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# MiniTech Engineering & Model Supplies Newsletter

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I am tempted to make some clever political statement (Let's just imagine for the moment that I am capable of that) but I am so sick of the seemingly interminable talk of politicians I didn't want to add to anybody else's suffering. The television news no longer has the attraction that it used to have.

I'm just glad that I don't live in America where the political campaigns take about 12 months. What a horrible thought? I wonder how many people out there have deliberately left the shed radio off while they have locked them selves away from

the endless rhetoric. To those who love it or are absorbed by it, please be aware there are some others like me out there who will only be too happy to listen to the news about the state of Darren Lockyer's groin, Nick Riewoldt's hammy or the latest exercise in stupidity by some celebrity whose life is governed by hormones.

With all these goings on is it any wonder that us sane people find refuge in the shed and an interesting project in which to immerse ones self. Now, what can I do next that will keep me there for another year or two!

**Couple in their  
nineties are both having  
problems remembering things.  
During a checkup, the doctor  
tells them that they're physically  
okay, but they might want to  
start writing things down to help  
them remember ..**

**Later that night, while watching  
TV, the old man gets up from his  
chair. 'Want anything while I'm  
in the kitchen?' he asks.**

**'Will you get me a bowl of ice  
cream?'**

**'Sure..'**

**'Don't you think you should  
write it down so you can  
remember it?' 'I can remember  
it.' he replies**

**'Well, I'd like some strawberries  
on top, too. Maybe you should  
write it down, so as not to forget  
it?'**

**He says, 'I can remember that.  
You want a bowl of ice cream  
with strawberries.'**

**'I'd also like whipped cream. I'm  
certain you'll forget strawberries  
and whipped cream - Irritated,  
he says, 'I don't need to write it  
down, I can remember it! Ice  
cream with strawberries and  
whipped cream - I got it, for  
goodness sake!' then he toddles  
into the kitchen. After about 20  
minutes, the old man returns  
from the kitchen and hands his  
wife a plate of bacon and eggs..  
She stares at the plate for a  
moment and says....**

**'Where's my toast?'**

## Center vs Spotting Drill Bits.

Center drill bits are used in metalworking to provide a starting hole for a larger-sized drill bit or to make a conical indentation in the end of a workpiece in which to mount a lathe center. Whereas the centre drill performs both functions admirably, the primary purpose of a center drill is in lathe work. Center drills are meant to create a conical hole for "between centers" manufacturing processes (typically lathe or cylindrical-grinder work). That is, they provide a location for a (live, dead, or driven) center to rotate the part about an axis. Spotting drills on the other hand are not used to create a hole for a lathe centre and are primarily used for a starting hole in drill work.

Traditional twist drill bits may tend to wander when started on an unprepared surface. Once a bit wanders off-course it is difficult to bring it back on center. A center drill bit frequently provides a reasonable starting point as it is short and therefore has a reduced tendency to wander when drilling is started.

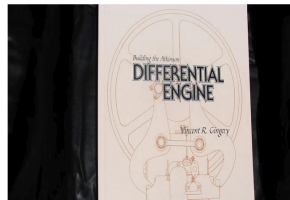
Center drills wander as easily as anything else in hand-held power drills—so for such operations, a center punch is often used to spot the planned hole center prior to drilling a pilot hole. However, a center drill works nearly as well as a spotting drill for most rigidly-clamped drilling operations, especially in softer metals such as aluminum and its alloys.

The small starting tip has a tendency to break, so it is economical and practical to make the drill bit double-ended.

(Courtesy Wikipedia with edits)

## BOOK REVIEW...

### Building the Atkinson Differential Engine –



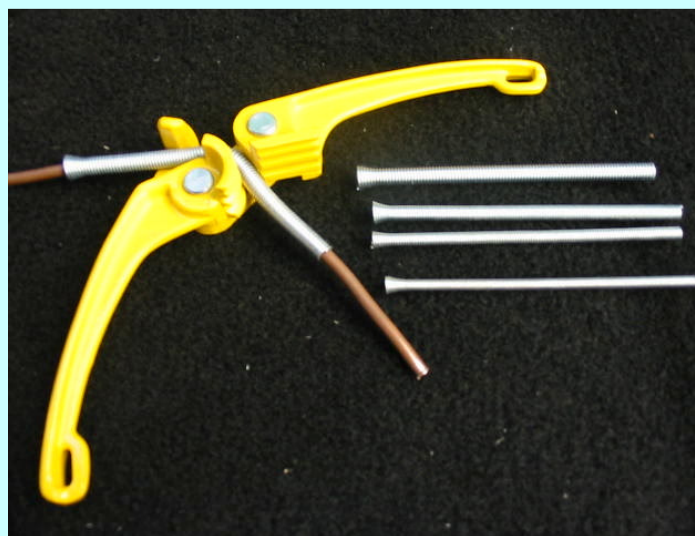
by Vincent  
R Gingery

A very convenient paper back book in A4 size of 112 pages. The Atkinson Cycle Engine was first patented in 1886 to offer an alternative to the hugely successful Otto 4 stroke internal combustion engine.

