# Broce Broom

BB250 Self Propelled Multi Purpose Sweeper

# SERVICE -MAINTENANCE & PARTS MANUAL





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#### BROCE MANUFACTURING CO.

1460 South Second Ave. Dodge City, Ks. 67801 PHONE# 316-227-8811 FAX# 316-227-3012

#### WARRANTY

The Broce Manufacturing Co. warrants to the original purchaser it's new product to be free from defects in material and workmanship for a period of six months, after date of delivery, to original purchaser. The obligation of the company is limited to repairing or replacing any defective part returned to the company and will not be responsible for consequential damages or any further loss by reason of such defect.

The Broce Manufacturing Co. will be responsible for the cost of replacement parts that are covered by the approved warranty policy and for the authorized labor costs incurred in the repair or replacement of defective parts for a period of three months. The last three months are for warranty on parts only. The parts that are supplied to Broce Manufacturing are covered by the warranty that the supplier allows to Broce Manufacturing.

This warranty does not obligate Broce Manufacturing to pay for damages that may happen to the machine while it is in transit, from job to job, unless it is evident that it was caused by a defective part. Alterations to the machine that are not either approved by or performed by Broce Manufacturing are not to be considered a warranty item.

Machines that are damaged in shipment need to be addressed before the trucking company leaves the place of delivery. Broce Manufacturing needs to be notified by phone so we know who is responsible and it is agreed to between the customer and Trucking Co. A phone call, plus a note and signature must appear on bill of lading agreeing to the damages. Signing the bill of lading can release responsibility of the delivering company of damages. It is the dealer and/or customer receiving the machine who is responsibility for making sure it is damage free when delivered.

Any part or product that shows damage due to improper operation will not be covered. Including damage due to shipment, abuse, neglect, improper maintenance or modification to the machine.

Normal start-up services, normal maintenance services and adjustments usually performed by the selling dealer, factory service representative and/or customer personnel are not covered under warranty.

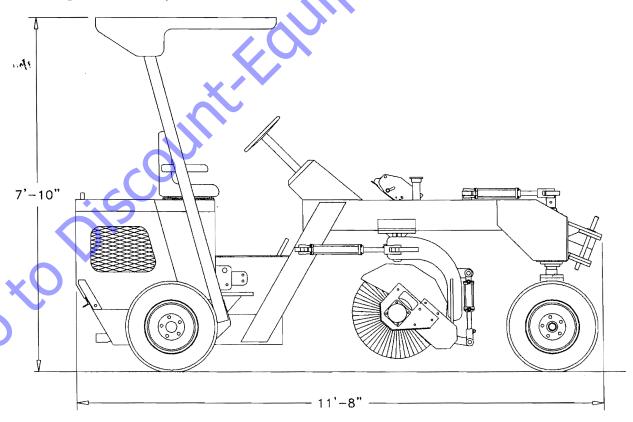
This warranty and foregoing obligations are in lieu of all liabilities including negligence and all warranties of merchantability or otherwise expressed or implied in fact or by law.



### MODEL BB-250

### Specification Sheet

Engine Horse Power	37 H.P.
Machine Weight	3,000 LB
Machine Weight wafers UF+ -38 Broom Size Wafers _8F+ -52	3,600 LB w/Water System
Broom Size WHTERS 8F1-52	6 3/8" ID X 24" OD
Broom Length	Full 8 FT
Broom Drive	Dual Hydraulic Motors
Broom Angle	$_{\perp}$ $_{\perp}$ $_{\perp}$ Full 40° (both ways)
Steering	<b>\( \langle 60° (both ways)</b>
Fuel Capacity	9 GAL
Hydraulic Oil Capacity	15 GAL
Speed	0 to 8 M.P.H.
Inside Sweeping Radius	5 FT
Optional Water System	72 GAL



### STANDARD EQUIPMENT ON ALL UNITS

- SAFETY YELLOW PAINT
- ▶ 8' STEEL CORE W/6 3/8" X 24" POLY CONVOLUTED WAFERS
- > CERTIFIED ROLL-OVER PROTECTION STRUCTURE & CANOPY
- > SEAT BELTS & REVERSE ALARM
- ➢ POWER STEERING
- > 2-WHEEL HYDRAULIC DRUM BRAKES W/MANUAL PARKING BRAKE
- 37 H.P. 4-CYLINDER KUBOTA DIESEL ENGINE
- 2" BALL TOW HITCH W/SURGE BRAKES & TOW LIGHTS
- > GAUGE PACKAGE INCLUDES; OIL, WATER, ALTERNATOR, FUEL GAUGE & HOUR METER
- ▶ P185/70R13 RADIAL TIRES
- > EATON HYDRAULIC TRANSMISSION

### **OPTIONAL EQUIPMENT**

- □ 2 5/16" BALL HITCH OR PENTLE EYE HITCH
- □ 70 GAL WATER SPRINKLER SYSTEM
- □ AMBER BEACON LIGHT
- □ AMBER STROBE LIGHT
- FRONT WORK LIGHTS & REAR TAIL LIGHTS
- REAR WORK LIGHTS (2 Single Beam)
- TURN SIGNAL & WARNING LIGHTS
- □ PAINT (Other than standard Safety Yellow)

### START UP & PROPELLING



CAUTION: OPERATOR MUST BE SEATED WITH SEAT BELT PROPERLY SECURED WHILE ENGINE IS RUNNING.

This model of broom is hydrostatically driven. The directional control is achieved through the use of a hydraulic control valve lever on the left side of the operator's seat. When the lever is forward, the broom is in forward gear, when it is back, the broom is in reverse gear. Motion is achieved by depressing the foot pedal on the floor board to the right of center. Letting the foot pedal up will result in a braking action caused by the hydraulic system. This is the proper method for braking on this machine. The brake pedal on the left side of the floor board should not have to be used except in cases where the engine has died or there is a problem with the hydraulic system.



CAUTION: BEFORE STARTING ENGINE, BE SURE PARKING BRAKE IS SET, (PULLED ALL THE WAY FORWARD), LEFT FOOT IS ON THE BRAKE PEDAL AND RIGHT FOOT DOES NOT CONTACT THE CONTROL PEDAL.

- 1. Turn the key switch to the start position, all the way to the right. Add fuel as necessary using the hand operated locking throttle near the lower right side of the dash. Release the key switch when the engine starts. Do not use ether (STARTING FLUID) in this engine, severe engine damage will occur.
- 2. Choose the desired direction of travel, forward or reverse. Use the control valve lever on the left side of the seat for the desired direction. Push the lever forward, to go forward and back to go in reverse.
- 3. After the desired direction has been selected, raise engine R.P.M. to about half throttle. Release parking brake. Slowly depress control pedal and adjust the engine to the desired travel speed. Speed can also be varied by the distance the control pedal is depressed.



CAUTION: DO NOT REVERSE THE DIRECTION OF TRAVEL WHILE THE BROOM IS IN MOTION. THIS WILL DAMAGE THE DRIVE COMPONENTS AND VOID THE WARRANTY. THIS TYPE OF OPERATION IS CONSIDERED TO BE ABUSE.

4. To stop the engine, turn the key back to the center position. The parking brake must be set prior to leaving the operator's seat.

### TOWING PROCEDURES

- 1. Before towing this machine check the following:
  - A. The tires should be inflated to 32 PSI and be in good condition.
  - B. Any loose items on the machine should be removed of secured so that there is no chance of losing anything on the road.
  - C. Check to see that all the lug nuts/bolts are tight on the wheels and that the wheels are in good condition.
- 2. The Parking Brake must always be set before starting to hook up the machine to a towing vehicle. The Parking Brake must also be set before starting to unhook the machine from a Towing Vehicle.
- 3. Swing the Tow Hitch around in front of the machine and pin into place using the tow hitch pin provided. Make sure the pin has a clip in it to keep it from working out of position.
- 4. Rotate the jack to a vertical position and jack the machine up to a height that is sufficient for hooking up the towing vehicle.
- 5. Let the hitch down on the towing vehicle ball (A 2" BALL IS REQUIRED FOR TOWING) and make sure it is secure.
- 6. Attach the tow hitch to the towing vehicle with a safety chain. Check the local, state and/or federal regulations that apply to the area you are in for information about the type and size of safety chain that is required for your particular situation.
- 7. Unlock hubs on the rear wheels of the machine so that it will roll freely without turning the hydraulic motors.
- 8. Let the jack down and position it at 90° on the side of the tow hitch. Pin the jack in place. Make sure the front wheel of the machine has sufficient ground clearance before towing.
- Hook up the lights and make sure they are in good working order.
- 10. Release the Parking Brake. Pull the machine a short distance and make sure the machines brakes are not dragging. If they are, adjust and/or repair them so that they will work effectively when needed.

