

RHINO RM350

USER MANUAL

Equipment Uses

- ✓ Concrete leveling, grinding and polishing
- ✓ Terrazzo grinding and polishing
- ✓ Stone grinding and polishing
- ✓ Hardwood grinding, sanding and polishing
- ✓ Glue, Thinset and mastic removal

Address:

103B-81 Golden Drive
Coquitlam, BC
Canada V3K 6R2



Contact:

1-888-467-0242
sales@newgrind.com

Assembled in Canada using only the highest-quality USA components

Table of Contents

Equipment Uses	1
RM350 Diagram	4
RM350 Bottom Diagram	5
Machine Specifications	6
Tooling	6
Average Production Rates.....	6
SAFETY INSTRUCTIONS	7
Work Area Safety	7
Electrical Safety.....	7
Personal Safety	7
Equipment Safety and Care	8
Service Safety.....	9
OPERATING THE GRINDER	9
Prior to using the grinder	10
Starting the grinder.....	10
Adjusting the speed	11
Stopping the equipment.....	11
Adjusting the handle.....	11
Using the biased weight kit.....	11
Changing the drive belt.....	11
Changing tools and accessories	12
Parts and accessories.....	13
GRINDER MAINTENANCE	13
General Maintenance	13
Daily Maintenance	13
Monthly Maintenance	13
Yearly Maintenance	14
TROUBLESHOOTING	15
VFD Fault Messages	15

LIMITED EQUIPMENT WARRANTY OF SALE17

FORCE MAJEURE18

LIABILITY LIMITATIONS18

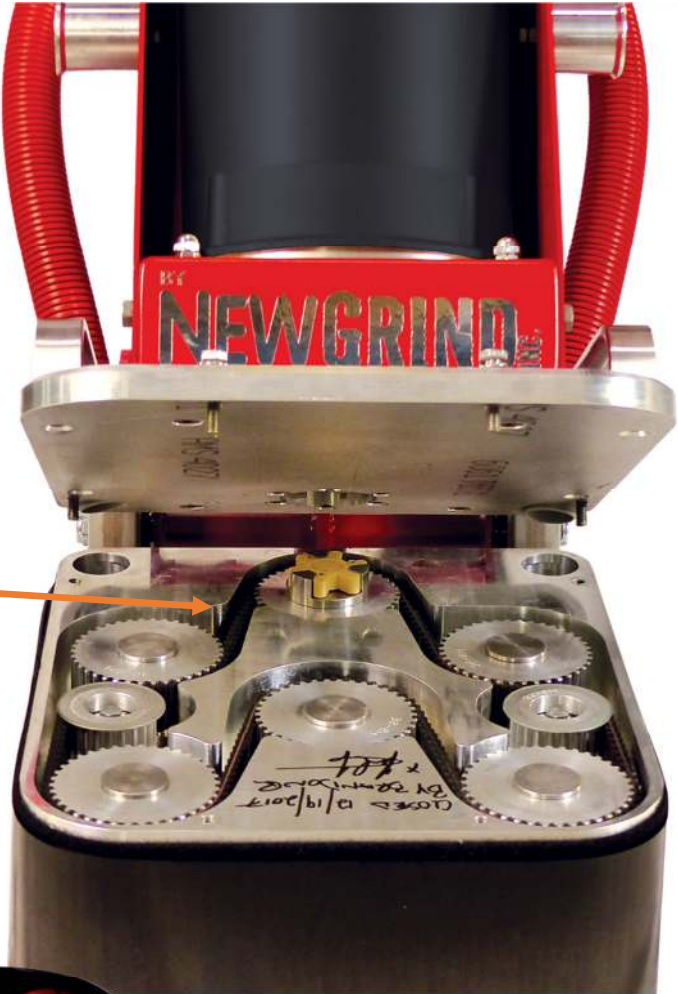
TERMS & CONDITIONS19

AGREEMENTS20

RM350 Diagram



RM350 Bottom Diagram



Quick-change drive belt



Single or double grommet mounting system



Counter-clockwise spinning Rhino tool plates (Red)



Rhino style tooling (attaches using 1/2" bolt)



Clockwise spinning Rhino tool plates (Black)



