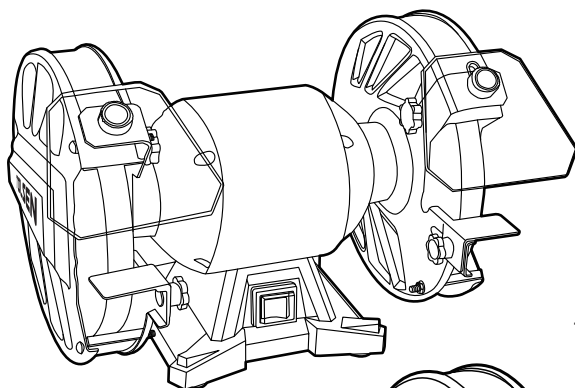


TOLSEN **FORCE XPRESS**

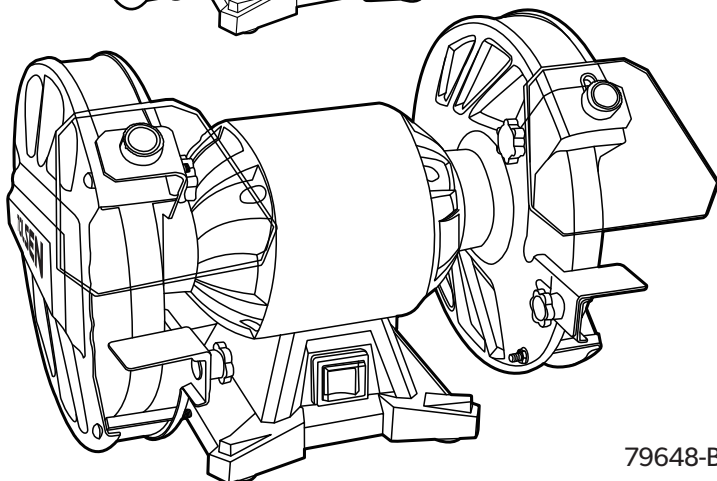
79646-BS/79648-BS BENCH GRINDER

INSTRUCTION MANUAL

230V 50Hz



79646-BS 150W



79648-BS 350W

SAVE THIS MANUAL !

You will need this manual for safety instructions, operating procedures and warranty.
Put it and the original sales receipt in a safe dry place for future reference.

IMPORTANT SAFETY INFORMATION

General Power Tool Safety Warnings

WARNING:

Read all safety warnings and instructions.

Failure to follow the warnings and instructions may result in electric shock, fire and/or serious injury.

Save all warnings and instructions for future reference.

1. Keep guards in place and in working order.
2. Remove adjusting keys and wrenches. form habit of checking to see that keys and adjusting wrenches are removed from tool before turning it on.
3. Keep work area clean. cluttered areas and benches invite accidents.
4. Don't use in dangerous environment. don't use power tools in damp or wet locations, or expose them to rain. keep work area well lighted.
5. Keep children away. all visitors should be kept safe distance from work area.
6. Make workshop kid proof with padlocks, master switches, or by removing starter keys.
7. Don't force tool. it will do the job better and safer at the rate for which it was designed.
8. Use right tool. don't force tool or attachment to do a job for which it was not designed.
9. Use proper extension cord. make sure your extension cord is in good condition. when using an extension cord, be sure to use one heavy enough to carry the current your product will draw. an undersized cord will cause a drop in line voltage resulting in loss of power and overheating. table a shows the correct size to use depending on cord length and nameplate ampere rating. if in doubt, use the next heavier gauge. the smaller the gauge number, the heavier the cord.
10. Wear proper apparel. do not wear loose clothing, neckties, rings, bracelets, or other jewelry which may get caught in moving parts. nonslip footwear is recommended. wear protective hair covering to contain long hair.
11. Always use safety glasses. also use face or dust mask if cutting operation is dusty. everyday eyeglasses only have impact resistant lenses, they are not safety glasses.
12. Secure work. use clamps or a vise to hold work when practical. it's safer than using your hand and it frees both hands to operate tool.
13. Don't overreach. keep proper footing and balance at all times.
14. Maintain tools with care. keep tools sharp and clean for best and safest performance. follow instructions for lubricating and changing accessories.
15. Disconnect tools before servicing; when changing accessories, such as blades, bits, cutters, and the like.
16. Reduce the risk of unintentional starting. make sure switch is in off position before plugging in.
17. Use recommended accessories. consult the owner's manual for recommended accessories. the use of improper accessories may cause risk of injury to persons.
18. Never stand on tool. serious injury could occur if the tool is tipped or if the cutting tool is unintentionally contacted.
19. Check damaged parts. before further use of the tool, a guard or other part that is damaged should be carefully checked to determine that it will operate properly and perform its intended function – check for alignment of moving parts, binding of moving parts, breakage of parts, mounting, and any other conditions that may affect its operation. a guard or other part that is damaged should be properly repaired or replaced.
20. Direction of feed. feed work into a blade or cutter against the direction of rotation of the blade or cutter only.
21. Never leave tool running unattended. turn power off.

