine exhaust.

DO NOT use the engine on any forest covered, brush covered or grass covered unimproved land unless spark arrester is installed on the muffler.

To avoid getting an electric shock, DO NOT touch spark plugs, plug caps or spark plug leads during engine running.

To avoid a serious burn, DO NOT touch a hot engine or muffler. The engine becomes hot during operation. Before you service or remove parts, stop engine and allow the engine to cool.

DO NOT place hands or feet near moving or rotating parts. Place a protective cover over pulley, V belt or coupling.

DO NOT run engine at excessive speeds. This may result in injury.

Always remove the spark plug caps from spark plugs when servicing the engine to prevent accidental starting.

Read warning labels on the engine and understand them. If any label is missing, damaged, or worn, get a replacement from your Kawasaki dealer and install it in the correct position.

EMISSION CONTROL INFORMATION

Fuel Information

THIS ENGINE IS CERTIFIED TO OPERATE ON UNLEADED REGULAR GRADE GASOLINE ONLY. A minimum of 87 octane of the antiknock index is recommended. The antiknock index is posted on service station pumps in the U.S.A.

Emission Control Information

To protect the environment in which we all live, Kawasaki has incorporated an exhaust emission control system in compliance with applicable regulations of the United States Environmental Protection Agency and the California Air Resources Board. Also, depending on when your engine was produced, it may have an assigned emissions durability period. *See below for the engine emissions durability period that may apply to your engine.

Exhaust Emission Control System

The exhaust emission control system applied to this engine consists of a carburetor and an ignition system having optimum ignition timing characteristics. The carburetor has been calibrated to provide lean air/fuel mixture characteristics and optimum fuel economy with a suitable air cleaner and exhaust system.

A sealed-type crankcase emission control system is also used to eliminate blow-by gasses. The blow-by gasses are led to a breather chamber through the crankcase and from there to the air cleaner.

Engine Emission Compliance Period California

Engines Greater Than or Equal To 225 cc Model Year - 2008 and later Durability period - 1 000 hours All Other States Engines Greater Than or Equal To 225 cc Model Year - 2007 and later Durability Period - 1 000 hours (Category A)

* If your engine has an assigned emissions durability period it will be located on the certification label attached to the engine (IMPORTANT ENGINE INFORMATION).

Concrete Polishing Solutions- G320D PRO Operator's Manual

KAWASAKI MOTOR GUIDE

High Altitude Performance Adjustment Information

To improve the EMISSIONS CONTROL PERFORMANCE of engines operated above 1 000 meters (3 300 feet), Kawasaki recommends the following Environmental Protection Agency (EPA) and the California Air Resources Board (CARB) approved modifications.

However, the models with DFI (Digital Fuel Injection system) does not require high altitude performance adjustment.

NOTE

O When properly performed, these specified modifications only are not considered to be emissions system "tampering" and engine performance is generally unchanged as a result.

Installation Instructions:

High altitude adjustment requires replacement of carburetor main jets. Installation of these optional parts may be performed by an authorized Kawasaki dealer, or the consumer, following repair recommendations specified in the appropriate Kawasaki Service Bulletin.

Maintenance and Warranty

Proper maintenance is necessary to ensure that your engine will continue to have low emission levels. This Owner's Manual contains those maintenance recommendations for your engine. Those items identified by the Periodic Maintenance Chart are necessary to ensure compliance with the applicable standards.

As the owner of the engine, you have the responsibility to make sure that the recommended maintenance is carried out according to the instructions in this Owner's Manual at your own expense.

The Kawasaki Limited Emission Control System Warranty requires that you return your engine to an authorized Kawasaki dealer for remedy under warranty. Please read the warranty carefully, and keep it valid by complying with the owner's obligations it contains.

Tampering with Emission Control System Prohibited

Federal law and California State law prohibit the following acts or the causing thereof: (1) the removal or rendering inoperative by any person other than for purposes of maintenance, repair, or replacement, of any device or element of design incorporated into any new engine for the purposes of emission control prior to its sale or delivery to the ultimate purchaser or while it is in use, or (2) the use of the engine after such device or element of design has been removed or rendered inoperative by any person.

