



RHINOVATOR 120L

Forced action mixer

USER MANUAL



Clean Less. Mix More.



RHINOVATOR 120L

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RHINO

SURFACE SOLUTIONS LTD

RHINOVATOR
120L

RHINO



OVERVIEW:

The Patent pending Rhinovator is different from any other forced action mixer on the market in that its drum and chute are made from Polypropylene instead of steel, giving it the unique property of being able to resist a permanent bond with resin based materials. As such, it must be treated differently to other conventional forced action mixers.

This user manual sets out the correct way to use the Rhinovator to ensure you get quality mixes and reliable performance – every time.

Failure to follow the instructions given in this manual or using the mixer for mixing materials other than those specified in this manual or other uses not recommended may constitute ‘misuse’ for which the manufacturer bears no responsibility and will void the warranty.

APPLICATIONS:

The Rhinovator is designed for creating consistent high quality mixes of resin-based materials, such as resin bound aggregates, rubber crumb surfaces (wet pour) and rubber mulch. It is also particularly proficient at mixing concrete, screeds and mortars (not Lime mortar).

SAFETY INSTRUCTIONS:

- Ensure the machine is on firm, level ground.
- The machine must only be connected to installations protected by an RCD (residual circuit breaker).
- The machine must not be adapted or altered in any way as this can impact its safety features and will void the warranty.
- Before use, check the following:
 - The safety switch on the grid lid is intact and in good working order.
 - That the grid of the lid is intact.
 - That the chute outlet protection is fitted and intact.
 - That the main switch is intact and in working order.
- Disconnect the mixer from the power source before attempting to move the machine.
- Do not insert tools or other objects into the mixer while the mixer is operating.
- Do not leave the mixer unattended with the power switched on.
- The Rhinovator is fitted with a safety switch on the lid that stops the motor if the lid is opened (do not override this safety feature.)
- The Rhinovator is fitted with an ‘emergency stop’ button on the main switch. If this is damaged, replace the switch before use.
- The mixer arms rotate clockwise.



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POWER REQUIREMENTS:

The Rhinovator must be connected to a 5kVA intermittent transformer (2.5kVA continuous) or equivalent generator. For optimum running, the transformer should be connected to the mains, and a 32amp lead should run from the transformer to the mixer.

Use only approved and certified power cables and plugs.

INSTALLATION: BEFORE CONNECTING TO THE POWER SUPPLY:

- Ensure the mixer is placed on firm, solid ground.
- Remove the mixing arms, then place one of the drive shaft sleeves over the central spindle and replace the mixing arms.
- Ensure the mixing arms are seated properly on the 'hex' bolt and that the mixing shovels are correctly adjusted to be 5-7mm clear of the mixing drum surfaces.
- Ensure the machine is connected to a 5kV Transformer (see 'power requirements')
- Ensure the trailing lead does not exceed 15 metres.
- The lid is fitted with a safety switch, which ensures the machine ONLY operates when the lid is down. Do not attempt to over-ride this safety feature as injury could result.

OPERATING THE RHINOVATOR:



NEVER PUT ANY PART OF YOUR BODY INTO THE MACHINE WHEN THE POWER IS CONNECTED. SERIOUS INJURY CAN RESULT.

- Close the lid and ensure the safety lock (plunger) is engaged.
- Start the mixer by pressing the GREEN start button.
- Commence loading the machine with the required materials.
- **DO NOT attempt to load the machine unless the mixer is running**
- **It is recommended to 'twist' the drive shaft sleeve after each mix to ensure it doesn't become stuck to the drum base.**

When the material has reached the desired consistency, open the mixer door and allow the mixer to disperse the mixed contents into the wheelbarrow or bucket. Switch off the machine, pull the lid locking plunger to release the lid and remove the remaining mix from the drum. Close the mixer, then close the mixer lid, ready for the next mix.



