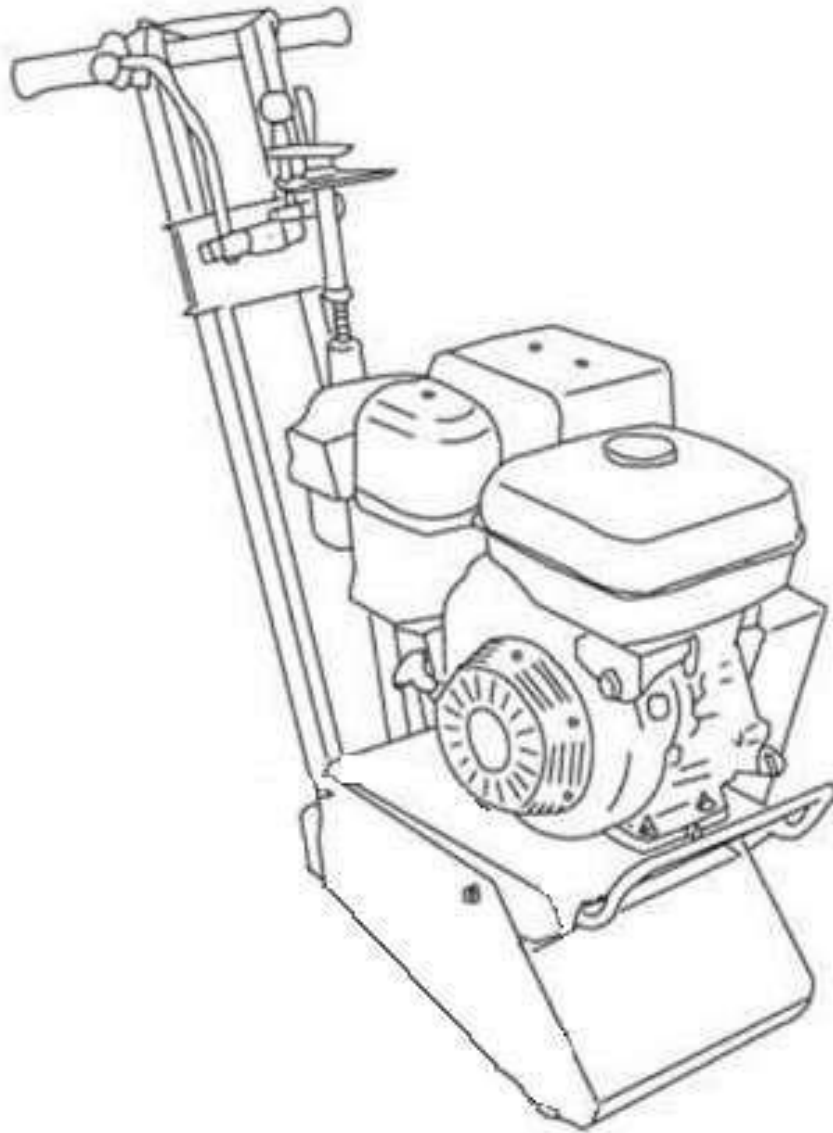


Operator's Safety and Service

Surface Scarifier



TFP-9

20042022

It is the OWNER'S RESPONSABILITY to communicate information on the
SAFE USE and OPERATION of this machine to the operators.

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1. SERIAL NUMBER LOCATION

The model/serial number decal is located on the shroud assembly (cowl).

(Write model number)

(Write serial number)

The unit year of manufacturing can be determined by its serial number. So, keep this information handy at all times, use your unit serial number when ordering parts.

This Unit warranty is stated in this Operational and Safety manual on page 16. Failure to return warranty registration card renders the warranty null and void.

An engine owner's manual is also attached to every unit. Engine parts must be order from any authorized HONDA dealer, or other if different than HONDA. Refer to the engine owner's manual lo learn about specifications and part identification.

REMEMBER – You own the best. If repairs are needed use only OEM purchased parts from authorized distributors.

ALWAYS HAVE READY:

1. Dealer Account number
2. Dealer Name and Address
3. Shipping address and method of shipping if different than billing address.
4. Applicable model and serial number of machine(s).
5. Item part number(s), description, and quantity.

2. OPERATING INSTRUCTIONS

This Operation manual contains only standard parts. Variations of these parts as well as other special accessories are not included. Contact your local distributor for assistance in identifying parts not included in this manual.

ASSEMBLY INSTRUCTIONS

1. Remove the machine and all components from its shipping crate. You will see:
 - Preamsembled Scarifier with no Cartridge, unless Cartridge was purchased separately and asked to be installed before shipping.

