

1. Introduction

1.1 Summary

Runyon Surface Prep Machines are used for processing the floor surface. The scope of use of the machine depends on the choice of tools. In addition to the use and general functions, this manual describes information on the use, repair, and maintenance of the grinder. Contact your local dealer for further information.

1.2 Liability

We make every effort to make this manual as complete and accurate as possible, and we are not responsible for any errors or loss of information. Runyon reserves the right to change the instructions in this manual without prior notice. This manual is protected by copyright law and cannot be reproduced or used in any part without the express written consent of Runyon.

1.3 Warranty

This warranty only covers manufacturing defects. Runyon bears no responsibility for damage that arises or occurs during transportation, unpacking or use. In no instance and under no circumstances shall the manufacturer be held responsible for damage and defects caused by incorrect use, corrosion or use outside the prescribed specifications. The manufacturer is not responsible for indirect damage or costs under any circumstances. For complete information on the manufacturer's warranty period, see Runyon's current warranty terms. Local distributors may have special warranty terms specified in their terms of sale, delivery and warranty. If there is any uncertainty regarding warranty terms, please contact your dealer.

2. Safety

This manual indicates the important information / rules that must be observed when using Runyon's machine.

2.1 Operation Safety

Users of machines from Runyon have the ultimate responsibility for ensuring that everybody who works with or in the vicinity of the equipment follows all applicable safety rules. Safety measures must meet the requirements that apply to this type of equipment. Apart from the standard rules that apply in the workplace, the recommendations in this manual shall also be observed.

All work must be done by trained personnel. Users of machines from Runyon must have read through the dedicated manual for the machine. Incorrect use of the equipment could result in situations that could cause harm to the operator, the surroundings, or the machine. Machines from Runyon may only be used in the way recommended by Runyon. Machines from Runyon may only be used for commercial purposes.

Anyone using the machine shall know about:

- Its functions
- Location of emergency stops
- The safety rules for the work

The operator shall ensure that:

- No unauthorized person is stationed within the work area when the machine is started up

The workplace shall:

- be suitable for the purpose.
- be secured from loose objects that can be thrown out by the machine.
- be free from protruding bolts etc. on the surface to be processed.

Individuals in the workplace shall always use the recommended personal protective equipment and wear suitable clothing:

- safety goggles
- protective gloves
- steel toe safety shoes
- hearing protection
- Do not wear loose-fitting clothing or anything that can catch, such as scarves, bracelets, rings, etc.

General Precautions:

- Check the machine is connected to a grounded power supply.
- Work on live parts shall only be performed by qualified personnel.
- Suitable fire extinguishers should be clearly marked and close to hand.
- Maintenance of the equipment must not be performed during operation.

2.2 Electrical Safety

- Work on live parts shall only be performed by qualified personnel.
- The cables and connectors shall meet the machine's specifications.
- The machine is equipped with an overload protector. Once the overload protector has tripped, power off and then power in to restart it.
- Check the cords before powering in. Any broken cords may cause a serious accident.
- The wires should be away from the high temperature surfaces.
- Keep the motor, electrical box, inverter away from water.

3.1 Unpacking

Check the packaging and equipment carefully on delivery of any possible transport damage. If there is any sign of damage, report packaging damage to the carrier in the first place, and contact the dealer and report the damage by photos, report form or any other necessary evidence as well. Check whether the delivery meets the order. If you have any questions, please contact the dealer.

3.2 Transport

Always make sure that the machine is securely anchored to its surroundings and that the grinding head is lowered on to the surface. Tighten the securing straps, or other equipment used for anchoring during transport over non-moving parts, e.g. the machine's chassis. Make sure the wheels are engaged/locked during transport in the forward position and that the handle is in its back position. When lifting the machine, lifting straps must be used.

