

HPP23-12 HYDRAULIC POWER PACK



OPERATION, MAINTENANCE, & SAFETY USER MANUAL



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SERVICING THE KINGDOM CONSTRUCTION PRODUCTS POWER PACK:

This manual contains safety, operation, and routine maintenance instructions. KINGDOM CONSTRUCTION PRODUCTS recommends that servicing of hydraulic tools, other than routine maintenance, must be performed by an authorized and certified dealer. Please read the following warning.



**SERIOUS INJURY OR DEATH COULD RESULT FROM THE IMPROPER REPAIR OR SERVICE OF THIS TOOL.
REPAIRS AND / OR SERVICE TO THIS TOOL MUST ONLY BE DONE BY AN AUTHORIZED AND CERTIFIED DEALER.**

For the nearest authorized and certified dealer, Call 1 (800)-372-0507 and ask for a Customer Service Representative.

SAFETY SYMBOLS

Safety symbols and signal words, as shown below, are used to emphasize all operator, maintenance and repair actions which, if not strictly followed, could result in a life-threatening situation, bodily injury or damage to equipment.



This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.



This safety alert and signal word indicate an imminently hazardous situation which, if not avoided, **WILL** result in **DEATH OR SERIOUS INJURY**.



This safety alert and signal word indicate a potentially hazardous situation which, if not avoided, **COULD** result in **DEATH OR SERIOUS INJURY**.



This safety alert and signal word indicate a potentially hazardous situation which, if not avoided, **MAY** result in minor or **MODERATE INJURY**.



This signal word indicates a potentially hazardous situation which, if not avoided, **MAY** result in **PROPERTY DAMAGE**.



This signal word indicates a situation which, if not avoided, **WILL** result in **DAMAGE TO THE EQUIPMENT**.



This signal word indicates a situation which, if not avoided, **MAY** result in **DAMAGE TO THE EQUIPMENT**.

Always observe safety symbols. They are included for your safety and for the protection of the tool.

LOCAL SAFETY REGULATIONS

Enter any local safety regulations here. Keep these instructions in an area accessible to the operator and maintenance personnel.

SAFETY PRECAUTIONS

Tool operators and maintenance personnel must always comply with the safety precautions given in this manual and on the stickers and tags attached to the equipment.

These safety precautions are given for your safety. Review them carefully before operating the tool and before performing general maintenance or repairs.

Supervising personnel should develop additional precautions relating to the specific work area and local safety regulations. If so, place the added precautions in the space provided in this manual.

In addition to this manual, read and understand safety and operating instructions in the Engine Operation Manual furnished with the power pack.

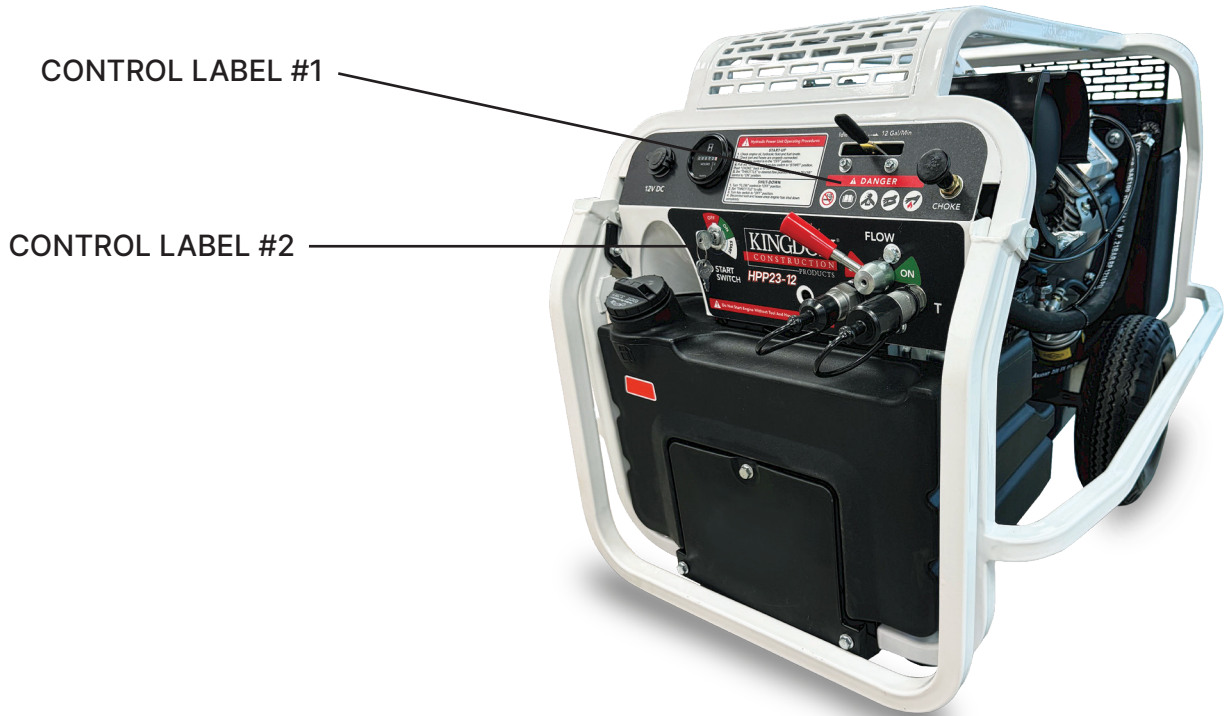
The Hydraulic Power Pack will provide safe and dependable service if operated in accordance with the instructions given in this manual. Read and understand this manual and any stickers and tags attached to the Power Pack. Failure to do so could result in personal injury or equipment damage.



