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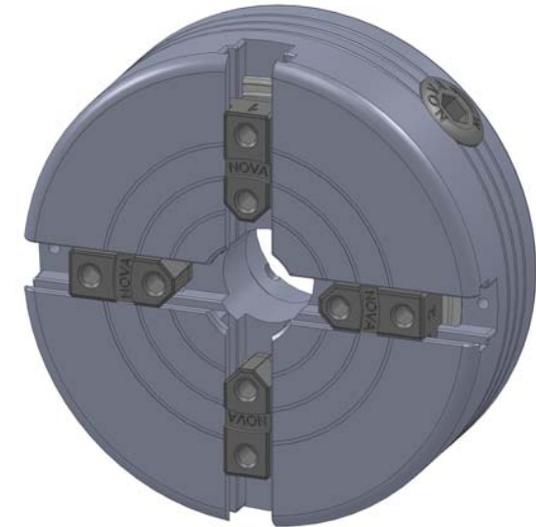
CE

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# NOVA

## Titan Chuck



CE

# NOVA Titan Chuck Features:

Thank you for purchasing Teknatool Nova Titan 5inch Chuck. We are confident that it will help in both enhancing as well as advancing your woodturning. The Teknatool Nova Titan 5inch Chuck is a very versatile unit, designed to offer a wide range of work holding modes. The Nova Titan 5inch Chuck has a powerful grip while being quick and easy to use.

It combines the best features of our Nova series chucks and similar woodturning chucks (wide jaw movement, quick two way grip) with the advantages of superior gripping power and a convenient one handed operation. The Nova Titan also has some special safety features: a travel stop on the jaws and a contracting scroll jaw action to centre under power with no work mounted. This means that there is very little chance of the jaws flying out of the chuck - a common hazard with many chucks.

The Nova Titan, utilizing the two screw position, can take the existing NOVA accessory jaws. In addition it accepts all of the thread inserts developed for the NOVA chucks. This provides maximum interchangeability of jaws, inserts and woodworm screws, between all three chucks.

The Titan using the wide variety of accessory jaws can be used to expand into recesses or contract around round/square wood spigots of varying sizes and applications. The chuck can swap from the expansion/dovetail mode to the spigot mode and back instantly, with no adjustments or extra fittings being necessary. In either modes, any spigot or recess size can be selected between the minimum and maximum range of the jaws. With the add-on accessory jaws removed, the jaw slides can be used to grip smaller spigots. The chuck also utilises a powerful Woodworm screw for screw chuck work. (Included with standard model only)

The Jaw accessories are included at the back of this manual. However the range is steadily being expanded to include more options. Check with your reseller or at [www.teknatool.com](http://www.teknatool.com) for the latest accessories. As a valued customer, we would be pleased to hear from you and how you found your Nova Titan. Any comments on the chuck or accessory ideas would be very welcome so that we can continue to offer what we believe is the best woodturning chucking system available.

## Teknatool Warranty

### **Teknatool Two Year Limited Warranty**

This Teknatool product is backed by a TWO YEAR warranty from the date of purchase. Teknatool International Ltd will repair or replace, at its expense and option, this Teknatool product which in normal use has proven to be defective in workmanship or material, provided that the customer returns the product prepaid to an authorized Teknatool service center with proof of purchase of the product within TWO YEARS and provides Teknatool with reasonable opportunity to verify the alleged defect by inspection.

Teknatool will not be responsible for any asserted defect which has resulted from normal wear, misuse, abuse, or repair or alteration made by anyone other than an authorized service facility or representative. Under no circumstances will Teknatool International Ltd. be liable for incidental, special, indirect, and consequential damages or expenses, including loss of profits or loss of operations. This warranty is Teknatool International Ltd. sole warranty. There are no other warranties, whether written or verbal, whether expressed or implied by law, trade, custom, or otherwise, whether of merchantability, fitness for purpose, or otherwise, except for remedies available to customers under the Consumer Guarantees Act or other legislation.

**OVERSEAS CUSTOMERS: Our Teknatool Distributors and agents will issue their own warranty to cover this product. Terms may vary from those stated above; please check with your dealer.**

**ⓘ Note:** Did you know you can register your warranty with Teknatool online? Visit our website on [www.teknatool.com](http://www.teknatool.com) to register your warranty faster today!

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## SPUR CENTRE

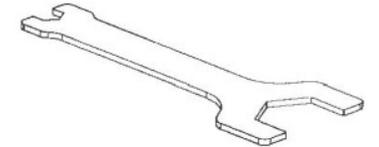
Code: **NCSC**

This is a rugged 4 pronged spur drive with a 19mm square shank, which fits snugly into the Nova/SuperNova jaws. Creep of the spur is prevented as the shank is slotted to allow the chuck jaws to close over it. This spur is the answer for turners who use their Nova Titan almost all of the time but want to be able to do those odd spindle jobs without removing the chuck from the lathe.