Note: All installation hardware must be inserted into its respective location on the unit, reference parts breakdown for more details if needed.

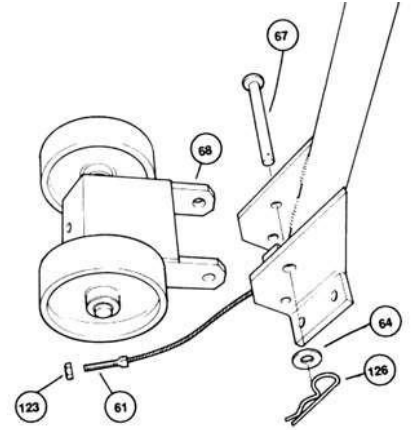


Warning: failure to use proper lifting equipment could cause machine to fall and cause serious injury.

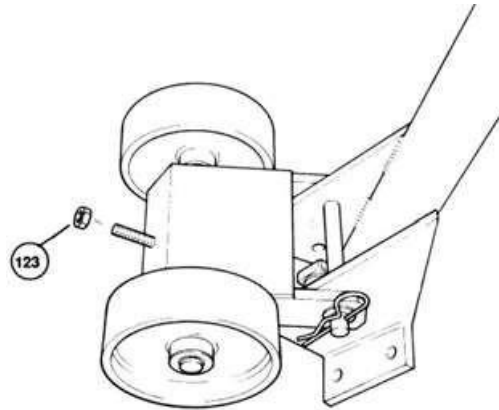
2. Bring unit down to the ground from shipping pallet. Scarifier can be hand lifted by 2 people without the need of handling equipment.
3. If machine is shipped regular, unit will con pre-assembled and only rear wheels will be missing.

For installation

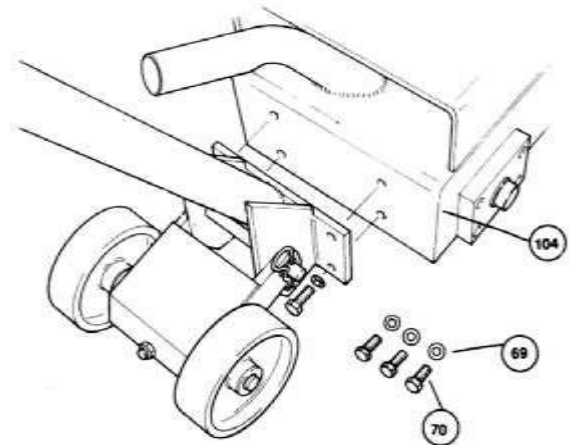
1. Remove the pin (67) from the handle assembly. Align the lift plate (68) and re-insert the top pin (67). Place flat washer (64) on pin. Insert spring clip (126) through hole in pin. Feed threaded bolt end of cable (61) through hole on lift plates.



2. Tighten cable by attaching nut (123).



3. Remove the four bolts (70) and lock washers (69) from machine housing (104). Match up the holes on the handle assembly to the machine housing and insert the bolts (70) and the washers (69). Tighten bolts corner-to-corner. Before final tightening, place the machine on a flat surface to ensure all wheels contact the surface.



CARTRIDGE INSTALLATION/REMOVAL



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.

1. Tilt machine back onto handle (if your unit is equipped with a Honda GX engine, unit must be tilted

forward or cylinders will be flooded with oil).

2. Remove cutter cage and retainer shaft.
3. Facing underside of machine, slide dummy shaft (110) through outboard bearing on left side (if engine is a Honda GX this will be on the right side of the housing).
4. Slide retainer shaft (108) through edger cage. The roll pin in the shaft head should fit into the slot on the end plate of the cage.
5. Slide retainer shaft through the outboard bearing and the dummy shaft.
6. Using a 15/16" socket or wrenches tighten the retainer shaft by turning counter clockwise.
7. Install edger housing (106) using the three bolts supplied (107).
8. NOTE: Edger operation is not to be performed with main TFP cage in place.



3.SAFETY PRECAUTIONS



WARNING



CALIFORNIA – Proposition 65 Warning

Engine exhaust and some of its constituents and some dust created by power sanding, sawing, grinding, drilling and other construction activities contains chemicals known to the State of California to cause cancer, birth defects and other reproductive harm.

