Review full manual instructions prior to use for important safety information. Always check Rockler.com to confirm that you are using the most recent manual version for your product.
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GENERAL SAFETY WARNINGS

This product is designed for specific applications as defined in the instructions and should not be modified and/or used for any other applications. Before using Bench Dog Hand Planes, read, understand and follow all instructions and safety information provided. KEEP THESE INSTRUCTIONS FOR FUTURE REFERENCE.

> Always confirm that you are using the most recent version of the Instructions and safety warnings for your product. To find the most recent version, find the product page on Rockler.com and click on the link to the Instructions.

> Before using this product, review and verify that all tools to be used with it have safety equipment installed and are in proper working order as defined by the tools’ owner’s manuals.

> Do not use this product until you have read and are confident you understand:
  - Product Specific Warnings (p. 4);
  - Unpack and Inspect the Tool (p. 5);
  - Components of a Typical Bench Plane (pp. 6-7);
  - Flattening the Sole (p. 8);
  - Honing the Blade (p. 9);
  - Adjusting the Blade (p. 10);
  - Periodic Maintenance (p. 10);
  - Troubleshooting (p. 11);
  - Smoothing Planes (p. 12);
  - Jack Planes (p. 13);
  - Jointing Planes (p. 14);
  - Block Planes (p. 15);
  - 3-in-1 Shoulder Planes (p. 16);
  - No 92. Shoulder Planes (p. 17).

> Do not use this product in any manner other than what is described in these instructions. Use only recommended accessories.

> Do not modify the product in any way unless instructed to by the instructions.

> Remain alert and use good judgment when using this product. Do not use this product if you are in any way impaired by medications, alcohol, drugs or fatigue.

> Dress appropriately and remove all jewelry, secure loose clothing and tie up long hair before using this product.
It is the sole responsibility of the purchaser of this product to ensure that any third party whom you allow to use this product reads and complies with all the instructions and safety precautions outlined in this manual prior to use.

Maintain these instructions and warnings as long as you own the product. Keep this booklet in a place where it will be readily available for reference.

Always wear safety glasses in compliance with ANSI safety standards and hearing protection and follow all standard shop safety practices, including:

- Keep your work area well lit and clean;
- Unplug all power tools before making any adjustments or changing accessories;
- Use dust collection tools and dust face masks to reduce exposure to dust;
- Use accessory safety equipment such as featherboards, push sticks and push blocks whenever appropriate;
- Do not use power tools in explosive environments (e.g., in the presence of flammable liquids, fumes or dust);
- Keep children and bystanders away from the tool operating area;
- Maintain proper footing at all times and do not overreach;
- Do not force woodworking tools.

These warnings and instructions do not represent the total of all information available regarding tool safety, use and technique. Please read the full manual before using this product and always seek out opportunities to learn more and improve your skills and knowledge.

⚠️ WARNING: Drilling, sawing, sanding or machining wood products can expose you to wood dust, a substance known to the State of California to cause cancer. Avoid inhaling wood dust or use a dust mask or other safeguards for personal protection. For more information go to www.P65Warnings.ca.gov/wood.

⚠️ WARNING: Cancer and Reproductive Harm – www.P65Warnings.ca.gov
Danger indicates a hazardous situation that, if not avoided, will result in death or serious injury.

Warning indicates a hazardous situation that, if not avoided, could result in death or serious injury.

Caution indicates a hazardous situation that, if not avoided, may result in minor or moderate injury or property damage.

Notice indicates important or helpful information and/or user tips.

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**WARNING**

**PRODUCT SPECIFIC SAFETY WARNINGS**

> Always wear safety glasses.

> Keep the blade sharp to avoid the plane catching on material which may cause it to move in an unexpected way or cause workpiece damage.

> Always check the stock you’re preparing to plane for any metal (nails, screws, staples, etc.) that could damage the cutting edge.

> Make sure that your stock is clamped or otherwise held securely.
Congratulations on the purchase of your Bench Dog hand plane.

You’ve chosen a high-quality tool that has been crafted to provide years of excellent performance and woodworking enjoyment.

The body of your plane is made from ductile iron, which is stronger and more impact-resistant than typical cast iron. The sole has been machined flat, then inspected and verified to be within a tolerance of 0.0015" to 0.002". Durable, comfortable handles are made from sapele, and fittings are machined from solid brass.

The blade is made from tempered high-carbon spring steel. On most planes, the bevel is ground to 25° and the back is machined flat. For best results, honing is recommended before use. See Honing the Blade, p. 9.

The box that your tool came in can be used for storage, and a fabric sock is included to provide extra protection against rust and corrosion.

Unpack and Inspect the Tool

Carefully remove the tool from the shipping carton. Be careful as the blade is sharp. Inspect the tool carefully for any damage that may have occurred during transit. Check for loose, missing or damaged parts. If damage has occurred or parts are missing, contact your local Rockler retailer or Rockler Technical Services at 1-800-260-9663 or support@rockler.com.