Note: When the machine is to be unhooked from the towing vehicle, set the Parking Brake and proceed to unhook the machine in the same manor as it was hooked up, except in reverse order.

Note: The speed at which this machine is towed depends on road conditions and the personal judgement of the individual in charge. Broce Manufacturing Co. will not be responsible for neglect or poor judgement at anytime during machine operation and/or towing of the machine.

### OPERATION OF THE SWEEPING CORE

All functions of the sweeping core are hydraulically operated. Three control valve handles are mounted to the right of the operator's seat for controlling these functions. The front inside handle controls the core height. The front outside handle controls the angle of the core. The rear handle controls the operation of the core motors.

#### RAISE / LOWER / FLOAT DETENT

To raise the core, move the front inside handle to the back, "RAISE," position until the core is raised all the way. The handle will return to the hold position and core height will be maintained. To lower the core during normal sweeping conditions, move the handle to the front, "FLOAT DETENT," position. The "FLOAT" position will allow the core to maintain the ideal contact with the road while allowing it to float over bumps or contours in the road surface. This valve is equipped with a feature called "POSITIVE DOWN PRESSURE." It should only be used under the heaviest sweeping conditions. The down pressure adjustment is located between the hold position and the float detent. To adjust the core height downward, slowly move the handle from the hold position to the lower position. The core will begin to move downward. Release the handle when the desired height has been achieved.

**NOTE:** The operator must maintain continuous adjustment on the core while the down pressure option is being used. This feature does not allow the core to float over contours in the road surface. Therefore, the operator must constantly make these adjustments. If the broom core is forced to close to the ground, the bristles will not have the "flicking" action which is necessary to do a proper sweeping job. This is why we recommend using the float detent during all but the heaviest sweeping conditions.



CAUTION: OVER USE OF THE POSITIVE DOWN PRESSURE FEATURE WILL CAUSE EXCESSIVE WEAR AND SHORTEN THE LIFE OF THE BROOM.

### RIGHT/LEFT ANGLE

The core may be set at any angle from 40° left to 40° right. Move the front outside a handle to the forward, "LEAVES' position, to angle the core to the left and to the rear, "RIGHT' position, to angle to the right. Release the handle when the desires angle is achieved.

#### BROOM ON / BROOM OFF

The core motor is activated when the handle to the right and back of the seat is moved to the rear, "ROTATION ON' position and turned off when the handle is moved froward, "ROTATION OFF" position.

**NOTE:** Engine speed should be at full R.P.M. for sweeping operations. Lower engine R.P.M.'s will exert abnormal stress on the engine and related hydraulic components which will result in a shortened life span of these items.

### **SWEEPING TIPS**

- 1. If the broom starts to hop or bounce, the propelling speed is too high. Slow the machine down, but maintain high engine speed. This will allow you to do a good job on the first pass and you will not need to go over it again.
- In areas where the dirt is caked, try to clean the sweeping surface by going over it a second or third time. If this does not clear the dirt, use the Positive Down Pressure feature, although in most cases, the float position will yield the best results.
- 3. When changing the direction of travel, for example, backing up to sweep a spot which was not cleared the first time, always allow the machine to come to a complete stop before moving the shift lever in the opposite direction. This will help eliminate break downs and costly down time.
- 4. If the dust cloud becomes so thick that your vision is obscures and you can't see the road, use the water sprinkling system (if installed) or stop the machine until the dust clears. If possible, angle the sweeper so that the dust and debris is swept downwind.
- 5. Always wear eye protection, hearing protection and some sort of dust filter over your mouth and nose.

CAUTION: THE OPERATOR MUST BE AWARE, AT ALL TIMES, OF ANY PEOPLE, VEHICLES OR ANY OTHER OBJECTS WHICH MIGHT BE IN THE PATH OF FLYING DEBRIS FROM THE SWEEPER. THE SWEEPER CAN THROW SMALL ROCKS AND OTHER OBJECTS SEVERAL FEET. THIS DEBRIS CAN CAUSE SERIOUS INJURY TO PEOPLE AND DAMAGE TO PROPERTY.

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ALWAYS ENSURE THAT THE AREA AROUND AND IN FRONT OF THE BROOM CORE ARE FREE OF OBSTRUCTIONS BEFORE ADJUSTING BROOM ANGLE OR ACTIVATING CORE.

### EXTENDING BRUSH LIFE

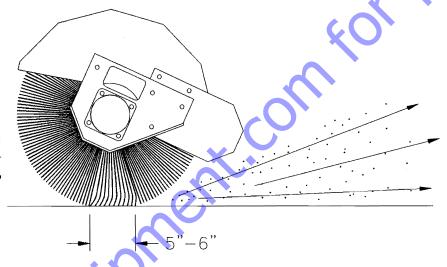
#### **BRUSH DOWN PRESSURE**

Most problems of rapid wear, bristle breakage and loss are attributed to excessive down pressure. If the proper down pressure is used, the sweeping efficiency will improve and bristle life will be extended considerably. More down pressure does not give a result of better sweeping. The broom gets its sweeping action by the flicking action of the bristles.

Broce Brooms are equipped with a float detent control valve. This function should be used as often as possible for optimum sweeping and longer brush life.

When too much down pressure is used, the side of the bristle is in contact with the working surface and very little flicking action is present to give a good clean sweep.

Set broom down pressure to maintain sweeping pattern as shown, approximately 5-6 inch width.



#### KEEPING BROOM LEVEL

Running the broom core out of level will result in a poor sweeping job and a shortened wafer life. Check the broom core for levelness every day it is to be used.

There are three things to look for if the broom core is not level.

- 1. Make sure both of the rear tires are inflated to the same pressure. Both rear tires should be the same brand and size to help in keeping the machine level.
- 2. Check the frame and make sure it is not bent.
- 3. Make sure the hanger bearing hub bolts are tightened evenly and the hub bearings are adjusted properly.

#### PROPER GROUND SPEED

Rotary sweepers work best when they use a flicking action of the bristles. The broom can sweep debris to a depth of ½ the diameter of the brush or to the point where the frame or a shield is in contact with the debris and causes a restriction in the natural sweeping process. If the ground speed is too fast the debris may build up in front of the brush causing a wind row effect. This wind row effect will put excessive side pressure on the bristles and they will break off at the metal ring that holds them in place.

Always sweep at a brush rotation speed that is high enough and a ground speed that is low enough to discharge the debris effectively and result in a clean sweeping job.

### MACHINE OPERATION AND SAFETY GUIDELINES

- 1. Read all decals and manuals before starting and/or operation this machine.
- 2. Do not operate or make any adjustments or repairs to the machine if parking brake will not hold machine from rolling. If the parking brake will not keep the machine from rolling adjust, repair or replace it before operating, adjusting or repairing the machine.
- 3. Always set parking brake before starting and after stopping engine on the machine. The parking brake should be set each time the operator disconnects his seat belt and leaves the operating position.
- 4. Always wear appropriate protective eye wear while operating, adjusting and servicing this machine and while working within 100' of this machine.
- 5. Do not operate this machine if any person is within operating range of this machine and if any person within 100' of the machine is not wearing appropriate eye protection and safety attire.
- 6. Always disengage both rear wheel lockouts before any adjustments or repairs are made and before towing machine.
- 7. Do not make operational adjustments or repairs to this machine with the machine running if the operator is not in the operator's seat with the seat belt fastened, with the parking brake set and with both rear wheel lockouts disengaged.
- 8. Before starting this machine, always inspect the springs on the Variable Speed Pedal to be sure they are both adjusted to the proper tension and are not broken. The springs can be found under the floor plate on the right hand side of the broom. <u>DO not start and or attempt</u> to operate the machine if one of these springs are out of adjustment or broken!
- 9. Always follow industry accepted safety practices while operating or making any repairs and adjustments to this machine.
- 10. Do not tow this machine with any vehicle that does not meet or exceed all federal, state and local laws for vehicle GVW, trailer hitch and lighting requirements for all of the states in which you operate this machine.
- 11. Do not operate this machine when any person is within 100 feet of the discharge area of the sweeper broom.
- 12. Do not change direction of this machine from forward to reverse or reverse to forward before first coming to a complete stop.
- 13. Tow this machine only when the front wheel has sufficient clearance between the tire and the road surface when hooked up to a towing vehicle. Be particularly cautious when going through dips and ditches.
- 14. Use and attach only those Tow-Bar safety chains as recommended by federal, state and local laws.

### MACHINE OPERATION AND SAFETY GUIDELINES

- 15. Do not start, service, operate or make any adjustments to this machine before you have read and fully understood all of this manual.
- 16. Familiarize yourself with all operation and safety decals before operating this machine.

