NEWSLETTER August 2025

Good day everyone, I hope you are enjoying the summer, at least the lawn hasn't needed much cutting! I must start by thanking Chris for his Blacker Power Hammer presentation, and insight into local history.

I thoroughly enjoyed it. I didn't manage the evening very well, and after the tea break the meeting fizzled out earlier than I expected, hence I forgot to officially thank him.

The trip to Skinningrove on Tuesday September 9th is taking shape, so please pay for your place before the end of the month. I have to pay the balance on Tuesday 2nd September.

Do you find it easy to use our new banking system? One or two have said it's not straight forward, so if it is a problem let me know. Give me cash and I will pay it in for you.

Do not forget one of the benefits of being a club member is *Public Liability* insurance if you want to privately exhibit your models at a local event. I will give you the correct certificate for you to show the event organisers. A few days' notice would be appreciated.

I am not an experienced Club Secretary, and sorting out the insurance was a bit of a task. It reminded me we really need a Club Secretary. I have seen in another Society's magazine that they don't have any nominations for a Club Secretary and state they may have to close. I wish them good luck.

We have attracted a couple of new members lately, so that's encouraging for us, but we can't expect then to join the Committee until they get to know us, and vice versa. Any nominations for any post on the Committee will be welcome and 100% support will be provided for anyone who wants to give it a go.

Finally, I received an invitation asking if anyone would like to attend the *2025 NAME Boiler Seminar*, hosted by the *Urmston and District MES* at Manchester on Saturday November 22nd. Let me know if you are interested and I will book you a place.

Go steady, kind regards, Jonathan.

- **Forthcoming Events.**

- **Wednesday September 3rd** ***My Milling Machine*. A Talk By Peter Bramley.**
- **Tuesday September 9th** **Visit To Skinningrove *'Land Of Iron'*. https://landofiron.org.uk** Click on link
- **Tuesday September 16th** **Workshop Morning.**
- **Wednesday October 1st** **Mike Sayers' Trophy Night and Autumn '*Bring and Brag'*.**
- **Tuesday October 21st** **Workshop Morning.**
- **Friday November 7th** **Annual General Meeting. (Friday Lunchtime).**
- **Tuesday November 18th** **Workshop Morning.**

- **Club Evening On Wednesday 6th August. Model Of A *Blacker* Power Hammer. A Talk by Chris Bramley.**

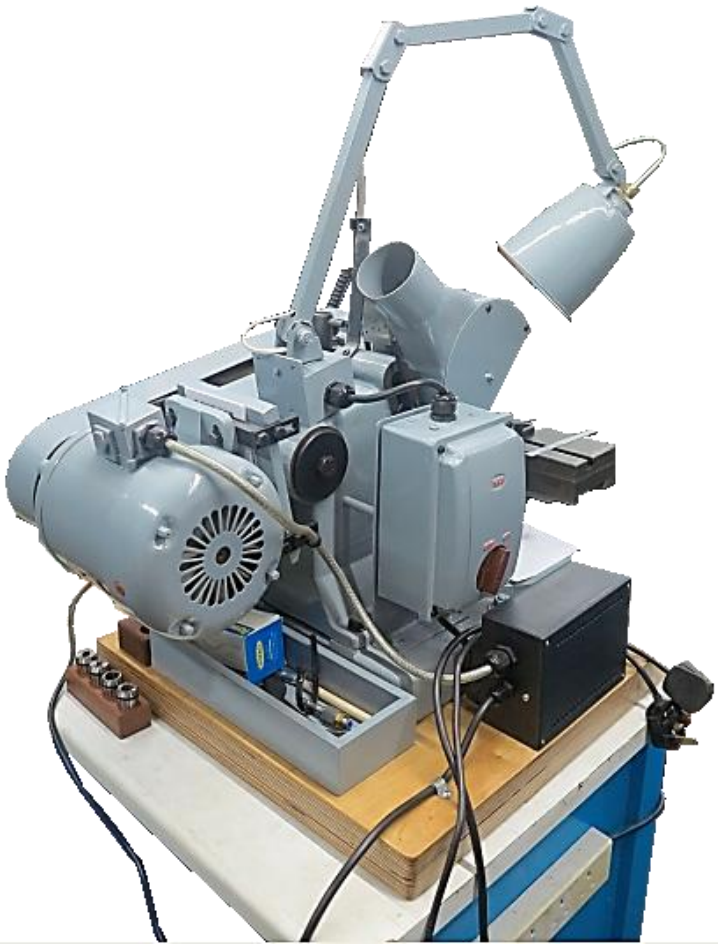
Jonathan welcomed everyone to the meeting including Graham, who had come to see what PEEMS is all about. He also welcomed Peter Green who was a new member.

