NEWGRIND

OUTPERFORMING FROM EDGE TO EDGE

RHINO RL500

RESURFACING MACHINE OPERATOR'S MANUAL

LENZE VFD i550 protec IP31 / NEMA 1, NEMA 4X outdoor

EQUIPMENT USAGES

- Concrete leveling, grinding and polishing
- Glue, thinset and mastic removal
- Terrazzo grinding and polishing
- Stone grinding and polishing
- Hardwood sanding and refinishing

For your personal safety, READ and UNDERSTAND before using.

SAVE THESE INSTRUCTIONS FOR FUTURE REFERENCE.

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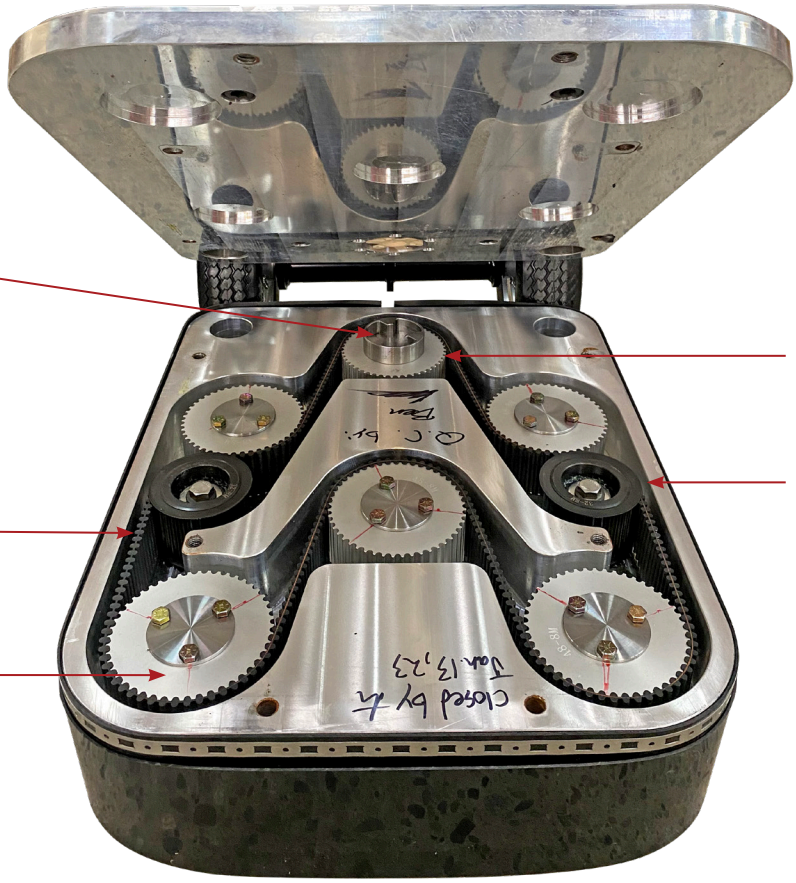
RHINO RL500 DIAGRAM

RHINO RL500 BOTTOM DIAGRAM



HYTREL COUPLER
(SPIDER GEAR)

MAIN DRIVE SPROCKET

IDLER SPROCKET X 2
(1 ON EACH SIDE)

QUICK-CHANGE DRIVE BELT

SECONDARY DRIVE
SPROCKET X 5

COUNTER-CLOCKWISE
SPINNING RHINO TOOL PLATES
(RED)

SINGLE OR DOUBLE GROMMET
TOOL PLATE
MOUNTING SYSTEM

CLOCKWISE
SPINNING RHINO TOOL PLATES
(BLACK)

RHINO STYLE TOOLING
ATTACHES USING 8MM SCREW

RHINO RL500 MACHINE SPECIFICATIONS

POWER	40 AMP/220-240V Single Phase - 30 AMP/208-230V 3 Phase
MAXIMUM WATTS DRAW	8000
HP	10
MACHINE WEIGHT	500 lbs
BIASED WEIGHT KIT MAX WEIGHT	360 lbs
COMBINED WEIGHT	860 lbs
DISC SPEED	350-1400 rpm
VARIABLE SPEED CONTROL	YES
NUMBER OF GRINDING HEADS	6
COUNTER-ROTATING HEADS	YES
DISK SIZE	7 inches
GRINDING FOOTPRINT	20 inches
QUICK CHANGE TOOLING PLATES	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	YES