Some examples of these chemicals are:

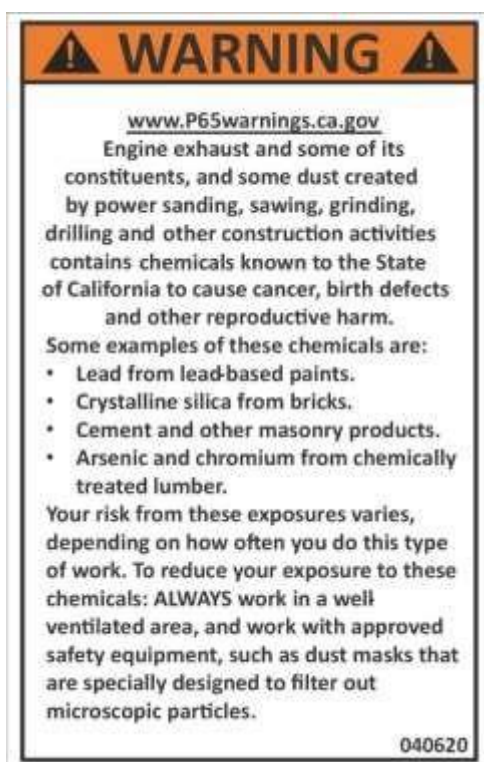
- Lead from lead-based paints
- Crystalline silica from bricks
- Cement and other masonry products
- Arsenic and chromium from chemically treated lumber

Your risk from these exposures varies, depending on how often you do this type of work. To reduce your exposure to these chemicals:

ALWAYS work in a well ventilated area, and work with approved safety equipment, such as dust masks that are specially designed to filter out microscopic particulates.

READ AND STUDY THE FOLLOWING SAFETY INFORMATION BEFORE ATTEMPTING TO OPERATE THIS EQUIPMENT. IN ADDITION, ENSURE THAT EVERY INDIVIDUAL WHO OPERATES OR WORKS WITH THIS EQUIPMENT IS FAMILIAR WITH THESE SAFETY PRECAUTIONS.

IT IS THE OPERATOR'S RESPONSIBILITY TO OPERATE OUR MACHINES ONLY WHEN WEARING THE PROPER PROTECTION RECOMMENDED BY THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION. HARM OR DEATH BY INHALING PARTICLES OR OTHER PHYSICAL INJURY MAY OCCUR IF THIS MACHINE IS OPERATED WITHOUT USING THE PROPER SAFETY GEAR, OR FOLLOWING THE APPROPRIATE PROCEDURES IN THIS MANUAL.



WARNING - LETHAL EXHAUST GAS!

An internal combustion engine discharges carbon monoxide, which is a poisonous and odorless invisible gas. Death or serious illness may result if inhaled. Operate only in an area with good ventilation. **NEVER IN A CONFINED AREA!**

WARNING - DANGEROUS FUELS!

Use extreme caution when storing, handling and using fuels - they are highly volatile and explosive in the vapor state. Do not add fuel while engine is running. Stop and cool the engine before adding fuel.

DO NOT SMOKE WHEN REFUELING!

SAFETY GUARDS

It is the owner's responsibility to ensure **ALL GUARDS AND SHIELDS** are in place and in working order.

IGNITION SYSTEMS



Breakerless magneto and batteries ignition systems **CAN CAUSE SEVERE ELECTRICAL SHOCKS**, avoid contact with these components or

their wiring.

SAFE DRESS

DO NOT WEAR loose clothing, rings, wristwatches, etc., near machinery.

NOISE PROTECTION

Wear O.S.H.A. specified hearing protection devices.

FOOT PROTECTION

Wear O.S.H.A. specified steel tip safety shoes.

HEAD PROTECTION

Wear O.S.H.A. specified safety helmets.

EYE PROTECTION

Wear O.S.H.A. specified eyes shields, safety glasses, and sweat bands.

DUST PROTECTION

Wear O.S.H.A. specified dust mask or respirator.

OPERATOR

Keep children and bystanders off and away from the equipment.

For details on safety rules and regulations in the United States, contact your local Occupational Safety and Health Administration (O.S.H.A.) office. Equipment operated in other countries must be operated and serviced in accordance and compliance with any and all safety requirements of such country.



