IMPULSE™ & AERO™

Diamond Glass Grinders
User Guide

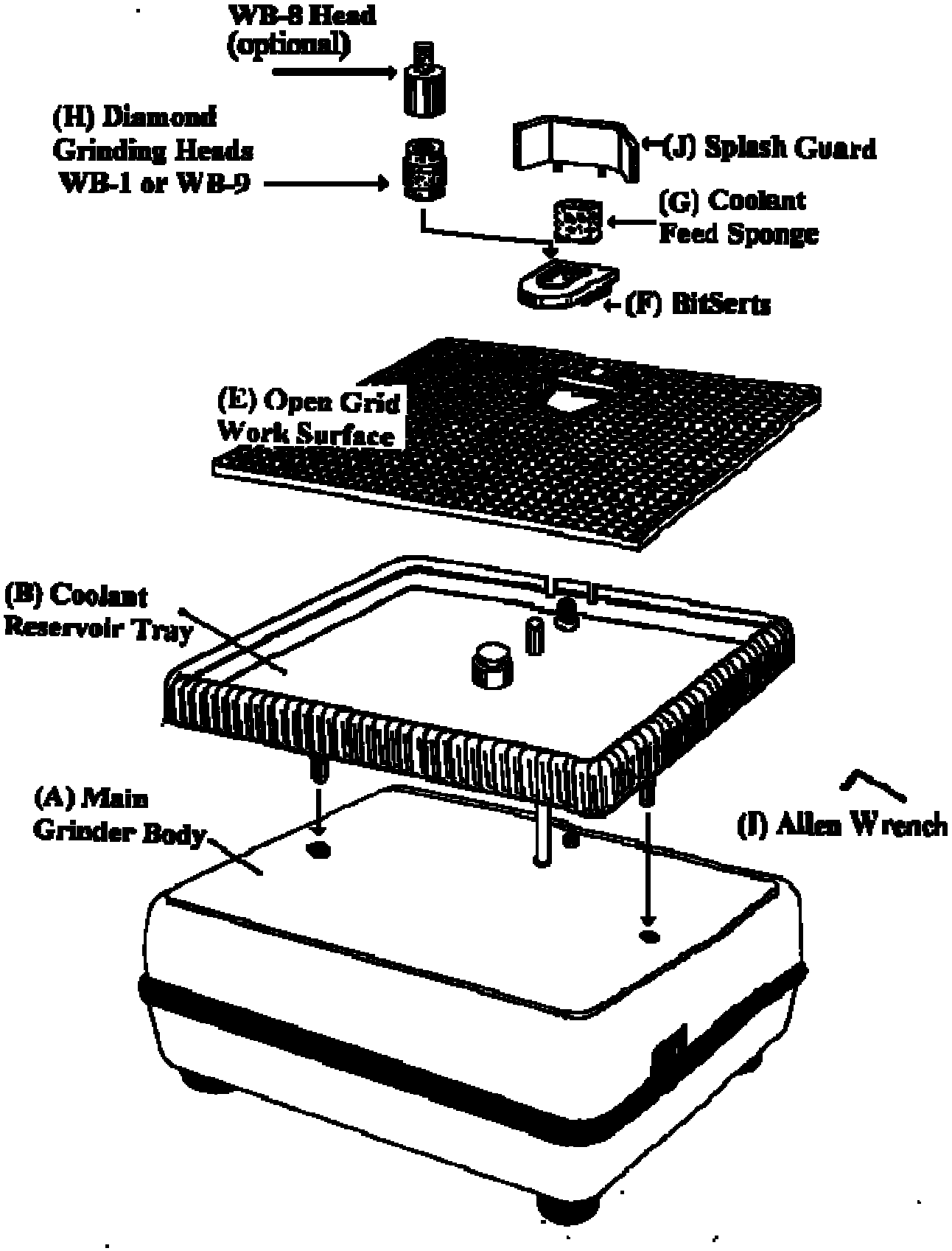
Thank you for buying an Inland product. There are several unique features found on the **Impulse**™ and **Aero**™ grinders: Our **TouchTop**™, three-way switch allows the grinder to turn on automatically when you touch the work surface. The coolant reservoir lifts off for easy cleaning. The open grid work surface is reversible. More than 18 different grinding heads and over a dozen Inland accessories are available for your grinder.

