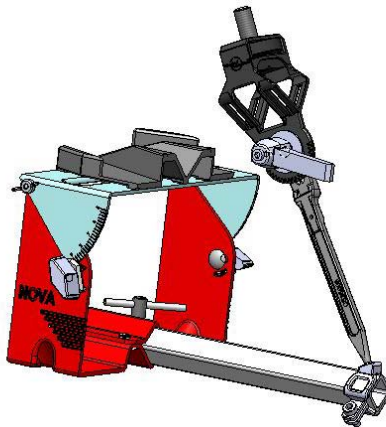


NOVA™

Sharpening Center

Accessory

Instruction Manual



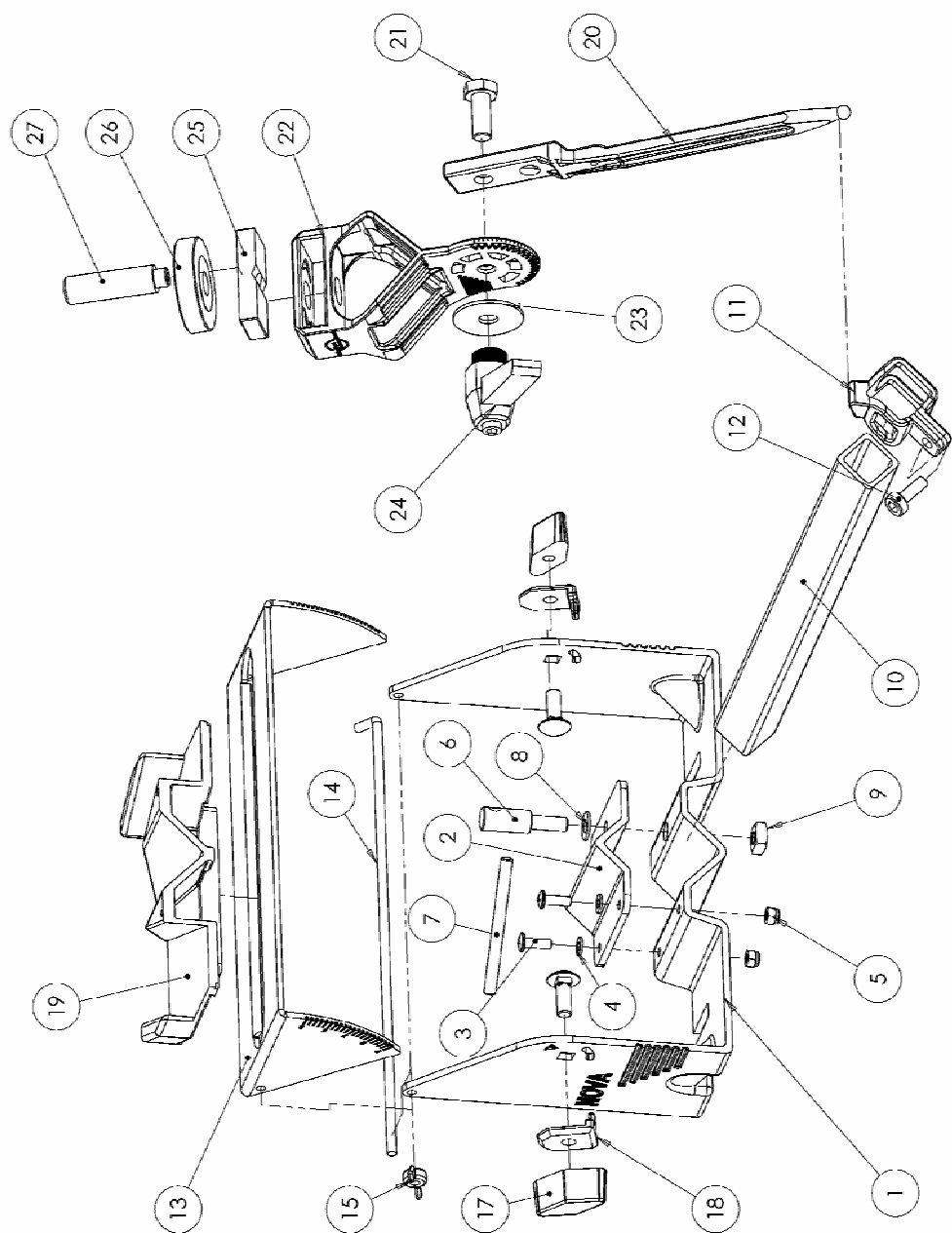
Nova Sharpening Center

Perfect for all your Sharpening Needs.
Fast and easy to use.

READ THIS MANUAL CAREFULLY AND

**BECOME THOROUGHLY FAMILIAR WITH
OPERATIONS BEFORE USE**

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PART NO: 35018



Part Lists

Part No.	Product Code	Qty	Description	Part No.	Product Code	Qty	Description
1	35000	1	Sharpening base	15	Wing Nut M4	1	Wing Nut M4
2	35011	1	Sharpening base upper clamp	16	BNMZ0620	2	Sharpening base coach bolt
3	MPB0412	2	M4X12 screws	17	35017	2	Plastic knob
4	FW04	2	Nyloc Washer M4x8x1	18	Wing Nut M6	2	Top plate locking tab
5	NHZ4	2	Nut Hex M4 ZP	19	35002	1	Slide platform
6	35012	1	Tee Lock body	20	35009	1	Finger grind rod
7	35013	1	Tee Lock arm	21	SZ0820	1	Hex Bolt M8X20 ZP
8	FW06	1	Nyloc Washer M6x12x1	22	CS35008	1	Finger grind clamp
9	NHZ6	1	Nut Square Hex M6 ZP	23	FW08	1	Nyloc Washer M8x16x1
10	35010	1	Finger grind arm	24	35023	1	Finger grind nut
11	35022	1	Finger grind slider	25	CS35015	1	Clamp plate
12	C05015	1	Cap screw M5X15	26	35016	1	Clamp wheel
13	35001	1	Sharpening base top plate	27	35020	1	Clamp bolt
14	35021	1	Sharpening base top plate locking rod				

Product Assembly

Thank you for purchasing our Teknatool Nova Sharpening Centre which is designed to give you precise control and grinding economy with your chisel sharpening. To sharpen tools successfully, it is important to have a support system that gives the control needed during grinding.