Before Chris's talk he made some announcements:

- **The *Clarkson* cutter-grinder that has been donated to PEEMS.**

This cutter-grinder, which has been donated to PEEMS, has now been fully renovated by Paul Gammon and Doug Pickering. It incorporates an air bearing and a DRO (digital read out). This will be ideal for grinding cutter flutes.

Doug Pickering is donating a bench-grinder, and that will be suitable for sharpening the ends of end mills. That will need to be refurbished too, and will eventually sit alongside the *Clarkson* flute grinder in the PEEMS workshop.



- **Skinningrove '*Land Of Iron*' at 11 am Tuesday 9th September.**

  It now looks like we have enough people wanting to go on this trip, that we can now have a guided tour of the exhibition and mine, and a heritage walk around the village. Jonathan has sent out an e-mail, and tickets should have been bought by the end of August. If you have any questions please contact Jonathan.

- **Bradford Model Engineering Society (BMES):** BMES have sent Jonathan an e-mail to say that their Open Day (September Visitors Day) will be on Saturday 27th September. See the BMES website for details.

- **PEEMS Annual General Meeting (AGM) Friday 7th November from 11am at the Hungate Centre.**

  Jonathan is still asking members to consider joining the PEEMS Committee or just to help during events or during Club meetings once a month.

- **The Summer '*Bring and Brag'* Meeting.**

  Jonathan has had a number of people telling him how well the Bring and Brag meeting went in July. There was a good variety of displays, and some people liked the food. Hopefully the next *'Bring and Brag'* will be a good evening too. Jonathan wanted to thank everyone who made the Summer '*Bring and Brag'* such a success.

- **An Announcement From Graham Sykes,**

  PEEMS has been fortunate to have had an association with Graham Sykes. Graham has built and developed his world record seeking "*Force Of Nature*" flash steam rocket bike.

  We have been privileged that Graham has visited the Club to report on the progress of the machine in February 2019 and June 2023. The talks have been written up in those month's newsletters.

  Jonathan read out the current announcement that **"*Force Of Nature"* has become the quickest ⅛th mile bike in the world. It took 3.32 seconds to cover the ⅛th mile, passing the marker at 174.46 mph.**

Photo Copyright Harvey Brewster.

- **Workshop 'Tidy Up'**

  Hello all, it was time to have a bit of a tidy up of the PEEMS workshop. Stuff has been in bins for years.

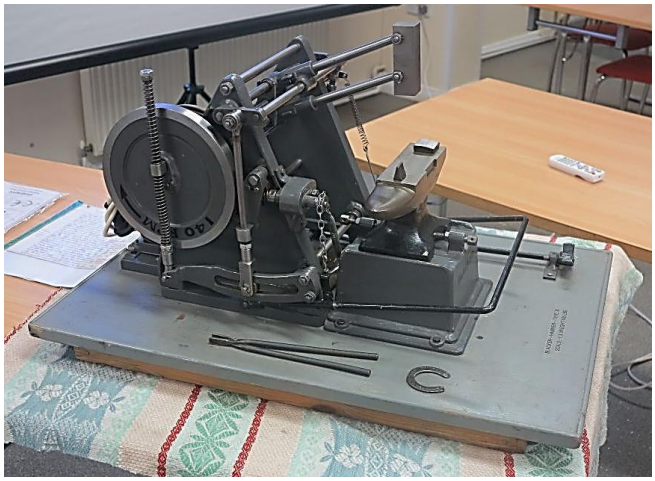
  Briefly, the various items we would like to shift are; various steel and brass, mini-drill stand, tin of woodscrews, Vernier callipers, Ryobi charger and battery, mini anvil, Myford paint, woodworker vice, 10% sulphuric acid.

  Record plane, drill sharpener, Picador spindle, white wall paint. *Flying Scotsman* tee-shirt.

