LS722H Log Splitter

OPERATING INSTRUCTIONS AND SPARE PARTS

READ CAREFULLY BEFORE OPERATING MACHINE

May 2007

Agriquip thanks you for buying this quality product and insists that you read this booklet. You will find all the information you require for the correct use of the product you have purchased. We would ask you to take special notice of the safety and of the other warnings and to read the whole booklet carefully. You should in keep this booklet in a safe place that is also convenient for easy reference. Agriquip reserve the right to change the contents of this booklet without notice or without incurring additional liability for the purpose of making changes to, and improving the performance of products already delivered.

Contents

1. Introduction

The Agriquip LS722H Log Splitter is a portable self-contained machine designed for splitting wooden logs up to a maximum length of 600mm.

This operating guide and maintenance information will explain how to get the best performance results and life expectancy from your machine.

2. Technical Specifications

Splitting Force	22 Tons (*99.9t*)
Engine	6.5 HP Briggs and Stratton Quantum
Splitting Positions	Horizontal and Vertical
Cylinder Size	4"X24"
Punt	2 Stage with Heavy Duty Bearings
Pump Specs	11 gallons (US) per min (*50 lpm)*
Valve	Auto Return
Drive System	Belt Drive 1:1 Ratio with Clutch for Easy Starting
Hydraulic System Fluid Capacity	18-22 Quarts (*20-25 Li*)
Maximum Log length	25 1/2" (*648mm*)
Tyres & Wheels	4.00 X 4.80 X 8 with High Speed Bearings
Metal Fenders	No
Ball Hitch	2" Ball
Unit Weight	525 lbs (*238kg*)
Maximum PTO Speed	1000 rpm

3. Safety Precautions

This Safety Alert Symbol indicates important messages in this manual. When you see this symbol, carefully read the message that follows and be alert to the possibility of personal injury.

Read this manual completely. This machine can amputate hands, feet, and throw objects. Failure to observe the following safety instructions could result in serious injury or death.

WARNING: The engine exhaust from this product contains chemicals known to cause cancer, birth defects or other reproductive harm.

DANGER: Your log splitter was built to be operated according to the rules for safe operation in this manual. As with any type of power equipment, carelessness or error on the part of the operator can result in serious injury. If you violate any of these rules, you may cause serious injury to yourself or others.

- Read and understand the manual. Learn to operate this equipment in a safe manner. Familiarise yourself with all of the controls in a safe environment before starting to work with this machine.
- DO NOT under any circumstances alter this log splitter. This equipment was designed and engineered in accordance with operating instructions. Altering this equipment, or using this equipment in such a way as to circumvent its design capabilities and capacities, could result in serious injury or fatality and WILL VOID THE WARRANTY.
- Allow ONLY responsible adults who have read this manual to operate this machine. NEVER allow children to operate this machine.
- NEVER operate or allow someone to operate this equipment while under the influence of alcohol, drugs or medication. Being coherent is essential for safety.
- ALWAYS use outdoors with adequate ventilation. DON'T run the engine in an enclosed area. Exhaust gases contain carbon monoxide. This odourless gas can be deadly when inhaled.
- NEVER use splitter for any other purpose than splitting wood. Any other use can result in injury. Your splitter is a precision piece of power equipment, not a toy. Therefore, exercise extreme caution at all times.
- ONLY a single operator is to load and operate the log splitter. KEEP all others, including pets and children, a minimum of 20 feet away from your work area. More accidents occur when more than one person operates the log splitter than any other time.
- ALWAYS wear protective gear such as safety goggles, protective hearing device, steel-toed shoes, and tight-fitting gloves without drawstrings or loose cuffs.
- NEVER wear loose clothing or jewellery that can be caught by moving parts of the splitter and pull you into it. Keep hair away from moving parts.
- NEVER operate your splitter on wet, muddy, or icy surfaces. KEEP work area clean of split wood. Safe footing is essential in preventing accidents.
- ONLY operate splitter on level ground with wheels blocked, not on the side of a hill. It could tip, or rolling logs, poor footing, etc. could cause an accident.
- NEVER operate your splitter near a flame or spark. Hydraulic oil and gasoline are flammable and can explode.

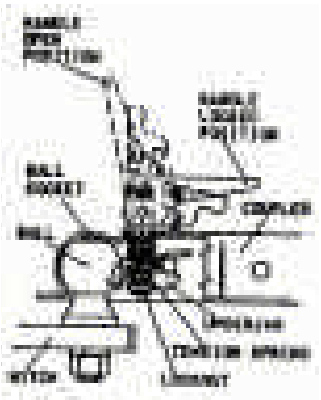
Safety Precautions *(continued)*

- NEVER fill gas tank while the engine is hot or running. Allow the engine to cool before refuelling.
- This unit is equipped with an internal combustion engine and should not be used on or near any unimproved forest-covered, brush-covered or grass-covered land unless the engine's exhaust system is equipped with a spark arrester. If a spark arrester is used it should be maintained in effective working order by the operator.
  NOTE: Spark arrester mufflers are available at your Briggs & Stratton dealer.
- ONLY use your hands to operate the control lever. NEVER use foot, knee, rope or any extension device.
- Split ONLY one log at a time. NEVER attempt to split two logs on top of each other.
- NEVER place hands or feet between log and splitting wedge or between log and ram during forward or reverse stroke. ALWAYS keep fingers clear of splits that open in log during splitting operation.
- DO NOT straddle or reach across the splitting area while operating the splitter.
- DO NOT step over splitter when the engine is running. You may trip or accidentally activate the splitting wedge. Walk around to get to the other side.
- NEVER attempt to load splitter while splitting wedge is in motion. When loading log splitter, place hands on the sides of the log, not the ends.
- NEVER attempt to split woods across the grain. Wood may burst or fly out of your splitter and result in serious injury.
- NEVER leave your splitter unattended with the engine running. Shut off the engine if you are leaving your splitter, even for a short period of time. Someone could accidentally activate the ram and be injured.
- Both ends of the log should be cut as squarely as possible to prevent the log from sliding out of the splitter during operation. Log length should be kept to 600mm (*24"*) or less.
- NEVER operate your splitter while it is attached to the towing vehicle.
- BEFORE towing, be certain that the splitter is securely attached to the towing vehicle and that the support leg, beam and cylinder are secured in there respective towing positions.
- NEVER allow persons to ride on splitter. DO NOT carry any cargo or wood on your splitter. It may fall off and cause an accident.
- DO NOT loosen or remove any hydraulic fitting, line or reservoir cap while your splitter or engine is running.
- Fluid escaping from a very small hole can almost be invisible. DO NOT check for leaks with your hand. See maintenance section for instructions. IF injured by escaping fluid, see a doctor immediately. Serious infection or reaction can develop if proper medical treatment is not administered immediately.
- DO NOT operate your splitter in poor mechanical condition or when it is need of repair.
- ALWAYS disconnect the spark plug wire and place the wire where it cannot contact the spark plug, to prevent accidental starting the engine when setting up, transporting, adjusting or repairing.

4. Towing Safety

- Do not allow persons to ride on splitter. Do not carry any cargo or wood on your splitter. It may fall off and endanger vehicles that are following you.
- Be sure support leg is in the travel position and coupling secure. This must also be retracted so not to interfere while towing. Retract support leg by removing pin, pivoting up, and replacing pin.
- Never exceed 70kph while towing your splitter. Be extra cautious when travelling over rough terrain, especially over railroad tracks.
- Always be careful while backing your splitter. You could jack-knife your log splitter if not careful.
- Before using splitter, disconnect it from tow vehicle. A log could easily be pushed forward into the vehicle.
- See tyre and wheel specifications for correct inflation while towing.
- Be aware of the extra length of splitter while turning, parking, crossing intersections, and in all driving situations.

Operation Instructions - Posi-lock Coupler



Adjust coupler locking pressure on ball before use.

Place handle in locked position with ball in coupler.

Tighten locknut against tension spring so that coupler is not loose on ball.

Correct adjustment will allow handle to be released with moderate pressure applied to handle.

To open, pull up on coupler handle and rotate forward.

Place coupler on ball when ball is completely nested in ball socket

Rotate coupler handle backward until handle is in locked position.

- After towing for 75km, check coupler for tightness on ball.
- Always check tightness before towing.
- Ensure coupler handle is in locked position.

WARNING: Never exceed weight capacity and always use safety chains. Always use correct ball size, making sure ball is completely inserted into coupler. Lock coupler handle securely before towing. Always check for damages and replace if damaged. Avoid sharp turns and steep vertical angles when towing.

5. Assembly

This log splitter has been partially assembled at the factory. Refer to the drawings and part lists should it become necessary to disassemble the unit for repair or replacement of parts.

Refer to uncrating and assembly instructions for assembly procedures.

Inspect all components for damage. If you believe you have a damaged part please contact your dealer immediately.

This unit is shipped with oil but without petrol in the engine.

After assembly, see separate Engine Manual for proper fuel and oil recommendations.

WARNING: Exercise extreme caution, as parts are very heavy. Sufficient persons or mechanical handling equipment should be used.

Filling the Hydraulic Reservoir

Fill the hydraulic reservoir to the top mark on the dipstick with Dexron® III automatic transmission fluid, a 10W AW hydraulic fluid or AW-32 Hydraulic oil. After the hydraulic reservoir and the engine crankcase are filled correctly with their respective oils, start the engine. Remember to set the throttle and turn on the fuel shut-off valve. The hydraulic pump should prime itself. With the engine running, move the hydraulic valve lever toward the wedge. This will cause the cylinder to extend and expel air. When the cylinder is fully extended, retract it. Repeat this procedure several times

An erratic movement of the cylinder and wedge indicates that there is air in the system

Once the cylinder has a smooth and constant speed indicating that all air has been expelled, shut the system off and refill the reservoir until the fluid is in the safe operating range as specified by the marks on the dipstick.

6. Operation

This log splitter is intended and designed to only split wood. NEVER use for any other purposes. Doing so can cause injury or VOID THE WARRANTY.

