

#8274 & #9274 PANTHER[®] PLANETARY GRINDERS INSTRUCTION MANUAL



Read Manual Before Operating Machine



National
Flooring Equipment, Inc.



"Surface Preparation Solutions"

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RULES FOR SAFE OPERATION

READ AND SAVE ALL INSTRUCTIONS FOR FUTURE USE. Before use, be sure everyone operating this equipment reads and understands this manual as well as any labels packaged with or attached to the tool.

- 1. KNOW YOUR EQUIPMENT:** Read this manual carefully to learn equipment applications and limitations as well as potential hazards associated with this type of equipment.
- 2. GROUND YOUR TOOL:** *See Grounding.*
- 3. AVOID DANGEROUS ENVIRONMENTS:** Do not use in rain, damp or wet locations, or in the presence of explosive atmospheres (gaseous fumes, dust or flammable materials). Remove materials or debris that may be ignited by sparks.
- 4. KEEP WORK AREA CLEAN AND WELL LIT:** Cluttered, dark work areas invite accidents.
- 5. DO NOT USE ON STEPS:**
- 6. DRESS PROPERLY:** Do not wear loose clothing. These may be caught in moving parts. When working outdoors, wear rubber gloves and insulated non-skid footwear. Keep hands and gloves away from moving parts.
- 7. USE SAFETY EQUIPMENT:** Everyone in the work area should wear safety goggles or glasses complying with current safety standards. Wear hearing protection during extended use and a dust mask for dusty operations. Hard hats, face shields, safety shoes, etc. should be worn when specified or necessary.
- 8. KEEP BYSTANDERS AWAY:** Children and bystanders should be kept at a safe distance from the work area to avoid distracting the operator and contacting the tool or extension cord. Operator should be aware of who is around them and their proximity.
- 9. PROTECT OTHERS IN THE WORK AREA:** Provide barriers or shields as needed to protect others from debris.
- 10. USE PROPER ACCESSORIES:** Using accessories that are not recommended may be hazardous. Be sure accessories are properly installed and maintained. Do not delete a guard or other safety device when installing an accessory or attachment.
- 11. CHECK FOR DAMAGED PARTS:** Inspect guards and other parts before use. Check for misalignment, binding of moving parts, improper mounting, broken parts and any other conditions that may affect operation. If abnormal noise or vibration occurs, turn the tool off immediately and have the problem corrected before further use. Do not use damaged equipment. Tag damaged tools "DO NOT USE" until repaired. A guard or other damaged parts should be properly repaired or replaced. For all repairs, insist on only identical National replacement parts.
- 12. REMOVE ALL ADJUSTING KEYS AND WRENCHES:** Make a habit of checking that the adjusting keys, wrenches, etc. are removed from the tool before turning it on.
- 13. GUARD AGAINST ELECTRIC SHOCK:** Prevent body contact with grounded surfaces such as pipes, radiators, ranges and refrigerators. When making cuts, always check the work area for hidden wires or pipes. Hold your tool by insulated nonmetal grasping surfaces. Use a Ground Fault Circuit Interrupter (GFCI) to reduce shock hazards.
- 14. AVOID ACCIDENTAL STARTING:** Be sure equipment is turned off before plugging it in. Do not use a tool if the power switch does not turn the tool on and off.
- 15. DO NOT FORCE EQUIPMENT:** Equipment will perform best at the rate for which it was designed. Excessive force only causes operator fatigue, increased wear and reduced control.
- 16. KEEP HANDS AWAY FROM ALL CUTTING EDGES AND MOVING PARTS.**
- 17. WEAR GLOVES WHEN CHANGING ACCESSORIES.**

RULES FOR SAFE OPERATION

18. **DO NOT ABUSE CORD:** Never unplug by yanking the cord from the outlet. Pull plug rather than cord to reduce the risk of damage. Keep the cord away from heat, oil, sharp objects, cutting edges and moving parts.
19. **DO NOT OVERREACH. MAINTAIN CONTROL:** Keep proper footing and balance at all times. Maintain a firm grip.
20. **STAY ALERT:** Watch what you are doing, and use common sense. Do not use when you are tired, distracted or under the influence of drugs, alcohol or any medication causing decreased control.
21. **STARTING MACHINE:** On/off switch must be in off position before connecting to power source.
22. **UNPLUG EQUIPMENT:** When it is not in use, unplug tool before changing accessories or performing recommended maintenance.
23. **MAINTAIN EQUIPMENT CAREFULLY:** Keep handles dry, clean and free from oil and grease. Keep cutting edges sharp and clean. Follow instructions for lubricating and changing accessories. Periodically inspect tool cords and extension cords for damage. Have damaged parts repaired or replaced.
24. **STORE IDLE EQUIPMENT:** When not in use, store in a dry, secured place. Keep away from children.
25. **MAINTAIN LABELS AND NAMEPLATES:** These carry important information. If unreadable or missing, contact National for a free replacement.
26. **MACHINE IS HEAVY, DO NOT DROP.**
27. **WHEN OPERATING MACHINE, TETHER CORD MUST BE CONNECTED TO OPERATOR.**
28. **DO NOT ALLOW** the rotating plates to come into contact with the supply cord.
29. **Regularly examine the supply cord for damage**, such as cracking or aging. If damage is found, replace the cord before further use. Only replace the supply cord with the type specified in the instruction manual.

 **WARNING:** Exposure to dust may cause respiratory ailments. Use approved NIOSH or OSHA respirators, safety glasses or face shields, gloves and protective clothing. Provide adequate ventilation to eliminate dust, or to maintain dust level below the Threshold Limit Value for nuisance dust as classified by OSHA.

RULES FOR SAFE OPERATION

CHARACTERISTICS OF A DEFENSIVE OPERATOR

- Education
- Alert
- Skills
- Judgment
- Common Sense
- Recognizes the Hazards
- Understands the Defense
- Acts Correctly

A GOOD OPERATOR IS A “DEFENSIVE” OPERATOR

QUALITIES

Education: Learns about the machine and the environment.

Alert: Stays alert at all times...never lets guard down.

Skills: Only performs duties he/she are qualified to do. Always tries to improve.

Judgment: Plays it safe. Doesn't take chances.

Common Sense: Does the right thing without having to be told. Applies knowledge.

Recognizes the Hazards: Maintains alertness. Anticipates danger.

Understands the Defense: Knows that safety isn't an accident...it's a thinking person's choice.

Acts Correctly: Does not cave in to peer pressure. Performs correctly when supervised or not.

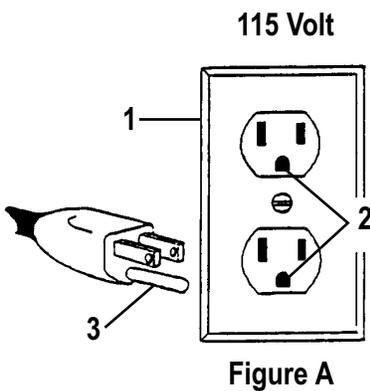
RULES FOR SAFE OPERATION

GROUNDING

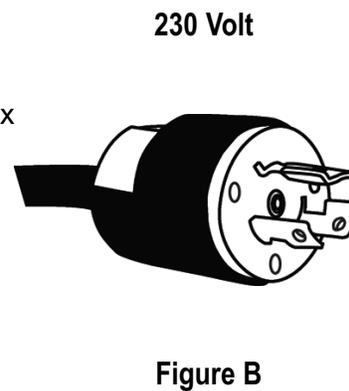
Jobsite receptacles can vary. Check voltage at receptacles on the jobsite for the best voltage supply. 15 amp GFI outlets are not recommended.

⚠ WARNING: Improperly connecting the grounding wire can result in the risk of electric shock. Check with a qualified electrician if you are in doubt as to whether the outlet is properly grounded. Do not modify the plug provided with the tool. Never remove the grounding prong from the plug. Do not use the tool if the cord or plug is damaged. If the plug will not fit the outlet, have a proper outlet installed by a qualified electrician.

⚠ WARNING: Electrical cords can be hazardous. Misuse can result in fire or death by electrical shock. Read carefully and follow all directions.



1. Cover of grounded outlet box
2. Outlet ground
3. Grounding prong



GROUNDING TOOLS: TOOLS WITH THREE PRONG PLUGS

Tools marked "Grounding Required" have a three wire cord and three prong grounding plug. The plug must be connected to a properly grounded outlet (Figure A & B). If the tool should electrically malfunction or break down, grounding provides a low resistance path to carry electricity away from the user, reducing the risk of electric shock.

The grounding prong in the plug is connected through the green wire inside the cord to the grounding system in the tool. The green wire in the cord must be the only wire connected to the tool's grounding system and must never be attached to an electrically "live" terminal.

Your tool must be plugged into an appropriate outlet, properly installed and grounded in accordance with all codes and ordinances. The plug and outlet should look like those in Figure A & B.

⚠ WARNING: Only use the socket outlet on the machine for purpose specified in the instruction manual.

RULES FOR SAFE OPERATION

EXTENSION CORDS

⚠ WARNING: Electrical cords can be hazardous. Misuse can result in fire or death by electrical shock. Read carefully and follow all directions.

Grounded tools require a three wire extension cord. Double insulated tools can use either a two or three wire extension cord. As the distance from the supply outlet increases, you must use a heavier gauge extension cord. Using extension cords with inadequately sized wire causes a serious drop in voltage, resulting in loss of power and possible tool damage.

The smaller the gauge number of the wire, the greater the capacity of the cord. For example, a 10 gauge cord can carry a higher current than a 12 gauge cord. When using more than one extension cord to make up the total length, be sure each cord contains at least the minimum wire size required. If you are using one extension cord for more than one tool, add the nameplate ampere and use the sum to determine the required minimum wire size.

GUIDELINES FOR USING EXTENSION CORDS

- If you are using an extension cord outdoors, make sure it is marked with the suffix “W-A” (“W” in Canada) to indicate that it is acceptable for outdoor use.
- Be sure your extension cord is properly wired and in good electrical condition. Always replace a damaged extension cord or have it repaired by a qualified person before using it.
- Protect your extension cords from sharp objects, excessive heat and damp or wet areas.
- Keep away from water. Do not use if wet. 
- Inspect thoroughly before each use. **DO NOT USE IF DAMAGED.**
- Make sure equipment is not running before disconnecting cord.
- **FULLY INSERT** plug into outlet.
- Do not remove, bend or modify any metal prongs or pins of cord.
- Do not use excessive force to make connections.
- Do not connect a three prong plug to a two-hole cord.
- Avoid overheating. Uncoil cord and do not cover it with any material.
- Do not walk on cord.
- Do not drive, drag or place objects over cord.
- Minimum 12 gauge cord, 50ft maximum length.
- Regularly examine the supply cord for damage, such as cracking or aging. If damage is found, replace the cord before further use.
- Only replace the supply cord with the type specified in the instruction manual.

⚠ WARNING: Do not allow the rotating plates to come into contact with the supply cord.

READ AND SAVE ALL INSTRUCTIONS FOR FUTURE REFERENCE.

8274/9274 SAFETY INSTRUCTIONS



Read and understand operators instruction manual and instructional video before operating this equipment.

⚠ WARNING: Know and understand before operation. Failure to do so could cause damage to equipment or bodily injury.

- Only qualified, trained personnel should operate this unit.
- Loose or damaged parts should be replaced immediately. Failure to do so could cause equipment damage or serious injury.
- Switches and levers should be inspected. Do not use if defective.
- Power control box, motor and switches should be completely enclosed at all times with no exposed wiring.
- Disconnect power from unit before servicing. Failure to do so can cause electrical shock. 
- Only use National components. Failure to do so could cause damage or serious injury.
- Always be aware of support personnel and their proximity when in operation. Block off work area.
- Support personnel should never stand next to machine, in front of or behind machine while machine is running. Failure to do so could cause serious bodily injury or death.
- Manual should be kept with machine in supplied holder for access by operator at all times.
- Always wear eye protection when running machine.
- Never defeat switches or guards.
- Remove blade when machine is not in use and/or lower cutting head to floor. Failure to do so could cause serious bodily injury.
- Wear gloves when changing blades. Always shut machine off when changing blades.

⚠ WARNING: Failure to follow any of the above instructions could cause damage to machine, damage to property or serious bodily injury or death.



WARNING: SILICA DUST WARNING



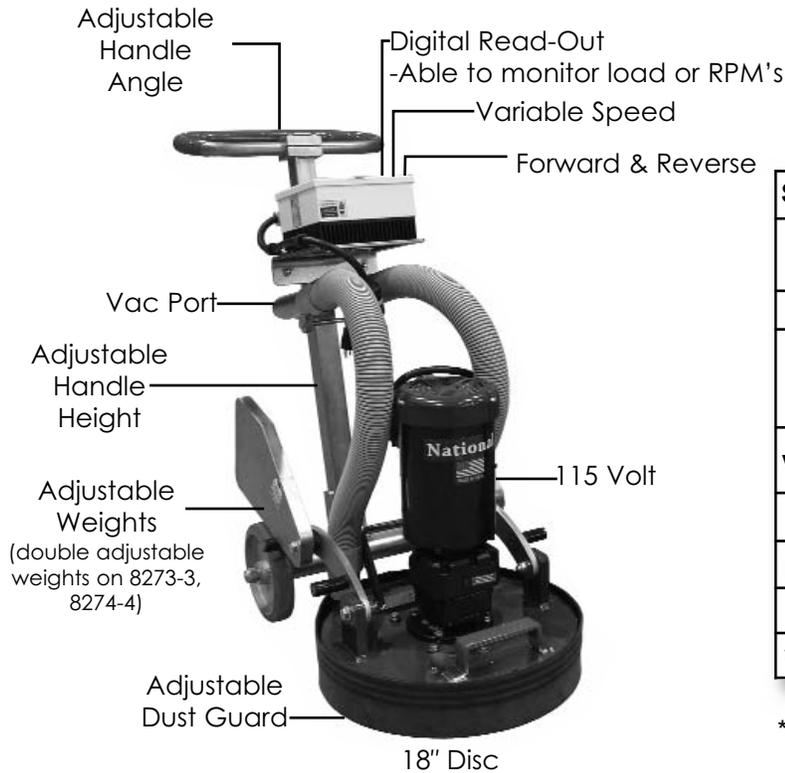
Grinding/cutting/drilling of masonry, concrete, metal and other materials can generate dust, mists and fumes containing chemicals known to cause serious fatal injury or illness, such as respiratory disease, cancer, birth defects or other reproductive harm. If you are unfamiliar with the risks associated with the particular material being cut, review the material safety data sheet and/or consult your employer, the material manufacturer/supplier, governmental agencies such as OSHA and NIOSH and other sources of hazardous materials. California and some other other authorities, for instance, have published lists of substances known to cause cancer, reproductive toxicity, or other harmful effects. Control dust, mist and fumes at the source where possible. In this regard use good work practices and follow the recommendations of the manufacturer/supplier, OSHA/NIOSH, and occupational and trade associations. When the hazards from inhalation of dust, mists and fumes cannot be eliminated, the operator and any bystanders should always wear a respirator approved by OSHA/MSHA for the material being cut.