  Have a look at the photos. Ideally everything goes on Tuesday 16th September, a workshop morning. If it's not worth anything, take it away, although I would have thought that some items like the woodworker vice, plane, anvil and brass would be worth something to the workshop kitty. *Jonathan.*

- **A ⅓rd Scale Blacker Power Hammer Model. A Talk by Chris Bramley.**

Introduction



In 1952, Chris's family moved to Pickering, to the top of Eastfield Road, adjoining Ruffa Lane. Every day, Chris used to walk along Ruffa Lane to school. This was a 10-minute walk. He walked off Ruffa Lane on to what was Kirkham Lane, and which now forms the lower part of Whitby Road down to the roundabout. In those days, Kirkham Lane was only 9 feet wide, and there were one or two businesses on it.

The Junction of Kirkham Lane and Eastgate, Pickering

Starting at the bottom, on the left hand-side going up, was Robin Frank's garage. After he moved, the motorcycle dealers *Fairbairn and Laycock* from Scarborough took it over. After that it became a car accessory shop.

The Eastgate car park is now on the right hand-side of the Lane. There is an entrance to the car park, where the toilets are, and an exit in the middle, up the Whitby Road. Where the car park entrance is now, used to be Burrell's café (seen on the right in the photo) with the police station next to that on the corner of Kirkham Lane.

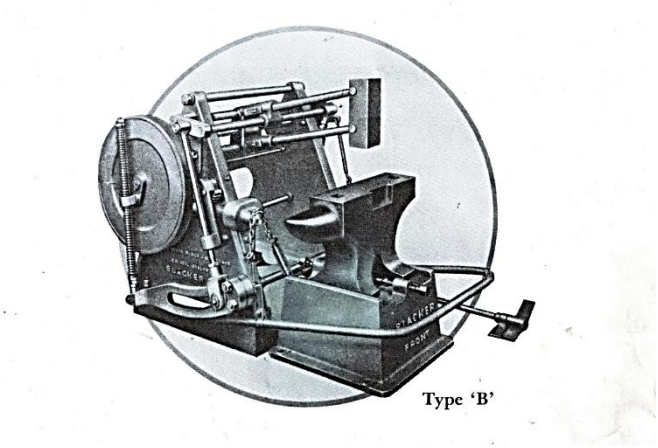
It can be seen how narrow Kirkham Lane used to be. Going up Kirkham Lane, behind the police station there used to be a court house and two police houses.

After the police houses there was Wilf McNeil's blacksmiths shop and home which was a two-storey building. As it was on Chris's route to school, he went to investigate the workshop.

That's Wilf McNeil standing on the corner.

Wilf didn't mind Chris going to see him, and after a few visits showed him the *Blacker* Power Hammer. He had bought it in 1951 at the *Festival of Britain* exhibition in London. At the time, he must have only had it for a few years.

The **BLACKER** *Hammer is a machine that pays for itself in less than a year.*



- *Can deliver single blows.*
- *Can smoothly alternate light and heavy blows.*
- *Uses the blacksmith's familiar hand tools and methods.*
- *Weight of blows can be accurately controlled.*
- *Maintains constant speed – doesn't slow on light blows.*
- *Can deliver blows heavier and faster than hand blows.*
- *Cuts time and labour costs materially.*
- *Reduces number of heats necessary per job.*
- *Reproduces hand blow effect - with quick rebound.*
- *Enables one smith alone to do the work of a smith and two helpers.*

Supplied with:
Four anvil tools to fit block or anvil.
1½ h.p. motor – single or three phase.

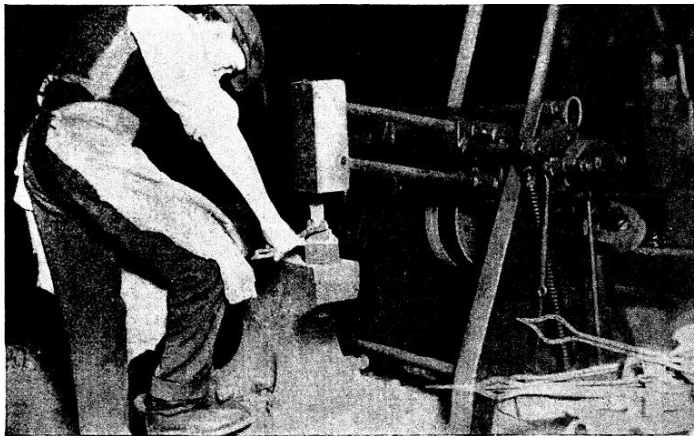
In 1962, Wilf McNeil got notice that they were going to knock down the police station buildings and his workshop/home in order to widen Kirkham Lane to what is seen today. He moved down Eastgate to a bungalow next to the snicket by the then North Riding Garages. His garden used to extend down to Outgang Road which is where he had his workshop. Approximately ten years later, Chris started his own business, and acquired a workshop and yard opposite Wilf's. They got on very well.

