

THE CAMEL

LOW-MOISTURE CLEANING MACHINE



OWNER'S MANUAL
OPERATION • CARE • SERVICE

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MACHINE SPECIFICATIONS

Model.....	HP1517-180BRUTE/HP1520-180BRUTE
Voltage.....	115V, 230V/60Hz
Power Cord	50 ft. (15.2m) 14-3 ST Fixed
Motor	1.5HP /180 Frame Totally Enclosed
RPM	165
Gear Box	Planetary 3-Idler Severe Duty Hardened Gears With Steel Gear Box Coupler
Machine Weight	126 Lbs (57.27 KG.)

SERVICE INFORMATION

To obtain consistent performance over the life of your equipment, read through these instructions and save them for future reference. If you require service, contact the dealer from which the machine was purchased or an authorized service station. Always refer to your Limited Warranty for complete service information.

Record the model and serial number of your unit below.

Refer to the data plate on the unit.

S/N _____

Model _____

Retain this owners manual for future reference.

IMPORTANT SAFETY INSTRUCTIONS

When using an electrical appliance, basic precautions should always be followed, including the following:

READ ALL INSTRUCTIONS BEFORE USING THIS FLOOR MACHINE.



WARNING: ELECTRIC SHOCK CAN CAUSE SERIOUS INJURY OR BE FATAL. PLEASE READ THE FOLLOWING INSTRUCTIONS ON THE USE AND OPERATION OF FLOOR CLEANING MACHINES.

- Your floor machine is equipped with a safety switch lock and power switch triggers designed for your safety. Do not attempt to bypass or defeat the safety switch lock. Never use any device to lock the power switch triggers in the "ON" position.
- Do not leave the floor machine plugged in. Turn off the switch and unplug the electrical cord when not in use.

- Do not allow the machine to be used as a toy. Close attention is necessary when used near children. Do not leave the machine connected to an electrical outlet unattended.
- Use only as described in this manual. Use only manufacturer's recommended attachments.
- Do not use with a damaged cord or plug. If the machine is not working as it should, has been dropped, damaged, or left outdoors, return it to a service center before using.
- Use care to keep the electrical supply cord away from sharp edges or corners. Keep the cord away from the heated surfaces.
- Connect to properly grounded (3-wire) outlet only. Refer to Grounding Instructions, Page 4.
- Do not use extension cords or outlets with inadequate current carrying capacity.
- Turn off all controls before unplugging.
- Do not unplug by pulling on the cord. To unplug, grasp the plug and pull.
- Do not handle the plug or floor machine with wet hands.
- Wind the cord no tighter than is necessary to retain it during storage. Refer to Cord Storage, Page 7.
- Use extra care when working on or near stairs.
- Do not use in conjunction with flammable or combustible liquids such as gasoline, or use in areas where explosive vapor or dust may be present.
- Store your floor machine in a cool, dry area.
- Keep your work area well lighted.
- WARNING: To avoid electrical shock, use indoors only.

GROUNDING INSTRUCTIONS

This appliance must be grounded. If it should malfunction or break down, grounding provides a path of least resistance for electric current to reduce the risk of electric shock. This appliance is equipped with a cord that has an equipment-grounding conductor and grounding plug. The plug must be plugged into an appropriate outlet that is properly installed and grounded in accordance with all local codes and ordinances.

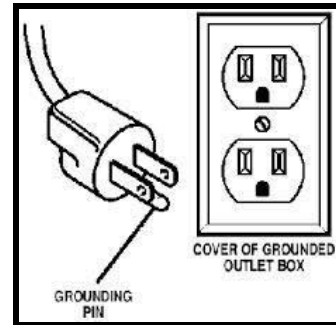


Figure 1

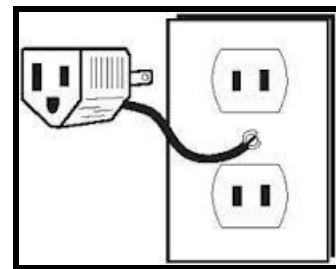


Figure 2

Improper connection of an equipment grounding conductor can result in risk of electric shock. Check with a qualified electrician or service person if you are in doubt as to whether the outlet is properly grounded.