After you’ve inspected your plane, use denatured alcohol, mineral spirits or another solvent to wipe the protective coating off of the metal surfaces.
COMPONENTS OF A TYPICAL BENCH PLANE

Mouth: The opening in the plane’s sole through which the blade extends and the cut wood shavings are ejected. (Not shown)

Blade: Also called the iron, it features a sharp beveled edge that cuts the workpiece.

Sole: The cast iron base of the plane, to which all parts are secured directly or indirectly. To achieve good results, it is crucial that the sole be flat and that the sides be square to the bottom.

Handle: Also known as the tote or rear handle, it is shaped to fit the contours of the hand and typically is bolted to the sole.

Lever Cap: Holds the iron or blade assembly in place. The lever cap is secured with a screw.

Chip Breaker: Also sometimes called the cap iron, it mounts between the lever cap and the blade. It bends the shaving right at the cutting edge, in effect constantly breaking it and preventing a larger chip from tearing out in front of the blade.

Cap Iron Screw: Adjusts the amount of pressure the lever cap applies to the blade.

Lever Cap Screw: Holds the blade/chip breaker assembly to the frog. It should be tightened enough that the blade doesn’t wander during use, but not so much that turning the depth adjustment wheel becomes difficult. When in doubt, start with less pressure than you think is necessary and increase it only if you see the blade shifting during use.

Frog: Attached to the iron body of the plane with machine screws, it holds the blade/chip breaker assembly at the appropriate cutting angle. It adjusts forward and back to fine-tune the gap between the blade’s cutting edge and the front of the mouth. It also can be adjusted laterally to make sure the cutting edge is square to the sole.

Knob or Front Handle: Fastened to the plane body, it provides a handhold for good leverage at the front of the plane.
Frog Adjusting Screw: Allows the frog to be moved backward or forward to increase or reduce the gap between the cutting edge and the front of the mouth.

Depth Adjustment Wheel: Adjusts the projection of the iron, which directly affects the depth of cut and amount of material removed. Turning it clockwise increases the cutting depth; turning it counterclockwise reduces the depth.

Lateral Adjustment Lever: Skews the blade left/right to square it to the sole.
Flattening the Sole

For a hand plane to work well, the sole must be flat. Here’s an easy way to check the flatness: First, retract the blade so that it doesn’t project beyond the sole. With the plane upside down, hold a straightedge, such as a square or rule with edges that you know to be flat, diagonally across the sole both ways and then directly front to back on both sides. Look for any light between the straightedge and the sole. If you see daylight, the sole needs flattening.

Before flattening, make sure that all parts are installed and in tension. If you attempt to flatten the sole without the blade and cap iron installed, the sole could flex and won’t be flat once those parts are reinstalled.

To flatten the sole, first affix a sheet of coarse sandpaper temporarily to a dead-flat surface such as a piece of 1/4 thick plate glass, a slab of granite or the cast iron tool table. Use a permanent marker to draw lines across the sole at regular intervals along the full length of the plane.

Place the plane sole-down on the sandpaper. Holding it with even (but not too much) pressure at the front and back, work the sole over the abrasive. Stop periodically to check your progress and then continue until all lines begin to fade evenly. Stop once all the marks are removed.

Once the sole is flat, switch to a finer abrasive and work the sole over the paper with even pressure. By working your way through the increasingly fine grits of paper, you’ll effectively polish the sole smooth. Be sure to file away any sharp corners on the long edges of the sole and file a chamfer on the front and back to keep the sole from catching and gouging your workpieces.

When done flattening the sole, it’s a good idea to lubricate it with paraffin wax, which will help the plane slide more easily across the workpiece but won’t stain the wood or prevent glue from adhering.
Honing the Blade

A flat sole is necessary but not sufficient for effective planing: The blade also must be properly sharpened. For best results, honing is recommended before use.

An easy way to achieve a sharp cutting edge is to begin with a setup similar to the one used for flattening the sole — a dead-flat surface with progressively finer abrasives. You can use paper abrasives, oilstones, waterstones, diamond stones, lapping plates or ceramic stones — as long as the surface is flat. (You can find an array of sharpening tools and accessories at www.rockler.com/sharpening.)

First, remove the blade from the plane. Then flatten the back of the blade by working it in a circular motion on the abrasive, until you achieve a uniform scratch pattern.

To sharpen the bevel, it’s best to use a honing guide that will hold the blade at the prescribed angle for your particular plane. Once set, carefully work the blade across the abrasive, making sure to maintain even pressure. Move through progressive grits until you feel a burr form on the back edge. Then switch to the back face and work it across a fine abrasive to remove the burr.

Continue with this process, moving through progressively finer grits.
Adjusting the Blade

Control the projection of the blade and depth of cut by turning the depth adjustment wheel. Start with a slight blade projection, about the thickness of a human hair, and advance until you achieve the desired depth of cut.

Set the blade’s cutting edge parallel to the mouth by moving the lateral adjustment lever right or left as needed.

To reduce tear-out, set the edge of the chip breaker closer to the cutting edge of the blade and secure by tightening the lever cap screw.