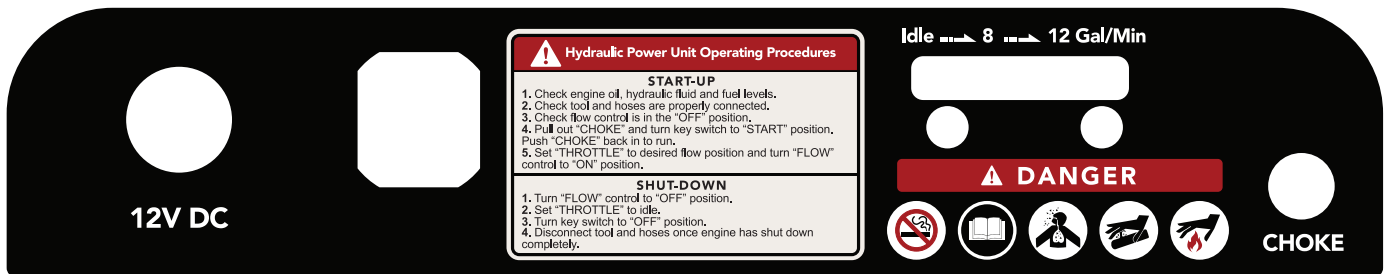
- Operator must start in a work area without bystanders. The operator must be familiar with all prohibited work areas such as excessive slopes and dangerous terrain conditions.
- Establish a training program for all operators to ensure safe operation.
- Do not operate the power pack unless thoroughly trained or under the supervision of an instructor.
- Always wear safety equipment such as goggles, ear, head protection, and safety shoes at all times when operating the power pack and a hydraulic tool.
- Do not inspect or clean the power pack while it is running. Accidental engagement of the pack can cause serious injury.

- Always use hoses and fittings rated at 2500 psi/172 bar with a 4 to 1 safety factor. Be sure all hose connections are tight.
- Be sure all hoses are connected for correct flow direction to and from the tool being used.
- Do not inspect hoses and fittings for leaks by using bare hands. "Pin-hole" leaks can penetrate the skin.
- NEVER OPERATE THE POWER PACK IN A CLOSED SPACE. Inhalation of engine exhaust can be fatal.
- Do not operate a damaged, improperly adjusted power pack.
- Never wear loose clothing that can get entangled in the working parts of the power pack.
- Keep all parts of your body away from the working parts of the power pack.
- Keep clear of hot engine exhaust.
- Do not add fuel to the power pack while the power pack is running or is still hot.
- Do not operate the power pack if gasoline odor is present.
- Do not use flammable solvents around the power pack engine.
- Do not operate the power pack within 3.3 ft/1 m of buildings, obstructions or flammable objects.
- Do not reverse tool rotation direction by changing fluid flow direction.
- Allow power pack engine to cool before storing in an enclosed space.
- Always keep critical tool markings, such as labels and warning stickers legible.
- To avoid personal injury or equipment damage, all tool repair, maintenance and service must only be performed

OPERATING LABELS



CONTROL LABEL #1



CONTROL LABEL #2



HOSE REQUIREMENTS

HYDRAULIC HOSE TYPES AUTHORIZED FOR USE WITH KINGDOM CONSTRUCTION PRODUCTS HPP23-12 HYDRAULIC POWER PACK ARE AS FOLLOWS:

CERTIFIED NON-CONDUCTIVE

Hose labeled certified non-conductive is the only hose authorized for use near electrical conductors.

WIRE-BRAIDED (CONDUCTIVE)

This hose is conductive and must never be used near electrical conductors.

FABRIC-BRAIDED (NOT CERTIFIED OR LABELED NON-CONDUCTIVE)

This hose is not certified non-conductive and must never be used near electrical conductors.

HOSE PRESSURE RATING

The rated working pressure of the hydraulic hose must be equal to or higher than the relief valve setting on the hydraulic system. 2500 PSI

HTMA REQUIREMENTS

TOOL CATEGORY



*SSU = Saybolt Seconds Universal

HYDRAULIC SYSTEM REQUIREMENTS	TYPE I	TYPE II	TYPE III	TYPE RR
FLOW RATE	4-6 gpm (15-23 lpm)	7-9 gpm (26-34 lpm)	11-13 gpm (42-49 lpm)	9-10.5 gpm (34-40 lpm)
TOOL OPERATING PRESSURE (At the power supply outlet)	2000 psi (138 bar)	2000 psi (138 bar)	2000 psi (138 bar)	2000 psi (138 bar)
SYSTEM RELIEF VALVE SETTING (At the power supply outlet)	2100-2250 psi (145-155 bar)	2100-2250 psi (145-155 bar)	2100-2250 psi (145-155 bar)	2200-2350 psi (152-159 bar)
MAXIMUM BACK PRESSURE (At tool end of the return hose)	250 psi (17 bar)	250 psi (17 bar)	250 psi (17 bar)	250 psi (17 bar)
Measured at a max. fluid viscosity of: (At min. operating temperature)	400 ssu* (82 centistokes)	400 ssu* (82 centistokes)	400 ssu* (82 centistokes)	400 ssu* (82 centistokes)
TEMPERATURE Sufficient heat rejection capacity to limit max. fluid temperature to: (At max. expected ambient temperature)	140°F (60 °C)	140°F (60 °C)	140°F (60 °C)	140°F (60 °C)
Min. cooling capacity at a temperature difference of between ambient and fluid temps	3 hp (2.24 kW) 40 °F (22 °C)	5 hp (3.73 kW) 40 °F (22 °C)	7 hp (4.47 kW) 40 °F (22 °C)	6 hp (5.22 kW) 40 °F (22 °C)

NOTE:

Do not operate the tool at oil temperatures above 180°F (60 °C). Operation at higher temperatures can cause operator discomfort at the tool.