Do not modify the plug provided with the appliance. If it will not fit the outlet, have a proper outlet installed by a qualified electrician. This appliance is for use on a nominal 120 volt circuit and has a grounding plug that looks like the plug illustrated in **Figure 1**.

A temporary adapter which looks like the adapter illustrated in **Figure 2** may be used to connect this plug to a two pole receptacle if a properly grounded outlet is not available. The temporary adapter should be used only until a properly grounded outlet (**Fig 1**) can be installed by a qualified electrician. The green colored rigid ear, lug or the like extending from the adapter must be connected to a permanent ground such as a properly grounded outlet box cover. Whenever the adapter is used, it must be held in place by a metal screw.

OPTIONS / ACCESSORIES

CHOOSING THE RIGHT BRUSH AND DRIVE BLOCK

Your floor machine is packed completely assembled and ready for use after you install a brush or drive block.

Your floor machine is designed to be used for many different floor care applications. Make sure you use the correct brush or pad for the type of job you want to perform. (Accessories are available from the dealer from whom the floor machine was purchased).

When ordering a rotary brush, choose one 2 inches smaller than machine size. When ordering a pad driver, order 1" smaller than machine size. For example, a 17" machine uses a 15" brush, 16" pad driver.

The clutch plate used on this machine is considered standard, or universal.

BRUSH AND PAD DRIVER INSTALLATION

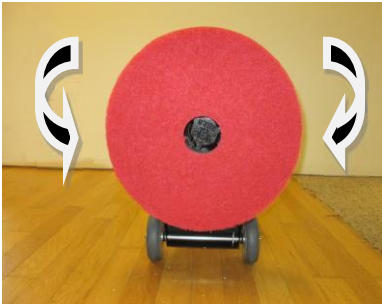


Figure 3

To install a brush or pad driver, leave the handle in the upright position and tip the machine backwards so it rests on its wheels and upper handle section (**fig 3**). The brush and pad driver both attach in the same manner: align the cut-outs on the inner ring of the brush or pad driver with the tabs on the inside of the ring of the drive hub (**fig 3**). Push the brush or pad driver firmly in position, then turn it counterclockwise until it locks into place. To remove, turn the brush or pad driver clockwise until it stops, then lift it off. **NOTE:** Always remove the brush or pad driver when the machine is not in use.

HANDLE ADJUSTMENT

The handle can be adjusted to any desired work position by simply pushing up on the handle lock (**fig 4**). Move the handle to the desired position, then firmly push down on the handle lock which will lock the handle in position.

HANDLE CAM LOCK ADJUSTMENT

With the handle cam lock in the “up” position (unlocked), tighten the adjusting nuts until there is a slight drag when the handle is raised or lowered. The tube should be locked securely when the handle lock is pressed downward. (**fig 4**).



Figure 4

GUIDELINES FOR OPERATION

- Your floor machine is a very sensitive, powerful unit. When in operation, it should be guided gradually and smoothly without sudden or rough motions. You will want to practice with your machine on a smooth surface first until you have experience in operating it.

- For ease of operation, always keep the brush or pad surface level, balanced, and flat on the floor at all times.

- Always adjust the operating handle to a comfortable height at which the brush or pad surface is balanced before starting the machine. (see “Handle Adjustment” Pg 5).

- Your floor machine will operate differently on various surfaces. For example, there will be much more resistance when the machine is used with a brush or pad on carpeted surface than when it is used with a brush or pad on a smooth surface. If bonnets are used on carpet, pre-dampen the pad for easier operation.

- **BEGIN OPERATING THE FLOOR MACHINE WITH THE BRUSH OR PAD SURFACE LEVEL, BALANCED AND FLAT ON THE FLOOR.**

- To move the machine to the right, slowly apply slight upward pressure on the handle.

- To move the machine to the left, slowly apply slight downward pressure on the handle.

- To move the machine forward or backward, keep brush or pad flat on the floor and push or pull machine in the desired direction.