## INSERT SPANNER

Code: **23014**

Spanner to remove inserts off lathe spindle or from chuck body.



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### Pin Jaw Set

Code: **JSPIN**

These special 25mm extended jaws are designed to act like a pin chuck - expanding into a pre-bored hole. This is a useful technique for free form edge bowls. The real advantage though is you don't have to bore an exact size as with pin jaws. The longer jaws allow for a very powerful spigot grip for smaller work like lace bobbins etc. It also has a small dovetail to mount small bowls.

### Step Jaw Set

Code: **JS75N**

Designed primarily to grip footed bowls in the contracting mode. Provides for optimum grip of three different size foot diameters. Also dovetail mode.

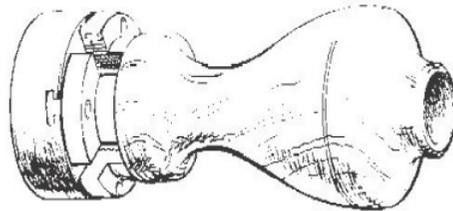
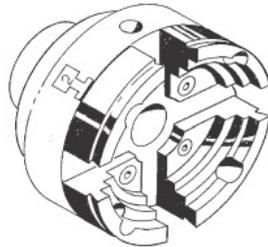
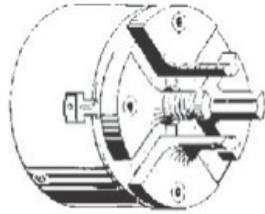
### 35mm Spigot Jaws

Code: **JS-SP35**

### 45mm Spigot Jaws

Code: **JS-SP45**

These two jaws provide a very powerful contracting spigot grip with the Titan Chuck. For long unsupported spigot turning applications.



## GENERAL SAFETY RULES



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

1. **FOR YOUR OWN SAFETY, READ THE MANUAL BEFORE OPERATING THE TOOL.** Learn the machine's application, limitations and the specific hazards particular 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 will 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 plugs or muffs for any 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 Wood 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 DVR is **not recommended** for children or the infirm. Such personnel and onlookers should be kept at a safe distance from the work area.
8. **MAKE WORKSHOP CHILDPROOF.** Utilize locks, master switches, or by removing starter/lockout 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 plug must be attached to a known ground. **NEVER** remove the third or grounding prong.
10. **DISCONNECT TOOLS.** Ensure the plug is removed from the wall socket before servicing and when changing accessories such as blades, bits, cutters and fuses, etc.
11. **AVOID ACCIDENTAL STARTING.** Make sure switch is in the **Off** position before plugging in power cord into the wall socket.
12. **NEVER LEAVE MACHINE RUNNING UNATTENDED.** Do not

leave machine unless it is turned off and has come to a complete stop.

13. **KEEP GUARDS IN PLACE.** Ensure guards are in working order.
14. **USE CORRECT TOOLS.** Do not use a tool or attachment to do a job for which it was not designed.
15. **DON'T FORCE THE TOOL.** It will do the job better and be safer at the rate/force for which it was designed.
16. **MAINTAIN TOOLS IN TOP CONDITION.** Keep tools sharp and clean for the best and safest performance. Follow instructions for lubricating and changing accessories.
17. **NEVER STAND ON THE TOOL.** Serious injury could occur if the tool is tipped or if the cutting tool is accidentally contacted.
18. **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.
19. **DON'T OVERREACH.** Keep proper footing and balance at all times.
20. **DIRECTION OF FEED.** Feed work into the blade or cutter against the direction of rotation.
21. **ATTENTION TO WORK.** Concentrate on your work. If you become tired or frustrated, leave it for awhile and rest.
22. **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.
23. **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.
24. **DRUGS, ALCOHOL OR MEDICATION.** Do not operate machine while under the influence of drugs, alcohol, or any medication.
25. **DUST WARNING.** The dust generated by certain woods and wood products can be harmful to your health. Always use an approved dust mask and operate machinery in well-ventilated areas. In addition, provide a means for proper dust removal. Use wood dust collection systems whenever possible.

## 130mm JUMBO JAWS

Code: **JS130N**

The big brother to the 100mm jaws. Designed to handle large work up to 750mm (29") in diameter. An ideal 'companion' jaw to the Nova Titan 5 inch as the extra power of the Nova 5 inch matches the big capacity of these jaws. No need to consider larger chucks for those special jobs - the Jumbo Jaws will perform just as well. Has a dovetail recess facility up to 149mm (5.86").

