

LIST PRICE \$5.00

POWER UNITS & Gardening Attachments

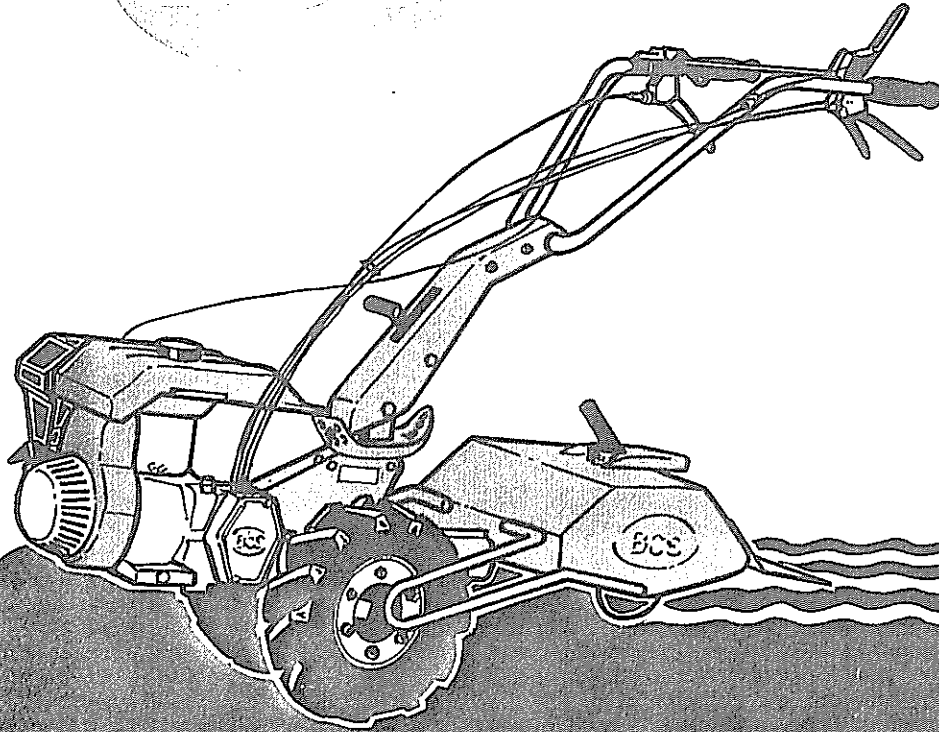
MODELS

201

203

204

205



OWNERS Use & Care MANUAL



READ THIS OWNER'S MANUAL BEFORE ATTEMPTING TO
OPERATE ANY OF THE POWER UNITS OR ATTACHMENTS

PREFACE

Dear Customer;

Thank you for your purchase. Get set to enjoy the benefits your wise selection of a BCS machine has earned for you. We believe there to be no other make machine that can handle so many lawn and garden tasks with such fine results as you can enjoy with your BCS — and with such little effort on your part.

The BCS Limited Warranty for your machine extends for a full three years, or one year for commercial or rental use, during which time all necessary service qualifying under the conditions of warranty will cost you only for the transportation of the machine.

The beauty of the BCS concept is that you need only to add interchangeable attachments to your BCS instead of buying a whole machine for each application. With precision gearing throughout, your BCS machine is built for lasting service, with no troublesome drive belts or chains.

Our network of BCS distributors and servicing dealers stands ready to supply your needs for attachments, accessories, parts and service. With a yearly check-up, your local dealer can help you keep your BCS equipment in top shape. In the meantime, be sure to follow the operating and maintenance tips in this owner's manual for satisfied performance of your machine.

BCS Mosa, Inc.

GRAPHIC SYMBOLS

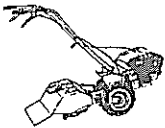


This symbol is like a warning flag. It flags your attention to danger warnings in the manual.

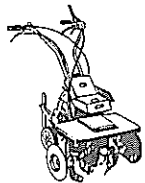


When placed over a picture or an item in the picture, this symbol says "NO! Do not do, or use, or permit whatever is shown."