The interesting thing about the engine is it has two pistons in the one cylinder and by such an arrangement, is able to complete all four cycles in one revolution of the crank. The book begins with the very interesting letter from Atkinson himself describing his invention and copies of his original drawings. The rest of the book is dedicated to providing ALL the information required to make a model of this fascinating engine. Even how to make the moulds for the necessary castings is provided (Ed Note: Castings are available to purchase from Minitech if required)

There are literally dozens of clear modern photographs, instructions, materials list and drawings to let even the most amateur modeller to complete the task.

First Printed in 2000 and published by David J Gingery \$44 incl GST  
Set of Castings \$319 incl GST (Frt. extra)



**New - Small Tube Bender with 5 spring sleeves -**  
(to prevent crimping.) Sizes 3/16, 5/32, 1/8,  
3/32, 1/16" \$33

### Methods of centering a lathe tool

- Arguably the easiest method is to turn the tool post sufficiently to allow a dead centre in the tail stock to touch the tip of the tool. This will be on centre.
- When a job is already mounted and held by a dead centre, the above method isn't available. Another method is to place a steel rule against the side of the work (must be round) in a vertical position. Then wind the cross slide until the tool tip touches the rule. If the top of the rule moves away from you, the tool needs to be lower and vice versa. When the rule maintains a perpendicular status the tool is on centre.
- A fool proof method is to lightly face the work and adjust the tool height until the "pip" (which indicates an off centre situation) is shaved off. If heavy cutting is to be undertaken then a slightly higher position can be adopted to allow for tool flex.
- The easiest method is to have a Quick Change Tool Post on your lathe where each tool in your arsenal has a dedicated tool holder. Using any of the methods above, set the centre height for each tool in it's holder and you never have to do it again, even when you replace and swap tools in the tool post. This is achieved because each tool holder has a lockable adjuster that returns the new tool to the same centre height as before. The most common is the Dickson QCTH-Small (\$269.50 incl GST)

## **FEELING RUSTY????**

A customer recently asked if we had any rust remover. There were a few people in the shop at the time and it seemed everyone had a strategy that was tried and true and had been passed down from father to son for 10 generations.

It seems everyone has rust challenges and their own solution. For many items, rust converter isn't any help as it doesn't actually remove the rust but converts the surface of the rust (not the rust underneath it). Unfortunately the unsightly cancer is still on the surface and this is not always acceptable, especially if the item's surface is a critical component.

I went to Bunnings to see what they had and despite the earnest desire of the 2 ladies and one young man at the paint desk to convert me to rust converter, they claimed it was my only option and that there were no commercially available products that actually remove rust.

Soon after, an ad in an English Modeling Magazine informed me that there WAS indeed such a product.

I contacted the English manufacturers and am pleased to say that Minitech is now agents for "Restore Rust Remover gel" and "Restore Rust Remover."

The products are NOT acidic, completely bio degradable and remove only the rust. **Note the rust is removed not converted.** They are harmless to plastics, rubbers, and non ferrous metals and even protects the previously rusty item from further rust.

The Gel is able to be applied with a scourer for an immediate result whilst the liquid can be diluted by a 5:1 ratio in water to soak items where some parts are inaccessible to a scourer.

Because the product is not hazardous or flammable, it is able to be sent by post.

250ml Gel \$24.95

250ml Liquid Concentrate \$24.95

To watch a video of the gel in action go to You Tube and type **Restore Rust Remover Gel in action.**



**A 5 year old boy asked his grandfather "How old are you Grandpa?" Teasingly Grandpa replied "I can't remember" "Oh that's easy Grandpa, just look in your underpants and they will tell you. Mine says I'm 4 to 6"**



# How to use and read a metric vernier caliper

(Adapted from information by Tresna.)

