

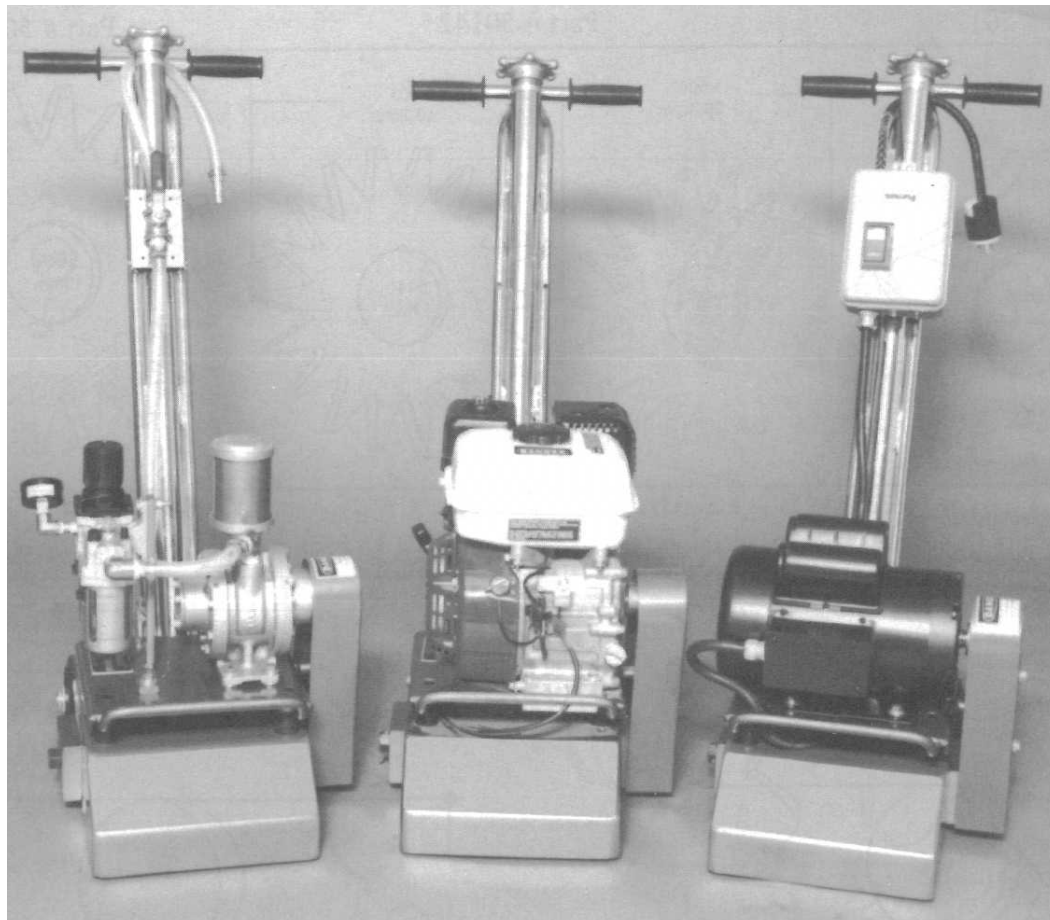


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OWNER'S MANUAL AND PARTS BOOK

SURFACE PREPARATION

SP-8A
SP-8E
SP-8G
SP-2A



Applies to Machines with Serial Numbers 78604 and Below

**ORIGINAL
LANGUAGE**

Doc. # OI-B09033

Contents of SPS Manual

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Foreword

It is important that the following information be read carefully in order that the operational characteristics and performance of the **BARTELL MORRISON SURFACE PREPARATION UNIT** be fully understood. Proper adherence to operating and maintenance procedures will ensure long life and top performance of your equipment.

Safety Instructions

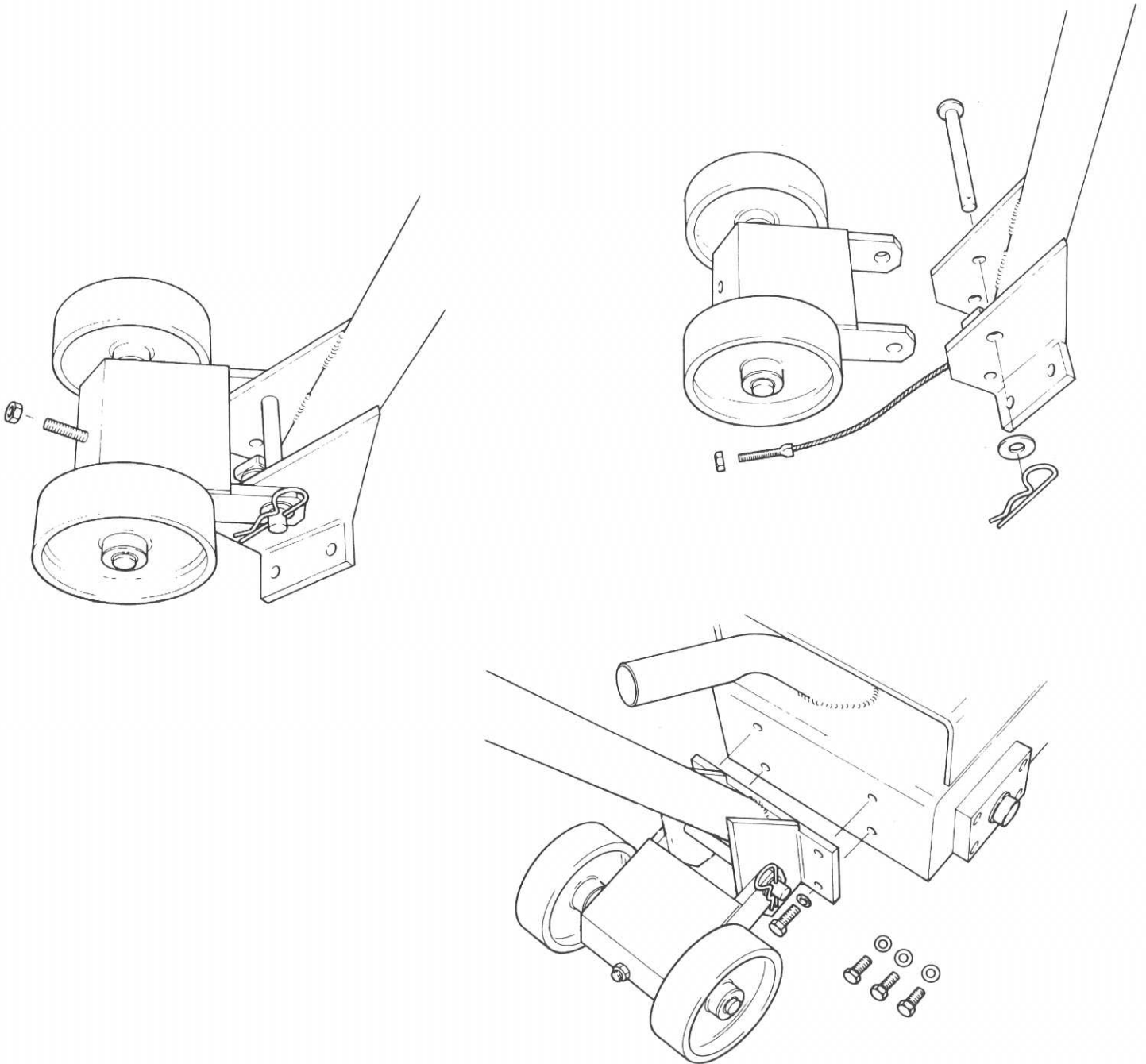
- A. Only authorized, experienced or properly trained individuals should operate this equipment.
- B. Operating personnel should be equipped with proper safety protection.
- C. Rotating and moving parts will cause injury if contacted. Ensure guards and safety devices are in place before this machine is operated. Make sure engine is shut down and spark plug or air or electric supply is disconnected before servicing your **SURFACE PREPARATION UNIT**. Never leave a machine unattended when it is running.
- D. Be careful to avoid contact with the muffler when the engine is hot as it may cause severe burns.
- E. When using the **BARTELL MORRISON DUST CONTROL UNIT** avoid hose contact with the **S.P.S.** muffler as the muffler may burn a hole in the hose.
- F. Do not operate the machine in an explosive atmosphere, near combustible materials or where gas fumes may not be properly dispersed. Repair immediately any fuel leaks. Remove accumulated dust frequently from air filter system.
- G. Do not run the air motor without sufficient oil in the lubricating system. Lubricant levels should be checked regularly on gas and air powered units. Refer to manufacturer's manual for amounts.
- H. Before starting your unit, always raise the cutter cage assembly using the hand knob adjustment, so that the cutters do not contact the surface.

Assembly

Your **BARTELL MORRISON SURFACE PREPARATION UNIT** has been shipped partially assembled with the exception of the handle assembly. Following attachment of handle, gas powered units require only filling with fuel and a brief check of lubricant levels in preparation for operation. Engine crankcase is not pre-seviced with oil at the factory; levels should be checked. Electric Power Units are prewired at the factory and require only properly sized extension cable and fusing to comply with local by-laws.