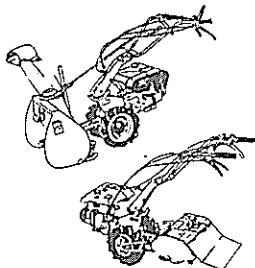
PUSHER, TRACTOR AND CONVERTIBLE POWER UNITS



*A **tractor** has the power take-off (PTO) connector in the rear and the engine up front. Model 201 is a tractor. Its sole attachment is the 18-inch rear tine tiller.*



*A **pusher** has the power take-off (PTO) connector up front and the engine in the rear. Models 203 and 204 are pushers. They can be used only with front-mounted attachments including a rotary mower, cutter bar mower, and snow thrower. A front-mount tiller attachment is available for model 204.*



***Convertible** pusher/tractor model 205. This model can use most of the front-mount attachments the model 204 uses or can be converted to tractor for the rear-tine tiller attachment. Conversion from one mode to the other consists of swinging the control handle around from one end to the other and setting the wheels to rotate for forward travel with machine in forward gear.*

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⚠ WARNING

READ ALL SAFETY RULES AND OPERATING AND MAINTENANCE INSTRUCTIONS IN THIS MANUAL BEFORE USING ANY POWER UNIT, ATTACHMENT, AND/OR ACCESSORY.

RECORD SERIAL NUMBERS HERE

BCS UNIT ☆ _____ ☆

ENGINE MODEL _____

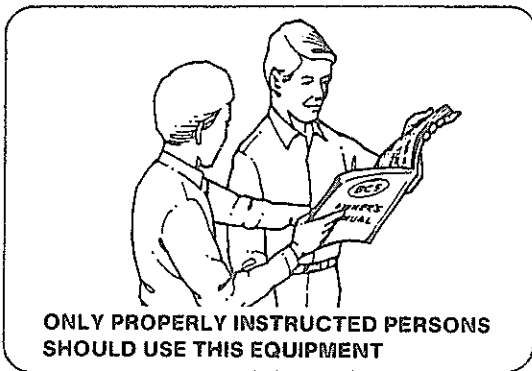
ENGINE SERIAL _____

SECTION ONE

INSTRUCTIONS FOR SAFE OPERATION OF BCS POWER UNITS AND ATTACHMENTS

General precautions and instructions are followed by specific precautions for each combination of attachment and power unit in the owner's manual.

GENERAL PRECAUTIONS AND INSTRUCTIONS



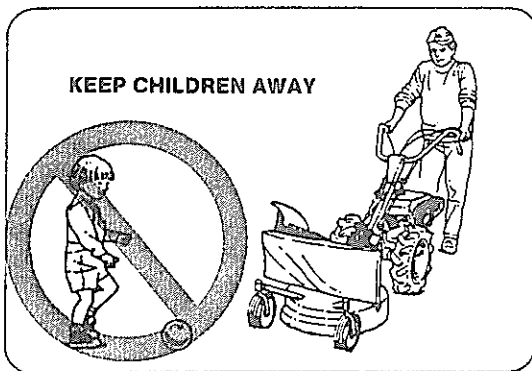
TRAINING

READ THIS OWNER'S MANUAL PRIOR TO OPERATING THE POWER UNITS AND ATTACHMENTS. BCS power units and attachments are designed for operation by properly instructed adults only. Make certain that any person operating this equipment has read this manual.

DO NOT LET CHILDREN OPERATE THE POWER UNIT.

KEEP THE OPERATING AREA CLEAR OF PEOPLE AND ANIMALS. BE CAREFUL THAT CHILDREN DO NOT COME NEAR.

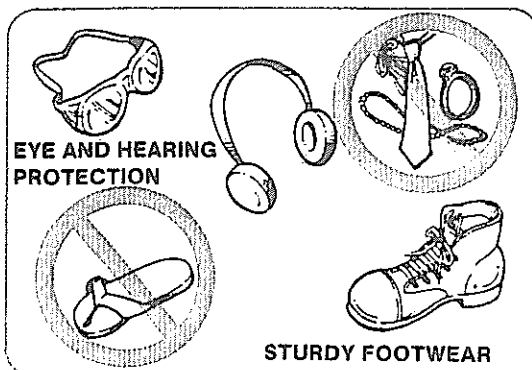
During its storage and whenever the power unit is unattended, render the engine unstartable by disconnecting the spark plug wire from the spark plug.



PREPARATION

Wear appropriately protective clothing and safety protection articles for the climate and type of attachment you are to operate.

1. For all walk-behind applications, wear sturdy non-slip boots or shoes. See recommendations listed for use of a particular attachment. Do not wear open-toed sandals or go barefoot when operating these machines.
2. Wear snug-fitting protective clothing which allows freedom of movement without being loose-fitting. Ties, scarfs, and jewelry which could be caught in the machinery should not be worn.
3. Wear hearing protection.
4. Wear eye protection when operating a snow-thrower, rotary mower, or cutter bar mower attachment.
5. Overexposure to sunlight can be damaging to your eyes and skin. When working in strong sunlight, protect your eyes with sun glasses, and either keep your body covered or apply a sun screen lotion.