The Nova Sharpening Centre has been developed with both the woodworker and the woodturner in mind. It is capable of supporting most woodturning and woodworking hand chisels.

It provides the functions of a precision machine in an inexpensive product. The machine sideways as well as giving exact control and precision also functions to precision dress the stone with ease. (See section on wheel dressing)

The Nova Sharpening Centre will give you many advantages to your chisel sharpening solutions.

The V section and diagonals on the sliding platform provide a long bearing surface to:

- Give stability to the tool in the jig
- Provide the ability to replicate the tool bevels with ease.
- Removes the necessity to have to regularly grind off a secondary bevel causing unnecessary tool wear.
- Saves time grinding with minimal tool wear.

Once bevel is established then only a quick and light pass over the stone is needed to retouch the edge.

Sharpening Centre Specifications and Features.

Dimension: (L x H x W)

Grinding Stand: 150 x 250 x 220mm

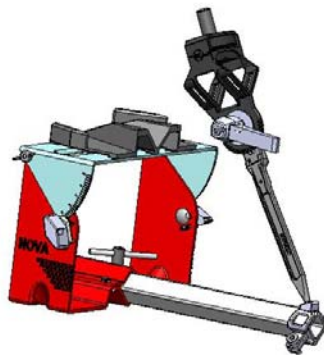
Finger Grinding unit: 250 x 50 x 50mm

Weight: 1.6 kg (total)

Materials: Cast High Tensile carbon steel (Finger Grind)

Punched Sheet Metal (Grinding Stand)

Die cast Aluminum (Grinding Platform)



Main Features:

- Designed with wood turning experts to create the best sharpening tool on the market.
- Finger grinding unit combined with the stationary grinding stand resulted in a high efficiency grinding tool allowing minimal tool wear covering a wide range of grinding applications.
- Design and manufactured using computer modeling software gives the product good accuracy, high strength and great economical values.
- Finger grinder clamp has enormous capacity available for large chisels up to 1" inch
- Quickly retouch bevel edge with newly designed finger grind bracket.
- Strong / light-weight aluminum platform unit offers set guide angles for simple, easy grinding.
- Ability to replicate the tool bevels with ease and simplicity.
- Grinds perfect bevel on deep and shallow gouges, roughing gouges and skews and scrapers.
- Hollow ground bevel offers the ability to hone the edge in ease, and create amazing sharpness.
- Also designed to sharpen various sizes of drills.
- Quick and easy to setup.
- Suits both 6" (150mm) and 8" (200mm) grinders.
- Will work with either the right or left hand grinding wheel.
- Very easy and accurate dressing of grinding wheel imperative for accurate sharpening results.

SAFETY



Warning! Failure to follow these rules may result in serious personal injury.

- It is important to protect your eyes!! Wear approved safety glasses which comply with current ANSI Standard Z87.1 (USA) at all times when performing grinding, wheel dressing or woodturning operations. We also strongly recommend that a full face shield be used at all times.
- During wheel dressing a dust mask must be worn.
- Follow safety directions that are supplied with your grinder.
- Do not make any adjustments to the Sharpening Centre until the grinder is switched off and the wheel has stopped revolving.
- Maintain a firm grip of chisel and always use gentle grinding action.

GENERAL SAFETY RULES

1. **FOR YOUR OWN SAFETY, READ THE MANUAL BEFORE OPERATING THE TOOL.** Learn the machine's application and limitations plus the specific hazards peculiar to it.
2. **ALWAYS USE A FULL FACE SHIELD-Strongly recommended** (must comply with ANSI STANDARD Z87.1 -USA) Everyday eye-glasses usually are only impact resistant and safety glasses only protect eyes. A full face shield fill protect the eyes and face. Also use face or dust mask if cutting operation is dusty.
3. **WEAR PROPER APPAREL.** Do not wear loose clothing, gloves, neckties, rings, bracelets or other jewelry which may get caught in moving parts. Non slip footwear is recommended. Wear protective hair covering to contain long hair.
4. **USE EAR PROTECTORS.** Use ear muffs for extended period of operation. Use muffs rated to 103 DBA LEQ (8 hour).
5. **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. The DVR Lathe is intended for indoor use only. Failure to do so may void the warranty.
6. **KEEP WORK AREA CLEAN.** Cluttered areas and benches invite accidents. Build up of sawdust is a fire hazard.
7. **KEEP CHILDREN AND VISITORS AWAY.** The Nova Sharpening Center is **not recommended** for children and infirm. Such personnel and onlookers should be kept a safe distance from work area.
8. **MAKE WORKSHOP CHILDPROOF** with locks, master switches, or by removing starter keys.
9. **GROUND ALL TOOLS.** If the tool is equipped with a three prong plug, it should be plugged into a three hole electrical receptacle. If an adapter is used to accommodate a two prong receptacle, the adapter lug must be attached to a known ground. Never remove the third prong.
10. **MAKE SURE TOOL IS DISCONNECTED FROM POWER SUPPLY** while the motor is being mounted, connected, or reconnected.
11. **DISCONNECT TOOLS from wall socket** before servicing and when changing accessories such as blades, bits, cutters and fuses etc.
12. **AVOID ACCIDENTAL STARTING.** Make sure switch is in the Off position before plugging in power cord.
13. **NEVER LEAVE MACHINE RUNNING UNATTENDED.** Do not leave machine unless it is turned off and has come to a complete stop.
14. **KEEP GUARDS IN PLACE** and in working order.
15. **USE RIGHT TOOL.** Do not use a tool or attachment to do a job for which it was not designed.
16. **USE RECOMMENDED ACCESSORIES.** The use of improper accessories may cause hazards.
17. **DON'T FORCE TOOL.** It will do the job better and be safer at the rate for which it was designed.
18. **MAINTAIN TOOLS IN TOP CONDITION.** Keep tools sharp and clean for best and safest performance. Follow instructions for lubricating and changing accessories.
19. **NEVER STAND ON TOOL.** Serious injury could occur if the tool is tipped or if the cutting tool is accidentally contacted.
20. **REMOVE ADJUSTING KEYS AND WRENCHES.** Form a habit of checking to see that keys and adjusting wrenches are removed from tool before turning it on.
21. **DON'T OVERREACH.** Keep proper footing and balance at all times.
22. **DIRECTION OF FEED.** Feed work into a blade or cutter against the direction of rotation of the blade or cutter only.
23. **ATTENTION TO WORK.** Concentrate on your work. If you become tired or frustrated, leave it for awhile and rest.
24. **SECURE WORK.** Use clamps or a vice to hold work when practical. It's safer than using your hand and frees both hands to operate tool.
25. **CHECK DAMAGED PARTS.** Before further use of the tool, any part that is damaged should be carefully checked to ensure that it will operate properly and perform its intended function. Check for alignment of moving parts, binding of moving parts, mounting, and any other conditions that may affect its operation. Any damaged part should be properly repaired or replaced.
26. **DRUGS, ALCOHOL, MEDICATION.** Do not operate machine while under the influence of drugs, alcohol, or any medication.
27. **DUST WARNING.** The dust generated by certain woods and wood products can be harmful to your health. Always operate machinery in well-ventilated areas and provide means for proper dust removal. Use wood dust collection systems whenever possible.