WARNING: Do not start or run the log splitter without oil in the engine and hydraulic reservoir.

Start-up

Before starting engine make sure crankcase is filled with oil and the proper fuel has been used.

The engine will only start when the throttle lever and fuel shut-off valve if applicable are turned to their ON positions.

1. Move throttle control to "FAST."
2. Set Choke to on position (*if applicable*) or push primer bulb three (3) times.
   NOTE: Do not use primer or choke to restart a warm engine after a short shutdown.
3. Grasp rope handle and pull out slowly until resistance it felt. Then pull rapidly with a full arm stroke.
   NOTE: If engine fails to start after three (3) pulls, repeat steps 1 and 2.
4. When Engine starts, set choke to off position (*if applicable*) leave throttle control at "FAST." The throttle must be set in the fast position for maximum performance.
5. To stop engine, move throttle lever to "SLOW" for a few seconds then to "STOP."

Cold Weather Start Up

The Cold Weather Clutch enables the engine to be started without having to pull through cold, thickened hydraulic fluid. Simply pull the handle out into locked position. Start engine, let it warm up, and release Cold Weather Clutch. After starting, ensure that the lever has re-engaged.

Operation *(continued)*

Splitter Operation

1. Set up the log splitter in a clear, level area and block the wheels. The suction port on the tank should always be on the lower side of the log splitter.
2. Place a log on the beam, against the foot plate. Make sure the log is securely on the foot plate and up against the beam.
3. Depress the valve lever so that the cylinder will drive the push block into the log. Extend the cylinder until the log splits or to the end of its stroke. If the log has not completely split after the cylinder has reached the end of its extension, retract the cylinder.
   NOTE: Leaving the valve in the "actuate" position at the end of the stroke may damage the pump. Always use extra care when splitting logs with ends that are not square.
   NOTE: To extend the life of the hydraulic cylinder, avoid "BOTTOMING OUT" the cylinder.

Towing Safety

This unit should not be towed on any street, highway, or public road without a current Motor Registration and Warrant of Fitness.

- Follow all precautions given in the relevant “Safety Precautions” section.
- Obey all LTSA regulations when towing on public roads and highways.
- Turn the fuel shut-off valve OFF to prevent flooding of the engine while travelling.
- Be careful when backing up. You can easily jack-knife your splitter.
- When towing at night the splitter will have to be fitted with reflectors and tail-lights.

Hydraulic Safety

The hydraulic system on your splitter requires careful inspection along with the mechanical parts. Be sure to replace any frayed, kinked, cracked or otherwise damaged hydraulic components. Just because it isn't leaking today doesn't mean that it will not fail tomorrow.

Fluid escaping from a very small hole can almost be invisible. Do not check for leaks with your hand. Escaping fluid under pressure can have sufficient force to penetrate skin causing serious personal injury or even death. Leaks can be detected by passing a piece of cardboard or wood over the suspected leak and looking for discoloration.

IMPORTANT: IF injured by escaping fluid, see a doctor at once. Serious infection or reaction can develop if proper medical treatment is not administered immediately.

Should it become necessary to loosen or remove any hydraulic fittings, lines or reservoir cap, be sure to relieve all pressure by shutting of the engine and moving the control handle back and forth several times.

WARNING: NEVER remove the cap from the hydraulic tank or reservoir while the unit is running. Hot oil under pressure could result in serious injury.

The pressure relief valve on your splitter is preset at the factory. DO NOT adjust the valve. Only a qualified technician should perform this adjustment

7. Maintenance and Storage

WARNING: Disconnect the spark plug before performing any maintenance.

Always check the oil level of the hydraulic reservoir before operation.

Operating without an adequate oil supply will cause severe damage to the pump.

Change the hydraulic fluid in the reservoir after every 100 hours of operation.

Change the hydraulic filter after every 50 hours of operation (*use only a 10 micron hydraulic filter*).

Periodically check that all nuts, bolts, screws, clamps and fittings are tight and secure.

To keep your splitter in top working condition perform all recommended maintenance procedures before you use your splitter.

If the wedge becomes dull or nicked a grinder or sharpening tool can be used to sharpen it.

Completely drain the fuel tank prior to storage.

- Always store gasoline in an approved, tightly sealed container.
- Store container in a dry, cool place with adequate ventilation.
- Keep fuel away from areas where fumes could contact open flame, pilot light or sparks.

Be aware of the environment when disposing of used petroleum products.

Dispose of used hydraulic fluid, engine oil and any by products from the maintenance of your splitter at approved recycling centres.

Should it become necessary to disassemble the unit for repair or replacement of parts, refer to the drawings and parts list on the following pages.

NOTE: Exercise extreme caution, as some parts are very heavy and will require sufficient persons or mechanical handling equipment.

All replacement parts must be original manufacturer's.

Your Log Splitter has been produced with components designed specifically to this machine. Although standard springs, hardware etc. may look similar to parts used on other machinery, they may in some cases be made of a different construction and/or materials.

WARNING: The operation of any splitter can produce foreign objects to be thrown into the eyes, resulting in severe eye damage.

Always wear certified safety glasses or wide-vision safety goggles over spectacles before staring any splitting machine and while operating such a machine.

WARNING: The operation of any splitter produces sound waves that are damaging to the human ear.

Class II hearing protection is recommended.

Ordering Spare Parts

When ordering spare parts quote the following information:

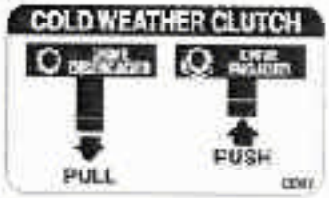
Machine Name: *Log Splitter*
Model Number: *LS722H*
Serial Number
Engine Type: *Briggs & Stratton*
Engine Serial Number
Part Number
Part Description
Quantity Required

NOTE: Colour cannot be guaranteed upon service parts

8. Decals

Replace decals immediately if damaged or missing

OD16 – FUEL SHUT OFF DECAL



12493 – COLD WEATHER DECAL

12494 – HYDRAULIC FILL PLUG DECAL

12549 – DO NOT EXCEED 45 MPH DECAL

12532 – HYDRAULIC OIL DECAL

12492 – OPERATOR INSTRUCTION DECAL

11427 – DANGER DECAL

9. Troubleshooting

Problem	Cause	Remedy
Engine fails to start.	1 Spark plug wire disconnected. 2 Fuel tank not full enough or stale fuel. 3 Throttle control lever not in correct starting position. 4 Choke not in CHOKE position. 5 Engine not primed properly. 6 Fuel valve not ON or blocked fuel line. 7 Faulty spark plug.	1 Connect wire to spark plug. 2 Fill tank full with clean, fresh gasoline. 3 Move throttle lever to FAST position. 4 Move choke to CHOKE position. 5 Prime engine. 6 Turn on fuel vale or clean fuel line. 7 Clean, adjust gap, or replace spark plug.
Engine is hard to start or runs erratic.	1 Spark plug wire loose. 2 Unit running on CHOKE. 3 Blocked fuel line or stale fuel. 4 Water or dirt in fuel system. 5. Dirty air cleaner.' 6 Carburettor out of adjustment.	1 Connect and tighten spark plug wire. 2 Move choke lever to OFF position. 3 Clean fuel line; fill tank with clean, fresh petrol. 4. Drain fuel tank. Refill with fresh petrol. 5 Clean or replace air cleaner. 6 See authorised service centre.
Cylinder rod will not extend or contract.	1 Cold weather clutch not engaged. 2 Broken or improperly installed belt. 3 Low hydraulic fluid. 4 Hydraulic lines blocked. 5 Damaged or broken pump. 6 Damaged control valve.	1 Engage cold weather clutch. 2. Replace or reinstall belt. 3. Fill hydraulic tank to correct fluid level. 4 Flush and clean hydraulic system.✞ 5 See authorised service centre.' 6 See authorised service centre.
Cylinder rod is slow or erratic while extending and contracting.	1 Low hydraulic fluid. 2 Contaminated hydraulic fluid. 3 Excessive pump inlet vacuum. 4 Damaged pump. 5 Damaged control valve. 6 Internal cylinder damage.	1. Fill hydraulic tank to correct fluid level. 2 Drain fluid, flush system, and refill. 3 Make certain pump hoses are clear and unblocked. Make certain hose in not collapsing under suction. 4 See authorised service centre. 5 See authorised service centre. 6 See authorised service centre.
Leaking Cylinder	1 Broken seals. 2 Scored cylinder.	1 See authorised service centre. 2 See authorised service centre.

✞ Flushing the reservoir tank and hoses with kerosine whenever service is performed on the tank, hydraulic pump or valve is recommended. Contact an authorised service centre.

NOTE: For repairs beyond those listed here, contact your nearest authorised service centre.

10. Warranty

Agriquip guarantees the LS772H woodsplitter for a term of twenty-four months from the purchase date. The warranty is only valid after a careful examination carried out by Agriquip, or their authorised agent on the parts not working properly. Agriquip will not be held responsible for damages, defects or costs generated by the inappropriate or incorrect use of the machine or for repairs and modifications performed by unauthorised staff. Agriquip will only replace the parts covered by a warranty, excluding any transport costs. Agriquip is not liable for any loss of profits, both direct and indirect.

Engine Warranty All engines utilised on our products have a separate warranty extended to them by the individual engine manufacturer. Any engine service difficulty is the responsibility of Briggs & Stratton and in no way is Agriquip or their agents responsible for the engine warranty.

Commercial Use The warranty period for any product used for commercial or rental is limited to ninety (90) days from the date of original purchase.