Handle Assembly

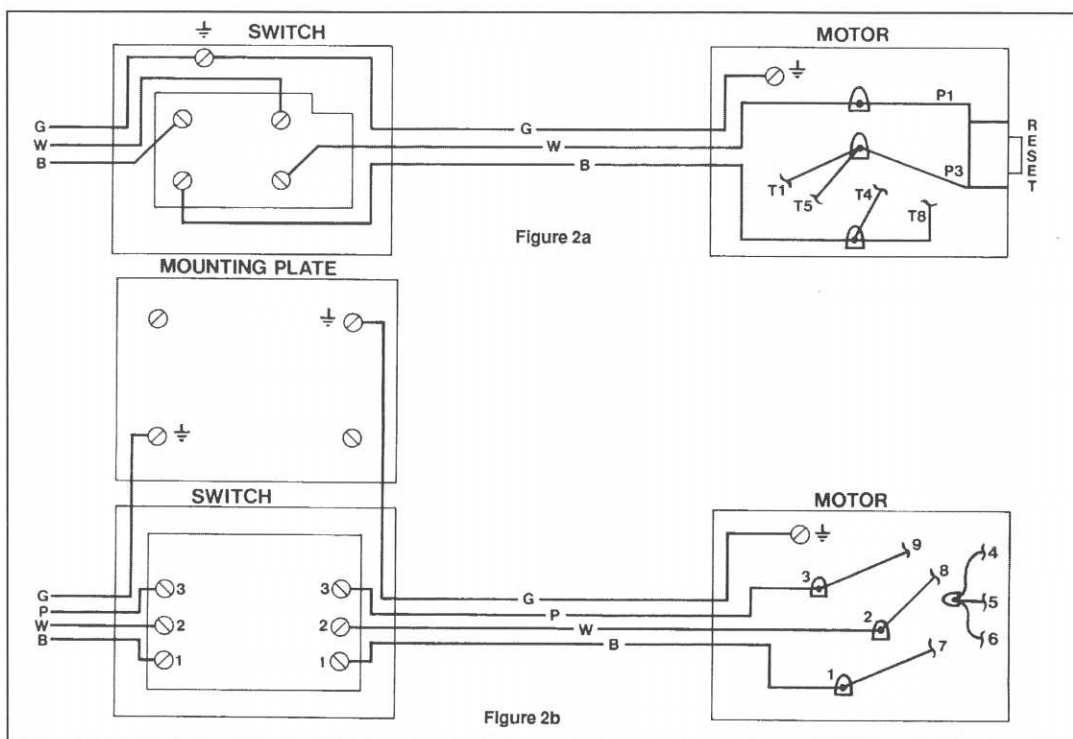
- A. To attach the handle, first remove the pin from the handle assembly. Align the lift plate and re-insert the top pin. Place flat washer on pin. Insert spring clip through hole in pin. Feed threaded bolt end of cable through hole on lift plates.
- B. Tighten cable by attaching nut.
- C. Remove the four bolts and lockwashers from the machine housing. Match up the holes on the handle assembly and the machine housing and insert the bolts and the washers. Tighten bolts corner to corner. Before final tightening, place the machine on a flat surface to ensure that all wheels contact the surface.



Stop Switch

On gas powered models feed the attached stop wire under the bridge and through the circular hole on the machine housing, from below the engine, up to attached terminal on the engine. Secure it to terminal by clamping with a pair of pliers.

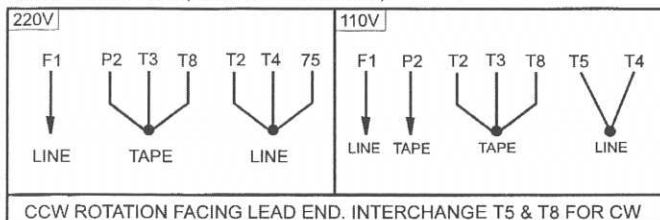
On electric models, attach bracket to the handle with screws and lockwashers provided. Wiring diagrams shown are for reference only and is for 110/220V.



Wiring Directions for Leeson Motors on SP8E Models

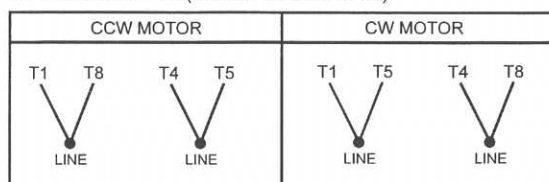
2 HP Leeson

DIAGRAM ON PLATE (ATTACHED TO MOTOR)



3 HP Leeson

DIAGRAM ON PLATE (ATTACHED TO MOTOR)



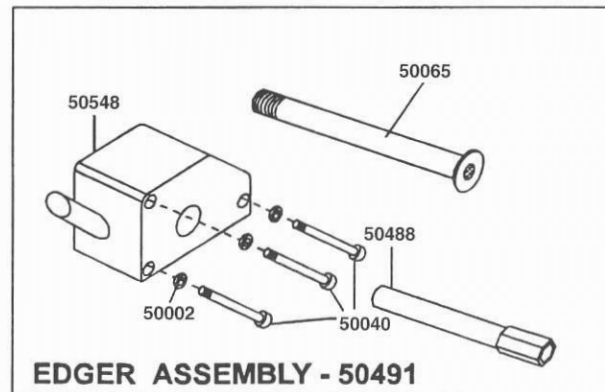
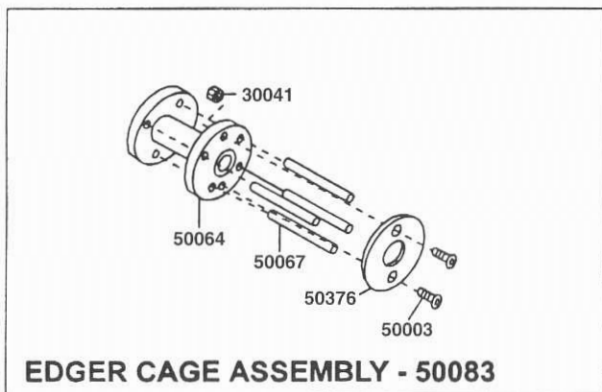
Note: To correct direction in rotation, interchange wires marked T5 & T8

Edger Installation

1. Make sure that the power source is disconnected; unplug the electric unit; disconnect spark plug and turn off fuel supply on gas unit; disconnect air supply on air unit.
2. Tilt machine onto handle (if your unit is equipped with a Honda GX engine, unit must be tilted forward or cylinders will be flooded with oil).
3. Remove cutter cage and retainer shaft (see cutter cage removal).
4. Facing underside of machine, slide dummy shaft through outboard bearing on left side (if engine is a Honda GX this will be on the right side of the housing).
5. Slide retainer shaft through edger cage. The roll pin in the shaft head should fit into the slot on the end plate of the cage.
6. Slide retainer shaft through the outboard bearing and the dummy shaft.
7. Using a 15/16" socket or wrench tighten the retainer shaft by turning counter clockwise.
8. Install edger housing using the three bolts supplied.
9. **Note:** Edger operation is not to be performed with main **S.P.S.** cage in place.

Edger Removal

1. Make sure the power source is disconnected; unplug the electric cord; disconnect spark plug and turn off fuel supply on gas unit; disconnect air supply on air unit.
2. Tilt machine onto handle (if your unit is equipped with a Honda GX engine, unit must be tilted forward or cylinders will be flooded with oil).
3. Using a 15/16" socket or wrench, turn head of shaft clockwise to loosen.
4. While turning the shaft outwards, cage will move towards the outer edge as well. Free cage from locking pins on shaft by pushing cage back towards main housing. Turn shaft out and remove.



Cutter Cage Removal and Cutter Change

A. To remove the cutter cage from the machine:

1. Make sure that the power source is disconnected. With gas models turn off fuel supply to engine and disconnect spark plug; unplug electric units; disconnect air supply on air units.
2. Tilt machine onto the handle. (If your unit is equipped with a Honda GX engine, unit must be tilted forward to change cutter or cylinders will be flooded with oil. This will prevent starting).
3. Facing the underside of the machine housing place a bar between the cutter rods to jam cage.
4. Insert a drift pin into the hole on the main shaft and pull towards you until loose (if equipped with a Honda GX engine, drift pin will be pushed away from you to loosen main shaft). Remove drift pin and turn shaft out by hand. Remove shaft.

Changing Cutters/Shafts

Once the cage has been removed use a 5/32" Allen Key and 7/16" open end wrench, remove screws from cover plate and remove from cage. With drift pin, tap rods (or, if changing cutters on edger cage) from the drive side until free of cage. Replace cutters or shafts as required. Replace cover plate. To re-install cutter cage in machine, reverse procedure for removal. Ensure that shaft is tight.

Removing Cage for Hand Held Models

Remove thumbscrews from coverplate, remove cover. Using chuck wrench insert in slot of matching spline of drive unit to hold cage assembly. Insert pin wrench in matching holes of cage assembly. Holding both wrenches at the same time, turn pin wrench counter clockwise until cage is free.

Changing Cutters - Hand-Held Unit

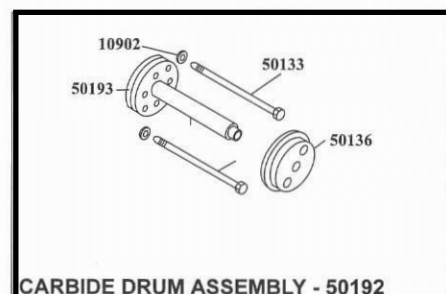
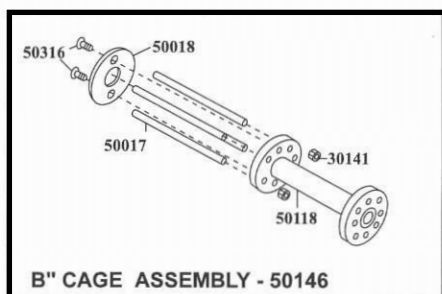
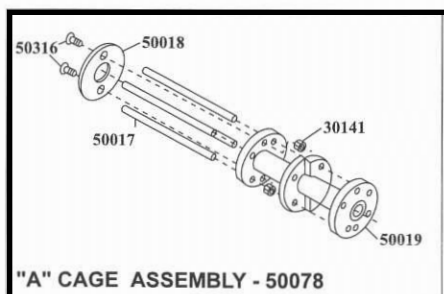
Remove cage shaft plate by removing screws. Using drift pin, tap out rods until free of cage. Replace cutters or shafts as required. Reposition rods and cover plate and re-install cage in unit by reversing procedure for removal.

Carbide Drum Change

Use the above procedure for removal of cage. Remove bolts and face plate. Change drum. Re-install face plate and bolts. Re-install cage.

Silicon Carbide Disc Change

Use the above procedures for removal of cage; remove bolts and face plate. Change disc. Re-install face plate and bolts. Re-install cage.



Starting Procedure

Gas Operated

Important: Set the machine in an upright position and adjust the cutter cage to maximum height by turning the height adjustment knob to its farthest position. (This will ensure clearance for the rotating cage).

Open the fuel valve on gas tank. Place throttle lever at fast idle position. Set the choke to closed position. Start engine, open choke to prevent flooding. Move throttle control to open or run position when engine is warmed up. Increase throttle control to maximum operating position (3600 r.p.m.), close choke. Stop engine after two (2) minutes. Re-start engine.

Electric

With cage in maximum raised position, plug in power cord to power source. Press the start button. Run-in for two (2) minutes. Press the stop button, then re-start. Ensure your cable is of sufficient size to run the motor properly. (14/3 type S for 110/220 volts).

Air

With cage in maximum raised position, attach air supply (minimum 90 C.F.M. at 90 P.S.I.) turn quick opening valve on. Run in for two (2) minutes. Turn off valve, then re-start.

The air regulator is equipped with a pressure gauge. The recommended operating pressure is 90 P.S.I. at 90 C.F.M.; however when the unit is running with no load (cutters not engaged) the gauge will read 40 P.S.I.

When the cutters are engaged the indicator needle should rise to 90 P.S.I.

To Stop Engines

With machine in upright position, adjust the cutter cage to maximum height by turning the height adjustment knob to its farthest position. (This ensures clearance for the rotating cage).