THE EXIT CHUTE IS FITTED WITH A SAFETY GUARD. DO NOT REMOVE THIS OR ATTEMPT TO PLACE ANY OBJECTS/FINGERS THROUGH THE GUARD WHILST THE MACHINE IS IN OPERATION.



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CLEANING:



DISCONNECT THE MIXER FROM THE POWER SUPPLY BEFORE ATTEMPTING TO CLEAN THE MACHINE. DO NOT ALLOW THE MIXER'S ELECTRICAL PARTS TO COME INTO CONTACT WITH ANY LIQUID.



HEAT, NAKED FLAME, MECHANICAL ABRASION OR CORROSIVE CHEMICALS MUST NOT BE USED TO CLEAN THE MIXER DRUM OR CHUTE.

- Open the lid by pulling back on the spring plunger.
- Remove the mixing arms by pulling them upwards.
- Remove the drive shaft spindle cover and either clean or dispose of it.
- If using resin products, spray Rhino 'drum cleaner' to the inside of the drum and chute and wipe all surface areas clean with a cloth. The drum should be cleaned at the end of the installation or every ten mixes – whichever comes first.
- If resin products have been allowed to cure onto the plastic surfaces, remove cured residue with a metal scraper.
- Undo the thumbwheel and retaining bolt to remove the trap door. Clean the trap door opening thoroughly to ensure no curing debris is trapped in the opening. Using the Rhino cleaner, thoroughly clean the trap door and mixing arms (paying particular attention to the bolts securing the mixing shovels). A wire brush is ideal for this.

It is recommended that the retaining bolt and wheel are re-attached to the trap door but the trap door not be refitted to the machine until it is next ready for use.

Finally, wipe down all external parts of the machine to remove any uncured resin materials. If using the mixer for concrete or mortar materials, use water instead of drum cleaner.



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TRANSPORT:



The Rhinovator weighs 95kg. Minimum two person lift when loading onto vehicles. Use marked lifting points

TRANSPORT (when moving): Grip the lifting points between the loading wheels (fig. A pictured) and tip the machine back on its transport wheels. Push the machine forward to manoeuvre.



TRANSPORT (when loading): The mixer lid should be closed and the machine should be placed on all four wheels and secured to avoid movement during transport.

The mixer weighs 95kg, and manual handling safety procedures should be followed when loading and unloading the machine onto vehicles.

Ensure the machine is secured when transporting.

RECOMMENDED LIFTING/LOADING PROCEDURE (TWO PERSON LIFT):

- Tip the machine so that the loading wheels rest on the loading bay of the vehicle.
- With knees bent and back straight, each person should grip lower lifting points (see fig B).
- Straighten legs (lift with your legs) to raise the machine vertically to the vehicle loading bed.
- Manoeuvre the machine by pushing forward until all four wheels are on the vehicle loading bed.
- Secure the machine to the vehicle loading bed to avoid movement during transport.



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MAINTENANCE:

It is good practice to remove the mixing head and chute exit door at the end of each install. The following components are considered critical for the continued use of the machine during on-site operation, and the associated inspection frequencies are specified below.

Component	Check	Inspection Frequency
Cabling between switch, motor and lid switch	Check for damage. Ensure cores aren't exposed. Ensure connectors are intact.	Before each use.
Main switch	Check housing for damage.	Before each use.
Outlet (chute) protection grill	Ensure grill is present and securing bolts are tight.	Before each use.
Lid protection grill	Ensure entire grill is intact.	Before each use.
Drum thumbwheels	Ensure ALL thumb wheels are present and secure.	Before each use.
Drum	Ensure drum has not worn through	Before each use.
Chute door	Ensure door opens and closes freely	Before each use.
Drive shaft protection cover	Ensure cover is in place and rotates freely.	Before each use.
Lid limit switch	Switch on machine and lift lid to test that mixer arms stop rotating. Check switch housing for damage.	Before each use.
Transport wheels (tyre pressures)	Ensure tyres are inflated to between 1.8 and 2.0 bar.	Weekly.
Mixing shovels	Ensure shovel edges are between 5mm and 7mm from drum sides to avoid premature wear of the drum. Adjust as required.	Weekly.
Mixing head	The mixing head should be removed once per week, and a non-acid grease applied to the 'hex' bolt drive shaft head. This enables easy removal of the mixing head.	Weekly.
Frame	Check frame welds for damage.	Monthly.
General fixings	Check all fixings are secure.	Monthly.