SETTING UP THE NOVA SHARPERNIG CENTER

The positioning of the platform in relation to the centre height of the grinding wheel is critical to ensure that the marked positions will achieve the correct angles.

NOTE: Some grinder model designs may not allow the unit to be positioned as close to the grinding wheel as required below. You may need a gap much larger than 3mm.

The unit will still operate quite satisfactorily with a larger gap but you will need to set your own angles. As the gap widens it has the effect of making all the angles longer e.g. the pre set position A of 30 degrees will now measure somewhat less.

1. Use an adjustable set square or small spirit level to move the sharpening centre top plat to a horizontal position. Lock the platform in the horizontal position using the plastic knobs.

2. The top of the top plate needs to be positioned 10mm (3/8" approx.) above the centre of the grinding wheel (to ensure accuracy of marked angle settings). This usually means that the Sharpening Centre needs to be placed on a wood packing piece to raise it up to the correct height. With 6 inch grinders the packing piece required is about 6mm (1/4") thick, for 8 inch grinders about 25mm(1"). The exact size will vary with each grinder make and model, so you need to check it against your grinder.

Remove guard of grinder (replace after measuring). With the Sharpening Centre in front of the grinder, use a ruler or straight edge placed on top of the top plate so that it projects out next to the grinding wheel. Now measure the distance up from the straight edge to a point 10mm above the centre. This measurement is then the thickness required for your packing piece to bring the top of the platform 10mm (3/8" approx.) above centre height of grinding wheel. Remember to add on the thickness of your straight edge to the measurement.



3. Make your packing piece and position under Sharpening centre in front of grinder. The unit needs to be placed such that the pivot point of the finer grinding jig is central on the grinding wheel.



Mark a position in the base slots about 10-12mm in from the front edge of the slots.



Remove Sharpening Centre and drill fixing holes through packing piece and into bench. Screw the unit loosely in place.

4. Using a ruler placed on top of the platform and measure a gap of 3mm from the edge of the top plate to the wheel. With the ruler in place tighten the screws attaching the unit to the bench.