Safety

- When operating this or any grinder, it is extremely important to wear proper eye protection. We highly recommend that safety goggles rather than safety glasses be worn. You may also choose to use an Inland **FaceShield**™ or **MagnaShield**™ face shield in **conjunction** with eye protection; a shield alone does not provide adequate protection.
- This machine is for use only in a grounded outlet! Please make sure that the outlet you are using is properly grounded. Under **NO** circumstances should you override the grounding system.
- The best place to set up your grinder is on a sturdy, level workbench or table that is water tolerant and is a comfortable height for you to work on.

Set-up

The diagram below is an exploded drawing showing how the parts fit together. The parts chart lists what is in your grinder carton depending on whether you bought an **Impulse**™ or **Aero**™ grinder. Take a minute to check that you have all the parts indicated.



The Parts Chart

ITEM	The IMPULSE™	The AERO™
(A) Main Grinder Body	(1) Black/White	(1) White/Maroon

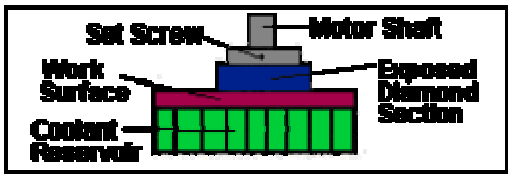
(B) Coolant Reservoir Tray	(1) Black	(1) Maroon
(E) Open Grid Work Surface	(1) White	(1) White
(F) BitSerts™	(2) White	(1) White
(G) Coolant Feed Sponge	(2) Yellow	(2) Yellow
(H) Grinding Bit	(2) 1" WB-9, 1/4" WB-8	(1) 3/4" WB-1
(I) Allen Wrench	(2) Black	(2) Black
(J) Splash Guard	(1) White	(1) White

To assemble your grinder:

Refer to the exploded view drawing. Place the Coolant Reservoir Tray on the white main Grinder Body by inserting the locator pegs on the bottom of the reservoir into the corresponding holes in the grinder body. Place the work surface on the coolant reservoir so that it sits on the inside lip of the reservoir. Insert the BitSert™.(Impulse™ owners refer to the BitSert™ section on page **6** for more detailed information.) Install the splash guard behind the BitSert™ by pushing the posts into the grid holes of work surface. **Note:** The splash guard is reversible.

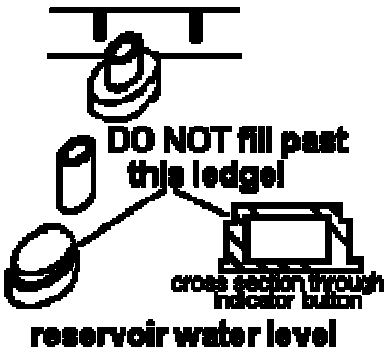
Installing the grinding bit:

Before mounting the grinding head and any time you change or remove heads, we recommend you apply a light coating of **Inland Motor Shaft Lubricant**™ to the motor shaft (Stock #50022). Our Teflon based lubricant helps prevent the bit from seizing on the shaft and seals out ground glass particles. In a pinch, you can use a bit of Vaseline.



Select the 1" (Impulse™) or 3/4" (Aero™) grinding head. Use the allen wrench to loosen the set screw by turning it counter clockwise. Slide the bit onto the motor shaft. Turning it slightly will help it slide down. Position the head so that about 1/8" of the silver diamond surface is above the work surface. Make sure that the set screw sits over the flat side of the motor shaft and secure the head in place by tightening the set screw. **Important:** Always remember to sec ure to the flat side of the motor shaft. Mounting to the rounded side can scar the shaft preventing bit removal.