4. SAFETY NOTICE & DECALS



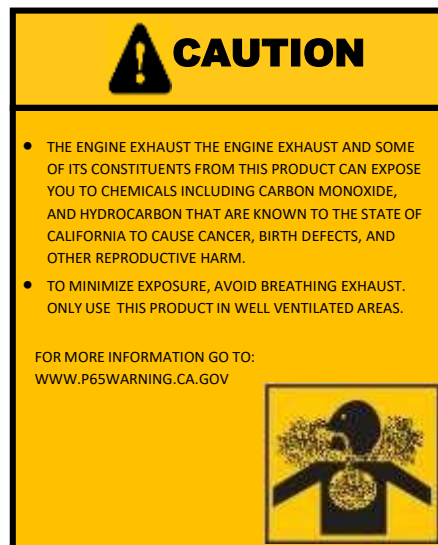
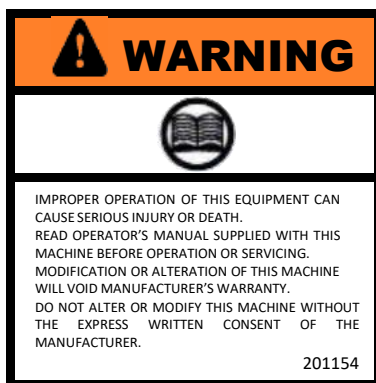
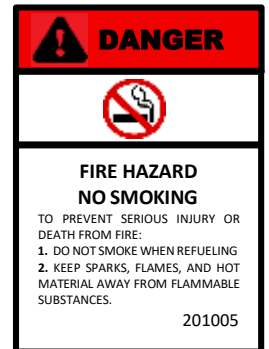
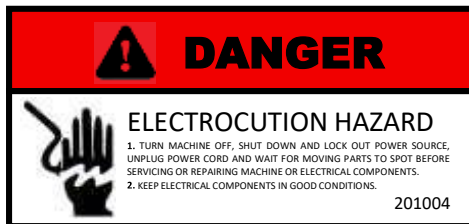
IMPORTANT NOTICE



The "**SAFETY ALERT SYMBOL**" is used to call attention to items or operations that may be dangerous to those operating or working with this equipment. These symbols can be found throughout the manual and on the unit itself. Please read these warnings and cautions carefully.

READ SAFETY DECALS CAREFULLY

Carefully read and follow all safety decals. Keep them in good conditions. If they become aged, replace as required. If repainting, **REPLACE ALL** decals. Decals are available from your authorized Distributors. Decals are not shown to scale.



5. BEFORE OPERATING

- **REMEMBER!** It is the owner's responsibility to communicate information on the safe use and proper operation of this unit to the operators.
- Before operating, review SAFETY PRECAUTIONS on this manual.
- Familiarize yourself with the operation of the unit and confirm that all controls function properly BEFORE starting engine.
- Locate the killing switch and assure you know how to STOP the unit.
- Make sure hands, feet, and clothing are at a safe distance from any moveable parts prior to starting.
- Shrouds and grids are provided to protect the operator or structures in close proximity to rotating hot engine parts. It is the **RESPONSABILITY OF THE OPERATOR** to see that they are properly secured.
- OIL LEVEL - Check the oil level in the engine. For more information see "Lubrication" under the engine "Owner's Manual" the "Maintenance" section of this manual.

All units come without oil on **ENGINE**. Running an engine without lubrication may damage this unit.

- AIR CLEANER - Check to ensure elements are in good condition and properly installed.
- Review every decal with the OPERATOR.
- FUEL SUPPLY – Engines require an automotive grade of clean, fresh, unleaded or regular gasoline. **All units come WITHOUT gasoline, oil or any other fluid.**
- FUEL FILTER - Check to ensure element is in good condition... Replace if it is clogged or damaged.
- LUBRICATION POINTS - Grease wheels (4), arbor shaft bearings (2) daily.
- POSITION – The only operating position for this saw is between the handle bars at the rear of the saw. If the operator must leave this position the engine must be shut down.
- SPECTATORS – Keep all personnel/spectators away from saw while cutting. Spinning diamonds blades can throw segments; abrasives blades can crack.

6. OPERATION INSTRUCTIONS

Prior to starting engine, make sure all guards are in place and secured and that the blade guard is at least 1" away from the cutting area.

Check Gas engine

IMPORTANT
Engine warranty is void if the engine is run without oil.

1. Open the fuel valve.
2. Pull the stop switch on the engine shroud to its "Out" position.
3. Move the engine throttle control to the "FAST" position.
4. Choke the engine X3 times for warming, if necessary.
5. Pull the starter string.
6. After the engine starts, move the choke lever to the open position, move the throttle level to the "IDLE" position and let the engine warm-up for one or two minutes.

OPERATING

1. Make sure the diamond cutters are at least 1" away from grinding area "IDLER" position.
2. Pull the stop switch on the engine shroud to its "Out" position.
3. If using a dust control vacuum make sure is running before starting machine.
4. Pull the engine starter string.