Log Splitter LS722H

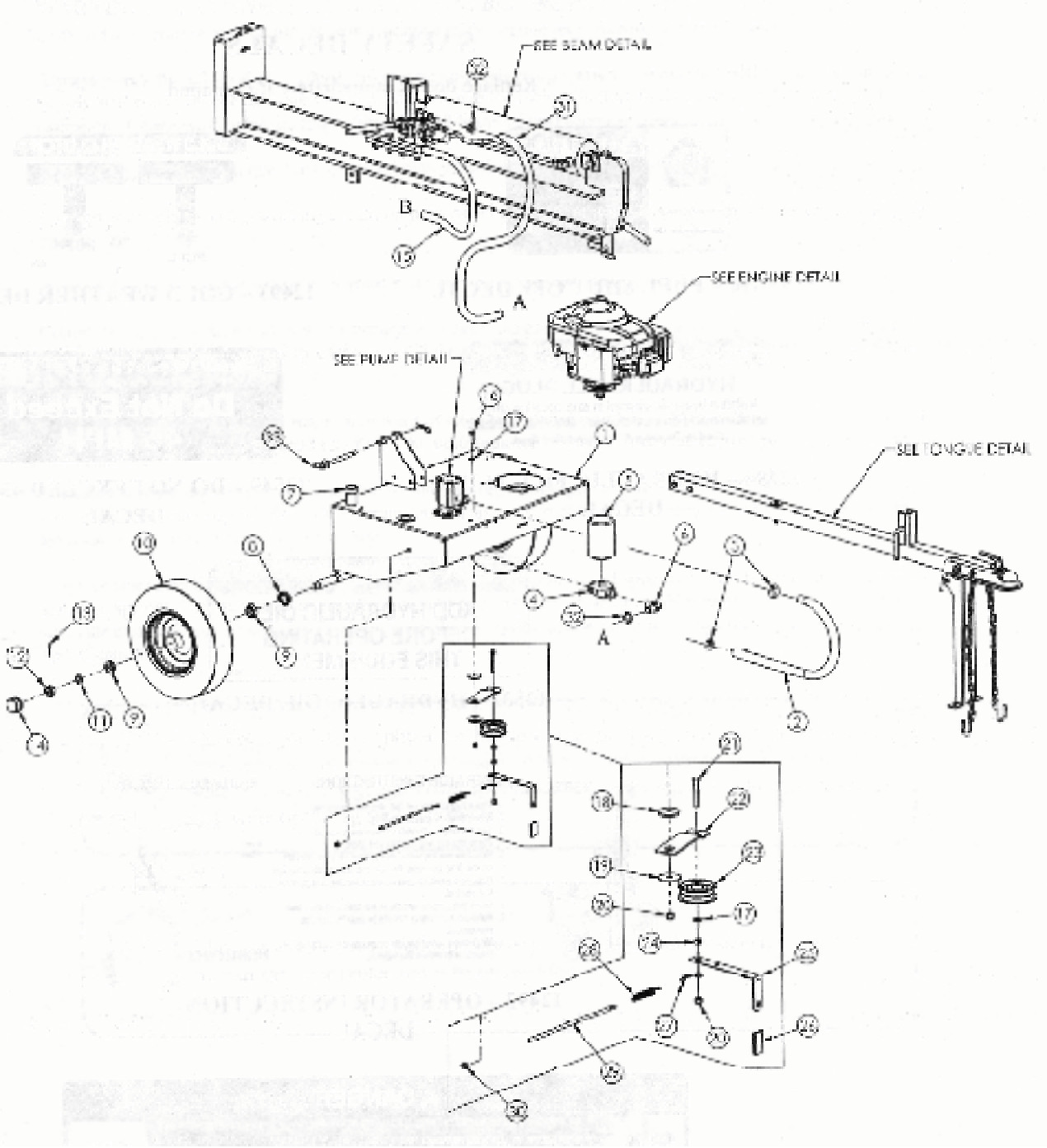
Spare Parts Manual

AGRICULTURAL IMPLEMENT WHOLESALERS
30 Hurlstone Drive P O Box 578 NEW PLYMOUTH
Ph (06) 759 8402 Fax (06) 753 2741

Please have Model & Serial Numbers ready when ordering parts.

Colour cannot be guaranteed upon service parts

Assembly Detail



Please have Model & Serial Numbers ready when ordering parts.

Colour cannot be guaranteed upon service parts

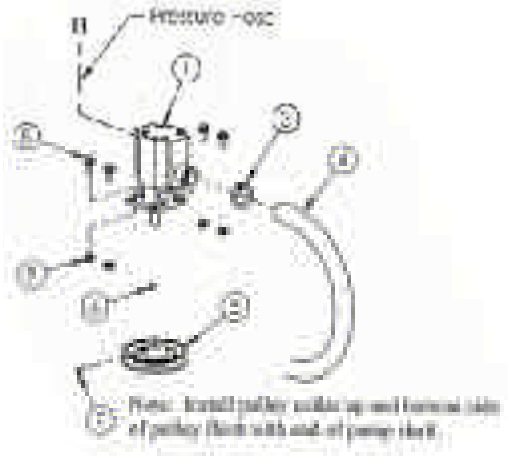
Assembly Detail *(continued)*

Item	Description	Part N°
1	Motor Base/Hydraulic Tank	12350TK
2	36" Suction Hose	12362
3	#12 Hose Clamp	LS5001
4	Filter Head	LS1112
5	Filter Element	LS1113
6	Return Line Fitting	7329
7	Breather Cap	12379
8	Bearing Seal	2203S
9	Tapered Bearing	2203B
10	Tyre & Wheel	7296
11	Washer 3/4D x 11/4OD 10GA	
12	Castle Nut	2203CN
13	Cotter Pin	NB633
14	Wheel Dust Cover	2203DC
15	High Pressure Hose 48"	7289
16	Bolt 3/8-16 x 1 ½ GR 5	NB107
17	Washer 3/8 SAE	NB272

Item	Description	Part N°
18	Idler Bushing	6037
19	Idler Spacer	6040
20	Nut 3/8-16 Nyloc	NB182
21	Bolt 3/8-16 x 2 ½ GR 5	NB619
22	Idler Arm	6041TK
23	Idler Pulley	B527
24	Nut 3/8-16 2-way Lock	NB280
25	Clutch Lever	11226TK
26	Clutch Lever Cap	2077
27	Wire Link for Idler Arm	BRS6H
28	Idler Tension Spring – bent leg	4422
29	Bolt Spade 5/16-18 x 12	10636
30	Nut 5/16-18 Nyloc	NB181
31	Return Hose 72"	12363
32	#16 Hose Clamp	LS4999
n/s	Grommet	12441
n/s	44" Belt	644

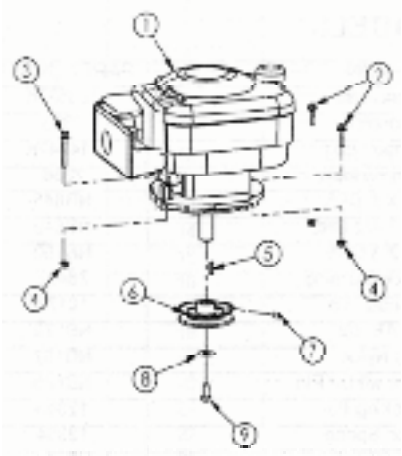
Pump Detail

Item	Description	Part N°
1	Hydraulic Pump	12360
3	#16 Hose Clamp	LS4999
4	36" Suction Hose	12362
5	Pump Pulley	7306
6	1/8 X 1/2 # Woodruff Key	024002
7	5/16-18 X 1/2 Set Screw w/Loctite	NB312
8	Bolt 5/16-18 X 3/4 Serr. Flange	NB596
9	Nut 5/16-18 Serr. Flange	NB170



Engine Detail

Item	Description	Part N°
1	Engine	n/a
2	Bolt 5/16-18 x 1 ¼ Serr. Flange	NB253
3	Bolt 5/16-18 x 2 ¼ Serr. Flange	NB622
4	Nut 5/16-18 Serr. Flange	NB170
5	3/16 x 1 Keystock	9030
6	Engine Pulley 7/8" ID	7323
7	5/16-18 x 1/2 Set Screw w/Loctite	NB312
8	Washer Belleville	699
9	Bolt 3/8-24 x 1 w/Loctite	NB238N
n/s	Fuel Shut Off Valve (in-line)	7414
n/s	Fuel Line Clamp	6FLC

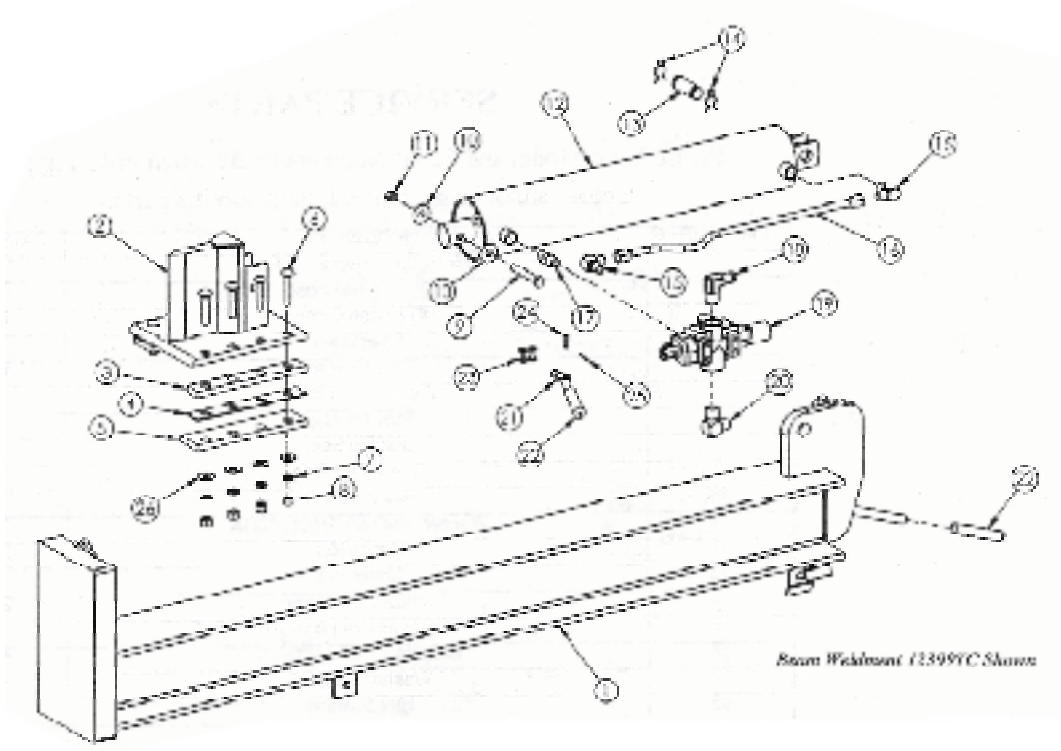


Please have Model & Serial Numbers ready when ordering parts.