Filling the coolant reservoir tray:



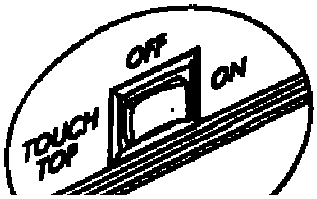
Coolant helps keep glass dust from becoming airborne, increases grinding speed, lubricates the diamond and increases the life of the head. Fill the reservoir by removing the work surface and pouring water into the tray up to the fill level indicator located in the tray center. You can also add a capful of Inland DiamondCoolant™ to the water to further the life of the bit. **Do Not Overfill** the reservoir. Causing coolant to flow out over the edges will damage the grinder.

Sponge placement:

The conventional way to get coolant onto the grinding head is to use a sponge held in by the BitSert™. Insert the sponge into the slot of the BitSert™. The bottom of the sponge should contact the coolant in the reservoir, and the upper portion should contact the diamond surface of the grinding head. You may need initially to wet the sponge. The sponge should always be in contact with the head. If a white paste develops on the head while grinding, either the sponge is not properly positioned on the bit or the coolant level is low. Periodically remove the sponge and rinse it out to remove grinding residue.

An alternative to the sponge is the patented InvisibleSponge™ system explained in the BitSert™ section on page **4**. It is a standard feature on the Impulse™ and available as an accessory (Stock #40035) for the Aero™.

The TouchTop™ Feature:



Your grinder has a three-way switch on the right side of your grinder. The grinder can be off, on or **TouchTop**™. When set for **TouchTop**™, the grinder turns on when you

put the glass and your hands onto the work surface to grind and turns off when you remove your hands. Using the **TouchTop**™ switch selection will extend motor life. You can adjust the sensitivity of the work surface to the feel you like best. When you adjust the sensitivity of the TouchTop, put a weight of about 1 lb. on top of the work surface. The weight will compensate for the load of the coolant that will be in the reservoir when it is being used. Under the reservoir is a sensitivity set screw: turning the screw tighter, or clockwise, decreases the sensitivity. By loosening the screw, or turning it counter-clock wise, you increase the sensitivity. Adjust the sensitivity of the work surface to your preference now.

Grinding:

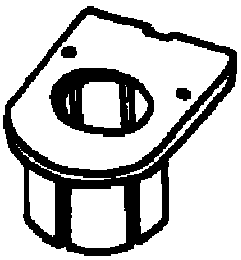
It is advisable first to test grind a scrap of glass to get a feel for grinding. Make sure the sponge is touching the grinding head. Turn the machine to either TouchTop™ or 'On'. Begin by pushing the glass into the diamond bit using light pressure at first. As you grind, move the glass back and forth across the head. Slowly increase the pressure until you feel comfortable with the grinding speed and your control. If you need to grind out a deep cut, use intermittent pressure. This allows coolant to clean the head making it more effective.

If you notice a white powder or paste while grinding, immediately stop and check the position of the sponge and the coolant level. Grinding without coolant on the head greatly reduces its life. When you notice that the head doesn't seem to grind as well and more pressure is needed to grind, the diamond is wearing and you need to expose a new section of diamond. Loosen the set screw and move the grinding head up on the shaft until you have exposed a new 1/8" section of diamond. Secure in place and reposition the sponge if needed. You have up to five 1/8" sections of diamond on a standard grinding bit to use before you need to consider replacing the entire bit

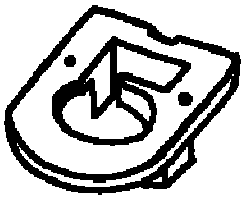
BitSerts™ and the InvisibleSponge™

Impulse™ grinders are equipped the InvisibleSponge™ BitSert™ for 1" bits. The InvisibleSponge™ BitSert™ eliminates the need for a sponge most of the time. It works by automatically pumping coolant to the bit while you are grinding. You will find it more effective to use a standard BitSert™ to use up the lowest section of diamond on the bit.