DO NOT OPERATE THIS UNIT WITH CHECKING ALL POINTS!

5. After turning engine/motor "ON", and the Scarifier in its raised position, attach the air supply (minimum 90 C.F.M. at 90 P.S.I.) turn quick opening valve on. Run in for two (2) minutes. Turn valve off, and 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.
6. SLOWLY LOWER CUTTERS! Lower machine until it just touches the material to grind adjusting the crank clockwise into the desired grinding height.
7. Slowly push Scarifier forward to desired area.
This Unit can be used as several applications, make sure you know the operation procedure of this equipment and the cutters types for each application
8. To stop the engine, make sure to let the engine idle before stopping by using the crank lift handle to raise the machine height.
9. Push in the engine stop switch on the machine.
10. Close the fuel valve.
11. Additional cleaning may be needed.

**REMEMBER! ALWAYS USE
PERSONAL SAFETY
EQUIPMENT.**

7.TYPICAL SCARIFIER APPLICATIONS

- Asphalt leveling and grooving
- Carpet backing removal
- Coating removal
- Concrete grinding
- Concrete & steel surface preparation
- Concrete grooving
- Epoxy removal
- Expansion joint leveling
- Floor cleaning steel & concrete
- Glue/adhesive removal
- Milling joints
- Non-slip removal
- Paint removal
- Steel de-scaling
- Traffic line removal
- Wheelchair ramp leveling.

8. RECOMMENDED CUTTERS TYPE SELECTION

ADHESIVES – CARPET R120 (B-1 Cutters)

Most carpets adhesives removal

Estimated Production Rate: 100-300 sq. ft/hr. Estimated Cutter Life: 1200-1500 sq. ft.

ADHESIVES – TILE R138 (A-3, B-3 Cutters)

Most tile adhesives removal.

Estimated Production Rate: 100-250 sq. ft/hr.

Estimated Cutter Life: 1200-1500 sq. ft

CONCRETE GRINDING - R150, R151, or R152 (Carbide Cutters)

Smoothing rough concrete and/or grinding high spots.

Estimated Production Rate: 200-500 sq. ft/hr.

Estimated Cutter Life: 3000-6000 sq. ft

CONCRETE SCARIFYING/GRINDING R134 or R139 (Tungsten Carbide Tipped Cutters)

Preparation prior coating application or concrete overlay (1/8" depth of cut per pass.)

Estimated Production Rate: 200-400 sq. ft/hr.

Estimated Cutter Life: 8000-15,000 sq. ft

PAINTING LINES REMOVAL R132 (B-2) - Painting concrete/asphalt lines removal

Estimated Production Rate: 10-20 linear ft/min

Estimated Cutter Life: 800-2000 linear ft.

THERMOPLASTIC LINES REMOVAL R143 (B-3) - Thermoplastic concrete/asphalt base paints

Estimated Production Rate: 10-20 linear ft./min

Estimated Cutter Life: 800-1200 linear ft.

9. ADDING FLUIDS AND TRANSPORTATION

GAS ENGINE

1. Move the engagement lever to the "IDLER" position and lock saw.
2. Pull off the engine stop switch.
3. Close the fuel valve.
4. Add oil to continue operation / Drain oil if need oil change.
5. Add gasoline if needed.

**STOP THE ENGINE OR ELECTRIC MOTOR BEFORE:**

1. Adding fuel/Oil.
2. Leaving equipment unattended for any amount of time.
3. Making any repairs or adjustments to the unit.
4. Transportation.

**IF LIFTING/LOWERING EQUIPMENT ALWAYS:**

1. Leave lift/lower crank handle in locked position.
2. Stop the engine or electric motor.
3. Secure any other hardware on the equipment.
4. Make sure you use appropriated lifting equipment rated to lift the Scarifier.
Have in mind the equipment weight.
5. Do not position yourself where you could possibly be pinched / caught between equipment and some other obstacle.

TRANSPORTING

1. Move Scarifier on the jobsite with appropriate lifting equipment.

STORING

1. Drain fuel tank.
2. Remove cartridge.
3. Clean cartridge shaft, threats, Coat parts with grease.
4. Lube all bearings
5. Lower unit completely.
6. Cover unit for dust/weather protection.

10. SERVICE INSTRUCTIONS

- Never service or lubricate the unit engine while running.
- After servicing the unit, restore and fasten all guards, shields, and covers to their original positions.
- Never drain oil into the ground, into open streams, or down sewage drains.

ENGINE

See engine owner's manual maintenance schedule.