AVERAGE PRODUCTION RATES

(on Medium Hard Concrete)

EXTREMELY HEAVY REMOVAL	500-850 sq./ft. per hour
HEAVY REMOVAL	600-1050 sq./ft. per hour
LIGHT REMOVAL	900-1300 sq./ft. per hour
GRINDING AND PROFILING	800-1450 sq./ft. per hour
POLISHING	1200-1850 sq./ft. per hour

RHINO RL500 SPECIFICATIONS

MODEL	HDX465	HDX465HV
Input Power	208-240V +/- 15% 50/60Hz	380-460V +/- 15% 50/60Hz
Amps	27-30A	14-16A
Plug Type	3P4W 30A 250V 3 ~ (NEMA L15-30P)	3P4W 30A 480V 3 ~ (NEMA L16-30P)
Disc Diameter	7" / 178mm	7" / 178mm
Disc Speed (RPM	350 - 1400	350 - 1400
Machine Width	19.25" / 489mm	19.25" / 489mm
Weight	500lbs / 228kg	500lbs / 228kg

GENERAL 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

1. Keep your work area clean and well lit. Cluttered floors and dark areas invite accidents.
2. Do not operate equipment in explosive atmospheres, 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, pets and visitors away while operating equipment. Distractions can cause you to lose control.
4. Use appropriate dust control vacuum system when dry grinding or sanding.

ELECTRICAL SAFETY

4. 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.
5. 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.
6. 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 have the buttons depressed invites accidents.

PERSONAL SAFETY

7. 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.
8. Do not overreach. Keep proper footing and balance at all times. Proper footing and balance enables better control of the equipment in unexpected situations.

9. Use safety equipment. Always wear eye protection. Dust mask, non-skid safety shoes, hard hat, or hearing protection must be used for appropriate conditions. Ordinary eye or sunglasses are NOT eye protection.
10. **DO NOT** turn on equipment while the machine is tilted back. Any tooling fastened to the machine can come off and cause damage or injury.

EQUIPMENT USE AND CARE

11. 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.
12. 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.
13. 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.
14. 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.
15. Use only tools and accessories that are recommended by the manufacturer for your equipment. Tools and accessories that may be suitable for one style of equipment, may become hazardous when used on another style of equipment.

SERVICE

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

USE 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. Use 10 gauge cord or larger. If in doubt, use the next heavier gauge. The smaller the gauge number, the heavier the cord.

SPECIFIC SAFETY RULES

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.

1. Tools and accessories must be rated for at least the speed stated on the equipment serial plate. Tools and other accessories running over rated speed can fly apart and cause injury.

2. Always use safety glasses or goggles. Ordinary eye or sun glasses are NOT safety glasses.
3. 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.
4. Adequate ventilation of your work area is very important when using equipment. Use a dust mask or appropriate respirator.
5. 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.
6. Always install the dust skirt before operation.
7. Check the tools and accessories carefully for damage before operation. Replace damaged tools and accessories immediately.
8. Hold the equipment firmly with both hands during operation.
9. Do not leave the equipment running unattended.
10. Do not touch the tools immediately after operation; they may be extremely hot and could burn your skin.

WARNING:

Misuse or failure to follow the safety rules stated in this instruction manual may cause serious personal injury.

SAVE THESE INSTRUCTIONS.

MACHINE OPERATION:

The Variable Frequency Drive (VFD) is designed to allow the user to operate the equipment on either single phase or three phase power . The equipment is able to operate on either 50 Hz or 60 Hz frequencies. To operate equipment on single phase, a single phase to three phase adapter cord is equired. The VFD will automatically adjust for phase or frequency input.