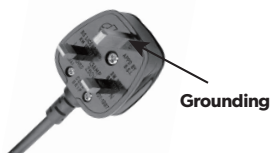
GROUNDING INSTRUCTIONS

WARNING:

To prevent electric shock and death from incorrect Grounding wire connection read and follow these instructions:

220-240 VAC Grounded Tools: Tools with Three Prong Plugs

1. In the event of a malfunction or breakdown, grounding provides a path of least resistance for electric current to reduce the risk of electric shock. This tool is equipped with an electric cord having an equipment-grounding conductor and a grounding plug. The plug must be plugged into a matching outlet that is properly installed and grounded in accordance with all local codes and ordinances.
2. Do not modify the plug provided – if it will not fit the outlet, have the proper outlet installed by a qualified electrician.
3. Improper connection of the equipment-grounding conductor can result in a risk of electric shock. The conductor with insulation having an outer surface that is green with or without yellow stripes is the equipment-grounding conductor. If repair or replacement of the electric cord or plug is necessary, do not connect the equipment-grounding conductor to a live terminal.
4. Check with a qualified electrician or service personnel if the grounding instructions are not completely understood, or if in doubt as to whether the tool is properly grounded.
5. Use only 3-wire extension cords that have 3-prong grounding plugs and 3-pole receptacles that accept the tool's plug.
6. Repair or replace damaged or worn cord immediately.



7. This tool is intended for use on a circuit that has an outlet that looks like the one illustrated above in 230 vac 3-prong plug and outlet. The tool has a grounding plug that looks like the plug illustrated above in 230 vac 3-prong plug and outlet.
8. The outlet must be properly installed and grounded in accordance with all codes and ordinances.
9. Do not use an adapter to connect this tool to a different outlet.

Grinder Safety Warnings

For your own safety read instruction manual before operating grinder.

1. Wear eye protection.
2. Use grinding wheel suitable for speed of grinder.
3. Replace cracked wheel immediately.
4. Always use guards and eye shields.
5. Do not overtighten wheel nut.
6. Use only flanges furnished with the grinder.
7. Adjust distance between wheel and work rest to maintain 0.125 inch or less separation as the diameter of the wheel decreases with use.
8. Frequently clean grinding dust from beneath grinder.
9. Wear a full face shield over ansi-approved safety goggles during use.
10. Do not grind with side of wheel unless wheel is specifically designed for that type of grinding.
11. Do not operate with any guard disabled, damaged, or removed. moving guards must move freely and close instantly.
12. The use of accessories or attachments not recommended by the manufacturer may result in a risk of injury to persons.
13. When servicing use only identical replacement parts.
14. Only use safety equipment that has been approved by an appropriate standards agency. unapproved safety equipment may not provide adequate protection.
15. Stay alert, watch what you are doing and use common sense when operating a power tool. do not use a power tool while you are tired or under the influence of drugs, alcohol or medication. a moment of inattention while operating power tools may result in serious personal injury.
16. Maintain labels and nameplates on the tool. these carry important safety information. if unreadable or missing, contact harbor freight tools for a replacement.
17. Avoid unintentional starting. prepare to begin work before turning on the tool.
18. People with pacemakers should consult their physician(s) before use. electromagnetic fields in close proximity to heart pacemaker could cause pacemaker interference or pacemaker failure.
19. Warning: the cord of this product contains lead and/or di (2-ethylhexyl) phthalate (dehp), chemicals known to the state of california to cause cancer, and birth defects or other reproductive harm. wash hands after handling.
20. The warnings, precautions, and instructions discussed in this instruction manual cannot cover all possible conditions and situations that may occur. it must be understood by the operator that common sense and caution are factors which cannot be built into this product, but must be supplied by the operator.