8274/9274 TRANSPORTATION

LOAD AND UNLOAD

- Always disconnect from power source before transporting.
- Loosen Handle Securing Bolts to slide handle down to make machine easier to load. Retighten Bolts when handle is at the desired height.

8274/9274 FEATURES/SPECIFICATIONS



8274 18" GRINDER

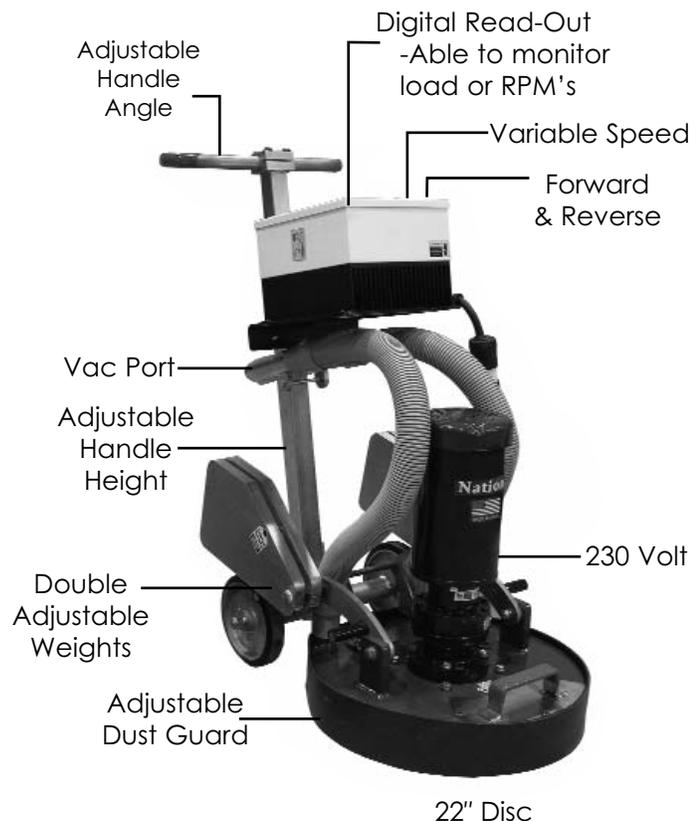
Stock #	8274-1	8274-3	8274-4
Disc Size	18 Inch	18 Inch	18 Inch
HP	1½	3	4
Motor Phase	3 Phase *	3 Phase	Single Phase
Voltage	115 V	230 V	115 V
Height	38"	38"	38"
Length	32"	32"	32"
Width	19"	19"	19"
Weight	265 lbs.	360 lbs.	360 lbs.

* Power Conversion from Single Phase to 3 Phase

9274 22" GRINDER

Stock #	9274-1	9274-2
Disc Size	22 Inch	22 Inch
HP	3	4
Motor Phase	3 Phase*	Single Phase
Voltage	230 V	115 V
Height	38"	38"
Length	32"	32"
Width	23"	23"
Weight	430 lbs.	380 lbs.

* Power Conversion from Single Phase to 3 Phase



8274/9274 PROCEDURE

HANDLE ASSEMBLY

⚠ WARNING: Handle must be engaged with both securing bolts. Failure to do so could cause serious injury.

Handle adjusts to operator height. Loosen handle bolt and adjust handle (Figure A) to desired length and properly tighten bolt. Handle adjusts in both height and angle. Adjust handle grip to desired angle and firmly secure (Figure B). Adjust handle to desired angle and secure with clip (Figure C).



Figure A



Figure B



Figure C

8274/9274 PROCEDURE

VACUUM PORT

⚠ WARNING: Make sure you are using the proper style of vacuum for what you are grinding, scraping or sanding. Failure to do so could cause emissions of hazardous particulates or explosion due to fine dust (ie, wood sanding), which is flammable. Make sure the system you are using complies or exceeds OSHA recommended standard. Make sure the rubber dust guard is covering all the way to the floor surface.

The machine is provided with a vacuum port at the rear of the machine. Use a vacuum hose that snugly fits either on the outside or the inside of the port.

Connect vacuum hoses (Figure A).

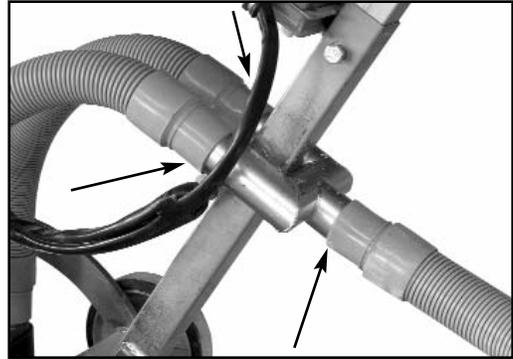


Figure A

WEIGHTS

Weights rotate front to back. To apply added weight to head, one or both weights can be rotated forward (Figure B). To take load off machine, pull weights to the back (Figure C). If load is over 100%, pull weights back. If circuit breakers blow, pull weights back.



Figure B



Figure C

8274/9274 PROCEDURE

RUBBER DUST GUARD

⚠ WARNING: NEVER operate machine without rubber guard in place covering plate completely. Failure to do so could cause serious injury.

NEVER mount or readjust rubber guard with machine plugged in. Disconnect from power source before mounting or readjusting the rubber guard.

ATTACHING

Return machine to upright position. Attach dust guard (Figure A) keeping as close to the floor as possible. If dust is exposed when operating machine, stop machine and readjust dust guard.

POSITIONING

Unplug machine from power source. With machine sitting in the operating position, remove rubber dust guard held on by Velcro. Starting at one end of the shroud, place guard to rest on floor surface. Firmly press rubber guard into securing Velcro on shroud. Wrap rubber guard all the way around the shroud making sure the guard rests on the floor surface and is secure. Inspect for air gaps.

If rubber guard securing Velcro becomes loaded up with debris, wash out with mild soap or blow out with an air hose. If Velcro on the machine is damaged or worn out, replace before using the machine. If the rubber guard is cut, damaged or worn out, replace before using the machine. Safety glasses need to be worn by operator and all people working around the equipment.



Figure A

8274/9274 PROCEDURE

BELT

BEFORE ANY MAINTENANCE, MAKE SURE MACHINE IS DISCONNECTED FROM POWER SOURCE

TO ACCESS BELT

- Remove the dust guard (page 13)
- Remove the four bolts on top of the shroud cover (Figure A)
- Pull back on the handle. The shroud should lift up and away from the grinding disc (Figure B). If it does not lift away, using a pry bar on each side, gently pry plate away from shroud - Do Not Force
- Move machine back and off the plate (Figure C)

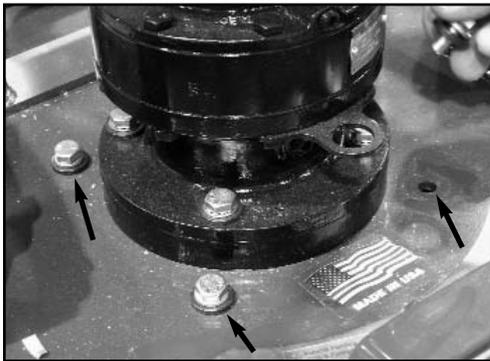


Figure A



Figure B



Figure C

8274/9274 PROCEDURE

BELT (CONTINUED)

BELT TENSION

NOTE: IF THE TENSION IS NOT PROPERLY TIGHTENED, THE TOOLING WILL SLIP AND NOT PERFORM AS DESIGNED

8274

- Loosen (do not remove) two of the three tension bracket bolts (Figure A)
- Pivot the loosened bracket so it is evenly spaced with the center pulley (Figure B & C)
- Apply pressure with a pry bar between the gear plate and tension bracket (Figure D), tighten both bolts
- Recheck the spacing between the brackets and the center pulley (Figure B & C)
- Belt should be tightened to have less than $\frac{1}{4}$ " of movement (Figure E)

9274

- Loosen (do not remove) both bolts on one of the tension brackets (Figure F)
- Pivot the loosened bracket so it is evenly spaced with the center pulley (Figure G & H)
- Apply pressure with a pry bar between the gear plate and tension bracket (Figure I), tighten both bolts on the bracket
- Recheck the spacing between the brackets and the center pulley (Figure G & H)
- Belt should be tightened to have less than $\frac{1}{4}$ " of movement (Figure J)



Figure A

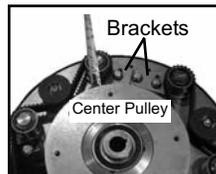


Figure B

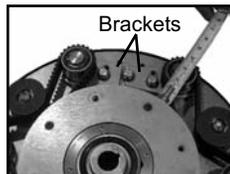


Figure C

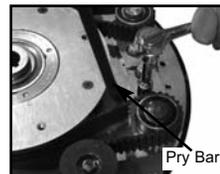


Figure D

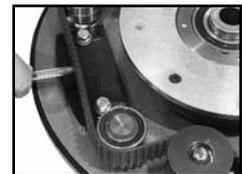


Figure E

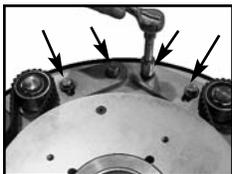


Figure F

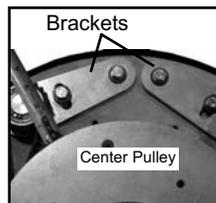


Figure G

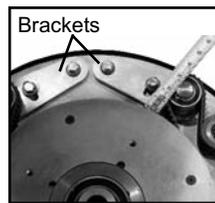


Figure H



Figure I



Figure J

8274/9274 PROCEDURE

BELT (CONTINUED)

REMOVING BELT (8274 & 9274)

- Loosen bolt or bolts on one of the tension brackets (Figure A & B)
- Push in on tension bracket toward gear plate
- Belt should be loose enough to slide off

REPLACING BELT (8274 & 9274)

- Loop belt around in pattern shown (Figure C & D)
- Follow Belt Tension procedure

MOUNTING PLATE ON TO MACHINE

- Grease shaft first
- Shaft key needs to line up with key notch on plate (Figure E). To temporarily hold key in place, secure key with an o-ring or rubber band (Figure F)
- Position machine over plate (Figure G)
- Swivel machine until key fits into plate
- Secure the four bolts on top of the shroud cover (Figure H)
- Replace the dust guard

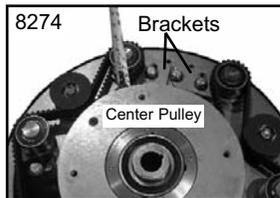


Figure A



Figure B

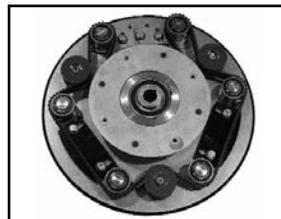


Figure C

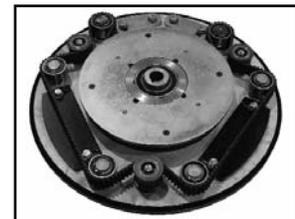


Figure D

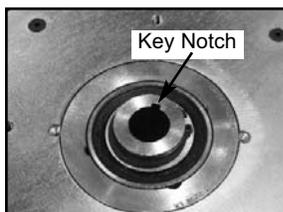


Figure E

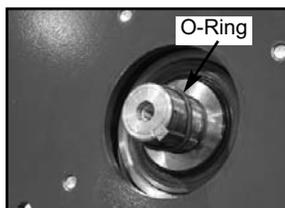


Figure F



Figure G

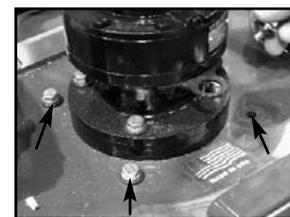


Figure H

8274/9274 PROCEDURE

IDLER BEARING REPLACEMENT

- Remove belt, following belt removal instructions (page 14-16)
- Remove snap ring (Figure A)
- Remove idler bearings (Figure B)
- Replace bearing
- Replace snap ring, making sure ring is seated in the groove (Figure C)
- Reinstall belt



Figure A



Figure B

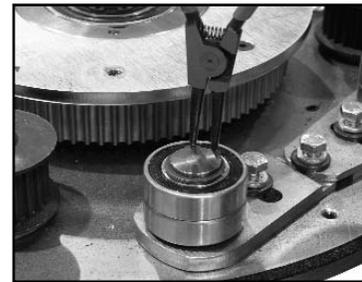


Figure C

PULLEY REPLACEMENT

- Remove belt, following belt removal instructions (page 14-16)
- Remove nut from top of pulley (Figure D)
- Slide pulley up and off. Key will fall out (Figure E)
- Replace key in new pulley
- Line up key in pulley (Figure F)
- Install pulley
- Reinsert nut
- Reinstall belt

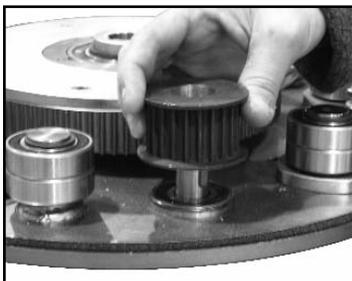


Figure D

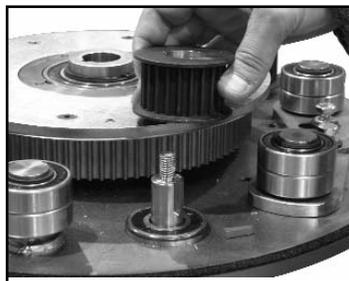


Figure E

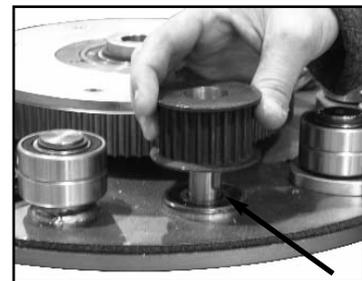


Figure F

8274/9274 PROCEDURE

SATELLITE SHAFT REPLACEMENT

- Remove pulley following pulley replacement instructions (page 17)
- Push down on shaft (Figure A)
- Lift up on plate and pull out shaft (Figure B)
- Replace shaft (Figure C)
- Replace Pulley (page 17)
- Replace nut
- Reinstall belt

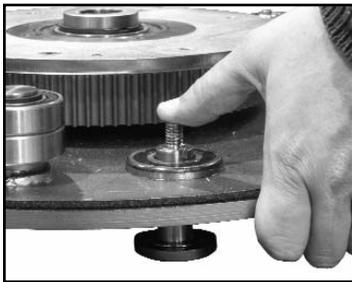


Figure A



Figure B

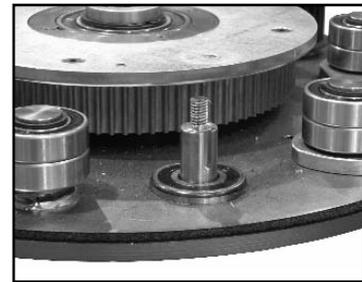


Figure C

SATELLITE BEARING REPLACEMENT

- Remove pulley (page 17)
- Remove satellite shaft
- Block up plate (Figure D)
- Knock out bearing (Figure E)
- Turn plate over on blocks
- With the retainer ring turned upwards, replace the bearing (Figure F) keeping the bearing as straight as possible (Figure G)