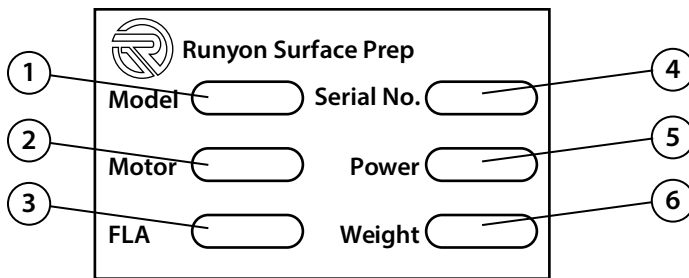
3.3 Lifting

The machine can also be lifted using the lifting eyes provided or using other approved lifting equipment. In which case, make sure that the weights are locked.

3.4 Movement

When moving on sloping surfaces, e.g. loading ramps, the battery system should have a minimum of 40% charge. Be sure the wheel locking pins are engaged. The maximum slope should not exceed 20%. The weights should be in the forward position. Otherwise, there is a risk that the machine tips backwards. Ensure there is no one below the machine during movement on sloping surfaces.

3.5 Machine Name Plate



1. Model Name	2. Rated Power	3. Full Load Amps
4. Serial Number	5. Rated Voltage	6. Net Weight

3.6 Storage

The grinding machine should be stored in a heated, dry place at normal temperature when not in use. It may be damaged by condensation and cold.

4. Machine Description

RSP-6 is a 3-head planetary floor grinder, used to grind (rough grind, fine grind and polish) concrete, natural stone and terrazzo floors or other materials specified in this manual or recommended by Runyon. This machine is expected to be used in commercial applications such as hotels, schools, hospitals, factories, offices and warehouses and retail environments. It is equipped with a transport wheel kit and battery system for mobilizing the machine on a job site. The battery powers the self-propelled mechanism that eliminates the need for manual pushing to reduce operator fatigue, and enhances productivity and helps maintain consistent performance throughout extended use.

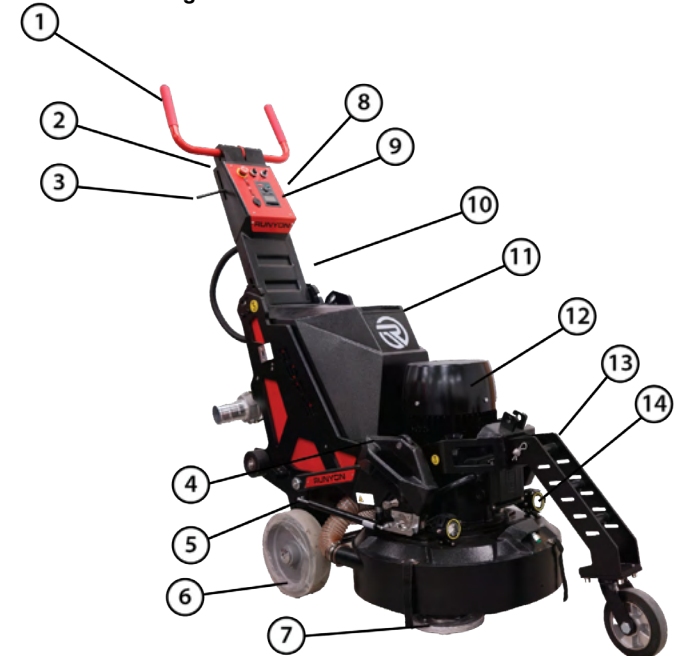
A water tank equipped can be used for wet grinding or mist spraying. The handle can be set in different positions. To prevent crystalline silica exposure, posing a threat to the health of the operator and other workers, when dry grinding, make sure that a dust collection system of the proper CFM is connected to the grinder (The recommended dust collector for this machine is the VonArx T7).

4.1 Standard Delivery

The machine will come with the following items. If anything is lost, please contact your Runyon Rep.