DO NOT LET THE MACHINE REST ON THE PAD OR BRUSH FOR AN EXTENDED PERIOD OF TIME. This may alter the shape of the pad or brush which may cause the machine to wobble.

For more ergonomic operation, do not fill the solution tank more than 2/3 to keep the handle weight at a more comfortable level.

CONTROLS

ON/OFF POWER SWITCH TRIGGERS

The ON/OFF switch is conveniently located in the form of dual triggers underneath the handle grips.

TO TURN THE MACHINE ON

The operating handle must be lowered to the operating position before switching the machine ON. Place both hands firmly on the handle grips with your fingers around either the left or right power trigger. Do not apply pressure on the triggers before the safety switch is disengaged (**fig 5**).



Figure 5

Disengage the safety switch lock by pushing it forward with one thumb. Then, while holding the safety switch lock in disengaged position, squeeze the power triggers toward the handle grips and return your thumb to the handle grip.

To stop the machine, simply release the triggers. The safety switch lock will automatically return to the engaged position.

SOLUTION TANK OPERATION

Your floor machine is equipped with a solution tank and sprayer assembly offering two dispensing options.

One option sprays cleaning solution through an adjustable nozzle assembly in front of the machine. The other option is the center feed option which allows cleaning solution to flow through the center of the pad/brush to the floor to be dispersed.

FRONT MOUNT SPRAYER OPERATION

Place the orange handle valve on the front nozzle assembly in a vertical position (**Fig 6**) and the rear orange valve handle in a horizontal position (**Fig 7**)

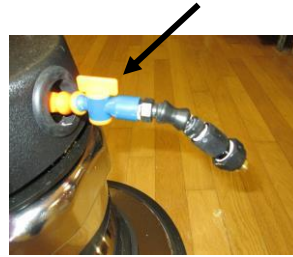


Figure 6



Figure 7

Once the machine is running, engage the toggle lever located just under the right side trigger (not shown). Solution will spray from the front nozzle assembly. To stop the flow of the sprayer, simply release the toggle lever.

SOLUTION CENTER-FEED OPTION

Place the orange valve handle on the front nozzle fixture in a horizontal position (**Fig 8**) and the rear orange handle valve in a vertical position (**Fig 9**).



Figure 8



Figure 9

Once the machine is running, engage the toggle lever located just under the right side trigger (not shown). Solution will flow down through the center of your pad/brush, and will distribute outward by the circular rotation of the pad/brush. To stop the flow of the sprayer, simply release the toggle lever.

CORD STORAGE

When not in use, loosely wind the power cord around the cord storage hook on the handle shaft and around the handle grip, as shown:



CLEAN UP AND STORAGE

After being used, your floor machine can be wiped clean with a soft, damp cloth and should be stored in a clean, dry place.

If you choose, you may temporarily store cleaning chemical in the solution tank for use within a day or two. For longer storage, empty and clean solution tank thoroughly.