Machine Specifications

Power	20 AMP/1 Phase
Maximum watts draw	4000
HP	5
Machine weight	270 lbs
Biased weight kit max weight	280 lbs
Combined weight	550
Disc speed	350-1200 rpm
Variable speed control	YES
Number of grinding heads	6
Counter-rotating heads	YES
Disk size	5 inches
Grinding footprint	14 inches
Quick change tooling	YES
Quick belt changing system	YES
Wet or dry grinding	YES
UHMW floating dust skirt	YES
Multi-articulating handle	YES
Runs forward or reverse	YES
Can be used as an edger	YES – grinds to within 1/8 of the edge
Dual vacuum manifolds	YES

Tooling

Rhino Style tooling	YES
Standard trapezoid	NO

Average Production Rates

Extremely heavy removal	300-400 sq./ft. per hour
Heavy removal	400-700 sq./ft. per hour
Light removal	550-800 sq./ft. per hour
Grinding and profiling	550-800 sq./ft. per hour
Polishing	900-1200 sq./ft. per hour

SAFETY INSTRUCTIONS

 **WARNING! Read and understand all instructions.** 

Failure to follow all instructions listed below, may result in electric shock, fire and/or serious personal injury. **SAVE THESE INSTRUCTIONS.**

Work Area Safety



1. Keep your work area clean and well lit. Cluttered floors and dark areas invite accidents.
2. Do not operate equipment in explosive environments, such as in the presence of - flammable liquids, gases or dust. Grinding can create sparks which may ignite the dust or fumes.
3. Keep bystanders, children, and visitors away while operating equipment. Distractions can cause you to lose control.

Electrical Safety



1. Do not abuse the cord. Never use the cord to pull the equipment or pull the plug from an outlet. Keep cord away from heat, oil, sharp edges or moving parts. Replace damaged cords immediately. Damaged cords increase the risk of electric shock.
2. Make sure cord is clear of wheels and cutting discs. Do not wrap cord around your arm or wrist. If control of equipment is lost, cord may become wrapped around you and cause personal injury.
3. When operating equipment outside, use an outdoor extension cord marked "W-A" or "W". These cords are rated for outdoor use and reduce the risk of electric shock.
4. Avoid accidental starting. Be sure stop button is depressed before plugging in. Starting equipment with your finger on the start buttons or plugging in equipment that has the buttons depressed invites accidents.
5. USE THE PROPER EXTENSION CORD. Make sure your extension cord is in good condition. When using an extension cord, be sure to use one heavy enough to carry the current your product will draw. An undersized cord will cause a drop in line voltage resulting in loss of power and overheating.
For the RM350 use 10-gauge cord or larger.

Personal Safety



1. DO NOT let comfort or familiarity with  product (gained from repeated use) replace strict adherence to equipment safety rules. If you use this equipment unsafely or incorrectly, you can suffer serious personal injury.

2. Stay alert, watch what you are doing and use common sense when operating equipment. Do not use equipment while tired or under the influence of drugs, alcohol, or medication. A moment of inattention while operating equipment may result in serious personal injury.
3. Adequate ventilation of your work area is very important when using equipment. Use a dust mask or appropriate respirator. Due to the dusty nature during use of
4. Do not overreach. Always keep proper footing and balance. Proper footing and balance will enable better control of the equipment in unexpected situations.
5. Use safety equipment. Always wear eye protection, dust mask, non-skid safety shoes, hard hat and hearing protection.
Ordinary eye or sunglasses are NOT eye protection.
6. DO NOT Turn on equipment while the machine is tilted back. Any tooling fastened to the machine can eject and become a lethal projectile.



Equipment Safety and Care

1. The equipment is designed to remove excess surface material. To prevent damage to the equipment and/or serious personal injury, beware of protruding objects or other debris on or embedded in the surface being finished.
2. Disconnect the plug from the power source before making any adjustments, changing accessories, or storing equipment. Such preventive safety measures reduce the risk of starting the equipment accidentally.
3. Maintain equipment with care. Keep tools and accessories in good condition. Properly maintained tools with sharp cutting edges are less likely to fail and are easier to control.
4. Check for binding of moving parts, breakage of parts, and any other condition that may affect the equipment's operation. If damaged, have equipment serviced before using. Many accidents are caused by poorly maintained equipment.
5. Use only tools and accessories that are recommended by the manufacturer for your equipment. Tools and accessories that may be suitable for style of equipment, may become hazardous when used on another style of equipment.
6. Tools and accessories must be rated for at least the speed stated on the equipment serial plate. Tools and other accessories running faster than rated speed can fly apart and cause injury.
7. Due to the dusty nature during use of this equipment, be sure to clean equipment often to remove dust accumulations. Carefully blow the dust out of the motor, VFD and dust covered areas frequently.
8. Always install the dust skirt before operation.