### OPERATIONAL AND SAFETY DECALS

A WARNING A

USE PROTECTIVE
EYE-WEAR
WHILE SWEEPING

#### ATTENTION OPERATOR

THIS SWEEPER IS EQUIPPED WITH ADJUSTABLE BROOM CORE DOWN PRESSURE. THIS FEATURE SHOULD BE USED ONLY UNDER THE HEAVIEST SWEEPING CONDITIONS.

OVERUSE OF THIS FEATURE WILL CAUSE EXCESSIVE WEAR AND SHORTEN THE LIFE OF THE BROOM.

THE "FLOAT" POSITION SHOULD BE USED DURING NORMAL SWEEPING CONDITIONS.

A WARNING A

DO NOT START ENGINE WITH CONTROL PEDAL DEPRESSED.

HYDRAULIC OIL KEEP CLEAN

CAUTION KEEP HANDS CLEAR OF FAN BLADE A WARNING A

OPERATOR MUST BE SEATED WITH SAFTY BELT PROPERLY ADJUSTED & SECURE WHEN ENGINE IS RUNNING

WATER
SERVICE INLINE STRAINER AND
SPRAY NOZZLES FREQUENTLY

TIE DOWN POINT

### **OPERATIONAL AND SAFETY DECALS**





#### THROWN OBJECT HAZARD KEEP AWAY

- •To prevent serious injury or death from thrown objects:
- •Stay away from discharge area during operation. Keep others away.
- Do not point discharge toward people animals or property.



### CHECK ALL OF THE FOLLOWING BEFORE TOWING

- Always set the Parking Brake while hooking & unhooking to the towing vehicle.
- 2. Tow bar pins & clilps are in place.
- 3. Ball hitch is secure.
- 4. Safty chain is in place.
- Rear hubs are locked out.
- 6. Front wheel has sufficient ground clearance when hooked to a truck and jack is up.
- 7. All lights are hooked up and working.

### A WARNING A

STAND CLEAR WHEN IN USE!

FLYING OBJECTS

### A WARNING A

### TOWING INSTRUCTIONS

- 1. SET PARKING BRAKE AND TURN OFF ENGINE.
- 2. PIN TONGUE IN TOWING POSITION AND CONNECT TO TOWING VEHICLE.
- 3. ATTACH SAFETY CHAIN AND LIGHTS.
- 4. DISCONNECT RH AND LH LOCK OUT HUBS.
- 5. RELEASE PARKING BRAKE BEFORE TOWING.

### HYDRAULIC OIL

USE MOBIL FLUID 423 OR EQUIVALENT

DO NOT CONTAMINATE SYSTEM

TAKE EXTRA PRECAUTIONS WHEN PREFORMING MAINTENANCE OR REPAIRS ON THIS SYSTEM. CONTAMINATION (DIRT ETC.) WILL CAUSE DAMAGE TO THE HUDRAULIC PUMP AND/OR MOTOR.

IF PUMP OR MOTOR FAILURE OCCURS, THE ENTIRE SYSTEM MUST BE FLUSHED PRIOR TO INSTALLATION OF REPAIRED COMPONENTS. THE OIL IN THE MACHINE AT THE TIME OF FAILURE WILL CONTAIN METAL SHAVINGS THAT MAY CAUSE FURTHER DAMAGE.



STAND CLEAR!
PINCH POINT!

### OPERATIONAL AND SAFETY DECALS



### WARNING



#### AVOID DEATH OR INJURY

### BEFORE STARTING OR OPERATING THIS MACHINE

- 1. Make sure Parking Brake is set before starting machine, dismounting machine and before turning off engine.
- 2. Fasten seat belt around operator.
- 3. Set forward—reverse lever to neutral.
- 4. Set broom rotation lever to "OFF".
- 5. Wear eye protection.



- 1. Read Operators Manual before using machine.
- 2. Before servicing, adjusting, repairing and unplugging, always stop engine, place all controls in neutral, set park brake, remove iginition key and wait for all moving parts to stop.
- 3. Install and secure all guards before starting.
- 4. Keep hands, feet, hair and clothing away from moving parts.
- 5. Do not allow riders.
- 6. Keep all hydraulic lines, fittings and couplers tight and free of leaks before using.
- 7. Clean reflectors, SMV and lights before transporting.
- 8. Set park brake and block wheels before working beneath components.
- 9. Install safety chain when attaching to towing wehicle.
- 10. Keep away from overhead electrical lines. Electrocution can occur without direct contact.
- 11. Review safety instructions with all operators annually.

### MACHINE OPERATION CONTROLS LOCATION

ITEM	LOCATION	FUNCTION		
1. Seat Belt	Left and right side of seat.	To prevent operator from falling off machine.		
2. Parking/Emergency Brake	Left of seat and back.	To hold machine from rolling when parked and in neutral. To be used for energency stopping of machine.		
3. Variable Speed Control	Forward and to the right on the floor plate. For operatiog with the right foot.	Varies machine speed in forward and reverse when the Forward and Reverse lever is actuated.		
4. Forward/Reverse lever	Located to the left of the operators seat.  FORWARD	A. Forward positon allows machine to travel forward when varible speed pedal is depressed.		
	• NEUTRAL	B. Center position does not locks machine in park (always use Parking Brake when in this position).		
×	REVERSE	C. Rear position allows unit to travel in reverse when the variable speed pedal is depressed.		
5. Keyswitch	Centrally located below the steering wheel.	Preheats engine glow plugs when turned and held in full left position, starts engine when turned and held in full right position. First notch position from full right is the Run position and second notch position from full right is the Off position.		
6. Broom Rotation	Located to the right and back of the seat.  ROTATION OFF ROTATION ON	When pushed back, broom sweeps forward, when in forward position, broom stops.		

### MACHINE OPERATION CONTROLS LOCATION

ITEM	LOCATION	FUNCTION		
7. Broom Left to Right Angle Control	Outside lever to the right of the operators seat.	When pushed forward, right end of broom moves toward front, when pulled back, right end of broom moves back.		
8. Broom Lift Control  9. Engine Throttle Cable Knob	Inside lever to the right of the seat.  FLOAT  LOWER  RAISE  To right of and below the steering wheel.	A. When pushed all the way forward to FLOAT, detent position, broom core goews to a lowered float (desired operationg position).  B. When pushed forward to the LOWER position, broom core will excert down presure on the sweeping surface (not the normal operating position).  C. When lever is pulled back to the RAISE position, broom core raises off the sweeping surface.  To set engine operating speed.		
	12			

#### MACHINE SERVICE AND SAFETY GUIDELINES

- 1. Read all decals and manuals before starting and operating this machine.
- 2. Do not operate or make any adjustments or repairs if the Parking Brake does not hold machine. Repair the Parking Brake first, before making any other repairs or adjustments to this machine.
- 3. Always set Parking Brake before starting and after stopping engine on this machine.
- 4. Do not operate this machine if any person is within operating range of machine and if any person within 100 feet of machine and is not wearing appropriate eye protection and safety attire.
- 5. Always disengage both rear wheel lockouts before making any adjustments or repairs to the machine and before towing machine.
- 6. Do not make operational adjustments or repairs to this machine with the machine running if the operator is not in the operator's seat with seat belt fastened, with Parting Brake set and with both rear wheel lockouts disengaged.
- 7. Before starting this machine, always inspect both (2) Variable-Speed-Pedal return springs located on the right side of the machine below the floorboard. Do not start or operate this machine if both (2) Variable-Speed-Pedal return springs are not in place and functional.
- 8. When servicing any component of the engine starting circuit on this machine including the battery, always <u>DISCONNECT THE NEGATIVE CABLE FIRST</u>.
- 9. Always wear protective eye wear and safety attire when servicing battery.
- 10. When connecting battery cables always CONNECT THE POSITIVE CABLE FIRST.
- 11. Do not "JUMP START" this machine under any circumstances. If the battery power is low, remove the battery and replace it with a battery that has a full charge.
- 12. Under no circumstances is ether (STARTING FLUID) to be used when trying to start the engine in this machine. Severe engine damage will occour if ether is used.
- 13. Always follow industry accepted safety practices while operating or making any repair and adjustments to this machine.
- 14. Do not tow this machine with any vehicle that does not meet or exceed all federal, state and local laws for vehicle GVW, trailer hitch and lighting requirements for all of the areas in which you operate this machine.
- 15. Tow this machine only when the front wheel has sufficient clearance between the tire and the road surface when hooked up to a towing vehicle. Be particularly cautious when going through dips and ditches.
- 16. Use and attach only those tow-bar safety chains as recommended by federal, state and local laws.
- 17. Do not start, service, operate or make any adjustments to the engine or the machine itself before you have read and fully understood all of the manuals.