Wilf is seen on the left, working in his new workshop on a cart wheel on October 1985.

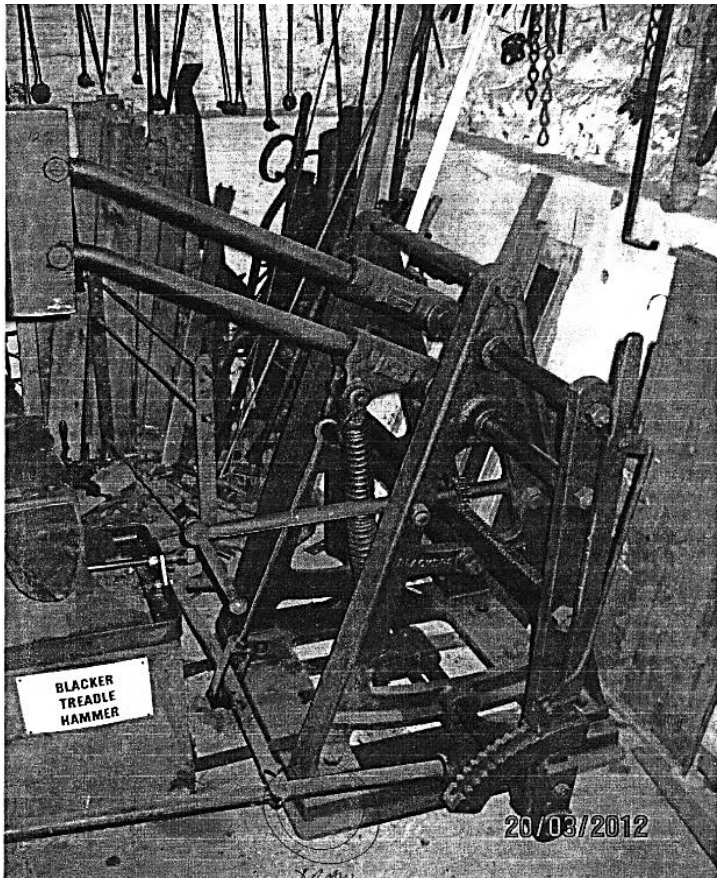
In the photo below, Wilf is seen in his new workshop shoeing a horse. The man behind him is Henry Goddard, and he was the "horse man" at R.V. Roger's Nursery.

A few years later in 1996, Chris was in his workshop, looking out of his window across the road, and a wagon had pulled up outside Wilf's workshop, and someone who had bought everything inside, was putting all the items into the wagon. Chris saw them loading the *Blacker* power hammer, and because he did a bit of ironwork himself, went across to see if he could buy it off them, but they wouldn't sell it. Chris carried on working in his workshop for another three or four years, until he had to retire.

The Blacker Power Hammer



Blacker power hammer enabling the smith to dispense with the services of “strikers”. Light or heavy blows up to 140/minute, are under control by the treadle. (*Blacker Forge and Hammer Co. Ltd* Stalybridge.) Ref *Engineering Workshop Practice, by Arthur Judge.*



This shows another *Blacker* power hammer, with a foot treadle on it, used for amateur work. Chris found this example in the forge in the Beck Isle Museum in Pickering. The blacksmith there was called John Steele. Chris told him that he could make a model of the power hammer. Six weeks later, Chris took the model to show him, and he left it there on display for a month.

The Model Power Hammer

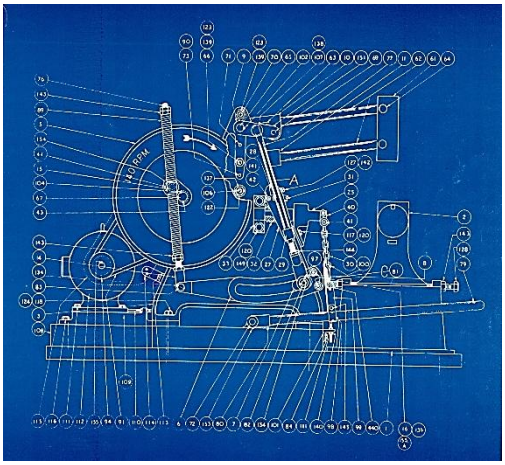
Blacker power hammers were made in Manchester *by B&S Massey* between 1863 and 1964. When Chris retired, he wanted to do more model engineering, and he built a 5½” Foden Wagon for a start. He made some extra cash by selling it, which he spent on some new machinery. After that, he thought: what should he build next? It dawned on Chris that he could build a model power hammer.