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For more information on the Rhinovator forced action mixer, scan the QR code to access our YouTube tutorials on:

- 1) Operating the machine
- 2) Cleaning and Maintenance
- 3) Transport/loading the machine
- 4) Replacing spare parts
- 5) Replacing the drum
- 6) Health and safety



LABELS:

- 1)** Patent pending, bond-resistant, 'easy clean' polypropylene drum.
- 2)** Quick release fixings - change the drum in under one minute.
- 3)** Larger loading wheels for enhanced stability when loading and transporting.
- 4)** Robust and unique steel 'spine' - protecting the rear of the machine when loading.
- 5)** Safety grid to protect users from injury during machine operation.
- 6)** Lid safety switch - automatically switches the machine off when lid is raised.
- 7)** Wide wheels with pneumatic tyres for easier transport.
- 8)** Powerful motor with 2KW geared output, matching the most powerful 120L mixer on the market.
- 9)** Drive shaft cover to protect from resin build-up.
- 10)** Four mixing arms with fully adjustable shovels for faster, more consistent mixing.
- 11)** Cable housing - no more trailing cables.
- 12)** Rhino shield - motor protection cover.
- 13)** Multi-tooth bag splitter.
- 14)** Handy tool caddy.

The only forced action mixer which has been 100% designed by installers for use by installers.



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TECHNICAL DATA:

Motor:	230V110V 50HZ (Geared output 2KW)
H/W/D:	116cm/69cm/92cm
Mixing Capacity:	120 Litres
Weight (empty):	95kg
Noise:	<68 dB when empty

TROUBLESHOOTING:

Symptom	Possible Cause
My forced action mixer won't start.	Check power is on. Check all cables for defects (with power off). Check transformer is a correct rating (5kV) Check that lid is down (the machine won't operate with the lid up). Check that the main switch and safety switch are intact and not damaged. If the machine still won't operate, contact the Service Centre.
My forced action mixer blows fuses/can't turn a full load.	Check that the cable isn't too long (refer to 'power requirements' on page 6 of this manual.) Check that capacitors aren't blown or deformed.
The mixing shovels are snagging the drum.	Check that mixing shovels clear the drum sides and base by 5-7mm. Loosen the retaining nuts on the mixing shovels and adjust accordingly. Tighten the nuts.
Smoke is coming out of my forced action mixer.	This is likely to be caused by faulty or broken capacitors. Contact the service centre to have them replaced before further use of the machine is attempted.
My Machine is difficult to manoeuvre.	Check that the tyres are inflated to the correct pressure. The correct pressure is printed on the sidewall of the tyre.
I can't remove the drum from my mixer.	This is usually caused by a buildup of mixed and cured materials on the drive shaft column. The plastic column covers can avoid this by being used on every job. Chip off the cured materials with a chisel then use a 'flap disk' attachment on an angle grinder to return the drive shaft column to bare metal. The drum should slide up and off the column easily once all cured materials are removed.
I can see the black 'wear' bars from the inside of the machine.	It's time to replace the drum. If the black wear bars have only just become visible, the drum won't split for another 100 metres or so. But it should be changed before the next job.