If lost please visit <https://engines.honda.com/parts-and-support/owners-manuals> for more information.

LUBRICATION

1. Grease wheels (4), and knob lever daily. Use high quality gun grease.
2. Keep a coating of grease on the drive shaft and threads for easy installation or removal and longer bushing life.

SPARK PLUG

1. Check and clean spark plugs regularly. A fouled, dirty or carbonized spark plug causes hard starting and poor engine performance. Set spark plug gap to recommended clearance. Refer to engine manual.

BELT TENSION

1. If there is excessive belt play, there will be a decrease in the cutting/grinding action, which could cause cage and machine damage. The normal belt play should be 3/8" to 1/2" which is attained by depressing the top section of the belt at the belt guard mounting bracket location. When adjusting the belt make sure that the drive pulley is in alignment with cage pulley. Tighten all engine mount bolts, adjust the two engine-stop bolts, and tighten lock nuts.

CUTTER CAGE REMOVAL/CHANGE

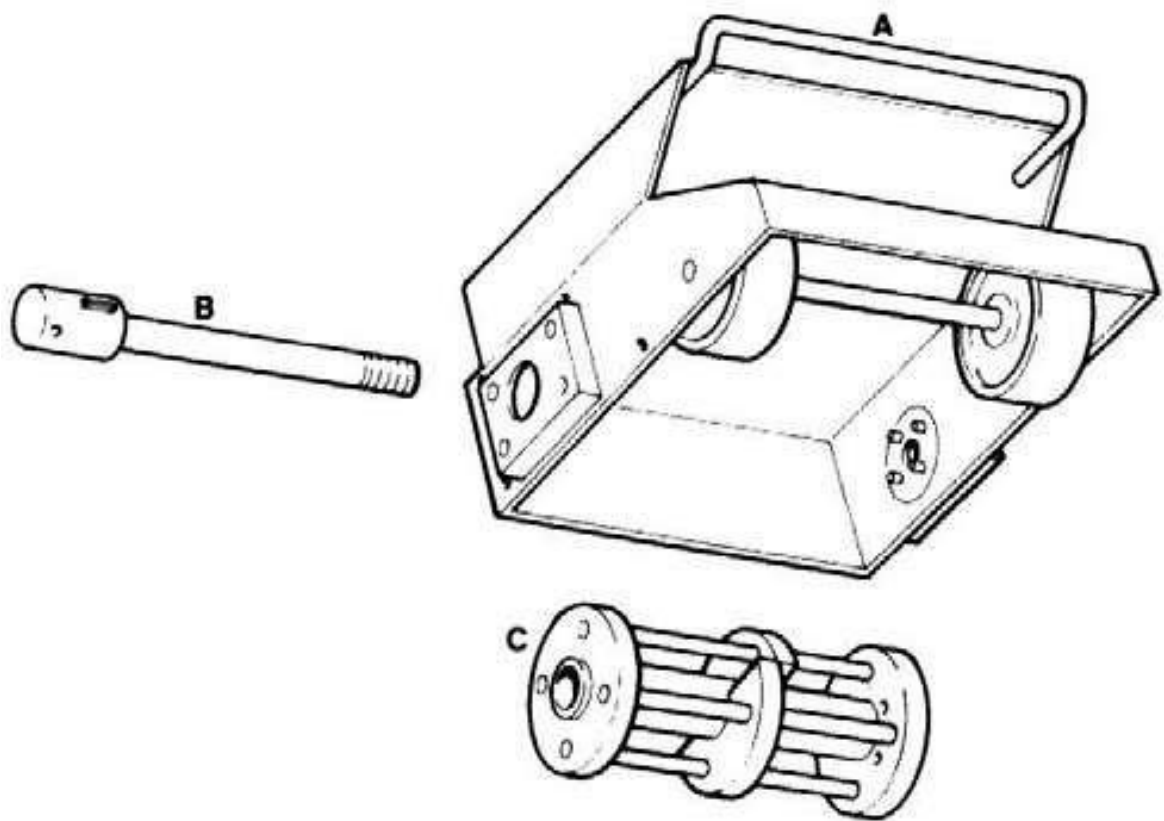
1. Make sure that the power source is disconnected. With gas models turn off fuel supply to engine and disconnect sparkplug; unplug electric unit; disconnect air supply on air unit.
2. Tilt machine back onto the handle. (If your unit is equipped with a Honda GX engine, unit must be tilted forward to change cutters or cylinders will be flooded with oil).