Colour cannot be guaranteed upon service parts

Beam Detail

Not all parts are on all models



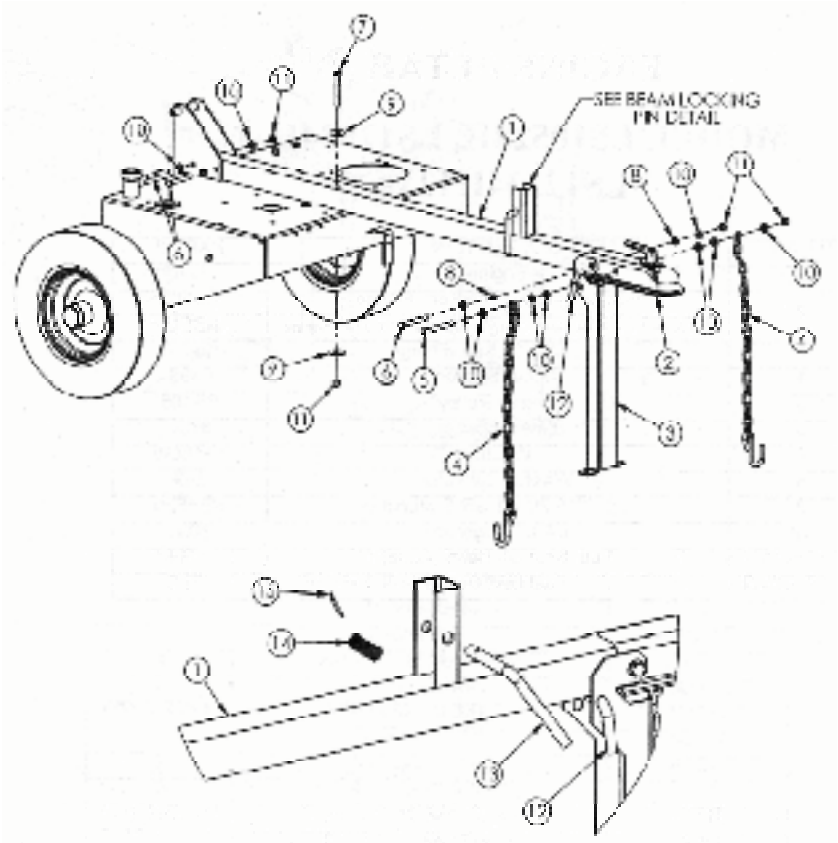
Item	Description	Part N°
1	Beam Weldment	12465TC
2	Wedge Weldment	7233TK
3	Thick GIB Plate	7237TK
5	Bottom GIB Plate	7333TK
6	1/2-13 X 2 1/2 GR5 Carriage Bolt	NB643
7	1/2 Lock Washer	NB508
8	1/2-13 Nut	NB213Z
9	1/2-13 X 3 1/2 GR5 ZP	NB577
10	Washer	TR150W
11	Nut 1/2-13 Nyloc Jam	NB121
12	Ram Cylinder	7284TK
12A	Seal Kit (Ram)	7284SK
13	Steel Pin	7293

Item	Description	Part N°
14	Clip Pin	NB642
15	Hydraulic Fitting	7291
16	Stationary Line Assembly	7288TK
17	2-Way Pipe Nipple	7292
18	Return Line Fitting	7329
19	Valve Control	7287TK
20	Valve Inlet Fitting	7387
21	Valve Control Handle	7423
22	Handle Grip	7425
23	Master Chain Link	7424
24	1/4 X 1 Clevis Pin	NB522
25	Cotter Pin	NB597
26	1/2 Washer USS Flat	NB597

Please have Model & Serial Numbers ready when ordering parts.

Colour cannot be guaranteed upon service parts

Tongue Detail

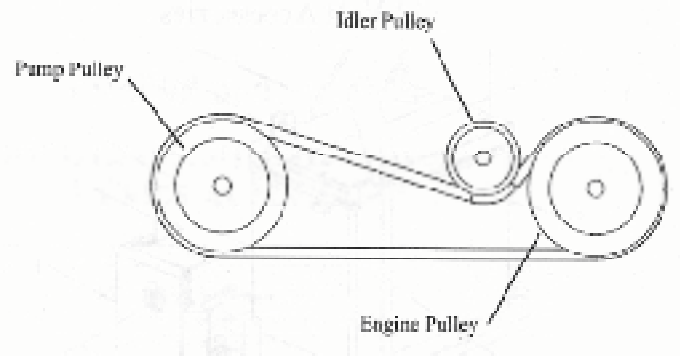


Item	Description	Part N°
1	Tongue Weldment	12353TK
2	2" Ball Coupler	7365
3	Folding Support Leg	11494TK
4	Safety Chain w/Hook	7366
5	Bolt 3/8-16 X 4 GR5	NB645
6	Bolt 3/8-16 X 3 1/2 GR5	NB649
7	Bolt 3/8-16 X 3 GR5	NB 150
8	Latch Pin Guide Bushing	78402.

Item	Description	Part N°
9	Washer Fender 3/8	10177
10	Washer SAE 3/8	NB272
11	Nut 3/8-16 Nyloc	NB182
12	1/2 X3 Bent Pin w/Hair Pin	NB606
13	1/2 Bent Locking Pin	12345
14	Compression Spring	12364
15	Cotter Pin 1/8 X 1	NB126

Belt Routing Diagram

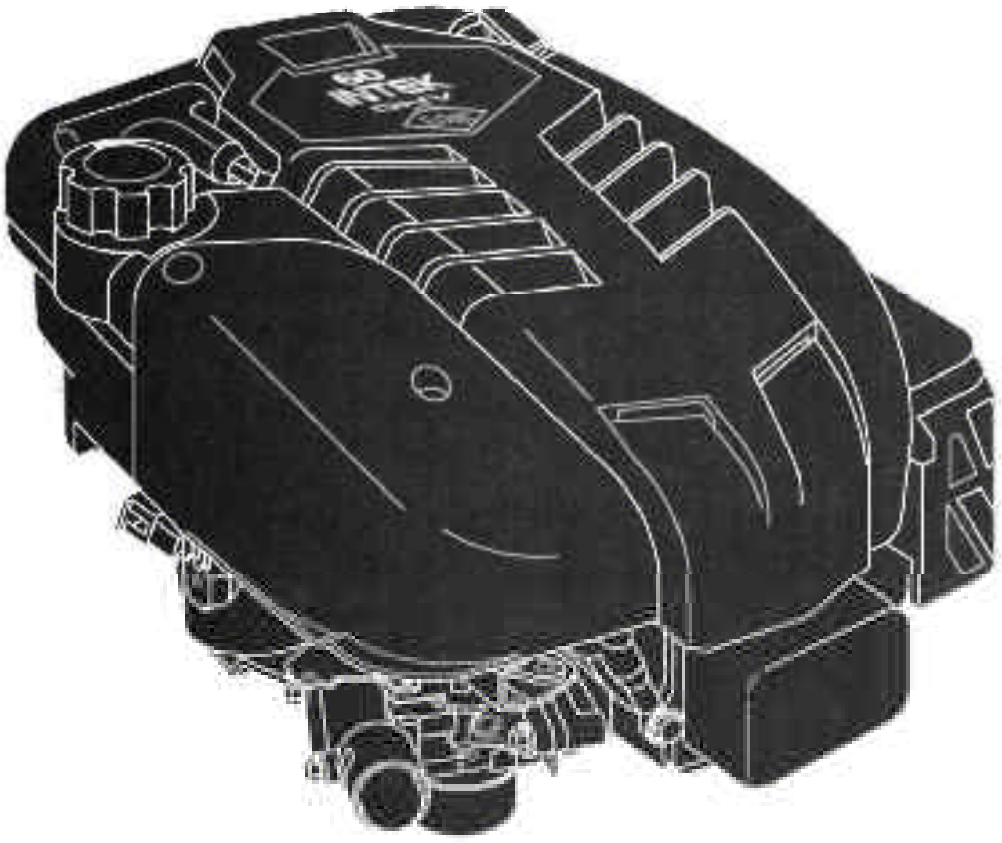
(viewed from underside of splitter)



Please have Model & Serial Numbers ready when ordering parts.