Do not operate on terrain where you cannot maintain good footing or where the machine could overturn or slide into you. Walk slowly behind the unit. **DO NOT RUN!**

Thoroughly inspect the area where you are going to mow grass or throw snow. Remove toys, stones, wires, glass, and other objects which could be caught up and thrown by the machine.

Take the following precautions for the safe handling and storage of fuel:

1. Keep fuel supplies in approved type, properly labeled fuel containers.
2. Do not store fuels or fueled units in closed (unventilated) areas or in garages or shops connected to human living quarters. Do not store units or fuel where there are flames or sources of sparks such as electrical appliances and switches.
3. Obey all local regulations for the storage and handling of fuel.
4. Do not smoke when fueling, and do not fuel where the fumes could be ignited by fire or sparks.
5. Do all fueling outdoors over non-flammable surfaces. If fuel is spilled on the unit, wipe the unit dry and properly dispose of the wiping rag. ALWAYS MOVE THE UNIT AT LEAST 10 FEET (3m) AWAY from the fueling spot and fuel supplies before starting the engine.
6. Always remove the engine fuel cap very slowly to equalize tank pressure and avoid spurting of fuel. Keep your face and eyes away from the tank while loosening the fuel cap.
7. Do not fuel a running or hot engine. Do not loosen the fuel cap until the engine has stopped. Then wait several minutes for the engine to cool before pouring fuel.

Before starting the engine, disengage all control levers including the power take-off (PTO) for the attachment.

Never make blade height or any other adjustment to the power unit or any attachment while the engine is running.

OPERATION

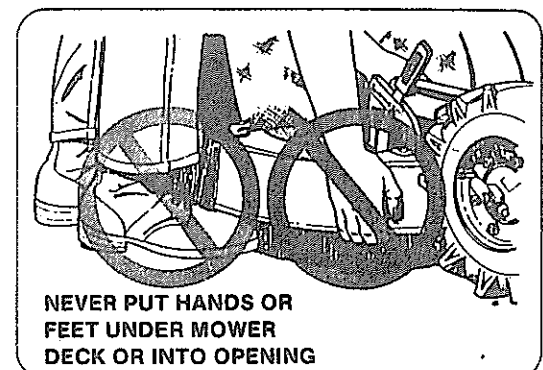
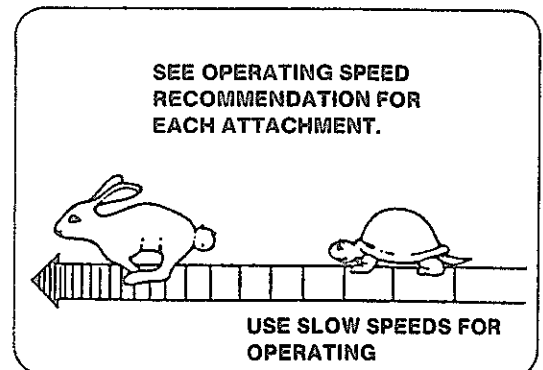
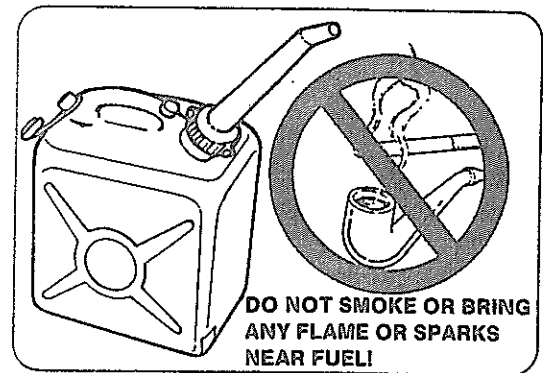
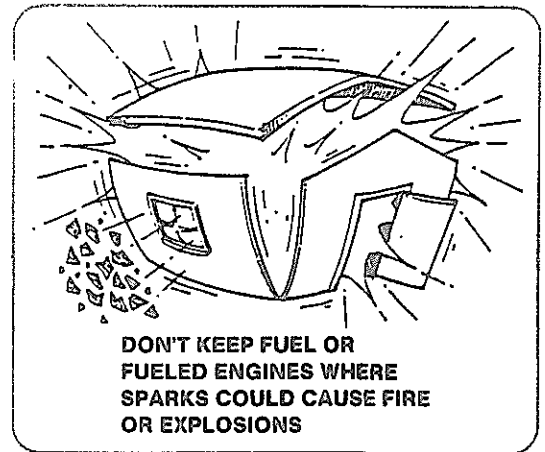
Operate only when there is good visibility. Do not operate at dusk or at night. Do not operate when it is foggy or hazy.

