



June 2022

In this issue

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RPM measurement using your phone

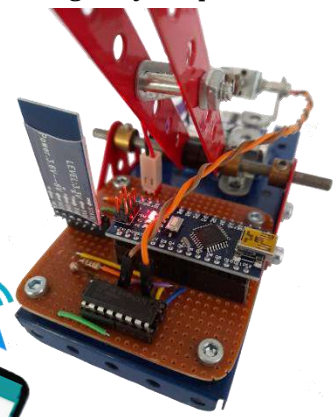
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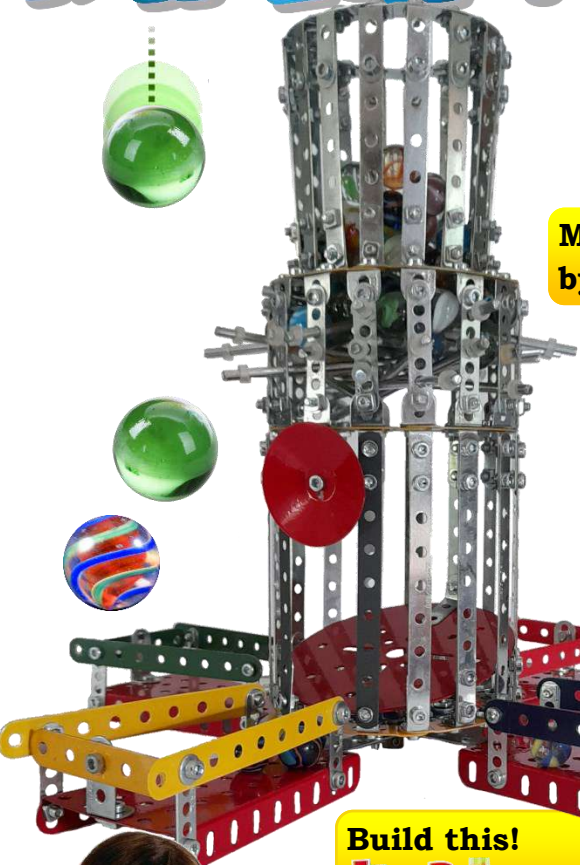
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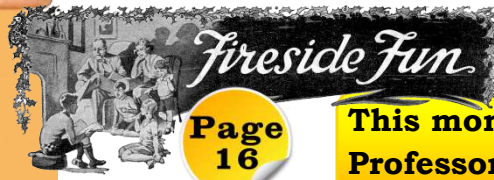
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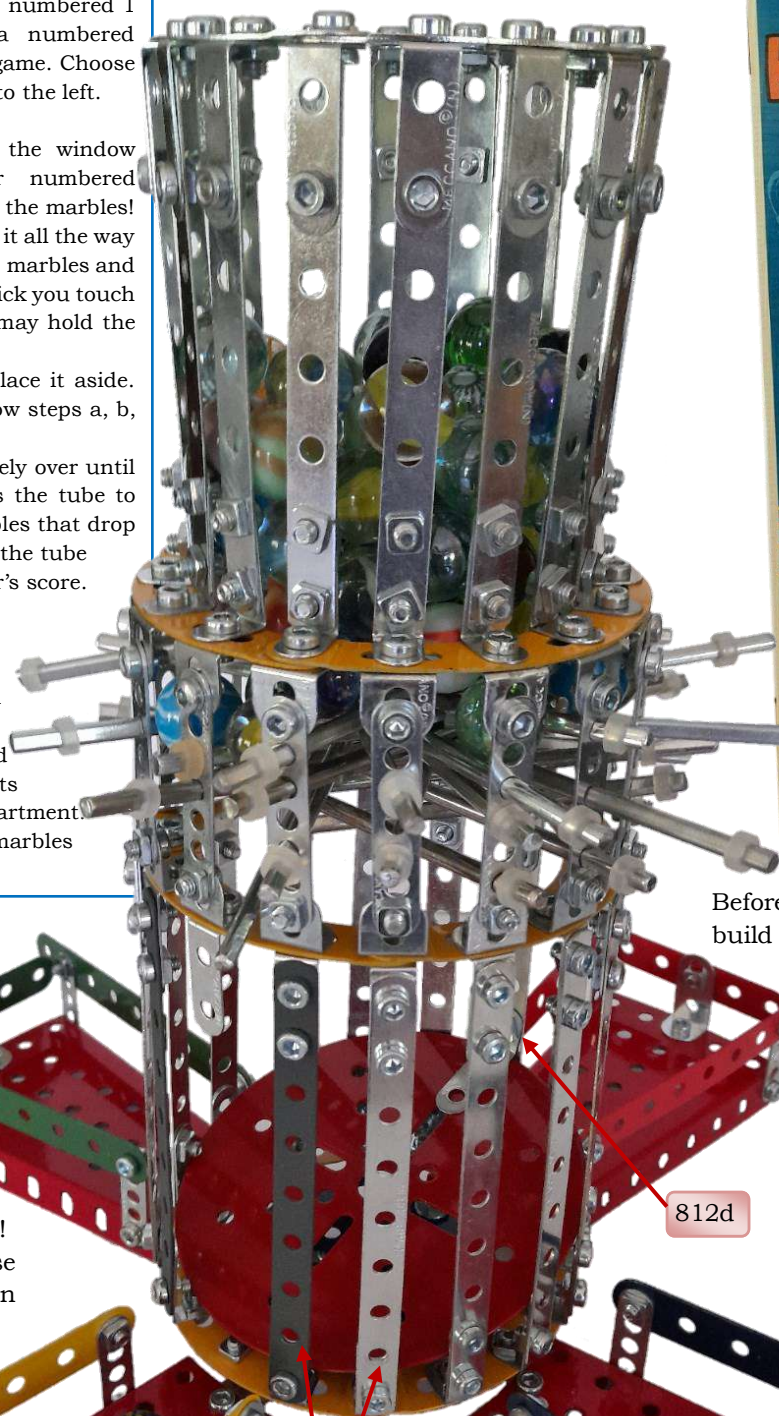