GAS UNIT - Stop engine by depressing kill switch button located at top of handle.

AIR UNIT - Turn off air supply valve.

ELECTRIC UNIT - Turn off switch on handle.

Maintenance

The machine is generally run in very dusty conditions. Engine life will be extended by maintaining a clean engine and using a **BARTELL MORRISON DUST CONTROL UNIT**. Keep the air filter clean at all times. Wash the element in a non-oil based solvent. Squeeze out any residue and allow filter to dry before re-installing in the air cleaner.

Lubrication: Use proper engine oil as recommended by manufacturer. Keep engine oil clean, change as required. Maintain crankcase levels as recommended in engine manual.

Spark Plug: Check and clean spark plugs regularly. A fouled, dirty or carboned spark plug causes difficulty in starting and poor engine performance; set spark plug gap to recommended clearance in engine manual.

Drive Shaft: Keep a coating of grease on the drive shaft and threads for easy installation or removal and longer bushing life.

Spot Checks: Perform as required. Machine should be inspected with ignition in "off" position or power cord disconnected. Do not perform inspections while machine is running.

- check all fasteners for tightness - machine is subject to vibration.
- check "V" belt for wear; adjust or replace as required.
- check that wheels are clean and rotating freely.
- check that inside of housing is clean; remove any build-up as required.
- check that pulleys are aligned properly to ensure that "V" belt is running true (i.e. not at an angle).

Bearing Replacement Procedures

Important: Disengage power supply. Do Not attempt replacement while machine is operable

Sealed Bearing Replacement - Outboard Side: Remove drive shaft and cutter cage assembly as per cutter change procedure. Remove snap ring and bearing shield from inside housing. Loosen and remove bearing block flange by removing screws and lockwashers. Using a soft drift, drive out bearing sleeve. Remove old bearing and clean parts which will be re-used. Carefully press new bearings into flange. Clean and install bearing cover plate taking care to seat the plate flush. Re-install bearing sleeve. Take extreme care to maintain aligned installation. Do not press sleeve into position if misaligned. Mount bearing block to side of housing but do not tighten. From inside housing install bearing shield and snap ring. Centre block on the housing taking care that shield does not bind on bearing sleeve. Tighten bolts when bearing block is in a free spin position.

Bearing Replacement - Drive or "V" Belt Side: Remove belt guard and "V" belt. Loosen set screws, remove key and remove pulley. Remove bearing block assembly by removing screws and lockwashers. Remove snap ring and slip ring. Using a soft drift, drive out spindle. Take care not to burr or flare spindle. Remove cover plate and bearing. Carefully press new bearing into block, clean and install bearing cover plate being certain the plate fits flush. Press drive spindle into block. Install slip ring and snap ring. Centre and install spindle assembly to housing. Re-install pulley and key. Ensure pulley butts flush against shoulder or spindle. Note: When removing spindle or sleeve, care must be taken not to damage or distort these parts. A soft drift is recommended to prevent damage.

TROUBLE SHOOTING GUIDE

| PROBLEM | CAUSE | SOLUTION |
|--|--|---|
| AIR UNIT 1. Air supply inconsistent 2. Ice forming in air exhaust 3. Low R.P.M. | <ul style="list-style-type: none"> ● leak in air lines ● water in air supply ● insufficient air flow | <ul style="list-style-type: none"> ● tighten connections ● check auto drain; refer to engine manual ● SP8-A: adjust large knob on top of regulator by pulling outer ring of control upwards and turning clockwise. Once adjusted push ring down to lock in position ● SP-2A: adjust air flow by turning slot head screw on side of drive unit |
| ELECTRIC UNIT 1. Unit running slow 2. Unit won't run | <ul style="list-style-type: none"> ● voltage drop ● fuse blown ● power disconnected ● cold cut ● other | <ul style="list-style-type: none"> ● check power supply ● check ext. cord size & length (max. 150') ● check fuses ● check plug ● check cord ● refer to motor manual |
| GAS UNIT 1. Engine won't start | <ul style="list-style-type: none"> ● no fuel ● engine switch off ● kill switch grounded ● gas in air filter or carburetor | <ul style="list-style-type: none"> ● refuel ● remove air filter cover, crank engine ● refer to engine manual |
| COMMON PROBLEMS 1. Cutters wearing unevenly 2. Drive shaft backs out while running 4. Machine jumps on floor 5. "V" belt wearing rapidly 6. Uneven cut | <ul style="list-style-type: none"> ● cage too low ● wrong setup ● material buildup ● cutters too tight ● no grease on threads ● cage lowered too far ● R.P.M. too low ● pulley misaligned ● wrong belt ● belt rubbing on surface ● wear on I.D. of front wheels ● wear on front axle | <ul style="list-style-type: none"> ● raise cage ● see applications guide ● clean or change cutters ● remove one or more cutters ● grease threads ● not tightened properly ● adjust height knob ● reset throttle ● adjust pulley ● replace ● adjust height of machine ● replace wheels ● replace axle |

STORAGE

The following steps should be taken to prepare your S.P.S. gas unit for extended storage:

- a. Close shutoff valve.
- b. Siphon excess fuel from storage tank
- c. Start engine and run until it stalls due to lack of fuel. This will consume all the fuel in the carburetor and prevent formation of deposits due to evaporating fuel.
- d. Remove spark plug and pour two ounces of SAE 30 or SAE 40 motor oil into cylinder. Slowly crank the engine two or three times to distribute the oil throughout the cylinder. This will prevent rust during storage. Replace spark plug. Store the unit in an upright position in a cool, dry, and well ventilated area.

TO START YOUR ENGINE AFTER PROLONGED STORAGE

- a. Refuel
- b. Open shutoff valve
- c. Start engine. Any excess oil residue will quickly burn off without harming operation

Parts List

SP8 - Gas

Cages/Edger Assembly

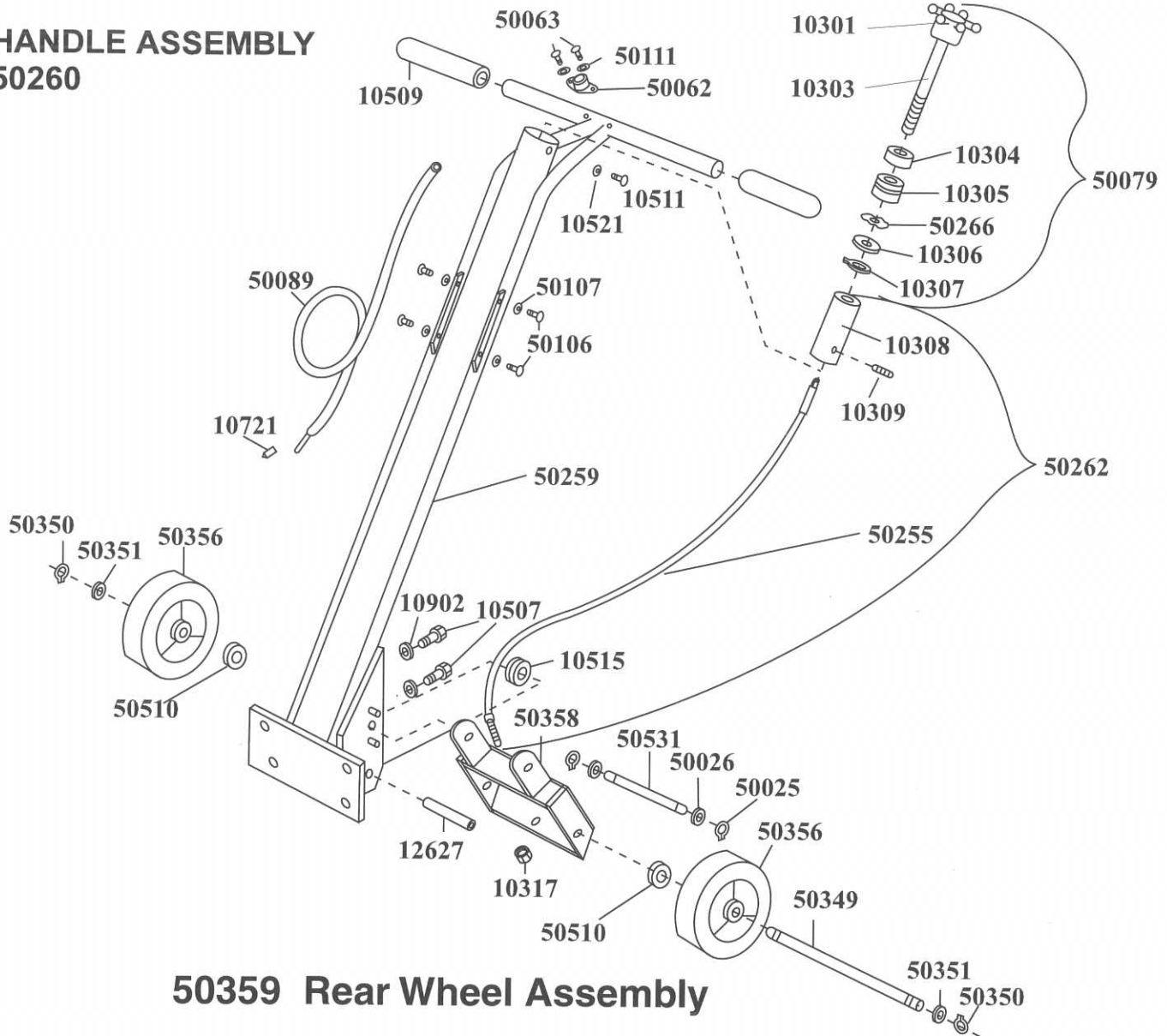
| Part Number | Qty | Description | Part Number | Qty | Description | Assy # |
|-------------|-------|--|-------------|-------|-------------------------------|--------|
| 10208 | 1 pc. | Key - 3/16 sq. x 1 1/2" | 30141 | 2 pc. | Locknut - 1/4" | 50078 |
| 10402 | 4 pc. | Lockwasher - 5/16" | 50003 | 2 pc. | Screw - 1/4" x 1" F.H.M.S. | 50078 |
| 10919 | 4 pc. | Washer - 5/16" | 50017 | 4 pc. | Cutter Shaft | 50078 |
| 21333 | 1 pc. | Engine - Honda 5.5 hp | 50018 | 1 pc. | Shaft Retaining Plate | 50078 |
| 30037 | 2 pc. | Slider Nut | 50019 | 1 pc. | Type "A" cage | 50078 |
| 30142 | 4 pc. | Screw - 5/16" x 3/4" H.H.C.S. | | | | |
| 50001 | 6 pc. | Screw - 3/8" - 16 x 3/4" S.H.C.S. | 30141 | 2 pc. | Locknut - 1/4" | 50083 |
| 50002 | 8 pc. | Lockwasher - 3/8" hicoliar | 50003 | 2 pc. | Screw - 1/4" x 1" F.M.H.S. | 50083 |
| 50004 | 1 pc. | Bearing | 50018 | 1 pc. | Shaft Retaining Plate | 50083 |
| 50010 | 1 pc. | Drive Spindle | 50064 | 1 pc. | Edger Cage | 50083 |
| 50012 | 1 pc. | Snap Ring | 50067 | 1 pc. | Edger Shaft | 50083 |
| 50093 | 1 pc. | Bearing Cover Plate | | | | |
| 50094 | 1 pc. | Pulley - 2 1/4" x 3/4" | 30041 | 2 pc. | Locknut - 1/4" | 50146 |
| 50098 | 1 pc. | Pulley - 2 1/2" | 50003 | 2 pc. | Screw - 1/4" x 1" F.H.M.S. | 50146 |
| 50117 | 2 pc. | Set Screw - 5/16" - 18 x 1/2" S.H.S.S. | 50017 | 4 pc. | Cutter Shaft | 50146 |
| 50348 | 1 pc. | Front Axle | 50018 | 1 pc. | Cage Retaining Plate | 50146 |
| 50350 | 2 pc. | Snap Ring - 5/8" Ext. | 50118 | 1 pc. | Type "B" cage | 50146 |
| 50351 | 2 pc. | Flat Washer - 5/8" | | | | |
| 50357 | 2 pc. | Front Wheel - 4" Dia. | 10902 | 2 pc. | Lockwasher | 50192 |
| 50365 | 1 pc. | Drive Flange Assm. | 50136 | 1 pc. | End Plate - carbide drum | 50192 |
| 50455 | 1 pc. | Pulley - 3 3/8" x 1 1/4" | 50133 | 1 pc. | Screw - 3/8" x 9" | 50192 |
| 50459 | 1 pc. | Key - 3/16" x 1/4" x 1 1/4" | 50193 | 1 pc. | Shaft Assy. | 50192 |
| 50482 | 1 pc. | Bearing - Hex ID | | | | |
| 50483 | 1 pc. | Hex Drive Shaft | 50002 | 3 pc. | Lockwasher - 3/8" hicoliar | 50491 |
| 50484 | 1 pc. | End Cap Flange | 50040 | 3 pc. | Bolt - 3/8 - 16 x 5" S.H.C.S. | 50491 |
| 50485 | 1 pc. | Felt Washer | 50065 | 1 pc. | Edger Drive Shaft | 50491 |
| 50503 | 1 pc. | End Flange Assm. | 50376 | 1 pc. | Edger Retainer | 50491 |
| 50511 | 1 pc. | Housing | 50488 | 1 pc. | Edger Spacer Shaft | 50491 |
| 50517 | 1 pc. | Engine Mounting Plate - Gas | 50548 | 1 pc. | Edger Guard | 50491 |
| 50522 | 1 pc. | Belt Guard | | | | |
| 50523 | 1 pc. | Belt - 3VX280 "V" belt | | | | |
| 50524 | 2 pc. | Belt - Electric (2GR. Pulley) | | | | |
| 50526 | 4 pc. | Rubber Antivibration Mounts | | | | |
| 50527 | 1 pc. | Cage Housing Assm. | | | | |
| 50528 | 4 pc. | Spacer - 1 1/8" x 3/4" | | | | |
| 50529 | 4 pc. | Screw - 5/16" - 18 x 1 1/4" F.H.S.C.S | | | | |
| 50530 | 4 pc. | Lockwasher - 5/16" Ext. C.S. | | | | |
| 50537 | 1 pc. | Ground Strap | | | | |
| 50544 | 1 pc. | Felt Washer Lg. | | | | |
| 50545 | 1 pc. | Felt Washer Sm. | | | | |
| 50546 | 1 pc. | Ring Spacer | | | | |
| 50554 | 1 pc. | 2 Groove Pulley - Honda | | | | |
| 50569 | 1 pc. | Drive Flange | | | | |
| 50576 | 2 pc. | Belt (2 Groove Pulley) - Honda | | | | |
| 50612 | 1 pc. | 2 Groove Pulley - Honda Plate | | | | |