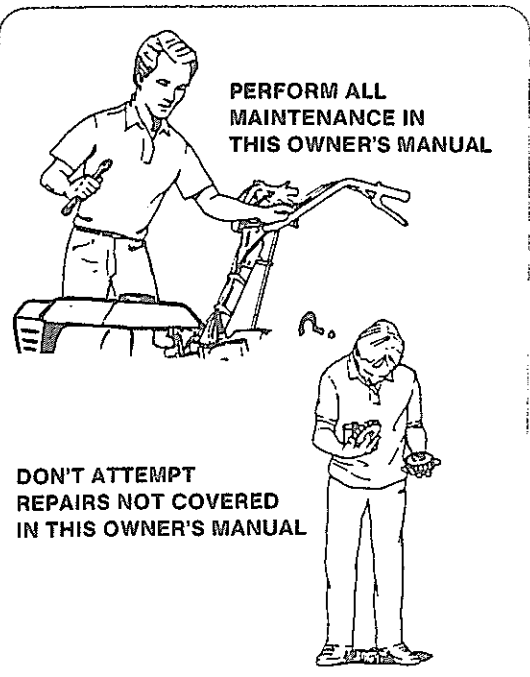
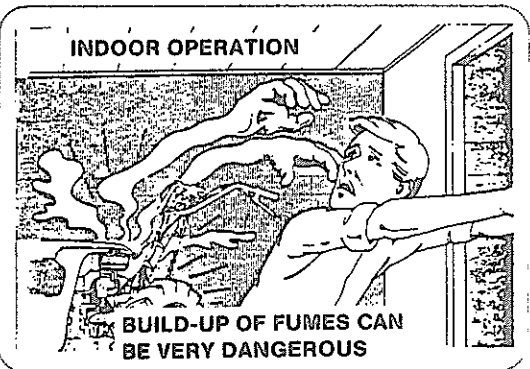
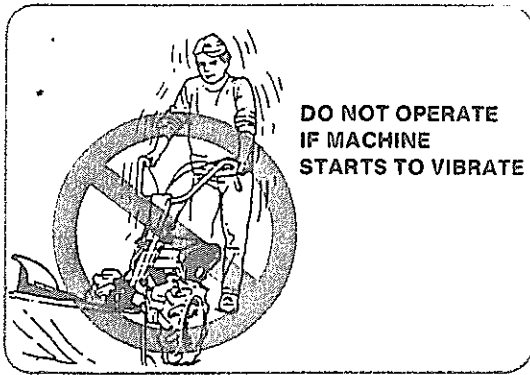
Never change the engine governor setting or overspeed the engine. Use the throttle and gear settings recommended for particular attachments and applications in this owner's manual.

Do not put hands and feet under the mower deck or into the discharge openings of a rotary mower.

Do not put fingers or any other part of the body into the intake or discharge openings of any mower or snow-thrower attachment unless the engine has been rendered unstartable (by disconnection of spark plug wire). Keep machine clean-out holes closed. Stay out of the discharge stream of a mower or snow-thrower.

Always stop operation of a rotary mower, a cutter bar mower, snow thrower, or a tiller before crossing paved or gravel roadways.





Do not make adjustments or repairs to the machine when the engine is running. Shut off the engine, wait until reciprocating or rotating parts of the attachment have stopped, and disconnect the spark plug wire:

1. Before leaving the unit where unauthorized persons may start it accidentally.
2. When a foreign object has been struck or taken into the attachment. Proper operation should be restored before further use.
3. Before cleaning out a clogged attachment such as a rotary mower, cutter bar, or snow-thrower.
4. If the machine suddenly starts to vibrate or run erratically. The entire machine should be inspected by an authorized BCS servicing dealer before further use.

Never back the unit when power to the attachment is engaged. Before using *reverse*, always be sure the PTO (power take-off) to the attachment is disengaged.

Some units have either a *PTO Lockout* or a *PTO/Reverse Lockout*. Both devices ensure against inadvertent engagement of the PTO. Also, the *PTO/Reverse Lockout* prevents operating the attachment during backing of the unit. **DO NOT DISCONNECT** either device or otherwise defeat its purpose.

All safety guards, plates, deflectors, and shields must be in proper position. Do not operate if any safety devices or fastening parts are missing from the unit.

Do not run the engine indoors where deadly poisonous carbon monoxide fumes can collect. If the engine is to be started inside a garage or barn, open the doors and windows wide so the fumes can escape.