## 100mm Jaw Set

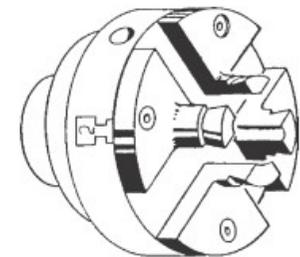
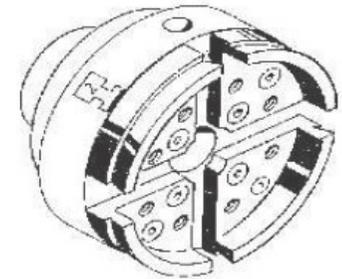
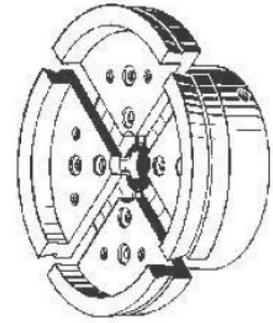
Code: **JS100N**

Have an expanding dovetail grip, strong reverse dovetail grip for footed bowls. Made for a larger range of work than either the 50mm or Step jaws.

## 25mm Jaw Set

Code: **JS25N**

Designed for small bowl (expanding dovetail mode) and small spigot (contracting mode) free end turning work below the size that can be handled by the standard 50mm jaws.



## Titan Accessories

### OPTIONAL ACCESSORIES

The Nova Titan 5inch Chuck is one of the most versatile chucking systems. It is fully compatible with the Nova and SuperNova Chucks and shares the same extensive accessory range.

Optional accessories include over 16 different jaw sets and other items to enable you to explore all areas of turning with your Nova Titan 5in Chuck.

#### COLE JAW SET

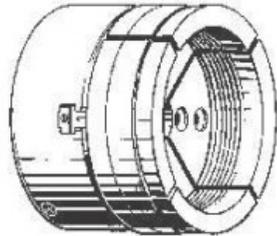
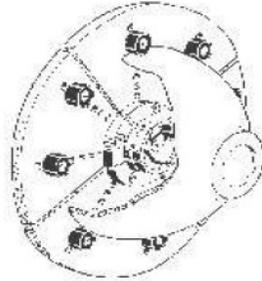
Code: **JSCOLE**

A versatile set designed primarily for re-chucking of bowls to remove chuck marks or re-shape the bottoms of the bowls that have already been turned. Most other jaws etc can be mounted on top of the Cole Jaws for a combination jaw facility.

#### POWERGRIP JAWS

Code: **PJSN**

These jaws have tremendous holding power. Best used in conjunction with the Nova Titan 5inch, as the extra gripping power of the chuck enhances the PowerGrip's action. This jaw is included with the standard Nova Titan model. Able to hold large work up to 750mm (29") in diameter but has the added advantage over the 130mm jaws, of being able to hold long spigots up to 19" long. Also has a dovetail facility with up to 120mm (5") recess.



## ADDITIONAL SAFETY RULES:



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

1. **SEEK INSTRUCTION.** If you are not thoroughly familiar with the operation of wood lathes, obtain advice from your supervisor, instructor, or other qualified person. Instruction from a qualified person is strongly recommended.
2. **MAKE SURE WOOD** is securely clamped in the chuck before turning it on
3. **EXAMINE WORK PIECE** and glue joints before turning to make sure it has no defects that would cause it to break when turning.
4. **CHECK SET-UP** with power Off. Examine the set-up carefully and rotate the work piece by hand to check clearance before turning on power.
5. **ADJUST TOOL REST** close to the work piece. Before turning, revolve the stock by hand to make sure it clears the rest. At intervals, stop the lathe and readjust the tool rest.
6. **DO NOT MAKE ADJUSTMENTS** when the lathe or work piece is turning. Make all adjustments with power Off.
7. **TIGHTEN ALL CLAMP HANDLES** on the headstock, tailstock, and tool rest before operating lathe.
8. **USE LOWEST SPEED** when turning a new or unbalanced work piece.
9. **USE CORRECT SPEED** for turning the wood blank as wood speed will vary depending on diameter.
10. **KEEP TOOL ON TOOL REST.** Tools should remain on the tool rest whenever the tool is engaged in contact with the work piece.
11. **DO NOT ROTATE CHUCK** under power without wood being gripped and securely tightened in the chuck
12. **USE CORRECT LATHE TOOLS.** Do not use spindle turning chisels for faceplate mounted work, and vice versa. Spindle turning tools used for faceplate turning may grab the work piece and pull the chisel from your control.
13. **DO NOT POUND WORK PIECE** into headstock drive (spur) center while attached to the lathe when turning between centers. Pound the drive center into the work piece with a soft mallet before installing it between centers in the lathe.
14. **DO NOT USE TAILSTOCK** to drive work piece into the drive (spur) center when turning between centers. Secure work between centers with light pressure from the tailstock quill action.
15. **FASTEN STOCK SECURELY BETWEEN CENTERS.** Make sure the tailstock is locked before turning on the power.
16. **NEVER LOOSEN TAILSTOCK** spindle or tailstock while work piece is turning.

## Titan Chuck Specifications

There are two models of the Nova Titan 5inch Chuck designed to meet various woodturning requirements.