Among those acts presumed to constitute tampering are the acts listed below: Do not tamper with the original emission related parts:

- Carburetor or DFI system, and their internal parts
- Spark Plug
- Magneto or electronic ignition system
- Fuel filter element
- Air cleaner elements
- Crankcase
- Cylinder heads
- Breather chamber and internal parts
- Intake pipe and tube
- Muffler or any internal portion of the muffler

FOREWORD

We wish to thank you for purchasing this Kawasaki engine.

Please read this Owner's Manual carefully before starting your new engine so that you will be thoroughly familiar with the proper operation of your engine's control, its features, capabilities and limitations.

Also read the manual of the equipment to which this engine is attached.

To ensure a long, trouble-free life for your engine, give it the proper care and maintenance described in this manual. Always keep this manual at your fingertip so that you can refer to it whenever you need information. This manual should be considered a permanent part of the engine and should remain with the engine when it is sold.

All rights reserved. No part of this publication may be reproduced without our prior written permission. This publication includes the latest information available at the time of printing. However, there may be minor differences between the actual product and illustrations and text in this manual.

All products are subject to change without prior notice or obligation.

KAWASAKI HEAVY INDUSTRIES, LTD. Consumer Products & Machinery Company

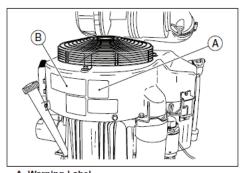
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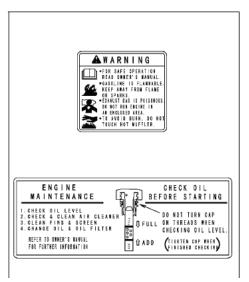
8 GENERAL INFORMATION

GENERAL INFORMATION

Location of Safety Related Labels

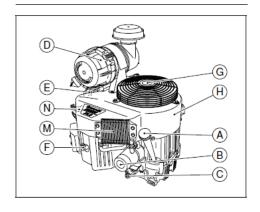


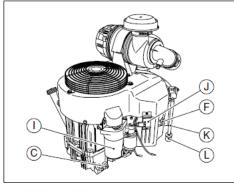
A. Warning Label
B. Engine Maintenance



GENERAL INFORMATION 9

Location of Parts





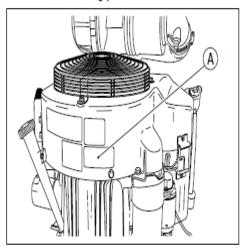
- A. Oil Gauge Filler
- B. Oil Filter
- C. Oil Drain Plug
- D. Air Cleaner
- E. Carburetor
- F. Spark Plug Cap/Spark Plug
- G. Guard
- H. Fan Housing
- I. Electric Starter
- J. Voltage Regulator
- K. Fuel Tube
- L. Fuel Filter
- M. Oil Cooler
- N. Control Panel

10 GENERAL INFORMATION

Engine Serial Number

The engine serial number is your only means of identifying your particular engine from others of the same model type.

This engine serial number is needed by your dealer when ordering parts.



A. Engine Serial Number

Tune-up Specifications

ITEM	Specifications
Ignition Timing	Unadjustable
Spark Plugs: Gap	NGK BPR4ES 0.75 mm (0.030 in)
Low Idle Speed	1550 r/min (rpm)
High Idle Speed	3600 r/min (rpm)
Valve Clearance	IN 0.10 - 0.15 mm (0.004 - 0.006 in) EX 0.10 - 0.15 mm (0.004 - 0.006 in)
Other Specifications	No other adjustment needed

NOTE

 High and low idle speeds may vary depending on the equipment on which the engine is used. Refer to the equipment specification.

GENERAL INFORMATION 11

Engine Oil Capacity

Engine Oil Capacity

FX801V	2.1 L (2.2 US·qt) [when oil filter is not removed]
	2.3 L (2.4 US·qt) [when oil filter is removed]

12 FUEL AND OIL RECOMMENDATIONS

FUEL AND OIL RECOMMENDATIONS

Fuel

Use only clean, fresh, unleaded regular grade gasoline.

CAUTION

Do not mix oil with gasoline.

Octane Rating

The octane rating of a gasoline is a measure of its resistance to "knocking". Using a minimum of 87 octane by the antiknock index is recommended. The antiknock index is posted on service station pumps in the U.S.A.

NOTE

 If "knocking" or "pinging" occurs, use a different brand of gasoline or higher octane rating.