FILTER Min. full-flow filtration Sized for flow of at least: (For cold temp. start-up and max. dirt-holding capacity)	25 microns 30 gpm (114 lpm)	25 microns 30 gpm (114 lpm)	25 microns 30 gpm (114 lpm)	25 microns 30 gpm (114 lpm)
HYDRAULIC FLUID Petroleum based (Premium grade, anti-wear, non-conductive)	100-400 ssu*	100-400 ssu*	100-400 ssu*	100-400 ssu*
VISCOSITY (At min. and max. operating temps)	AW 68 (20-82 centistokes)			

NOTE:

When choosing hydraulic fluid, the expected oil temperature extremes that will be experienced in service determine the most suitable temperature viscosity characteristics. Hydraulic fluids with a viscosity index over 140 will meet the requirements over a wide range of operating temperatures.

NOTE:

These are general hydraulic system requirements. See tool Specification page for tool specific Requirements.

OPERATION

PREPARATION FOR USE

Do not operate the power pack until you have read the engine operating and maintenance instructions manual furnished with the pack.

1. ENGINE CRANCKCASE OIL LEVEL

Always check the oil level before starting the engine. Make sure the oil level is at the FULL MARK on the dipstick. Do not overfill. Use detergent oil classified "For Service SE, SF, SG" as specified in the engine operating and maintenance manual. See engine manual for oil viscosity grade.

2. SPARK PLUG

On power packs equipped with Briggs & Stratton Engines, ONLY Champion RC12YC or equivalent can be used.

Incorrect type spark plugs can produce radio frequency interference that will corrupt and damage the controller. Failure to use the correct spark plug could result in a warranty that will not be considered.

3. ENGINE FUEL LEVEL

Check the fuel level. If low, fill with unleaded gasoline with a minimum of 85 octane.

4. HYDRAULIC FLUID

Check the sight glass in the hydraulic fluid reservoir for the proper fluid level. Use fluids meeting the following specifications.

VISCOSITY (FLUID THICKNESS)

U.S.

50 °F 450 SSU Maximum	AW46	10 °C 95 C.S.
100 °F 130-200 SSU	AW68	38°C 27-42 C.S.
140 °F 85 SSU Minimum	AW68	60 °C 16.5 C.S. Min
Pour Point	-10 °F/-23 °C	Minimum (for cold startup)
Viscosity Index	(ASTM D-2220)	140 Minimum
Demulsibility	(ASTM D-1401)	30 Minutes Maximum
Flash Point	(ASTM D-92)	340 °F/171 °C Minimum
Rust Inhibition	(ASTM D-665 A & B)	Pass
Oxidation	(ASTM D-943)	1000 Hours Minimum
Pump Wear Test	(ASTM D-2882)	60 mg Maximum

METRIC

The following fluids work well over a wide temperature range, allow moisture to settle out and resist biological growth that may occur in cool operating hydraulic circuits. These fluids are recommended by Kingdom Construction Products. Other fluids that meet or exceed the specifications of these fluids may also be used.

- AW46 cold temps
- AW68 hot temps

5. HYDRAULIC CONNECTIONS

The recommended hose length is 50' with a 1/2 inch/12.7 mm inside diameter. The hoses must have a working pressure rating of at least 2500 psi/175 bar. Each hose end must have male thread ends compatible with HTMA (HYDRAULIC TOOL MANUFACTURERS ASSOCIATION) quick disconnect fittings (NPT type threads). (see control panel #2 figure)



control panel #2 figure

Facing the control panel, the left male quick disconnect fitting is the PRESSURE FLUID OUT fitting. The right female quick disconnect fitting is the TANK/RETURN FLUID IN fitting. (see control panel #2 figure)

QUICK DISCONNECT COUPLERS

HTMA-approved quick disconnect couplings are installed to hydraulic hoses so that the direction of oil flow is always from the male to the female quick disconnect as shown in Figure 2. Quick disconnect couplings and hose fittings are selected so that additional fittings such as reducer or adapter fittings are not required.

If adapter fittings are used, they must be approved steel hydraulic fittings meeting a minimum operating pressure rating of 2500 psi/172 bar. Do not use galvanized pipe fittings or black pipe fittings. Use thread tape or pipe joint compound when installing quick disconnect couplings to hose or tool fittings. Follow the instructions furnished with the selected thread sealant. **DO NOT OVER TIGHTEN THE FITTINGS.**

6. BATTERY

The supplied 12-Volt DC battery is a non-spillable, maintenance-free battery and is fully charged. Make sure the battery cables are tight and charging circuit functions are operating properly.

NOTICE

Do not charge the battery with a standard automotive battery charger. This type of charger produces a charging amperage higher than 2 amps. Charging the battery at higher than 2 amps will damage the battery.

NOTICE

If the engine runs out of gas or dies during operation and the ignition switch is left in the ON or RUN position, this could drain the battery. Make sure the ignition switch is returned to the OFF position.