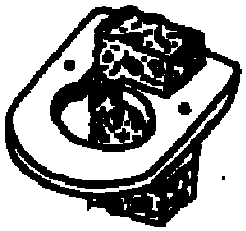
To use: Remove the standard BitSert™ and sponge and install the InvisibleSponge™ BitSert™ in the work surface. Adjust the position of the bit if necessary. Turn on an allow water to reach bit surface before grinding.



Invisible Sponge BitSert

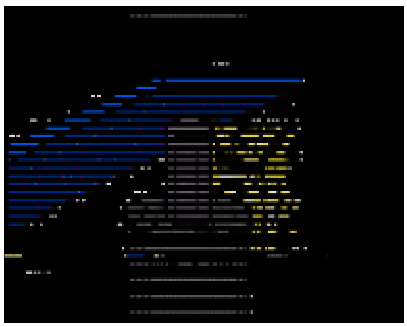


Standard BitSert



Standard BitSert with sponge in place

How to drill a hole:



The Impulse™ includes a 1/4" WB-8 bit for intricate grinding and drilling holes. Place the WB-8 bit onto the shaft so it sits on top of the WB-1. Secure to the flat of the shaft. Begin drilling the hole by holding the glass finished side down to the upper edge of the bit at about a 45^{o} angle. Refer to the diagram on page 7. You will need to hold a coolant soaked sponge against the bit as you drill the hole. As the bit begins to grind out the hole, slowly move the glass to a horizontal position. Continue to press the glass down onto the bit making sure that the sponge is supplying coolant to the bit. Reload the sponge with coolant as needed. Ease up on the pressure just before the bit comes through the back of the glass to reduce chipping. It is advisable to practice on a scrap of glass before you begin drilling on your final project.

Bits:

Diamond grinding heads, or bits, have actual diamond crystals. Our 1" and 3/4" standard bits have a 5/8" vertical section of usable diamond. Since most stained glass is 1/8" thick, by adjusting the bit up and down on the shaft you

have up to 5 usable sections of diamond. Inland makes bits in a variety of different sizes, grits and profiles to fit any grinder.

Reversible work surface:

Another of the unique features on both the Impulse™ and Aero™ is the reversible work surface: when one side becomes worn simply flip it over. This feature gives you twice the life of a standard grid surface.

Maintenance:

Maintenance to your grinder is minimal but important to prolonging the life and performance of the machine.

- The motor bearings are permanently sealed and lubricated so the motor is self maintaining.
- To prevent the bit from seizing on the shaft we suggest that you apply a small amount of MotorShaft Lubricant™ to the shaft every time you change or remove a bit. We also recommend removing the bit from the shaft if you will not be using the grinder for extended periods.
- To prevent damage to the motor shaft always make sure to mount the bit on the flat side of the shaft. Mounting to the round side can scar the shaft preventing removal of the bit.
- The reservoir is the part that requires the most maintenance. As ground glass accumulates in the reservoir, it can keep the bit from turning. Residue also hardens when it dries making it difficult to remove. Periodically the reservoir needs removal and cleaning. First, remove the bit and work surface. The reservoir just lifts off the grinder body. Remove the ground glass, rinse out the reservoir tray and reassemble.

Popular Aero™ and Impulse™ Accessories:

FaceShield™, Inland no. 50017: An clear acrylic shield that mounts on the back of your grinder for additional eye and face protection.

MagnaShield™, Inland no. 50018: This clear acrylic shield has a precision magnifying lens molded in for viewing intricate and small details.

SecondStory™ Work Surface, Inland no. 50001: An elevated work surface for grinding intricate pieces when using WB-8 bits.

GrinderStation™, Inland no. 50014: A washable vinyl, three-sided accessory that contains grinder spray.

MagnaLight™, Inland no. 76020: A light with swing away magnifier and extra mounts that's easy to move from grinder to bench top or other work areas.

SuperJet™ Cooling System, Inland no. 50002: Increases grinding speed and bit life. Includes two elevated work surfaces.

Service

If you have any questions or comments regarding the use and operation of your Impulse™ or Aero™, please call Inland Customer Service at 1-800-521-8428 Monday through Friday from 9:00 am to 5:00 PM Eastern Standard Time or contact at:

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