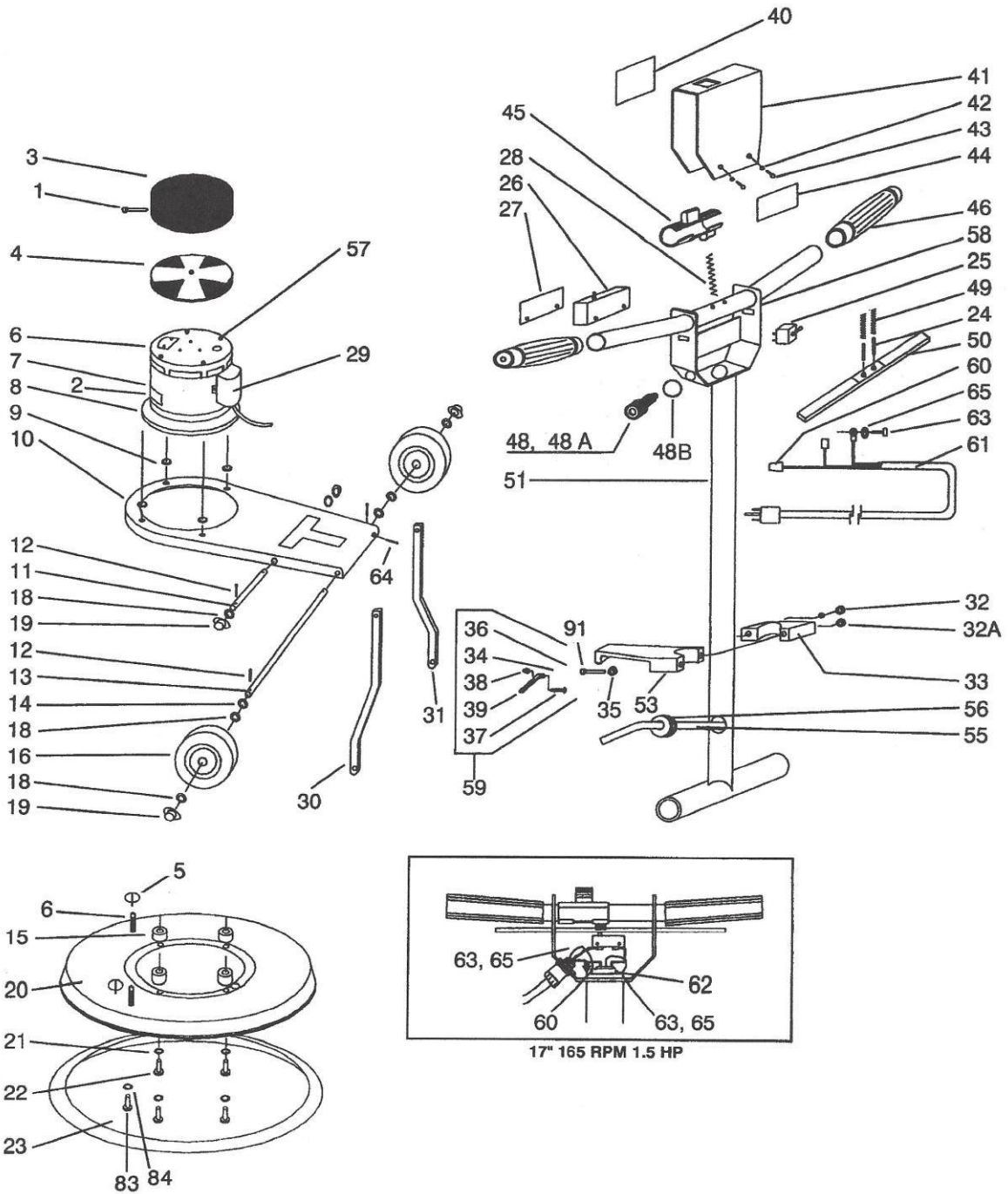
Use this space for your notes and maintenance records.