CONTROL PANEL

PRESSURE

RETURN



HTMA 1/2 INCH FEMALE QUICK DISCONNECT COUPLER



HTMA 1/2 INCH MALE QUICK DISCONNECT COUPLER



1/2 INCH MALE PIPE HOSE END

1/2 INCH I.D. HOSE, WITH 2500 PSI/172 BAR RATING AND 4 TO 1 SAFETY FACTOR



PRESSURE

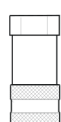
RETURN



1/2 INCH MALE PIPE HOSE END



HTMA 1/2 INCH FEMALE QUICK DISCONNECT COUPLER



HTMA 1/2 INCH MALE QUICK DISCONNECT COUPLER



ADAPTER, 3/8 INCH MALE PIPE x -8 SAE O-RING



PRESSURE

TOOL

RETURN

hydraulic connections figure

HPP23-12 Hydraulic Power Pack ▶ 9

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OPERATION

CONTROLS

This pack is equipped with a mechanical engine control system. It provides a means of controlling engine speed by adjusting the fuel control lever. The Power Pack provides one circuit, with an oil flow of 8 gpm/30 lpm up to 2000 psi/140 bar or 12 gpm/45 lpm up to 2000 psi/140 bar with a factory set governor.

One hydraulic tool can be connected to the tool circuit. The circuit is activated by turning the flow control lever on.

THROTTLE CONTROL

The throttle control permits the operator to select one of 2 operating modes after the engine has warmed up. When starting the engine, make sure the flow selector lever is in the OFF position. The throttle control lever can be set in either the idle, 8 GPM, or 12 GPM positions.

START UP

Before starting the engine make sure the flow lever is in the OFF position. Connect all hoses and tools then pull choke knob out, then pull choke knob out and move the Throttle Control Lever to idle. Ensure the flow selector switch is in the OFF position. Turn the Ignition Switch to the START position. After the engine starts, release the switch. Gradually push in the choke knob as the engine begins to idle smoothly. Allow the engine to warm up.

FOR 8 GPM OPERATION

For 8 gpm operation, select mode of operation with the Throttle Control Lever. Move the flow selector lever to the ON position.

When finished operating the tool, move the flow selector lever to the OFF position.

FOR 12 GPM OPERATION

For 12 gpm operation, select mode of operation with the Throttle Control Lever. Move the flow selector lever to the ON position.

When finished operating the tool, move the flow selector lever to the OFF position.

COLD WEATHER STARTUP

1. Use the procedures described under "STARTUP" and then follow the procedure below.
2. Hydraulic fluids are thicker in cold weather. Therefore, it is recommended that the engine be run at low idle long enough to bring the fluid temperature up to a minimum of 50 °F/10 °C.
3. If the tools and tool hoses are cold, it is recommended to allow hydraulic fluid to circulate through the tool hoses until warm before using the tool.

SHUTDOWN

1. Ensure the flow selector lever is in the OFF position
2. Move throttle lever to idle.
3. Allow the engine to idle for approximately one minute and move the Ignition Switch to the OFF position

ROUTINE MAINTENANCE

ENGINE MAINTENANCE

Follow the maintenance schedule and general maintenance instructions in the engine maintenance and operation manual furnished with the power pack

HYDRAULIC SYSTEM MAINTENANCE

- Check hydraulic fluid level daily. Add fluid per specifications in this manual. (See “HYDRAULIC FLUID” under the section titled “OPERATING INSTRUCTIONS”.)
 - Remove condensed moisture from the hydraulic fluid by pumping the hydraulic fluid into a 5 gal/20 l container through the pressure hose. Make sure the engine is at idle when performing this procedure. When the hydraulic reservoir is empty turn the engine off immediately.
 - Allow the fluid to sit long enough for the water to settle to the bottom of the container. Slowly pour the fluid back into the hydraulic tank, avoiding the water at the bottom of the container.
 - Each day, check hydraulic lines and fittings for leaks, kinks, etc. Do not use your hand to perform this check.
 - Change the hydraulic filter element every 200 hours of operation. Change more often if cold, moist or dusty conditions exist.
 - Check oil cooler for debris. Remove debris with air / water pressure.
- Remove spark plugs and pour approximately ounce (30 ml) of engine oil into each cylinder. Replace spark plugs and crank the engine slowly to distribute the oil.
 - Check hydraulic reservoir for water. If water is found, change the oil and circulate it through the tool hose and tool. (See “HYDRAULIC SYSTEM MAINTENANCE” earlier in this section).
 - Disconnect tool hoses.

SPARK PLUG

On power packs equipped with Briggs & Stratton Engines, ONLY Champion RC12YC or equivalent can be used.

STORAGE

- Clean the pack thoroughly before storage. Do not use water pressure.
- Always store the pack in a clean and dry facility.
- If the pack will be stored for a prolonged period (over 30 days), add a fuel additive to the fuel tank to prevent the fuel from gumming. Run engine for a short period to circulate the additive.
- Replace crankcase oil with new oil.

TESTING AND TROUBLESHOOTING

GENERAL

Tests and adjustments should be performed periodically to ensure the power pack is operating at maximum efficiency. Use a calibrated flow and pressure tester. This tester can be used to isolate problems in both the engine and hydraulic system prior to any power pack disassembly.

TESTING THE HYDRAULIC CIRCUIT

The following tests can be performed to ensure that the hydraulic pump is supplying the correct flow and pressure and that the system relief valve is operating properly.

During these tests, make sure the engine is warm and operating smoothly. If test results are not as specified, refer to the troubleshooting table in this section for possible causes.

TESTING THE 8 GPM HTMA TYPE II CIRCUIT OR THE 12 GPM TYPE III CIRCUIT

To test the circuit, proceed as follows:

1. Set the flow selector switch to the OFF position.
2. Set the throttle control lever to the 8 GPM / 12 GPM position.
3. Use a calibrated flow and pressure tester across two hose ends (where the tool would normally be connected).
4. Fully open the tester restrictor valve(counter-clockwise).
5. Start the engine and allow it to run until warm.
6. Switch the flow selector lever to the ON position.
7. With the engine at the set speed, the test flow gauge should read 7-9 gpm/26.5-34 lpm or 11-13 gpm / 41.6-49 lpm.
8. Slowly turn the restrictor valve clockwise while watching the pressure gauge. The flow rate should stay at 7-9 gpm / 26.5-34 lpm or 11-13 gpm / 41.6-49 lpm as the pressure gauge reaches 2000 psi / 148-155 bar.