9. Check the tools and accessories carefully for cracks or damage before operation. Replace cracked or damaged tools or and accessories immediately.
10. Hold the equipment firmly with both hands during operation.
11. Do not leave the equipment running unattended.
12. Do not touch the tools immediately after operation; they may be extremely hot and could burn your skin.

Service Safety

1. DO NOT modify the machine. Modifications will void warranty and could result in unsafe operation of equipment.
2. Equipment service should be performed only by qualified repair personnel. Service or maintenance performed by unqualified personnel could result in a risk of injury.
3. When servicing equipment, use only identical replacement parts. Use of unauthorized parts may create a risk of electric shock or injury.



WARNING: Misuse or failure to follow the safety rules stated in this instruction manual may cause serious personal injury. **SAVE THESE INSTRUCTIONS.**



OPERATING THE GRINDER

The machine is outfitted with a Variable Frequency Drive (VFD) enabling the user to select the desired operating speed.

The equipment can operate on either 50 Hz or 60 Hz frequencies.

The VFD will automatically adjust for phase or frequency input which will raise or lower head speed on the machine.

VFD features:

- Under voltage protection - Over current protection
- 60Hz and 50Hz capability (international)
- 110V
- Soft start
- Speed display
- Load display
- Current limiting

NOTE: LED DISPLAY – Shows PAD speed when machine is running and says “STOP” when plugged in but not running.

Prior to using the grinder

1. Inspect the grinder to make sure all bolts are tight, and that tools are properly mounted
2. Check that the plug is properly connected to the extension cord and inspect the cord for wear and tear.
3. Make sure that speed dial is turned to its lowest setting



WARNING: This will prevent unexpected high speed start up which could cause some tools to eject or cause undesirable marks to the surface being finished.



4. Plug the machine in – the VFD LED should read “STOP”

Starting the grinder



DO NOT LIFT THE EQUIPMENT OFF THE GROUND WHILE STARTING!

Doing so can cause the tools to release from the equipment and cause damage to the surface being finished and harm to the user!



1. With the machine in an upright position, set the articulating handle to the desired position.
2. Check that speed dial is set to slowest speed.
3. Plug the power cable in, making sure that extension cord is not tangled or wrapped around any obstacles.
4. Ensure that the VFD LED reads “STOP”
5. Apply downward pressure on the handle to alleviate some pressure on the tools and press the GREEN start button. (If you want the machine to run in reverse you can push the yellow start button.

NOTE: Always use the equipment in the forward rotation mode (green button) unless reverse rotation is needed. This will ensure consistent tool wear.

The use of the equipment in the reverse rotation is only needed when surface being finished is uneven and causes the equipment to pull in an undesired direction or when the tooling is glazed and needs to be re-dressed.

6. Once the equipment is started, gently release the downward pressure and start grinding.

NOTE: The equipment is designed to rotate the tooling in either the forward direction (green button) or reverse direction (yellow button) depending on operating needs.

Adjusting the speed

1. Use the knob, located on the right side of the handle control box to adjust speed of equipment.

Stopping the equipment

1. To stop the equipment, turn speed control knob to the slowest setting and,
2. push the red stop button on the face of the handle

Adjusting the handle

1. Make sure machine is unplugged
2. Pull the hand latch or step on foot latch on the handle and move handle up or down to the desired position.

Avoid stepping on or tangling handle control cable when adjusting the handle position. Make sure that the latch clicks in place when the desired position is achieved.



WARNING: Failure to check for positive handle latch engagement could result in damage to the equipment or injury to the user as the handle could release unexpectedly when the machine is being operated or tilted back!



Using the biased weight kit

The Rhino line of equipment was designed to be used with our biased weight kit, which allows our machines to be loaded with weights to increase point pressure for very hard floors and to rapidly expose aggregate.

Our unique patented biased weight system uses standard Olympic weight plates, allowing placement on either side of the machine to increase pressure when grinding edges with slab curl and high and low spots.

Weights can also be placed on the handle to alleviate pressure and weight from the machine, enabling the Rhino to be easily and effectively used for soft & rained out slabs.