MAINTENANCE AND STORAGE

Keep the power unit, engine, and all attachments in safe working condition.

Clean the unit and attachments at regular intervals; also check for damaged or missing parts. Check the tightness of all fasteners.

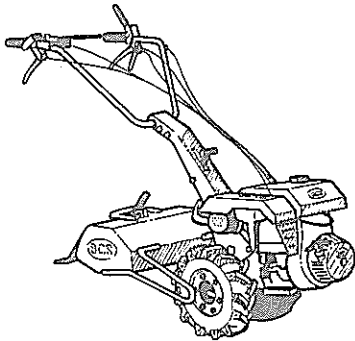
Perform the items of maintenance recommended in this owner's manual. Do not attempt any disassembly and repairs for which instructions have not been furnished. Certain engine adjustments and internal servicing of the engine, power unit, and attachments should be done only by a BCS-trained serviceman at an authorized BCS servicing dealer or distributor.

Do not store the machine with fuel in the system. Disconnect the fuel line at the carburetor inlet and drain the fuel into a fuel container. Then reconnect the fuel line. Start and run the engine until it stops from lack of fuel. Open the drain and drain the float bowl at the bottom of the carburetor.

Store the machine in a well-ventilated place, protected from dampness and the weather.

TILLER PRECAUTIONS

FOR BOTH REAR-TINE AND FRONT MOUNT TILLERS



SPECIAL: TO SET MODEL 205 AS TRACTOR

Do the following to convert the model 205 from a pusher to a tractor for rear-tine tiller operation:

1. Swing the control handle over the PTO end of the unit. (See page 12 for procedure.)
2. Change the reverser on the wheels from the direct drive to the reverse position. This will cause the tractor to move forward in forward gear. (See page 13 for reverser instructions.)

Disengage the PTO before backing the unit. Use slow throttle setting during backing. Never till while backing the unit.

Do not use makeshift accessories in conjunction with the unit or the attachment.

Do not put hands or feet near or under the tiller housing. Keep away from the rotating tines. The tines of the BCS tiller rotate at high speeds independent of the tractor gear speed settings.

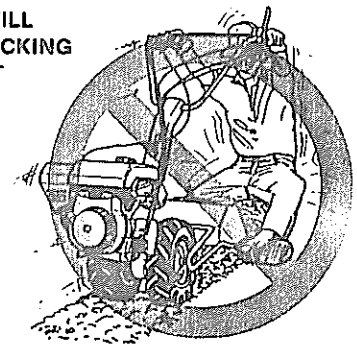
Inspect the area to be tilled. Pick up rocks and other objects of a size which may jam or otherwise interfere with tiller operation.

Till only when there is good light.

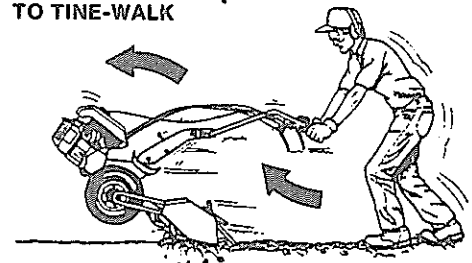
Use caution to avoid slipping and falling. Wear footwear which will improve footing on slippery surfaces.

On hard, rocky or previously untilled soil, set the tiller for minimum soil penetration and use slow throttle and gear settings for the first few passes. **DO NOT LATCH THE CONTROLS.** Keep on the alert in case a hidden obstruction causes the tiller to tine-walk (leap forward). If the unit tine-walks, let go of the controls and it will stop. If you fight to maintain control, you may lose it.

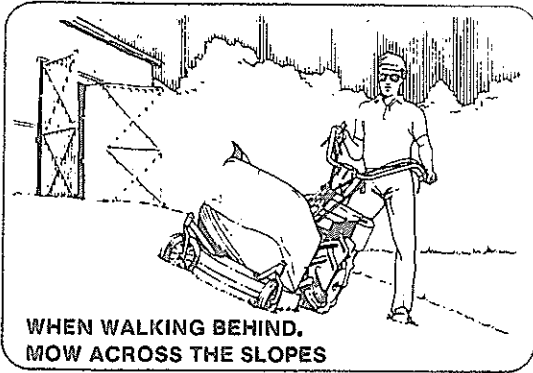
**DO NOT TILL
WHILE BACKING
THIS UNIT**



**OBSTRUCTIONS
CAN CAUSE TILLER
TO TINE-WALK**



ROTARY MOWER PRECAUTIONS



Clear the area to be mowed of all objects (wires, rocks, toys, etc.) which might be picked up and thrown by the mower.