Figure D

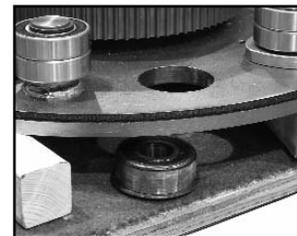


Figure E

- NOTE: BEARING CAN BE DIFFICULT TO GET INSERTED**
- Replace shaft
 - Replace pulley (page 17)
 - Replace nut
 - Reinstall belt



Figure F



Figure G

8274/9274 PROCEDURE

REMOVING TOP GEAR PLATE

- Remove belt, following belt removal instructions (page 14-16)
- With a 4 millimeter allen wrench, remove the four gear plate cover screws (Figure A)
- Remove gear plate (Figure B)
- Remove both snap rings (Figure C)

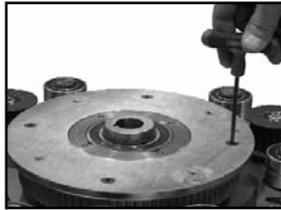


Figure A



Figure B



Figure C

- Remove gear (Figure D)
- Block up gear (Figure E)
- Knock out bearings (Figure F)



Figure D

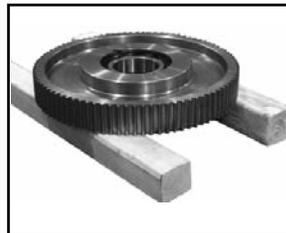


Figure E



Figure F

- Reinstall bearings one at a time

NOTE: HITTING AROUND THE OUTSIDE PERIMETER OF THE BEARING,
KEEP THE BEARING AS STRAIGHT AS POSSIBLE

- Replace gear back onto plate keeping fingers clear (Figure G)
(PINCH POINT), wiggle bearing until it drops down. DO NOT FORCE.
- Reinsert snap rings making sure they are seated in the groove
- Reinsert gear plate
- Reinsert four screws
- Reinstall belt



Figure G

LIGHT IN CORD PLUG

Red flashing light in cord plug is normal (Figure H).

The red (LED) shows the pulses to the motor



Figure H

8274/9274 PROCEDURE

MACHINE START UP PROCEDURE

TO RUN MACHINE

1. Connect machine to power source.
2. Attach tether cord to both operator and machine (Figure A). Failure to do so could cause damage to property and/or machine.
3. Securely hold handle with one hand.

Note: Applying light pressure downward on the handle takes pressure off the head of the machine.

4. Turn switch to “on” position (Figure B).

Note: Machine is programmed with a slow start.

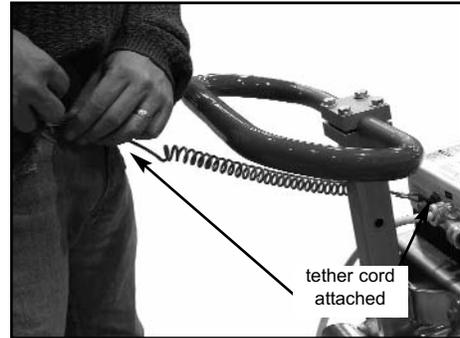
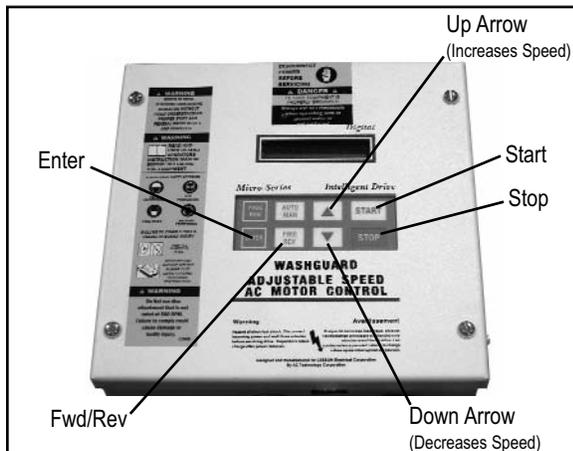


Figure A

BLUE LIGHTS: ENABLE, READY TO RUN

RED LIGHTS: DEFAULT (SEE TROUBLESHOOTING, ERROR CODES)



Start: Press Start Button

Stop: Press Stop Button

Change Direction: Press Fwd/Rev Button then Enter Button

Change Speed: Up Arrow = Faster,
Down Arrow = Slower

ONCE POWER IS APPLIED TO DRIVE (This will usually mean the unit is plugged in) the display will appear similar to this: **STOP> xx.xx HZ**

NORMALLY THE FREQUENCY IS PRE-SET TO 50 OR 60 HZ. The exception: last operating speed is displayed in HZ

PRESS START - Motor will start to turn. Full speed will be achieved in 20 seconds.

If motor is running wrong direction - Press FWD/REV button on keypad. Then **press “enter” button within 3 seconds**

TO CHANGE SPEED - Press the up arrow to increase speed (up to a factory preset maximum). Press Down Arrow button to decrease speed

PRESS STOP - to stop running motor

NOTE: Once machine is running, keep it on “load mode”. Always be aware that the load does not go over 100%.

8274/9274 PROCEDURE

CONTROLLER FAULT AND CIRCUIT OVERLOAD

If grinder is faulting or circuits are blowing, the machine could be overloaded. This could be due to individual jobsite power sources and/or variances in jobsite floor surfaces. Always monitor load percent and make alterations to machine accordingly. Do not run load over 100%.

Always be aware of the load percent while running the machine. To display the load percent, press the Enter Button on the controller twice (Figure A).

If display reads over 100 percent (Figure A), the machine is overloaded.

To take load off the machine, follow one or more of the following:

1. Pull the weights back (Figure B) (8274-one weight each side, 9274- one or two weights each side) or remove completely from the machine
2. Counter balance machine (take some weight off the head) by angling the handle further back (Figure C) (extend handle for comfort if necessary)
3. Slow the speed of the machine down by holding the Arrow Down Button (Figure D)
4. Change the grit of the tooling

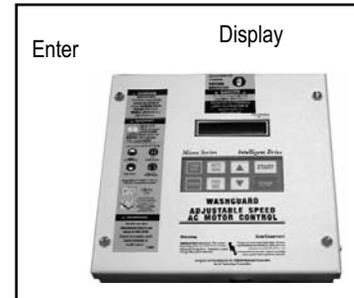


Figure A



Figure B



Figure C



Figure D

8274/9274 PROCEDURE

CONTROLLER CODES

CONTROLLER DEFAULT CODES

8274-1 & 9274-1

<u>Trouble</u>	<u>Possible Cause</u>	<u>Remedy</u>
Overload Run	Motor overloaded	Remove weight, slow machine or change tooling
Low Volts Acceleration	Line volts too low at start	a. Check cord length and gauge b. Check power source
Low Volts Run	Line volts too low	a. Check cord length and gauge b. Check power source
High Voltage	Line volts too high	Wired wrong or to improper supply
Power Sag	Erratic line volts	Check power supply, cord or for loose connection
External Acceleration	Kill switch off	Check kill switch - it is either off or malfunctioning
External Run	Kill switch off	Check kill switch - it is either off or malfunctioning

CONTROLLER ERROR CODES

Error codes are a binary flashing sequence of the Fault LED (and fault I/O line)

8274-4 & 9274-2

<u>Description</u>	<u>First Flash</u>	<u>Second Flash</u>	<u>Third Flash</u>
Over Temp	Dot	Dot	Dot
Thermal Switch	Dot	Dot	Dash
Hall Error	Dot	Dash	Dot
Over Current	Dot	Dash	Dash
Under Voltage	Dash	Dot	Dot
Over Voltage	Dash	Dot	Dash
Enable at Power	Dash	Dash	Dot
No Motion	Dash	Dash	Dash

For any other problems or questions, please contact NATIONAL at 1-800-245-0267

TROUBLESHOOTING

Trouble	Possible Cause	Remedy
1. Tooling plates fall off	a.	a. Replace screw (can use loktite)

8274/9274 PROCEDURE

POWER CORD

Use a 12 gauge power cord not exceeding 50 feet in length. If there is loss of power, convert to a 10 gauge power cord.

Do not allow the rotating plates to come into contact with the supply cord.

Regularly examine the supply cord for damage, such as cracking or aging. If damage is found, replace the cord before further use.

Only replace the supply cord with the type specified in this instruction manual.

POWER SOURCE VOLTAGE - FOR 115 VOLTAGE

Jobsite receptacles can vary. Check voltage at receptacles on the jobsite for the best voltage supply. 15 amp GFI outlets are not recommended.

NOTE: KITCHEN, BATHROOM, OUTDOOR AND GARAGE RECEPTACLES MAY BE GFI. GFI RECEPTACLES CAN BE "SENSITIVE". SOME GFI RECEPTACLES WILL NOT ALLOW THE MACHINE TO RUN. TO TEST OUTLET, GO TO SWITCH BOX AND CHECK CIRCUITS. TURN OFF TO TEST.

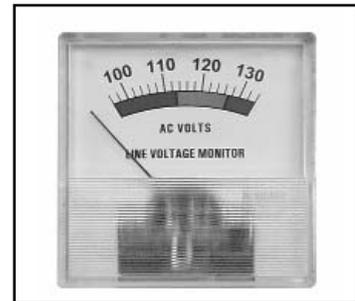


Figure A

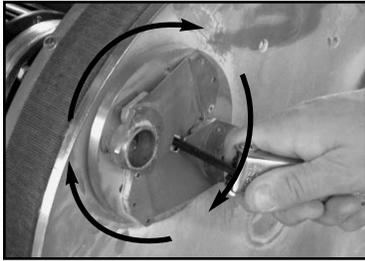
A #5110-501 Voltage Meter (Figure A) easily plugs into any outlet to determine the amount of voltage at that specific outlet.

The use of a #5110-500 Buck and Boost Transformer (Figure B) improves voltage out of a receptacle.



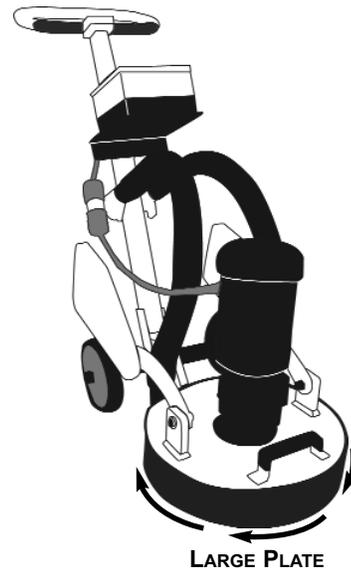
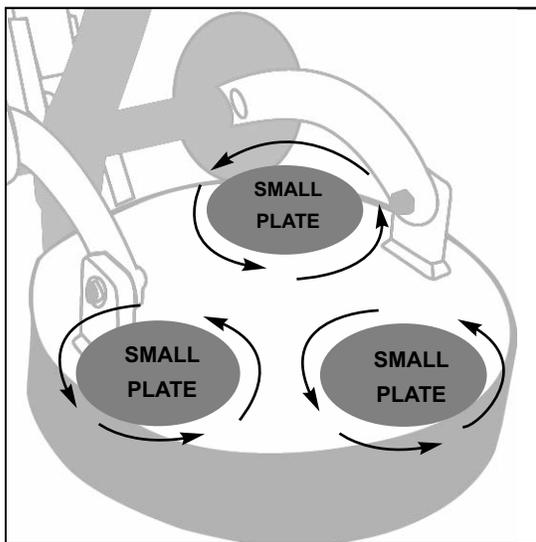
Figure B

8274/9274 ACCESSORY SET-UP



Must rotate clockwise towards the spring leg. If it rotated in reverse, damage could be caused to spring. Running a short distance on a smooth floor to remove glaze from spring should be ok but not to be consistently run that way.

⚠ CAUTION: DO NOT RUN TOOLING BACKWARD



APPLIES TO **PCD's, FLOATING TOOLING AND CARBIDE SCRAPING CHIPS:**

WITH MACHINE IN UPRIGHT POSITION: TOOLING (SMALL PLATE) SHOULD ONLY BE RUN COUNTERCLOCKWISE TO THE PLANETARY PLATE (LARGE PLATE). PLANETARY PLATE SHOULD ONLY RUN CLOCKWISE.

ALL OTHER TOOLING CAN BE RUN IN EITHER DIRECTION.

⚠ WARNING: DO NOT leave a plugged-in machine unattended.

Improper connection of the equipment-grounding conductor can result in a risk of electrical shock. Check with a qualified electrician or service person if you are in doubt as to whether the outlet is properly grounded. DO NOT modify the plug provided with this unit. If it will not fit the outlet, have a proper outlet installed by a qualified electrician. NOTE: In Canada, the use of a temporary adapter is not permitted by the Canadian Electrical Code.

Improper use of the grounding plug can result in a risk of electrical shock.

Know what you are removing. Scraping, sanding or grinding can release health hazardous dust and liquids. Make sure you are following OSHA, State and/or Federal guidelines when removing hazardous materials. Take necessary precautions and procedures. On some materials, grinding, scraping or sanding are not allowed.

8274/9274 ACCESSORY SET-UP

PLATE ATTACHMENT

Many choices of accessories are available for scraping, grinding, sanding, polishing, scrubbing etc. (Figure A).

To expose the underside of the machine, tilt motor back to expose grinding head (Figure B).



Figure A

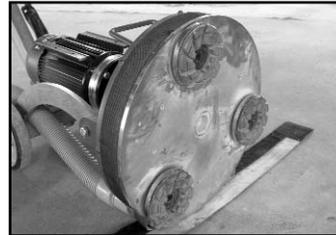
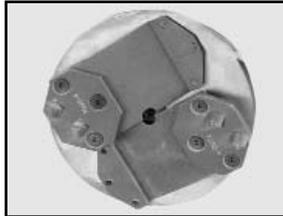
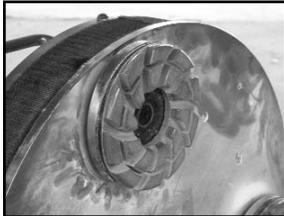


Figure B

Attach selected accessories.



When setting machine down into operation position, hold machine firmly. Set down gently, DO NOT drop. Damage to accessories and machine could occur if dropped.

⚠ WARNING: When accessories are exposed, never operate machine. Serious injury and possible plate disengagement could occur.

8274/9274 MAINTENANCE

MAINTENANCE

A well-maintained machine is a productive machine. If not properly maintained, it could be unsafe and could break down. A scheduled maintenance program should insure a long system life and a safe work environment.