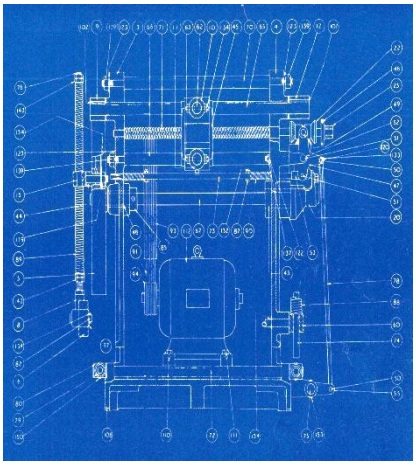
The firm that had bought Wilf McNeil’s power hammer was *Sherburn Forge* near Malton. Chris went down there and saw them about building the model, and they said he could take photos and take measurements any time he wanted. Chris told them that wasn’t good enough. *Sherburn Forge* then told Chris of a firm *Neville Barnes,* which had taken over all the spare parts when *B&S Massey* had closed in 1964. They were based in Upton, just south of Gainsborough in Lincolnshire.

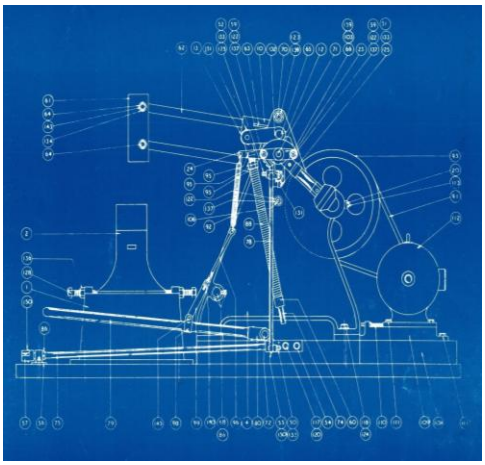
Chris went there, and there was an old woman in her eighties with a Zimmer frame. She was Mrs Barnes, the widow of the late owner. Chris told Mrs Barnes what he wanted to do, and he would like to see some drawings, and she referred him to the manager. The manager put Chris in a small office with the drawings and tracing paper. so he could copy the drawings. It was a very slow job and after 1½ hours, the manager came back and asked Chris how he was doing. Chris told him it would be better if he could take the drawings and get them copied. The manager said the drawings were the only ones they had and he couldn’t do that, so Chris went home.

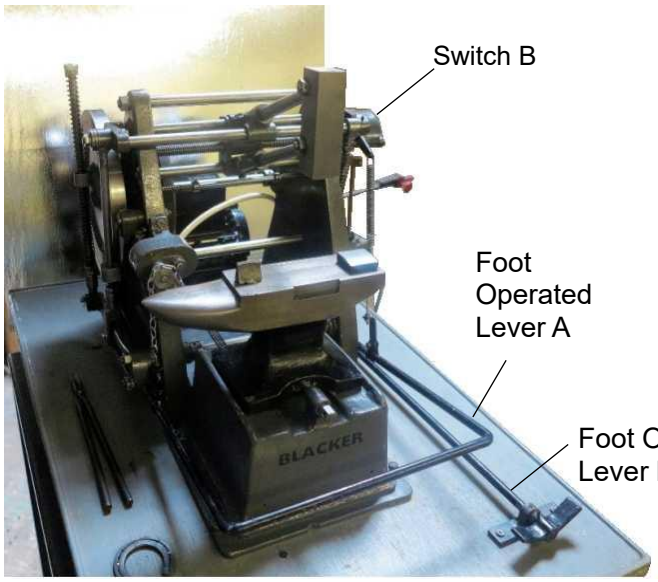
He took a few photos of the Foden wagon he had built and then went back down to Upton. The manager then said he could take the drawings, but whatever happens don’t lose them. Chris got them copied and then spent a number of nights going over them and scaling them down.

When Chris was down at *Neville Barnes,* they said that they had a spare parts catalogue, and Chris took it, and it’s been a very big help.