Oxygenated Fuel

Oxygenates (either ethanol or MTBE) are added to the gasoline. If you use the oxygenates, be sure it is unleaded and meets the minimum octane rating requirement.

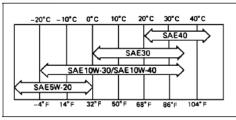
The followings are the EPA approved percentages of fuel oxygenates.

Engine Oil

The following engine oils are recommended. API Service Classification: SF, SG, SH, SJ or SL.

Oil Viscosity

Choose the viscosity according to the temperature as follows:



NOTE

Using multi grade oils (5W-20, 10W-30, and 10W-40) will increase oil consumption. Check oil level more frequently when using them.

ETHANOL: (Ethyl or Grain Alcohol)

You may use gasoline containing up to 10% ethanol by volume.

MTBE: (Methyl Tertiary Butyl Ether)

You may use gasoline containing up to 15% MTBE by volume.

METHANOL: (Methyl or Wood Alcohol)

You may use gasoline containing up to 5% methanol by volume, as long as it also contains cosolvents and corrosion inhibitors to protect the fuel system. Gasoline containing more than 5% methanol by volume may cause starting and/or performance problems. It may also damage metal, rubber, and plastic parts of your fuel system.

FUEL AND OIL RECOMMENDATIONS 13

14 PREPARATION

PREPARATION

Fuel

▲ WARNING

Gasoline is extremely flammable and can be explosive under certain conditions.

Before refueling, turn the engine switch to the OFF position. Do not smoke. Make sure the area is well ventilated and free from any source of flame or sparks, including any appliances with a pilot light.

Never fill tank so that fuel level rises into the filler neck. If tank is overfilled, heat may cause fuel to expand and overflow through vents in tank cap.

After refueling make sure tank cap is securely closed.

If gasoline is spilled, wipe it up immediately.

- Place the engine on level surface before fueling.
- Remove the fuel tank cap.
- Slowly pour fuel into the tank through the fuel strainer.
- · Close the tank cap securely.

PREPARATION 15

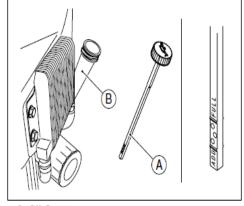
Engine Oil

Check the engine oil daily before starting the engine otherwise shortage of the engine oil may cause serious damage to the engine such as seizure.

- Place the engine on level surface. Clean area around the oil gauge before removing it.
- Remove the oil gauge (A) and wipe it with a clean cloth.
- Pour the oil slowly to "FULL" mark on the oil gauge.
- Insert the oil gauge into tube (B) WITHOUT SCREWING IT IN.
- Remove the oil gauge (A) to check the oil level.
 The level should be between "ADD" and "FULL" marks. Do not overfill.
- Install and tighten the oil gauge (A).

Engine Oil Capacity

FX801V	2.1 L (2.2 US·qt) [when oil filter is not removed]
FX751V	2.3 L (2.4 US·qt) [when oil filter is removed]



A. Oil Gauge B. Tube

CAUTION

The engine is shipped without engine oil.

16 STARTING

STARTING

Start Engine

A WARNING

Exhaust gases contain carbon monoxide, a colorless, odorless, poisonous gas.

Do not operate the unit in enclosed areas. Provide adequate ventilation at all times.

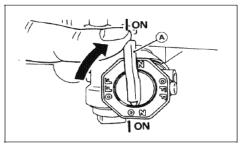
A WARNING

Engine exhaust may ignite combustible materials and cause a fire.

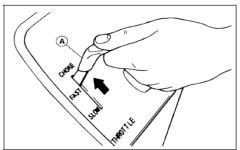
Keep the area around the exhaust outlet clear. Locate the unit so that the exhaust outlet points toward an open area and is located at least one meter (3.3 feet) from any obstructions.

NOTE

 Be aware of the following in order to start the engine easily in cold weather.



A. Fuel Valve



A. Throttle Lever

- OUse proper oil for expected temperature (See FUEL AND OIL RECOMMENDATIONS chapter). Use fresh gasoline.
- Protect the engine or the equipment from direct exposure to weather when not in operation.
- Before starting the engine, disconnect all possible external loads.
- . Open the fuel valve (A) on the equipment.
- Put the engine switch key into the engine switch.
 For Control Panel Switch Type, move the throttle lever on the equipment to its halfway position between "SLOW" speed and "FAST" speed.