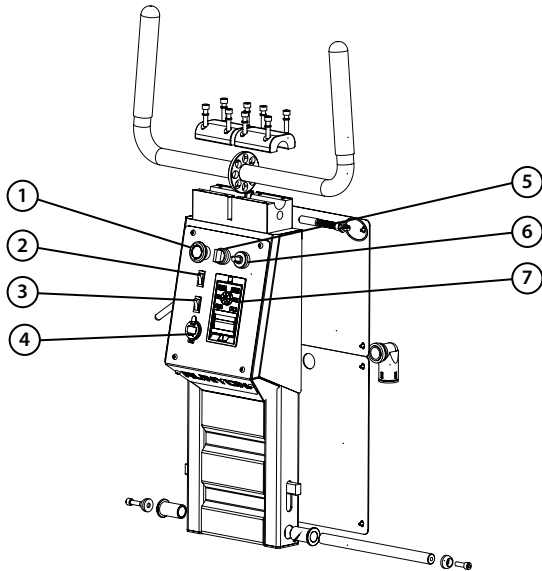
- dust skirt, 1
- female power connector, 1 (male connector on the machine)
- battery charger for the transport battery system, 1
- keys for the main electrical box, 2
- 3" Velcro tooling adaptors, 18 (on the grinding head)
- lifting strap, 1
- tool bag, 1

4.2 General Diagram



1. Handlebar	2. Handlebar Adj. Pin
3. Main Handle	4. Weight Kit
5. Air Spring for Weight	6. Rubber Drive Wheel
7. Grinding Heads	8. Main Handle Adjusting Lever
9. Operating Panel	10. Power Connector (Male)
11. Water Tank	12. Motor
13. Transport Wheel Kit	14. LED Spotlight

4.2 Operating Panel



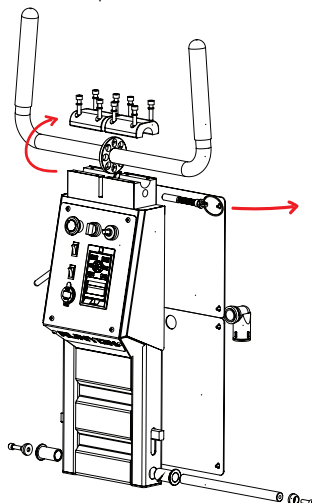
1. Emergency Stop Switch	5. Motor Forward / Reverse Switch
2. Water Release	6. Potentiometer For Travel Speed
3. LED Light Switch	7. Display Panel
4. USB Charging Port	

4.4 Display Panel

The display screen provides the operator with information about the machine, including voltage, rpm, amps, error code if any, etc.

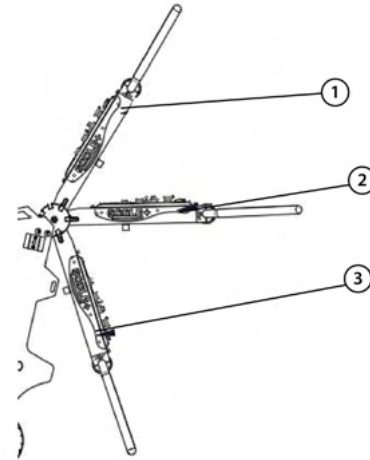
4.5 Handlebar Adjustment

The handlebar adjusting pin can be positioned at different positions to accommodate the specific user. Hold the handlebar with one hand, pull out the adjusting pin with the other hand, then release the adjusting bolt when it is rotated to proper position. Be sure that the pin has locked into a secure position.



4.2 Handle Adjustment

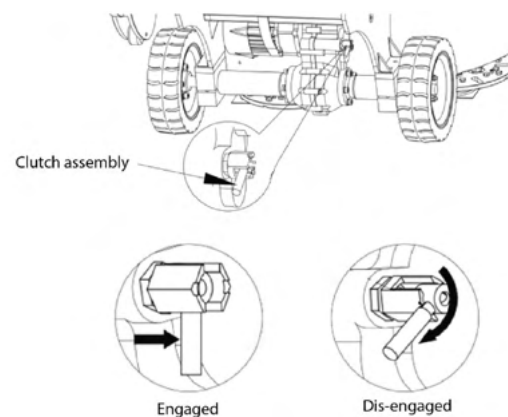
Use the handle position lever to adjust the position of the handle. Hold the handle tightly with one hand to support the handle, pull the lever lock back to release the handle, rotate the handle to a position that suits you best and release the lever to lock. Be sure that the handle has locked into a notch.