LCD DISPLAY – Shows PAD speed in RPM, % of motor load, and VFD status

STARTING THE EQUIPMENT:

The equipment is designed to rotate the tooling in either the forward direction (green button) or reverse direction (yellow button) depending on operating needs. Use the equipment in the forward rotation mode (green button) unless reverse rotation is needed. This will ensure consistent tool wear and tool profile. 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. Use the knob, located under the right side handle grip, to adjust speed of equipment. Before starting the equipment, ensure that the speed is set to the lowest speed available as displayed on the VFD screen. Doing so will prevent unexpected high speed start up which could cause undesirable marks to the surface being finished.

Never exceed the maximum speed of the tooling being used! Doing so could cause tooling to eject from the tool plate holder or cause irreparable damage to the surface being finished.

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 worked on and harm to other workers or surrounding installations.

STOPPING THE EQUIPMENT:

To stop the equipment, turn speed control knob to the slowest setting and push the red stop button on the face of the handle or the red stop button on the VFD.
Changing tools and accessories: Always turn off and disconnect power from the machine when performing any operations to the bottom of the machine!
To change tool segments on the tooling plate, use appropriate fasteners and be careful to avoid cross threading. When removing and inserting tool plates or adapter plates, be sure to inspect rubber grommets for signs for wear and replace any damaged grommets.

NOTE: Using grommets that are damaged or missing can cause damage to drive heads and tool plates.

HANDLE ADJUSTMENT:

To adjust the handle, pull either the upper ratchet hand lever or depress the lower ratchet foot pedal 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 ratchet clicks in place when the desired position is achieved.

FAILURE TO CHECK for positive 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!

RL500 DOUBLE GROMMET SYSTEM

There are 4 positions controlling tool plate articulation.

NOTE: Drive heads always have 6 grommets in every position.
Check grommets for wear and replace any torn or damaged grommets.

RIGID – This setup has 6 grommets on the drive heads and no grommets on the tool plate drive pins. Rigid position is used for heavy PCD removal of thick coatings such as glue, mastic, thinset, epoxy flake/chip, elastomeric/ rubberized parkade coatings etc. Rigid is also used for grinding or sanding a floor flat. When grinding/polishing concrete do not use Rigid position if you are doing cream, salt and pepper or minimum aggregate exposure.
FLEX – This setup requires 6 additional grommets on each tool plate. These grommets are pushed onto each drive pin with the thick side facing up. Flex is used for general grinding and polishing and normal removal of coatings, glue and mastic.
SEMI FLEX – This setup requires 3 grommets placed on every second tool plate drive pin on each tool plate. The grommets are placed with the thick side up. This position is good for general grinding and polishing on wavy floors as well as light removal of thinset, glue, mastic and coatings. Also good for salt and pepper and minimum aggregate exposure.
FULL FLEX – This setup requires 3 grommets on each tool plate except they are pushed on with the thin side facing up. This allows for maximum articulation to follow the floor as much as possible. This is used for cream polish, salt and pepper and minimum aggregate exposure on wavy floors. Do not use PCD's in this position as it may result in damage to drive heads, grommets and tool plate drive pins.

RHINO RL500 MAINTENANCE

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.

VFD FEATURES:

The machine is outfitted with a VFD (Variable Frequency Drive) enabling the user to select the desired operating speed. **The VFD also possesses many features such as:**

- Under voltage protection - Over current protection
- 60Hz and 50Hz capability (international)
- Wide voltage range
  (200-230V +/- 15% for 230V model)
  (380-460V +/- 15% for 460V model)
- Soft start
- Speed display - Load display
- Current limiting

MAINTENANCE:

General:

- Disconnect power before performing any maintenance, cleaning, or repair to your equipment!
- 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.

Weekly:

- Clean the equipment as needed.
- Check all fasteners and tighten if necessary.
- Inspect tool plate driver grommets for signs of wear. Replace grommets that show signs of extensive wear.

Monthly:

- Inspect handle wires for damage.
- Gently remove dirt and debris from the Velcro hook material using a stiff brush. This will ensure maximum adhesion.
- Check that the handle bolts are tight.
- Inspect plug ends for signs of carbon deposits or arcing.
- Blow off VFD heat sink with compressed air.
- Blow off motor fan with compressed air.
- Remove any excess dirt build up from the bottom plate and back side of pad drivers.