### 1 ¼”8TPI DIRECT THREADED MODEL

(SKU 13055)

Dedicated threaded chuck, 1 ¼”8 TPI. This cannot accept the Standard NOVA Chuck Insert/Adaptors. This has a special PowerGrip add on jaw set for heavy-duty spigot turning and heavy bowl work. These jaws extend the tremendous gripping power and range of the Nova Titan 5inch Chuck. Standard Model with PowerGrip Jaws  
Accessory Kit: 1x M6 Grubscrew, 2 x Fibre washers, 1 x pinion handle, 8 x M6x10 Jaws screws, 1 x Woodworm screw, 1 x PowerGrip jaw set, 1 x M4 Allen key, 1 x M3 Allen key, Nova Titan 5inch Chuck Manual.

### M33 DIRECT THREADED MODEL

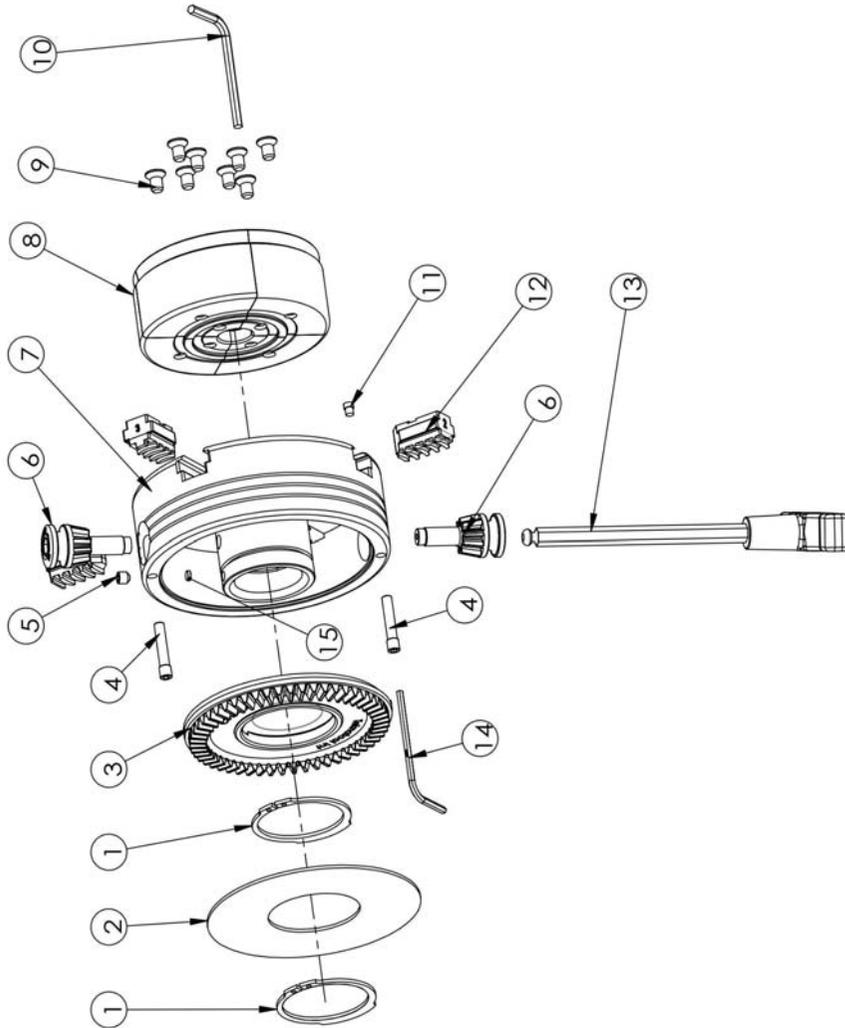
(SKU 13037)

Dedicated threaded chuck, M33 thread. This cannot accept the Standard NOVA Chuck Insert/Adaptors. This has a special PowerGrip add on jaw set for heavy-duty spigot turning and heavy bowl work. These jaws extend the tremendous gripping power and range of the Nova Titan 5inch Chuck. Standard Model with PowerGrip Jaws  
Accessory Kit: 1x M6 Grubscrew, 2 x Fibre washers, 1 x pinion handle, 8 x M6x10 Jaws screws, 1 x Woodworm screw, 1 x PowerGrip jaw set, 1 x M4 Allen key, 1 x M3 Allen key, Nova Titan 5inch Chuck Manual.