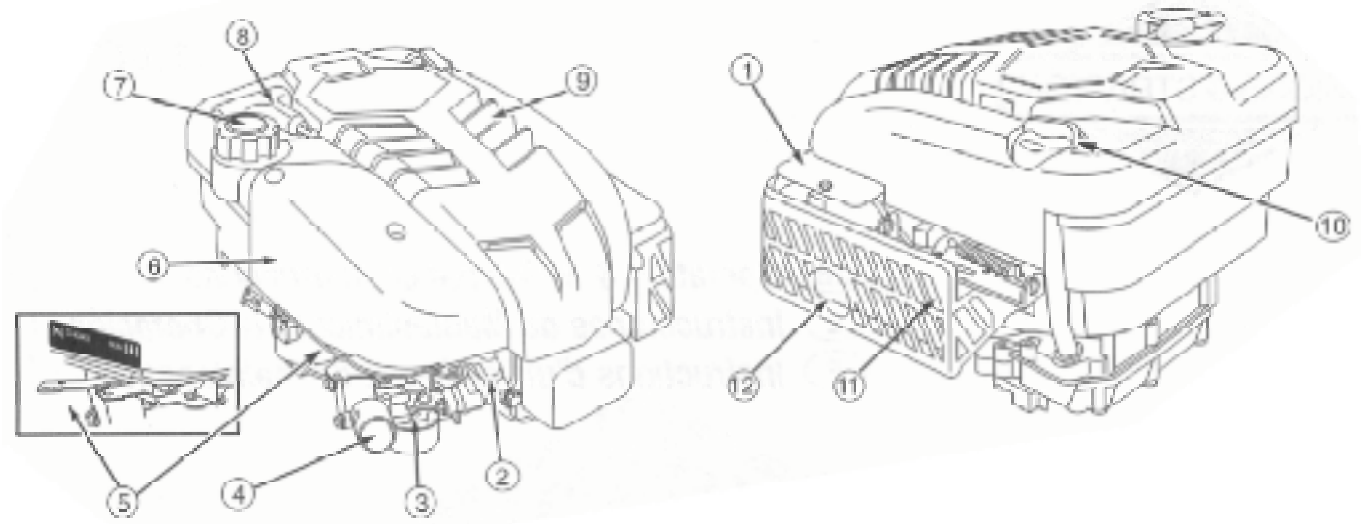
Colour cannot be guaranteed upon service parts

6.5 HP Briggs and Stratton Quantum Engine



Operating & Maintenance Instructions

Engine Components



1	Engine ID plate	7	Fuel filler
2	Resistor spark plug	8	Rope handle
3	Carburettor	9	Finger guard
4	Primer bulb, if equipped	10	Oil filler cap/Dipstick
5	Choke lever, if equipped	11	Muffler guard
6	Air cleaner	12	Muffler / Spark arrestor, if equipped

Technical Information

Power Rating

The power ratings for an individual engine model are initially by starting with SAE (Society of Automotive Engineers) code J1940 (Small Engine Power & Torque Rating Procedure (Revision 2002-05). Given both the wide array of products on which our engines are placed, and the variety of environmental issues applicable to operating the equipment, it may be the engine you have purchased will not develop the rated horsepower when used in a piece of power equipment (actual "on-site" power). This difference is due to a variety of factors including, but not limited to, the following: differences in altitude, temperature, barometric pressure, humidity, fuel, engine lubrication, maximum governed engine speed, individual engine to engine variability, design of the particular piece of power equipment, the manner in which the engine is operated, engine run-in to reduce friction and clean out of combustion chambers, adjustments to the valves and carburettor and other factors. The power ratings may also be adjusted based on comparisons to other similar engines utilised in similar applications, and will therefore not necessarily match the values derived using the foregoing codes.

General Information

In the State of California, OHV Model Series 110000 and 120000 engines are certified by the California Air Resources to meet emissions standards for 125 hours. Such certification does not grant the purchaser, owner or operator of any additional warranties with respect to the performance or operational life of this engine. This engine is warranted solely according to the product and emissions warranties stated elsewhere in this manual.

	110000 Series	120000 Series
Bore	68.26 mm (2.69 in.)	68.26 mm (2.69 in.)
Stroke	46.00 mm (1.80 in.)	52.00 mm (2.05 in.)
Displacement	167 cc (10.20 cu. in.)	190 cc (11.58 cu. in.)

Tune-up Specifications

Armature air gap	0.25 - 0.36 mm (0.010 - 0.014 in.)
Spark plug gap	0.51 mm (0.20 in.)

Valve clearance with valve springs installed and piston 6 mm past top dead center (check when engine is cold). See Repair Manual P/N 272147.

Intake valve clearance	0.10 - 0.20 mm (0.004 - 0.008 in.)
Exhaust valve clearance	0.10 - 0.20 mm (0.004 - 0.008 in.)

Note: Engine power will decrease 3.5% for each 1,000 feet (300 meters) above sea level and 1% for each 10° F (5.6° C) above 77° F (25° C). It will operate satisfactorily at an angle up to 15°. Refer to the equipment operator manual for safe allowable operating limits on slopes.

Safety Precautions

WARNING: The engine exhaust from this product contains chemicals known to cause cancer, birth defects or other reproductive harm.

THE OPERATING & MAINTENANCE INSTRUCTIONS CONTAIN SAFETY INFORMATION TO:
Make you aware of hazards associated with engines
Inform you of the risk of injury associated with those hazards, and
Tell you how to avoid or reduce the risk of injury.

A signal word (DANGER, WARNING, or CAUTION) is used with the alert symbol to indicate the likelihood and the potential severity of injury.

DANGER: indicates a hazard which, if not avoided, will result in death or serious injury.

WARNING: indicates a hazard which, if not avoided, could result in death or serious injury.

CAUTION: indicates a hazard which, if not avoided, might result in minor or moderate injury.

CAUTION: when used without the alert symbol, indicates a situation that could result in damage to the engine.

Fresh Start™ Fuel Cap

DANGER: Fresh Start fuel cap is designed to hold a cartridge that contains fuel stabiliser. Fuel stabiliser is a hazardous chemical. Contents are HARMFUL OR FATAL IF SWALLOWED. Avoid contact to eyes, skin, or clothing. Do not take internally. Avoid breathing the mist or vapour. Overexposure to eyes or skin can cause irritation. Keep stabiliser out of the reach of children.

IF SWALLOWED, call physician immediately. Do not induce vomiting. If inhaled, remove to fresh air. In case of eye or skin contact, flush with water for 15 minutes.

Store unopened cartridges in a cool, dry, well-ventilated area. Keep open cartridge in fuel cap, and fuel cap closed on fuel tank when not in use.

Fuel stabilizer contains 2,6-di-tert-butylphenol (128-39-2) and aliphatic petroleum distillate (64742-47-8).

Safety Precautions *(continued)*

Before Operating Engine

- Read entire Operating & Maintenance Instructions AND the instructions for the equipment this engine powers.
- Failure to follow instructions could result in serious injury or death.

WARNING: Petrol and its vapours are extremely flammable and explosive. Fire or explosion can cause severe burns or death.

When Adding Fuel

- Turn engine OFF and let engine cool at least 2 minutes e removing gas cap.
- Fill fuel tank outdoors or in well-ventilated area.
- Do not overfill fuel tank. Fill tank to approximately 40mm below top of neck to allow for fuel expansion.
- Keep petrol away from sparks, open flames, pilot heat, and other ignition sources.
- Check fuel lines, tank, cap, and fittings frequently for cracks or leaks. Replace if necessary.

When Starting Engine

- Ensure spark plug, muffler, fuel cap and air cleaner are in place.
- Do not crank engine with spark plug removed.
- If fuel spills, wait until it evaporates before starting engine.
- If engine floods, set choke to OPEN/RUN position, place throttle in FAST and crank until engine starts.

When Operating Equipment

- Do not tip engine or equipment at an angle which causes fuel to spill.
- Do not choke carburettor to stop engine.

Transporting Equipment

- Transport with fuel tank EMPTY or with fuel shut-off lever OFF.

When Storing Petrol or Equipment with Fuel in Tank

- Store away from furnaces, stoves, water heaters or other appliances that have pilot light or other ignition source because they can ignite petrol vapours.

WARNING: Starting engine creates sparking. Sparking can ignite nearby flammable gases. Explosion and fire could result.

- If there is natural or LP gas leakage in area, do not start engine.
- Do not use pressurised starting fluids because vapours are flammable.

WARNING: Rapid retraction of starter cord (kickback) will pull hand and arm toward engine faster than you can let go. Broken bones, fractures, bruises or sprains could result.

- When starting engine, pull cord slowly until resistance is felt, then pull rapidly.
- Remove all external equipment/engine loads before starting engine.
- Direct coupled equipment components such as, but not limited to, blades, impellers, pulleys, sprockets, etc. must be securely attached.

WARNING: Engines give off carbon monoxide, an odourless, colourless, poison gas. Breathing carbon monoxide can cause nausea, fainting or death.

- Start and run engine outdoors.
- Do not start or run engine in enclosed area, even if doors or windows are open.

Safety Precautions *(continued)*

WARNING: Running engines produce heat. Engine parts, especially muffler, become extremely hot. Severe thermal burns can occur on contact. Combustible debris, such as leaves, grass, brush, etc. can catch fire.

- Allow muffler, engine cylinder and fins to cool before touching.
- Remove accumulated combustibles from muffler area and cylinder area.
- Install and maintain in working order a spark arrestor before using equipment on forest-covered, grass-covered, brush-covered unimproved land.

WARNING: Rotating parts can contact or entangle hands, feet, hair, clothing, or accessories. Traumatic amputation or severe laceration can result.

- Operate equipment with guards in place.
- Keep hands and feet away from rotating parts.
- Tie up long hair and remove jewellery.
- Do not wear loose-fitting clothing, dangling draw-strings or items that could become caught.

WARNING: Unintentional sparking can result in fire or electric shock. Unintentional start-up can result in entanglement, traumatic amputation, or laceration.

BEFORE PERFORMING ADJUSTMENTS OR REPAIRS

- Disconnect spark plug wire and keep it away from spark plug.

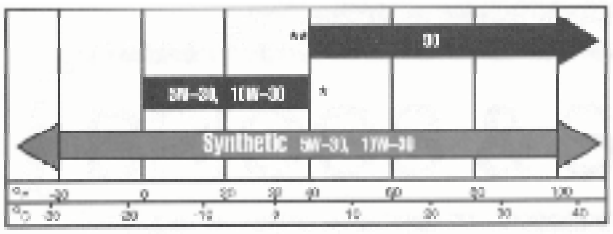
WHEN TESTING FOR SPARK

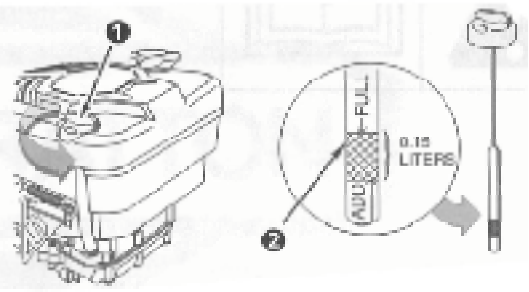
- Use approved spark plug tester.
- Do not check for spark with spark plug removed.

