charnwood

Woodworking machinery at its best!

BENCH GRINDER CHISEL SHARPENING SYSTEM
OWNERS MANUAL
MODEL: BGCS4

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GENERAL SAFETY RULES

WARNING: Do not attempt to operate the machine until you have read thoroughly and understood completely all instructions, rules, etc. contained in this manual. Failure to comply may result in accidents involving fire, electric shock, or serious personal injury. Keep this owner's manual and review frequently for continuous safe operation.

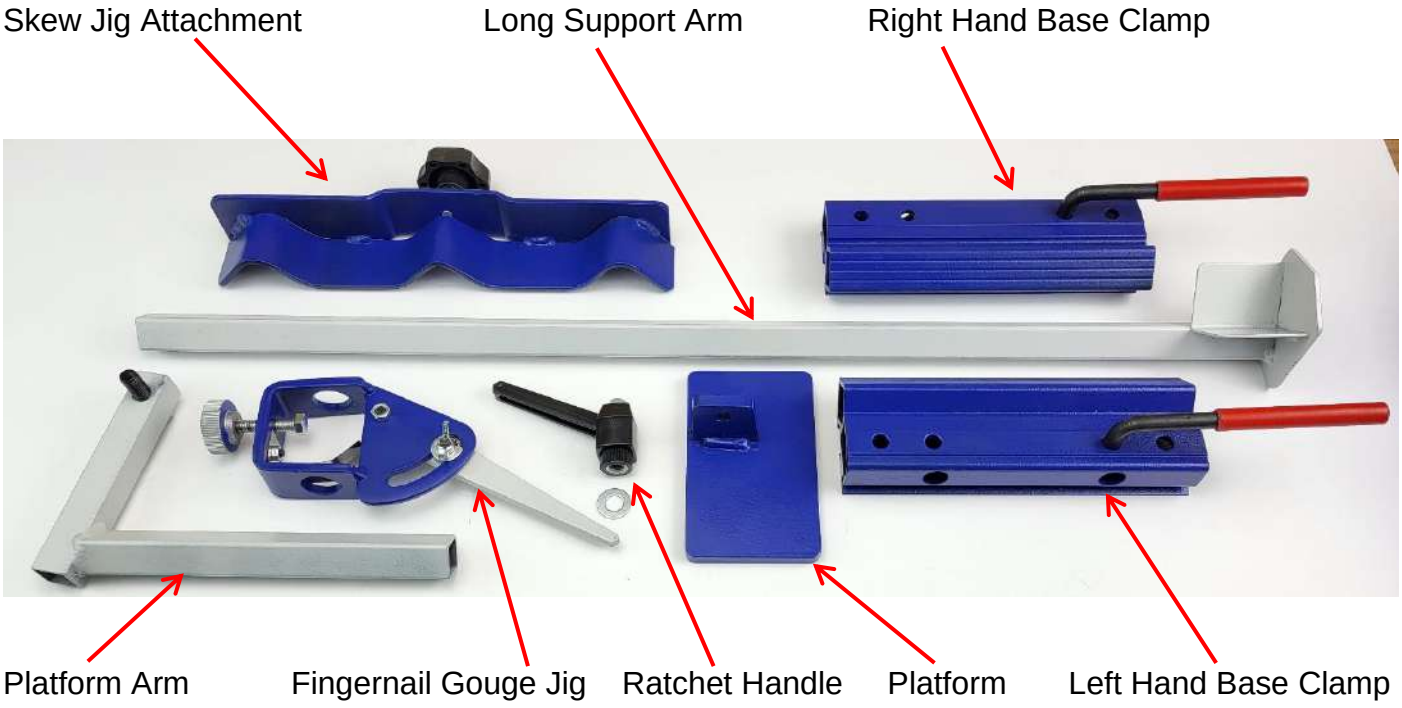
1. Know your machine. For your own safety, read the owner's manual carefully. Learn its application and limitations, as well as specific potential hazards pertinent to this machine.
2. Make sure all tools are properly earthed.
3. Keep guards in place and in working order. If a guard must be removed for maintenance or cleaning, make sure it is properly replaced before using the machine again.
4. Remove adjusting keys and spanners. Form a habit of checking to see that the keys and adjusting spanners are removed from the machine before switched it on.
5. Keep your work area clean. Cluttered areas and workbenches increase the chance of an accident.
6. Do not use in dangerous environments. Do not use power tools in damp or wet locations, or expose them to rain. Keep work areas well illuminated.
7. Keep children away. All visitors should be kept a safe distance
8. from the work area.
9. Make workshop childproof. Use padlocks, master switches and remove starter keys.
10. Do not force the machine. It will do the job better and be safer at the rate for which it is designed.
11. Use the right tools. Do not force the machine or attachments to do a job for which they are not designed. Contact the manufacturer or distributor if there is any question about the machine's suitability for a particular task.
12. Wear proper apparel. Avoid loose clothing, gloves, ties, rings, bracelets, and jewellery which could get caught in moving parts. Non-slip footwear is recommended. Wear protective hair covering to contain long hair.
13. Always use safety glasses. Normal spectacles only have impact resistant lenses. They are not safety glasses.
14. Do not over-reach. Keep proper footing and balance at all times.
15. Maintain the machine in good condition. Keep the machine clean for best and safest performance. Follow instructions for lubrication and changing accessories.
16. Disconnect the machine from power source before servicing and when changing the blade.
17. Never leave the machine running unattended. Turn the power off. Do not leave the machine until it comes to a complete stop.
18. Do not use any power tools while under the effects of drugs, alcohol or medication.
19. Always wear a face or dust mask if operation creates a lot of dust and/or chips. Always operate the tool in a well ventilated area and provide for proper dust removal. Use a suitable dust extractor.