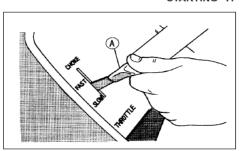
Moving the lever away from its low speed end turns ignition on.

[Separate Choke type]

For a Cold Engine - Place the choke control lever into "CHOKE" position.

 After starting the engine, gradually return the choke control lever to the fully open position.

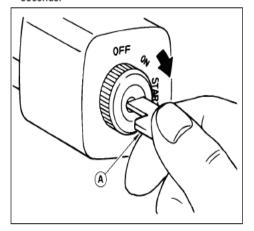
STARTING 17



A. Throttle Lever

18 STARTING

- Put the switch key (A) into the engine switch.
- Turn the switch key to the START position on the equipment. Normally the engine will start within 3 seconds.



CAUTION

Do not run the electric starter continuously for more than 5 seconds, otherwise the battery may discharge quickly. If the engine does not start right away, wait 15 seconds and try again.

CAUTION

Whenever you start engine, make sure warning light is not illuminated after engine starts. If warning light comes on, stop engine immediately and check oil level (If equipped).

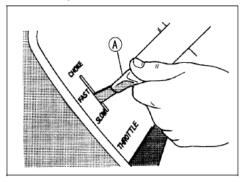
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OPERATING

Warming Up

After the engine starts, move the throttle lever (A) on the equipment to halfway between "FAST" and "SLOW".

To warm up the engine, run it for 3 to 5 minutes with the throttle lever in the same load position (halfway) before putting the equipment under load. Then, move the throttle lever (A) on the equipment to its "FAST" position.



CAUTION

Allow engine to warm up sufficiently (3 to 5 minutes at idle) before applying a load. This will allow oil to reach all engine parts, and allow piston clearance to reach design specifications.

CAUTION

While warming up the engine, make sure the warning light (oil pressure) on dash is not on. The warning light must not be illuminated during engine operation (if equipped).

20 OPERATING

Engine Inclination

This engine will operate continuously at angles up to 25° in any direction.

Refer to the operating instructions of the equipment this engine powers. Because of equipment design or application, there may be more stringent restrictions regarding the angle of operation.

CAUTION

Do not operate this engine continuously at angles exceeding 25° in any direction. Engine damage could result from insufficient lubrication.

STOPPING 21

STOPPING

Stopping the Engine

Ordinary Stop

- Move throttle lever (A) to "SLOW" position.
- Lower the engine speed to the idle speed. Keep running at the idle speed for about one minute.

CAUTION

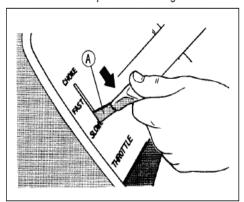
Engine damage can occur from run-on or after-burning if engine is stopped suddenly from high speed loaded operation. Reduce engine speed to idle for one minute before shutting engine off.

 Turn the engine switch or the switch key to "OFF" position.

For Control Panel Switch Type, move the throttle lever against its low speed end to turn the ignition off.

Emergency Stop

 Immediately turn the engine switch or the switch key to "OFF" position. Close the fuel valve on the equipment.
For Control Panel Switch Type, move the throttle lever on the equipment to its low speed end. Moving the lever to its low speed end turns ignition off.



WARNING

Always remove Engine Key from switch when leaving equipment unattended or when equipment is not in use.

22 ADJUSTMENT

ADJUSTMENT

Separate choke type of choke control is used for FX801V and FX751V Models Engines.

Separate Choke Type

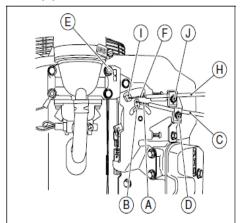
Throttle Cable Installation, Adjustment

- Link the throttle cable (A) to the speed control lever (B) and loosely clamp the throttle cable outer housing (C) with the cable clamp bolt (D).
- Move the throttle lever to "FAST" position.
- Pull up the outer housing (C) of the throttle cable until the inner wire (A) has almost no slack, and tighten the cable clamp bolt (D).
- Move the throttle lever to "SLOW" position. Make sure that the carburetor throttle valve pivot arm (E) is moved smoothly.