For best results and to increase production we highly recommend utilizing weights with your Rhino grinder.

Changing the drive belt

To view a video on how to change the drive belt – please visit our website at: www.newgrind.com

Changing tools and accessories



WARNING: Always turn grinder off and disconnect power from the machine when performing any operations to the bottom of the machine!



When removing and inserting tool plates or adapter plates, be sure to inspect rubber grommets for signs for wear and replace any damaged grommets.



WARNING: Using grommets that are damaged or missing can cause unexpected equipment operation and increase the chance of tool plate / adapter plate ejection or violent vibration leading to loss of control of equipment!



To change the tools:

1. Turn grinder off, and unplug power
2. Use the weight kit peg on the lower part of the handle to help you tilt the machine back and gently lay it on it's back



WARNING: Do not attempt to replace tools that have recently been in use as they may be hot and could cause injury



3. Grasp the tool plate firmly with both hands and pull to remove tool plate from grommets
4. Remove the bolt from the back of the tool plate behind each tool to release the tool
5. Hold the replacement tool up against the desired slot on the tool plate and insert/tighten the bolt.

NOTE: Rhino tool plates have spaces for up to 6 tools. Using 3 evenly spaced tools per plate is standard configuration.

6. Inspect the grommets to make sure they are not worn or missing
7. Reinsert tool plate into rubber grommets
8. Hold the plate firmly with both hands and jiggle it to make sure its properly attached
9. Repeat with each of the tool plates



WARNING: only use tools that have been designed for the machine, and make sure that the same type of tool is being used on all plates/positions.



10. Gently tilt machine back to upright position by lifting the handle
11. Follow the procedure for starting the grinder

Parts and accessories

A full range of parts and accessories for all of our grinders is available on our website.

GRINDER MAINTENANCE



WARNING: Disconnect power before performing any maintenance, cleaning, or repair to your equipment!



General Maintenance

- When the equipment is not in use, make sure that the adapter plate assemblies have something attached to them to protect the Velcro. Resting the machine directly on unprotected Velcro will crush the fastening material causing the Velcro to become unusable.

Daily Maintenance

- Wipe down the equipment after every job.
- Gently remove dirt and debris from the Velcro hook material using a wire brush. This will ensure maximum adhesion.
- Check that the handle bolts are tight.
- Vacuum or wipe underside of machine.
- Inspect plug ends for signs of carbon deposits or arcing.
- Check all fasteners and tighten if necessary.

Monthly Maintenance

- Inspect handle wires for damage.
- Blow off the VFD heat sink with compressed air.
- Blow out VFD cooling fan(s) with low pressure compressed air (30psi or less).
- Cleaning the fan(s) prevents fan failure and potential VFD overheating. Do not over-speed the fan(s) with compressed air!
- Blow off motor fan with compressed air.
- Remove tool plate holders and wipe down bearing shields with a damp cloth. Do not use any sharp object or abrasive pad to clean the bearing shields. This can compromise the bearing seal!
- Re-install tool plate drivers using blue medium strength thread locking compound.

- Using a soft scrub pad, remove any excess dirt build up from the bottom plate and back side of pad drivers.
- Inspect tool plate driver grommets for signs of wear. Replace grommets that show signs of extensive wear.

Yearly Maintenance

- Check all strain reliefs and make sure they are tight so as to avoid cords being pulled out of the VFD or handle.
- Remove tool plate drivers and inspect threads to make sure that there are no signs of cross threading or stripping.
- Clean and lubricate wheels.
- Clean and lubricate latch mechanisms.

TROUBLESHOOTING

VFD Fault Messages

The messages below show how they will appear on the display when the drive trips. When looking at the Fault History (P500), the **F.** will not appear in the fault message.