Patents Issued or Pending

| Part No. | Description |
|----------|---|
| 50146 | Type "B" Friction Cage - U.S. 4,640,553 Can 1,277,927 |
| 50125 | Agress Cutter, A-1 - U.S. 4,725,097 Can 1,266,969 |
| 50143 | Agress Cutter, A-3 - U.S. 4,725,097 Can 1,266,969 |

| Part No. | Description |
|----------|---|
| 50146 | Type "B" Friction Cage - U.S. 4,640,553 Can 1,277,927 |
| 50125 | Agress Cutter, A-1 - U.S. 4,725,097 Can 1,266,969 |
| 50143 | Agress Cutter, A-3 - U.S. 4,725,097 Can 1,266,969 |

HANDLE ASSEMBLY 50260



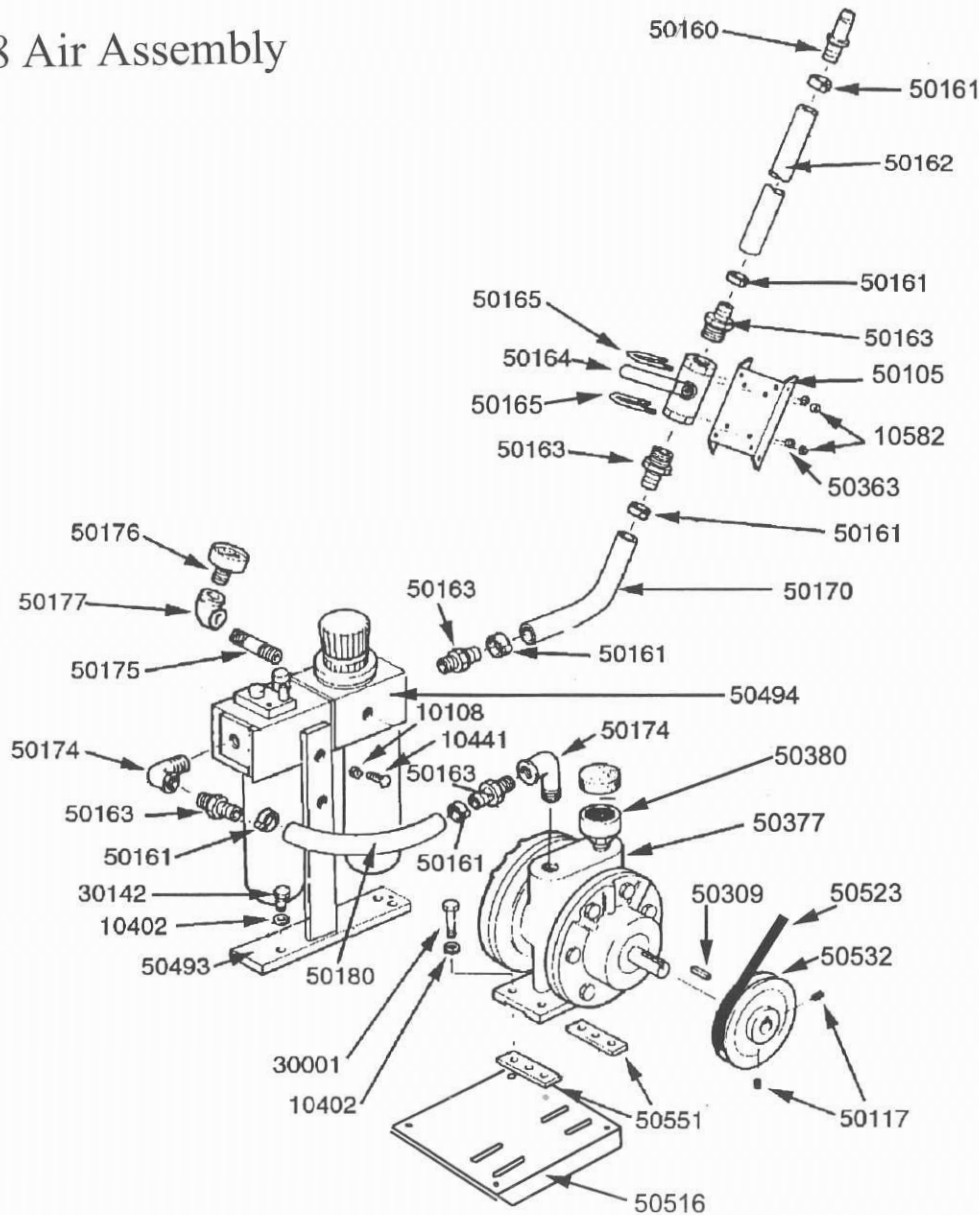
50359 Rear Wheel Assembly

| Part Number | Qty | Description | Part Number | Qty | Description |
|-------------|-------|------------------------|-------------|-------|----------------------|
| 10301 | 1 pc. | Hand Knob | 50025 | 2 pc. | Snap Ring |
| 10303 | 1 pc. | Screw Shaft | 50026 | 2 pc. | Flat Washer - 1/2" |
| 10304 | 1 pc. | Bearing | 50062 | 1 pc. | Stop Switch |
| 10305 | 1 pc. | Bushing | 50063 | 2 pc. | Screw - #6-32 x 1/4" |
| 10306 | 1 pc. | Washer | 50089 | 1 pc. | Wire Assy. |
| 10307 | 1 pc. | Retainer | 50106 | 4 pc. | Screw #8-32 x 1/4" |
| 10308 | 1 pc. | Slide Bushing | 50107 | 4 pc. | #8 Star Washer |
| 10309 | 1 pc. | Pin - 3/16" x 1 1/2" | 50111 | 2 pc. | #6 Star Washer |
| 10317 | 1 pc. | Locknut - 3/8" | 50255 | 1 pc. | Cable - 37 3/8" |
| 10507 | 4 pc. | Screw - 3/8" x 1" HH | 50259 | 1 pc. | SPS Handle |
| 10509 | 2 pc. | Handle Grips | 50262 | 1 pc. | Cable Assm. |
| 10511 | 1 pc. | Screw | 50266 | 1 pc. | Wave Washer |
| 10515 | 1 pc. | Pulley | 50349 | 1 pc. | Rear Axle |
| 10521 | 1 pc. | Lockwasher - 1/4" | 50356 | 2 pc. | Wheel - 5" Dia. |
| 10721 | 1 pc. | Terminal Splice | 50358 | 1 pc. | Lift Plate |
| 10902 | 4 pc. | Lockwasher - 3/8" | 50510 | 4 pc. | Wheel Bushing |
| 12627 | 1 pc. | Spiral Pin - 5/16" dia | 50531 | 1 pc. | Pin - Lift Plate |