1. Always wear eye protection.
2. Keep flammable and fragile objects away from the tool.
3. Always check nuts and bolts to make sure they are tight.
4. Always use the tool with proper voltage specified on the machine's nameplate.
5. Always keep guards in place.
6. Do not operate around water or wet conditions without use of GFI on cord.
7. Use properly grounded cord and receptacle.
8. Unplug from power before servicing.
9. Use 12 gauge or heavier wire cord, not exceeding 50 feet in length.
10. Do not force machine.
11. Do not alter machine.
12. Keep wheels free from debris.
13. Maintain Labels. These carry important information. If unreadable or missing, contact National for a free replacement.

 **WARNING:** DO NOT lock switch on handle into a permanent on position. If operator would lose control or be disabled, machine continues to operate.

 **WARNING:** To reduce the risk of injury, always unplug your tool before performing any maintenance. Never disassemble the tool or try to do any rewiring on the tool's electrical system. Contact National for ALL repairs.

MAINTAINING TOOLS

Keep in good repair by adopting a regular maintenance program. Before use, examine the general condition. Inspect guards, switches, tool cord set and extension cord for damage. Check for loose screws, misalignment, binding of moving parts, improper mounting, broken parts and any other condition that may affect its safe operation. If abnormal noise or vibration occurs, turn the tool off immediately and have the problem corrected before further use. Tag damaged tool, "DO NOT USE" until repaired (See Repairs).

- Mechanical inspection and cleaning (pulleys, belts, bearings, nuts, bolts, housing, labels, etc.).
- Electrical inspection (switch, cord, plugs, etc.).
- Testing to assure proper mechanical and electrical operation.

8274/9274 MAINTENANCE

CLEANING

Clean dust and debris from wheels and housing. Keep the tool handles clean, dry and free of oil or grease. Use only mild soap and a damp cloth to clean your tool since certain cleaning agents and solvents are harmful to plastics and other insulated parts. Some of these include: gasoline, turpentine, lacquer thinner, paint thinner, chlorinated cleaning solvents, ammonia and household detergents containing ammonia. Never use flammable or combustible solvents around machinery.

- Never use machine wet.
- Replace missing or worn labels. Labels contain important safety and operational information.

 **WARNING:** To reduce the risk of injury, electric shock and damage to the tool, never immerse your tool in liquid or allow a liquid to flow inside the tool.

REPAIRS

If your tool is damaged, call for a return/repair authorization number and return to:

National Flooring Equipment, Inc.
9250 Xylon Avenue
Minneapolis, MN 55445
(763) 535-8206 • 800-245-0267

- Shipments are not accepted without a return authorization number
- COD or freight collect shipments will not be accepted

Note: Number in parenthesis () is the amount needed on each machine. Parts are sold individually. Be sure to order the number of parts needed.

8274 COMPLETE PARTS LIST

#8274 PARTS LIST

<u>PART #</u>	<u>DESCRIPTION</u>
63-P31	3/4 LARGE WIRE CLAMP (2)
6254	EXTENSION CORD, 115 VOLT
6280-168	POWER CORD, 115 VOLT
7274-200	WHEEL (2)
8274-DECK	COMPLETE ASSEMBLY & #8274-29 BELT
8274-7	DRIVE PLATE ASSEMBLY (NOT SHOWN)
8274-21	BALANCE WEIGHT, SMALL (2) (OLD STYLE)
8274-27	90 TOOTH PULLEY
8274-29	BELT 20008 MGT30
8274-33	90 TOOTH GEAR PLATE
8274-45	8274 RUBBER DUST GUARD
8274-46	8274 110 CONTROLLER BRACKET
8274-48	8274 PULLEY SPACER (2)
8274-51	3/4 GEAR BOX SPACER (NOT SHOWN)
8274-52	GEAR BOX SLEEVE (NOT SHOWN)
8274-53	GEAR BOX BASE PLATE
8274-57	DRIVE SPUD WELDMENT
8274-60	TENSION SPROCKET
8274-61	SPROCKET HOLDER
8274-62	TENSION ANCHOR
8274-64	18 INCH PLANETARY DISK
8274-68	PLANETARY AUTO BELT TENSIONER (COMPLETE ASSEMBLY) (2)
8274-69	AUTO BELT TENSIONER COUNTERWEIGHT
8274-102	AC DRIVE - CONTROLLER 115 VOLT
8274-201	GEAR BOX
9274-39	FRONT HANDLE
9274-43	REAR HANDLE WELDMENT
70301	36" VAC HOSE (2) (FOR 8274-1 & 8274-4)
70703	UNHARDENED DOWEL PIN .375 X 1 $\frac{3}{4}$
70820	ISOLATOR (4)
71202	12MM ID CENTER BEARING (2) SKF6201-2RS
71222	20MM ID SATELLITE BEARING (3) MRC-5304CZZ6
71232	20MM ID IDLER BEARING (12) 1DC 6205-2PS
72361	1.5 HP MOTOR, 115 VOLT
72381	4 HP MOTOR, 115 VOLT (NOT SHOWN) (FOR 8274-4)
72802	1/2 90° CORD CONNECTOR
72804	1/2 STRAIGHT CORD CONNECTOR .375-.500
73029	1/4-20 X 3/4 FLAT HEAD SOCKET CAP SCREW (4)
73046	1/4-20 X 3/8 BUTTON HEAD SCREW
73202	3/8 INTERNAL LOCK WASHER (6) (NOT SHOWN)
73204	3/8 SPLIT LOCK WASHER (21)
73207	3/8-16 NYLON LOCK NUT (3) (NOT SHOWN)
73208	3/8-16 X 1 $\frac{1}{2}$ HEXHEAD CAP SCREW
73216	3/8-16 X 1 $\frac{3}{4}$ HEXHEAD CAP SCREW (4) (NOT SHOWN)
73225	3/8-16 X 5/8 HEXHEAD CAP SCREW (3)
73237	3/8 HARDENED FLAT WASHER (17)
73252	3/8-16 X 4 $\frac{1}{2}$ BOLT (NOT SHOWN)
73301	5/16-18 X 1/2 BUTTON HEAD SOCKET CAP SCREW (6) (NOT SHOWN)
73402	1/2-13 NYLON LOCK NUT (3) (NOT SHOWN)
73404	1/2 SAE FLAT WASHER (6) (NOT SHOWN)
73409	1/2-13 X 2 $\frac{1}{2}$ HEXHEAD CAP SCREW (NOT SHOWN)
73417	1/2-13 X 4 HEXHEAD CAP SCREW (NOT SHOWN)
73421	1/2-13 X 3 HEXHEAD CAP SCREW (2) (NOT SHOWN)
73904	3/16 X 3/16 X 3/4 KEY

8274 COMPLETE PARTS LIST

#8274 PARTS LIST

<u>PART #</u>	<u>DESCRIPTION</u>
74102	1" RETAINING RING (12) (NOT SHOWN)
74103	1 $\frac{7}{8}$ " RETAINING RING (NOT SHOWN)
74433	10-32 X 1/2 PHILLIPS PAN HEAD SCREW (4) (NOT SHOWN)
74801	.010 X 2/8 ID SHIM WASHER (4)
75025	2" VELCRO - LOOP (SOLD BY THE INCH)
75026	2" VELCRO - HOOK (SOLD BY THE INCH)
80024	PLANETARY HANDLE ASSEMBLY BLK THRU
80026	PLANETARY HANDLE ASSEMBLY TUBE OVAL
80035	TUBE INNER WELDMENT
80036	HANDLE TUBE WELDMENT
80037	PLANETARY HANDLE ASSEMBLY FRAME
80038	HANDLE ASSEMBLY COMPLETE
80039	PLANETARY VACUUM SPLITTER
80040	PLANETARY HANDLE WEIGHT (2)
80042	KILL SWITCH
80043	22 TOOTH PULLEY (FOR 8274 ONLY)
80045	1/2 INSIDE 1 $\frac{1}{2}$ OUTSIDE BUSHING (2) (NOT SHOWN)
80046	3/4-10 NYLON LOCK NUT (2) (NOT SHOWN)
80047	4 X 3/8 HANDLE PINS (NOT SHOWN)
80049	SCRUBBER SHAFT WELDMENT (3)
80054	T HANDLE .5 X 45°
80057	2.25 WEIGHT STUD (4)(NOT SHOWN)
80063	SPRING 1.22 OD X 1.50 LONG
80064	PULL OUT DOWEL 7/16
80066	SPROCKET BEARING
80067	RETAINING CLIP .375 SHAFT

LABELS

L33B	CAUTION MOVING PARTS LABEL
L38	DISCONNECT POWER LABEL
L95B	ON/OFF SWITCH LABEL
L95J	110 VOLT LABEL
L104B	READ AND UNDERSTAND LABEL
L106	PINCH POINT LABEL (2)
L141	MADE IN USA/FLAG LABEL
L175	NATIONAL LABEL - SMALL
L265	SILICA DUST WARNING LABEL
L266	8274 STOCK NUMBER LABEL

9274 COMPLETE PARTS LIST

#9274 PARTS LIST

<u>PART #</u>	<u>DESCRIPTION</u>
63-P31	3/4 LARGE WIRE CLAMP (2)
7274-200	WHEEL (2)
8274-7	8274 DRIVE PLATE ASSEMBLY (NOT SHOWN)
8274-46	8274 110 CONTROLLER BRACKET
8274-48	PULLEY SPACER (3)
8274-51	3/4 GEAR BOX SPACER (NOT SHOWN)
8247-52	GEAR BOX SLEEVE (NOT SHOWN)
8274-57	DRIVE SPUD WELDMENT
8274-60	TENSION SPROCKET
8274-61	SPROCKET HOLDER
8274-62	TENSION ANCHOR
8274-68	PLANETARY AUTO BELT TENSIONER (COMPLETE ASSEMBLY) (2)
8274-69	AUTO BELT TENSIONER COUNTERWEIGHT (2)
9274-DECK	COMPLETE ASSEMBLY & #9274-44 BELT
9274-3	112T GEAR PLATE
9274-12	20.6 PLANETARY TENSION WELDMENT (2) (NOT SHOWN)
9274-27	112 TOOTH PULLEY
9274-39	FRONT HANDLE
9274-43	REAR HANDLE WELDMENT
9274-44	DRIVE BELT 22008 MGT30
9274-45	9274 RUBBER DUST GUARD
9274-64	22 INCH PLANETARY DISK
9274-102	AC DRIVE - CONTROLLER 230 VOLT
9274-201	GEAR BOX
70301	36"VAC HOSE (2)
70703	UNHARDENED DOWEL PIN .375 X 1¼
70820	ISOLATOR (4)
71202	12MM ID BEARING SKF6201-2RS
71222	20MM ID SATELLITE BEARING (3) MRC-5304CZZ6
71232	20MM ID IDLER BEARING (12) 1DC 6205-2PS
72371W	3 HP MOTOR, 230 VOLT (FOR 9274-1 ONLY)
72381	4 HP MOTOR, 115 VOLT (FOR 9274-2 ONLY)
72585	EXTENSION CORD
72586	POWER CORD, 230VOLT
72802	1/2 90° CORD CONNECTOR
72804	1/2 STRAIGHT CORD CONNECTOR .375-.500
72807	MALE PLUG (CONTROLLER)
72808	FEMALE PLUG (CONTROLLER)
73029	1/4-20 X 3/4 FLAT HEAD SOCKET CAP SCREW (4)
73046	1/4-20 X 3/8 BUTTON HEAD CAP SCREW
73201	3/8-16 X 1 HEX HEAD CAP SCREW , GRADE 5 (17)
73202	3/8 INTERNAL LOCK WASHER (6) (NOT SHOWN)
73204	3/8 SPLIT LOCK WASHER (21)
73208	3/8-16 NYLON LOCK NUT (3)
73216	3/8-16 X 1¼ HEXHEAD CAP SCREW (4) (NOT SHOWN)
73225	3/8-16 X 5/8 HEXHEAD CAP SCREW (2)
73237	3/8 HARDENED FLAT WASHER (3)
73252	3/8-16 X 4½ BOLT (NOT SHOWN)
73301	5/16-18 X 1/2 BUTTON HEAD SOCKET CAP SCREW (6) (NOT SHOWN)

9274 COMPLETE PARTS LIST

#9274 PARTS (CONTINUED)

<u>PART #</u>	<u>DESCRIPTION</u>
73402	1/2-13 NYLON LOCK NUT (3) (NOT SHOWN)
73404	1/2 SAE FLAT WASHER (6) (NOT SHOWN)
73409	1/2-13 X 2 1/2 HEXHEAD CAP SCREW (NOT SHOWN)
73417	1/2-13 X 4 HEXHEAD CAP SCREW (NOT SHOWN)
73421	1/2-13 X 3 HEXHEAD CAP SCREW (2) (NOT SHOWN)
73904	3/16 X 3/16 X 3/4 KEY
74103	1 7/8" RETAINING RING (NOT SHOWN)
74433	10-32 X 1/2 PHILLIPS PAN HEAD SCREW (4) (NOT SHOWN)
74801	.010 X 2/8 ID SHIM WASHER WASHER (4) (NOT SHOWN)
75025	2" VELCRO - LOOP (SOLD BY THE INCH)
75026	2" VELCRO - HOOK (SOLD BY THE INCH)
80001	20 TOOTH PULLEY (3)
80024	PLANETARY HANDLE ASSEMBLY BLK THRU
80026	PLANETARY HANDLE ASSEMBLY TUBE OVAL
80035	TUBE INNER WELDMENT
80036	HANDLE TUBE WELDMENT
80037	PLANETARY HANDLE ASSEMBLY FRAME
80038	HANDLE ASSEMBLY COMPLETE
80039	PLANETARY VACUUM SPLITTER
80040	PLANETARY HANDLE WEIGHT (2)
80042	KILL SWITCH
80045	1/2 INSIDE 1 1/2 OUTSIDE BUSHING (2) (NOT SHOWN)
80046	3/4-10 NYLON LOCK NUT (2) (NOT SHOWN)
80047	4 X 3/8 HANDLE PINS (NOT SHOWN)
80049	SCRUBBER SHAFT WELDMENT (3)
80054	T-HANDLE .5 X 45°
80056	3.8 WEIGHT STUD (4) (NOT SHOWN)
80063	SPRING 1.22 OD X 1.50 LONG
80066	SPROCKET BEARING (2)
80067	RETAINING CLIP .375 SHAFT