DATE

NOTES

FLOOR MACHINE ASSEMBLIES

17" 165 RPM 1.5 HP



FLOOR MACHINE PARTS LIST

REF. NO.	PART NO.	DESCRIPTION	QTY REQ
	17" Fl Mach, 165 RPM, 1 1/2 HP	
1.....	H0040.....	Screw, Fan Cover.....	3
2.....		Label.....	1
3.....	E0030HDM.....	Fan Cover.....	1
4.....	E0030HDM.....	Fan.....	1
5.....	H0100.....	Lynch Pin 1/4".....	2
6.....	A0032WPIN.....	Weight Retaining Pin.....	2
7.....	E0030HDM.....	Motor, 115V/230V/60Hz, 180 Frame, Chrome, 1 1/2HP.....	1
8.....	G0002XHD.....	Gear Unit, 11-1, 3-Idler-Black.....	1
9.....	H0005.....	Lockwasher, 5/16" ID, Ext Tooth.....	4
10.....	W0001P.....	Frame, Floor Machine.....	1
11.....	M0006P.....	Shaft Handle.....	1
12.....	H0006.....	Cotter Pin.....	4
13.....	M0005P.....	Shaft, Axle.....	1
14.....	H0007.....	Spring Washer.....	2
15.....	M0004.....	Spacer, Frame/Brush Cover.....	4
16.....	C0004.....	Wheel 5" Diameter.....	2
18.....	H0008.....	Steel Washer, 33/64" x 7/8".....	12
19.....	H0009.....	NutPush - .50".....	4
20.....	S0003CP/S0004CP.....	Brush Cover, 17"20".....	1
21.....	H0010.....	Lockwasher, 5/16" ID.....	4
22.....	H0011.....	Screw, 5/16" x 2.0SocHd.....	4
23.....	C0001.....	Bumper, 17" Black.....	1
24.....	H0012.....	Roll Pin.....	2
26.....	E0007.....	Switch, ON/OFF.....	1
27.....	H0013.....	Insulation, Switch.....	1
28.....	H0014.....	Spring.....	1
31.....	S0005P.....	Connecting Leg - Right.....	2
32.....	H0015.....	Nut, 3/8" - 16 Hex Nyloc Thin.....	1
32A.....	H0057.....	Nut, 3/8" - 16 Hex Nyloc Standard.....	1
33.....	C0006P.....	Clamp, Handle Lock.....	1
34.....	H0001P.....	Washer, Hardened Slotted.....	1
35.....	H0016.....	Washer, 3/8".....	3
36.....	H0017.....	Stud, Clamp.....	1
37.....	H0018.....	Rivet, 5/16" x 1.25 Long Rd Head.....	1
38.....	H0019.....	Push Nut, 5/16".....	1
39.....	M0001P-1.....	Cam, HandleLock.....	1
40.....	L0002.....	Label, Switchbox.....	1
41.....	W0003CP.....	Cover Asm, Switchbox.....	1
42.....	H0020.....	Lockwasher, #10 Ext Tooth.....	3
43.....	H0040.....	Screw, 10-24 x .50 Pan Head.....	2
44.....	L0005.....	Label, Warning.....	1
45.....	C0003.....	Switch Safety.....	1
46.....	C0007.....	Handle Grip, Black.....	2
48.....	H0021.....	Strain Relief, Power Cord.....	1
48A.....	H0022.....	Nut, Strain Relief.....	1
48B.....	H0022-1.....	Washer.....	1
49.....	H0023.....	Spring, Trigger.....	2
50.....	S0008P.....	Trigger.....	1
51.....	W0002P.....	Handle Weldment.....	1
53.....	C0008P.....	Cord Hook Body.....	1
56.....	H0028.....	Grommet.....	1
57.....	H0026.....	Screw, Motor - 1/4" - 20 x 6 3/4.....	4
59.....	HP0003.....	Cam Lock Asm, Incl 34, 36, 37, 38, 39.....	1
60.....	H0027.....	Nut, Wire.....	1
61.....	E0003.....	Power Cord, 14-3 ST, 50 FT Long.....	1
62.....	H0066.....	Clamp, Power Cord.....	1
63.....	H0040.....	Screw, 10-24 x .50.....	2
64.....	H0031.....	Cotter Pin.....	1
65.....	H0020.....	Lockwasher, #10 Ext Tooth.....	1
83.....	H0042.....	Bolt, .375 - 16 x .875 Long.....	2
84.....	H0004.....	Lockwasher.....	2

OPTIONAL ACCESSORIES

Item #	Item Description
137199	Brush-n-Bonnet Pad Driver, 19", Complete, w/riser
135599	Pad Driver w/Clutch Plate, Standard, to fit 17"
137399	Slotted Cleaning Bonnet Pad, 19"
136599	Cotton Bonnet Pad, Wiping/Drying, 19"
138099	CleanGrit Brush w/NP-9200 Clutch Plate, to fit 17"
138499	Mal-Grit Scrub w/NP9200, Green, to fit 17"
139599	Nylon Carpet Brush w/Clutch Plate to fit 17"

FEATURES

- Dual trigger negative pressure switch allows operator to run with either hand.
- Safety switch lock mechanism prevents accidental start.
- Hardened steel transmission gears and steel gearbox coupler.
- Planetary gearbox means strength.
- Premium 180 frame motor provides better cooling and more torque with longer motor life.
- One piece welded heavy gauge steel handles give superior handling stability.
- Ergonomically designed upper handle positive lock handle adjustment eliminates bending.
- High strength steel frames withstand heavy duty wear situations.