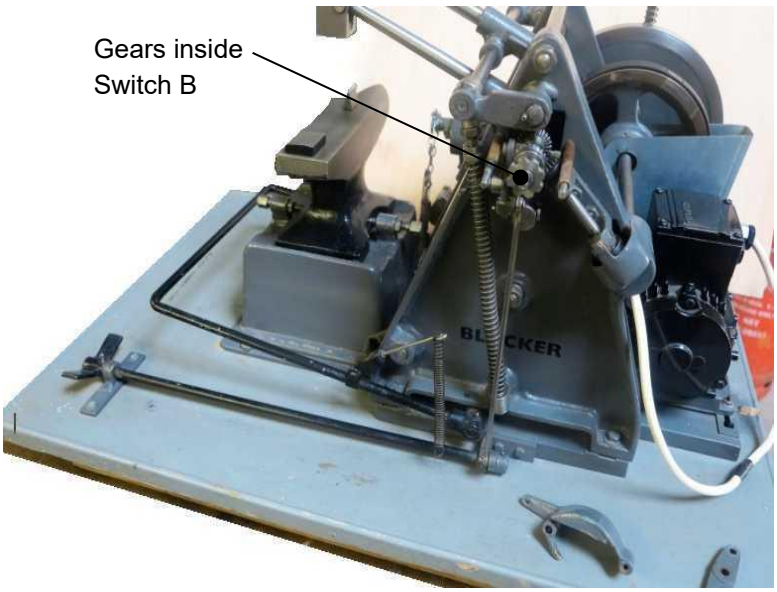
Chris then had to find an anvil that was suitable. The one he found was quite a bit wider than the one on the ⅓rd scale model, and he had to machine it down and cut the square *hardy* holes in it.

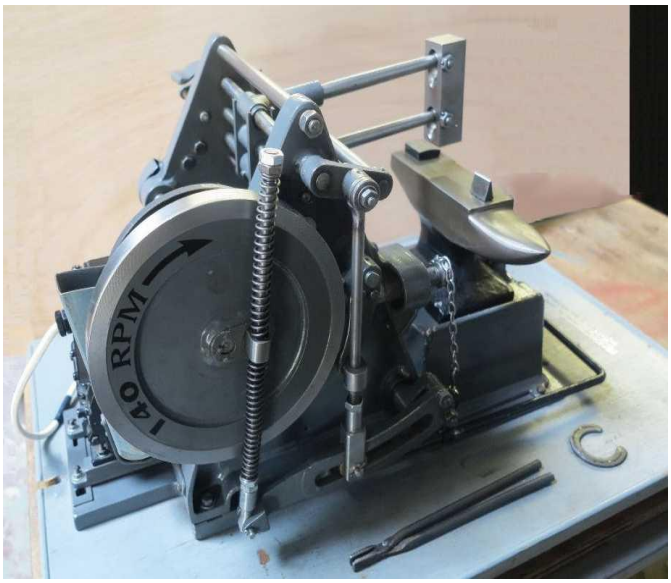
The next thing was to make the base and the two 'side cheeks' which were quite difficult to make. They had to be bolted together and made in one piece.

There are no castings on the model, it's all fabricated.

Foot operated Lever L at the bottom is for the traverse shift of the hammer, which makes it come across the anvil and reverse back again.

The little manual switch B acts as a clutch and brake, to stop the traverse occurring when the hammer is in operation. Taking the cover off the switch, reveals the inner workings.





Everything is third scale. The motor is 3 phase ¼ h.p. When the motor is switched on it drives the pulley wheel, which when it turns, drives the hammer up and down.

The only things that are different between the full-size hammer and the model is that: a) on the full-size big pulley wheel there are three belts, whereas on the model, there is only one. and b) on the full-size hammer the motor junction box is on the top, and on the model it is on the back.

When Chris had finished with the drawings, he took them back to *Barnes.* When he had finished the model, he put it in his trailer and took John Steele, the blacksmith at Beck Isle Museum, down to Upton. They made a lot of spare parts for very old farm machinery, in their forge. There were ten or twelve people working in the workshops at *'Barnes'.* Everyone in the workshops came out. Someone went around the village (about forty houses), and people of all ages came out. That was a good end to the project.

Questions And Answers.

Q: Can you control how hard the hammer hits?

Chris: Yes. You can control the speed of the motor and that controls the hammer force.