Yearly:

- Check all strain reliefs and make sure they are tight so as to avoid cords being pulled out of the VFD or handle.
- Clean and lubricate wheels.
- Clean and lubricate ratchet mechanisms. And check shoulder bolts are not loose. If needed, tighten nylock nuts enough to keep handle forks from having side to side movement but still allow ease of movement for handle position adjustment.

RHINO RL500 VFD ERROR CODES

ERROR CODE	DESCRIPTION	CLASSIFICATION	REMEDY	BLOCKING TIME [S]	RESET POSSIBLE
2250	CiA: Continuous overcurrent (inside the device)	Fault	· Check motor and wiring for short circuit. · Check brake resistor and wiring. · Check motor circuit (delta connection, star connection). · Check setting of the motor data.	5	Yes
2320	Short circuit or earth leakage on the motor side	Fault	· Check motor cable. · Check the length of the motor cable. · Use shorter or lower-capacitance motor cable.	5	Yes
2340	CiA: Short circuit (inside the device)	Fault	· Check motor cable for short circuit.	5	Yes
2350	CiA: i^2*t overload (thermal state)	Fault	· Check drive sizing. · Check machine/driven mechanics for excessive load. · Check setting of the motor data. · Reduce values for slip compensation (P315.01, P315.02) and oscillation damping **(P318.01, P318.02)**.	5	Yes
2382	Error: Device utilization (Ixt) too high	Fault	· Check drive sizing. · Reduce maximum overload current of the inverter **(P324.00)**. · In case of high mass inertias, reduce maximum overload current of the inverter **(P324.00)** to 150 %.	3	Yes
2383	Warning: Device utilization (Ixt) too high	Warning	· Check drive sizing.	0	Yes
3120	Mains phase fault	Fault	· Check wiring of the mains connection · Check fuses.	0	Yes
3210	DC bus overvoltage	Fault	· Reduce dynamic performance of the load profile. · Check mains voltage. · Check settings for braking energy management. · Connect brake resistor to the power unit and activate the integrated brake chopper. (**P706.01** = 0: Brake resistance).	0	Yes
3211	Warning: DC bus overvoltage	Warning	· Reduce dynamic performance of the load profile. · Check mains voltage. · Check settings for braking energy management. · Connect brake resistor to the power unit and activate the integrated brake chopper. (**P706.01** = 0: Brake resistance).	0	Yes
3220	DC bus undervoltage	Trouble	· Check mains voltage. · Check fuses. · Check DC bus voltage **(P105.00)**. · Check mains settings.	0	Yes