3. Facing the underside of the machine housing (figure 3-A)
place a bar between the cutter rods to jam cage C.
4. Remove end cap and with a 1" (26 mm) socket loosen and remove the shaft by turning in clockwise direction or remove end cap and shaft guard to insert a drift pin into the hole on the main shaft B and turn shaft clockwise to loosen and remove shaft.
5. Disengage the cage from the drive pins by moving to the left. (The cage on the Honda GX machines will move to the right). Remove cage.

EDGER CAGE REMOVAL

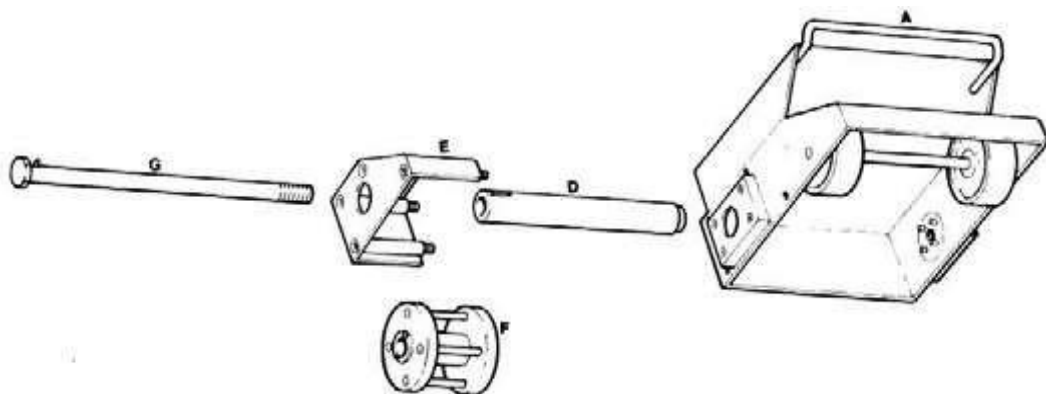
1. Make sure that the power source is disconnected. With gas models turn off fuel supply to engine and disconnect sparkplug; unplug electric unit; disconnect air supply on air unit.
2. Tilt machine back onto handle. (If your unit is equipped with a Honda GX engine, unit must be tilted forward to change cutters or cylinders will be flooded with oil).
3. Using a 15/16" socket or wrench, turn head of shaft (G) 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 (A). Turn shaft out and move.
5. Cage will be free to remove from edger.

Figure 3A



CHANGING CUTTERS/SHAFTS

1. Once the cage has been removed use a 5/32" Allen Key and 7/16" open end wrench, remove screws and cover plate from cage. With drift pin tap rods 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 the shaft is tight.



11.MAINTENANCE SCHEDULE

1. Check all hardware after the first 5 hours of use, the follow the maintenance schedule.
2. Check oil daily. Change after 5 (five) hours of use and every 25 hours after first change. Refer to engine manual for oil grades.
3. Use high quality gun grease, Kendall "SHP High temp" or equal.
4. Clean air filter and foam pre-cleaner daily. More often if dry cutting. Always use foam element pre-cleaner over paper cartridge. Never run engine with clogged or missing air filter.
5. Re-check cartridge shaft after first 25 hours of operation.
6. Set each belt for ¼" deflection with a 6lb load in middle of belt span. Over tensioning or under tensioning belts will cause premature belt fatigue. To adjust, loosen hex nut on belt tension bolt (2 places). To increase belt tension, turn tension bolts clockwise. To decrease belt tension, turn tension bolts counter clockwise. After adjusting belts make sure engine mount plate is LEVEL to frame. Secure position of tension bolts by tightening hex nuts.
7. Follow the maintenance schedule.

	<i>Maintenance</i>	<i>Each use</i>	<i>Every 20 hours</i>	<i>Every 50 hours</i>	<i>Every 100 hours</i>	<i>Yearly</i>
Engine	Refer to engine operator/owner manual	X				X
Air Cleaner	Refer to engine operator/owner manual	X				X
Oil	Oil change		X			
Bearings	Grease Arbor Shaft Bearings	X				X
V-Belts	Check for excessive wear		X			X
Cartridge	Recheck cartridge tension		X			
Hardware	Check and tighten 1,2		X	X		X

12. REPLACEMENT

Parts

Tolerance or Replacement Cycle

Engine Components

V-Belts

Cutters

Cartridge Shafts

Hardware

Safety Decals

- ✓ Refer to your engine manufacturer's Owner's Manual
- ✓ Replace if stretched to the point that the idler does not work properly. Replace the V-belts if they are cracked or torn.
- ✓ Replace if cutters present any missing segments or stress cracks.
- ✓ Replace shafts on cartridge if become loose or Scarifier break constantly.
- ✓ Re-torque all bolts after the first eight hours of operation and check hardware every 25 hours. Replace any worn or damaged hardware as needed. Replacement hardware should be grade 5 and zinc plated.
- ✓ Replace if they become aged, damaged or cannot be easily read.

