

# Operator's Safety and Service Manual

## SCARIFIER



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

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# SERIAL NUMBER LOCATION

- 1.- The model/serial number decal is located on the front leg in the middle.
- 2.- The serial number is also stamped on the mixer frame on the bottom back part of the shroud ( left side ).

(Write model number in blank)

(Write serial number in blank)

The units year of Manufacture can be determined by the serial number. Contact your nearest Sales Branch or  for this information

## BEFORE OPERATING


The Warranty is stated in this book on page 18. Failure to return Warranty Registration Card renders The Warranty null and void.


An "Owner's Manual" for the engine is also furnished. Engine parts may ordered from any authorized dealer. Refer to the engine " Owner's Manual" for exploded views and part identifications.

### PARTS ORDERING :

 parts are available worldwide and may be ordered through your local distributor. If you can not locate a  distributor in your area. refer to page 19 of this manual to locate the 

### ALWAYS INCLUDE :

- 1.- Model and Serial Number of machine when ordering  parts.
- 2.- Model and Serial Number of engine when ordering Engine Parts.
- 3.- Item Parts Number, Description, and Quantity.
- 4.- Company Name, Address, Zip Code, and Purchase Order Number.
- 5.- Preferred method of shipping.

**REMEMBER - you own the best. If repairs are needed use only parts purchased from Authorized  distributor**



# ▲ SAFETY PRECAUTIONS ▲

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.

## **WARNING - LETHAL EXHAUST GAS!**

An internal combustion engine discharges carbon monoxide, poisonous, 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 vapor state. Do not add fuel while engine is running. Stop and cool the engine before adding fuel. **DO NOT SMOKE!**

## **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 battery ignition systems **CAN CAUSE SEVERE ELECTRICAL SHOCKS**. Avoid contacting these units 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.

## **OPERATOR**

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 that country. The publication of these safety precautions is done for your information  does not by the publication of these precautions, imply or in any way represent that these are the sum of all dangers present near  equipment. If you are operating  it is your responsibility to insure that such operation is in full accordance with all applicable safety requirements and codes. All requirements of the United State Federal Occupational Safety and Health Administration Act must be met when operated in areas that are under the jurisdiction of that United States Department.

# Health and Safety

## Safety Precautions

Before using this equipment, study this entire manual to become familiar with its operation. Do not allow untrained or unauthorized personnel, especially children, to operate this equipment. Use only factory authorized parts for service.

When warning decals are destroyed or missing, contact \_\_\_\_\_ for replacement. For the safety of yourself and others, it is imperative that the following rules are observed. Failure to do so may result in serious injury or death.



This notation appears before warnings in the text. It means that the step which follows must be carried out to avoid the possibility of personal injury or death. These warnings are intended to help the technician avoid any potential hazards encountered in the normal service procedures. We strongly recommend that the reader takes advantage of the information provided to prevent personal injury or injury to others.

### USE COMMON SENSE WHEN HANDLING FUELS

Transport and handle fuel only when contained in approved safety container.

Do not smoke when refueling or during any other fuel handling operation.

Do not refuel while the engine is running or while it is still hot.

If fuel is spilled during refueling, wipe it off from the engine immediately and discard the rag in a safe place.

Do not operate the equipment if fuel or oil leaks exist - repair immediately.

Never operate this equipment in an explosive atmosphere.



Ear protection required when operating this equipment.

# Health and Safety

## Safety Precautions



Avoid contact with hot exhaust systems and engines.  
Allow engine to cool before performing any repairs.



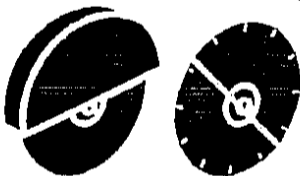
Never operate unit in a poorly ventilated or enclosed area.  
Avoid prolonged breathing of exhaust gases.



Eye protection required when operating this equipment.



Head protection required when operating this equipment.



Never operate this equipment without all guards in place.