Stay alert for holes, rocks, roots in the terrain, and other hidden hazards. Keep away from drop-offs.

Be especially cautious when changing direction on slopes. When walking behind, mow across the slope, never up and down. Do not mow excessively steep slopes.

Use *slow* throttle setting during backing. If the unit is not equipped with a **PTO/reverse lockout** to prevent simultaneous engagement of *PTO* and *reverse*, **DISENGAGE THE PTO BEFORE BACKING THE UNIT.**

Be careful not to discharge grass in the direction of roadways, houses, vehicles and people.

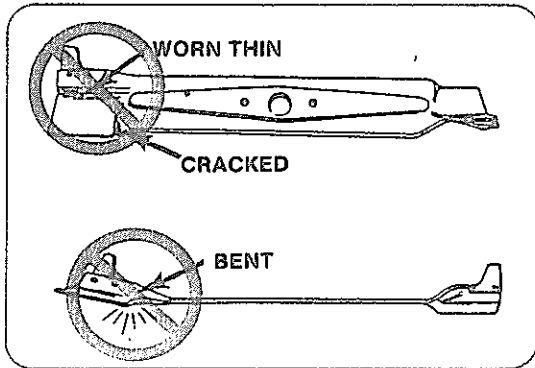
Inspect grass bags frequently for wear and deterioration. Replace grass bags which are not in good condition.

Mower decks designed for grass bags either must have a grass bag in position or must have the discharge opening to the grass bag closed or covered with a baffle.

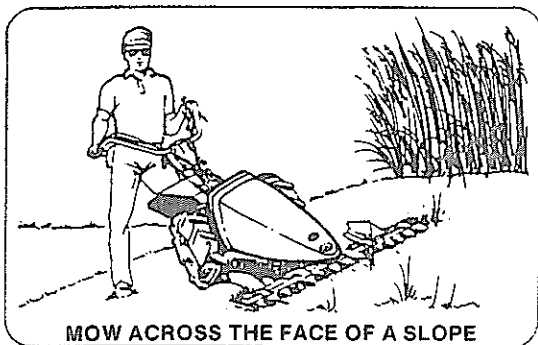
Before removing the grass bag for emptying, disengage the PTO, shut off the engine, and wait until the mower blades have stopped.

Never put hands in any openings of the mower or grass bag when the engine is running. If necessary to clear out the discharge chute with your hands, always first disconnect the spark plug wire.

Keep the mower blades in good condition. Inspect, sharpen, and maintain blades as recommended for mower attachments in Section 4. Replace bent, badly worn blades because pieces breaking off can become projectiles. After they are sharpened, blades should be balanced.



CUTTER BAR MOWER PRECAUTIONS



Cutter bar mowers are designed for mowing over terrain which is too rugged or steep for use of rotary mowers. Use care when mowing hilly terrain. Always mow across the face of a slope, never up and down. Use wheel extenders for added stability. Do not mow excessively steep slopes. Go slowly and carefully on all turns.

Cutter bar mower attachments are intended for walk-behind operation only. Do not operate the mower from a trailer or sulky.

Disengage* the PTO when backing the machine.

If the reciprocating blades become jammed, always shut off the engine, disengage all controls, disconnect the spark plug wire, and wait until all movement stops before attempting to clear the obstruction.

* If a model 204 or 205 has a PTO/reverse lockout, it is impossible to engage **PTO** and *reverse* simultaneously.

SNOW THROWER PRECAUTIONS

Wear protective, trim fitting winter clothing with no scarfs or draw strings which could be caught in the machinery. Wear boots or shoes designed to improve your footing on slippery surfaces. Wear proper eye protection.

When necessary to start the engine indoors and to drive the machine out of the building, keep the doors and windows wide open. Exhaust fumes can be dangerous.

The wooden stick clamped to the outside can be removed and used to deice the inside of the snow thrower. Never put this stick, or your hands, or anything else into the discharge opening or the impeller/collector opening when the engine is running. Severe injury can result from hand contact with a rotating impeller. Hard objects, such as the deicing stick, contacted by the moving blades will be thrown out with great force. Always disengage the PTO, shut off the engine, and wait until all moving parts have stopped before doing the following:

1. Cleaning or deicing the impeller/collector and discharge chute. (If possible, detach snow-thrower and thaw in a warm, dry place.)
2. After striking a foreign object, thoroughly inspect for damage. Make repairs before further operation.