Risk of Injury.
Never reach into
a moving part

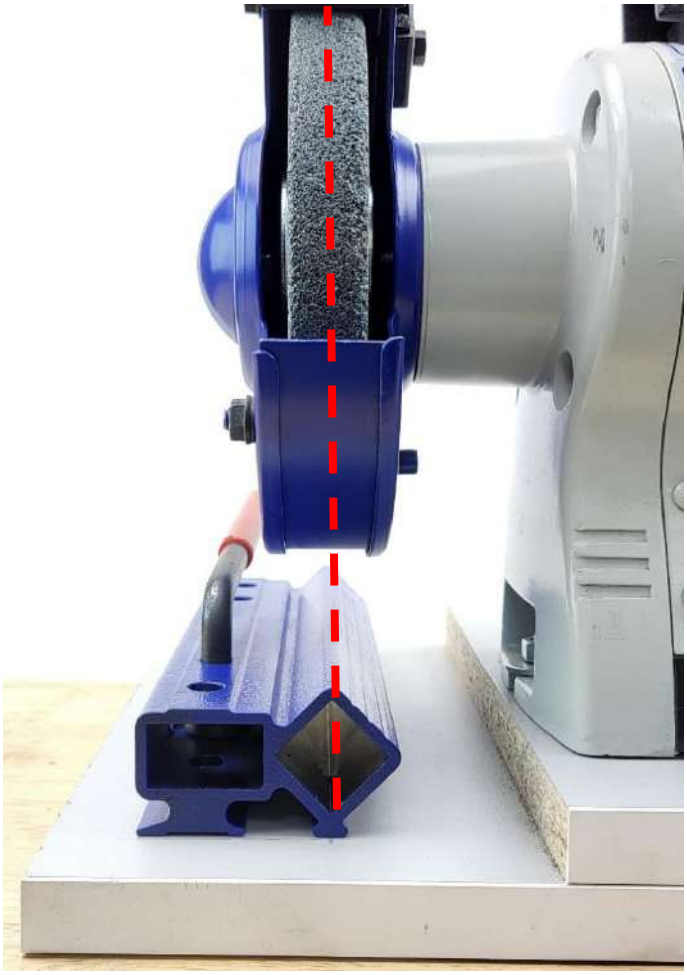
Wear Eye
Protection

Wear Ear
Protection

BGCS4 BENCH GRINDER CHISEL SHARPENING SYSTEM OVERVIEW



Setting Up



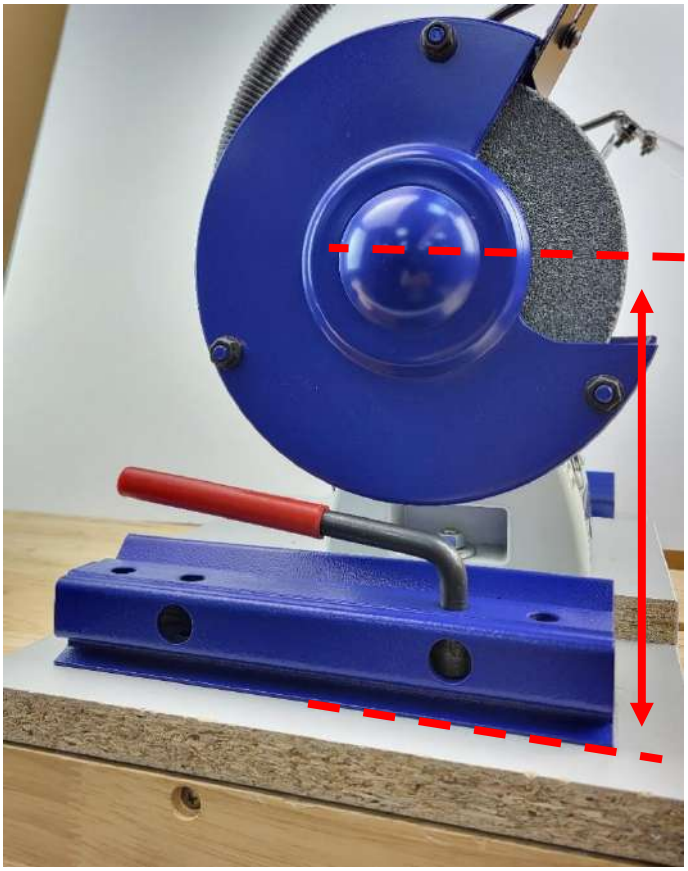
For your new Charnwood Grinder Sharpening System to work best, the grinder and your grinding jig should both be securely mounted to a workbench.

If you need to move grinder around your workshop, then use a base board to mount the sharpening system onto.

It is important that the position of the wheel and the jig are fixed in relation to each other, to get repeatable results.

The Base Clamps must be mounted under the grinding wheels with the centre of the grinding wheel in line with the centre of the clamp.

The front of the base clamp should be aligned with the front edge of the grinding wheel.



The bottom of the base clamp must be mounted between 160 and 165mm below the centre line of the grinding wheel.

For smaller grinders, it may be necessary to mount the grinder on a second piece of board to raise the height.