#### MACHINE SERVICE AND SAFETY GUIDELINES CONTINUED



USE PROTECTIVE
EYE-WEAR
WHILE SWEEPING

#### ATTENTION OPERATOR

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OVERUSE OF THIS FEATURE WILL CAUSE EXCESSIVE WEAR AND SHORTEN THE LIFE OF THE BROOM.

THE "FLOAT" POSITION SHOULD BE USED DURING NORMAL SWEEPING CONDITIONS.

### A WARNING A

DO NOT START ENGINE WITH CONTROL PEDAL DEPRESSED.

### HYDRAULIC OIL KEEP CLEAN

### CAUTION KEEP HANDS CLEAR OF FAN BLADE



OPERATOR MUST BE SEATED WITH SAFTY BELT PROPERLY ADJUSTED & SECURE WHEN ENGINE IS RUNNING

### WATER

SERVICE INLINE STRAINER AND SPRAY NOZZLES FREQUENTLY

### TIE DOWN POINT

### 1 WARNING 1

#### TOWING INSTRUCTIONS

- 1. SET PARKING BRAKE AND TURN OFF ENGINE.
- 2. PIN TONGUE IN TOWING POSITION AND CONNECT TO TOWING VEHICLE.
- 3. ATTACH SAFETY CHAIN AND LIGHTS.
- 4. DISCONNECT RH AND LH LOCK OUT HUBS.
- 5. RELEASE PARKING BRAKE BEFORE TOWING.

### HYDRAULIC OIL

USE MOBIL FULID 423 OR EQUIVALENT
DO NOT CONTAMINATE SYSTEM

TAKE EXTRA PRECAUTIONS WHEN PREFORMING MAINTENANCE OR REPAIRS ON THIS SYSTEM. CONTAMINATION (DIRT ETC.) WILL CAUSE DAMAGE TO THE HUDRAULIC PUMP AND/OR MOTOR

IF PUMP OR MOTOR FAILURE OCCURS, THE ENTIRE SYSTEM MUST BE FLUSHED PRIOR TO INSTALLATION OF REPAIRED COMPONENTS. THE OIL IN THE MACHINE AT THE TIME OF FAILURE WILL CONTAIN METAL SHAVINGS THAT MAY CAUSE FURTHER DAMAGE.

#### MACHINE SERVICE AND SAFETY GUIDELINES CONTINUED





#### THROWN OBJECT HAZARD KEEP AWAY

- •To prevent serious injury or death from thrown objects:
- •Stay away from discharge area during operation. Keep others away.
- Do not point discharge toward people animals or property.



STAND CLEAR
WHEN IN USE!
FLYING OBJECTS

### A WARNING A

#### AVOID DEATH OR INJURY

BEFORE STARTING OR OPERATING THIS MACHINE

- Make sure Parking Brake is set before starting machine, dismounting machine and before turning off engine.
- 2. Fasten seat belt around operator.
- 3. Set forward-reverse lever to neutral.
- 4. Set broom rotation lever to "OFF".
- 5. Wear eye protection.

### A WARNING A

### CHECK ALL OF THE FOLLOWING BEFORE TOWING

- Always set the Parking Brake while hooking & unhooking to the towing vehicle.
- Tow bar pins & clilps are in place.
- 3. Ball hitch is secure.
- 4. Safty chain is in place.
- 5. Rear hubs are locked out.
- 6. Front wheel has sufficient ground clearance when hooked to a truck and jack is up.
- 7. All lights are hooked up and working.

### A CAUTION

- 1. Read Operators Manual before using machine.
- Before servicing, adjusting, repairing and unplugging, always stop engine, place all controls in neutral, set park brake, remove iginition key and wait for all moving parts to stop.
- 3. Install and secure all guards before starting.
- 4. Keep hands, feet, hair and clothing away from moving parts.
- 5. Do not allow riders.
- Keep all hydraulic lines, fittings and couplers tight and free of leaks before using.
- 7. Clean reflectors, SMV and lights before transporting.
- 8. Set park brake and block wheels before working beneath components.
- 9. Install safety chain when attaching to towing wehicle.
- 10. Keep away from overhead electrical lines. Electrocution can occur without direct contact.
- 11. Review safety instructions with all operators annually.

### LUBRICATION AND MAINTENANCE

- 1. Grease two steering shaft bearings at the front of the machine every day.
- 2. The <u>front wheel bearings</u> should be cleaned and packed every six months.
- 3. The <u>tires</u> on the front and rear of the machine should be kept at 32 psi and should be checked on a daily basis. When a tire (or tires) needs to be replaced, make sure the replacement tire is the same type and height as the remaining tire (tires) on the machine. This will keep the sweeping core in a level plain with the road surface.
- 4. The <u>battery</u> should be checked once a month. Use distilled water only to bring the fluid level up to the required height. Keep battery post and cables clean. Battery requirements are: 12v, 70AH or equivalent.
- 5. The <u>radiator</u> should be checked for dirt build up every 4 to 8 hours. Use water or compressed air directed from the engine side of the radiator to remove excess dirt. A mixture of 50% water and 50% permanent antifreeze should be used in the radiator thru the entire year. Check the mixture and fluid level at least once a week. The fluid level should be ½ full on the side of the over flow tank.
- 6. <u>Engine</u> oil should be checked once per day. Engine oil type should be: 10w30, MIL-L-21046 or CD (API spec.) equivalent or above. Oil pan capacity is 7 quarts. The oil and oil filter should be changed after the first 50 hours and every 150 hours thereafter. All other filters, air, spin-on fuel and in-line fuel should be changed every 150 hours. Pre-Cleaner bowl at the top of the air inlet tube should be emptied and cleaned daily. Use only diesel fuel NO.2-D (ASTM D975).
- 7. The <u>fuel tank</u> should be drained once a year. The fuel tank drain is located in the back of the fuel tank.
- 8. The <u>water system</u> (for dust control) should be inspected daily. Clean the water filters, the spray nozzles and the screen inside the nozzle head daily.
- 9. The wheel lock-out hub oil level should be checked every three months. Remove the female hex plug on front or back of the housing to check, the oil level should be up to this hole. If oil needs to be added use a 10w40 non-detergent motor oil. Capacity of this hub is approx. ½ pint or 8oz.
- 10. <u>Hydraulic oil</u> should be checked daily. Oil should be to the full mark on the gauge at the right side of the hydraulic tank. Change hydraulic oil every six months or as needed. Hydraulic oil type: (CITGO TRANSGARD TRACTOR HYDRAULIC FLUID), (MOBIL 424) or equivalent. Change both spin-on hydraulic filter (under hood to the left of the engine) and the high pressure filter (under the hood, to the right and forward of the engine) every three months or every 500 hours, which ever comes first.

### BRAKE INSPECTION AND SERVICE

This machine is equipped with dynamic hydraulic braking, conventional hydraulic brakes and a mechanical Parking Brake.

The dynamic hydraulic braking will be in operation any time that the engine is running. When the foot pedal is released, the hydraulic system provides enough braking action that the conventional foot pedal brake should not have to be used. If the dynamic braking is not sufficient to stop the machine, check for hydraulic leaks and low hydraulic fluid level.

The Parking Brake should be used every time the operator leaves the operators seat, whenever the machine is being started, when the machine is being prepared for towing and/or whenever any repairs or adjustments are being made.

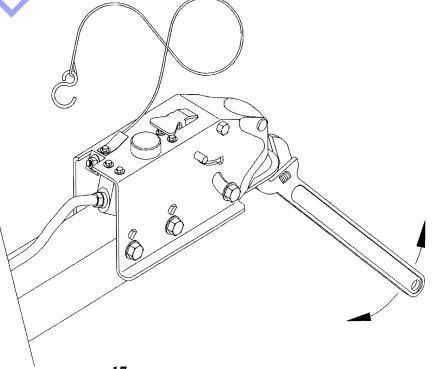
When the machine is being towed, the coupler at the end of the hitch will activate the mechanical brakes anytime the driver of the towing vehicle applies his brakes.

The operation of the brakes should be tested daily. Daily before this machine is to be operated, check the feel of the brake pedal. The pedal should be firm when depressed. If the pedal feels spongy, it probably means that there is air in the system. If the brake pedal goes all the way to the mechanical stop, there is a leak in the system, the reservoir is low on fluid, the brake shoes either need adjusting or need to be replaced. If the brakes don't feel right or do not operate correctly they should be serviced before using this machine.