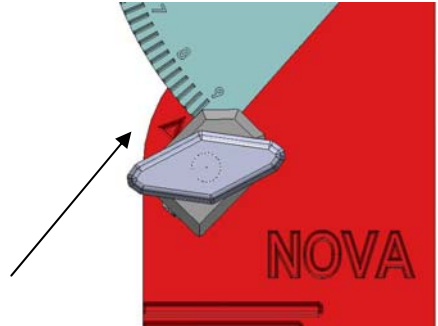


5. As you tighten the screws the distance will move so keep measuring and gently tap the unit into place before you lock the screws tight.



TO POSITION THE TOP PLATE:

Setting the appropriate angle on the top plate and using the correct guides will enable the beginner to achieve the correct and repeatable bevel on all turning tools, plane irons and chisels. First undo the plastic knobs at either side of the frame to allow the top plate move.



Positions can be set by lining up the numbers on the top plate to the arrow on the base.

The marked positions, 5-9 on the right hand upright of the Sharpening Centre frame are the degree of angle that the platform (50-90 deg), is on in relation to the back edge of the frame.

To establish the grinding angle simply minus 90 degrees from the marked degree. Remember that the grinding wheel is round and depending on the diameter of the wheel, produces a natural "hollow grind" to the front face of the chisel. The radius of the stone will produce a 3-5 degree clearance angle when the top plate is set to 90 degrees, ideal for scrapers.

Once you have the angle setting, check with an angle gauge such as the Nova 10 in 1 part number 10051 and make fine tuning adjustments as needed.

For example a skew chisel needing a 15 degree angle:

- As the desired angle is 15 degrees you minus 90 away from the marked degrees on the top plate. This will leave 75 degrees meaning the platform has to be on an angle of 75 degrees
- By loosening the wing nuts you can angle the top plate and line up the arrow on the frame with halfway between 7 and 8 (between 70 – 80 deg.)
- This will give you the desired angle of 15 degrees
- Lock both plastic knobs after top plate has been positioned.

SKREW CHISELS: The correct angle for skew chisels (15 degrees) is set at 75 degrees on the top plate scale. $90 - 15 = 75$ degrees.

BENCH PLANES/GENERAL WOODWORKING CHISELS: An angle of 25 degrees is set for these tools by 65 on the top plate scale. $90 - 25 = 65$ degrees.

PARTING TOOLS: Can be sharpened on the jig although there is no pre marked position for them. They should be placed on the top of the platform (V jig removed)

and the angle adjusted until it corresponds to the parting tool. A position can then be marked on the jig.

Achieving the accuracy of these angles will depend on the accuracy of your set up.

However these angles are suggestions only and you may wish to mark the angles you already have on your tools or your own preferred angles on the frame.

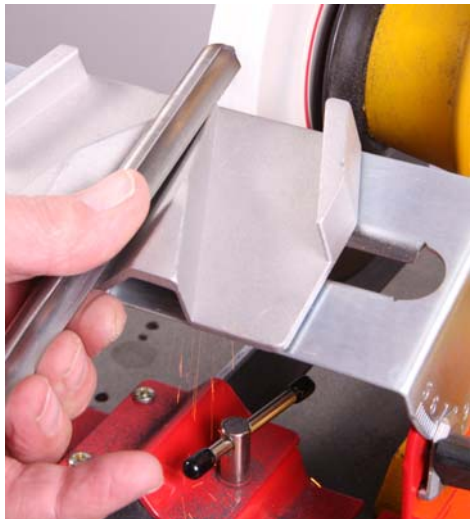
Certain specialised tools e.g. skew gouges, parting tools will need a special setting. Remember there is no 'right' angle for your bevels - use the ones you feel are the best for your turning.

GRINDING TECHNIQUE

It is important to develop a gentle touch while grinding tools.

Overheating by using too much force is probably the major cause of tool damage. Tools should be gently moved towards the stone until light contact is made. Light contact should be maintained throughout the grinding process.

Use the 'V' section of the sliding platform to support bowl gouges, detail (spindle) gouges and roughing gouges. **The skidding platform should be positioned with the apex point of the triangle at the top - for larger gouges you may want to use it around the other way.**



The diagonal sections are for skew chisels. Either side shoulder of the jig can be used for scrapers or woodworking chisels.