Fault		Cause	Remedy ⁽¹⁾
F₋AF	High Temperature fault	Drive is too hot inside	<ul style="list-style-type: none"> Reduce drive load Improve cooling
F₋AL	Assertion Level fault	<ul style="list-style-type: none"> Assertion Level switch is changed during operation P120 is changed during operation P100 or P121...P123 are set to a value other than 0 and P120 does not match the Assertion Level Switch. 	<ul style="list-style-type: none"> Make sure the Assertion Level switch and P120 are both set for the type of input devices being used, prior to setting P100 or P121...P123. See 3.2.3 and P120.
F₋bF	Personality fault	Drive Hardware	<ul style="list-style-type: none"> Cycle Power Power down and install EPM with valid data Reset the drive back to defaults (P199 = 3, 4) and then re-program If problem persists, contact factory technical support
F₋CF	Control fault	An EPM has been installed that is either blank or corrupted	
F₋cF	Incompatible EPM fault	An EPM has been installed that contains data from an incompatible parameter version	
F₋dbF	Dynamic Braking fault	Dynamic braking resistors are overheating	<ul style="list-style-type: none"> Increase active decel time (P105, P126, P127). Check mains voltage and P107
F₋EF	External fault	<ul style="list-style-type: none"> P121...P123 = 21 and that digital input has been opened. P121...P123 = 22 and that digital input has been closed. 	<ul style="list-style-type: none"> Correct the external fault condition Make sure digital input is set properly for NC or NO circuit
F₋F1	EPM fault	EPM missing or defective	Power down and replace EPM
F₋F2 ... F₋F12	Internal faults		Contact factory technical support
F₋Fnr	Invalid message received	<ul style="list-style-type: none"> A network message was received while in Remote Keypad mode A remote keypad message was received while in Network mode 	Only the remote keypad or the network can be connected at one time; see P100
F₋FoL	Loss of 4-20 mA signal fault	4-20 mA signal (at TB-25) is below 2 mA (P163 = 1)	Check signal/signal wire
F₋GF	OEM Defaults data fault	Drive is powered up with P199 = 1 and OEM settings in the EPM are not valid.	Install an EPM containing valid OEM Defaults data or change P199 to 0.
F₋HF	High DC Bus Voltage fault	Mains voltage is too high	Check mains voltage and P107
		Decel time is too short, or too much regen from motor	Increase active decel time (P105, P126, P127) or install Dynamic Braking option

(1) The drive can only be restarted if the error message has been reset

Fault		Cause	Remedy ⁽¹⁾
F_IL	Digital Input Configuration fault (P121... P123)	More than one digital input set for the same function	Each setting can only be used once (except settings 0 and 3)
		Only one digital input configured for MOP function (Up, Down)	One input must be set to MOP Up, another must be set to MOP Down
		PID mode is entered with setpoint reference and feedback source set to the same analog signal	Change PID setpoint reference (P121... P123) or feedback source (P201).
		One of the digital inputs (P121...P123) is set to 10 and another is set to 11...14.	Reconfigure digital inputs
		One of the digital inputs (P121...P123) is set to 11 or 12 and another is set to 13 or 14.	
		PID enabled in Vector Torque mode (P200 = 1 or 2 and P300 = 5)	PID cannot be used in Vector Torque mode
F_JF	Remote keypad fault	Remote keypad disconnected	Check remote keypad connections
F_LF	Low DC Bus Voltage fault	Mains voltage too low	Check mains voltage
F_nId	No Motor ID fault	An attempt was made to start the drive in Vector or Enhanced V/Hz mode prior to performing the Motor Auto-calibration	See P300...P399 for Drive Mode setup and calibration.
F_nIF	Module communication fault	Communication failure between drive and Network Module.	Check module connections
F_nFI ... F_nF9	Network Faults	Refer to the module documentation, for Causes and Remedies.	
F_DF	Output fault: Transistor fault	Output short circuit	Check motor/motor cable
		Acceleration time too short	Increase P104, P125
		Severe motor overload, due to: <ul style="list-style-type: none"> Mechanical problem Drive/motor too small for application 	<ul style="list-style-type: none"> Check machine / system Verify drive/motor are proper size for application
		Boost values too high	Decrease P168, P169
		Excessive capacitive charging current of the motor cable	<ul style="list-style-type: none"> Use shorter motor cables with lower charging current Use low capacitance motor cables Install reactor between motor and drive.
		Failed output transistor	Contact factory technical support
F_DF1	Output fault: Ground fault	Grounded motor phase	Check motor and motor cable
		Excessive capacitive charging current of the motor cable	Use shorter motor cables with lower charging current
F_PPF	Motor Overload fault	Excessive motor load for too long	<ul style="list-style-type: none"> Verify proper setting of P108 Verify drive and motor are proper size for application

(1) The drive can only be restarted if the error message has been reset

Fault		Cause	Remedy ⁽¹⁾
F_rF	Flying Restart fault	Controller was unable to synchronize with the motor during restart attempt; (P110 = 5 or 6)	Check motor / load
F_SF	Single-Phase fault	A mains phase has been lost	Check mains voltage
F_UF	Start fault	Start command was present when power was applied (P110 = 0 or 2).	<ul style="list-style-type: none"> • Must wait at least 2 seconds after power-up to apply Start command • Consider alternate starting method (see P110).