Choke Cable Installation, Adjustment

- Link the choke cable (F) to the choke lever (I), and loosely clamp the choke cable outer housing (H) with the cable clamp bolt (J).
- Move the equipment choke control to "OPEN" position. Make sure that the carburetor choke valve (pivot arm) (G) is fully opened.
- Pull up the outer housing (H) of the choke cable until the inner wire (F) has almost no slack, and tighten the cable clamp bolt (J).

- Move the equipment choke control to "CHOKE" position. Make sure that the carburetor choke valve (pivot arm) (G) is completely closed.
- Make sure that the choke valve turns from fully close position to fully open position when actuating the equipment choke control.



ADJUSTMENT 23

E G

E. Throttle Valve Pivot Arm

G. Choke Valve Pivot Arm

Engine Speed Adjustment

NOTE

- Do not tamper with the governor setting or the carburetor setting to increase the engine speed. Every carburetor is adjusted at the factory and cap or stop plate is installed on each mixture screw.
- If any adjustment is necessary, see your authorized Kawasaki Engine dealer to perform the adjustment.

E103011BM2 C

Concrete Polishing Solutions- G320D PRO Operator's Manual

KAWASAKI MOTOR GUIDE

24 MAINTENANCE

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Maintenance, replacement, or repair of the emission control devices and systems may be performed by any nonroad engine repair establishment or individual.

Periodic Maintenance Chart

WARNING

Always remove the spark plug caps from spark plugs when servicing the engine to prevent accidental starting.

NOTE

- The service intervals indicated are to be used as a guide. Service more frequently as necessary by operating conditions.
 - Service more frequently under dusty conditions.

K: Service to be performed by an authorized Kawasaki dealer.

	INTERVAL						
MAINTENANCE	Daily	First 8 hr.	Every 100 hr.	Every 200 hr.	Every 250 hr.	Every 300 hr.	Every 500 hr.
Check and add engine oil.	•						
Check for loose or lost nuts and screws.	•						
Check for fuel and oil leakage.	•						
Check battery electrolyte level.	•						
♦ Check or clean air inlet screen.	•						
♦ Clean dust and dirt from cylinder and K cylinder head fins.			•				

MAINTENANCE 25

				INTERVA	L		
MAINTENANCE	Daily	First 8 hr.	Every 100 hr.	Every 200 hr.	Every 250 hr.	Every 300 hr.	Every 500 hr.
Tighten nuts and screws.			•				
Change engine oil.		•	•				
♦ Check and clean oil cooler fins.			•				
Clean and regap spark plugs.			•				
Change oil filter.				•			
♦ Replace air cleaner primary element.					•		
♦ Check air cleaner secondary element.					•		
K Clean combustion chamber.						•	
K Check and adjust valve clearance.						•	
K Clean and lap valve seating surface.						•	
♦ Replace air cleaner secondary element.							•

26 MAINTENANCE

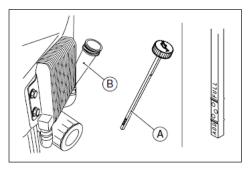
Oil Level Check

Check the oil level daily and before each time of operation. Be sure the oil level is maintained. See PREPARATION chapter.

Engine Oil Capacity

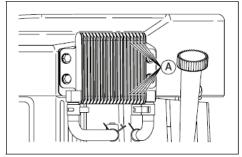
FX801V FX751V 2.1 L (2.2 US·qt) [when oil filter is not removed] 2.3 L (2.4 US·qt)

[when oil filter is removed]



Oil Cooler Service

Check and clean oil cooler fins every 100 hours.
 Clean dirt off the outside fins with a brush or compressed air.



A. Oil Cooler Fins

MAINTENANCE 27

- Install the oil drain plug.
- Remove the oil gauge and refill with fresh oil (See FUEL AND OIL RECOMMENDATIONS chapter).
- Check the oil level (see PREPARATION chapter).

A WARNING

Engine oil is a toxic substance. Dispose of used oil properly. Contact your local authorities for approved disposal methods or possible recycling.

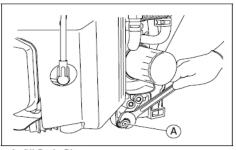
Oil Change

Change oil after <u>first 8 hours of operation.</u> Thereafter change oil <u>every 100 hours.</u>

- Run the engine to warm oil.
- Be sure the engine (equipment) is on level surface.
- Stop the engine.
- Remove the oil drain plug and drain the oil into a suitable container while engine is warm.