## NOVA Titan Chuck Parts List

No.	Quantity	Description	Part Number
1	2	Circlip	EC48
2	1	Cover	13003
3	1	Scroll Ring	13035
4	2	Fasten Screw	13004
5	1	Grubscrew M6X6 A/h cup point	G0606
6	2	Pinion gear	13036
7	1	Chuck body	13000
8	4	PJSN	10021
9	8	Head sunk screw M6X10	CM5010181
10	1	Allen Key 4mm	AK4.0
11	2	Position Screw	LSM4N
12	1	Jawslide #1	13051
	1	Jawslide #2	13052
	1	Jawslide #3	13053
	1	Jawslide #4	13054
13	1	Wrench Hex 8mm- T Bar 150mm long	13006
14	1	Allen Key 3mm	AK3.0
15	1	Fibre Washer 5X1mm	NS1000
16	1	Woodworm screw	10003

## NOVA Titan Chuck Exploded View



## Mounting the Titan Chuck on a Lathe

**CORRECT MOUNTING OF CHUCK TO LATHE SPINDLE IS VERY IMPORTANT TO ACHIEVE ACCURACY.**

WE STRONGLY RECOMMEND THAT THE CHUCK IS NOT USED ON LATHE SPINDLES UNDER 1in (25mm) diameter.

### FITTING CHUCK TO LATHE

Correct fitting of chuck to lathe spindle is important to ensure accuracy. The chuck body must contact an accurate shoulder on the lathe spindle or bearings to ensure chuck will run true. There can be a wide variety of lathe spindle thread and spigot dimensions even within the same thread size. The internal thread size is kept to standard tolerances.

### CHECK THE FOLLOWING:

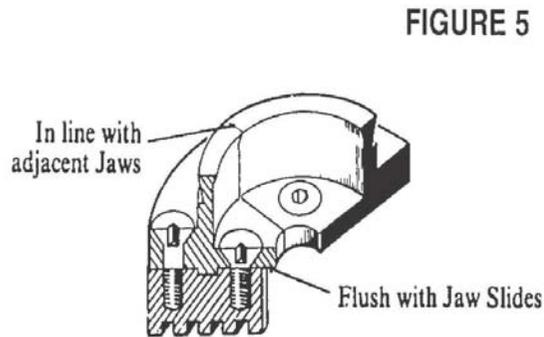
Although the Chuck may screw on part way it may not contact properly with spindle spigot - a spacer may be necessary. This would be the responsibility of the chuck user. Make sure the chuck is screwed to lathe thread properly - a good check is to see whether it screws home on the spindle same as any another lathe fixture such as a faceplate. **POOR FIT OF CHUCK TO LATHE SPINDLE CREATES A SERIOUS HAZARD WHERE CHUCK COULD DISLODGE FROM LATHE. DO NOT ATTEMPT TO USE CHUCK UNLESS THE CHUCK IS CORRECTLY FITTED TO LATHE SPINDLE.**

## Using the Titan Chuck

### Mounting Add-On Jaws

#### MOUNTING ADD-ON JAWS

Your standard Nova Titan 5in chuck is provided with PowerGrip add-on jaws. They need to be located and screwed on to the jaw slides of the chuck. The same procedure outlined below must be followed for all accessory jaws as well. IT IS IMPORTANT TO LOCATE JAWS PROPERLY IN THE JAW SLIDES FOR THE CHUCK TO FUNCTION ACCURATELY.



Follow the method set out below

1. You will notice that the back of the jaws have a stepped location ring. This location ring is designed to fit into the grooved section of the jaw slide for precision location. Ensure that the slide and collet back are clean and free from any burrs or damage that might affect location. Place the jaw segment over the hole positions on the jaw. Press the jaw segment firmly onto the jaw slide. For the first few times you may need to GENTLY tap the jaws into the locator slot with a block of wood.
2. The screws can now be screwed in, using the 4mm Allen Key provided. Lightly grease or oil screws under each head and on the threads before use to prevent the screws from seizing in the jaw. Preferably use an anti-seize compound e.g. Rocol J 166 Anti-Seize Compound. Do all screws up finger tight and then back them off one quarter to half a turn.

8. Chuck jams on lathe spindle

9. Woodworm screw creeps forward or is not seated properly in chuck

10. Wooden spigot shifts during turning

11. Wood blank does not seat properly in internal dovetail mounting

This is a common problem with fixtures on a lathe. Use piece of wood & knock against base of pinion gear in anticlockwise direction to jar loose from spindle. To help prevent it try a plastic or fibre washer between insert/chuck and spigot shoulder of a spindle. Use of washer could affect accuracy.

Make sure woodworm screw boss is placed correctly between jaw slides and behind jaws. See Page 9

Check that the spigot area is made correctly for jaws to grip. Check that the spigot is not oversize. See spigot operation instruction Page 11. Use careful chisel techniques that do not exert too much pressure. Irregular rough wood blanks need to be checked to see whether there is enough jaw contact.

Check the angle of the dovetail recess made is the same angle as the jaws. Make sure the bottom of the recess is flat and square to face. See dovetail operation Page 10. Check that the bowl is not incorrectly riding on the flat shoulder of jaws behind the dovetail.