# Technical Data

# Torque Chart - Imperial

SAE GRADE 5 Coarse Thread Zinc-Plated		
SIZE	TORQUE	
	fl.lbs.	Nm
¼ - 20 (.250)	6	8
5/16-18(.3125)	13	18
3/8 -16 (.375)	23	31
7/16-14(.4375)	37	50
½ - 13 (.500)	57	77
9/16-12 (.5625)	82	111
5/8-11 (.625)	112	152
¾ - 10 (.750)	200	271
7/8 - 9 (.875)	322	436.5
1 - 8 (1.000)	483	655

SAE GRADE 5 Fine Thread Zinc-Plated		
SIZE	TORQUE	
	fl.lbs.	Nm
¼ - 28 (.250)	7	10
5/16-24(.3125)	14	19
3/8 -24 (.375)	26	35
7/16-20(.4375)	41	56
½ - 20 (.500)	64	87
9/16-18 (.5625)	91	123
5/8-18 (.625)	128	173
¾ - 16 (.750)	223	302
7/8 - 14 (.875)	355	481
1 - 12 (1.000)	529	717
1 - 14 (1.000)	541	733

SAE GRADE 8 Coarse Thread Zinc-Plated		
SIZE	TORQUE	
	fl.lbs.	Nm
¼ - 20 (.250)	9	12
5/16-18(.3125)	18	24
3/8 -16 (.375)	33	45
7/16-14(.4375)	52	70
½ - 13 (.500)	80	108
9/16-12 (.5625)	115	156
5/8-11 (.625)	159	215
¾ - 10 (.750)	282	382
7/8 - 9 (.875)	454	615
1 - 8 (1.000)	682	925

SAE GRADE 8 Fine Thread Zinc-Plated		
SIZE	TORQUE	
	fl.lbs.	Nm
¼ - 28 (.250)	10	14
5/16-24(.3125)	20	27
3/8 -24 (.375)	37	50
7/16-20(.4375)	58	79
½ - 20 (.500)	90	122
9/16-18 (.5625)	129	175
5/8-18 (.625)	180	244
¾ - 16 (.750)	315	427
7/8 - 9(.875)	501	679
1 - 12 (1.000)	746	1011
1 - 14 (1.000)	764	1036

# Technical Data

# Torque Chart - Metric

Monthly, inspect all hardware on this equipment and engine/motor. Loose hardware can contribute to early component failure and poor performance. Use the torque chart below as a general guideline and keep all hardware tight.

Note: Some hardware is used to retain parts that have to move freely for correct operation of this unit. The hardware for these items should be snug enough to prevent excessive play, yet loose enough to allow the parts to pivot freely.

## Property Class 8.8

### ZINC-PLATED

SIZE
M6
M8
M10
M12
M14
M16
M20
M24

### Coarse Thread

Nm	ft.lbs
9.9	7
24	18
48	35
83	61
132	97
200	148
390	288
675	498

### Fine Thread

Nm	ft.lbs
10	7
25	18
49	36
88	65
140	103
210	155
425	313
720	531

## Property Class 10.9

### ZINC-PLATED

SIZE
M6
M8
M10
M12
M14
M16
M20
M24

### Coarse Thread

Nm	ft.lbs
14	10
34	25
67	49
117	86
185	136
285	210
550	406
950	701

### Fine Thread

Nm	ft.lbs
14	10
35	26
68	50
125	92
192	142
295	218
600	443
1000	738

## PROPERTY Class 12.9

### ZINC-PLATED

SIZE
M6
M8
M10
M12
M14
M16
M20
M24

### Coarse Thread

Nm	ft.lbs
16.5	12
40	30
81	60
140	103
220	162
340	251
660	487
1140	841

### Fine Thread

Nm	ft.lbs
16.5	12
42	31
82	60
150	111
235	173
350	258
720	531
1200	885

Conversion Factor: 1ft.lb. = 1.3558 Nm



# Operation

# Introduction/Determining the Right Machine

Congratulations on your purchase. You've made an excellent choice! It has been specifically designed as the ideal machine for the professional contractor who is engaged in concrete and asphalt flat sawing.

They are used for the primary purpose of "flat" sawing. This type of sawing is described as "flat" because the pavement is cut somewhere close to a horizontal plane. It is the most common type of diamond blade cutting.

Concrete saws in the industry are available in a variety of types, sizes and styles.

You will find one to fit a wide variety of job applications.