SP -8 Air Motor Assembly

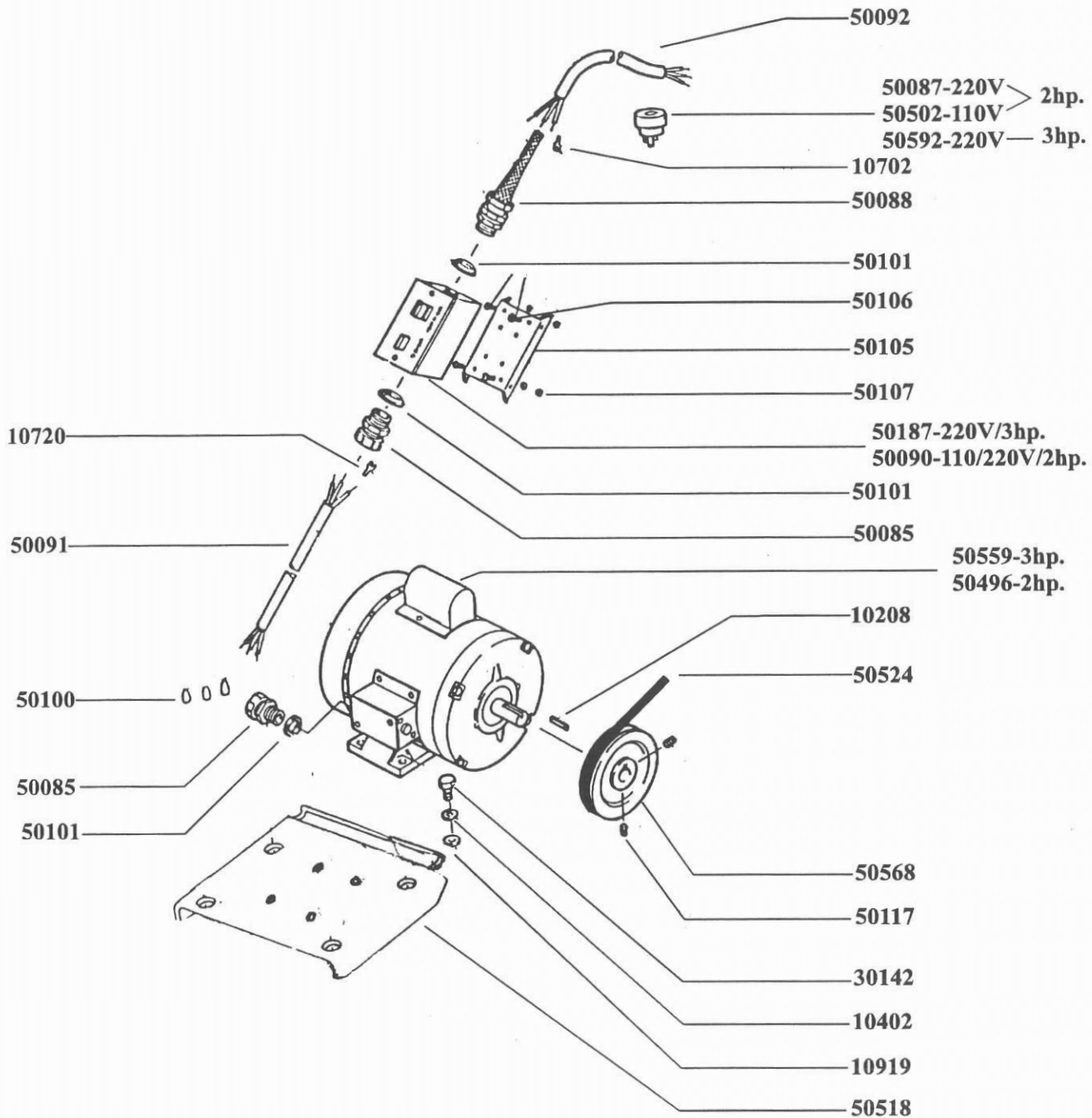
| Part Number | Qty | Description | Part Number | Qty | Description |
|-------------|-------|--|-------------|-------|--|
| 10108 | 2 pc. | Lock Nut - 5/16" | 10108 | 2 pc. | Lock Nut - 5/16" |
| 10402 | 6 pc. | Lock Washer - 5/16" | 10402 | 6 pc. | Lock Washer - 5/16" |
| 10441 | 2 pc. | Screw - 5/16" x 1" | 10441 | 2 pc. | Screw - 5/16" x 1" |
| 10582 | 4 pc. | Nut - 1/4" - 20 (sq. nut) | 10582 | 4 pc. | Nut - 1/4" - 20 (sq. nut) |
| 30001 | 4 pc. | Screw - 5/16" x 2" H.H.C.S. | 30001 | 4 pc. | Screw - 5/16" x 2" H.H.C.S. |
| 30142 | 4 pc. | Screw - 5/16" H.H.C.S. x 3/4" | 30142 | 4 pc. | Screw - 5/16" H.H.C.S. x 3/4" |
| 50105 | 1 pc. | Switch Plate | 50105 | 1 pc. | Switch Plate |
| 50117 | 2 pc. | Set Screw - 5/16" - 18 x 1/2" S.H.S.S. | 50117 | 2 pc. | Set Screw - 5/16" - 18 x 1/2" S.H.S.S. |
| 50160 | 1 pc. | Quick Coupling 1/2" | 50160 | 1 pc. | Quick Coupling 1/2" |
| 50161 | 6 pc. | Hose Clamp 1/2" | 50161 | 6 pc. | Hose Clamp 1/2" |
| 50162 | 1 pc. | Extension Hose - 30" | 50162 | 1 pc. | Extension Hose - 30" |
| 50163 | 5 pc. | Hose Fitting 1/2" | 50163 | 5 pc. | Hose Fitting 1/2" |
| 50164 | 1 pc. | Ball Valve 1/2" | 50164 | 1 pc. | Ball Valve 1/2" |
| 50165 | 2 pc. | Valve Clamp | 50165 | 2 pc. | Valve Clamp |
| 50170 | 1 pc. | Regulator Hose - 20" | 50170 | 1 pc. | Regulator Hose - 20" |

SP8 Air Assembly



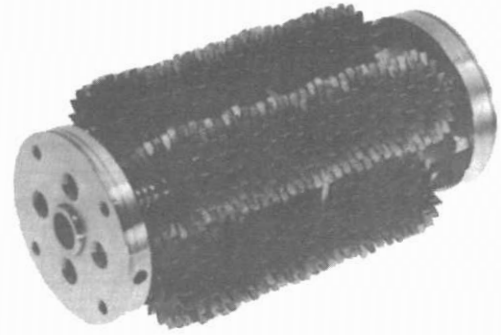
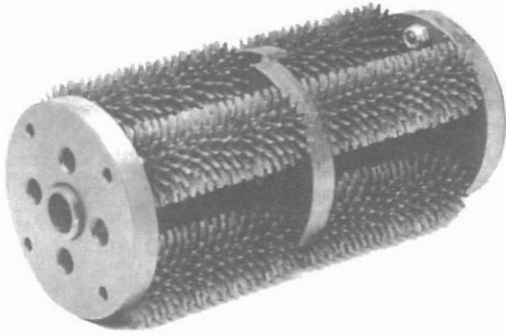
SP-8 Electric Set-up

| Part Number | Qty | Description | Part Number | Qty | Description |
|-------------|-------|-----------------------------------|-------------|-------|--------------------------------------|
| 10208 | 1 pc. | Key - 3/16 sq. x 1 1/2" | 50105 | 1 pc. | Switch Plate |
| 10402 | 4 pc. | Lockwasher - 5/16" | 50106 | 4 pc. | Screw - #8 - 32 x 1/4" |
| 10720 | 6 pc. | Terminal Splice | 50107 | 4 pc. | Star Washer - #8 |
| 10919 | 4 pc. | Flat Washer - 5/16" | 50117 | 2 pc. | Set Screw - 5/16" - 18 x 1/2" SHSS |
| 30142 | 4 pc. | Bolt - H.H.C.S. 5/16 x 3/4" | 50187 | 1 pc. | Starter Box - 22./480 Volt (3 hp) |
| 50085 | 2 pc. | Box Connector | 50496 | 1 pc. | Motor - 110/220 Volt (2 hp) |
| 50087 | 1 pc. | 220 Volt (2 hp) | 50502 | 1 pc. | Plug - 125 Volt 15 Amp |
| 50088 | 1 pc. | Strain Relief Connector | 50518 | 1 pc. | Motor Mounting Plate - Electric |
| 50090 | 1 pc. | Starter Box - 110/220 Volt (2 hp) | 50524 | 1 pc. | Belt - 3VX265 |
| 50091 | 1 pc. | Motor Cable - 51" | 50559 | 1 pc. | Motor - 230 Volt (3 hp) Single Phase |
| 50092 | 1 pc. | Motor Cable - 24" | 50568 | 1 pc. | Pulley - 2" Dia. x 7/8" |
| 50100 | 3 pc. | #31 Mar Connector | 50592 | 1 pc. | Plug - 220 Volt (3 hp) 20 Amp |
| 50101 | 3 pc. | 1/2" NPT Nut | | | |



Typical Cutter Setups

Cutter counts may vary with cutter width and/or spring tension.