Maintain firm contact between the tool and the guide. Keep the platform and the jigs free of grinding grit with regular cleaning.

The following techniques are a suggested method only. Practise all the techniques first against a stationary stone until you feel confident enough to proceed to actual grinding.

You may wish to modify the chisel shapes and techniques to suit your own style. The most difficult task at the beginning is to establish the correct bevel. This needs careful work to avoid overheating. Once the bevel has been established then it needs only a light, quick regrind.

BOWL GOUGE: Set the plate to position at 45 degrees. A new bowl gouge is ground to a portion of a cone which leaves a flat spot in the middle - this gets many novice turners in trouble.

Gripping Chisel: Use the two fingers next to thumb on left hand to hold chisel shaft firmly into the V section of jig. Use the right hand to grip the shaft against the back of the jig. Practise a balance of tension between your two hands to keep shaft in contact with jig and prevent rocking. Use the right hand to feed the chisel gently into the stone to make light contact. When you lift the chisel off the jig to reposition, maintain the same grip with right hand so your chisel will be at the same position to take the next pass.

To form a point at leading edge: Start with flute a little off 12 o'clock and grind each half separately. Rotate the tool to grind one side. To maintain an even wear on the grind stone, reposition by sliding the jig along the top platform, after each pass - Alternatively you could slide the jig at the same time as you rotate chisel but this requires more practice. If you want a rounded leading edge just to a full grind from side to side with the last passes.

CUT BACK WINGS: Some styles require the wings of the bowl gouge to be sloped back considerably. This is best achieved by removing the jig from the top platform. Alternatively you can slide the jig across as you do the last section of the bevel at the sides.

DETAIL (SPINDLE) GOUGE: Set the top plate to 30 deg. or 25 deg. positions. This tool is held in a similar manner to the bowl gouge. Once again position gouge near the grindstone and then gently advance with the right hand until the bevel gently touches wheel.

A detail gouge needs a continuous bevel. This means you need to rotate the chisel from one side to the other in a continuous action. Start with chisel positioned over on one side. It is best to position your right hand grip so that you are able to twist the chisel through one complete pass without needing to reposition your grip. Use the same left hand grip as with bowl gouge above. You need to allow gouge to rotate under your fingers.

Practise this until you get a smooth motion.

Rotate chisel to make one pass then shift along stone to make the next pass - this will even out the wear on the stone.

SKEW CHISEL: Set the top plate in full down position as described above. Set the chisel into the right hand diagonal of the jig. Use the three middle fingers of the left hand to hold the chisel flat against the jig. Use the small finger and thumb against the sides of the jig - these fingers allow you to exert pressure to slide the jig back and forth. Sharpen this side of bevel first then reposition skew in the left hand diagonal and sharpen other side.

Use gentle pressure against the stone as before and use the right hand to control the feed and hold position against the stone.

It is important to first establish the correct angle again the on skew. Because it has such a long bevel this could take a lot of gentle regrinding. You don't necessarily have to remove all old bevels but you need to establish a clear and broad useable bevel.



Practise this until you get a smooth motion.

Rotate chisel to make one pass then shift along stone to make the next pass - this will even out the wear on the stone.

USING THE FINGER JIG:

Preparation.

Remove the Sharpening Base Top Plate (part 13) by removing the plastic knob (part 17) and withdrawing the top plate locking rod (part 14)

About the Finger Grind Jig.

Use of the finger grinding unit allows the user to tailor the grind on their gouges to suit their preference, from a slight sweep back on the wings of the flute to quite extreme grinds. Once the ultimate grind is achieved and the settings are noted, these grinds can be faithfully repeated with minimal fuss and waste of gouge material.

This versatile jig can be used to sharpen Bowl Gouges, Spindle Gouges, Skew Chisels and Roughing Gouges.

A few basics on setting up.