Upon receipt of it, CAREFULLY CHECK FOR ANY FREIGHT DAMAGE. Any damaged should be immediately reported to the carrier and a claim registered.

It is manufactured to the strictest specifications and inspection procedures. If any material or manufacturing defects are found, return the tag on the machine with assembler's signature and your findings to the manufacturer. We want to know when a product is less than perfect. We also welcome any and all input on how the product may serve you better.

## Operation      Operating Principle/Delivery Checks/ Installing Blade/Types of Cutting

### **OPERATING PRINCIPLE**

The following instructions were compiled to provide you information on how to obtain long and trouble free use of the unit. Periodic maintenance of this unit is essential. Read the manual in its entirety and follow the instructions carefully. Failure to do so may injure yourself or a bystander.

### **DELIVERY CHECKS**

Immediately upon taking delivery of your new equipment and before putting it into service:

- Read the handbook completely--it could save a great deal on unnecessary expense.
- Read the engine manual supplied.
- Check the general condition of the equipment--has it been damaged during delivery?
- Check engine oil level.
- Check fuel levels.

Recommended lubricants are detailed in the CARE AND MAINTENANCE section.

### **INSTALLING BLADE**

1. Be certain that the spark plug is disconnected or saw is unplugged.
2. Remove the blade shaft nut, right hand thread, and take off outside blade shaft collar.
3. Clean off any foreign particles on the clamping surfaces of collars and on the mounting surface of the blade.
4. Place the blade on the blade shaft, lining up the offset drive pin in the blade with the drive pin in the mounting collar. If your blade has a directional rotational arrow, position arrow for down cut (diamond tail trailing for down cut).
5. Replace the outside blade shaft collar on the blade shaft. Drive pin on the inside collar must project through the drive hole in the blade and into the outside collar.
6. Tighten the blade shaft nut (right-hand thread) securely against star washer and outside collar, using two wrenches supplied.
7. Reconnect the spark plug or (with switch "off") plug in the electric supply cord.

## TYPES OF CUTTING

Cut speed depends entirely on using the correct blade for the material to be cut. Wet or dry, diamond blades of various specifications are available for cutting concrete or asphalt.

Manual Saws - require the operator to push the saw through the material. They are ideal for small jobs where high productivity is not required.

# Operation

## BEFORE STARTING

1. Use correct blade for cutting conditions.
2. Ensure arbors and collars are clean and undamaged.
3. Mount blade and tighten securely using both wrenches.
4. When wet cutting, check water jets for adequate flow.
5. Disengage transmission on self-propelled models.
6. Align pointer with saw blade.



**Caution - Set unit up in an open area. Avoid close proximity to structures or other equipment. Failure to do so may cause inadvertent injury to operator or other persons in the area.**

**Cold Start** - Open the fuel valve under the gas tank all the way. Position the engine stop switch, located on the engine, to run. Open the throttle approximately half way and apply the choke. Pull the starter rope sharply. When the engine starts, open the choke and adjust the throttle as necessary to keep it running. Allow the engine to warm up for a few minutes before placing it under the load. If the engine doesn't start after (3) pulls, open choke slightly to prevent flooding. Always operate the engine at full throttle when under load.

**Hot Start** - Open the valve under the gas tank all the way if it has been shut off. Open the

## Before Starting/Cold Start/Hot Start/To Start Sawing

throttle approximately half way. Do not apply the choke. Pull the starter rope sharply until the engine starts. When the engine starts, adjust the throttle. Always operate the engine at full throttle when under load.

**NOTE:** These starting instructions are general guidelines only. Since many engine options are available, consult the Engine Manual included with this unit for specific instructions.



**Caution - Gasoline Engines - To improve the engine service life, allow the engine to idle without load for (2) to (5) minutes before shutting it down. When the idling period is up, use the stop switch located on the engine and turn it to stop. Close the fuel valve under the gas tank. Engine flooding can occur if the valve is left open during transport.**

## TO START SAWING

1. Start engine and let engine warm up. All sawing is done at full throttle.
2. Align blade and saw with cut. If wet sawing, open water valve and turn water safety switch on.
3. Lower blade to touch surface and re-zero depth gauge.
4. Lower blade into cut slowly.
5. Put speed control in neutral, engage transmission and move speed control lever slowly toward forward position.