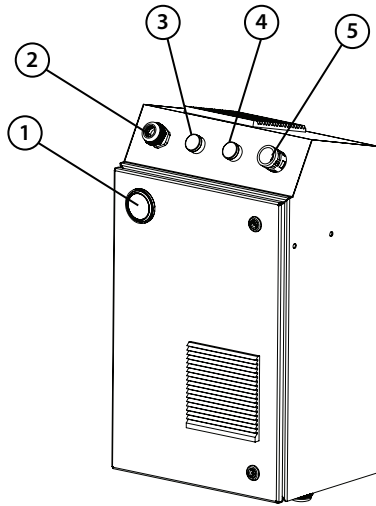
Position 1 is for tilting the machine back
Position 2 is the operating position
Position 3 is the transport position

4.7 Self-Propelled Operation

This machine is equipped with a self-propelled drive system that eliminates the need for manual pushing to reduce operator fatigue and enhances productivity and helps maintain consistent performance throughout extended use. The direction switch, forward, reverse, and neutral allows the operator to control the direction of the machine. The operator still needs to steer the machine left and right or during turns. The travel speed potentiometer controls the travel speed which helps maintain consistent performance throughout extended use. Above the axle there is a clutch switch that can engage or disengage the self-propelled system. To disengage the clutch simply pull the knob out of the slot and turn 90 degrees. The wheels can move, and the machine is able to operate manually. To engage the clutch for self-propelled operation, turn the knob 90 degrees and return to the slot. See the images below.



4.8 Electrical Cabinet



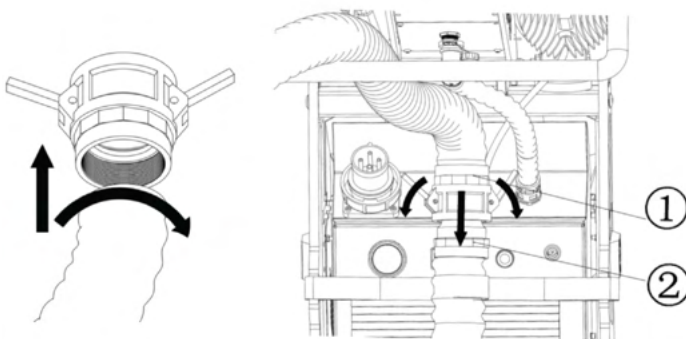
1. Hour Meter	2. Power Cord Grip
3. Fault Light	4. Power On Light
5. Handle Cord Grip	

4.9 Battery Charging

When the battery indicator shows less than 20% the battery charger should be plugged in. Never try to transport the machine if the battery level is below 20%. The battery will start to charge if the machine is powered on, and the motor is running. Charging the battery once a month is great for preserving your battery for long periods of time if you're not using your machine.

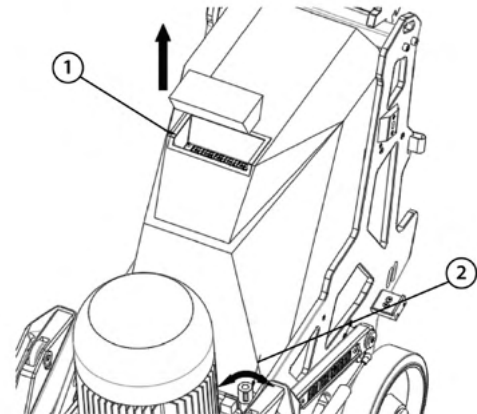
4.10 Vacuum Quick Connector

The fast connector consists of 2 parts, the part #1 is connected to the vacuum tube (3"), the part #2 is connected to the grinder. This allows for fast connection of the vacuum to the grinder.



4.11 Water Tank

The capacity of the water tank is 35L/10 Gal. There is a water inlet on the top of the water tank (1) with a mesh screen. During wet grinding, turn on the water valve (2) located above the grinding head to inject water into the grinding head.