Vibration Safety

This tool vibrates during use. Repeated or long-term exposure to vibration may cause temporary or permanent physical injury, particularly to the hands, arms and shoulders. To reduce the risk of vibration-related injury:

1. Anyone using vibrating tools regularly or for an extended period should first be examined by a doctor and then have regular medical check-ups to ensure medical problems are not being caused or worsened from use. Pregnant women or people who have impaired blood circulation to the hand, past hand injuries, nervous system disorders, diabetes, or raynaud's disease should not use this tool. If you feel any medical or physical symptoms related to vibration (such as tingling, numbness, and white or blue fingers), seek medical advice as soon as possible.
2. Do not smoke during use. Nicotine reduces the blood supply to the hands and fingers, increasing the risk of vibration-related injury.
3. Use tools with the lowest vibration when there is a choice between different processes.
4. Include vibration-free periods each day of work.
5. Grip workpiece as lightly as possible (while still keeping safe control of it). Let the tool do the work.
6. To reduce vibration, maintain the tool as explained in this manual. If any abnormal vibration occurs, stop use immediately.



SAVE THESE INSTRUCTIONS.

SPECIFICATIONS

All Models

79646-BS

Electrical Input	230 VAC/50Hz
Motor No Load Speed	2950RPM
Input Power	150W
Base Size	150mm(6’)
Wheel Size	Φ150x16mmx12.7mm

79648-BS

Electrical Input	230VAC / 50 Hz
Motor No Load Speed	2950RPM
Input Power	350W
Base Size	200mm(8’)
Wheel Size	Φ200x20x12.7

INSTRUCTIONS FOR PUTTING INTO USE

WARNING:

read the entire important safety information section at the beginning of this manual including all text under subheadings therein before set up or use of this product. To prevent serious injury from accidental operation: turn the tool off and unplug it before assembling or making any adjustments to the tool.

Assembly

1. Installing Tool Rests

- A. Install adjustable rests to the wheel guards as shown in Figure 1. Use bolts and washers to secure them in place as shown in Figure 1.

Note: There is a left and a right tool rest. Refer to Figure 1 to be certain that you install them correctly.

- B. The tool rests should be adjusted to within 1/16" of the grinding wheel. To adjust this distance, move Adjustable Rests by loosening bolts and moving them to the proper position.

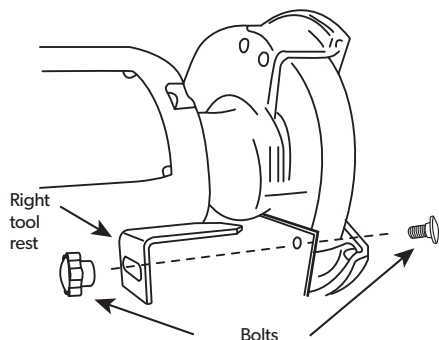


Figure 1

2. Installing Spark Guards

- a. Install the right spark guard to the wheel guard as shown in Figure 2.

- b. Adjust the spark guard to within 1.5mm of the grinding wheel. Repeat for left side.

Note: There is a left and right spark guard. Refer to Figure 2 to be certain that you install them correctly.

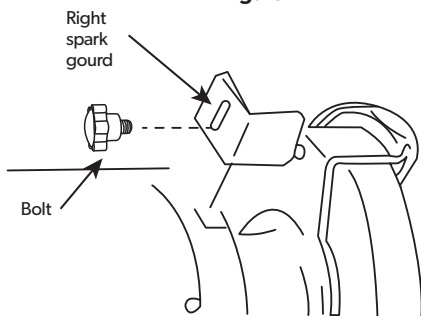


Figure 2

3. Installing Eye Shield to Grinder

- a. For installation of the right eye shield, make sure that the holes in the eye shield bracket face downward.