Control the size of the mouth opening by loosening the frog adjustment screw, moving the frog as needed and retightening the screw.

Periodic Maintenance

• Disassemble the plane and clean off accumulated dirt, grease, resin and rust.

• Keep rust at bay by maintaining a light coating of oil on metal surfaces if you’re putting the plane away for a while. Make sure all moving parts are periodically oiled with light machine oil.

• When setting a plane down, put it on its side. If you put it sole down, you can damage the cutting edge.

• Make sure that no shavings are trapped between the blade and the frog. Trapped shavings can skew the blade, making it difficult to center it in the mouth. Shavings also can reduce the amount of contact between the cutter and the bed, resulting in chatter. Use a brush or a pointed dowel to clear the shavings. Never use a screwdriver or other metal tools, as they may dull the cutting edge.

• Store your plane in the included fabric storage sock. This also will help prevent rust and corrosion.
**Troubleshooting**

**Symptom:** Tear-out, even though the blade is sharp.

**Diagnosis/Solution:** The chip breaker is set too far back, or the plane’s mouth is open too much. Adjust the chip breaker closer to the end of the blade and move the frog to narrow the plane’s mouth.

**Symptom:** Plane leaves tracks on a board’s surface.

**Diagnosis/Solution:** The blade isn’t level, or there’s a nick in the blade. Use the lateral adjustment lever to make sure the cutting edge runs parallel to the mouth opening.

**Symptom:** Blade chatters, bouncing up and down as it cuts.

**Diagnosis/Solution:** Blade may not be clamped down tight enough, or the frog may not be flat.

**Symptom:** Plane suddenly stops cutting.

**Diagnosis/Solution:** Blade may have moved back; adjust the blade depth. Shavings might be trapped between the blade and chip breaker. Remove the shavings and check to be sure the chip breaker is set close enough to the cutting edge. Check the size of the mouth opening, too.
Smoothing Planes

Smoothing planes are relatively short and wide and are ideal for preparing the wood for final finishing – hence the name. Often the last planes used on a wood surface, they are capable of producing a finish that equals or surpasses that left by sandpaper. They also work well for trimming parts.

The No. 4 Smoothing Plane is arguably the most commonly used bench plane and a good starter plane for those new to woodworking. With a 2” wide blade, it is heavy enough to produce a smooth cut but not so heavy that it is tiring to use.

The No. 4½ Smoothing Plane is slightly longer and wider. Its wider blade allows the user to plane a surface with fewer cuts, and its slightly greater heft helps keep the cut smooth.
Jack Planes

These “jack of all trades” owe their nickname to their general-purpose utility. Also called fore planes, Jack Planes often are used to flatten rough stock and bring it closer to final size. But they also can be useful for smoothing and jointing, depending on the size of the workpiece.

The No. 5 Jack Plane is 2½" wide and 14" long, with a 2" wide blade. The No. 5½ Jack Plane is 15" long and 3" wide, with a 2¾" wide blade and a bit more heft.

The Low Angle Jack Plane is a hybrid design that is lighter than a conventional bench plane and easier to set up. There’s no chip breaker, and the hefty blade is set bevel-up at 12°, providing maximum support of the cutting edge and a low angle of attack. The mouth opening is easy to adjust.

No. 5 Jack Plane

Low Angle Jack Plane
Jointing Plane

The long sole of the No. 7 Jointing Plane – around 22" long – can span high spots on uneven stock, allowing it to trim off the peaks with progressive cuts to gradually flatten the edges of a workpiece. Jointing planes also are known as try planes. In practice, any bench plane can be used to joint an edge straight so long as it’s no more than three times the length of the sole.
Block Planes

Typically small enough to be used with one hand, block planes are versatile tools. Originally used to surface the end grain of butcher’s blocks, they can smooth milling marks, chamfer sharp edges, true up miters and clean up glue lines. They also can trim small amounts of wood from the edges of doors to fit them more precisely into cabinets or even entryways. Because their blades typically are set at a lower angle, with the bevel facing up, they’re especially effective at slicing end grain.

The No. 60½ Low Angle Block Plane is $6\frac{3}{16}$" long by $1\frac{13}{16}$" wide and features a $1\frac{5}{8}$" wide blade set at $12^\circ$ for great performance especially on end grain and soft woods.
3-in-1 Shoulder Plane

True to its name, the 3-in-1 Shoulder Plane packs the functionality of three tools into one reconfigurable plane. It can be used as a full-length shoulder plane to fine-tune the shoulders and faces of tenons. It can be configured as a bullnose plane, with a shorter nose than the shoulder plane, to refine rabbets. And it can be configured as a chisel plane, with no front piece, so it can reach into the intersections on stopped dadoes, rabbets or mortises to create sharp, clean corners.
No. 92 Shoulder Plane

The low-angle blade of the No. 92 Shoulder Plane spans the full width of the tool, making it perfect for trimming the shoulders and faces of tenons and forming rabbets. It also can flatten the high spots on the tongue of a solid wood table being fitted with a breadboard end and fine-tune grooves.