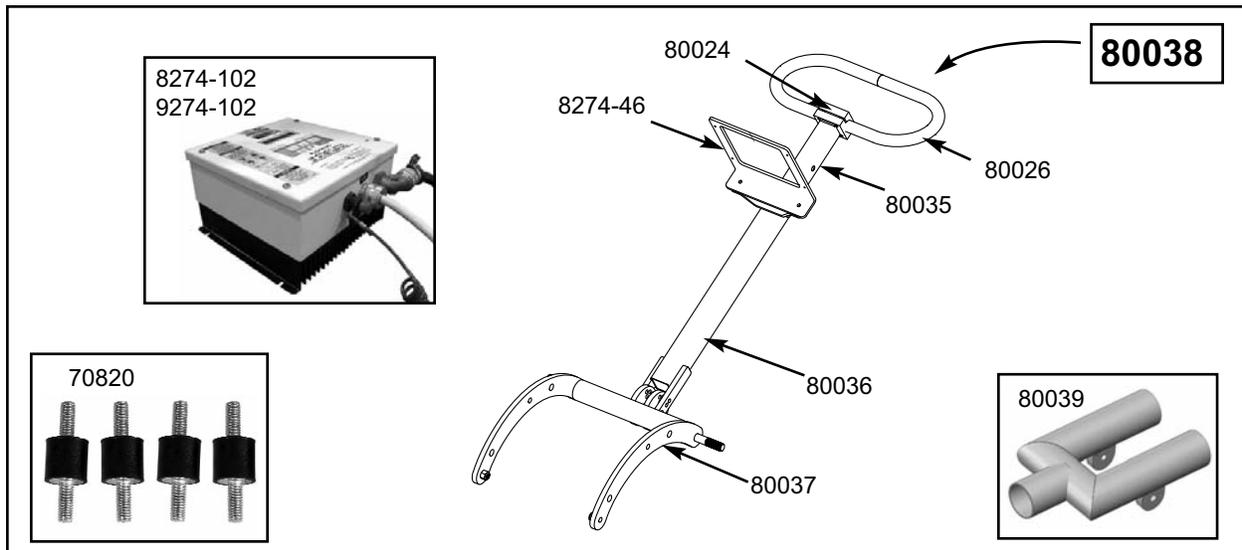
LABELS

L33B	CAUTION MOVING PARTS LABEL
L38	DISCONNECT POWER LABEL
L95B	ON/OFF SWITCH LABEL
L95I	220 VOLT LABEL (FOR 9274)
L104B	READ AND UNDERSTAND LABEL
L106	PINCH POINT LABEL (2)
L141	MADE IN USA/FLAG LABEL
L175	NATIONAL LABEL - SMALL
L265	SILICA DUST WARNING LABEL
L268	9274 STOCK NUMBER LABEL

PART NUMBERS & DIAGRAMS

USED FOR BOTH 8274 & 9274
GRINDERS UNLESS OTHERWISE NOTED

HANDLE PARTS



MOTOR



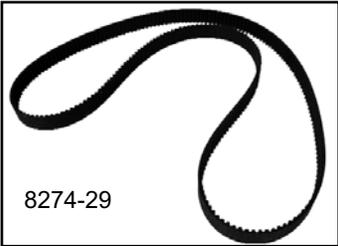
GEAR BOX



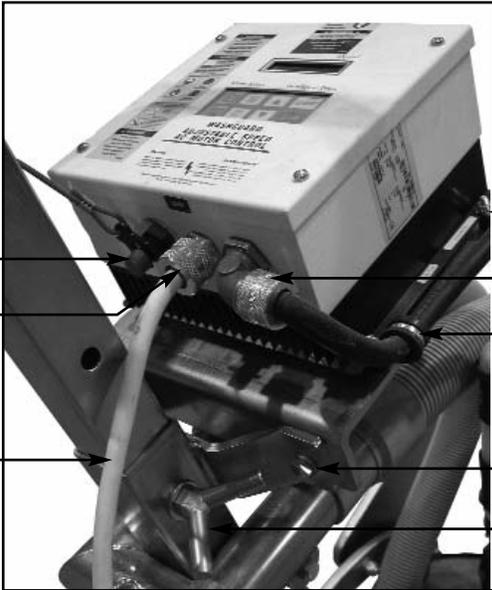
<u>PART #</u>	<u>DESCRIPTION</u>	<u>PART #</u>	<u>DESCRIPTION</u>
8274-46	Controller Bracket	72371W	3 HP Motor (for 9274-1only)
8274-51	3/4 Gear Box Spacer (Not Shown)	72381	4 HP, 115 Volt Motor (for 8274-4 & 9274-2 only) (Not shown)
8274-52	Gear Box Sleeve (Not Shown)	80024	Handle Block Thru
8274-102	AC Drive - Controller 115V (for 8274 only)	80026	Handle Oval
8274-201	Gear Box (for 8274)	80035	Inner Tube Weldment
9274-102	AC Drive - Controller 230V (for 9274 only)	80036	Outer Tube Weldment
9274-201	Gear Box (for 9274 only)	80037	Handle Assembly Frame
70820	Isolator (4)	80038	Handle Assembly Complete
72361	1.5 HP Motor (for 8274-1 only)	80039	Vac Splitter

PART NUMBERS & DIAGRAMS

8274 EXTERNAL PARTS



8274-29



80042

72804

80042

6280-168

63-P31

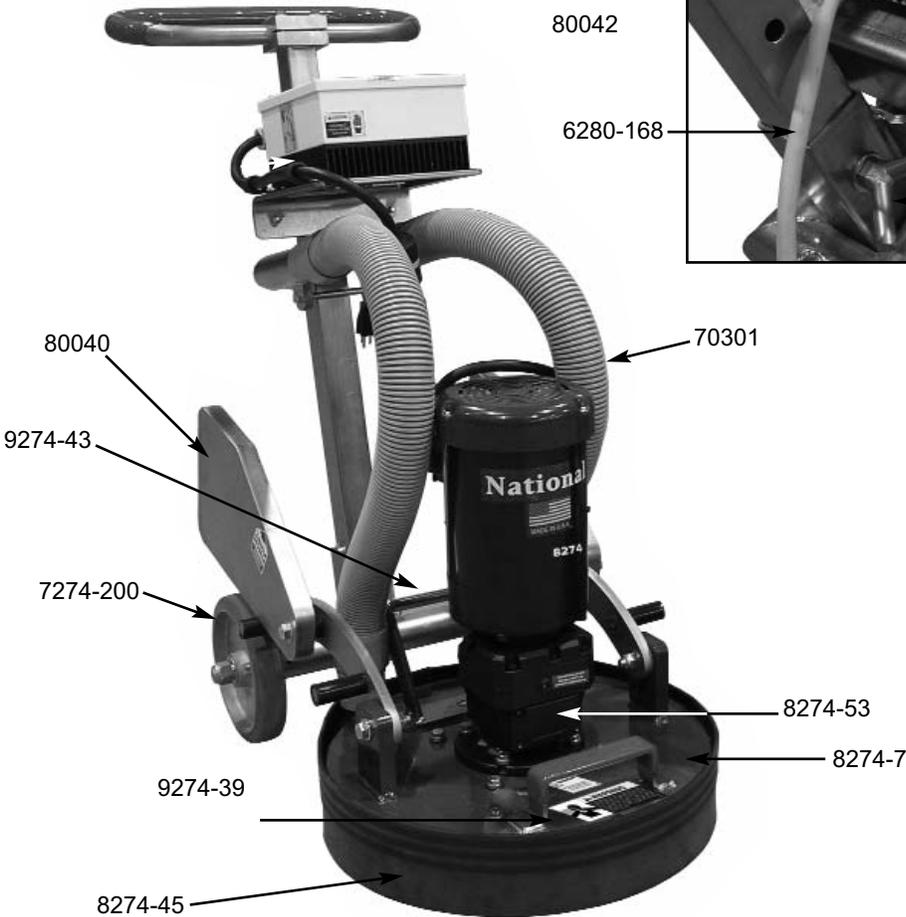
72802

63-P31

73225

73204

80054



80040

9274-43

7274-200

9274-39

8274-45

70301

8274-53

8274-7



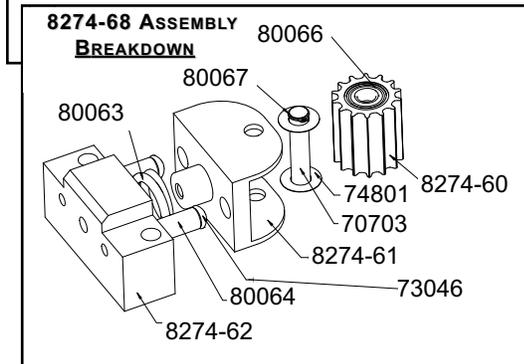
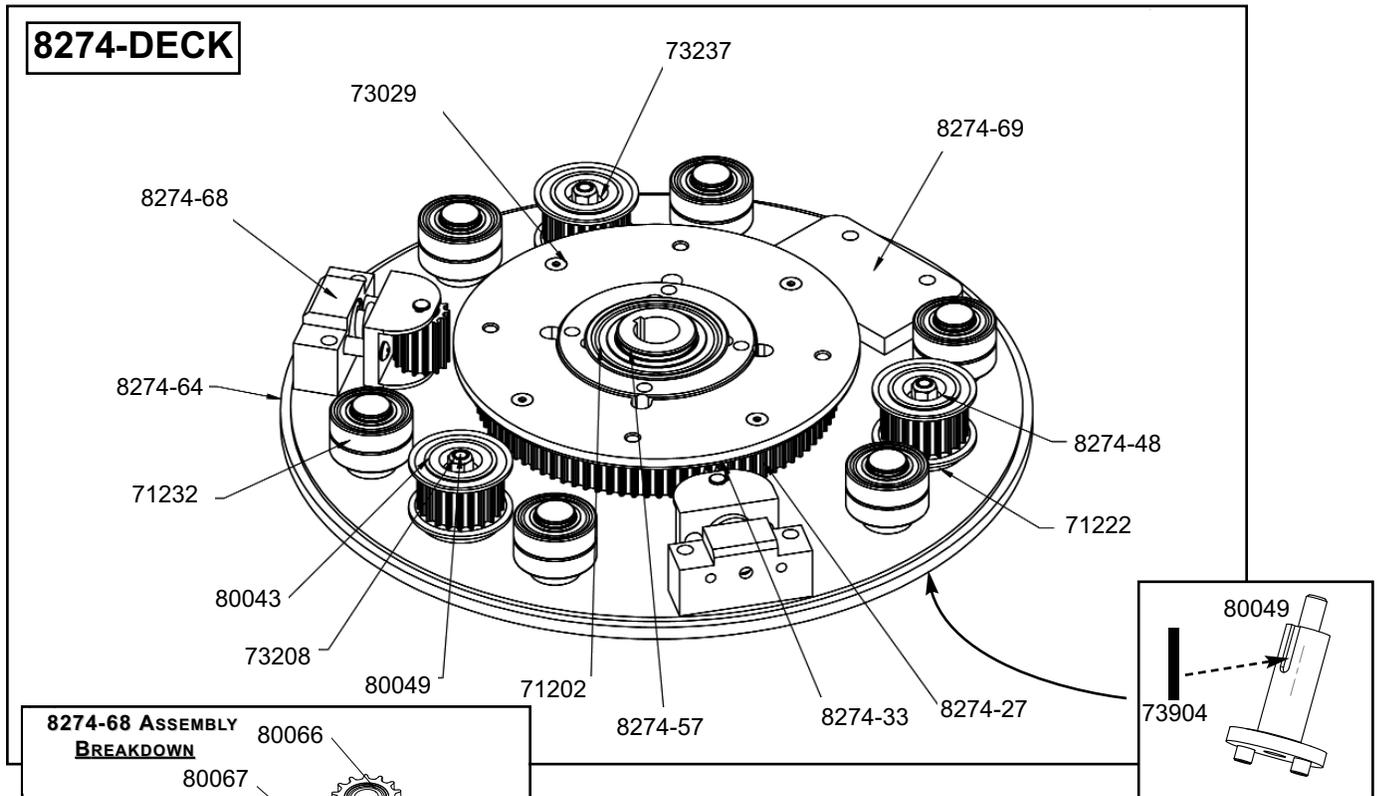
6254

PART #	DESCRIPTION
63-P31	3/4 Large Wire Clamp (2)
6254	Extension Cord, 115 Volt
6280-168	Power Cord, 115 Volt
7274-200	Wheel (2)
8274-7	Top Cover
8274-29	Belt 2000 8MGT30
8274-45	Rubber Dust Guard
8274-53	Gear Box Base Plate
9274-39	Front Handle

PART #	DESCRIPTION
9274-43	Rear Handle Weldment
70301	36" Vac Hose (2) (For 8274-1 & 8274-4)
72802	1/2 90° Cord Connector
72804	1/2 Straight Cord Connector .375-.500
73204	3/8 Split Lock Washer
73225	3/18-16 x 5/8 Hexhead Cap Screw
80040	Planetary Handle Weight (2)
80042	Kill Switch
80054	T-Handle .5 x 45°