9. At 2300 - 2500 psi, the relief valve should begin to open. The pressure at which the relief valve just begins to open is commonly referred to as the "cracking pressure". At the "cracking pressure," the flow rate should start to drop because the relief valve is allowing fluid to bypass to the hydraulic reservoir. The "cracking pressure" is preset at the factory and if it is not within the above range, the relief valve must be reset as follows:
 - A. The relief valve is located on the right side of the pack just behind the dash panel. It protrudes out from the manifold assembly. Use a open end or box end wrench to loosen the nut on the relief valve.
 - B. Use an Allen wrench to adjust the relief valve. Turn clockwise to raise the pressure and counterclockwise to reduce the pressure.
 - C. Tighten the nut and retest.

TROUBLESHOOTING

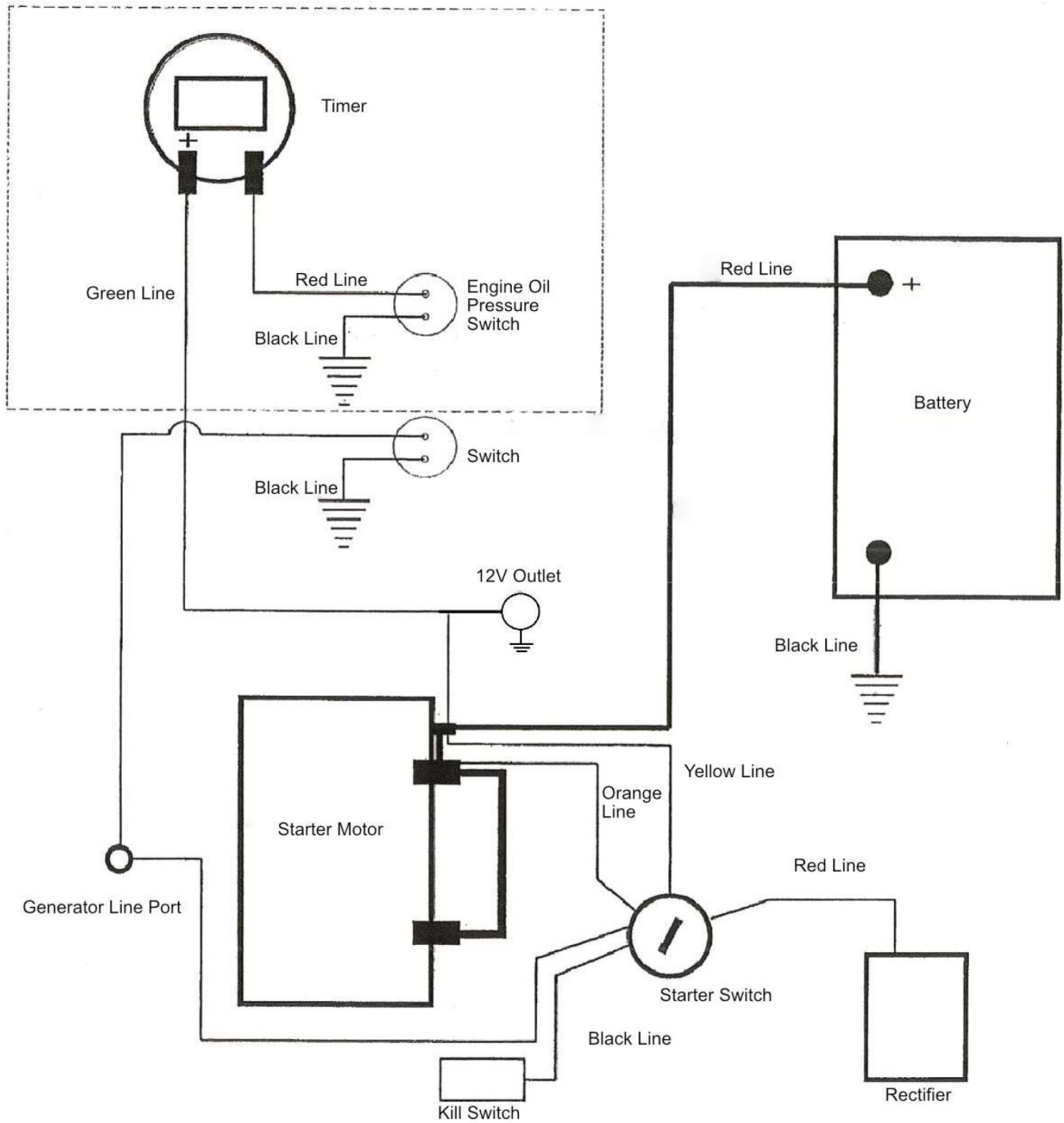
PROBLEM	CAUSE	PROBLEM
Engine will not start.	Battery not connected.	Attach battery cables, check wires.
	Weak battery.	Test battery, charge or replace.
	No fuel.	Add fuel.
	Fuel filter plugged.	Replace fuel filter.
	Defective spark plugs.	Remove plugs, check gap, clean or replace.
Fluid blowing out of fluid reservoir vent.	Hydraulic tank overfilled.	Correct the fluid level.
	Pump suction leak.	Check suction connections. Tighten if necessary.
Hydraulic tool won't operate.	Flow selector lever not switched ON.	Check that the flow selector switch is set to ON position.
	Incorrect hose connection to tool.	Make sure the tool hose circuit goes from left (pressure) fitting to tool and back to the right fitting (return). Fluid always flows from the male to female fittings.
	Quick disconnect fittings defective.	Detach from hose, connect set together and check for free flow.
	Hydraulic fluid level low.	Check for correct fluid level. Fill using the recommended fluid.
	Pump coupling defective.	With the engine not running: Check the coupling between the pump and engine that it is engaged and is not damaged. Caution: Keep hands clear of rotating objects.
	Relief valve stuck open.	Adjust or replace valve.
	Suction hose kinked.	Make sure suction hose from fluid reservoir to pump inlet has a smooth curve.
	Tool is defective.	Refer to tool manual.