Note: Any rubber feet should be removed from the grinder before mounting on a board.

Charnwood BG6 Grinder Package

The bench grinder sharpening system is available as a package with the Charnwood BG6 bench grinder.

We recommend using 19mm (3/4”) thick material to create a base board 420mm x 250mm.
Then a second piece 170mm x 250mm to lift the grinder to the correct height for the sharpening system.

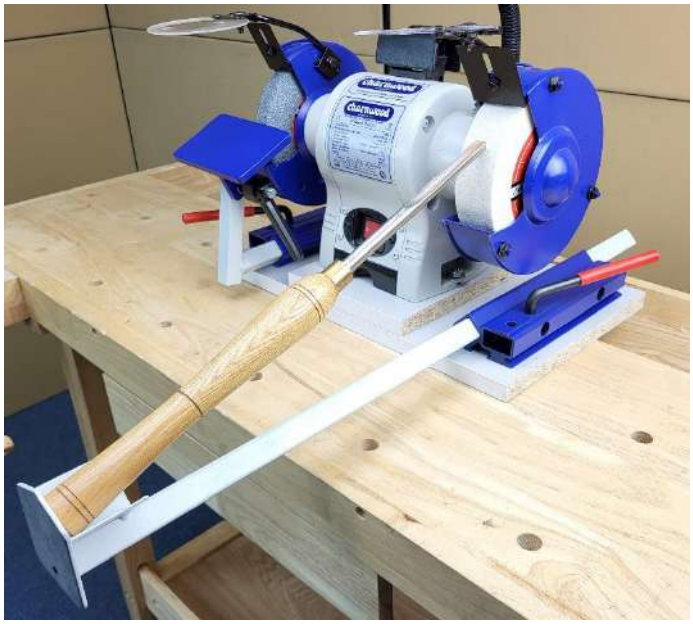
The base clamps should be mounted 25mm from the front edge of the board and held in place using 4 wood screws.

Instructions for Grinding

There are four ways to support your tools for grinding each used for different types of tools:

1) Long Support Arm	Bowl gouges, Roughing gouges
2) Skew Jig Attachment	Flat or curved Skews, Scrapers
3) Fingernail Gouge Jig	Fingernail gouges, Spindle gouges
4) Platform	Parting tools, Straight edge skews, Bench chisels

Using the Long Support Arm



The Long Support arm can be used to grind standard (flat grind) bowl gouges and roughing gouges.
They are both ground with the same technique.