The location for checking and adding brake fluid is the coupler cylinder on the end of the Tow Hitch. When checking and adding brake fluid to the braking system, swing the Tow Hitch to the front of the machine, as if you were preparing it to be towed. This will put the cylinder reservoir in the best posture for checking and filling of brake fluid. Check the fluid level periodically, especially if the brake lines show signs of leakage. If it becomes necessary to add or change the brake fluid, use a fluid with

a DOT 3 rating. Inspect brake lines every 50 hours (minimum) for leaks and/or damage. Replace brake hoses every two years.

When checking the brake fluid level or bleeding the brakes, do so at the end of the Tow Hitch. Swing the Tow Hitch around to the front of the machine, so that the reservoir in the ball coupler is relatively level. Use a wrench on the end of the ball coupler to pump fluid from the reservoir through the braking system. From here on follow the standard automotive procedures for bleeding brakes.



### **ENGINE**

The normal engine operation and maintenance procedures are covered in a separate manual, which is furnished by the engine manufacturer. We do suggest, however, due to the dusty conditions in which these machines operate, that engine fan inspection and replacement should be accomplished more frequently than the engine manufacturer may suggest. Inspect the fan every 300 to 400 hours. The dust in the air will eventually erode the fan blades to a condition that may cause a safety hazard or an operational failure. Replace the fan if it is deteriorated to the point that it may not provide enough air movement for cooling or when the blades become too sharp or too chipped to safely perform maintenance around. This erosion is considered to be a normal wear item on this type of machine.

### **STORAGE**

The storage of this machine follows the pattern of any construction equipment. We do however recommend that when leaving a machine out in the weather that has wire as part of the core and it is exposed to the weather, a light spray of oil be applied to retard rusting.

Do not store polypropylene (poly) brushes in direct sunlight! Polypropylene is chemically affected in direct sunlight. After prolonged exposure to sunlight, the material can deteriorate and will greatly shorten the life of the bristle.

Do not let this machine sit with the sweeping core lowered with the weight on the bristles. This will cause a flat spot on the brush and make it bounce when in use. To avoid this, use a cylinder stop on the sweeping core lift cylinder to hold the bristles off the ground or use blocks under the ends of the core frame.

### **BROOM WAFERS**

<u>Poly wafers</u> are used in normal dry sweeping conditions: dirt, sand, leaves and other light debris. These types of jobs will give the wafers their longest life. Poly is recommended for most applications due to their increased flicking ability and is more economical to replace.

A combination of ½ poly and ½ wire wafer is not recommended except in conditions where aggressive sweeping is needed. In most cases the standard all poly brush will be adequate. The wire wafers will wear faster than the poly and cost much more to replace. Wire has sharp tips for cutting action and can reach down into cracks and crevasses better than poly. The sharp ends of the wire cut through ice and snow faster than poly wafers. We recommend no more than a 2" down pressure pattern be used with wire wafers or a combination of poly and wire to prevent breakage of the bristles. If too much down pressure is exerted on the bristles they will flex too much and break off close to the wafer base, leaving the bristles on the pavement. Excessive down pressure reduces broom life considerably.

The <u>life span of brush wafers</u> is directly related to the way they are used. When properly used the brush wafer life can be extended by 50 to 100 hours.

### **NOTES**

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<b>XO</b>	
Goxo	



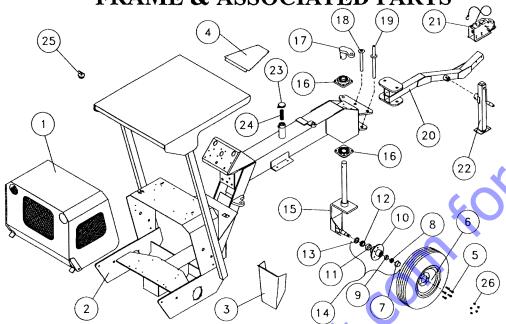
### REPAIR PARTS

BB250 Self Propelled Multi Purpose Sweeper

## IMPORTANT! BEFORE ORDERING PARTS

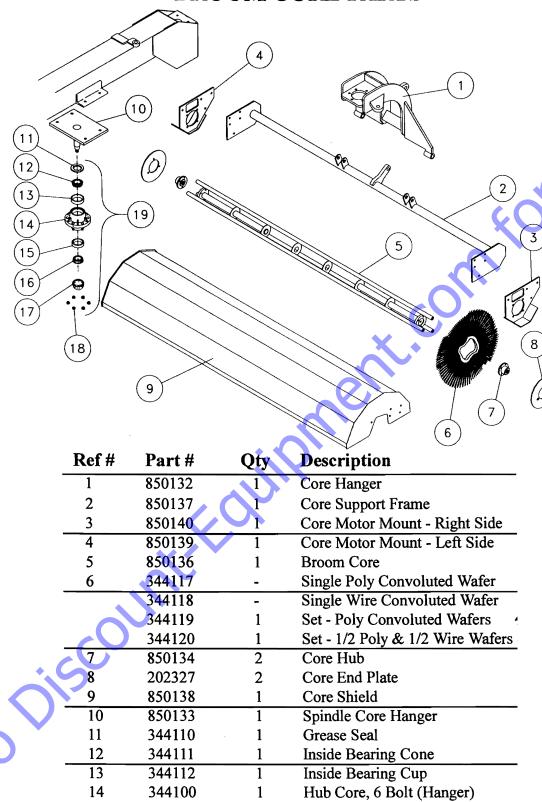
PLEASE PROVIDE COMPLETE MODEL AND SERIAL NUMBER WHEN ORDERING PARTS. THIS WILL MAKE FILLING YOUR ORDER EASIER, FASTER AND WILL HELP AVOID ANY UNNECESSARY DELAYS IN PROCESSING YOUR ORDER.

### FRAME & ASSOCIATED PARTS



	_			
	Ref#	Part#	Qty	Description
	1	850131	1	Hood
	2	850126	1	Main Frame
	3	202358	1	Hydraulic Hose Shield
	4	202403	1	Dash Cover
	5	400830	* 5	Wheel Lug Bolt
	6	344123	3	Wheel 13", 5 Bolt
	7	344124	1	Grease Cap
	8	344125	1	Outer Bearing Cone
	9	344126	11	Outer Bearing Cup
	10	344127	1	Wheel Hub 5 Bolt w/Bearing Cups
	11	344128	1	Inner Bearing Cup
	12	344129	11	Inner Bearing Cone
*.	13	344130	1	Hub Grease Seal
	14	344131	1	Wheel Hub Complete (5,7,8,10,12,13)
	15	850130	11	Front Wheel Support Assy.
+, <b>C</b>	16	344132	2	Bearing 2", 4 Bolt Flange
	17	850144	1	Steering Lug
	18	850141	11	Hitch Pivot Pin
	19	850142	1	Hitch Latch Pin
~()	20	850143	1	Tow Hitch
	21	344133	11	Hyd.Brake Actuator Ball Hitch - 2"
	22	344096	1	Jack, Side Wind, 3500", 15" Lift
	23	T-702-B	1	Oil Filler Cap (Hyd. Tank)
	24	344108	1	Oil Filler Screen (Hyd. Tank)
	25	344183	1	Fuel cap
,	26	344185	10	Rear Wheel Lug Nuts
	27	BS-1050	1	Seat (Not Shown) W/Logo
	28	344168	1	Seat Belt (Not Shown)
				A.4