# Operation

# Cutting/Belts & Pulleys

7. Use only enough side pressure on saw handles to follow cutting line.

## CUTTING

Lower the blade into concrete to required depth by turning the tilt crank counterclockwise. Ease the saw slowly forward. Slow forward pressure if the saw begins to stall.

Note: For deeper cuts (4 inches/102 mm or more), several cuts should be made in incremental steps of 1-1/2 inch (38 mm) to 2 inches (51 mm) until the desired depth is reached.

Push the saw steadily forward using the front pointer as a guide. Exert enough forward pressure so that the engine/motor begins to labor, but does not slow down. If the saw begins to stall, retard forward movement until full RPM is restored to the blade. If saw stalls, raise the blade out of the cut before restarting. Avoid excessive side pressure or twisting of the blade in the cut.

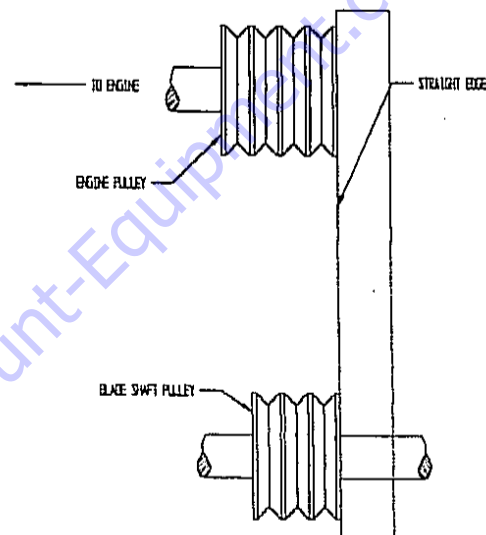
## BELTS & PULLEYS

**NEVER MAKE ADJUSTMENTS TO V-BELTS AND PULLEYS WHILE ENGINE IS RUNNING.**

1. The best tension for a v-belt drive is the lowest tension at which the belts will not slip under full load.
2. Take up tension until the belts are snug in the grooves. Run the drive for about five (5) minutes to "seat" the belts. Then impose the peak load. If the belts slip, tighten them until they no longer slip at peak load. Most new belts will need additional tensioning after seating.
3. Remember, too much tension shortens belt and bearing life.
4. Check the belt tension frequently during the first day of operation. Check the belt tension periodically thereafter and make any necessary adjustments.

5. The two most common causes of sheave misalignment are:
  - a) The engine drive shaft and the blade shaft are not parallel.
  - b) The pulleys are not located properly on the shafts.

6. To check alignment, use a steel straight edge.



7. Line up the straight edge along the outside face of both pulleys shown in the drawing. All pulleys have (2) set screws in the bottom of their grooves. Set screws require thread locking lock tite.
8. Misalignment will show up as a gap between the pulley face and straight edge. Make sure there is clearance between arbor pulley and saw base on both sides.

## DRY CUTTING



- Never operate any saw without safety guards in place.
- Do not exceed maximum operating speed established for blade diameter.
- Do not force blade into material: allow blade to cut at its own speed.
- Do not make long continuous cuts. Never dry cut for more than 30 seconds at a time. Allow blade to cool.
- Do not cut, or grind with side of blade or cut a curve or radius.
- Do not cut dry with blades recommended for wet cutting.
- Do not operate saw with blade diameter larger than machine's capacity.

## Maintenance

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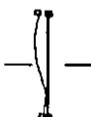


### IMPORTANT

THE PERSON ATTEMPTING ANY OF THE FOLLOWING MAINTENANCE TASKS, MUST BE AUTHORIZED TO DO SO AND HAVE READ AND UNDERSTOOD ALL SECTIONS WITHIN THIS MANUAL