SPECIFICATIONS

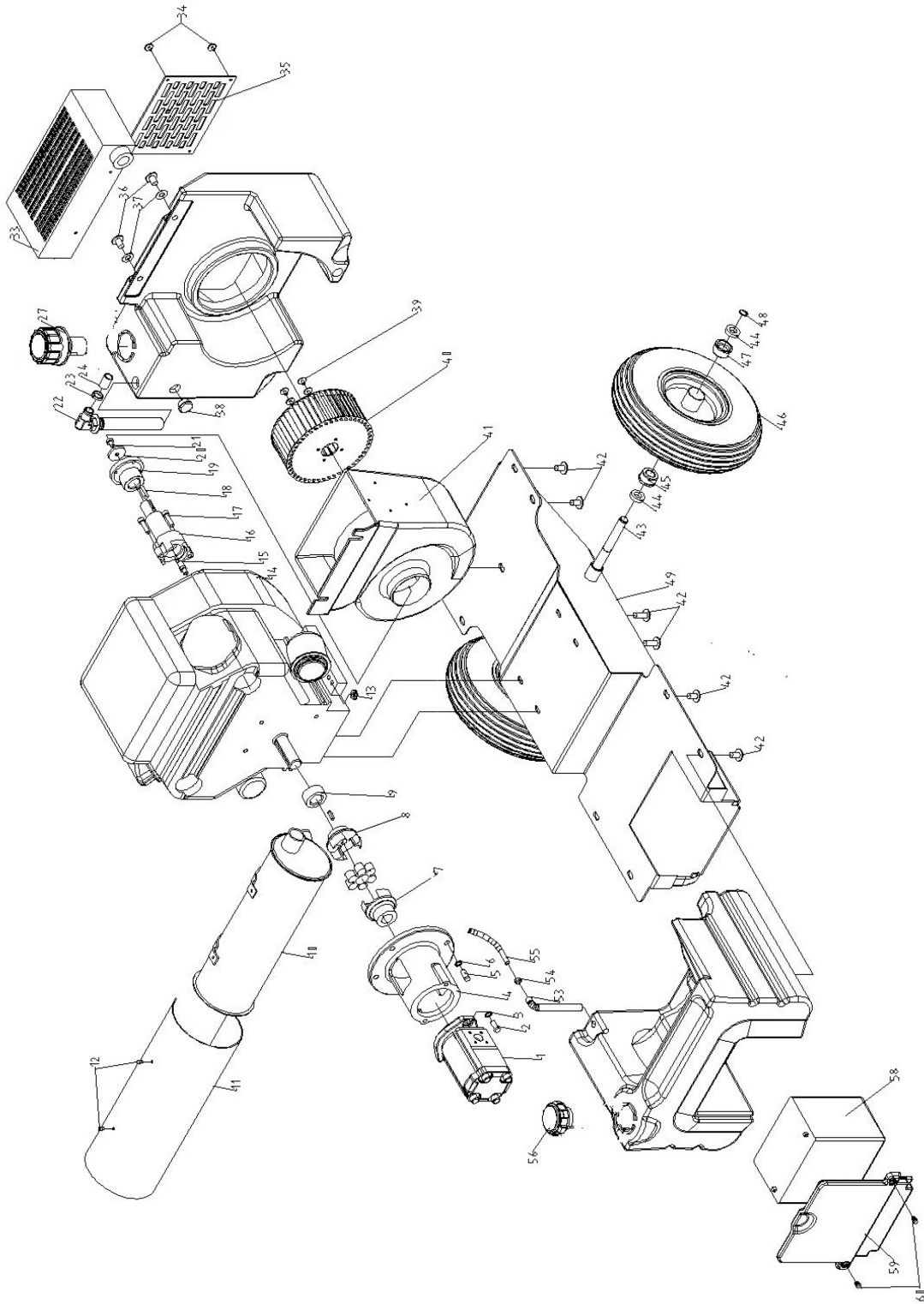
Engine:..... 23 hp Briggs & Stratton Vanguard
 Capacity..... One 8 gpm / 30 lpm Circuit or One 12 gpm / 45 lpm Circuit
 Length:..... 40 in. / 102 cm
 Width:..... 27.75 in. / 70.49 cm
 Height:..... 29.5 in. / 74.9cm
 Weight (Wet): Single Circuit Briggs..... 302 lbs / 137 kg
 Fuel Tank Capacity:..... 5.8 gal. / 22 ltr
 Estimated Gas Consumption Per Hour..... 1.3 gal / 4 ltr
 Hydraulic Reservoir Capacity:..... 4.2 gal. / 16 ltr
 Relief Valve "Crack" Setting..... 2300 psi / 145 bar
 Full Relief Setting..... 2500 psi / 172 bar
 HTMA Category "D" (30 lpm @ 138 bar) or "E" (45 lpm @ 138 bar)