### **BROOM CORE PARTS**



Outside Bearing Cup

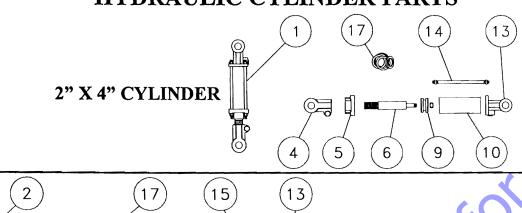
Outside Bearing Cone

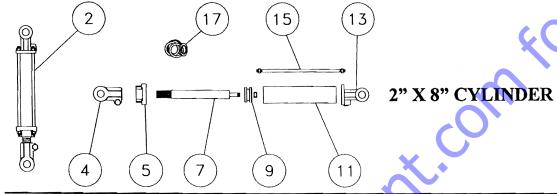
Hub Core Hanger Complete

Grease Cup

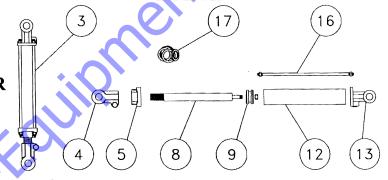
Hub Lug Nut

### **HYDRAULIC CYLINDER PARTS**



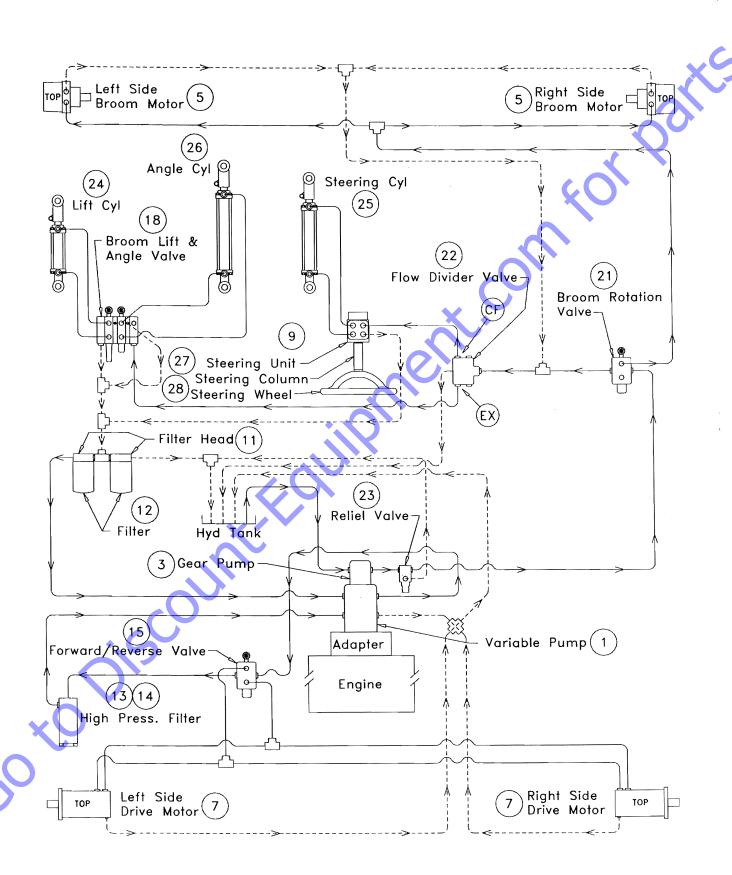


### 2" X 10" CYLINDER



	Ref#	Part#	Qty	Description
	1	204	1	Cylinder 2 x 4 (Lift)
	2	208	1	Cylinder 2 x 8 (Steering)
_	3	210	1	Cylinder 2 x 10 (Angle)
	4	RC-15	1	Rod Clevis
	5	RC-16	1	Head
	6	RC-14-4	11	Rod 4" Stroke
	7	RC-14-8	1	Rod 8" Stroke
	8	RC-14-10	1	Rod 10" Stroke
	9	RC-17	1	Piston_
	10	RC-13-4	1	Barrel 4" Stroke
	11	RC-13-8	1	Barrel 8" Stroke
	12	RC-13-10	11	Barrel 10" Stroke
	13	RC-18	1	Base
	14	RC-11-4	4	Tie Rod 4" Stroke
	15	RC-11-8	4	Tie Rod 8" Stroke
	16	RC-11-10	4	Tie Rod 10" Stroke
	17	IC-4244	1	Seal Kit

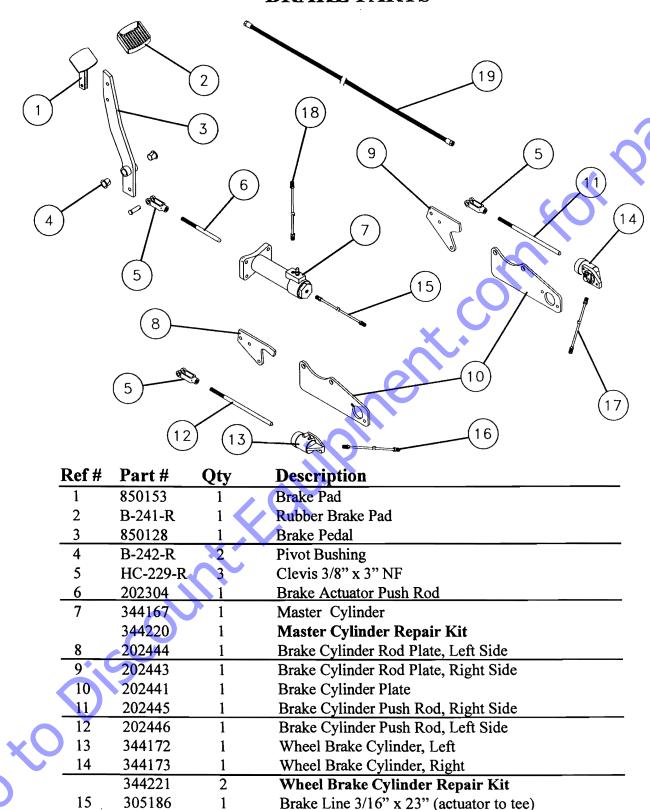
### **HYDRAULIC COMPONENTS**



### **HYDRAULIC COMPONENTS**

	Ref#	Part#	Qty	Description
•	1	344138	1	Variable Pump 1.24 CID w/A-pad
	2	344139	1	Seal Kit for Variable Pump
	3	344140	1	Gear Pump 1.02 CID Series 26
	4	344141	1	Seal Kit for Gear Pump
•	5	344142	2	Hyd. Motor, Core Drive
	6	344143	2	Seal Kit for Drive Motor, W Series
	7	344144	2	Wheel Drive Hyd. Motor
	8	61252	2	Seal Kit for Drive Motor 2000
	9	344146	1	Steering Unit Series 4
	10	344147	1	Seal Kit for Steering Unit Series 4
	11	344149	2	Hyd. Filter Head
	12	344150	2	Hydraulic Filter, 10 Micron
	13	344151	1	Filter H.P. Housing
	14	344152	1	Filter Element, H.P.
	15	344153	1	Forward/Reverse Valve
	16	344154	1	Seal Kit for Forward/Reverse & Rotation Valves
	17	344155	1	Handle Kit, J Type
	18	344156	1	2 Spool Control Valve
	19	344157	1	Seal Kit for 2 Spool Valve
	20	344158	2	Handle Kit, Adjustable Type (2-Spool Valve)
	<u>2</u> 1	344159	1	Broom Rotation Control Valve (Single Spindle)
	22	344161		Flow Divider Valve
	23	344163	1	Pressure Relief Valve
	24	204	1	Cylinder, 2 x 4, Lift
	25	208	1	Cylinder, 2 x 8, Steering
	26	210	1	Cylinder, 2 x 10, Angle
	27	344169	1	Steering Column
	28	344170	1	Steering Wheel
	29	550-5	1	Hydraulic Sight Glass (Not Shown)
	* 30	344251	1	Engine Drive Housing (Not Shown)
	31 32	344252	1	Engine Drive Plate (Not Shown)
	32	344253	1	Engine Drive Hub (Not Shown)
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(3 <sup>O</sup>				,

### **BRAKE PARTS**



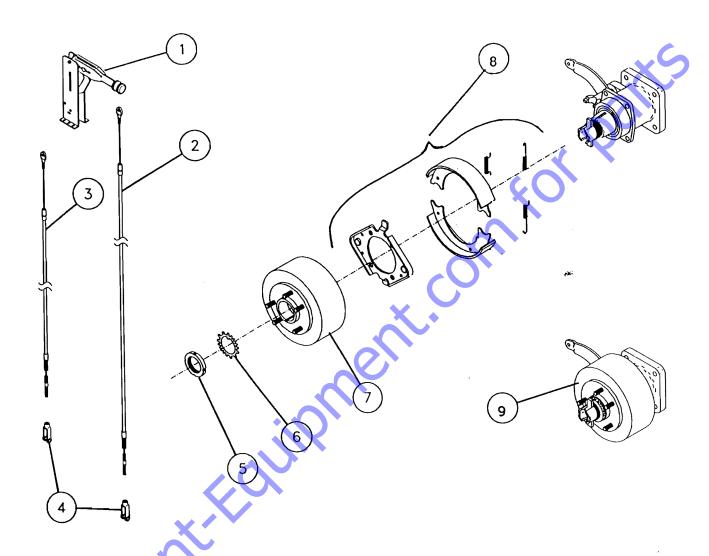
Brake Line Hose (tow hitch)

Brake Line 3/16" x 42 1/2" (tee to left wheel cyl)