Oil Recommendations

CAUTION: Engine shipped from Briggs & Stratton without oil. Before starting engine, fill with oil. Do not over-fill.

Use a high quality detergent oil classified "For Service SF, SG, SH, SJ" or higher such as Briggs & Stratton 30, Part Number 100005. Use no special additives with recommended oils. Do not mix oil with petrol.





** Air cooled engines run hotter than automotive engines. The use of non-synthetic multi-viscosity oils (5W-30, 10W-30, etc.) in temperatures above 40° F (4° C) will result in higher than normal oil consumption. When using a multi-viscosity oil, check oil level more frequently.

* Use of SAE 30 oil below 40° F (4° C) will result in hard starting and possible engine damage due to inade-quate lubrication:

Choose the SAE viscosity grade of oil from the above chart that matches the starting temperature anticipated before the next oil change.

Note: Synthetic oil meeting ILSAC GF-2, API certification mark and API service symbol with "SJ/CF ENERGY CONSERVING" or higher, is an acceptable oil at all temperatures. Use of synthetic oil does not alter required oil change intervals.

Check oil level.

Oil capacity is about (22 ounces or 0.65 litre) if engine is not equipped with oil filter. If engine is equipped with oil filter, add 4 more ounces (0.1 litre) when changing oil filter.

Place engine level and clean around oil fill [1] (*fig on previous page*).

Remove dipstick, wipe with clean cloth, insert and tighten down again. Remove dipstick and check oil level. Oil should be at FULL mark [2] (*fig on previous page*).

If oil is required, add slowly. Tighten dipstick firmly before starting engine.

Fuel Recommendations

Use clean, fresh, lead-free, regular gasoline with a minimum of 85 octane. Leaded gasoline may be used if it is commercially available and if unleaded is unavailable. Purchase fuel in quantity that can be used within 30 days. See storage instructions.

Some fuels, called oxygenated or reformulated gasolines, are gasolines blended with alcohols or ethers. Excessive amounts of these blends can damage the fuel system or cause performance problems. If any undesirable operating symptoms occur, use gasoline with a lower percentage of alcohol or ether.

This engine is certified to operate on petrol. Exhaust Emission Control System: EM (Engine Modifications). Do not use petrol that contains Methanol. Do not mix oil with petrol.

For engine protection, we recommend using Briggs & Stratton Fuel Stabiliser available from an Authorised Briggs & Stratton Service Dealer.

Adding Fuel

WARNING: Before refuelling, allow engine to cool 2 minutes.

Clean around fuel fill before removing cap to refuel. Remove cap. Fill tank to approximately 1-1/2 inches below top of neck to allow for fuel expansion. Be careful not to overfill.

Note: Remove and discard blue plug in fuel fill.

Fresh Start™ Fuel Cap

Your engine may be equipped with a Fresh Start™ Fuel Cap

DANGER: Contents are HARMFUL OR FATAL IF SWALLOWED. Avoid contact to eyes, skin, or clothing. Do not take internally. Avoid breathing the mist or vapour. Overexposure to eyes or skin can cause irritation. Keep stabiliser out of the reach of children.

Fuel stabiliser is a hazardous chemical.

Fuel stabilizer contains 2,6-di-tert-butylphenol (128-39-2) and aliphatic petroleum distillate (64742-47-8).

Fresh Start fuel preserver cartridge with white tab. [1]

Fresh Start fuel preserver cartridge with tab removed. [2]

1. Place cartridge into fuel cap. [3]
2. Push to "snap" cartridge into place.
3. Remove the white tab to expose membrane. [4]

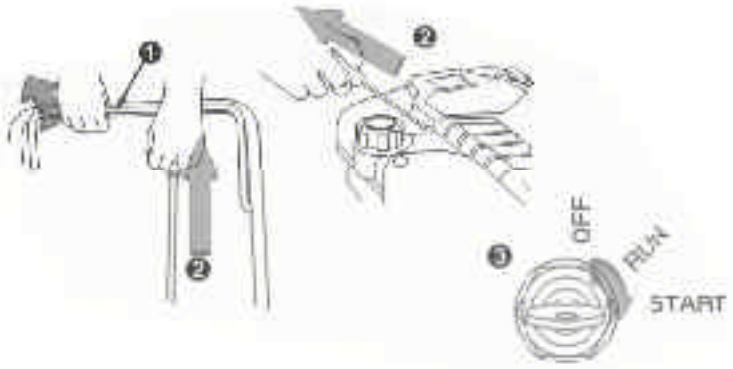
   Note: Do not remove the silver foil on opposite side of cartridge.
4. Reinstall fuel capon engine fuel tank.
5. Periodically check the cartridge to ensure there is still stabiliser liquid inside. If it is empty, remove cartridge and replace.

Starting/Stopping

Before Starting

1. Check oil level.
2. Add fuel and replace fuel cap.
3. Move throttle control to FAST position. [1]
4. Push primer bulb 3 times, if equipped. [2]
5. Move choke lever to close. [3]

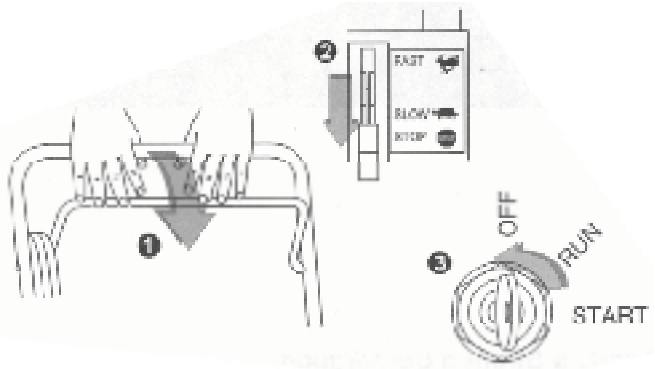
Starting Engine



1. Pull back safety brake control handle [1] then,
2. Pull rope handle [2] slowly until resistance is felt. Then pull cord rapidly to overcome compression, prevent kickback and start engine.
3. Allow engine to warm up.
4. If choke equipped:
   Slowly adjust toward RUN position.
   Wait until engine runs smoothly before each choke adjustment.

Stopping

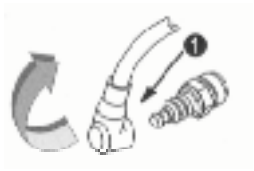
WARNING: Do not stop engine by moving choke control to CHOKE. Backfire, fire or engine dam-age could occur.



1. Release safety brake control handle [1] OR move throttle control to stop [2].

Maintenance

WARNING: To prevent accidental starting, remove spark plug wire [1] and ground it before servicing.



We recommend that you see an authorised Briggs & Stratton Dealer for all maintenance and service. Use only Briggs & Stratton parts.

WARNING: Do not strike the flywheel with hammer or hard object. If done, the flywheel may shatter during operation.

Do not tamper with governor spring, links or other parts to increase engine speed.

CAUTION: If engine must be tipped to transport equipment or to inspect or remove grass, keep spark plug side of engine up

Follow the hourly or calendar intervals, whichever occur first. More frequent service is required when operating in adverse conditions noted below:

First 5 Hours
- Change oil

Every 8 hours or daily
- Check oil level
- Clean debris
- Clean around muffler

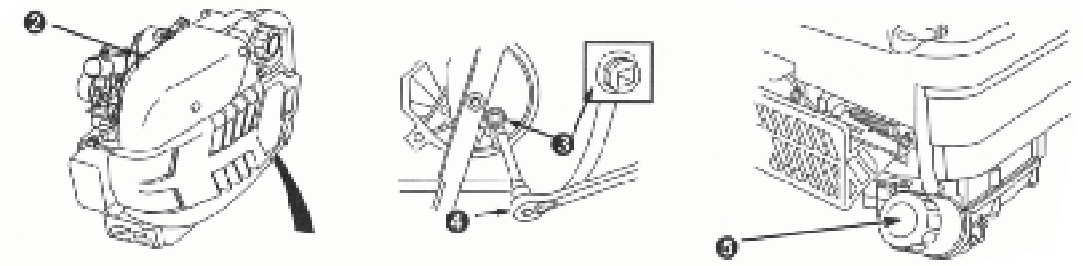
Every 25 hours or every season
- Change oil if operating under heavy load or high ambient temperature
- Service air cleaner (*clean more frequently under dusty or adverse conditions*)

Every 50 hours or every season
- Change oil
- Inspect spark arrestor, if equipped

Every 100 hours or every season
- Service air cleaner cartridge, if equipped with pre-cleaner
- Clean air cooling system (*clean more frequently under dusty or adverse conditions*)
- Change oil filter, if equipped.
- Replace in line fuel filter, if equipped.
- Replace spark plug

Maintenance *(continued)*

Changing Engine Oil



Change oil after first 5 hours of operation. Change oil while engine is warm. Refill with new oil of recommended SAE viscosity grade.

1. Preferably drain oil from top of engine as illustrated. If draining oil from top of engine, keep air cleaner [2] side up. Oil can also be drained with spark plug side up.
2. OR, Oil can be drained form bottom if necessary. By removing drain plug [3] with a ratchet and square extension [4], oil can be drained from bottom of engine.

Oil Filter

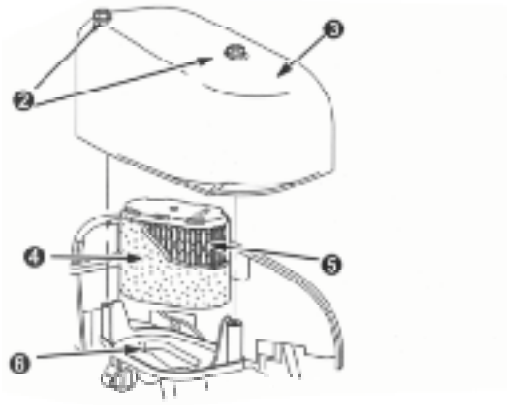
Change oil filter [5], if equipped

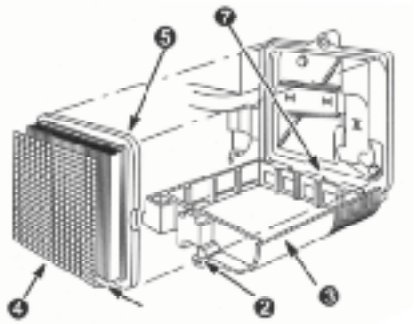
Replace oil filter after every 100 hours of operation.