Parts Required - R120 (Complete Assembly)

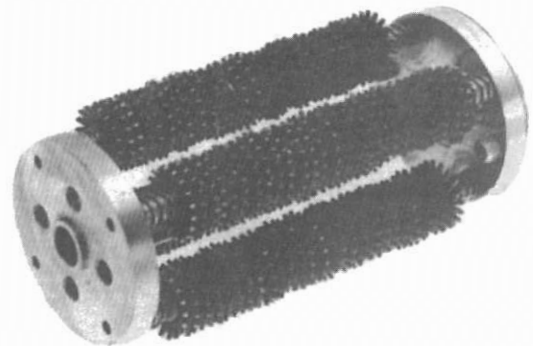
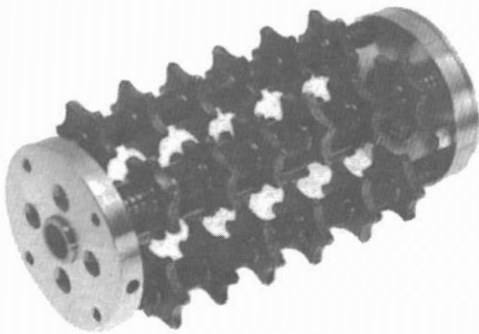
| Part No. | Description | Quantity |
|----------|---------------------|----------|
| 50078 | Type "A" Flail Cage | 1 |
| 50021 | B-1 Cutter | 120 |
| 50102 | Ring Spacer | 128 |

- For removal of grease and oil or thin paint build-ups
- Lower gradually, running machine back and forth with circular motion as required

Parts Required - R122 (Complete Assembly)

| Part No. | Description | Quantity |
|----------|----------------|----------|
| 50140 | B-3 Cutter | 92 |
| 50102 | Ring Spacer | 88 |
| 50147 | Shackle | 4 |
| 50127 | Tension Spring | 8 |
| 50146 | Type "B" Cage | 1 |

- For trenching (keying) asphalt around drains and shallow patches in pavement
- Draw SPS unit slowly around perimeter, gradually increasing the depth of cut to a maximum of 5/8"
- After initial trench, run over inside edge to produce gradually sloped keyway



Parts Required - R123 (Complete Assembly)

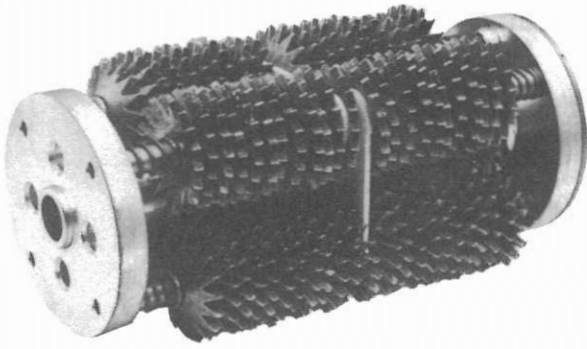
| Part No. | Description | Quantity |
|----------|---------------------------|----------|
| 50146 | Type "B" Friction Cage | 1 |
| 50120 | Carbide Cutters | 24 |
| 50137 | 3/4" Grooving Spacer | 20 |
| 50339 | 1/2" Hardened Flat Washer | 36 |
| 50127 | Tension Springs | 8 |

- For safety grooving of concrete
- With cutters lowered, make a short pass to establish path, then slowly pull machine along area to be grooved
- Square grid pattern can be established by running SPS across the parallel grooves as above.

Parts Required - R125 (Complete Assembly)

| Part No. | Description | Quantity |
|----------|------------------------|----------|
| 50146 | Type "B" Friction Cage | 1 |
| 50142 | A-2 Cutter | 92 |
| 50102 | Ring Spacers | 104 |
| 50127 | Tension Spring | 8 |

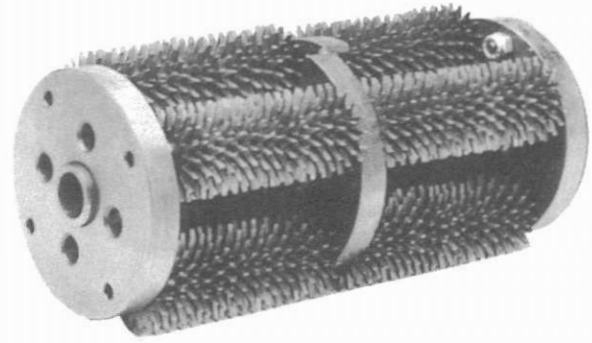
- Removal of oil, grease buildup from wood block flooring
- Lower gradually, running machine back and forth with circular motion as required



Parts Required - R126 (Complete Assembly)

| Part No. | Description | Quantity |
|----------|----------------|----------|
| 50143 | A-3 Cutter | 88 |
| 50102 | Ring Spacer | 104 |
| 50127 | Tension Spring | 8 |
| 50147 | Shackle | 4 |
| 50146 | Type "B" Cage | 1 |

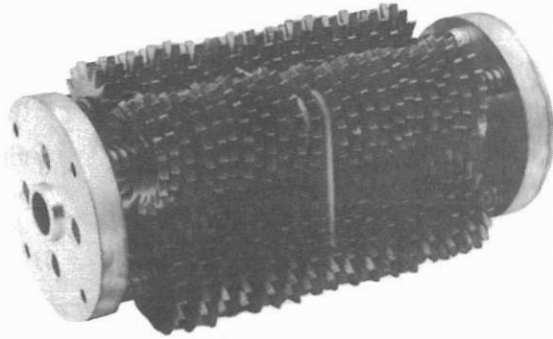
- For milling sidewalks. R138 may be required in extreme cases
- Lower cage gradually, running machine back and forth with circular motion as required



Parts Required - R137 (Complete Assembly)

| Part No. | Description | Quantity |
|----------|---------------------|----------|
| 50078 | Type "A" Flail Cage | 1 |
| 50139 | B-2 Cutters | 115 |
| 50102 | Ring Spacers | 114 |

- Removal of paint, tile and carpet adhesives, urethanes, rubber membranes & epoxy resins.

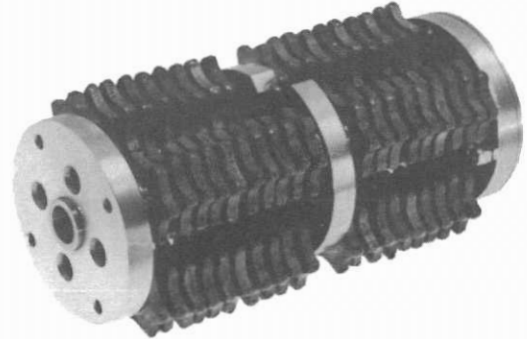


Parts Required - R138 (Complete Assembly)

| Part No. | Description | Quantity |
|----------|---------------------|----------|
| 50102 | Ring Spacers | 116 |
| 50127 | Tension Springs | 8 |
| 50140 | B-3 Cutters | 32 |
| 50143 | A-3 Cutters | 44 |
| 50146 | Friction Cage Ass'y | 1 |
| 50147 | Shackles | 4 |

Removal of coal tar epoxy, rubberized asphalt, urethane rubber and epoxy non-skid.

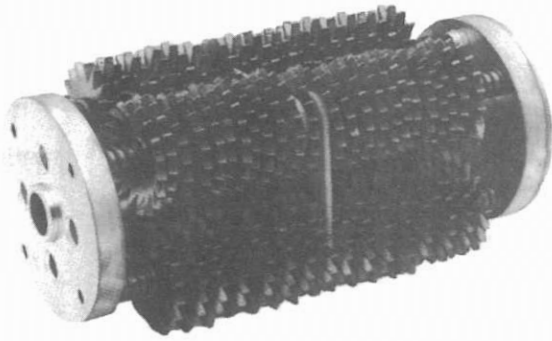
A-3 /B-3 cutters / B-cage



Parts Required - R139 (Complete Assembly)

| Part No. | Description | Quantity |
|----------|----------------------------|----------|
| 50078 | Type "A" Flail Cage | 1 |
| 50120 | Carbide Cutters | 76 |
| 50339 | 1/2" Hardened Flat Washers | 104 |

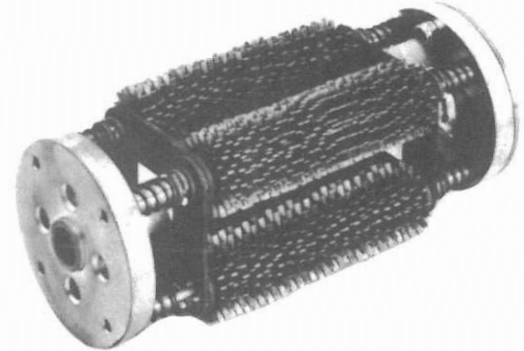
- Carbide cutters A cage- single spaced



Parts Required - R142 (Complete Assembly)

| Part No. | Description | Quantity |
|----------|----------------|----------|
| 50146 | Type "B" Cage | 1 |
| 50139 | B-2 Cutter | 34 |
| 50142 | A-2 Cutter | 50 |
| 50127 | Tension Spring | 8 |
| 50147 | Shackle | 4 |
| 50102 | Ring Spacer | 114 |

- Removing thick material build-up (up to 1") of impacted oil, grease, corn oil, vegetable powder, resins
- Triple action cut produced by this set-up shears material efficiently



Parts Required - R143 (Complete Assembly)

| Part No. | Description | Quantity |
|----------|----------------|----------|
| 50140 | B-3 Cutter | 100 |
| 50146 | B Cage | 1 |
| 50102 | Ring Spacers | 60 |
| 50147 | Shackle | 8 |
| 50127 | Tension Spring | 8 |

- *This produces a 5 1/2" wide cut. For wider cut, add more cutters
- Note:** When setting up the cage, ensure that two opposite shafts have 19 cutters (with ring spacers) per shaft while the remaining shafts take 33 cutters (no ring spacers) each

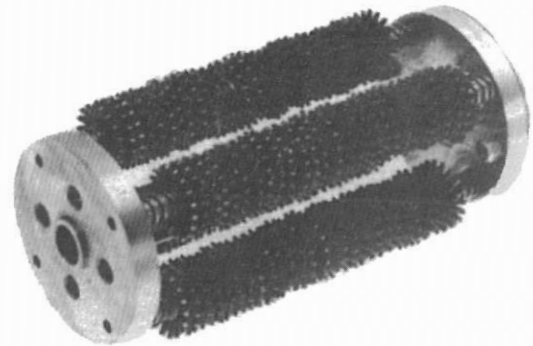
- Line removal - thermoplastic
- Removes thick traffic lines quickly and efficiently



Parts Required - Fine R150; Medium R151; Coarse R152; Superfine R158 (Complete Assemblies)

| Part No. | Description | Quantity |
|----------|--------------------------------------|----------|
| 50192 | Carbide Drum Assembly | 1 |
| 50145 | Replacement Carbide Drum (Fine) | 1 |
| 50147 | Replacement Carbide Drum (Medium) | 1 |
| 50148 | Replacement Carbide Drum (Course) | 1 |
| 50150 | Replacement Carbide Drum (Superfine) | 1 |

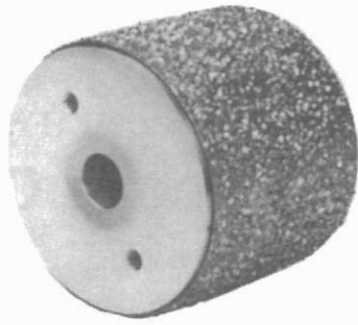
- For smoothing operations on concrete and wood floors
- Smoother profiles produces with varying grits of carbide drum



Parts Required - R155 (Complete Assembly)

| Part No. | Description | Quantity |
|----------|---------------------|----------|
| 50139 | B-2 Cutters | 232 |
| 50078 | Type "A" Flail Cage | 1 |