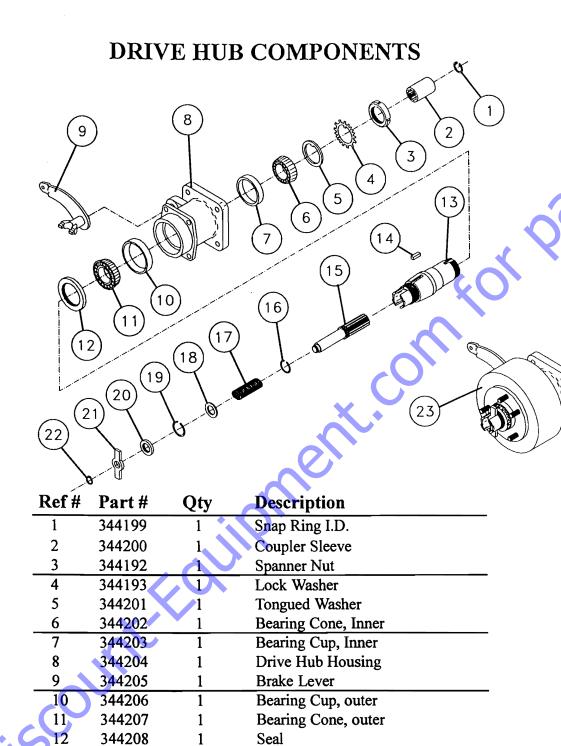
Brake Line 3/16" x 54 1/2" (tee to right wheel cyl)

Brake Line 3/16" x 88" (actuator to surge brake hose)

### BRAKE PARTS



	Ref#	Part#	Qty	Description
C	1	344179	1	Parking Brake Lever
	2	344180	1	Parking Brake Cable 70"
	3	344181	1	Parking Brake Cable 40"
	4	HC-229-R	2	Clevis 3/8" x 3" NF
	5	344192	1	Spanner Nut
	6	344193	1	Lock Washer
	7	344194	1	Brake Drum
	8	344189	1	Brake Assy.
	9	344219	1	Wheel Assy w/Brake (complete)



Spindle

Shaft

Spring

Washer

Handle

Seal

Key 5/16 x 1

Snap Ring O.D.

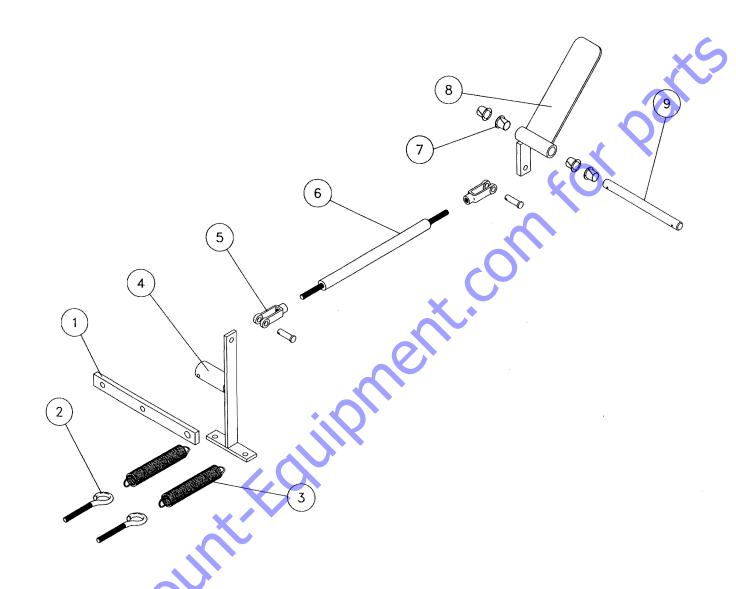
Snap Ring I.D.

Snap Ring O.D.

Drive Hub Assy.

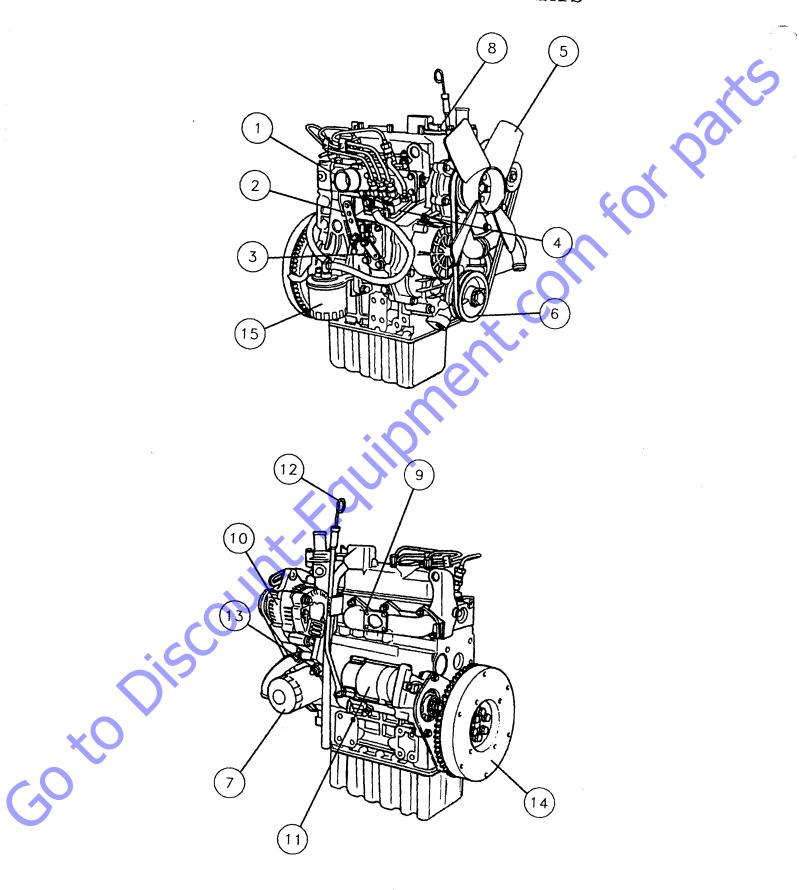
30 xC

### ACCELERATOR PEDAL & LINKAGE



Ref#	Part#	Qty	Description
1	202369	1	Accelerator Linkage Stop Strap
2	400791	2	Eye Bolt 3/8" x 2" Shank Length
3	344109	2	Spring (Retraction)
4	850147	1	Hydrostat Shift Arm
5	HC-229-R	2	Clevis 3/8" x 3"
6	850145	1	Accelerator Linkage
7	B-242-R	2	Pivot Bushing
8	850146	1	Foot Pedal
9	400638	1	5/8" X 7" HHCS #5W/
	400050	1	5/8" Hex Nylok Nut

### **ENGINE EXTERNAL PARTS**

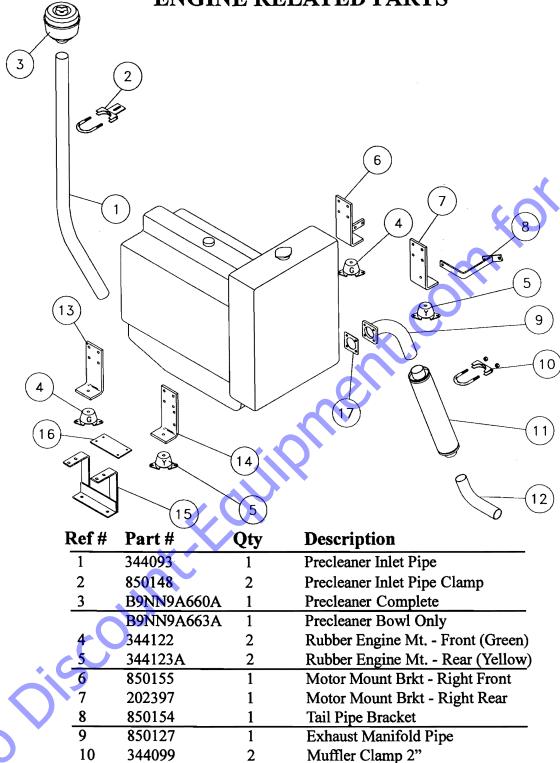


### **ENGINE EXTERNAL PARTS**

	Ref#	Part#	Qty	Description
	1	344222	1	Intake Manifold
	2	344223	1	Speed Control Lever
	3	344224	1	Engine Stop Lever
	4	344225	1	Injection Pump
	5	344227	1	Cooling Fan
	6	344228	1	Fan Drive Pulley
	7	344229	1	Oil Filter Cartridge
	8	344230	1	Oil Filler Plug
	9	344231	1	Exhaust Manifold
	10	344232	1	Alternator
	11	344233	1	Starter
	12	344234	1	Oil Level Gauge (Dipstick)
	13	344235	1	Oil Pressure Switch
	14	344236	1	Flywheel
•	NS	344226	1	Fuel Pump
	NS	344237	1	Fuel Filter (Inline)
	NS	344238	1	Radiator Mounts (Complete)
	NS	344239	1	Radiator Screen
	NS	344240	1	Alternator Guard
	NS	344241	•1	Fan Screen
	NS	344242	1	Radiator Kit (Complete)
	NS	344243	1	Coolant Recovery Kit
	NS	344244	1	Fuel Filter (Spin On)
	NS	344245	1	Fan Shroud
	NS	344246	1	Radiator Cap
	NS	304150	1	Upper Radiator Hose
	NS	344248	1	Lower Radiator Hose
	NS	344249	1	Air Cleaner Filter Element
	NS	344250	1	Air Cleaner Housing
	NS	344251	1	Engine Drive Housing
•	NS	344252	1	Drive Plate
	NS	344253	1	Drive Plate Hub
	NS	304101	1	Air Cleaner (Rubber Elbow)
	NS	344135	1	Air Intake Tube (filter to manifold)
	NS	344136	1	Air Inlet Hose (precleaner pipe to filter)
X	NS	344166	1	Kubota Engine, 37 H.P. (complete)
GO	NS=N	Not Shown		