ELECTRICAL DIAGRAM



HPP23-12 ENGINE ASSEMBLY



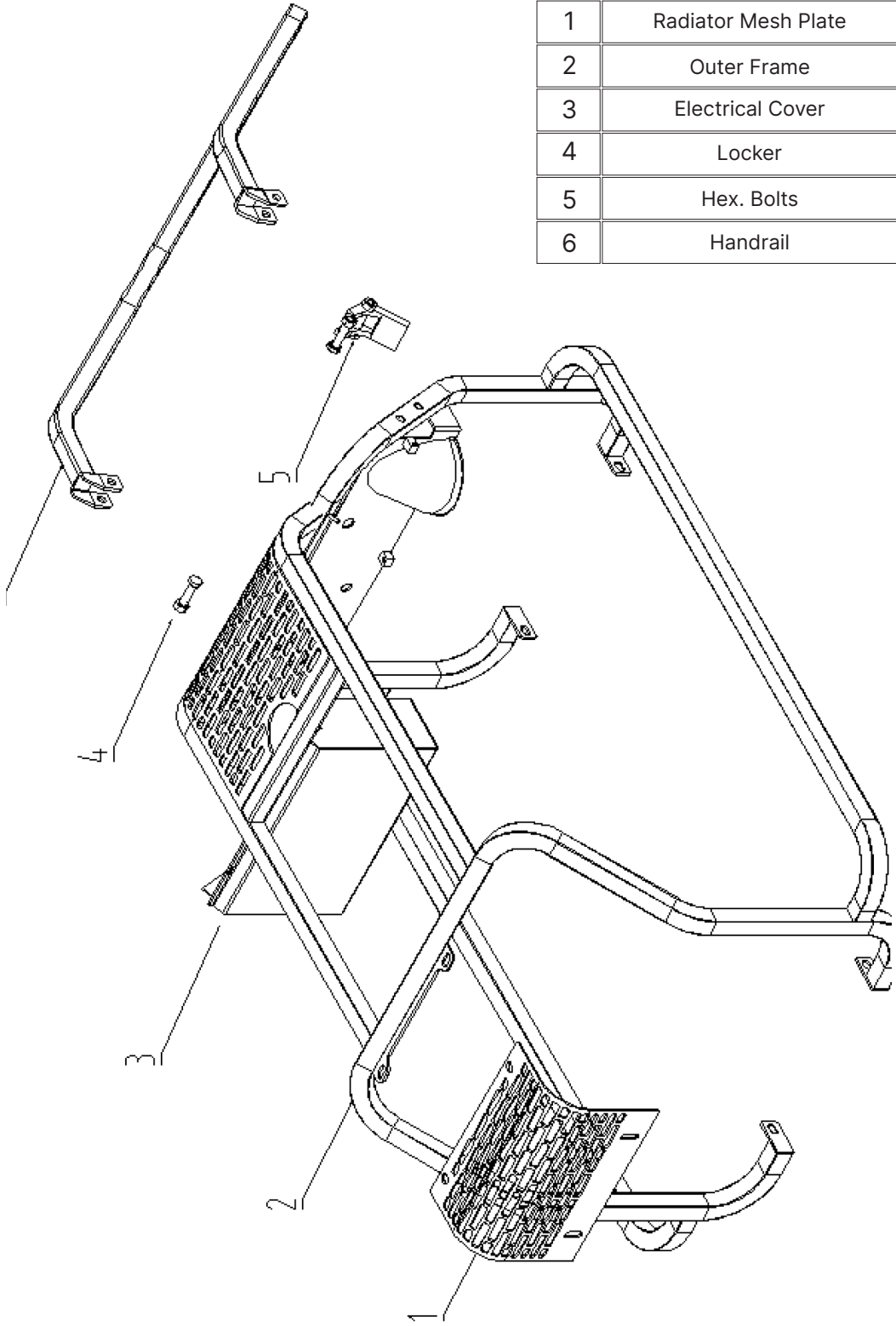
HPP23-12 PARTS LIST

ID#	DESCRIPTION	QTY	SKU
1	Hex.Socket Head Bolts	2	22369-00
2	Flash Mat	2	25368-00
3	Hydraulic Motor	1	21459-00
4	Hex. Socket Head Cap Screws	1	21459-00
5	Flat Mat	4	29360-00
6	Engine Flange	1	52557-00
7	Engine Shaft End Coupling	1	24372-00
8	Pump End Coupling	1	41358-00
9	Coupling Adjustment Pad	1	52358-00
10	Exhaust Muffler	1	21382-00
11	Muffler Guard	1	22377-00
12	Flange Bolts	2	32556-00
13	Flange Nuts	4	21364-00
14	Engine Motor	1	29364-00
15	Fan Shaft Locking Pin	1	42358-00
16	Fan Shaft	2	21368-00
17	Hex. Socket Head Cap Screws	2	22333-00
18	Square Key	1	42359-00
19	Fan Flange	4	21384-00
20	Gasket	1	29361-00
21	Flange Bolt	1	27365-00
22	Fuel Tank Inlet	1	42357-00
23	Clamp	2	26365-00
24	Suction Pipe Assembly	1	42361-00
25	Hex. Socket Head Bolts	12	42360-00
26	Pan Head Screws	12	27370-00
27	Hydraulic Oil Filter	1	29560-00
31	Hydraulic Oil Reservoir	1	29473-00
32	Pump Inlet Fitting	1	24366-00
33	Radiator Assembly	1	29559-00