PART NUMBERS & DIAGRAMS

8274/ 18 INCH DECK ASSEMBLY

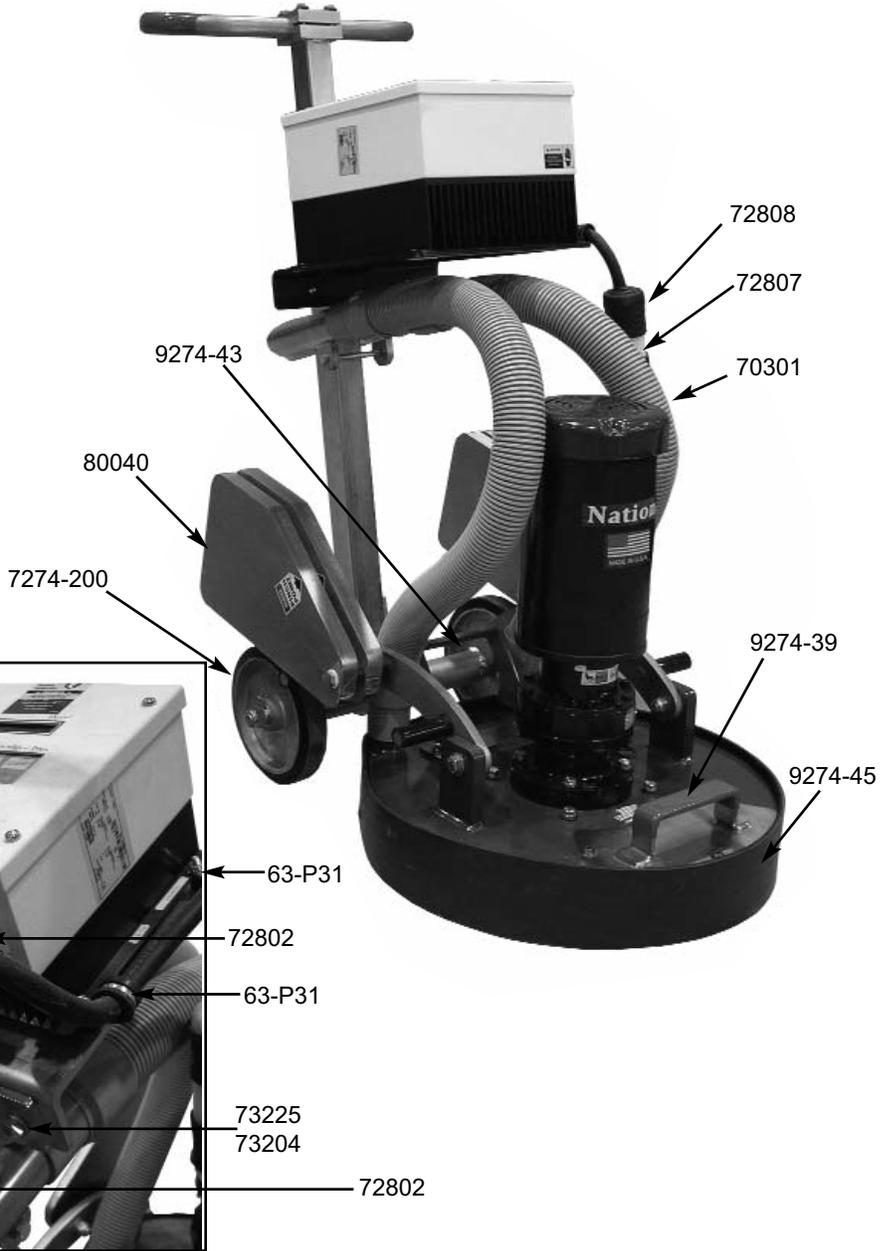
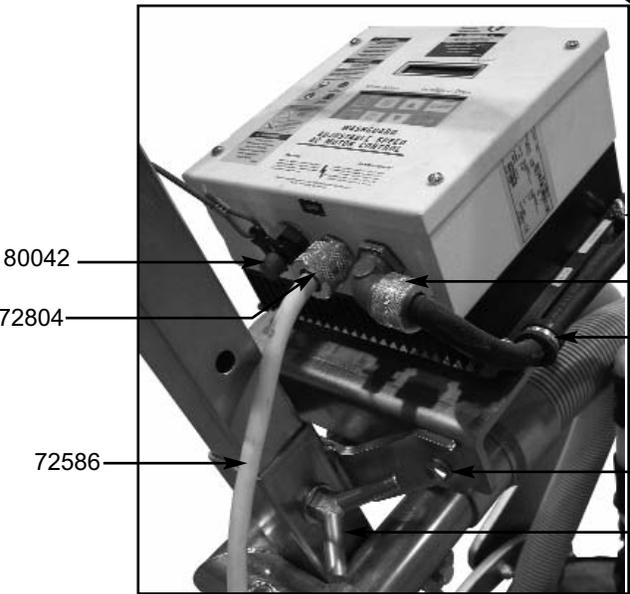
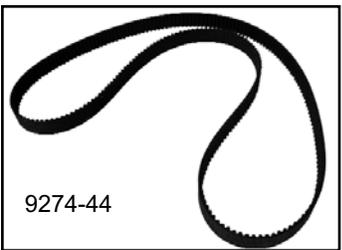


PART #	DESCRIPTION
8274-DECK	Complete Assembly & #8274-29 Belt
8274-7	8274 Drive Plate Assembly (Not Shown)
8274-27	90 Tooth Pulley
8274-33	90 Tooth Gear Plate
8274-48	8274 Pulley Spacer (3)
8274-57	Drive Spud Weldment
8274-60	Tension Sprocket
8274-61	Sprocket Holder
8274-62	Tension Anchor
8274-64	18 Inch Planetary Disk
8274-68	Planetary Auto Belt Tensioner (Complete Assembly) (2)
8274-69	Auto Belt Tensioner Counterweight
71202	12MM ID Center Bearing (2) SKF6201-2RS

PART #	DESCRIPTION
71222	20 MM ID Bearing (3) MRC-5304CZZ6
71232	20MM ID Bearing (12) 1DC 6205-2RS
70703	Unhardened Dowel Pin .375x1 $\frac{3}{4}$
73029	1/4-20 x 3/4 Flat Head Socket Cap Screw (4)
73046	1/4-20 x 3/8 Button Head Screw
73208	3/8-16 Hexhead Cap Screw (3)
73237	3/8 Hardened Washer (3)
73904	3/16 x 3/16 x 3/4 Key
74102	1.00 Retaining Ring (6) (Not Shown)
74103	1 $\frac{1}{8}$ Retaining Ring (Not Shown)
74801	.01 x 2/8 ID Shim Washer
80049	Scrubber Shaft Weldment (3)
80043	22 Tooth Pulley (3)
80063	Spring 1.22 OD x 1.50 Long
80064	Pull Out Dowel 7/16
80066	Sprocket Bearing
80067	Retaining Clip .375 Shaft

PART NUMBERS & DIAGRAMS

9274 EXTERNAL PARTS

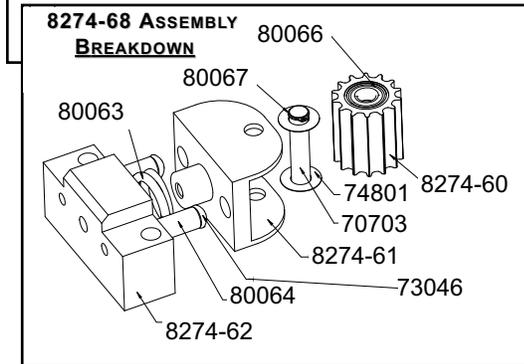
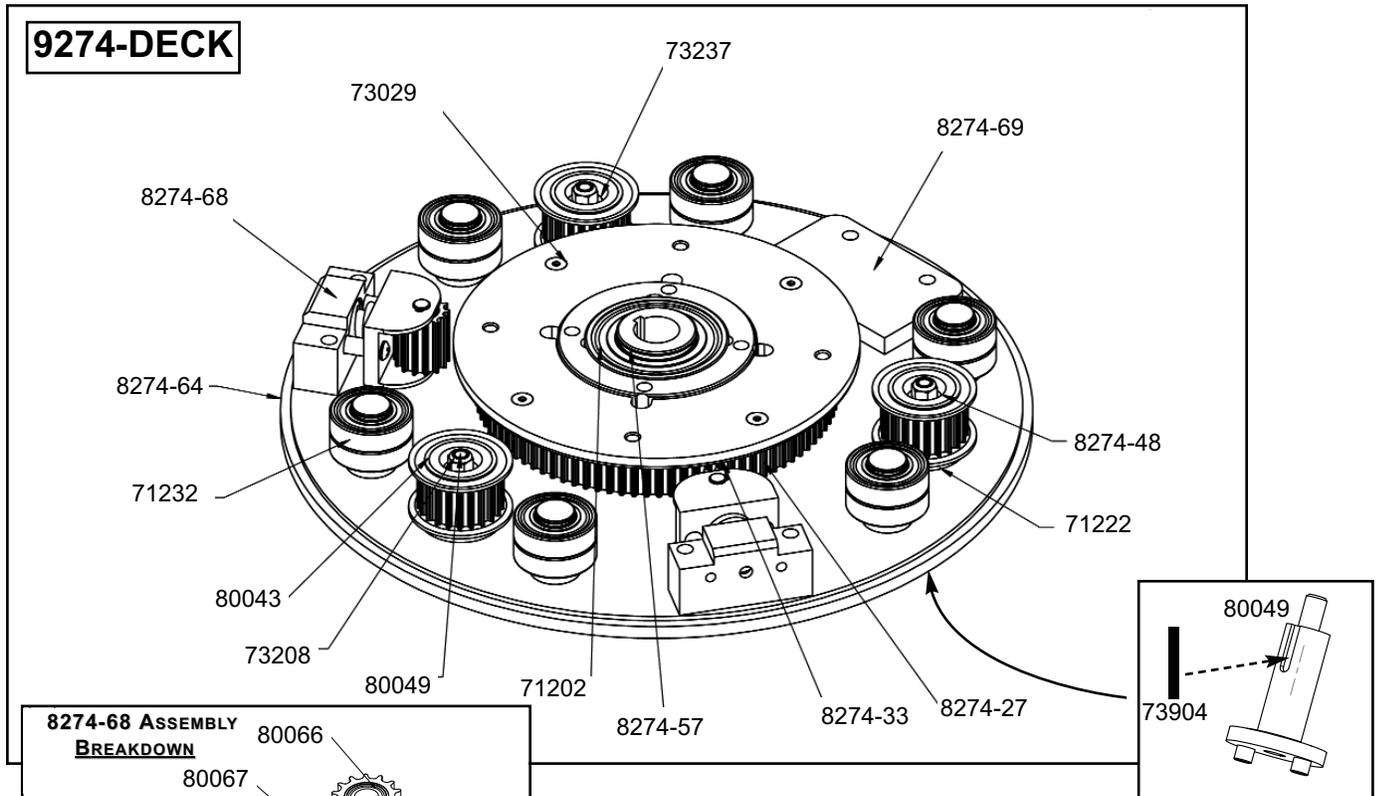


<u>PART #</u>	<u>DESCRIPTION</u>
63-P31	3/4 Large Wire Clamp (2)
7274-200	Wheel (2)
9274-39	Front Handle
9274-43	Rear Handle Weldment
9274-44	Belt 22008 MGT30
9274-45	Rubber Dust Guard
70301	36" Vac Hose (2) (for 9274-1 & 9274-2)
72585	Extension Cord, 230Volt
72586	Power Cord, 230 Volt

<u>PART #</u>	<u>DESCRIPTION</u>
72802	1/2 90° Cord Connector
72804	1/2 Straight Cord Connector .375-.500
72807	Male Plug (Controller) HBL2411
72808	Female Plug (Controller) HBL2413
73204	3/8 Split Lock Washer
73225	3/18-16 x 5/8 Hexhead Cap Screw
80040	Planetary Handle Weight (2)
80042	Kill Switch
80054	T-Handle .5 x 45°

PART NUMBERS & DIAGRAMS

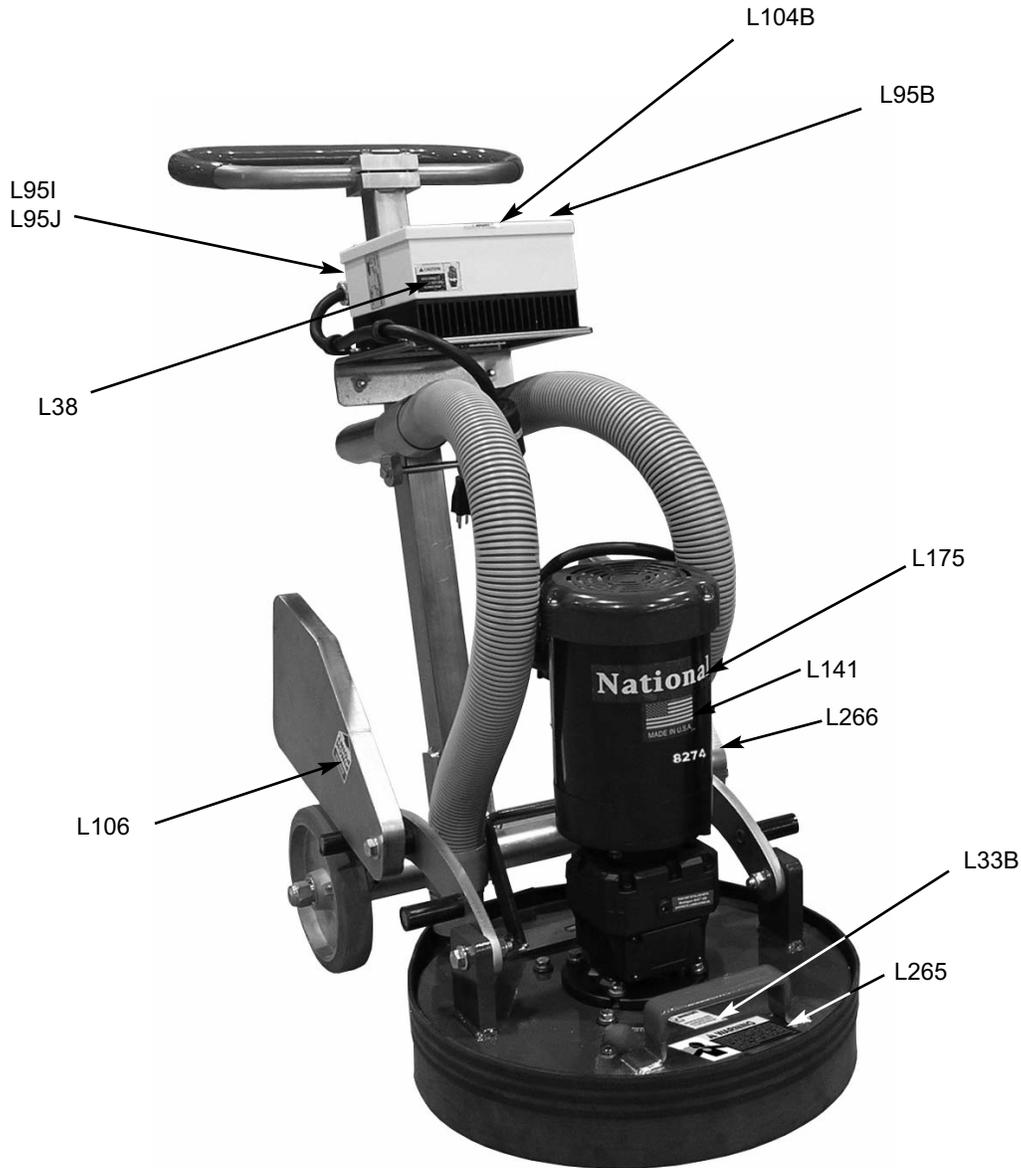
9274/ 22 INCH PLATE PARTS



PART #	DESCRIPTION
8274-7	8274 Drive Plate Assembly (Not Shown)
8274-48	8274 Pulley Spacer (3)
8274-57	Drive Spud Weldment
8274-60	Tension Sprocket
8274-61	Sprocket Holder
8274-62	Tension Anchor
8274-68	Planetary Auto Belt Tensioner (2) (Complete Assembly)
8274-69	Auto Belt Tensioner Counterweight (2)
9274-DECK	Complete Assembly & #9274-44 Belt
9274-3	112 Tooth Gear Plate
9274-27	112 Tooth Pulley
9274-64	22 Inch Planetary Disk

PART #	DESCRIPTION
70703	Unhardened Dowel Pin .375 x 1 3/4
71202	12M ID Bearing (2) SFK6201-2RS
71222	20MM ID Bearing(3) MRC 530 4C226
71232	20MM ID Bearing (12)1DC 6205-2RS
73029	1/4-20 x 3/4 Flat Head Socket Cap Screw (4)
73046	1/4-20 x 3/8 Button Head Screw
73208	3/8-16 Nylon Lock Nut (3)
73237	3/8 Hardened Washer (3)
73904	3/16 x 3/16 x 3/4 Key
74103	1 1/8 Retaining Ring (Not Shown)
74801	.01 x 2/8 ID Shim Washer
80001	20 Tooth Pulley (3)
80049	Scrubber Shaft Weldment (3)
80063	Spring 1.22 OD x 1.50 Long
80064	Pull Out Dowel 7/16
80066	Sprocket Bearing (2)
80067	Retaining Clip .375 Shaft