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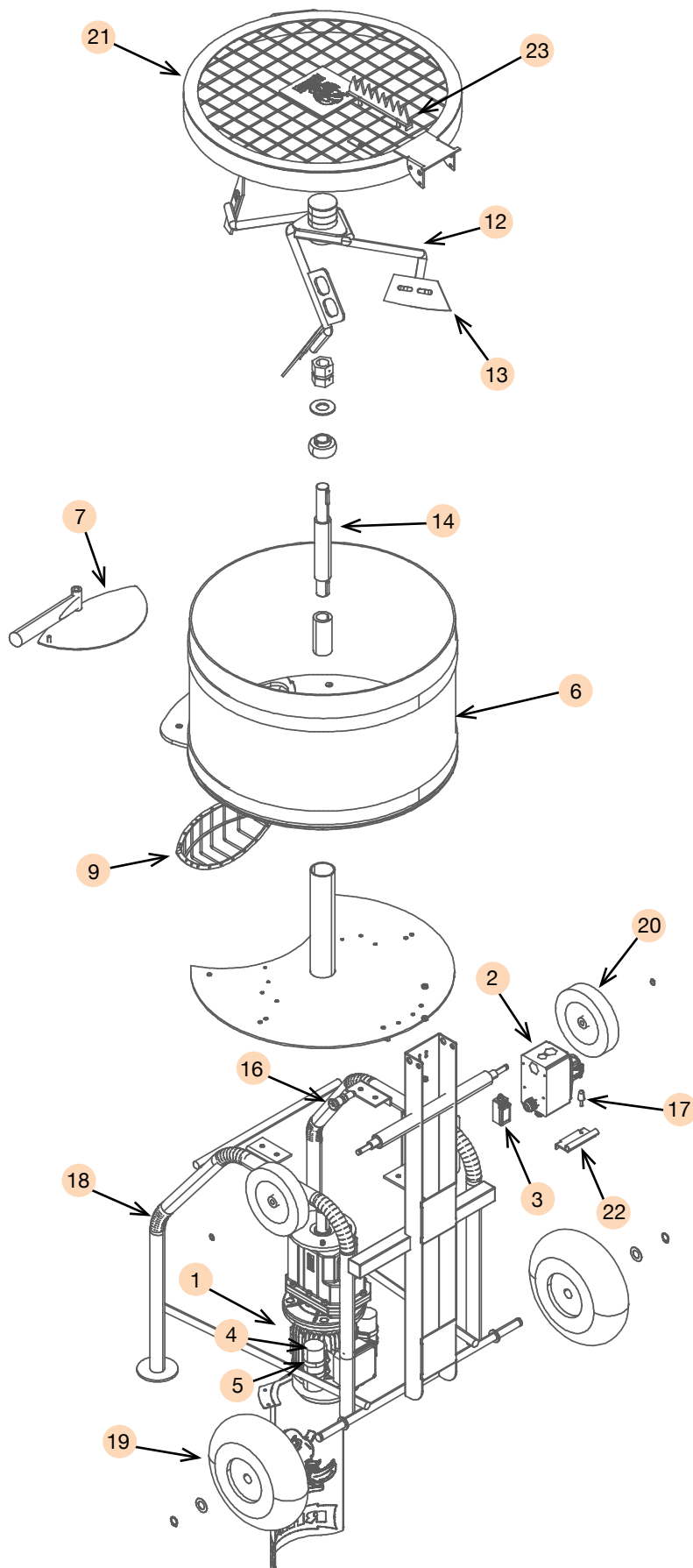


Pos.	Description	Part no.
1	2kw output motor and gearbox 50hz	RV003
2	Main switch inc. Relay and connecting cables	RV004
3	Lid safety switch	RV005
4	Start capacitor 500µf/125v	RV006
5	Run capacitor 140µf/250v	RV007
6	Rhinovator 120l pp drum (complete with fixings)	RV008
7	Rhinovator trap door (complete with fixings)	RV009
8	Drive shaft spindle protection (pack of 10)	RV010
9	Outlet protection grill	RV011
10	M8 threaded thumbwheel and bolt for drum (10 pack)	RV012
11	M10 threaded thumbwheel and bolt for trap door (5 pack)	RV013
12	Mixing arms (4 arms): excluding shovels	RV016
13	Shovel set for mixing arms (4 shovels and fixings)	RV017
14	Rhinovator 30mm drive shaft	RV019
15	Polypropylene resin funnel (not shown)	RV020
16	M16 lid locking plunger (positioning bolt)	RV021
17	Rubber damper for safety switch plate	RV022
18	Rhinovator 120l frame only	RV023
19	300mm transport wheels 20mm bore (pair)	RV024
20	175mm loading wheels (pair)	RV025
21	Rhinovator 120 lid	RV026
22	Rhinovator plate for safety switch	RV027
23	Rhinovator bag cutter (fits all forced action mixers)	RV028