Q: The force of the hammer will depend on its weight and inertia, but does the motor also give the hammer its energy?

Chris: Yes. Before power hammers came out, you would have a blacksmith holding a part and two assistants (strikers) with 7lb to 10lb hammers hitting it . With the power hammer, the blacksmith could do all the work on his own, which saves a lot of time and trouble.

B&S Massey did make two more models, one which ran by means of a flat belt from an overhead line shaft, and the other had an internal gear on the pulley wheel, and a little gear on the motor.

Q: Is it all made from steel and is it fabricated rather than machined from the solid.?

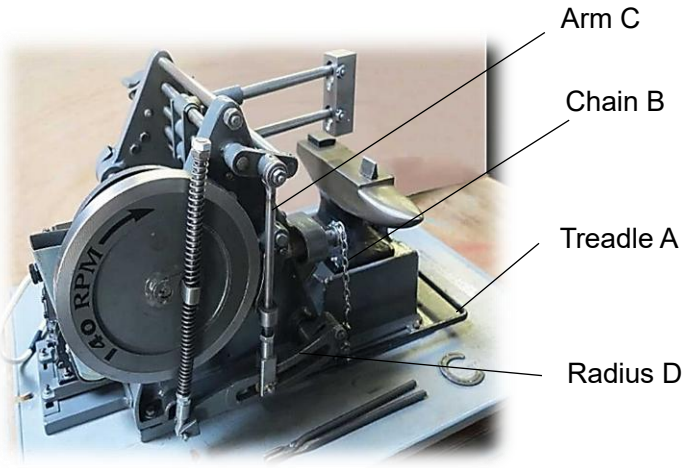
Chris: Yes. There was a lot of filing and welding to be done, and the welding was done by the person who bought my business. He did a very tidy job.

Q: Have you used the model with some red-hot metal in it?

Chris: I have used it with some solder, and it does flatten it.

Q: How is the hammer adjusted for different heights?

Chris: On the lower lever (treadle). When you push down treadle A, it pulls on the chain B which moves a little gear which twists the arm C, moving it along the radius D which changes the hammer height.



Q: Are you able to supply drawings if anybody wants to make one?

Chris: I'm the only one who has a full set of drawings, so it depends if anyone wants to make one. Does anyone want to make one?

Comment: I'm sure that I've seen that model in *Model Engineer* magazine.

Chris: It's been in *Model Engineer* about three times and has been to about four shows.

Chris was going to bring the other hammer model he has made, but couldn't on that evening.

PEEMS thanks Chris for a very interesting talk.

Ted Fletcher has provided this article he has written, for those who will find it useful:

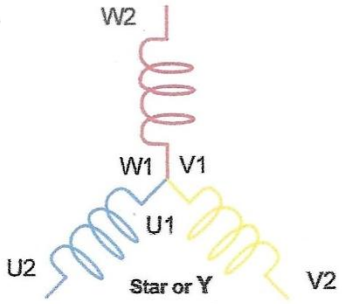
Converting A 3-Phase 415 Volt Motor From STAR Connection To 240 Volt Delta (2).

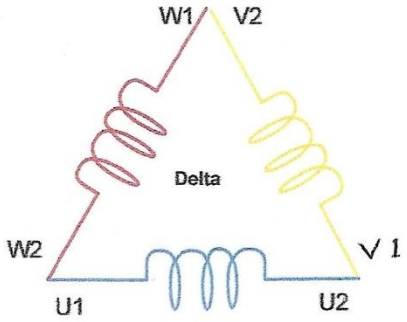
A friend bought a Harrison 140 lathe which had been used on a 415 volt electric supply. The motor visually looked OK, no cracks or bad dents in the casing, and the shaft was in good order. After having had a look in the terminal box, I found it had just three screw terminals, obviously the STAR connection must be inside the motor.

The motor had to be carefully dismantled. Scratch marks across from motor casing to end shield, two marks on non-drive end, single mark shaft end. These marks will help, when re-assembling the motor. Don't use a centre punch on the edge of the cast iron end shields or stator. Carefully dismantle the motor, be especially cautious when sliding out the rotor to avoid scratching or damaging the stator windings. Should you find that the motor windings are protruding beyond the casing then get four pieces of wood nail them together to form an open top box, which will lift the windings clear of the bench? **DON'T** rest the motor on the winding.