4.12 Weight Kit Adjustment

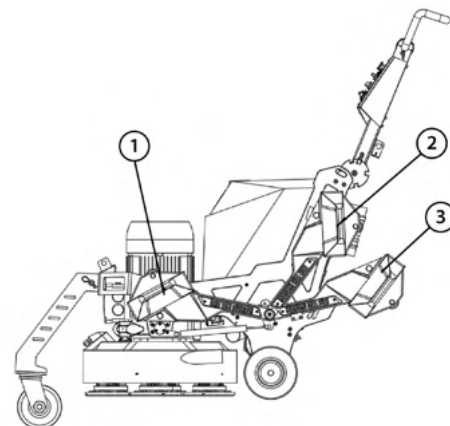
The machine is equipped with two weights to make it easy to move the machine's center of gravity. Each weight is provided with a locking pin, and a front limiting stop and a rear limiting stop on the frame of each side as well as a neutral position weight block.

Position 1----Pull the pin outwards and take hold of the weight and move the weight all the way forward until reaching the front stop.

Position 2----Lift the weight up until the pin locks into the neutral position weight block.

Position 3----Pull the pin outwards and take hold of the weight and move the weight all the way backWard until reach the rear limiting stop.

In order for the grinding pressure to be maximized, the weights shall be placed in position 1 and to be minimized in position 3. If the machine feels heavy to operate, it may be due to the placing of the weights. Raise the weights to position 2, position 3 to relieve the grinding head. Ensure that the weights are in the same position on both sides to prevent the risk of uneven grinding.



4.13 Transport Wheel

Installing the transport wheel makes moving the grinder easier and reduces effort. To move the machine, tip it down, attach the transport wheel, then return the machine to an upright position. When grinding, tip the machine down and either remove the transport wheel or place it in the upright position on its support.

4.14 LED Lights

The RSP-6 comes with two LED light bars—one at the front and one at the back. The light switch is located on the control panel. Flip the switch to the “on” position to illuminate the floor in front of and behind the grinder where the operator stands. This makes it easier to inspect the floor’s condition while the machine is in operation.

5. Transportation

The machine can be transported either manually, or by using the onboard battery system along with the transport wheel. Battery transport can be done without connecting the machine to a power supply.

5.1 Manual Transport with Transport Wheel

1. Tip the machine back and install the transport wheel.
2. Disengage the clutch pin above the axle to unlock the wheels.
3. The machine can be pushed manually.

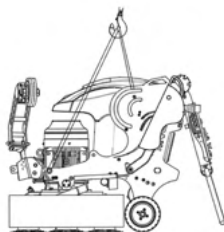
5.2 Battery Transport

1. Tip the machine back and install the transport wheel.
2. Engage the clutch pin on the axle to lock the wheels.
3. Turn the DC power switch on the machine electrical cabinet to engage the onboard systems.
4. Turn the travel speed potentiometer on the handle panel to a low setting.
5. Turn the emergency stop to the up position to release.
6. Flip the rocker to the forward position and adjust the travel speed as needed, then transport to the destination by forward, backWard or stop/neutral.
7. Press the emergency stop button down to stop all movement.

Note: Be sure not to run on a slope exceeding 20°. Be sure that the area around the machine is free and clear of any debris or tools before moving. Be sure that no personnel are in the immediate area when moving the machine.

5.3 Lifting the Machine

The image below illustrates the proper way to lift the machine with a crane or forklift. Always use the designated pick points on the frame. Use the lifting straps provided with the machine, or straps rated for the machine’s weight. Make sure the area is clear, and never allow anyone to stand under the machine while it is being lifted.



6. Operation

The following section describes how to change tools and how to operate the machine in manual or self-propelled mode. The machine may be operated either way depending on the job site requirements and the operator’s skill level. Only experienced operators should use self-propelled mode to run the machine.

6.1 Handle Setting

Place in the right working height using the various settings. Ensure that the handle lock locks properly in the position wanted when adjusting the handle.

6.2 Weight Setting

Place the weights in the right position for current work. If the machine is heavy to operate, it may be due to the placing of the weights. Fold the weights up or back to unload the grinding head.