LIMITED WARRANTY

Your equipment which has been manufactured, tested and inspected in accordance with carefully specified engineering requirements, is warranted to be free from defects in material and workmanship. This Limited Warranty is, however, subject to the following qualifications, conditions and limitations which are set forth to provide you and all users of the equipment with information concerning the duration, extent, availability, and applicability of this Limited Warranty, the procedure to be taken to obtain its performance, and other information concerning the Limited Warranty policy.

The Limited Warranty is extended to the original end user as follows:

Machines: 3 year parts replacement and 1 year service labor warranty.

Replacement parts guaranteed for 90 days from date of installation against defects in material and workmanship.

This Limited Warranty will not cover damage attributable to the following:

- (1) Improper, unreasonable or negligent use or abuse of the equipment
- (2) Use of equipment with hot water or high temperature above 130 degrees Fahrenheit (Solution Tanks)
- (3) Abrasions or punctures of the equipment.

The start date of the Limited Warranty coverage shall be the purchase date of the original end user or six months from the date the machine was shipped from the Factory, whichever comes first.

PARTS OF EQUIPMENT NOT COVERED BY THE LIMITED WARRANTY

Certain parts of equipment require replacement in the ordinary use due to normal wear by reason of their characteristics. Normal wear items such as cords, switches, bumpers, handle grips, bearings, etc. are excluded from the Limited Warranty.

EXCEPTIONS AND EXCLUSIONS FROM THE LIMITED WARRANTY

This equipment is required to be used on electric current as indicated on the data plate. Otherwise damage, defects, malfunctions or other failure of the equipment arising from use on electric current not as indicated are excepted and excluded from this Limited Warranty. Defects, malfunctions, failure or damage of the equipment caused by improper, unreasonable or neglectful use or abuse while in possession of the purchaser are likewise excluded from this warranty. If repair is done on your equipment by anyone other than those designated as authorized to perform such work without first having obtained factory instructions, FLAT ROCK SOLUTIONS LLC at its sole option, may determine that this warranty will not apply and that reimbursement for such repair will not be made because of the failure to comply with such factory specified instructions.

PROCEDURE TO BE TAKEN TO OBTAIN PERFORMANCE OF LIMITED WARRANTY REPAIR

To secure repair of the equipment or any warranted parts under this Limited Warranty, the following procedure should be taken. The inoperative equipment or warranted parts, together with satisfactory evidence of the purchase date, must be delivered, with shipping and delivery charges prepaid, to one of the following:

- (1) The dealer from whom purchased;
- (2) Any authorized service station.

If you are unable to locate any of the foregoing, you may write or otherwise communicate with FLAT ROCK SOLUTIONS LLC before repair service is performed by anyone else. In such event, FLAT ROCK SOLUTIONS LLC will provide either the location or a closely available authorized distributor service department, or authorized service station or other factory instructions. Upon compliance with the above procedure, all warranted defects will be repaired, at no additional charge or costs to the customer, and the repaired product returned to the customer, with all shipping and delivery charges pre-paid. In following the procedures set forth, PLEASE MAKE CERTAIN to state the model, type and serial number as shown on the data plate of the equipment.

REPLACEMENT

In the event of a defect, malfunction or failure of your equipment or any warranted part to conform with this warranty, FLAT ROCK SOLUTIONS LLC may, at its sole option and own expense, replace the equipment or any warranted part with another new identical or reasonably equivalent model or part in lieu of repairing the defect.

NO REFUND OF PURCHASE PRICE

FLAT ROCK SOLUTIONS LLC will not, as a matter of its Limited Warranty policy, refund the customer's purchase price.

LIMITED WARRANTY REGISTRATION CARD FOR YOUR EQUIPMENT AND REQUEST FOR INFORMATION

Your distributor from whom you purchased your equipment is responsible for the registration of your Limited Warranty with the factory. Any information or questions you may have concerning your equipment or this Limited Warranty may likewise be secured from the factory. This Limited Warranty give you specific legal rights, and you may also have other rights which vary from state to state.