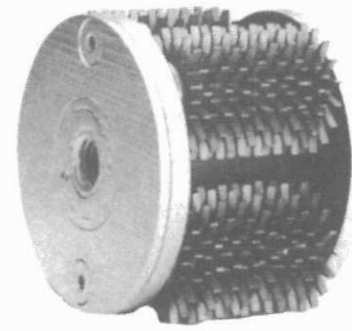
- B-2 cutters / A cage



Parts Required - R153 (Complete Assembly)

| Part No. | Description | Quantity |
|----------|-----------------------|----------|
| 50153 | Carbide Drum assembly | 1 |

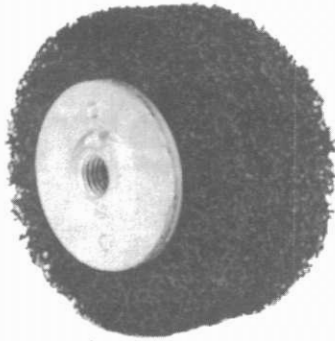
- For graffiti removal with SP-2A Unit
- Produces a smooth profile when surface depth of graffiti is minimal



Parts Required - RH311 (Complete Assembly)

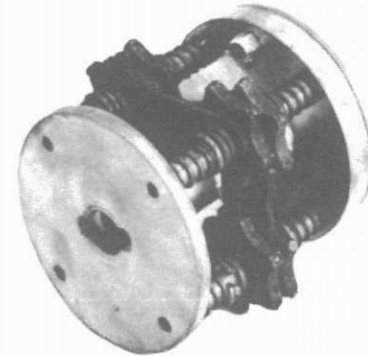
| Part No. | Description | Quantity |
|----------|-----------------|----------|
| 50021 | B-1 Cutters | 34 |
| 50102 | Ring Spacers | 34 |
| 50399 | H.H. Cage Ass'y | 1 |

- SP2A-1 Cage / B-1 Cutters
- Light duty cleaning of concrete, oil.grease deposit and thin urethane removal.



**R159 for the SP8
RH309 for the SP-2A**

- For Aluminum cleaning
- Make as many passes as required with either SP-8 or SP-2A



Parts Required - RE210 (Complete Assembly)

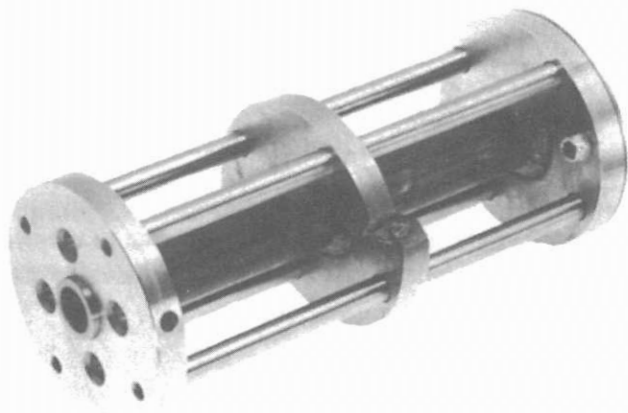
| Part No. | Description | Quantity |
|----------|----------------|--------------|
| 50083 | Edger Cage | 1 |
| 50120 | Carbide Cutter | 12, 8 or 4* |
| 50147 | Shackle | 4 |
| 50102 | Ring Spacer | 20, 16 or 4* |

*Depending on required width. To increase or decrease width of cut, add or subtract cutters and ring spacers as required

- For crack routing with edger
- Make initial pass to establish path and width of cut. Lower as required to depth required

Typical Cages - No Cutters

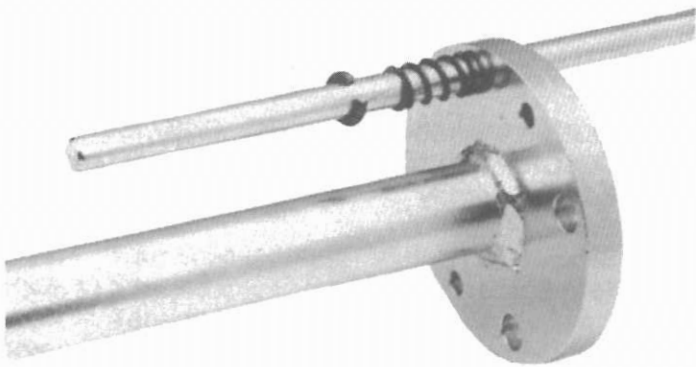
Standard Type "A" Flail Cage



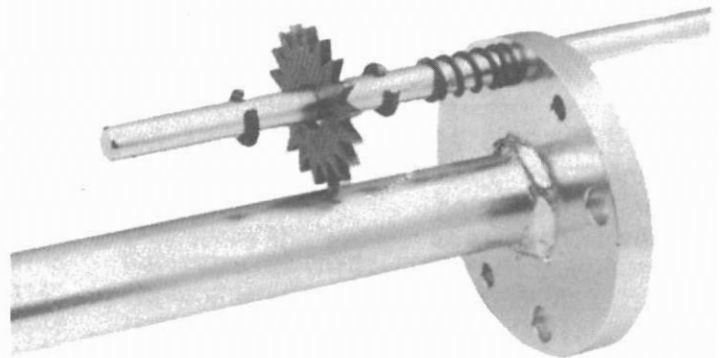
Type "B" Friction Cage



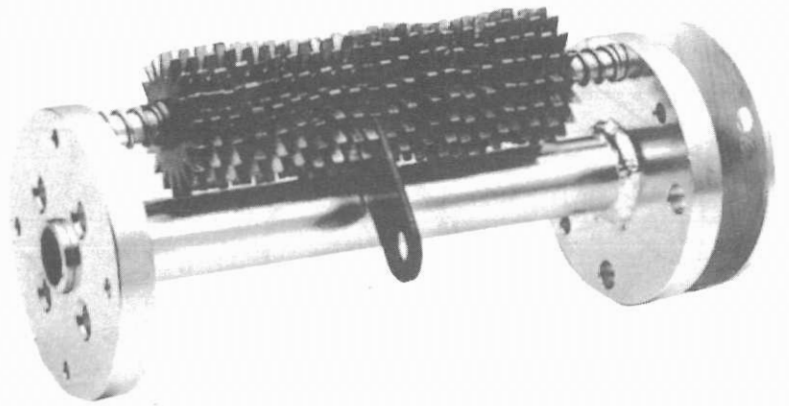
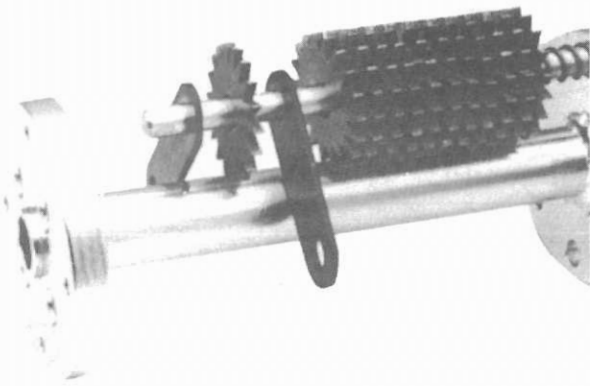
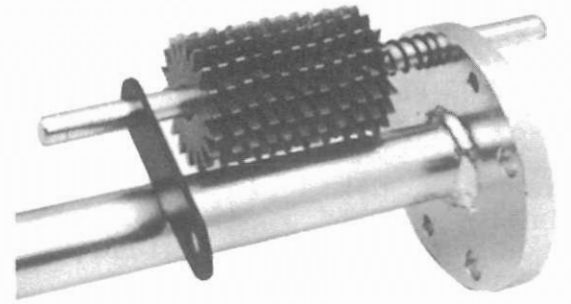
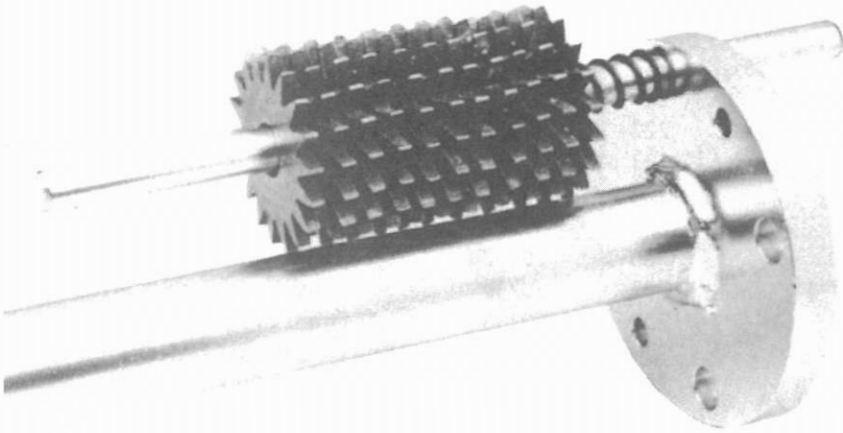
Typical "B" Cage Assembly



Insert shaft through hole in end plate of cage. Slide tension spring onto shaft, followed by ring spacer.



Install desired cutter followed by ring spacer.