## Troubleshooting Guide

Problem	Possible Cause and Solution
1. Chuck jams when partially threaded onto spindle.	Check chuck body threads are free from damage. Check spindle has engaged with chuck body thread correctly. See 'Fitting to Chuck' Page 7. Make sure the grub screw has not been SCREWED IN. Check insert is properly home in chuck body.
2. Chuck body appears not to be true	Check that the insert is correctly screwed onto lathe spindle. Insert must back against accurate face/register or bearing on lathe spindle. See Page 7. Check jaws are mounted correctly on jaw slides. For method see Page 9. For accuracy parameters see Page 2. When the jaws are expanded beyond a 50mm circle they will appear to be running out but in fact are maintaining concentricity. Always evaluate runout from turned wood clamped in jaws
3. Add on jaws do not run true	
4. Jaw Slides closed to centre and No. 1 slide stays in centre when jaws are expanded again	Jaw Slide(s) have over travelled from scroll. It will be necessary to tap back No 1 jaw slide until it has re-engaged. See page 8 for 'insertion of jaw slide'.
5. Chuck very stiff to operate or jammed	Wood dust and shavings can clog the chuck in use. The chuck should be cleaned. Follow instruction Page 7
6. Jaw Slides when Wound to centre do not meet	Slides have not engaged sequentially in clockwise order with scroll - 1-2-3-4. Jaw Slides could have been inserted out of order. Check insertion procedure Page 8.
7. When chuck is being removed from spindle the body unwinds from insert	Either lock insert in body using grub screw and fibre washer provided or use spanner on the insert to wind chuck off lathe.

3. Wind the mounted jaws into the centre of the chuck until they all butt against the other. Now finally tighten screws, starting with centre screws and then outside screws. Nip screws up firmly but DO NOT OVER TIGHTEN.
4. Check there is no light between jaw slides and add on jaw segments or that one or more segments is not higher or lower than the rest. If this is the case repeat procedure above.

### OPERATING MODES

**SCREW CHUCK:** This is a convenient mounting method. The PowerGrip Woodworm screw is purpose-designed for screw chucking. It is a cylindrical screw which maintains its full holding power along the whole length, unlike normal tapered screws. The thin thread form is specially designed to cause minimum damage to wood fibres. They grip better than screws with thicker threads because there is a larger volume of undamaged wood retained within the screw. The woodworm screw is made complete with the boss section in one piece. The woodworm screw is designed to be used with the powergrip jaws remaining in place on the chuck. This facility is very convenient for remounting work directly onto the jaws after the screw is removed. To convert to this operation, place the boss section into the centre of the chuck making sure flat shanks are aligned to the jaw slides and close jaws around it. BEFORE FINAL TIGHTENING MAKE SURE THAT THE FRONT OF THE BOSS SECTION OF THE SCREW IS SEATED BEHIND AND AGAINST THE POWERGRIP JAWS. This will prevent any tendency for the boss section to creep forward when the screw is being used. The front face of the PowerGrip Jaws has been machined to provide an accurate backing surface. This is quite an advantage, providing a much tighter fit and better tolerance for irregular face stock. This feature is also quite an advantage when using the screw to mount a bowl for first stage bowl turning - forming the outside of the bowl straight onto the jaws (the screw is first removed) after the recess has been formed.

**SCREW DEPTH:** The screw provides 19mm (3/4 inch) of thread beyond the PowerGrip jaws. With all wood blocks over 150mm (6 inches) in diameter the full thread depth of 19mm should be used. Irregular, rough tree blanks (e.g. small sections of tree limbs) not exceeding the above sizes can be held quite firmly BUT caution must be exercised. Check for adequate contact.

**CAPACITY:** DO NOT USE THE SCREW FOR VERY LARGE WOOD BLANKS. Its use is intended for small bowl and screw chucking work. The maximum capacity which should be mounted on the screw - 250mm (10 inches) diameter x 100mm (4 inches). DO NOT EXCEED 600 RPM FOR THIS OPERATION. Use tailstock support.

**PREPARATION:** The 10.5mm thread requires a drilled hole about 8mm (5/16") in diameter. The screw has considerable holding power and it is sometimes difficult to unscrew, so wax or oil the thread before mounting the wood. CARE: The threads are fine and can be damaged by mishandling. DON'T hammer into wood! DO screw into a pre-drilled hole. Any nicks on the threads can be removed by carefully filing.

## EXPANDING DOVETAIL OPERATION

Expansion of the jaws into a recess. This function is for bowl and platter turning where the projection (depth) of the wood blank is not too great i.e. up to 150mm (6 inches). Characteristically these items have a parallel wood grain. IT MUST NOT BE USED FOR ANY LONG WORK (OVER 150MM) AS THERE WOULD BE GREAT DANGER OF WOOD TEARING OUT AND DISLODGING FROM CHUCK.

Instructions below apply to the Powergrip jaws but the general technique is the same with other accessory jaws. However the maximum size of wood blank that can be mounted, the maximum turning speed and recess size varies with the different accessory jaws. Consult specific instructions included for each jaw set.