WARNING

Hot engine oil can cause severe burns. Allow engine temperature to drop from hot to warm level before draining and handling oil.



A. Oil Drain Plug

28 MAINTENANCE

Oil Filter Change

• Change the oil filter every 200 hours of operation.

WARNING

Hot engine oil can cause severe burns. Allow engine temperature to drop from hot to warm level before attempting to remove oil filter.

Drain the engine oil into a suitable container.

CAUTION

Before removing the oil filter, place suitable pan under filter connection.

- Rotate the oil filter (A) counterclockwise to remove it.
- Coat a film of clean engine oil on the seal of new filter
- Install new filter rotating it clockwise until the seal contacts the mounting surface (B). Then rotate the filter 2/3 turn more by hand.
- Supply engine oil as specified.
- Run the engine for about 3 minutes, stop the engine, and check any oil leakage around the filter.
- Add oil to compensate for oil level drop due to oil filter capacity (see PREPARATION chapter).

Air Cleaner Service

CAUTION

Do not run the engine with the air cleaner removed.

Air Cleaner

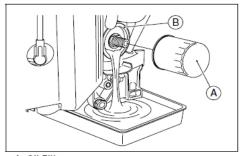
This air cleaner elements are not recommended to be cleaned. Replace each air cleaner element with a new one at the maintenance time as shown in the maintenance chart.

CAUTION

To prevent excessive engine wear, do not run the engine with the air cleaner removed.

CAUTION

Do not wash air cleaner elements.
Do not oil air cleaner elements.
Do not use pressurized air to clean air cleaner elements.



A. Oil Filter B. Mounting Surface

WARNING

Engine oil is a toxic substance. Dispose of used oil properly. Contact your local authorities for approved disposal methods or possible recycling.

MAINTENANCE 29

NOTE

 Operating in dusty condition may require more frequent maintenance.

Primary Element

Replace the primary element every 250 hrs.

Secondary Element

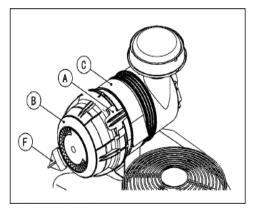
- Replace the secondary element with a new one, if the secondary element is dirty when the primary element is checked.
- Replace the secondary element with a new one every 500 hrs.

Cap (Dust Ejector Valve)

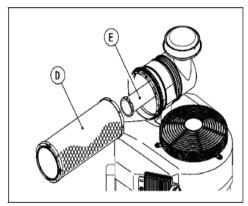
Push and open the cap on the case of the air cleaner body to expel dust and/or water accumulated inside.

- Unfasten the two retaining clamps (A) and remove the case (B) from the air cleaner body (C).
- Remove the primary element (D) and the secondary element (E) from the air cleaner body by pulling out them.

30 MAINTENANCE



- A. Retaining Clamps
- B. Case
- C. Air Cleaner Body
- F. Cap (Dust Ejector Valve)



- D. Primary Element
- E. Secondary Element
- Install the new air cleaner elements into the air cleaner body.
- Reinstall the case and the cap (F) then securely fasten the two retaining clamps.

MAINTENANCE 31

Fuel Filter and Fuel Pump Service

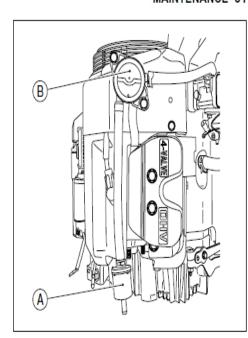
A WARNING

Improper use of solvents can result in fire or an explosion.

Do not use gasoline or low flash-point solvents to clean the fuel filter and/or the fuel pump.

Clean only in a well ventilated area away from sources of sparks or flame, including any appliances with a pilot light.

- The fuel filter (A) can not be disassembled. If the fuel filter gets clogged, replace it with a new one.
- The fuel pump (B) can not be disassembled. If the fuel pump fails, replace it with a new one.



32 MAINTENANCE

Spark Plug Service

WARNING

Hot engine components can cause severe burns.

Stop engine and allow it to cool before checking spark plugs.