- b. Push eye shield bracket onto mounting bracket until it locks into place as shown in Figure 3.

- c. Repeat for left eye shield.

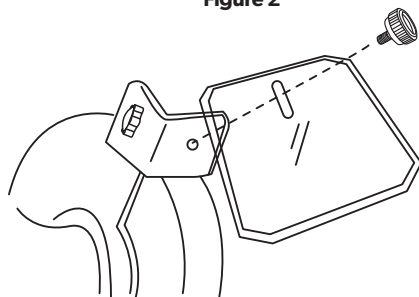


Figure 3

OPERATING INSTRUCTIONS

Warning! Read the entire important safety information section at the beginning of this manual including all text under subheadings therein before set up or use of this product.

Work Piece and Work Area Set Up

1. Designate a work area that is clean and well-lit. The work area must not allow access by children or pets to prevent distraction and injury.
2. Route the power cord along a safe route to reach the work area without creating a tripping hazard or exposing the power cord to possible damage.
3. There must not be objects, such as utility lines, nearby that will present a hazard while working.

General Operating Instructions

Warning! To prevent serious injury: do not operate with any guard disabled, damaged, or removed.

1. Sharpening scissors

if possible take the scissors apart to make the sharpening operation easier and safer. remove material only from the outside surface and work from the heavy end of the blade toward the tip.

2. Sharpening screwdrivers

the end of a properly sharpened screwdriver will be a perfect rectangle, absolutely flat and perpendicular to the center line of the shank. the two sides and two faces will taper outward from the edge of the shank of the screwdriver. they should be flat with intersecting faces perpendicular. hold each face of the screwdriver against the wheel to true it up, then ease the end straight into the stone to grind it true.

3. Sharpening knives

remove metal from both faces of most knives, working from the heavy end of the blade toward the tip.

4. Sharpening twist drill bits

drill bits are best sharpened on a sharpening jig but some sharpening can be done on your bench grinder. begin on one side of the point at the existing angle, then twist the bit while maintaining a constant angle with the grinding surface. sharpen only the tip. this technique requires considerable practice so try it a few times with the grinder off. be sure to maintain the original cutting edge angle as this is important to maintaining the efficiency of your bits.

5. To prevent accidents, turn off the tool and disconnect its power supply after use. clean, then store the tool indoors out of children's reach.

MAINTENANCE AND SERVICING

warning! procedures not specifically explained in this manual must be performed only by a qualified technician. to prevent serious injury from accidental operation: turn the power switch of the tool to its "off" position and unplug the tool from its electrical outlet before performing any inspection, maintenance, or cleaning procedures. To prevent serious injury from tool failure: do not use damaged equipment. if abnormal noise or vibration occurs, have the problem corrected before further use.