8274/9274 LABELS



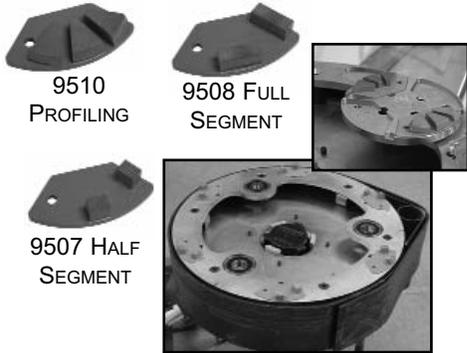
<u>PART #</u>	<u>DESCRIPTION</u>	<u>PART #</u>	<u>DESCRIPTION</u>
L33B	Caution Moving Parts Label	L106	Pinch Point Label (2)
L38	Disconnect Power Label	L141	Made in USA/Flag Label
L95B	On/Off Switch Label	L175	National Label - Small
L95J	110 Volt Label (for 8274)	L265	Silica Dust Warning Label
L95I	220 Volt Label (for 9274)	L266	8274 Stock Number Label
L104B	Read and Understand Label	L268	9274 Stock Number Label (Not Shown)

8274/9274 MAGNETIC TOOLING

Grind • Scrape • Prep • Profile • Polish • Sand

METAL BOND

Utilized for light, medium and aggressive concrete grinding and profiling as well as sealer & top coat removal • Can be used for both residential and industrial applications • Perfect for leveling concrete high spots and repairing imperfections as well as creating the perfect profile for accepting new coatings, epoxies or preparing concrete for polishing



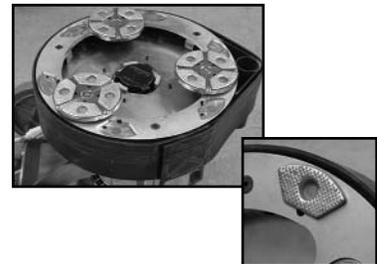
- 9507-3.....3 Grit Metal Bond Half Segment Diamond
- 9507-16.....16 Grit Metal Bond Half Segment Diamond
- 9507-30.....30 Grit Metal Bond Half Segment Diamond
- 9508-16.....16 Grit Metal Bond Full Segment Diamond
- 9508-30.....30 Grit Metal Bond Full Segment Diamond
- 9510-30.....30 Grit Metal Bond Profiling Diamond
- 9510-50.....50 Grit Metal Bond Profiling Diamond
- 9510-120.....120 Grit Metal Bond Profiling Diamond
- 9510-180.....180 Grit Metal Bond Profiling Diamond
- 73081.....Tooling Mount Screw

BRAZED TRAPEZOID

Utilized primarily in light industrial and residential applications for concrete grinding & profiling as well as sealer and top coat removal • Provides excellent surface profile for new coatings, epoxies or stains • Also creates an exceptional profile for concrete preparation & restoration prior to polishing concrete

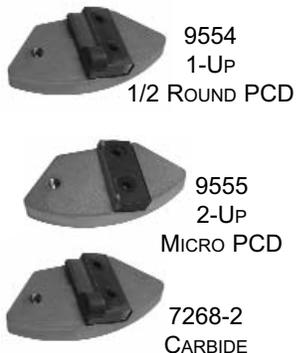


- 9522-16.....16 Grit Brazed Trapezoid
- 9522-30.....30 Grit Brazed Trapezoid
- 9522-50.....50 Grit Brazed Trapezoid
- 9522-100.....100 Grit Brazed Trapezoid

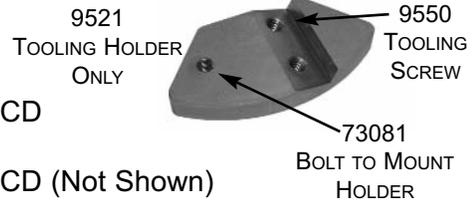


PCD'S & CARBIDES

Designed for aggressive concrete stock removal as well as coatings, glues, mastics and other floor covering adhesives



- 7268-2.....Carbide
- 9554.....1-Up, 1/2 Round PCD
- 9555.....2-Up Micro PCD
- 9556.....2-Up, 1/2 Round PCD (Not Shown)
- 9557.....4-Up Micro PCD (Not Shown)
- 9521.....Tooling Holder (only)
- 9550.....Screw
- 73081.....Tool Holder Mounting Bolt

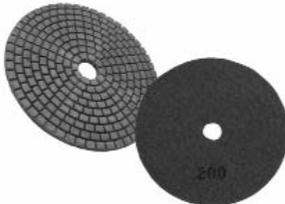


8274/9274 MAGNETIC TOOLING

Grind • Scrape • Prep • Profile • Polish • Sand

POLISHING PADS

Utilized for polishing concrete to various finishes and shines • Resin Bond • Available in escalating grits



- 9267-50.....Polishing Pad
- 9267-100.....Polishing Pad
- 9267-200.....Polishing Pad
- 9267-400.....Polishing Pad
- 9267-800.....Polishing Pad
- 9267-1500.....Polishing Pad
- 9267-3000.....Polishing Pad
- 9267-Buffer.....Polishing Pad

5 INCH BRAZED DIAMONDS

Utilized primarily in industrial applications for medium to aggressive concrete grinding & profiling as well as sealer and top coat removal • Perfect for concrete preparation & restoration prior to concrete polishing • In addition, brazed diamonds effortlessly remove stains and imperfections from exterior wood decking while simultaneously providing wood profile for receiving new stains and/or sealers

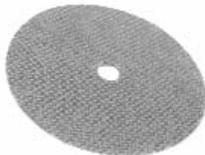


- 9235-16.....16 Grit 5" Brazed Diamond
- 9235-30.....30 Grit 5" Brazed Diamond
- 9235-50.....50 Grit 5" Brazed Diamond
- 9235-100.....100 Grit 5" Brazed Diamond



DIAMOND SANDING PADS

Used to efficiently remove manufacturer impregnated stains and sealers from interior hardwoods • In addition will create a perfect surface profile to receive new stains guaranteeing proper saturation and adhesion



- 9255-50.....Sanding Pad
- 9255-70.....Sanding Pad
- 9255-120.....Sanding Pad
- 9255-220.....Sanding Pad

8274/9274 MAGNETIC TOOLING

Grind • Scrape • Prep • Profile • Polish • Sand

SANDPAPER DISKS

Utilized on interior hardwood surfaces, the National 8274 and 5274 grinding systems with 5" sandpaper disks, efficiently removes factory applied stains & finishes without the mess created by a traditional belt sander

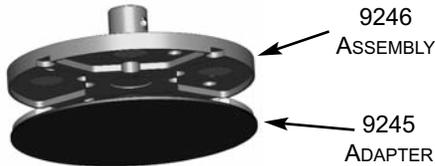


- 9278-F.....Sandpaper, Fine Grit
- 9278-M.....Sandpaper, Medium Grit
- 9278-C.....Sandpaper, Coarse Grit



ACCESSORIES FOR 8274 & 9274

Tooling mounts on to assembly. #9246 accommodates magnetic tooling, #9245 accomodates polishing pads, sanding pads and brazed disks



- 9246.....Assembly
- 9245.....Adapter

8274/9274 TRADITIONAL TOOLING

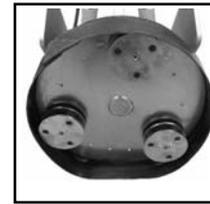
Versatile Floating Action/9292 Floating Assembly

Floating spring action allows tooling to follow the surface contour • Allows floating ability on all tooling, allowing tooling to work consistently • Provides profiling and polishing on uneven surfaces • Evens wear on grinding plugs • Eliminates scratches due to edge cut • Saves time and money • Assembly only, plates and tooling not included

- #9292 5" Plate Assembly with Spacer
- #8274-71 Spacer (only) - Required for Grinding Plugs
- #73214 Floating Assembly Mounting Screw
- #73254 Floating Assembly Screw (when using spacer)



9292 Floating Isolator Assembly



Machine Shown with Floating Assembly Attached

...
Plates and tooling attach onto mounted Floating Assembly

- FLOATS WITH THE SURFACE CONTOUR • HITS UNEVEN SURFACES • REACHES LOW SPOTS

ACCOMMODATES ALL TOOLING, INCLUDING EXISTING TOOLING AND 5" TOOLING PLATES
(GRINDING PLUGS, TRAPEZOIDS, CARBIDE SCRAPING, POLISHING PADS AND DIAMOND SANDING PADS)



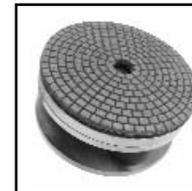
Assembly shown with Grinding Plugs



Assembly shown with Trapezoids



Assembly shown with Carbides



Assembly shown with Polishing Pad

Trapezoid Polycrystallines

Used for aggressive stock/coating removal • Not to be used directly on concrete

- #9263 5" Plate (only)-for Polycrystallines -3 Holder
- #9273 5" Plate (only)-for Polycrystallines -2 Holder
- #9284 Polycrystalline w/Sacrificial Wear Bar
- #9285 Polycrystalline w/o Sacrificial Wear Bar
- #73250 Plate Mounting Screw
- #74620 Polycrystalline Mounting Screw



#9273 Plate Shown w/ #9284 Polycrystallines & Plate sold separately



#9285 Trapezoid Polycrystalline w/o Sacrificial Wear Bar

Trapezoid Grinding Diamonds

Used for aggressive concrete floor grinding in addition to coating and floor leveling

- #9263 5" Plate (only)-for Grinding Diamonds -3 Holder
- #9273 5" Plate (only)-for Grinding Diamonds -2 Holder
- #32903 Grinding Diamond 6 Grit - Full Segment
- #32900 Grinding Diamond 40 Grit - Full Segment
- #32901 Grinding Diamond 80 Grit - Full Segment
- #32902 Grinding Diamond 150 Grit - Full Segment
- #32905 Grinding Diamond 30 Grit - Bond Pad
- #32906 Grinding Diamond 70 Grit - Bond Pad
- #32907 Grinding Diamond 120 Grit - Bond Pad
- #32920 Grinding Diamond 6 Grit - Half Segment
- #32921 Grinding Diamond 14 Grit - Half Segment
- #32922 Grinding Diamond 40 Grit - Half Segment
- #32923 Grinding Diamond 80 Grit - Half Segment
- #32924 Grinding Diamond 150 Grit - Half Segment
- #73250 Plate Mounting Screw
- #74620 Grinding Diamond Mounting Screw



#9263 Plate Shown w/Grinding Diamonds Diamonds & Plate sold separately



#9273 Plate Shown w/Grinding Diamonds Diamonds & Plate sold separately



Grinding Diamond - Full Segment



Grinding Diamond - Bond Pad



Grinding Diamond - Half Segment

8274/9274 PLANETARY TOOLING

Metal Bond Plugs

Available in various grits for light coating/paint removal • Used for floor preparation prior to polishing

#9250-6M	Metal Bond Plug	6 Grit - soft bond for hard concrete
#9250-14M	Metal Bond Plug	14 Grit - soft bond for hard concrete
#9250-30M	Metal Bond Plug	30 Grit - soft bond for hard concrete
#9250-70M	Metal Bond Plug	70 Grit - soft bond for hard concrete
#9250-120M	Metal Bond Plug	120 Grit - soft bond for hard concrete
#9250-220M	Metal Bond Plug	220 Grit - soft bond for hard concrete
#9251-6T	Terrazzo Bond Plug	6 Grit - hard bond for soft concrete
#9251-14T	Terrazzo Bond Plug	14 Grit - hard bond for soft concrete
#9251-30T	Terrazzo Bond Plug	30 Grit - hard bond for soft concrete
#9251-70T	Terrazzo Bond Plug	70 Grit - hard bond for soft concrete
#9251-120T	Terrazzo Bond Plug	120 Grit - hard bond for soft concrete
#9251-220T	Terrazzo Bond Plug	220 Grit - hard bond for soft concrete
#9242	5" Plate (only) for Plugs - 5 Holder	
#9259	5" Plate (only) for Plugs - 2 Holder	
#9260	5" Plate (only)-for Plugs - 3 Holder	
#73250	Plate Mounting Screw	



#9260 Plate Shown w/Grinding Plugs
Plugs & Plate sold separately



#9250-14M Grinding Plug

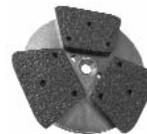


#9259 Plate Shown w/Grinding Plugs
Plugs & Plate sold separately

Trapezoid Abrasive Cartridges

Available in coarse or fine grit • Used for light coating & paint removal • Not for grinding concrete

#9249-C	Scraping Carbide - Coarse	
#9249-F	Scraping Carbide - Fine	
#9263	5" Plate (only)-for Abrasive Cartridges - 3 Holder	
#9273	5" Plate (only)-for Abrasive Cartridges - 2 Holder	
#73250	Plate Mounting Screw	
#74620	Abrasive Carbide Mounting Screw	

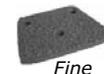


#9263 Plate Shown w/Fine Scraping Carbide
Carbides & Plate sold separately

Abrasive Cartridges



Coarse

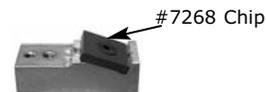


Fine

Carbide Scraping

Used for aggressive stock/coating removal utilizing an adjustable carbide grinding chip

#7267	Three Position Carbide Holder	
#7268	Carbide Replacement Chip	
#9261	5" Plate (only)-for Carbides -3 Holder	
#9264	Carbides Mounted onto Plate (complete)-3 Holder	
#9272	5" Plate (only)-for Carbides -2 Holder	
#9287	Carbides Mounted onto Plate (complete)-2 Holder	
#73029	Carbide Holder Mounting Screw	
#73042	Carbide Chip Fastening Screw	
#73250	Plate Mounting Screw	



#7267 Carbide Holder



#9287 Carbides Mounted onto Plate (Complete) - 2 Holder

Floating Grinding

Used for unlevel floors • To be used with Metal Bond Plugs

#9258	5" Plate (only)-for Grinding Plugs	
#9262	Spring w/Plug Holder Set	
#9265	Springs Mounted onto Plate (w/o Plugs)	
#73250	Plate Mounting Screw	
#74605	Spring Set Mounting Screw	