(1) The drive can only be restarted if the error message has been reset

The VFD is protected from voltage fluctuations within the specified voltage range. Check voltage before plugging in equipment to insure safe operation.



WARNING: If a machine is plugged into a power source that is above the machine's maximum voltage capability (ex. 230V model plugged into a 460V power source) this will damage and/or destroy the internals of the VFD and void the warranty!



LIMITED EQUIPMENT WARRANTY OF SALE

NewGrind Inc. warrants that each new unit manufactured by NewGrind Inc. to be free from defects in material and workmanship in normal use and service for a period of (3) three years from date of shipment to the original owner. Accessories or equipment furnished and installed on the product by NewGrind Inc. but manufactured by others, including, but not limited to engines, motors, electrical components, transmissions etc., shall carry the accessory manufacturers own warranty.

NewGrind Inc. will, at its option, repair or replace, at the NewGrind Inc. factory or at a point designated by NewGrind Inc. any part which shall appear to the satisfaction of NewGrind Inc. inspection to have been defective in material or workmanship. NewGrind Inc. reserves the right to modify, alter and improve any part or parts without incurring any obligation to replace any part or parts previously sold without such modified, altered or improved part or parts.

This warranty is in lieu of and excludes all other warranties, expressed, implied, statutory, or otherwise created under applicable law. In no event shall seller or the manufacturer of the product be liable for special, incidental, or consequential damages, including loss of profits, whether or not caused by or resulting from the negligence of seller and/or the manufacturer of the product unless specifically provided herein.

In addition, this warranty shall not apply to any products or portions there of which have been subjected to abuse, misuse, improper installation, maintenance, or operation, electrical failure or

abnormal conditions and to products which have been tampered with, altered, modified, repaired, reworked by anyone not approved by seller or used in any manner inconsistent with the provisions of the above or any instructions or specifications provided with or for the product.

FORCE MAJEURE

Seller's obligation hereunder are subject to, and Seller shall not be held responsible for, any delay or failure to make delivery of all or any part of the product due to labor difficulties, fires, casualties, accidents, acts of the elements, acts of God, transportation difficulties, delays by a common carrier, inability to obtain product, materials or components or qualified labor sufficient to timely perform part of or all of the obligations contained in these terms and conditions, governmental regulations or actions, strikes, damage to or destruction in whole or part of manufacturing plant, riots, terrorist attacks or incidents, civil commotions, warlike conditions, flood, tidal waves, typhoon, hurricane, earthquake, lightning, explosion or any other causes, contingencies or circumstances within CANADA not subject to the Seller's control which prevent or hinder the manufacture or delivery of the products or make the fulfillment of these terms and conditions impracticable. In the event of the occurrence of any of the foregoing, at the option of Seller, Seller shall be excused from the performance under these Terms and Conditions, or the performance of the Seller shall be correspondingly extended.

This document sets forth the terms and conditions pursuant to which the purchaser ("Purchaser") will purchase and New Grind Inc. ("Seller") will sell the products, accessories, attachments (collectively the products ") ordered by the Purchaser. These terms and conditions shall govern and apply to the sale of Seller's products to Purchaser, regardless of any terms and conditions appearing on any purchase order or other forms submitted by Purchaser to Seller, or the inconsistency of any terms therein and herein.

LIABILITY LIMITATIONS

The remedies of the user set forth under provisions of warranty outlined above are the exclusive and total liability of New Grind Inc. with the respect to their sale or the equipment and service furnished hereunder, in connection with the performance or breach thereof, or from the sale, delivery, installation, repair or technical direction covered by or furnished under the sale, whether based on contract, warranty, negligence, indemnity, strict liability, or otherwise shall not exceed the purchase price of the unit of equipment upon which such liability is based. New Grind Inc. will not in any event be liable to the user, any successors in interest or any beneficiary or assignee relating to this sale for any consequential, incidental, indirect, special or punitive damages arising out of this sale or any breach thereof, or any defects on, or failure of, or malfunction of the equipment under this sale based upon loss of use, lost profits or revenue, interest, lost goodwill, work stoppage, impairment of other goods, loss by reason of shutdown

or nonoperation, increased expenses of operation of the equipment, cost of purchase or replacement power of claims of users or customers of the user for service interruption whether or not such loss or damage is based on contract, warranty, negligence, indemnity, strict liability, or otherwise. New Grind Inc. reserves the right to modify, alter and improve any part or parts without incurring any obligation to replace any part or parts previously sold without such modified, altered or improved part or parts. No person is authorized to give any other warranty or to assume any additional obligation on New Grind Inc.'s behalf unless made in writing and signed by an officer of New Grind Inc.