1. Drain engine oil.
2. Before installing new filter, lightly oil filter gasket with fresh, clean oil.
3. Screw filter on by hand until gasket contacts oil filter adapter. Tighten ½ to ¾ turn more.
4. Refill engine with fresh oil.
5. Start and run engine at idle to check for leaks. Stop engine.
6. Re-check oil level. Add oil if required.

Maintenance *(continued)*

Air Cleaner





All engines have an air cleaner cartridge. The cartridge is either flat or oval (see illustrations). In addition, some engines have a pre-cleaner.

CAUTION: Do not use pressurised air or solvents to clean cartridge. Pressurised air can damage cartridge; solvents will dissolve cartridge.

Pre-Cleaner

To clean pre-cleaner (if equipped), separate it from cartridge and wash in liquid detergent and water. Air dry thoroughly. Do not oil pre-cleaner. Re-assemble dry pre-cleaner on clean cartridge.

Oval Air Cleaner

1. Loosen screws [2] and lift cover [3].
2. Carefully remove pre-cleaner [4] (*if equipped*) and cartridge assembly [5].
3. After servicing pre-cleaner and cartridge, assemble pre-cleaner on cartridge.
4. Install cartridge/pre-cleaner assembly in base [6].
5. Place cover on air cleaner and tighten screws securely to base.

Square Air Cleaner

1. Loosen screw [2] and tilt cover [3] down. Carefully remove pre-cleaner [4] (*if equipped*) and cartridge [5] assembly from cover
2. After servicing pre-cleaner and cartridge, place pre-cleaner, if equipped, over cartridge pleats with arrows in direction shown (pre-cleaner lip [6] will be at bottom of pleats).
3. Install pre-cleaner and cartridge assembly in cover.
4. Insert tabs on cover into slots [7] in bottom of base.
5. Tilt cover up and tighten screw securely to base.

Maintenance *(continued)*

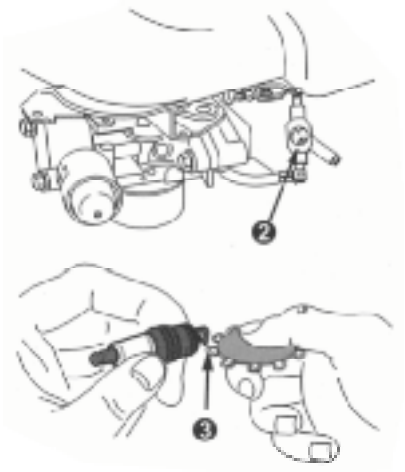
Fuel System

Replacement parts for fuel system (tank, hoses, valves, etc.) must be the same quality as original parts, otherwise fire can occur.

Replacing Fuel Filter

Remove the engine cover. Replace fuel filter. Check filter for water or debris. If found, clean fuel system. Reinstall the engine cover.

Spark Plug



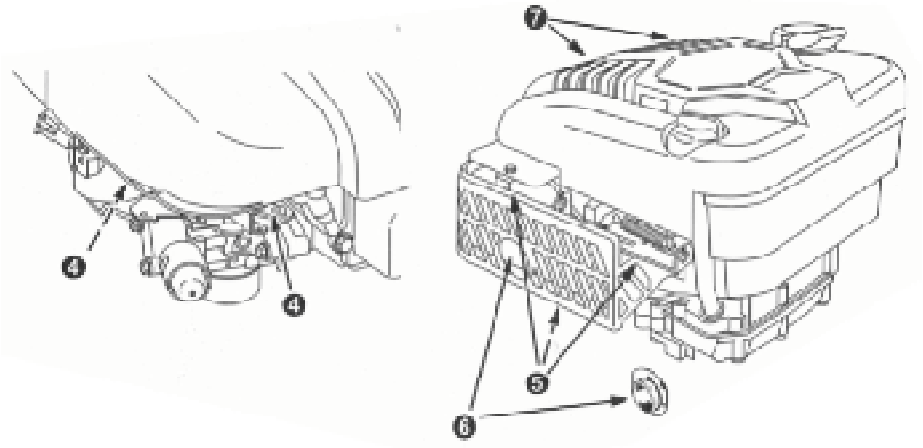
WARNING: DO NOT check for spark with spark plug removed. Use only Briggs & Stratton Spark Tester [2], to check for spark.

- The electrodes on the spark plug must be clean and sharp to produce the powerful spark required for ignition. If the spark plug is worn or dirty the engine will be hard to start.
- Ensure spark plug gap [3] is 0.51 mm or 0.020 in.

Valve Clearance

Under certain running conditions, engines may require periodic valve clearance adjustment. Consult the repair manual, Part No. 275110, or see your Authorised Briggs & Stratton Service Dealer for adjustment procedure.

Cleaning Debris



Engine and parts should be kept clean to maintain freedom of movement, and to reduce the risk of overheating from accumulated debris.

To assure smooth operation, keep governor linkage, springs and controls [4] free of debris.

Accumulation of debris around muffler [5] could cause a fire. Inspect and clean before every use.

If muffler is equipped with spark arrester screen [6], remove spark arrester screen for cleaning and inspection. Replace if damaged.

Periodically remove rubbish build-up from engine. Clean finger guard [7].

CAUTION: DO NOT use water to clean engine parts. Water could contaminate fuel system. Use a brush or dry cloth.

Storage

Engines stored over 30 days need special attention.

To prevent gum from forming in fuel system or on essential carburettor parts:

a) if fuel tank contains oxygenated or reformulated gasoline (gasoline blended with an alcohol or an ether), run engine until it stops from lack of fuel, or

b) if fuel tank contains gasoline, either run engine until it stops from lack of fuel, or add a gasoline stabiliser to the gas in the tank.

Note: If stabiliser is used, run the engine for several minutes to circulate the additive through the carburettor. Then engine and fuel can be stored.

1. Change oil.
2. Remove spark plug and pour about 15 ml (1/2 oz.) of engine oil into cylinder. Replace spark plug and crank slowly to distribute oil.
3. Clean engine of debris.
4. Store in a clean and dry area.

We recommend use of Briggs & Stratton Fuel Stabiliser available from an Authorised Briggs & Stratton Service Dealer.

WARNING: DO NOT store near a stove, furnace or water heater which uses a pilot light or any device that can create a spark.

Service

We recommend that you see an authorised Briggs & Stratton Service Dealer for all maintenance and service. Use only genuine Briggs & Stratton parts. Each Authorised Briggs & Stratton Service Dealer carries a stock of Genuine Briggs & Stratton Parts and is equipped with special service tools. Trained mechanics assure expert repair service on all Briggs & Stratton engines. Only dealers recognised as "Authorised Briggs & Stratton" meet the higher Briggs & Stratton service standards.

You may locate your nearest Authorised Briggs & Stratton Service Dealer in our dealer locator map on our web site (www.briggspowerproducts.com) or in the "Yellow Pages" directory under "Lawn Mowers" or "Engines"

Partial List of Genuine Briggs & Stratton Parts

Part	Part No.	Part	Part No.
Oil (20 oz.)	100005	Flat air cleaner pre-cleaner	493537
Oil (48 oz.)	100028	Oval air cleaner cartridge	498596
Oil filter	692513	Oval air cleaner pre-cleaner	273356
Fuel stabiliser (4.2 oz., 125 ml bottle)	5041	Resistor spark plug	499608
Fuel filter	298090/5018	Spark tester	19368
Flat air cleaner cartridge	491588/5043	Spark plug wrench	19374
Oil pump kit (uses standard electric drill to remove oil from engine quickly)			5056
Fuel stabiliser (1 oz., 30 ml single use pouch)			5058
Long life platinum spark plug (OHV engines - set gap to .020 in. or .50 mm)			5066

Briggs & Stratton Corporation (B&S); the California Air Resources. Board (GARB) and the United States Environmental Protection Agency (US EPA}. Emissions Control System: Warranty Statement (Owner's Defect Warranty Rights and Obligations).

California, United States and Canada Emissions Control Defects Warranty Statement

The California Air Resources Board (CARB), US EPA and B&S are pleased to explain the Emissions Control System Warranty on your small off-road engine (SORE). In California, new small off-road engines model year 2006 and later must be designed, built and equipped to meet the State's stringent anti-smog standards. Elsewhere in the United States, new non-road, spark-ignition engine scertified for model year 1997 and later must meet similar standards set forth by the US EPA. B&S must warrant the emissions control system on your engine for the periods of time listed below, provided there has been no abuse, neglect or improper maintenance of your small off-road engine.

Your emissions control system includes parts such as the carburettor, air cleaner, ignition system, fuel line, muffler and catalytic converter. Also included may be connectors and other emissions related assemblies.

Where a warrantable condition exists, B&S will repair your small off-road engine at no cost to you including diagnosis, parts and labour.

Briggs & Stratton Emissions Control Defects Warranty Coverage

Small off-road engines are warranted relative to emissions control parts defects for a period of two years, subject to provisions set forth below. If any covered part on your engine is defective, the part will be repaired or replaced by B&S.

Owner's Warranty Responsibilities

As the small off-road engine owner, you are responsible for the performance of the required maintenance listed in your Operating and Maintenance Instructions. B&S recommends that you retain all your receipts covering maintenance on your small off-road engine, but B&S cannot deny warranty solely for the lack of receipts or for your failure to ensure the performance of all scheduled maintenance.