This strong holding method, using the power grip jaws, bowls up to 400mm (16 inches) in diameter can be turned. DO NOT EXCEED 700RPM WITH THIS OPERATION. OUT OF BALANCE STOCK MUST BE TURNED AT THE SLOWEST SPEED POSSIBLE.

**Caution:** Do not close jaw slides to a diameter less than 8mm (5/16") for work holding. Do not close jaw slides to fully closed position because jaw slides could over travel on scroll and become disengaged.

## Insertion of jaw slides

Jaw slides are numbered 1 - 4 (numbering on end of slide). (Note: Travel stop screws need to be removed. Refer to previous jaw slide travel lock section). When the jaws are removed from the body they need to be reset in sequence. To reset jaws in chuck body, rotate with pinion gear until the lead of the scroll (like a thin wedge) appears in the opening of the slide way # 2.

**.CAUTION:** IT IS IMPORTANT TO ROTATE THE LEADING EDGE OF THE SCROLL BACK SLIGHTLY TO CLEAR THE SLIDEWAY BEFORE SLIDE CAN BE INSERTED. FAILURE TO ROTATE THE SCROLL BACK COULD RESULT IN DAMAGE TO SCROLL.

Now insert No.2 slide into slideway and rotate scroll in a clockwise direction (chuck facing you) until the lead of the scroll appears at the next slideway. Now engage No.3 scroll in the same manner as No.2. Proceed in the same way in a clock-wise sequence with No.4 and No.1 slides. Refer to the diagram.

# Maintaining the Titan Chuck

## General Maintenance

**CLEANING CHUCK:** The Nova Titan Chuck is perfectly enclosed from behind which makes the gearing mechanism maintenance free over a long period of time. However the chuck needs to be inspected periodically for build up of wood dust in the jaw slide area on the front side. Wood dust build up can make the jaws difficult to move. To clean out the wood dust build up, the following method can be used. Remove Jaw Slides. (First removing stop screw as explained in previous section) then using a piece of wood (matchstick size) insert in the bottom of scroll and rotate scroll ring. This will scrape out the accumulated wood dust.

**To disassemble chuck:** Over a long period of usage there could be some accumulation of very fine dust in the gearing area behind which may require dismantling of chuck for a full clean. Following are steps (Refer to exploded chuck diagram, Page 5) Using expanding pliers remove the circlip securing the backing plate. This should give enough access to clean the gears without further dismantling of the chuck. If you want to dismantle further, follow these instructions. Remove the two M6 fastening screws. Next hold the chuck with the jaw slide surface facing up. Wiggle the pinions with the help of 8mm Hexagon Wrench till the two dowel pins have fallen down. Next remove the pinions. Remove the second circlip securing the scroll ring. The scroll ring can be removed now. After you have cleaned the chuck assemble the chuck back in the same order. Re-insert the jaw slides. Remember, after you have re-assembled the gears, apply any general grease all around the gear area!!

**Remember to replace jaw travel stop screw!!**

## Stop on JAW Travel

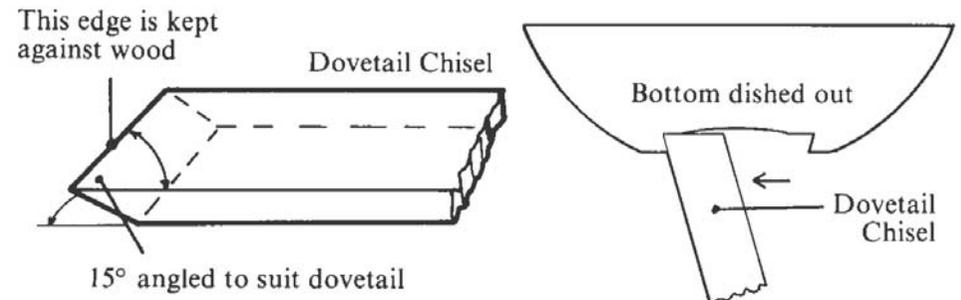
Stop screw is located at the end of the number 2 slideway, and number 4. The screw prevents jaw slides being unwound from the chuck. Do not exert pressure against the screw with pinion action. If screw is removed for disassembly it must be replaced before use. Refer exploded view diagram on page 5 of the manual, and to drawing accompanying insertion of jaw slides below.

**PowerGrip jaws:** Any recess can be turned between 96mm (3.8") and 120mm (4.7") diameter. **EUROPE/UK:** Maximum recess size is 8mm (0.30"). Choose the diameter that suits your bowl design. However the optimum turning recess diameter (on the outside) is 99mm (3 57/64"). As the recess diameter is increased above 99mm, less jaw contact is made. This needs to be kept in mind when considering the recess depth and size of wood blank being mounted. Increase the recess depth to maximum if a recess diameter in excess of 99mm is used. The dovetail angle is 15 degrees.