Cleaning, Maintenance, and Lubrication

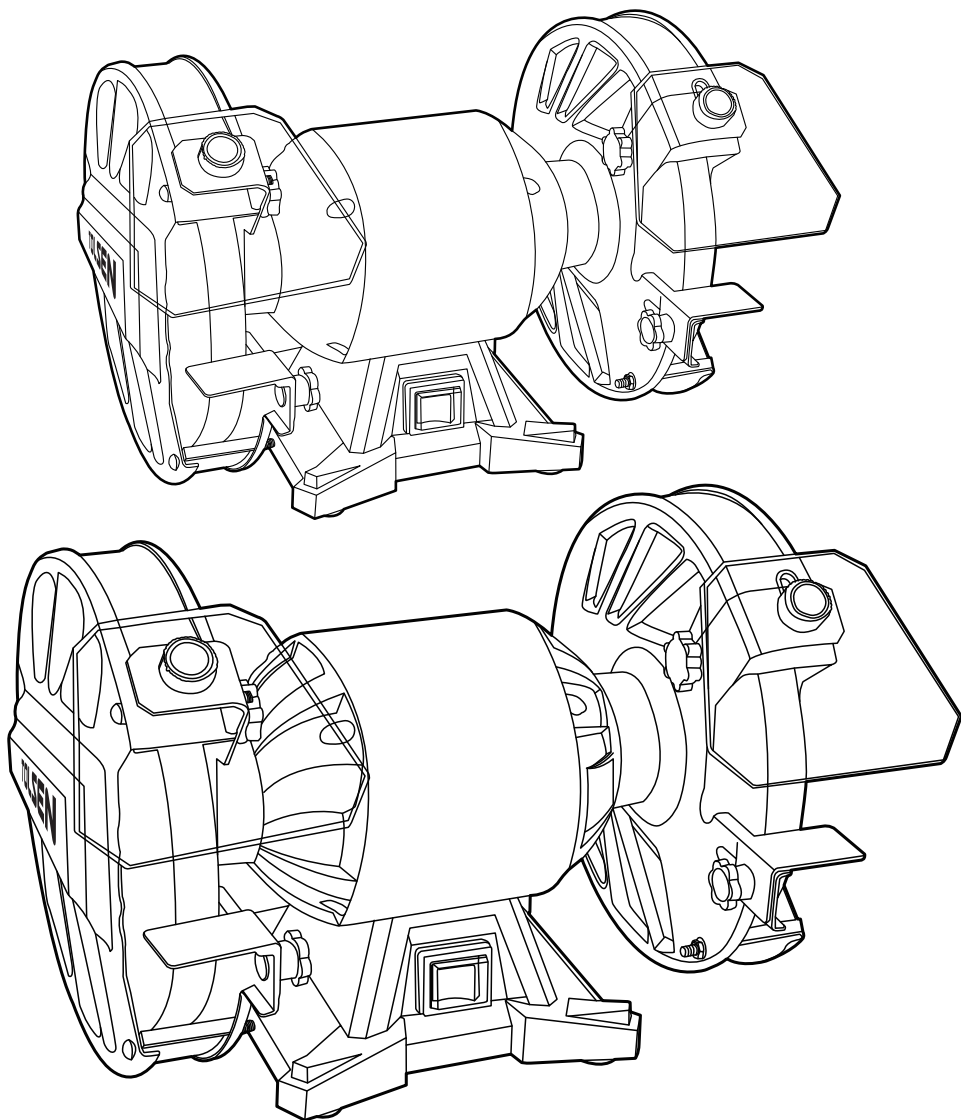
1. Before each use, inspect the general condition of the tool. check for loose hardware, misalignment or binding of moving parts, cracked or broken parts, damaged electrical wiring, and any other condition that may affect its safe operation.
2. After use, wipe external surfaces of the tool with clean cloth.
3. Care of grinding wheels as a result of normal use, grinding wheels may become cracked, grooved, rounded, chipped, out of true or loaded with foreign material. cracked wheels should be replaced immediately.
4. Wheel replacement if you must replace a wheel be sure to obtain one with a safe rated speed at least as high as the rated rpm of this grinder. be sure tool is switched off and unplugged before attempting repairs.
5. WARNING! if the supply cord of this power tool is damaged, it must be replaced only by a qualified service technician.

TROUBLESHOOT

Problem	Possible causes	Likely Solutions
Tool will not start.	<ol style="list-style-type: none"> 1. Cord not connected. 2. No power at outlet. 3. Tool's thermal reset breaker tripped (if equipped). 4. Internal damage or wear. (Carbon brushes or switch, for example.) 	<ol style="list-style-type: none"> 1. Check that cord is plugged in. 2. Check power at outlet. If outlet is unpowered, turn off tool and check circuit breaker. If breaker is tripped, make sure circuit is right capacity for tool and circuit has no other loads. 3. Turn off tool and allow to cool. Press reset button on tool. 4. Have technician service tool.
Tool operates slowly.	Power being reduced by long or small diameter extension cord.	Eliminate use of extension cord. If an extension cord is needed, use one with the proper diameter for its length and load. See Extension Cords in GROUNDING section.
Performance decreases over time.	Carbon brushes worn or damaged.	Have qualified technician replace brushes.
Excessive noise or rattling.	Internal damage or wear. (Carbon brushes or bearings, for example.)	Have technician service tool.
Overheating.	<ol style="list-style-type: none"> 1. Forcing tool to work too fast. 2. Blocked motor housing vents. 3. Motor being strained by long or small diameter extension cord. 	Allow tool to work at its own rate.



Follow all safety precautions whenever diagnosing or servicing the tool. Disconnect power supply before service.



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