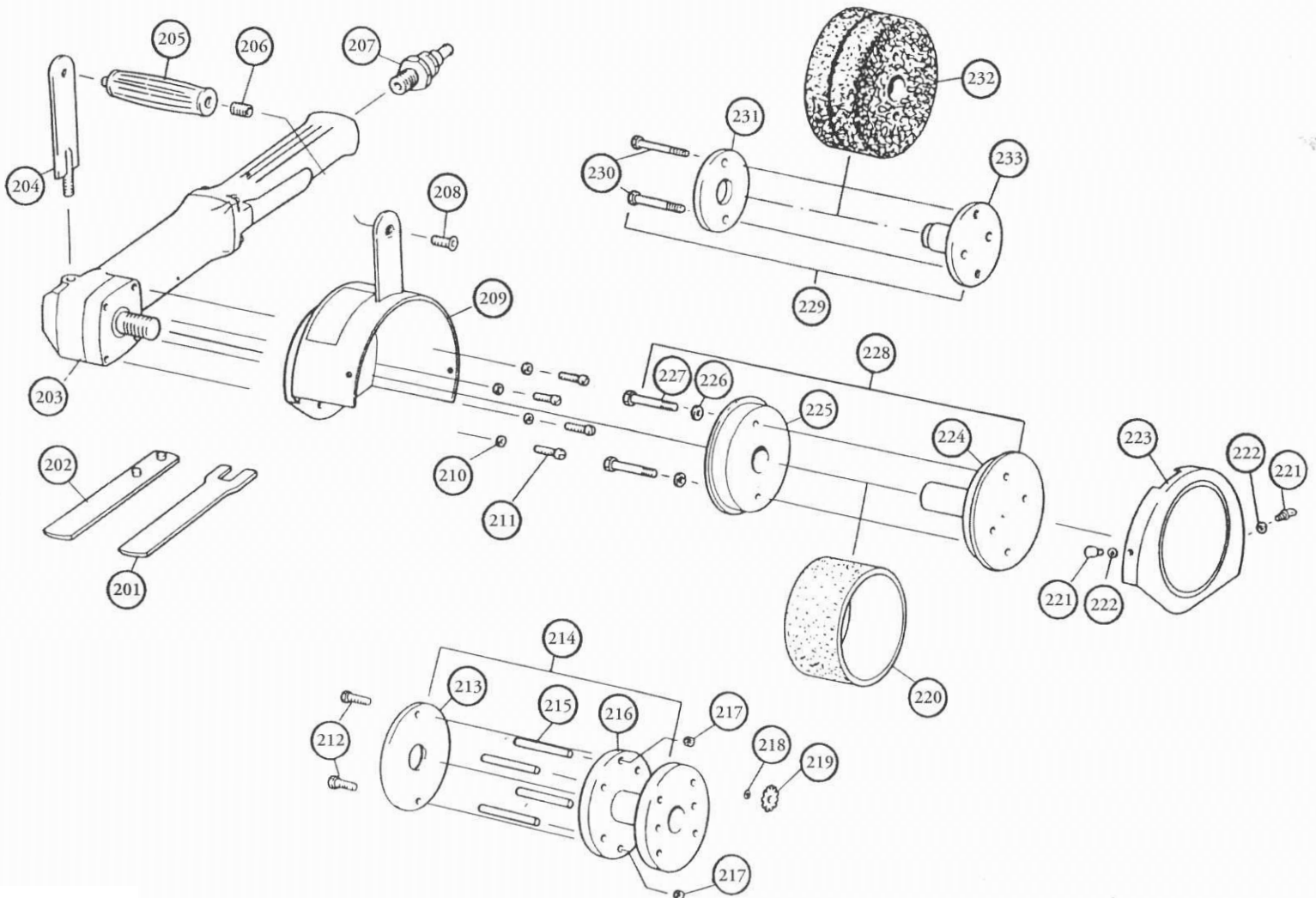


One cutter is placed between two bracing shackles. (Shackles are the same width as ring spacers.) Note: When using "A" type concave cutters, a ring spacer must be installed between the inner side of the cutter and a shackle.

Continue alternating cutters with ring spacers until shaft is full. Slide tension spring over end of shaft and snap into place. Tap shaft into hole in end plate. Repeat preceding steps with remaining three shafts until set-up is complete. Install end plate cover.

Parts List SPS Model SP-2 Hand Held

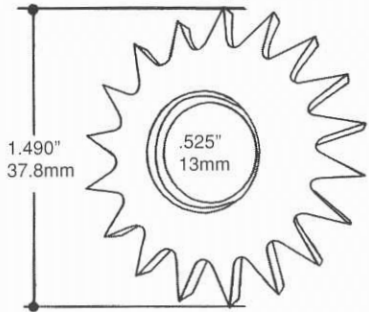
| Index No. | Part No. | Description | Index No. | Part No. | Description |
|-----------|----------|--------------------------------|-----------|----------|-------------------------------|
| 201 | 50219 | Chuck Wrench | 217 | 50407 | 1/4" Lock Washer |
| 202 | 50225 | Pin Wrench | 218 | 50102 | Ring Spacer |
| 203 | 50203 | Air Drive Motor | 219 | 50021 | Cutter Type B-1 |
| 204 | 50230 | Handle Support | 220 | 50240 | Carbide Drum - Fine HH |
| 205 | 50236 | Handle | 221 | 50443 | Thumb Screw |
| 206 | 50558 | Handle Insert | 222 | 50231 | Lock Washer |
| 207 | 50222 | Quick Coupling | 223 | 50441 | Cover Plate |
| 208 | 50217 | Screw 5/16-18 x 3/4 F.H.S.C.S. | 224 | 50237 | Drum Shaft Assembly |
| 209 | 50440 | Safety Guard | 225 | 50212 | Drum Side Plate |
| 210 | 50231 | Lock Washer | 226 | 10402 | 5/16" Lock Washer |
| 211 | 50224 | Screw 10-32 x 7/8" | 227 | 50239 | Screw - 5/11-18 x 2 3/4" Hex |
| 212 | 50406 | Screw 1/4-20 x 3/4" F.H.S.C.S. | 228 | 50238 | HH Drum Cage Assembly |
| 213 | 50405 | Cage Shaft Plate | 229 | 50200 | Silicon Carbide Disc Assembly |
| 214 | 50399 | Cage Assembly | 230 | 50235 | Screw - 1/4-20 x 2 1/2" Hex |
| 215 | 50202 | Cutter Shaft | 231 | 50233 | Cage Back Plate |
| 216 | 50398 | Cage | 232 | 50374 | Silicon Carbide Disc |
| | | | 233 | 50234 | Cage Shaft Assembly |



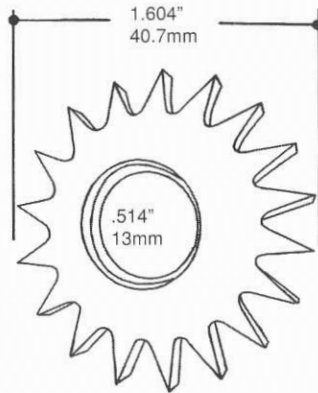
SP8 Cutters

SP8 Shaft size is 3/8"

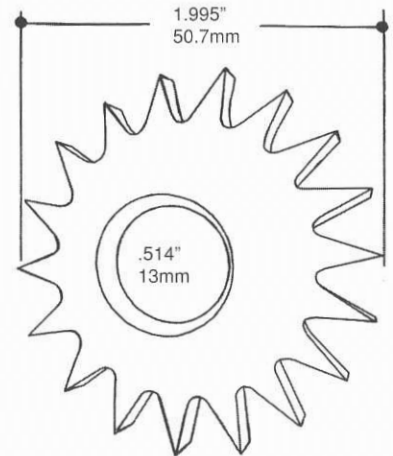
Cutters are shown actual size.



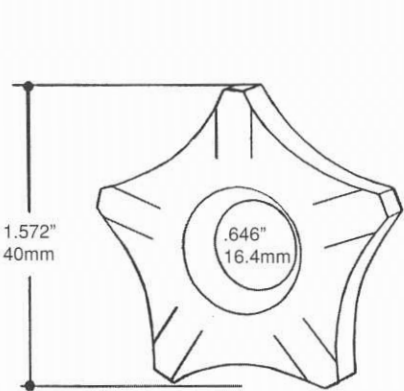
A - 1 Cutter
Part # 50125



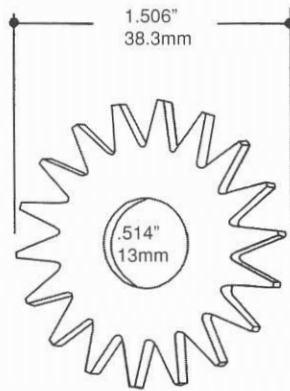
A - 2 Cutter
Part # 50142



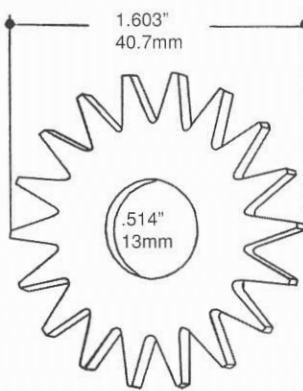
A - 3 Cutter
Part # 50143



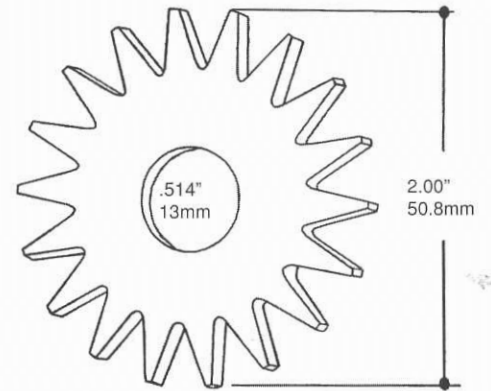
T.C.T. Cutter
Part # 50120



B - 1 Cutter
Part # 50021

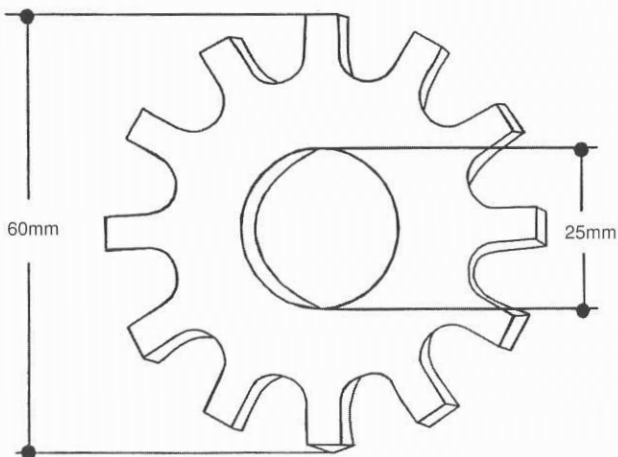


B - 2 Cutter
Part # 50139

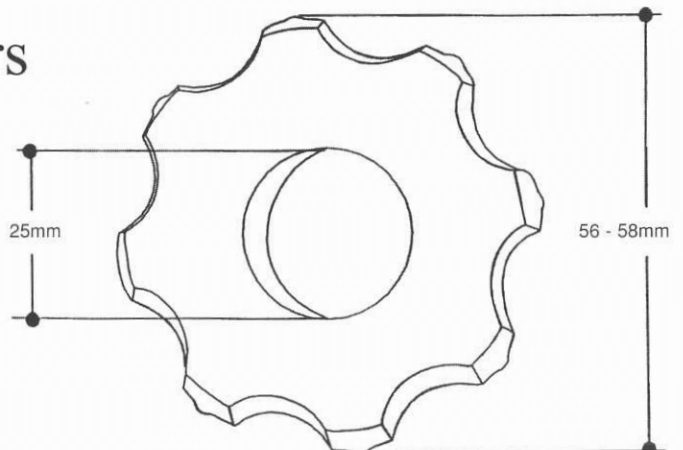


B - 3 Cutter
Part # 50140

SP10 Cutters



Beam Cutter
Part # 52135



T.C.T. Cutter
Part # 52137

SP10 Shaft size is 3/4"



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