6.1 Access to Grinding Tools

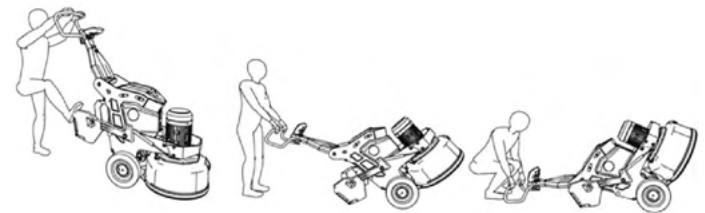
WARNING



- Risk of crushing.
- Risk for personal injury and mechanical damage.
- Disconnect the power prior to cleaning, maintenance, change of tools and repair.

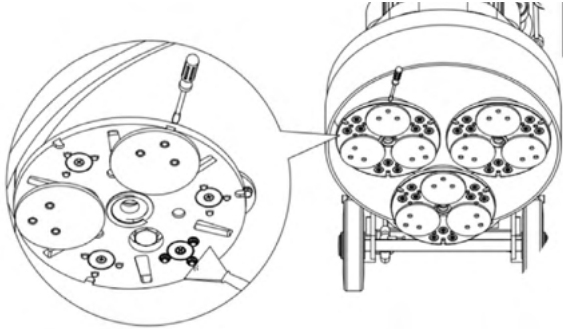
Raise the handle to the high position in accordance with the Handle Adjustment (page 3). Lower the weights back and place a foot on one of the weights. See Weight Kit Adjustment (page 4). Carefully, tip the machine backWards, until the weights reach the floor.

Ensure that the machine lies supported on the handle.



6.4 Fitting Grinding Tools

The machine uses 9 or 18 grinding tools. Insert the flat-blade screwdriver into the slot to remove the Velcro adapter. Align the 3 holes on the tool with the 3 pins on the plate and the tool will be attached immediately by magnet which is embedded in the tool plate. The tool plate holds the tools in place for the grinding application.



6.5 Manual Operation

Place the machine where you intend to start grinding operations.

Remove the transport wheel or place it in the upright position so the heads can touch the ground.

Install the tooling on the grinding heads

Connect the vacuum hose using the quick connector (unless wet grinding. If wet grinding be sure that the water tank has been filled).

Disengage the clutch pin to allow the machine to move freely. Rocking the machine would help to disengage the pin.

Make sure the emergency stop switch is pressed down (stop position). Plug in the power supply to the machine. Be sure it is the correct voltage for your machine (240V or 480V). Turn on the DC power switch to engage the onboard systems. Release the emergency switch to the up position. Flip the motor direction switch to any direction (clockwise or counterclockwise). Turn up the motor speed knob and the machine will begin grinding. Adjust the motor speed as needed for the tooling, and the RPM is read on the display panel.

Push the machine manually to move over the surface. Average speed for grinding should not exceed 8-10 feet per minute. Turn on the LED light if needed. To stop the machine, press down the emergency stop switch.

6.6 Self-Propelled Operation

Place the machine where you intend to start grinding operations.

Install the tooling on the grinding heads as needed for the operation. Remove the transport wheel or place it in the upright position so the heads can touch the ground.

Connect the vacuum hose using the quick connector (unless wet grinding. If wet grinding be sure that the water tank has been filled).

Engage the clutch pin to lock the wheels and get ready for self-propelled mode. Rocking the machine would help to engage the pin. Be sure that the pin clicks into the locked position.

Make sure the emergency stop switch is pressed down (stop position). Plug in the power supply to the machine. Be sure it is the correct voltage for your machine (240V or 480V). Turn on the DC power switch to engage the onboard battery system. Rotate the emergency switch to the up position. Flip the motor direction switch to any direction (clockwise or counterclockwise). Turn up the motor speed knob and the machine will begin grinding. Adjust the motor speed as needed for the tooling, and the RPM is read on the display panel.

Flip the rocker to the forward position and the grinder will begin moving. Adjust the travel speed as needed, travel speed should not exceed 8-10 feet per minute.

The machine still needs to be steered manually by the operator during grinding operation.

During a turn it is useful to flip the rocker switch into the reverse position to help with the turn.

Return the switch to the forward position as you complete the turn. Turn on the LED light if needed.