Have a look inside the stator and hopefully you will see an obvious insulated "lump" where the three winding end join up. This "lump" which is sometimes located at the opposite end to which the existing leads are located, they need to be separated. Carefully cut away the insulation to expose the three ends. The three exposed ends need extending, long enough for the three new wires to reach the terminal box. Solder on the three wires, then slide on fibre glass insulating sleeving followed by a piece of different coloured heat shrink on sleeve, this will identify which connection is which. Alternatively you can make a note, but the colouring may help others in the future. The three new wires MUST be secured to the original wires using cotton tape and insulating varnish or something similar, to avoid them being caught up or rubbing on the rotor. It's is OK to use any coloured wire you have available, but once the motor is assembled can you remember which wire is which? Now reassemble the motor, look out for those marks I told you about on the end shields, and once altogether rotate the shaft checking that nothing is binding or making a noise.

Having got the three new wires out, and into the terminal box, now you need to pair them up V1 & V2, U1 & U2 and W1 & W2, for this you will need an Ohmmeter, now check each winding resistance, to ensure that the three are the same value. Using the Ohmmeter or some form of continuity tester and follow the diagram on page 2. W2 & U1, U2 & V1 and V2 & W1 now the motor is connected in DELTA ready for connection to your inverter outputs. Next, carry out the all-important insulation test, using a 500 volt DC Megger. Don't forget the Earth connection.





I have used the modern notation above.

If your motor is old then W1/V2 will be A1/B2

U1/W2 will be B1/C2

V1/U2 will be C1/A2

Should your motor be a foreign made one with six wires, all of the same colour, similar to one another friend had and which he asked me to sort out for him?

Then you will first you need to pair up each winding, this is straight forward using an Ohmmeter. But one can get a winding the wrong way round (in correct polarity), the motor will attempt to start, make a growling noise and quickly over heat.

As always, there is a simple test to verify that the polarity is correct, for this you will need a 12 volt DC power supply, (I used a failed car battery) and an **analogue** type voltmeter (Avometer), must be analogue as you are looking for a very small deflection which you can't normally see on a digital multi meter, it's too quick. The set meter on 0 – 10 volts DC range. Maybe 3 volt range, but be cautious here, start high and work down and avoid damaging a good meter.

Note items 4 & 7 below. Here, I used a piece of wire. I gave the wire from the battery a quick flick to U2, do not use a switch, the switch action isn't quick enough.

1. Connect the meter – terminal to V2
2. Connect the meter + terminal to V1
3. Connect the battery or DC power supply – to **U1**
4. **Briefly touch the battery + to U2.**
   If the volt meter needle deflects to + then V1 & V2 are correct. If the meter needle deflects – then swap the labels on V1 & V2.

5. Connect the meter terminal – to W2

6. Connect the meter terminal + to W2

7. **Briefly touch the battery + to U2**

8. If the volt meter needle deflects to + then W1 & W2 are correct. If the meter needle deflects – then swap the labels on W1 & W2.

The coolant pump motor is the original one as fitted to a Harrison lathe, and was used in a machine shop with a 415 volt 3 phase supply. The lathe's new owner has just 240 volt single phase supply and intends to run the lathe on an inverter and the pump via the single capacitor arrangement. I wired up the pump motor, live and neutral to any pair of terminals in the motor terminal box. Then 4 µF capacitor (an ex 4 foot fluorescent light fitting one) to the unused terminal and the neutral terminal.. Now the pump motor can be connected to a domestic type 240 volt 13 amp socket outlet. Should you not have a 4 µF capacitor, then two 8 µF when connected in series will be OK. The capacitors should have a working voltage of 400 volts.

Not important to most users is the fact that it is very unlikely that each capacitor won't be exactly 4 µF ,consequently the voltage distribution across them won't be exactly or equal either, but between then 240 volts exists. Testing with a digital multimeter fitted with a 9 volt battery is not good enough, capacitors should be tested on or above working voltage and the 240 volt mains supply is 339.4 volts or 400. Capacitor calculations are the opposite to that of resistors. The two 8 µF capacitors when connected in parallel equal 16 µF.

analogue meter (Avometer),

On the Ohm range, the internal battery negative is actually connected to the external **POSITIVE** terminal of the meter, and the positive battery terminal is connected to the to the external **NEGATIVE** terminal of the meter. Low Ohms is to the right, the needle swinging/moves across to the left as the circuit resistance increases.

Contact: If you would like to contribute to the Newsletter, the contact is:
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