# Maintenance

# Troubleshooting

PROBLEM	CAUSE	REMEDY
<p>UNEVEN SEGMENT WEAR</p> 	<ul style="list-style-type: none"><li>• (In wet cutting) Insufficient water (usually on one side of blade).</li><li>• Equipment defects also can cause the segments to wear unevenly.</li><li>• Saw head is misaligned.</li></ul>	<ul style="list-style-type: none"><li>• Flush water system.</li><li>• Check flow to both sides of blade.</li><li>• Replace bad bearings, worn arbor shaft or misalignment to spindle.</li><li>• Check alignment for squareness, both vertically and horizontally, of the saw blade.</li></ul>
<p>SEGMENT CRACKS</p> 	<ul style="list-style-type: none"><li>• Blade is too hard for material being cut.</li></ul>	<ul style="list-style-type: none"><li>• Use a blade with a softer bond/matrix.</li></ul>
<p>SEGMENT LOSS</p> 	<ul style="list-style-type: none"><li>• Blade overheats because of lack of coolant (water or air).</li><li>• Core is worn from undercutting.</li><li>• Defective collars/flanges set blade out of alignment.</li><li>• Blade is too hard for material being cut.</li><li>• Blade is cutting out of round, causing a pounding motion.</li><li>• Improper blade tension.</li></ul>	<ul style="list-style-type: none"><li>• (Wet Cutting) Check water lines. Make sure flow is adequate on both sides of blade and there are no blockages. Use sufficient water to flush out the cut.</li><li>• (Dry Cutting) Run blade free of cut periodically to air cool.</li><li>• Clean collars/flanges or replace if they are under recommended diameter.</li><li>• Use proper blade specification for material being cut.</li><li>• Replace worn bearings; realign blade shaft or replace worn blade mounting arbor.</li><li>• When ordering blades match shaft speed of saw.</li><li>• Check spindle speed to ensure blade is running at correct RPM.</li><li>• Avoid twisting or turning blade in the cut.</li></ul>
<p>CRACKS IN CORE</p> 	<ul style="list-style-type: none"><li>• Blade flutters in cut as a result of losing blade tension.</li><li>• Blade specification is too hard for the material being cut.</li></ul>	<ul style="list-style-type: none"><li>• Tighten the blade shaft nut.</li><li>• Make sure blade is running at proper speed and that drive pin is functioning properly.</li><li>• Use a softer bond/matrix to eliminate stress.</li></ul>
<p>LOSS OF TENSION</p> 	<ul style="list-style-type: none"><li>• Core overheating.</li><li>• Core overheating as a result of blade spinning on arbor.</li><li>• Core overheating from rubbing the material being cut.</li><li>• Unequal pressure at blade clamping collars/flanges.</li><li>• Blade is too hard for the material being cut.</li></ul>	<ul style="list-style-type: none"><li>• Make certain blade RPM is correct.</li><li>• Check water flow, distribution and lines.</li><li>• Tighten the blade shaft nut.</li><li>• Make certain the drive pin is functioning.</li><li>• Properly align the saw to square cut.</li><li>• Collars/flanges must be identical in diameter and the recommended size.</li><li>• Use a softer bond/matrix to reduce stress.</li></ul>

# Maintenance

# Troubleshooting

## PROBLEM

## CAUSE

## REMEDY

### BLADE WOBBLER



- Blade is on a damaged or worn saw.
- Worn collar.
- Blade runs at an incorrect speed.
- Collar /flange diameters are not identical.
- Blade is bent as a result of dropping or twisting.

- Check for bad bearings, bent shaft, or worn mounting arbor.
- Check collars/flanges to make sure they are clean, flat and of correct diameter.
- Set engine at proper rpm.
- Use proper size blade collars/flanges.
- DO NOT USE bent blade. Contact blade manufacturer.

### BLADE WILL NOT CUT



- Blade is too hard for material being cut.
- Blade has become dull.
- Blade does not cut material it was specified for.

- Select proper blade for material being cut.
- Sharpen by cutting on softer abrasive material to expose diamonds. If continually sharpening, the blade is too hard for the material being cut.
- Break-in on the material to be cut. If it does not dress itself, sharpen as you would a dull blade.

### UNDERCUTTING THE CORE



- Abrasive wearing of the core faster than the segments.

- Use water to flush out fines generated during cutting.
- Use wear-retardant cores.

### ARBOR HOLE OUT-OF-ROUND



- Collars/flanges are not properly tightened, permitting blade to rotate or vibrate on the shaft.
- Collars/flanges are worn or dirty.
- Blade is not properly mounted.