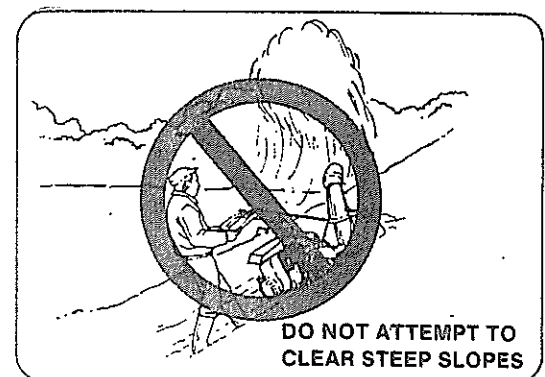
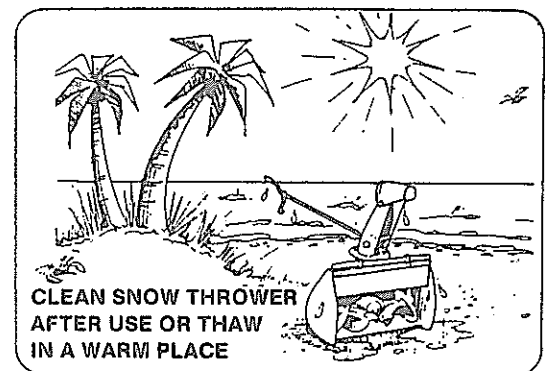
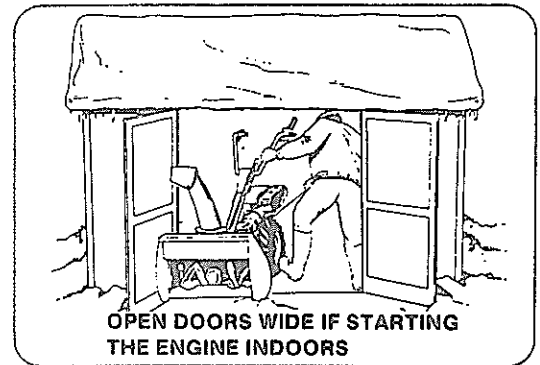
Never use the snow thrower near glass enclosures, automobiles, window wells, drop-offs, etc., without adjusting the discharge angle away from them.

Keep children, pets and observers away.

Do not overload machine capacity by attempting to clear snow at too fast a pace.

Work at slow speeds only. Never use high speed on slippery surfaces, and do not attempt to clear steep slopes.

Use only attachments and accessories (wheels and tires, chains, counterweights, etc.) approved by the manufacturer.



SECTION TWO PREPARING FOR USE

SPECIFICATIONS:

ENGINE

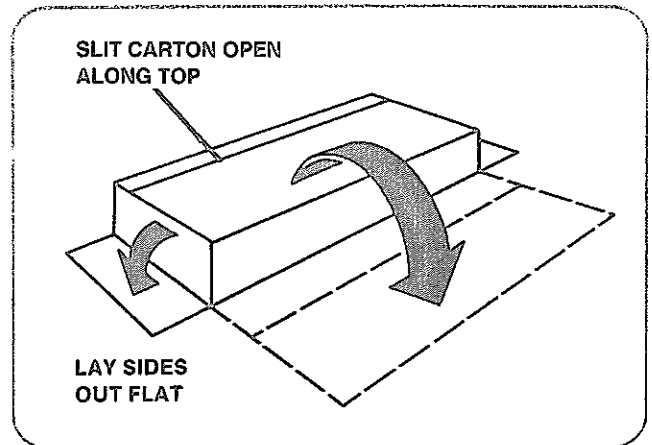
POWER UNIT

MODEL	BCS A-180	BCS A-220
TYPE	4-stroke, air-cooled	4-stroke, air-cooled
DISPLACEMENT	179 cm ³ -10.92 in. ³	220 cm ³ -13.43 in. ³
RATED POWER	3.3 kw-4.5hp	4 kw-5.5hp
MAXIMUM SPEED	377 rad/s-3600 rpm	377 rad/s-3600 rpm
AIR CLEANER	foam filter element	dry cartridge