Clean or replace the spark plugs and reset the gap (A) every 100 hours of operation.

- Disconnect the spark plug caps from the spark plugs and remove the spark plugs.
- Clean the electrodes (B) by scraping or using a wire brush to remove carbon deposits.
- Inspect for cracked porcelain, other wear or damage. Replace the spark plug with a new one if necessary.
- Check the spark plug gap and reset it if necessary. The gap must be 0.75 mm (0.030 in). To change the gap, bend only the side electrode, using a spark plug tool.
- Install and tighten the spark plugs to <u>22 N m (2.2 kgf m, 16 ft lb)</u>.
- Fit the spark plug caps on the spark plugs securely.
- Pull up the spark plug caps lightly to make sure of the installation of the spark plug caps.

Cooling System Cleaning

Before each operation, check that the air inlet (rotary) screen (C) is free from grass and debris. Clean the screen if necessary. Every 100 hours of operation, check and clean the cooling fins and the inside of engine shrouds (H) to remove grass, chaff or dirt clogging the cooling system and causing overheating. When cleaning, remove the guard (A) and air inlet screen (C), then remove the fan housing (E) and engine shrouds (H) (includes removing the air cleaner, fuel pump, oil cooler and the voltage regulator parts) if necessary.

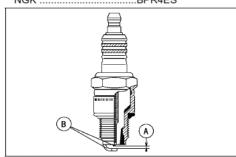
CAUTION

Do not run engine before all cooling system parts are reinstalled to keep cooling and carburetion as intended.

[Bolts Size, Tightening Torque]

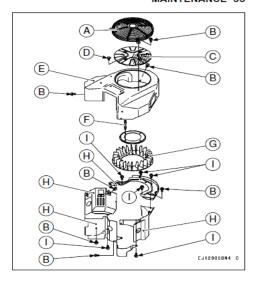
-			·
Bolts	Size	Length	Tightening torque
В	M6	12 mm	5.9 N m (0.6 kgf m, 4.3 ft lb)
D	М6	10 mm	5.9 N m (0.6 kgf m, 4.3 ft lb)
F	М6	81 mm	5.9 N m (0.6 kgf m, 4.3 ft lb)
1	М6	12 mm	8.8 N·m (0.9 kgf·m, 6.5 ft·lb)

RECOMMENDED SPARK PLUG NGKBPR4ES



A. Spark Plug Gap B. Electrodes

MAINTENANCE 33



34 STORAGE

STORAGE

Fuel System Draining

Engine to be stored over 30 days should be completely drained of fuel to prevent gum deposits forming on essential carburetor parts, the fuel filter and the tank.

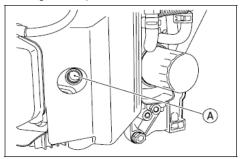
WARNING

Gasoline is extremely flammable and can be explosive under certain conditions.

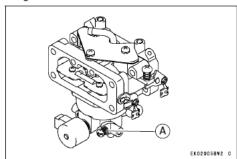
Drain fuel before storing the equipment for extended periods.

Drain gasoline in a well ventilated area away from any source of flame or sparks, including any appliances with a pilot light. Store gasoline in an approved container in safe location.

- Clean every part of the engine.
- Be sure that the engine switch or switch key is positioned at "OFF" position.
- Close the fuel valve and remove the sediment bowl.
- Put a pan under the fuel valve to receive the drained gasoline and open the fuel valve to drain the gasoline from fuel tank completely.
- Remove the spark plugs and pour approx 1 2 mL (0.06 - 0.1 cu in.) of engine oil through the spark plug holes [A] then screw the spark plugs in after turning the engine a few times. Slowly turn the engine until you feel the compression then leave it there. This traps the air inside the cylinders and prevents rust inside the engine.
- Wipe the body with oily cloth.
- Wrap the engine with plastic sheeting and store it in a dry place.
- Change engine oil for next use after period of storage. Refer to MAINTENANCE chapter for Oil Change section).



- Install the sediment bowl.
- Put a pan under the carburetor and loosen the drain screw of the carburetor to drain the gasoline completely.
- Tighten the drain screw.



A. Fuel Drain Screw

WARNING

Gasoline is a toxic substance. Dispose of gasoline properly. Contact your local authorities for approved disposal methods.