13. EQUIPMENT SPECS

MODEL	TFP-9
Working Width in (cm)	8" (20)
Grinded/Scarified area sq. ft./hr. (m ²)	350-500 sq. ft. /hr. (32-46)
Grinded/Scarified depth in (mm)	at a 1/8" (3 mm) depth
Engine Power	5 HP Electric 5.5 or 8 HP Honda
Overall Length in (cm)	35" (89)
Overall Width in (cm)	20" (51)
Overall Height in (cm)	39" (99)
Operating Weight lbs. (Kg)	190 lbs. (87)

14. TORQUE CHART

APROXIMATE TIGHTENING TORQUE

SIZE	GRADE 2	GRADE 5	GRADE 8
# 10-24	21 in-lbs	32 in-lbs	45 in-lbs
# 10-32	23 in-lbs	36 in-lbs	51 in-lbs
1/4-20	49 in-lbs	76 in-lbs	9 in-lbs
1/4-28	56 in-lbs	87 in-lbs	10 in-lbs
5/16-18	8 in-lbs	13 in-lbs	18 in-lbs
5/16-24	9 in-lbs	14 in-lbs	20 in-lbs
3/8-16	15 in-lbs	23 in-lbs	33 in-lbs
3/8-24	17 in-lbs	26 in-lbs	37 in-lbs
7/16-14	24 in-lbs	37 in-lbs	52 in-lbs
7/16-20	27 in-lbs	41 in-lbs	58 in-lbs
1/2-13	37 in-lbs	57 in-lbs	80 in-lbs
1/2-20	41 in-lbs	64 in-lbs	90 in-lbs
9/16-12	53 in-lbs	82 in-lbs	115 in-lbs
9/16-18	59 in-lbs	82 in-lbs	129 in-lbs
5/8-11	73 in-lbs	112 in-lbs	159 in-lbs
5/8-18	83 in-lbs	112 in-lbs	180 in-lbs
3/4-10	129 in-lbs	223 in-lbs	282 in-lbs
3/4-16	144 in-lbs	200 in-lbs	315 in-lbs
7/8-9	125 in-lbs	322 in-lbs	454 in-lbs
7/8-14	138 in-lbs	355 in-lbs	501 in-lbs

APROXIMATE TIGHTENING TORQUE

SIZE	GRADE 2	GRADE 5	GRADE 8
1-8	188 ft-lbs	483 ft-lbs	682 ft-lbs
1-12	205 ft-lbs	529 ft-lbs	746 ft-lbs
1-14	210 ft-lbs	541 ft-lbs	764 ft-lbs
1-1/8-7	266 ft-lbs	596 ft-lbs	966 ft-lbs
1-1/8-12	297 ft-lbs	668 ft-lbs	1083 ft-lbs
1-1/4-7	375 ft-lbs	840 ft-lbs	1363 ft-lbs
1-1/4-12	415 ft-lbs	930 ft-lbs	1509 ft-lbs
1-3/8-6	491 ft-lbs	1102 ft-lbs	1787 ft-lbs
1-3/8-12	559 ft-lbs	1254 ft-lbs	2034 ft-lbs
1-1/2-6	652 ft-lbs	1462 ft-lbs	2371 ft-lbs
1-1/2-12	734 ft-lbs	1645 ft-lbs	2668 ft-lbs
M 6	3 ft-lbs	4 ft-lbs	7 ft-lbs
M 8	6 ft-lbs	10 ft-lbs	18 ft-lbs
M 10	10 ft-lbs	20 ft-lbs	30 ft-lbs

CONVERSIONS

in - lbs x 0.083 = ft-lbs

ft - lbs x 12 = in-lbs

ft - lbs x 0.1383 = kg-m

ft - lbs x 1.3558 = N-m

15. WAREHOUSE LOCATIONS

We are at your service

We have established a network of reputable distributors with trained mechanics and full facilities for maintenance and rebuilt, and to carry an adequate stock parts in all areas of the country. Their sales engineers are available for professional consultation.

Phone: 956-796-9411

Fax: 956-462-2500

service@btmequipment.com

16. ADDITIONAL NOTES:

[illegible]