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TECHNICAL SUPPORT/SERVICE:

For service and technical support, please contact our service partners:

Shawbank Service Centre Ltd.

Unit 5a and 5b Shawbank Road Redditch, B98 8YN

Tel: 01527 913 081

SALES /CUSTOMER SUPPORT:

Rhinovating Ltd.

Unit 141, Leyland Trading Estate, Wellingborough, NN8 1RT

Tel: 01933 276998

Email: info@rhinovating.co.uk

Website: www.rhinomixer.com

YouTube: Rhino Surfaces

WARRANTY:

The Rhinovator comes with a 12-month limited warranty.

- This warranty covers any defects in material or workmanship under normal use during the warranty period. For warranty claims, the product must be returned to our service partners (see above for address) at the machine owner's cost.
- During the warranty period, Rhinovating Ltd will repair or replace, at no charge, products or parts of the product that prove to be defective because of improper material or manufacture., under normal use and maintenance as defined in this manual.
- The warranty does not cover items defined as 'wearing parts' with the exception of manufacturing defects.
- If the machine has been adapted, used, cleaned or maintained in any way other than that stated in this manual the warranty will be void.
- In all cases, the warranty does not allow for compensation in any way whatsoever.

DECOMMISSIONING YOUR RHINOVATOR FORCED ACTION MIXER:

When your machine has reached the end of its serviceable life, most of the machine can be recycled. Before recycling, cut off the plug.

Please return the drum to Rhinovating Ltd for recycling.

All steel parts can be disposed of at your local recycling centre.



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Declaration of Conformity

In accordance with BS EN ISO/IEC 17050-1:2010



1. *Product model / product:*

Product RHINOVATOR Forced action mixer
Model/type 120 L
Batch/serial no. RV001

2. *Manufacturer:*

Name Rhinovating Ltd
Address 141 Leyland Trading Estate, Wellingborough. UK. NN8 1RT

3. *This declaration is issued under the sole responsibility of the manufacturer.*

4. *Object of the declaration:*

Product: 120 Litre forced action mixer with polypropylene drum for mixing resin, concrete, mortars (not lime) and screed materials.
Specification: 2kW, 110V 50Hz mixer with detachable Polypropylene drum for external use.

5. *The object of the declaration described above is in conformity with the relevant UK Statutory Instruments:*

2008 No. 1597	The Supply of Machinery (Safety) Regulations 2008
2016 No. 1091	The Electromagnetic Compatibility Regulations 2016
2012 No. 3032	The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012

6. *References to the relevant designated standards used or references to the other technical specifications in relation to which conformity is declared:*

Reference & Date	Title
EN ISO 12100: 2010	Safety of machinery – General principles for design – Risk assessment and risk reduction.
EN 60204-1:2006	Safety of machinery. Electrical equipment of machines. General requirements

7. *Additional information:*

The technical documentation for the machinery is available from:

Name: David Shoesmith
Address: Rhinovating Ltd. Unit 141, Leyland Trading Estate, Wellingborough. UK. NN8 1RT

Signed for and on behalf of: Rhinovating Ltd
Place of issue: Wellingborough. UK
Date of issue: 25th November 2024
Name: David Shoesmith
Function: Managing Director

Signature:

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Forced action mixer

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