STORAGE 35

36 TROUBLESHOOTING GUIDE

TROUBLESHOOTING GUIDE

If the engine malfunctions, carefully examine the symptoms and the operating conditions, and use the table below as a guide to troubleshooting.

Symptom		Probable Cause	Remedy	
Engine won't start or output is	Insufficient compression	Faulty pistons, cylinders, piston rings, and head gaskets	К	
low		Faulty valves		
		Loose spark plugs	Tighten properly	
		Loose cylinder head bolts		
	No fuel to	No fuel in fuel tank	Fill fuel tank	
	combustion chamber	Fuel valve is not in "ON" position.	Open fuel valve lever.	
	Chamber	Clogged fuel filter or tube	Change fuel filter or fuel tube	
		Clogged air vent in tank cap	Clean fuel tank cap	
		Faulty carburetor	К	
	Spark plugs fouled by fuel	Over-rich fuel/air mixture	Open choke. Rotate engine with spark plugs removed to discharge excess fuel. Clean spark plugs.	
		Clogged air cleaner	Clean	
		Faulty carburetor	К	
		Incorrect grade/type of fuel	Change fuel	
		Water in fuel		

TROUBLESHOOTING GUIDE 37

Sym	ptom	Probable Cause	Remedy	
	No spark or	Faulty spark plugs	Replace spark plugs	
	weak spark	Faulty ignition coils	K	
		Engine switch is in "OFF" position	Turn engine switch to "START" position (See M)	
Low output	Engine	Clogged air cleaner	Clean	
	overheats	Air inlet screen or cooling air path clogged with dirt		
		Insufficient engine oil	Replenish or change oil	
		Carbon build-up in combustion chamber	к	
		Poor ventilation around engine	Select a better location	
Engine speed won t increase		Faulty governor	к	

K: Service to be performed by an authorized Kawasaki dealer.

M: For Control Panel Switch Type, move the throttle lever on the equipment away from its low speed end to turn the engine switch to "START" position.

38 ENVIRONMENTAL PROTECTION

ENVIRONMENTAL PROTECTION

To protect our environment, properly dispose of used batteries, engine oil, gasoline, coolant, or other components that you might discard.

Consult your authorized Kawasaki dealer or local environmental waste agency for the proper disposal procedures.

SPECIFICATIONS 39

SPECIFICATIONS

	FX801V, FX751V
Туре	Air- cooled, 4-stroke OHV 4Valves, V-twin cylinder, gasoline engine
Bore x Stroke	84.5 x 76 mm (3.33 x 2.99 in.)
Displacement	852 mL (52 cu.in.)
Ignition System	Solid-state ignition
Direction of rotation	Counterclockwise facing the PTO Shaft
Starting system	Electric starter
Dry weight : kg (lbs)	56.4 kg (124 lbs)

NOTE

- O Specifications are subject to change without notice.
- O Dry weight excludes that of the fuel tank and the muffler.

40 WIRING DIAGRAM

WIRING DIAGRAM

Wiring Diagram (With 12 V - 15 A Charging Coil)

WARNING

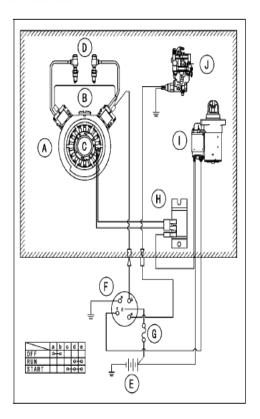
For electrical safety, always remove cable from negative (–) side of battery before attempting any repair or maintenance.

Battery Capacity Recommended

Model	Battery Capacity
Lawn Mower	12 V 550 CCA Class
Snow Thrower	12 V 550 CCA Class

NOTE

- Portion surrounded by hatching shows Kawasaki procurement parts.
- A. Flywheel F. Key Switch
- B. Ignition Coils G. Fuse
- C. Charging Coil H. Voltage Regulator
- D. Spark Plugs I. Electric Starter
- E. Battery J. Carburetor



AWARNING

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



KAWASAKI HEAVY INDUSTRIES,LTD. Consumer Products & Machinery Company







CPS Mission Statement

To build and maintain lifelong relationships with our clients through our commitment and dedication to provide superior support 24/7 through our knowledge of the craft of polished concrete, the quality of products we provide and cost saving solutions learned from years of experience.