## Forming a Recess

The jaw dovetail has been designed for use with a standard skew scraper. This chisel will make a recess to the angle required. **FOR SAFETY REASONS WE STRONGLY ADVISE AGAINST USING ANY OTHER TOOL.** A profile of this chisel is shown below. It is best to work with a tool, which is already ground, to the correct angle. All that is necessary then is to keep the leading edge of the chisel flat on the wood, moving forward and out to form the recess to the required diameter and depth.

Mount bowl blank on screw as described in previous section. It may be convenient to first mark out with a pencil, a circle on the bowl blank. To mark out the recess diameter with pencil, hold pencil point to desired radius, supported on the tool rest. Then revolve blank by hand thus creating a pencilled circle. However, as specified above, any recess diameter can be made between 96mm (3.8") 120mm (4.7") so exact sizing of the recess is unnecessary.



Before scraping out the recess, slightly hollow out the centre of the bowl blank with a bowl gouge or round nose scraper. The purpose is

to relieve the centre so that when the recess is scraped out only half the chisel edge needs to be used. We recommend this to reduce tearing of the wood by scraping action; and to make the recess a little more finished to give a better effect to the overall bowl. Extra embellishments can also be made to the recess to enhance the bowl. After the recess is finished and the outside of the bowl is turned to shape, wind bowl back off screw. Bowl blank is now ready to be reversed into the jaws. Expand the jaws into the recess. When the jaws are expanded out into the recess, screw the wood blank gently back and forth to make sure it is seated properly on the bottom face of the jaws. **WARNING: MAKE SURE THE JAWS ARE SEATED PROPERLY IN THE RECESS AND THAT THE BOWL IS NOT INCORRECTLY RIDING ON THE FLAT SHOULDER SECTION OF THE JAWS BEHIND THE DOVETAIL. THIS COULD LEAD TO THE BOWL DISLODGING FROM CHUCK. LOOSEN JAWS AND REMOUNT CORRECTLY.**

Now give a few gentle raps with the end of a chisel handle or wooden mallet around centre of bowl. Use pinion handle to give an extra nip up. Refer to chuck operation Page 4. Refer again to safety before operation.

## **SPIGOT OPERATION**

This is where the jaws contract around a wooden spigot for grip. This function is mainly for box, goblet and vase turning, that is, end grain items with a fair degree of overhang. This situation is one of the most difficult to provide secure holding no matter what fixing method is used. **EXTREME CAUTION WITH THIS OPERATION MUST BE EXERCISED. DO NOT EXCEED 700 RPM FOR THIS OPERATION.** If used properly the Nova Titan Chuck however, provides a very powerful and secure grip in this mode. Instructions below apply to the Power grip jaws but the general spigot technique is the same for other jaw types. However, maximum turning speed and recess size varies with different jaw types. Consult accessory jaw manual or instruction sheets. With the power grip jaws a maximum size wood blank of 200mm (8 inches) diameter (NOT spigot size) by 310mm (12 inches) length can be turned. Square timber of same length and between 60mm (2 23/64 inches) to 80mm(3 9/64inches) and grip of all four jaws

into wood. **MAKE SURE YOU HAVE AN ADEQUATE GRIP BEFORE OPERATION** by vigorously wrenching the limb mounted on chuck. If any loosening occurs **DO NOT PROCEED** with operation. Repeat tightening procedure and re-test grip.

## **SPIGOT SIZE:**

PowerGrip jaws will grip a round spigot between 80mm (3.15inches) to 100mm (4 inches) approx. Square timber between 60mm (2 23/64inches) to 80mm(3 9/64inches) square approx. (Note: EUROPE/UK: Maximum size is 6mm (1/4") less). Jaw slides only: With the add-on jaws removed, the jaw slides will grip either round or square timber down to 8mm (5/16inch). Length limits same for spigot work. Small work not greater than this diameter can be turned at a speed **NOT EXCEEDING 1800 RPM**. Larger work held in the jaw slides should not exceed 700 RPM.

## **FORMING SPIGOT:**

When selecting wood make sure it is sound without splits or weakness - especially around the area where the spigot is to be formed. **REMEMBER WITH FREE END TURNING, THIS IS THE ONLY AREA GRIP. IF ANY WEAKNESS IS FOUND, DO NOT PROCEED.** Mount wood between centres and turn the spigot area. Make the spigot as parallel as possible to maximise the efficiency of the clamping action. Only approximate sizing of the spigot is necessary, as the jaws will accommodate a wide range of spigot diameters within the spigot limits stated above.

## **FREE END TURNING**

Turning where the work is not supported by the tailstock. Check for adequate contact and grip of all four jaws into the wood when using this operation. **MAKE SURE YOU HAVE AN ADEQUATE GRIP BEFORE OPERATION** by vigorously wrenching the work piece mounted in the chuck. If any loosening occurs **DO NOT PROCEED** with this operation. Repeat tightening procedure and retest grip.