ITEM	MODEL 201	MODEL 203	MODEL 204	MODEL 205
ALL-GEAR TRANSMISSION Constant mesh Gears: Forward Reverse	1 Free-wheeling, no reverse	1 Free-wheeling, no reverse	2 1	2 1
Speed (mph) No. 1 No. 2 Reverse	0.75 — —	1.7 — —	1.7 3.7 2.0	Rear Mount: 0.6 0.9 0.7 Front Mount: 1.7 2.7 2.0
POWER TAKE-OFF (PTO) Rotation at highest peak with engine at 3600 rpm Type Attaching method	920 rpm Independent Spring-loaded couplers	920 rpm Independent Spring-loaded couplers	920 rpm Independent Spring-loaded couplers	920 rpm Independent Spring-loaded couplers
WHEELS & TIRES Size Reverser/reducer Tread Track Width	3.50-6 No Tractor 340mm—13.4 inches	3.50-6 No Turf or tractor 340mm—13.4 inches	3.50-6 No Turf or tractor 340mm—13.4 inches	3.50-6 Yes Tractor 360mm—14 inches
WEIGHT (lbs.)	88	86	88	115
DIMENSIONS (inches) Height Width Length	With rear tine tiller 35"—45" 20" 63"	With cutter bar 35"—46" 20" 59"	With cutter bar 35"—46" 21" 59"	With rear tine tiller 28"—42" 21" 63"
CAPACITIES (qts.) Fuel tank Transmission Crankcase	2.72 1.40 0.60	2.72 1.40 0.60	2.72 1.40 0.60	2.72 1.40 0.60
RUNNING TIME (@ 3600 rpm)	Up to 2.5 hrs.	Up to 2.5 hrs.	Up to 2.5 hrs.	Up to 2.5 hrs.

UNPACKING

1. The wheels and control handle were removed for shipping and must be reassembled to the unit. Cut the tape and remove staples at top of the carton. Slit it open and lay the side out flat.
2. Remove the unit, the wheels, and the control handle. (Be careful not to bend the cables.)
3. The fastening parts for assembly of wheels and control handle have been placed on the unit in the holes where they are to be installed.



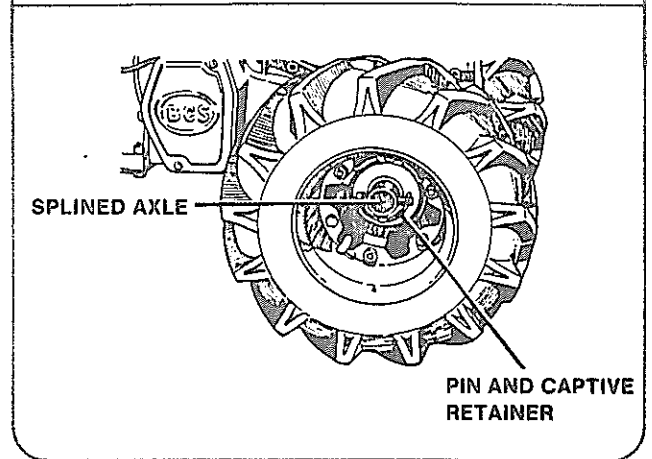
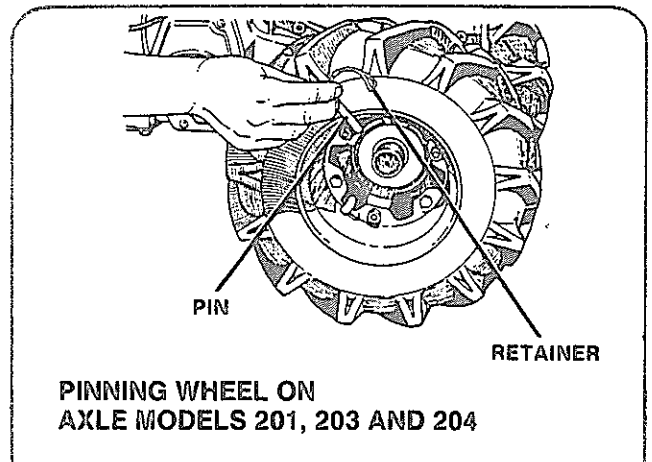
ASSEMBLING THE UNIT

INSTALL THE WHEELS

NOTE

The standard wheel has 3.50-6 tractor Vee tread tires. Other wheel and tire combinations are optional. The Vee tread should point in the direction most often used.

MODELS 201, 203 and 204: Pins with captive retainers hold the wheels in place on the axle. Unhook the retainers and remove the pins. Slide the wheels onto the axle and install the pins. Secure each wheel by hooking the retainer over the pin. (See drawing.)



MODEL 205: Remove the three nuts and lock washers from each wheel-mounting flange. Mount the wheels in place and secure each with three lockwashers and nuts.

Model 205 wheel assemblies have a planetary gear reverser device. The device has three settings:

- DIRECT DRIVE for pusher operation
- DISENGAGED for free-wheeling
- REVERSED DRIVE (through planetary gears) for tractor operation

See instructions (page 13) for setting the reverser.