As the small off-road engine owner, you should however be aware that B&S may deny you warranty coverage if your small off-road engine or a part has failed due to abuse, neglect, improper maintenance or unapproved modifications.

You are responsible for presenting your small off-road engine to an Authorised B&S Service Dealer as soon as a problem exists. The undisputed warranty repairs should be completed in a reasonable amount of time, not to exceed 30 days.

If you have any questions regarding your warranty rights and responsibilities, you should contact a B&S Service Representative at 1-414-259-5262.

The emissions warranty is a defects warranty. Defects are judged on normal engine performance. The warranty is not related to an in use emissions test.

Briggs & Stratton Emissions Control Defects Warranty Provisions

The following are specific provisions relative to your Emissions Contrd Defects Warranty Coverage. It is in addition to the B&S engine warranty for non-regulated engines found in the Operating and Maintenance Instructions.

1. Warranted Parts
   Coverage under this warranty extends only to the parts listed below (the emissions control systems parts) to the extent these parts were present on the engine purchased.
   a) Fuel Metering System
      - Cold start enrichment system (soft choke)
      - Carburettor and internal parts
      - Fuel Pump
      - Fuel line, fuel line fittings, clamps

   b) Air Induction System
      - Air cleaner
      - Intake manifdd

   c) Ignition System
      - Spark plug(s)
      - Magneto igniton system

   d.) Catalyst System
      - Catalytic converter
      - Exhaust manifold
      - Air injection system or pulse valve

   e) Miscellaneous Items Used in Above Systems
      - Vacuum, temperature, position, time sensitive valves and switches
      - Connectors and assemblies

2. Length of Coverage
   B&S warrants to the initial owner and each subsequent purchaser that the Warranted Parts shall be free from defects in materials and workmanship which caused the failure of the Warranted Parts for a period of two years from the date the engine is delivered to a retail purchaser.
3. No Charge
   Repair or replacement of any Warranted Part will be performed at no charge to the owner, including diagnostic labour which leads to the determination that a Warranted Part is defective, if the diagnostic work is performed at an Authorised B&S Service Dealer. For emissions warranty service contact your nearest Authorised B&S Service Dealer as listed in the "Yellow Pages" under "Engines, Gasoline," "Gasoline Engines," "Lawn Mowers," or similar category.
4. Claims and Coverage Exclusions
   Warranty claims shall be filed in accordance with the provisions of the B&S Engine Warranty Policy. Warranty cover-age shall be excluded for failures of Warranted Parts which are not original B&S parts or because of abuse, neglect or improper maintenance as set forth in the B&S Engine Warranty Policy. B&S is not liable to cover failures of Warranted Parts caused by the use of add-on, non-original, or modified parts.
5. Maintenance
   Any Warranted Part which is not scheduled for replacement as required maintenance or which is scheduled only for regular inspection to the effect of "repair or replace as necessary" shall be warranted as to defects for the warranty period. Any Warranted Part which is scheduled for replacement as required maintenance shall be warranted as to defects only for the period of time up to the first scheduled replacement for that part. Any replacement part that is equivalent in performance and durability may be used in the performance of any maintenance or repairs. The owner is responsible for the performance of all required maintenance, as defined in the B&S Operating and Maintenance Instructions.
6. Consequential Coverage
   Coverage hereunder shall extend to the failure of any engine components caused by the failure of any Warranted Part still under warranty.

Look For Relevant Emissions Durability Period and Air Index Information On Your Engine Emission Label

Engines that are certified to meet the California Air Resources Board (CARE) Tier 2 Emission Standards must display information regarding the Emissions Durability Period and the Air Index. Briggs & Stratton makes this information available to the consumer on our emission labels. The engine emission label will indicate certification information.

The Emissions Durability Period describes the number of hours of actual running time for which the engine is certified to be emissions compliant, assuming proper maintenance in accordance with the Operating & Maintenance Instructions. The following categories are used:

Moderate:

Engine is certified to be emission compliant for 125 hours of actual engine running time.

Intermediate:

Engine is certified to be emission compliant for 250 hours of actual engine running time.

Extended:

Engine is certified to be emission compliant for 500 hours of actual engine running time. For example, a typical walk-behind lawn mower is used 20 to 25 hours per year. Therefore, the Emissions Durability Period of an engine with an intermediate rating would equate to 10 to 12 years.

Certain Briggs & Stratton engines will be certified to meet the United States Environmental Protection Agency (US EPA) Phase 2 emission standards. For Phase 2 certified engines, the Emissions Compliance Period referred to on the Emissions Compliance label indicates the number of operating hours for which the engine has been shown to meet Federal emission requirements.

For engines less than 225cc displacement
Category C = 125 hours
Category B = 250 hours
Category A = 500 hours

For engines of 225cc or more displacement
Category C = 250 hours
Category B = 500 hours
Category A = 1000 hours

In the U.S.A., the 110000 and 120000 series engines covered in this manual are certified by the California Air Resources Board to meet emissions standards for 50 hours. Such certification does not grant the purchaser, owner or operator of this engine any additional warranties with respect to the performance or operational life of this engine. This engine is warranted solely according to the product and emissions warranties stated elsewhere in this manual.

Briggs & Stratton Engine Owner Warranty Policy

Effective July 1, 2004 replaces all undated Warranties and all Warranties dated before July 1, 2004

Limited Warranty

Briggs & Stratton Corporation will repair or replace, free of charge, any part(s) of the engine that is defective in material or workmanship or both. Transportation charges on parts submitted for repair or replacement under this warranty must be borne by purchaser. This warranty is effective for the time periods and subject to the conditions stated below. For warranty service, find the nearest Authorised Service Dealer in our dealer locator map at www.briggsandstratton.com, or by calling 1-800-233-3723, or as listed in the 'Yellow Pages,'".

THERE IS NO OTHER EXPRESS WARRANTY. IMPLIED WARRANTIES, INCLUDING THOSE OF MERCHANTABILITY AND FITNESS FOR A PAR-TICULAR PURPOSE, ARE LIMITED TO ONE YEAR FROM PURCHASE, OR TO THE EXTENT PERMITTED BY LAW ANY AND ALL IMPLIED WAR-RANTIES ARE EXCLUDED. LIABILITY FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES ARE EXCLUDED TO THE EXTENT EXCLUSION IS PERMITTED BY LAW. Some states or countries do not allow limitations on how long an implied warranty lasts, and some states or countries do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation and exclusion may not apply to you. This warranty gives you specific legal rights and you may also have other rights which vary from state to state and country to country.

Warranty Period

Consumer Use	2 years
Commercial Use	90 days

Engines used in competitive racing or on commercial or rental tracks are not warranted.

The warranty period begins on the date of purchase by the first retail consumer or commercial end user, and continues for the period of time stated in the table above. "Consumer use" means personal residential household use by a retail consumer. "Commercial use" means all other uses, including use for commercial, income producing or rental purposes. Once an engine has experienced commercial use, it shall thereafter be considered as a commercial use engine for purposes of this warranty.

NO WARRANTY REGISTRATION IS NECESSARY TO OBTAIN 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 Engine 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. For example, warranty would not apply if engine damage occurred because of misuse, lack of routine maintenance, shipping, handling, warehousing or improper installation. Similarly, warranty is void if the serial number of the engine has been removed or the engine has been altered or modified.

If a customer differs with the decision of the Service Dealer, an investigation will be made to determine whether the warranty applies. Ask the Service Dealer to submit all supporting facts to his Distributor or the Factory for review. If the Distributor or the Factory decides that the claim is justified, the customer will be fully reimbursed for those items that are defective. 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. Warranty will not cover repair when normal use has exhausted the life of a part or an engine. 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 be-cause 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. 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.
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.
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, altered gasolines, etc.

Warranty is available only through service dealers which have been authorized by Briggs & Stratton Corporation. your nearest Authorized Service Dealer is listed in the "Yellow Pages™ of your telephone directory under "Engines, Gasoline" or "Gasoline Engines," "Lawn Mowers," or similar category.

Briggs & Stratton Engines Are Made Under One Or More Of The Following Patents: Design D-247,177 (Other Patents Pending)

6,691,683	6,520,141	6,325,036	6,145,487	6,012,420	5,803,035	5,548,955	5,243,878	5,138,996	4,875,448	D 476,629
6,647,942	6,495,267	6,311,663	6,142,257	5,992,367	5,765,713	5,546,901	5,235,943	5,086,890	4,819,593	D 457,891
6,622,683	6,494,175	6,284,123	6,135,426	5,904,124	5,732,555	5,445,014	5,234,038	5,070,829	4,720,638	D 368,187
6,615,787	6,472,790	6,263,852	6,116,212	5,894,715	5,645,025	5,503,125	5,228,487	5,058,544	4,719,682	D 375,963
6,617,725	6,460,502	6,260,529	6,105,548	5,887,678	5,642,701	5,501,203	5,197,426	5,040,644	4,633,556	D 309,457
6,603,227	6,456,515	6,242,828	6,347,614	5,852,951	5,628352	5,497,679	5,197,425	5,009,208	4,630,498	D 372,871
6,595,897	6,382,166	6,239,709	6,082,323	5,843,345	5,619,845	5,320,795	5,197,422	4,996,956	4,522,080	D 361,771
6,595,176	6,369,532	6,237,555	6,077,063	5,823,153	5,606,948	5,301,643	5,191,864	4,977,879	4,520,288	D 356,951
6,584,964	6,356,003	6,230,678	6,064,027	5,819,513	5,606,851	5,271,363	5,188,069	4,977,877	4,512,499	D 309,457
6,557,833	6,349,688	6,213,083	6,040,767	5,813,384	5,605,130	5,269,713	5,186,142	4,971,219	4,453,507	D 308,872
6,542,074	6,347,614	6,202,616	6,014,808	5,809,958	5,497,679	5,265,700	5,150,674	4,895,119	4,430,984	D 308,871

Imported and Distributed by:

P.O. Box 578 30 Hurlstone Drive New Plymouth
(06) 759 8402 NEW PLYMOUTH