- Make certain the blade is mounted on the proper shaft diameter. Tighten the shaft nut with a wrench to make certain that the blade is secure.
- Clean collars/flanges, make sure they are not worn.
- Tighten arbor nut.
- Make sure the pin hole slides over drive pin.

### BLADE WORN OUT OF ROUND



- Shaft bearings are worn.
- Surges occur because engine is not properly tuned.
- Blade arbor hole is damaged from incorrectly mounting the blade.
- Bond/matrix is too hard for material.
- Blade is slipping, wearing one half of blade more than other.

- Install new blade shaft bearings or blade shaft, as required.
- Tune engine according to manufacturer's manual.
- If core is worn or arbor hole damaged, DO NOT USE. Contact blade manufacturer.
- Use proper blade. Consult blade manufacturer.
- Replace worn shaft or mounting arbor bushing.
- Make certain that drive pin is functioning.
- Tighten spindle nut.

## Lubrication

## Lubrication and Service

- Check oil levels, wiring, hoses (air, fuel, water) and lubricate machine daily.
- Repair or replace all worn or damaged components immediately.
- Check drive belt tension, do not over-tension.
- Make sure machine has full set of matched belts.
- Check bladeshaft, make sure arbor and threads are not worn, damaged, or bent.
- Bladeshaft bearings should be tight, not free play side-to-side or up and down.
- Grease blade shaft bearings daily.
- Blade collars should be clean, free of nicks and burrs. No diameter wear and not out of round.
- Drive pin not excessively worn or bent and free of gouges.
- All guards in place and secure.
- All fasteners tight and secure.
- Air filter/oil filter (hydraulic or engine) clean.
- Flush clean water through the pump and spray the assembly every night. This prolongs the pump and blade life.
- Insure machine is on solid, level ground before starting maintenance
- During lubrication maintenance insure strict cleanliness is observed at all times.
- To avoid the risk of accidents, use the correct tool for the job and keep tools clean.
- The draining of engine oil is best carried out when the oil is warm NOT hot.
- Any spilled oil must be cleaned up immediately.
- Use only clean containers for oil and only CLEAN, FRESH oils and grease of correct grade.
- Contaminated Water/Fluids/Oils/Filters Must Be Disposed of Safely.

### Lubricants:

Engine Oil SAE 10W/30 see engine manual

General Grease #1 Lithium

- Clean machine before starting lubrication maintenance.





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# WARRANTY

## THIS IS YOUR WARRANTY - PLEASE READ AND SAVE

- 1.-  Warrants each new machine against defects in material and workmanship under normal use and service for a period of six (6) months. This warranty commences the first day the machine is sold, assigned to a rental fleet, or otherwise put to first use.
- 2.- The obligation under this warranty is limited to the replacement or repairs of parts and/or machine at factory branches or at authorized  Distributors.
- 3.- Machines altered or modified without  written consent voids this warranty. Misuse, negligence, accidents or the operation of machines in any way other than recommended by  will void this warranty. This warranty shall not apply to machines repaired by other than  factory branches or authorized  Distributors
- 4.- This Warranty includes labor on all  products. Labor must be performed at an authorized  Distributors.
- 5.- The cost of transportation and other expenses connected therewith are not covered by this warranty.
- 6.- Written authorization for the return of merchandise under warranty must be obtained by from 
- 7.-  reserved the right to inspect and render final decision on each warranty case.
- 8.-  reserved the right to improve or make product changes without incurring any obligation to update, refit, or install the same on machines previously sold.
- 9.-  is not responsible for any liability or damage or injury directly or indirectly from design, material or operation of its products.
- 10.- Warranty card must be returned to  within 10 days after purchase, assignment to a rental fleet, or first use. Failure to return warranty card as specified renders the warranty null and void.
- 11.- Requests for warranty must be submitted in writing within 30 days after machine failure to 
- 12.- THE FOREGOING WARRANTY IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS FOR USE, AND OF ALL OTHER OBLIGATION OR LIABILITIES ON OUR PART, AND WE NEITHER ASSUME NOR AUTHORIZE ANY OTHER PERSON TO ASSUME FOR US ANY OF OUR PRODUCTS. LIKEWISE, THIS WARRANTY SHALL NOT APPLY WITH RESPECT TO ENGINES, MOTORS AND COMPONENT.



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