To stop the machine, press down the emergency stop switch.

7. Machine Maintenance

We recommend that the grinding machine be checked regularly to extend the service life. Always be sure that the machine is unplugged from power when performing maintenance or repairs.

7.1 Daily Maintenance

Maintenance should include keeping the machine as clean and dust-free as possible. Use a vacuum to remove excess dust from the grinding heads and other critical areas. Clean the grinding heads whenever you change abrasives, as the magnets can collect dust and metal fragments from the tooling. This buildup can prevent tools from seating properly, which may cause them to come loose or create uneven scratches on the floor.

Check the switches on the handle panel to ensure all functions work correctly. This can be done using battery power—simply turn on the key switch. Clean the switches as needed with a soft brush or rag; do not use water.

7.2 Monthly Maintenance

Check the batteries regularly—monthly charging is recommended to ensure proper operation. These are lead-acid batteries, and in cold weather, run time may be reduced. If the machine has been stored for over a month, charge the battery before connecting to 3-phase power. During normal grinding, the battery will trickle-charge when the machine is plugged in. Also, inspect the electrical compartment for dust, and keep it clean and dry.

7.3 Gear box Service

Change the gear box oil after the first 500 hours, then once a year after that. The drain plug is under the grinding plates, and the fill port is on top of the gear box cover. The RSP-6 holds about 1.5 gallons (6 L) of oil. We recommend VG320 or VG460 (ISO-VG mm²/s DIN-51519 at 40 °C). For service or questions, contact your retailer.

7.4 Overload Protection

The machine has an overload protection circuit for the inverter. If the machine becomes overloaded, it will automatically shut down to protect the inverter, and an error will appear on the display panel. When this happens, disconnect the power and allow the machine to cool down for 10–20 minutes. After it has cooled, reconnect the power and restart the machine.

8. Troubleshooting

Problem	Possible Cause	Solution
The machine won't run	Emergency stop is engaged	Reset the stop switch
	The motor is jammed	Remove the debris
	Power cable damaged	Replace the cable/ check power supply
	Non-standard operation	Refer to operation manual
The machine makes a low buzz when turned on	Motor may be burned out	Replace the motor
	Phase loss	Have electrician check power phase
Machine is difficult to control/amp draw is too high	Not enough tooling under the machine	Use the correct number of tools for the heads
	Power service not sufficient	Check the service amps
Battery cannot charge with 3-phase / battery cannot charge with dedicated charger	3-phase voltage is below the required range	Check the voltage and amps are correct for machine
	Battery has reached its service life	Replace the battery
	Battery has drained to 0%	Charge for 4 hours with dedicated charger
	Battery charger is damaged	Replace charger

Problem	Possible Cause	Solution
Machine bouncing	Diamond tools may not be installed correctly	Check to be sure tooling is correct
	Diamond may be different heights	Check the tooling is the same height/ Replace as needed
	The grinding plates are not flat	Replace the grinding plate
Machine will not travel	The clutch is not engaged	Check the clutch
	Servo mode control failure	Contact the factory / repair or replace
	Broken keyway between the wheel and driver	Contact the factory / repair or replace
	Direction switch is damaged or broken	Replace the direction switch
	Battery is drained	Charge the battery

9. Technical Data

RSP-6		
Motor Power	1 KW / 15 Hp	
Rated Voltage	1P 240 V	3P 240V
Rated amps	50 AMP	30 AMP
Cable Size	6 AWG	10 AWG
Input Hertz	60 Hz	
Inverter Power	20 Hp	
Working Width	27"	
Grinding Disc	9"	
Motor Speed	350-1680 rpm	
Head Weight/Weights Fwd	683 lbs	
Head Weight/Weights Neu	556 lbs	
Head Weight/Weights Bk	505 lbs	
Dimensions/packed	55" x 28" x 43"	
Dimensions/operation	80" x 28" x 45"	
Total Weight	1162 lbs	
Water Tank	4 gal	
Storage Temperature	-4-140°F	
Operating Temperature	14-104°F	
Humidity	Below 95% (no condensation)	