ID#	DESCRIPTION	QTY	SKU
34	Flange Bolts	4	34360-00
35	Fan Baffle	1	32457-00
36	Flange Bolts	2	21366-00
37	Flat Pad	2	32458-00
38	Oil Meter Gauge	1	23314-00
39	Hex Socket Head Bolts	4	22364-00
40	Fan Impeller	1	32359-00
41	Bellow	1	24359-00
42	Bolts	12	21352-00
44	Bear	2	32463-00
45	Bushings	2	21357-00
46	Foam Tier	2	34361-00
47	Wheel Bushing	2	24357-00
48	Bolts	2	32358-00
49	Chassis Assembly	1	22455-00
50	Flange Nuts	4	21358-00
52	Flange Bolts	4	21373-00
53	Fuel Tank Outlet Fitting	1	22456-00
54	Clamp	2	22332-00
55	Gasoline Hose	1	21346-00
56	Petrol Cap	1	29467-00
57	Fuel Tank	1	22349-00
58	Battery	1	24365-00
59	Battery Cover	1	22383-00
60	Bolts	2	22360-00

HPP23-12 FRAME ASSEMBLY & PARTS LIST

ID#	DESCRIPTION	QTY	SKU
1	Radiator Mesh Plate	1	72357-00
2	Outer Frame	1	72456-00
3	Electrical Cover	1	72566-00
4	Locker	1	72856-00
5	Hex. Bolts	2	13424-00
6	Handrail	1	72556-00



LIMITED WARRANTY POLICY

All Kingdom Construction Products warranties exclude normal wear and tear of the item and negligence due to misuse.

Kingdom Construction Products Hydraulic Power Packs offer one full year from the date of purchase, of warranty on any defect in material or construction.

Briggs & Stratton offers warranties that cover engine-related defective material and/or workmanship only, and not replacement or refund of the equipment to which the engine may be mounted.

We will work with any customer to help process any necessary warranty-related repairs.

Transportation charges on parts submitted for repair or replacement under this warranty must be borne by the purchaser.

By purchasing a HPP23-12 Power Pack you assume the responsibility that the buyer assumes all risks and hazards involved in their use or application of equipment.

Briggs & Stratton Limited Engine Warranty Policy

No warranty registration is necessary to obtain a warranty on Briggs & Stratton products. Save your proof of purchase receipt. If you do not provide proof of the initial purchase date at the time warranty service is requested, the manufacturing date of the product will be used to determine the warranty period.

About Your Warranty Briggs & Stratton welcomes warranty repair and apologizes to you for being inconvenienced. Any Authorized Service Dealer may perform warranty repairs. Most warranty repairs are handled routinely, but sometimes requests for warranty service may not be appropriate. To avoid misunderstanding which might occur between the customer and the dealer, listed below are some of the causes of engine failure that the warranty does not cover.

Normal wear: Engines, like all mechanical devices, need periodic parts service and replacement to perform well. The warranty will not cover repair when normal use has exhausted the life of a part or an engine. Warranty would not apply if engine damage occurred because of misuse, lack of routine maintenance, shipping, handling, warehousing or improper installation. Similarly, a warranty is void if the serial number of the engine has been removed or the engine has been altered or modified.

Improper maintenance: The life of an engine depends upon the conditions under which it operates, and the care it receives. Some applications, such as tillers, pumps, and rotary mowers, are very often used in dusty or dirty conditions, which can cause what appears to be premature wear. Such wear, when caused by dirt, dust, spark plug cleaning grit, or other abrasive material that has entered the engine because of improper maintenance, is not covered by warranty.

This warranty covers engine-related defective material and/or workmanship only and not replacement or refund of the equipment to which the engine may be mounted. Nor does the warranty extend to repairs required because of:

1. Problems caused by parts that are not original Briggs & Stratton parts.
2. Equipment controls or installations that prevent starting, cause unsatisfactory engine performance or shorten engine life. (Contact equipment manufacturer.)
3. Leaking carburetors, clogged fuel pipes, sticking valves, or other damage, caused by using contaminated or stale fuel.
4. Parts which are scored or broken because an engine was operated with insufficient or contaminated lubricating oil, or an incorrect grade of lubricating oil (check and refill when necessary, and change at recommended intervals). OIL GARD may not shut down running engine. Engine damage may occur if oil level is not properly maintained.
5. Repair or adjustment of associated parts or assemblies such as clutches, transmissions, remote controls, etc., which are not manufactured by Briggs & Stratton.
6. Damage or wear to parts caused by dirt, which entered the engine because of improper air cleaner maintenance, re-assembly, or use of a non-original air cleaner element or cartridge. At recommended intervals, clean and/or replace the filter as stated in the Operator's Manual.
7. Parts damaged by over-speeding, or overheating caused by grass, debris, or dirt, which plugs or clogs the cooling fins, or flywheel area, or damage caused by operating the engine in a confined area without sufficient ventilation. Clean engine debris at recommended intervals as stated in the Operator's Manual.
8. Engine or equipment parts broken by excessive vibration caused by a loose engine mounting, loose cutter blades, unbalanced blades or loose or unbalanced impellers, improper attachment of equipment to engine crankshaft, over-speeding or other abuse in operation.
9. A bent or broken crankshaft, caused by striking a solid object with the cutter blade of a rotary lawn mower, or excessive v-belt tightness.
10. Routine tune-up or adjustment of the engine.
11. Engine or engine component failure, i.e., combustion chamber, valves, valve seats, valve guides, or burned starter motor windings, caused by the use of alternate fuels such as, liquefied petroleum, natural gas, gasoline formulated with ethanol greater than 10%, etc.
12. Warranty service is available only through Briggs & Stratton Authorized Service Dealers.





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