#9265 Plate w/Springs attached & Mounting Screw



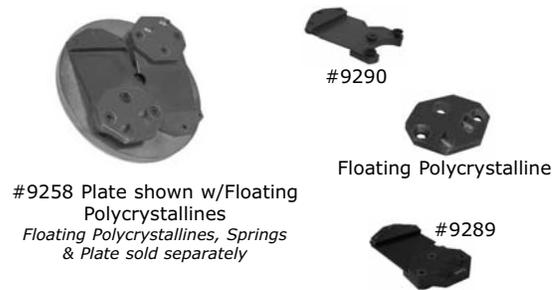
Plate Shown w/Springs & Grinding Plugs
Plate w/Springs (#9265) & Plugs sold separately

8274/9274 PLANETARY TOOLING

Floating Polycrystalline

Used to prep unlevel floors • Floating mechanisms allows diamonds to reach difficult low spots

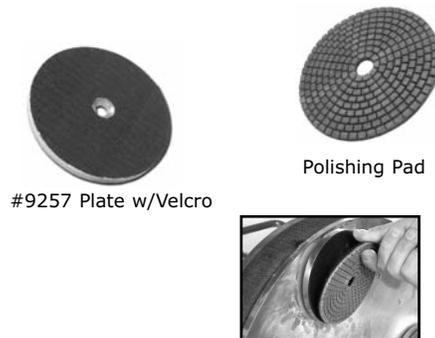
#9258	5" Plate (only)-for Grinding
#9282	Floating Polycrystalline w/o Sacrificial Wear Bar
#9289	Spring & Polycrystalline w/o Sacrificial Wear Bar
#9290	Polycrystalline Spring Set (only)
#73250	Plate Mounting Screw
#74605	Spring Set Mounting Screw
#74620	Polycrystalline Mounting Screw



Polishing Pads

Available in various grits • Utilized for polishing concrete to various finishes and shines • Resin Bond

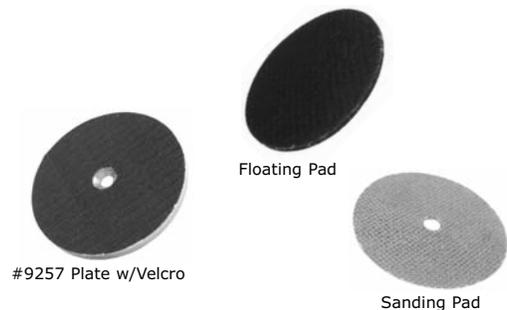
#9257	5" Plate w/Velcro (only)
#9257-1	Replacement Velcro (only)
#9267-50	Polishing Pad 50 Grit
#9267-100	Polishing Pad 100 Grit
#9267-200	Polishing Pad 200 Grit
#9267-400	Polishing Pad 400 Grit
#9267-800	Polishing Pad 800 Grit
#9267-1500	Polishing Pad 1500 Grit
#9267-3000	Polishing Pad 3000 Grit
#9267-Buffer	Polishing Pad Buffer
#73250	Plate Mounting Screw



Diamond Sanding Pads

Available in various grits • Utilized to sand and prepare hardwood surfaces for new stains and surface treatments

#9255-50	Sanding Pad 50 Grit
#9255-70	Sanding Pad 70 Grit
#9255-120	Sanding Pad 120 Grit
#9255-220	Sanding Pad 220 Grit
#9257	Plate w/Velcro (only)
#9257-1	Replacement Velcro (only)
#9270	Floating Foam Pad - Soft
#9271	Floating Foam Pad - Medium
#73250	Plate Mounting Screw



8274/9274 TOOLING PACKAGES



#11120 CONCRETE PREPARATION FOR COATING (SOFT CONCRETE) PACKAGE

- 3 - #9265 5" Plate w/ Springs Attached
- 6 - #9251-14T 14 Grit Terrazzo Plug Diamond
- 6 - #9251-30T 30 Grit Terrazzo Plug Diamond
- 6 - #9251-70T 70 Grit Terrazzo Plug Diamond
- 3 - 73250 Plate Mounting Screw
- 18 - 74605 Tooling Mounting Screw

#11130 CONCRETE PREPARATION FOR COATING (HARD CONCRETE) PACKAGE

- 3 - #9265 5" Plate w/ Springs Attached
- 6 - #9250-14M 14 Grit Metal Bond Plug Diamond
- 6 - #9250-30M 30 Grit Metal Bond Plug Diamond
- 6 - #9250-70M 70 Grit Metal Bond Plug Diamond
- 3 - 73250 Plate Mounting Screw
- 18 - 74605 Tooling Mounting Screw

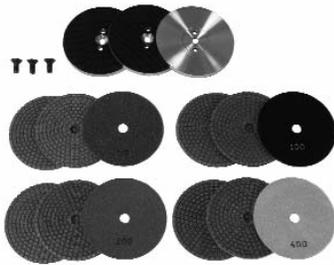


#11140 CONCRETE PREPARATION FOR POLISHING (SOFT CONCRETE) PACKAGE

- 3 - #9265 5" Plate w/ Springs Attached
- 6 - #9251-70T 70 Grit Terrazzo Plug Diamond
- 6 - #9251-120T 120 Grit Terrazzo Plug Diamond
- 3 - 73250 Plate Mounting Screw
- 18 - 74605 Tooling Mounting Screw

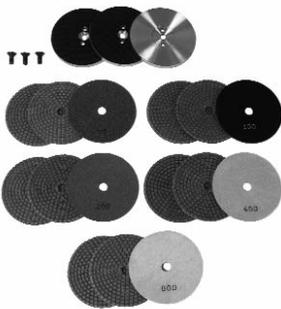
#11150 CONCRETE PREPARATION FOR POLISHING (HARD CONCRETE) PACKAGE

- 3 - #9265 5" Plate w/ Springs Attached
- 6 - #9250-70M 70 Grit Metal Bond Plug Diamond
- 6 - #9250-120M 120 Grit Metal Bond Plug Diamond
- 3 - 73250 Plate Mounting Screw
- 18 - 74605 Tooling Mounting Screw



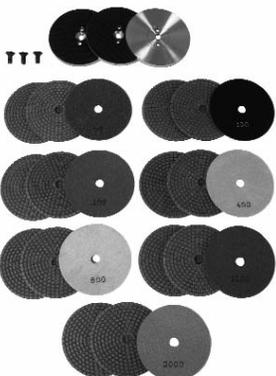
#11160 CONCRETE POLISH PACKAGE-LEVEL 2/ LITTLE LIGHT REFLECTION PACKAGE

- 3 - #9257 5" Plate w/Velcro
- 3 - #9267-50 50 Grit Resin Polishing Pad
- 3 - #9267-100 100 Grit Resin Polishing Pad
- 3 - #9267-200 200 Grit Resin Polishing Pad
- 3 - #9267-400 400 Grit Resin Polishing Pad
- 3 - #73250 Plate Mounting Screw



#11170 CONCRETE POLISH PACKAGE-LEVEL 3/ SATIN REFLECTION PACKAGE

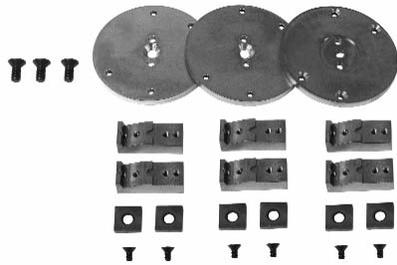
- 3 - #9257 5" Plate w/Velcro
- 3 - #9267-50 50 Grit Resin Polishing Pad
- 3 - #9267-100 100 Grit Resin Polishing Pad
- 3 - #9267-200 200 Grit Resin Polishing Pad
- 3 - #9267-400 400 Grit Resin Polishing Pad
- 3 - #9267-800 800 Grit Resin Polishing Pad
- 3 - #73250 Plate Mounting Screw



#11180 CONCRETE POLISH PACKAGE-LEVEL 4/ HIGH SHINE PACKAGE

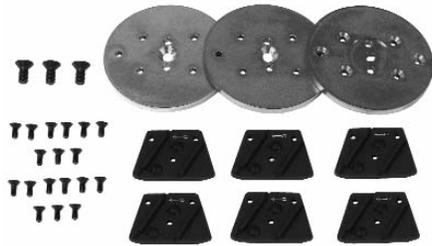
- 3 - #9257 5" Plate w/Velcro
- 3 - #9267-50 50 Grit Resin Polishing Pad
- 3 - #9267-100 100 Grit Resin Polishing Pad
- 3 - #9267-200 200 Grit Resin Polishing Pad
- 3 - #9267-400 400 Grit Resin Polishing Pad
- 3 - #9267-800 800 Grit Resin Polishing Pad
- 3 - #9267-1500 1500 Grit Resin Polishing Pad
- 3 - #9267-3000 3000 Grit Resin Polishing Pad
- 3 - #73250 Plate Mounting Screw

8274/9274 TOOLING PACKAGES



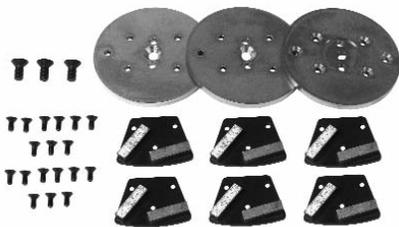
#11210 COATING REMOVAL - AGGRESSIVE PACKAGE

- 3 - #9272 5" Plate for Carbides
- 6 - #7267 Carbide Holder
- 6 - #7268 Carbide Replacement Chip
- 12 - #73029 Carbide Holder Mounting Screw
- 3 - #73250 Plate Mounting Screw
- 6 - #73402 Carbide Chip Fastening Screw



#11220 COATING REMOVAL - EXTREME PACKAGE

- 3 - #9273 5" Plate for Polycrystallines
- 6 - #9284 Polycrystalline with Sacrificial Wear Bar
- 3 - #73250 Plate Mounting Screw
- 18 - #74620 Polycrystalline Mounting Screw

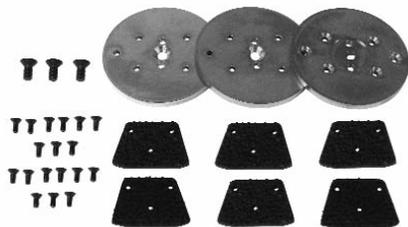


#11230 COATING REMOVAL PACKAGE

- 3 - #9273 5" Plate for Grinding Diamonds
- 6 - #32900 40 Grit Grinding Diamond
- 3 - #73250 Plate Mounting Screw
- 18 - #74620 Grinding Diamond Mounting Screw

#11240 COATING REMOVAL PACKAGE

- 3 - #9273 5" Plate for Grinding Diamonds
- 6 - #32901 80 Grit Grinding Diamond
- 3 - #73250 Plate Mounting Screw
- 18 - #74620 Grinding Diamond Mounting Screw



#11250 COATING REMOVAL PACKAGE

- 3 - #9273 5" Plate for Abrasive Carbides
- 6 - #9249-C Abrasive Carbide - Coarse
- 3 - #73250 Plate Mounting Screw
- 18 - #74620 Abrasive Carbide Mounting Screw

#11260 COATING REMOVAL PACKAGE

- 3 - #9273 5" Plate for Trapezoids
- 6 - #9249-F Abrasive Carbides - Fine
- 3 - #73250 Plate Mounting Screw
- 18 - #74620 Carbide Mounting Screw



#11270 COATING REMOVAL (HARD CONCRETE) PACKAGE

- 3 - #9265 5" Plate w/ Springs Attached
- 6 - #9250-6M 6 Grit Metal Bond Plug Diamond
- 6 - #9250-14M 14 Grit Metal Bond Plug Diamond
- 6 - #9250-30M 30 Grit Metal Bond Plug Diamond
- 3 - #74605 Tooling Mounting Screw

#11280 COATING REMOVAL (SOFT CONCRETE) PACKAGE

- 3 - #9265 5" Plate w/ Springs Attached
- 6 - #9251-6T 6 Grit Terrazzo Plug Diamond
- 6 - #9251-14T 14 Grit Terrazzo Plug Diamond
- 6 - #9251-30T 30 Grit Terrazzo Plug Diamond
- 3 - #74605 Tooling Mounting Screw

8274/9274 GUARANTEE

National Flooring Equipment, Inc. (National) warrants to the first consumer/purchaser that this National brand product (the #8274/#9274 Panther® Planetary Systems), when shipped in its original container, will be free from defective workmanship and materials and agrees that it will, at its option, either repair the defect or replace the defective product or part thereof at no charge to the purchaser for parts or labor for the period(s) set forth below.

This warranty does not apply to any appearance items of the product, to the additional excluded items set forth below, or to any product, the exterior of which has been damaged or defaced, which has been subjected to misuse, abnormal service or handling, or which has been altered or modified in design or construction.

In order to enforce the rights under this limited warranty, the purchaser should follow the steps set forth below and provide proof of purchase to National.

The limited warranty described herein is in addition to whatever implied warranties may be granted to purchasers by law. ALL IMPLIED WARRANTIES INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS FOR USE ARE LIMITED TO THE PERIODS FROM THE DATE OF PURCHASE AS SET FORTH BELOW. Some states do not allow time limitations on an implied warranty, so the above limitation may not apply to you.

Neither the sales person of the seller, nor any other person, is authorized to make any other warranties other than those described herein, or to extend the duration of any warranties beyond the time period described herein on behalf of National.

The warranties described herein shall be the sole and exclusive warranties granted by National and shall be the sole and exclusive remedy available to the purchaser. Correction of defects in the manner and for the period of time described herein, shall constitute complete fulfillment of all liabilities and responsibilities of National to the purchaser with respect to the product and shall constitute full satisfaction of all claims, whether based on contract, negligence, strict liability or otherwise. In no event shall National be liable, or in any way responsible for any damage or defects in the product which were caused by repairs or attempted repairs performed by anyone other than National. Nor shall National be liable, or in any way responsible, for any incidental or consequential, economics or property damage. Some states do not allow the exclusion of incidental or consequential damages, so the above exclusion may not apply to you.

THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS. YOU MAY ALSO HAVE OTHER RIGHTS WHICH VARY FROM STATE TO STATE.

WARRANTY PERIOD

The National #8274/#9274 Panther® Planetary Systems are guaranteed to be free of manufacturer defective workmanship and in quality of materials for a period of one year.

Items excluded from warranty coverage, unless found and reported defective immediately upon removal from the original shipping container and before being used by the original purchaser.

A freight damage claim must be filed with the carrier by the purchaser, the shipper cannot file the freight claim.

To obtain service contact National Flooring Equipment, Inc. toll free at 800-245-0267 for a repair authorization number. COD freight returns will not be accepted. Freight collect shipments will not be accepted. Warranty repairs must be accompanied by date of purchase receipt and a return/repair authorization number.

8274/9274 RETURN SHEET

Company Name _____

Contact Name _____

Telephone Number _____

Approximate Usage (hours) _____

Problems Encountered _____

Check One: Repair

Do you wish to be contacted before repairing Yes No

Return

Contact National if a loaner is needed

Return Authorization Number _____ Date _____

required, contact National

Customer Number _____

if known

Purchased From _____

if not directly from National

INTERNAL USE ONLY	
Date Received	_____
Unit Serial Number	_____
Subject To Warranty	_____