TERMS & CONDITIONS

1. PRICE

All prices set forth on any purchase order or other document are F.O.B. Sellers facility or distribution point, as may be determined by Seller (F.O.B. Point). All prices are exclusive of any and all taxes, including, but not limited to, excise, sales, use, property or transportation taxes related to the sale or use of the products, now or hereafter imposed, together with all penalties and expenses. Purchaser shall be responsible for collecting and/or paying any and all such taxes, whether or not they are stated in any invoice for the Products. Unless otherwise specified herein, all prices are exclusive of inland transportation, freight, insurance and other costs and expenses relating to the shipment of the Products from the F.O.B. point to Purchaser's facility. Any prepayment by Seller of freight insurance and other costs shall be for the account of Purchaser and shall be repaid to Seller.

2. PAYMENT TERMS

Payment terms are as follows: New Grind Inc. Machines - Payment prior to delivery.

*All past due accounts are subject to a late payment fee of 1.5% per month or a maximum allowed by law if different, along with the expenses incidental to collection including reasonable attorney's fees and costs.

*Seller reserves the right to hold shipments against past due accounts.

*Seller reserves the right to alter payment terms.

3. FREIGHT TERMS

All shipments will be made F.O.B. shipping point as designated in these Terms and Conditions, and title shall pass at the F.O.B. point. Delivery to the initial common carrier shall constitute delivery to the Purchaser. Any claims for loss or damage during shipment are to be filed with carrier by the Purchaser.

Seller will not assume responsibility for the performance of the carrier. Backorders will be shipped in the most practical fashion with charges consistent with our freight policy established

with the original order. UPS, FED EX, MAIL or shipments by other couriers are subject to the same terms and conditions as outlined in paragraph #3 "Freight Terms".

4. DELIVERY, DAMAGES, SHORTAGES

Seller shall use reasonable efforts to attempt to cause the Products to be delivered as provided for in these Terms & Conditions. Delivery to the initial common carrier shall constitute the delivery to the Purchaser. Seller's responsibility, in so far as transportation risks are concerned ceases upon the delivery of the Products in good condition to such carrier at the F.O.B. point and all the Products shall be shipped at the Purchaser's risk. Seller shall not be responsible or liable for any loss of income and/or profits, or incidental, special, consequential damages resulting from Seller's delayed performance in shipment and delivery.

5. RETURN OF DEFECTIVE PRODUCTS

Defective or failed material shall be held at the Purchaser's premises until authorization has been granted by Seller to return or dispose of Products. Products that are to be returned for final inspection must be returned Freight Prepaid in the most economical way. Credit will be issued for material found to be defective upon Seller's inspection based on prices at time of purchase.

6. PRODUCTS ORDERED IN ERROR

Products may be returned, provided that claim is made, and Seller is notified within 7 days of receipt of Products, and the Products are in original buyer's possession not more than 30 days prior to return, subject to Seller's approval. If Products are accepted for return, they must be Freight Prepaid and buyer will be charged a minimum of 15% restocking charge, plus a charge back for outbound freight charges if the original order was shipped prepaid. Returns are not accepted for any Products that are specifically manufactured to meet the buyer's requirement of either specifications or quantity.

AGREEMENTS

These Terms and Conditions constitute the entire agreement between Seller and Purchaser as it relates to terms and conditions of sale and supersedes any and all prior oral or written agreements, correspondence, quotations or understandings heretofore in force between the parties relating to the subject matter hereof.

There are no agreements between Seller and Purchaser with respect to the Product herein except those specifically set forth in and made part of these terms and conditions.

Any additional terms, conditions and/or prices are rejected by Seller. These terms and conditions may be modified, cancelled or rescinded only by a written agreement of both parties executed by their duly authorized agents.