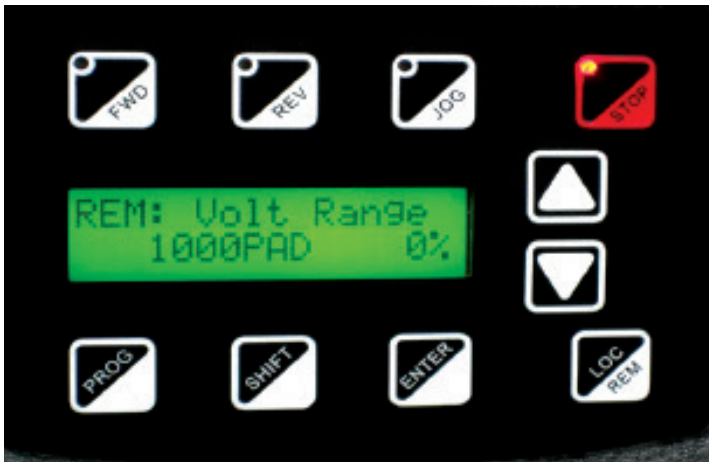
RHINO RL500 VFD ERROR CODES continued

ERROR CODE	DESCRIPTION	CLASSIFICATION	REMEDY	BLOCKING TIME [S]	RESET POSSIBLE
3221	Warning: DC bus undervoltage	Warning	· Check mains voltage. · Check fuses. · Check DC bus voltage. · Check mains settings.	0	Yes
3222	DC bus voltage too low for switch-on	Warning	· Check mains voltage. · Check fuses. · Check mains settings.	0	Yes
4210	PU: Overtemperature fault	Fault	· Check mains voltage. · Provide for a sufficient cooling of the device (display of the heatsink temperature in **P117.01**). · Clean fan and ventilation slots. If required, replace fan. · Reduce switching frequency **(P305.00)**.	0	Yes
4281	Heatsink fan warning	Warning	· Clean fan and ventilation slots. If required, replace fan. The fans can be unlocked via locking hooks and can then be removed.	0	Yes
4310	Error: Motor overtemperature	Fault	· Check drive sizing. · Check motor thermal sensor and wiring (X109/T1 and X109/T2).	5	Yes
5112	24-V supply fault	Warning	· Check optional external 24-V voltage supply (terminal X3/24E), if connected. · Check mains voltage.	0	Yes
5180	24-V supply overload	Warning	· Check 24-V output and digital outputs for earth fault or overload.	0	Yes
6280	Trigger/functions connected incorrectly	Trouble	· Check and correct the assignment of the triggers to the functions. · With keypad or network control, the two functions "Inverter enable" (P400.01) and "Run" (P400.02) can also be set to "Constant TRUE [1]" to start the motor.	0	Yes
7180	Motor overcurrent	Fault	· Check motor load. · Check drive sizing. · Adapt the set error threshold **(P353.01)**.	1	Yes
9080	Keypad removed	Fault	· Plug on the keypad again or activate another control source.	0	Yes
FF02	Error: Brake resistor overload	Fault	· Check drive sizing. · Check settings for the braking energy management. **NOTE!** The error will be reset if the thermal load falls below the error threshold **(P707.09)** of - 20 %.	5	Yes

RHINO RL500 VFD ERROR CODES continued

ERROR CODE	DESCRIPTION	CLASSIFICATION	REMEDY	BLOCKING TIME [S]	RESET POSSIBLE
FF06	Motor overspeed	Fault	· Adapt the maximum motor speed **(P322.00)** and the error threshold **(P350.01)**.	1	Yes
FF36	Warning: Brake resistor overload	Warning	· Check drive sizing. · Check settings for the braking energy management. **NOTE!** The error will be reset if the thermal load falls below the error threshold **(P707.09)** of - 20 %.	0	Yes
FF37	Automatic start disabled	Fault	· Deactivate start command and reset error.	0	Yes
FF85	Keypad full control active	Warning	· To exit the control mode, press the CTRL keypad key.	0	Yes

RHINO RL500 VFD ERROR SCREENS



The VFD is capable of handling a wide range of input power. The voltage range for the 230V models is 200-230V +/-10% (180-253V) and for the 460V models is 380-460V +/-10% (342-506V). If input source power is just outside of these ranges, the above screen will be displayed. The VFD is protected from voltage fluctuations within the specified voltage range. Check voltage before plugging in equipment to insure safe operation.

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 warranty!

LIMITED EQUIPMENT WARRANTY OF SALE

NewGrind Inc. warrants that each new unit manufactured for New Grind Inc. to be free from defects in material and workmanship in normal use and service for a period of (2) one year from date of shipment to the original retail or equipment rental center owner. Accessories or equipment furnished and installed on the product by New Grind 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 including, but not limited to the warranty of merchantability and the warranty of fitness for a particular purpose 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 speci cations provided with or for the product.

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 dificulties, fires, casualties, accidents, acts of the elements, acts of God, transportation dificulties, delays by a common carrier, inability to obtain product, materials or components or quali ed 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 ful llment 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 NewGrind 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.

NewGrind 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.

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.

No person is authorized to give any other warranty or to assume any additional obligation on NewGrind Inc.'s behalf unless made in writing and signed by an officer of NewGrind Inc.

RHINO RL500 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: NewGrind 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. Sellers 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.

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