(ENGINE RELATED PARTS ON NEXT PAGE)

### **ENGINE RELATED PARTS**



Muffler

Exhaust Tail Pipe

Motor Mount Brkt - Left Front

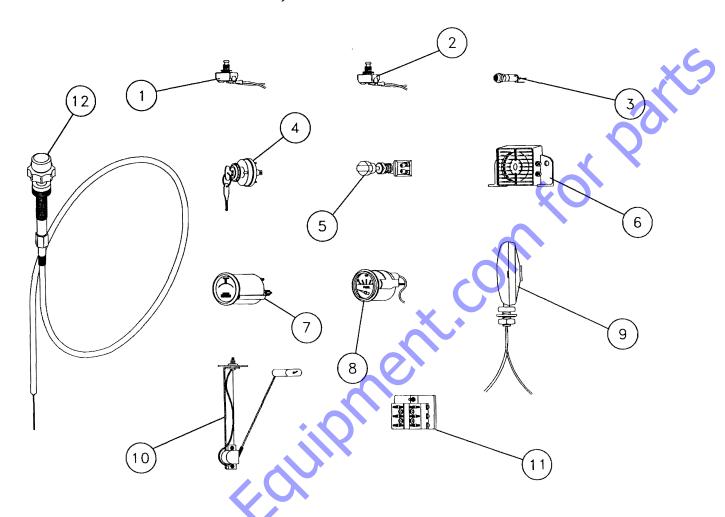
Motor Mount Brkt - Left Rear

Radiator Overflow Tank Bracket

Exhaust Gasket, Pipe to Manifold

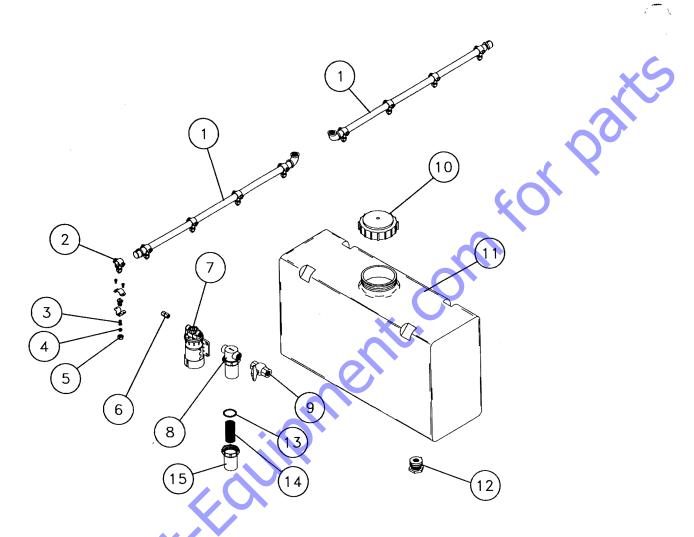
Hydraulic Filter Bracket

### GAUGES, SWITCHES & LIGHTS



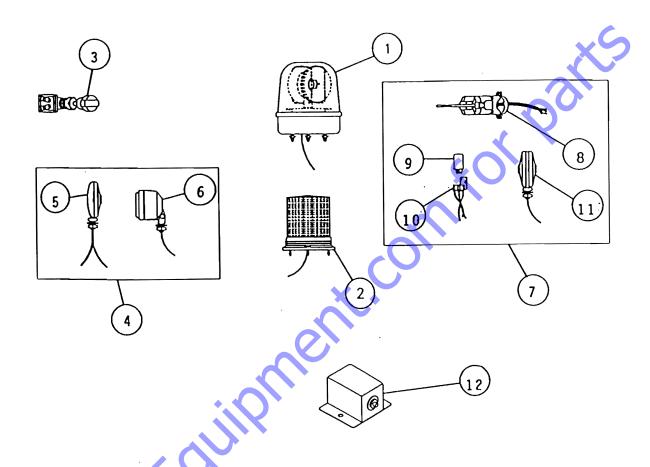
	Ref # Part #		Qty	Description
	1	PBS-13	1	Parking Brake Switch
	2	344255	1	Reverse Alarm Switch
	3	PBL-12	4	Warning Light
+. C	4	344182	1	Key Switch Kabota Engine
	5	23836	1	Push Pull Switch
( ) *	6	RH-250	1	Reverse Alarm
	7	I-222-HO	1	Hour Meter
~0	8	I-223-R	1	Fuel Gauge
	9	670001	2	Tail Light
	10	344175	1	Fuel Sender Gauge
	11	46050-6	1	Fuse Block Standard, 6 Gauge
		46050-8	1	Fuse Block Optional, 8 Gauge
		46050-10	1	Fuse Block Optional, 10 Gauge
	12	T-213-R	1	Throttle Cable

### **OPTIONAL WATER SPRAY SYSTEM**



	Ref#	Part#	Qty	Description
-	1	750024	2	Spray Bar Complete
	2	WS-155	8	Spray Nozzle Assy. Complete
	3	WS-158	8	Nozzle Screen
	4	TP8002	8	Spray Tip
•. C	5	1458	8	Cap, Spray Tip (plastic)
	6	WS-178	11	Back Flow Check Valve
	7	WS-146	1	Water Pump
	8	WS-148	1	Inline Strainer (complete) Plastic
$\sim$ ( )	9	344254	1	Ball Valve 3/4 (plastic)
	10	WS-145-D	2	Filler Cap 6" Plastic
	11	344178	2	Water Tank (complete) Poly
	12_	WS-176-D	2_	Tank Adaptor
	13	1700-0044	1	Strainer Gasket
	14	3800-0025	1	Strainer Screen
	15	3351-0005	1	Strainer Cap

### **OPTIONAL ACCESSORIES**



	Ref#	Part #	Qty	Description
	1	7-40004	1	Amber Beacon
•	2	3614A	1	Amber Strobe Light
	3	23836	1	Push Pull Switch
	4	LG-100-250	1	Light Group Kit
	5	6-70001	2	Tail Light
100	6	9-50004-WL	. 2	Utility Work Light (front or rear)
	7	LG-100-TS	1	Light Group, Turn Signal Pkg.
	8	16-35800	1	Turn Signal Switch
	9	550	1	Flasher
<b>VO</b>	10	550FH	1	Flasher Socket
	11	4-75001	1	Front Warning Light
	12	, 344257	1	Engine Safety Shutdown Switch

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We sell worldwide for the brands: Genie, Terex, JLG, MultiQuip, Mikasa, Essick, Whiteman, Mayco, Toro Stone, Diamond Products, Generac Magnum, Airman, Haulotte, Barreto, Power Blanket, Nifty Lift, Atlas Copco, Chicago Pneumatic, Allmand, Miller Curber, Skyjack, Lull, Skytrak, Tsurumi, Husquvarna Target, Stow, Wacker, Sakai, Mi-T-M, Sullair, Basic, Dynapac, MBW, Weber, Bartell, Bennar Newman, Haulotte, Ditch Runner, Menegotti, Morrison, Contec, Buddy, Crown, Edco, Wyco, Bomag, Laymor, EZ Trench, Bil-Jax, F.S. Curtis, Gehl Pavers, Heli, Honda, ICS/PowerGrit, IHI, Partner, Imer, Clipper, MMD, Koshin, Rice, CH&E, General Equipment, Amida, Coleman, NAC, Gradall, Square Shooter, Kent, Stanley, Tamco, Toku, Hatz, Kohler, Robin, Wisconsin, Northrock, Oztec, Toker TK, Rol-Air, APT, Wylie, Ingersoll Rand / Doosan, Innovatech, Con X, Ammann, Mecalac, Makinex, Smith Surface Prep,Small Line, Wanco, Yanmar