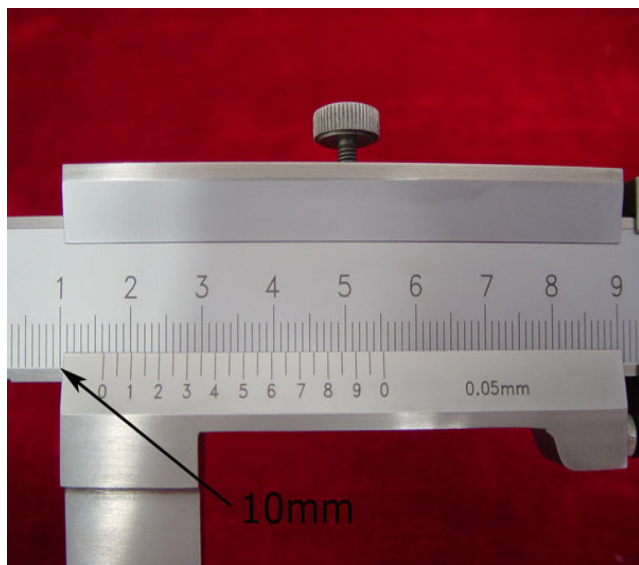
The basic steps are as follows:

1. Before measuring, make sure the caliper reads 0 when fully closed. If the reading is not 0, adjust the caliper's jaws until you do. If you can't adjust the caliper, you will have to remember to add or subtract the correct offset from your final reading. Clean the measuring surfaces of both vernier caliper and the object.

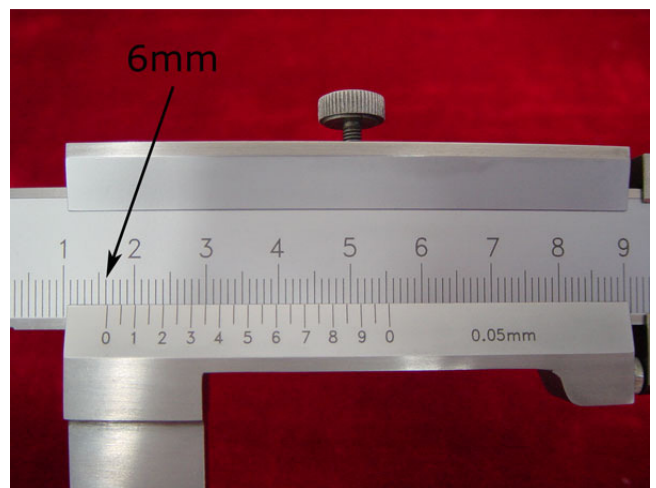
2. Close the jaws lightly on the points to be measured. One side has a pair of jaws that measure outside diameters whilst the opposite side measures inside diameters. A stiff bar extends from the caliper... as you open the calipers, the bar extends and therefore can be used to measure depth. If you are measuring something round, be sure the axis of the part is perpendicular to the caliper. Also,

3. How to read the measured value:

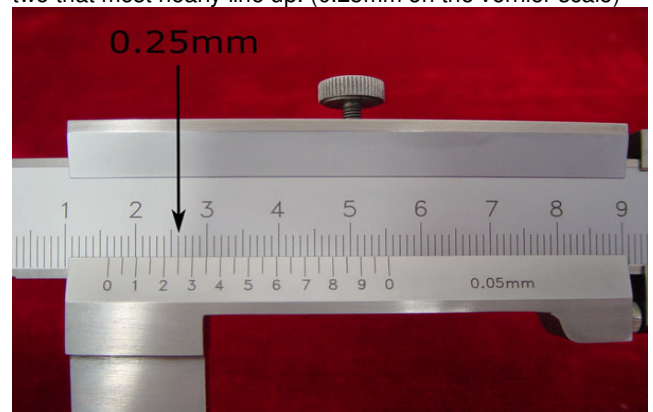
1), Read the centimeter mark on the fixed scale to the left of the 0-mark on the vernier scale. (10mm on the fixed caliper)



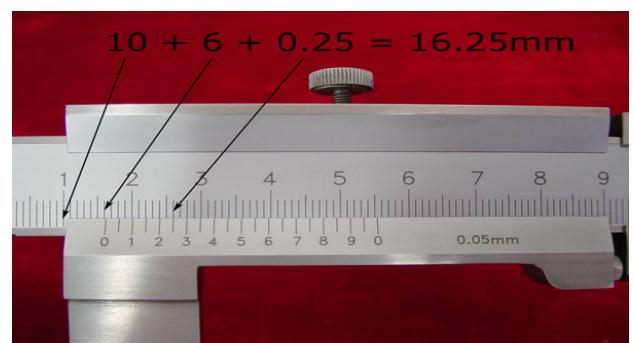
2). Find the millimeter mark on the fixed scale that is just to the left of the 0-mark on the vernier scale. (6mm on the fixed caliper)



3). Look along the ten marks on the vernier scale and the millimeter marks on the adjacent fixed scale, until you find the two that most nearly line up. (0.25mm on the vernier scale)



4). To get the correct reading, simply add this found digit to your previous reading. (10mm + 6mm + 0.25mm = 16.25 mm)



## 4. Maintenance

Clean the surface of the vernier caliper with dry and clean cloth (or soaked with cleaning oil) and stock in a dry environment if it stands idle for a long time.