In order to ensure symmetry to the grind, it is essential that the Sharpening Base (Part 1) is mounted so that the pivot point in the Finger Grind Slider (part 11) on the end of the Finger Grind Arm (Part 10) is in line with the centre of the Grinding Wheel.

To ensure consistent repeatable grind a few simple rules must be remembered;

1. Always have the same amount of gouge protruding from the front of the Finger Grind Jig.
2. Always set the Length of the Finger Grind Arm (part 10) the same.
3. Always set the angle to the same using the scale on the Finger Grind Clamp (Part 22).



It helps to write down the settings near your grinder so they are right where you need them.

By varying steps 2 and 3 above, a variety of grinds can be achieved. Use the length of the bar to achieve the flute grind (by ensuring the grinding is high on the wheel, between 1 and 2 o'clock) and the angle on the clamp to define the bevel and you will get long "erect" wings. Conversely, use the length of the bar to achieve the angle of the bevel and the angle on the clamp to control the wing length and the bevel will roll around the tip of the gouge with a "more modest" wing shape.

Note: Be careful never to attempt to grind tools below a line horizontal with the centre of the grinding wheel:

Holding the gouge while sharpening

Sharpening a Skew Chisel

Some turners prefer their skew chisels with an oval grind and this is easily achieved with the finger grind jig.

Mount the skew as you would any other gouge, set the plate angle so the cutting edge of the skew is square to the edge of the grinding wheel and set the bar length to suit the angle you want the bevel shallower angles, longer for steeper angles.

Ensure you use light sweeps across the grinder. The metal at the tip of a skew chisel is very thin due to the shape of the grind and thus is very prone to overheating. Quenching in water between strokes of the grinding action helps to alleviate this problem.

Some starter settings for your gouges

These are the settings typical for sharpening gouges, and will provide a starting point for you to work from.

For an approximately 55 degree grind (Steep) suitable for cutting the inside of a bowl;

- Angle of the Plate. 8.6
- Length of the bar – 156mm
- Length of gouge past the end of the holder – 57mm

For an approximately 35 degree grind (shallow) suitable as a roughing gouge and for the outside of a bowl;

- Angle of the Plate – 8.0
- Length of the bar – 140mm
- Length of gouge past the end of the holder – 57mm

For a spindle gouge.

- Angle of the plate – 6.5
- Length of the bar – 140mm
- Length of the gouge past the end of the holder – 76mm



DRESSING THE GRINDING WHEEL

A 60 - 80 grit White Aluminium Oxide wheel is the wheel we recommend for best grinding results.

When the surface of your grinding wheel becomes uneven or clogged with metal particles it will need dressing (re surfacing). This is done with a diamond dresser. A Huntington dresser or a dressing stone.



A diamond dresser is the most efficient. Huntington dressers need care not to remove too much and so shorten the life of the stone. The dressing stone is the cheapest option and the least efficient. Again light contact with the wheel is the most efficient method of using dressers.

The platform can be positioned horizontal or can be at an angle as long as the diamond point is in contact with the stone without the angle being too great that the metal shaft of the diamond dressing shaft is in contact with the stone. The diamond dresser is positioned in the V of the top slide plate. The slide platform is traversed across the face of the grinding wheel jig, taking the minimum depth of cut until the stone is perfectly dressed. The importance of the wheel dressing cannot be emphasised enough to achieve outstanding grinding results.

ACCESSORIES

Although the standard Sharpening Centre is adequate for most grinding needs we will be providing various accessories to help with various aspects of sharpening. These will become available and will fit your standard Sharpening Centre.

10051 Nova 10 in 1 workshop gauge ideal for exact gauging of angles, includes angles from 15-70 degrees as well as special gauging for bowl turning chisels 22, 35 and 55 degrees.

35050 Nova Diamond Dressing stone ¼ caret diamond. (Available Oct 2009)

35051 90 Degree slide platform for plane blade grinding. (Available Oct 2009)

35052 bench mount base for finger grind arm (enables finger grind arm to be setup on the other side of grinder. (available Oct 2009).

**Manufactured with pride by:
Teknatool International**