1. Slide the Long Support Arm into the base clamp.

2. With the grinder turned off, rest the handle of the tool in the V pocket of the long support arm.

3. Slide the long support arm in or out of the base clamp until the bevel of your gouge lays flat on your wheel surface when viewed from the side.

4. Lock the long support arm in place using the cam lock lever on the base clamp.
5. Lift the edge of the chisel off the wheel and turn the grinder on.

6. Gently lower the gouge onto the spinning wheel and allow the grinder to make a small mark on your chisel edge.

7. Lift the chisel completely off the wheel and long arm support and inspect the grind mark on the bevel.

8. If the grind marks are even on the whole bevel then the arm is adjusted correctly.

9. If the grind marks are only on the front cutting edge: Shorten the support arm slightly, push it further into the clamp.

10. If the grind marks are only on the heel/rear edge away from the cutting edge: Lengthen the support arm slightly, pull it further out of the clamp.

11. Once the position is set correctly, sharpen the gouge by touching the tool on the wheel and rolling slowly to either side keeping the tool moving to prevent excessive heat build up.

Using the Skew Jig Attachment

The Skew Jig attachment will perform the skew angle grinding on flat and curved skews and scrapers.

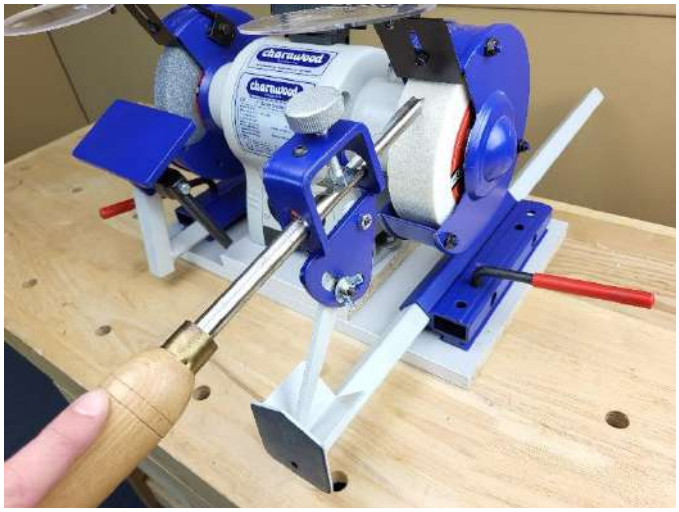
1. Place the Skew Jig attachment over the end of the Long Arm support and hold in place by tightening the round knob.

2. Set the correct angle in the same way as the standard gouge by adjusting the Long Support arm. You can flip the tool over to repeat the grind on the opposite side.

Minimal movement will result in a flat grind and a slight sweeping motion can produce a more curved grind.

These types of tools may require a light stropping on a leather strop to remove the burr that is developed.

Using the Fingernail Gouge Jig



The Fingernail Gouge Jig will consistently produce repeatable geometries on turning tools such as fingernail and spindle gouges.

With regular grinding jigs these profiles can be difficult to replicate and maintain. The Fingernail Gouge Jig when used in conjunction with the Long Support Arm will easily and consistently replicate these grinds.

1. Insert the tool into the jig so that 50mm is protruding from the front.

2. Tighten the locking knob to hold it in place.

3. Set the centre bevel angle by moving the Long Support arm as required.

4. Lock the long support arm in place using the cam lock lever on the base clamp.

5. Once this is set, adjust the angle of the jig arm using the wing nut. There are 3 pre-set angles, experiment with these until you find the correct one to match your chisel.

6. Once the position is set correctly, sharpen the gouge by touching the tool on the wheel and rolling the whole jig slowly to either side keeping the tool moving to prevent excessive heat build up.

It is a good idea to make notes of settings for your different tools to make repeatable grinds easier.

Using the Platform

The Platform can be used to sharpen scrapers, parting tools, flat or straight edge skews as well as standard wood chisels.

1. With the grinder turned off slide the assembled platform into the base on either side of the grinder.
2. Lock the platform arm in place using the cam lock lever on the base clamp.

3. Adjust the platform so that the tool meets the wheel at the required angle then adjust the platform arm to ensure the gap between the platform and wheel is at its minimum.

With standard wood chisels utilising this attachment to re-grind or set initial angles works best in conjunction with final sharpening and honing tools.

Cool the edge often as chisels can soften if turned blue with heat.

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Updated June 2023

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