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This month's Meccanoboy is Professor Andy Knox - Scotland

KER PLUNK

1. The game base has compartments numbered 1 through 4. Each player selects a numbered compartment to use throughout the game. Choose a player to go first; play then passes to the left.
2. On each turn:
 - a) Slowly rotate the tube so that the window opening is lined up with your numbered compartment. Be careful not to move the marbles!
 - b) Choose any stick and carefully pull it all the way out of the tube, trying not to move the marbles and causing them to fall. Note: The first stick you touch is the stick you must pull, but you may hold the tube steady with one hand.
 - c) When you've removed the stick, place it aside. It's now the next player's turn to follow steps a, b, and c.
- NOTE: A player's turn is not completely over until the moment the next player touches the tube to rotate it or touches a stick. Any marbles that drop before the next player touches either the tube or a stick are added to the first player's score.
3. Marbles that drop during your turn will automatically go into your numbered compartment. Do not remove them. Just leave them there until the game is over.
4. When all the marbles have dropped into the game base, each player counts the number of marbles in their compartment. The player with the least number of marbles in their compartment is the WINNER!



Before you start gathering parts to build this, let me give you a few tips.

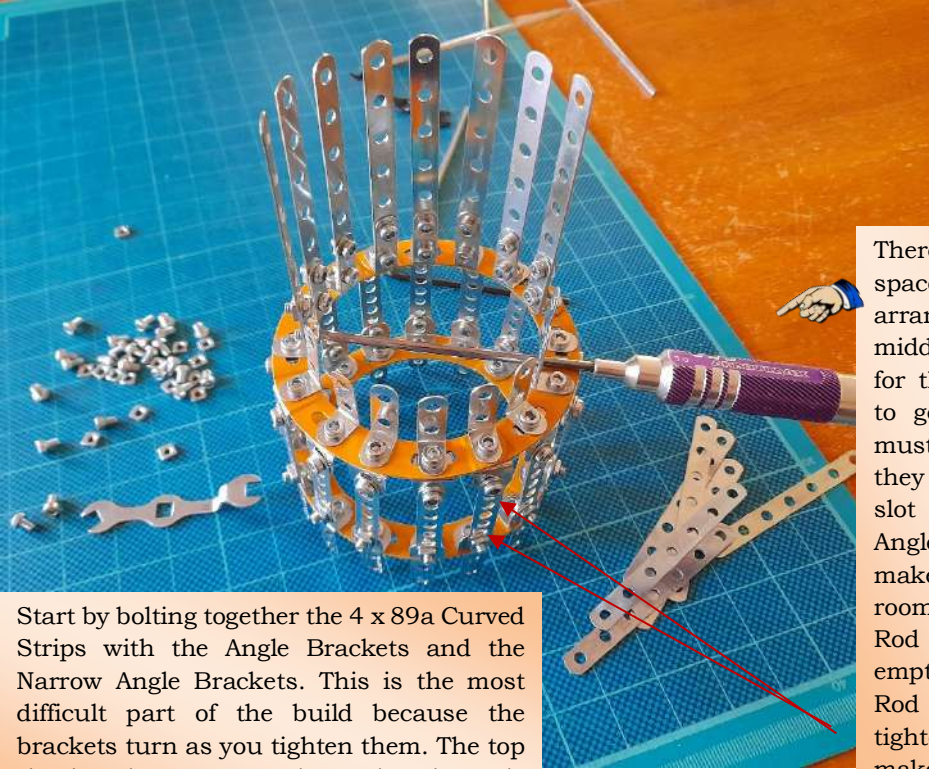
1. Tri Flat axles work better than Rods.
2. A lot of effort must go into tightening the 12a Angle Brackets and the 812b Narrow Angle Brackets as they twist and turn. (The air turned blue!)
3. Narrow Strips are better as they allow a view of the inside, but standard Strips could be used instead.

Do you remember this game? I do! Oh, what fun we had in those golden olden days of no television in a small country town.

812d

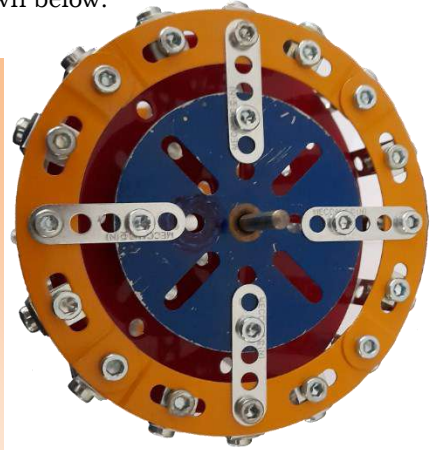
Tips cont.

4. Don't use Bolts on the top hole of the Narrow Angle Brackets near the exit as they will foul the marbles.
5. Use random lengths of Tri Flats to prevent any marbles slipping through. Some Rods can go through holes on both sides, then the shorter ones fill the gaps.



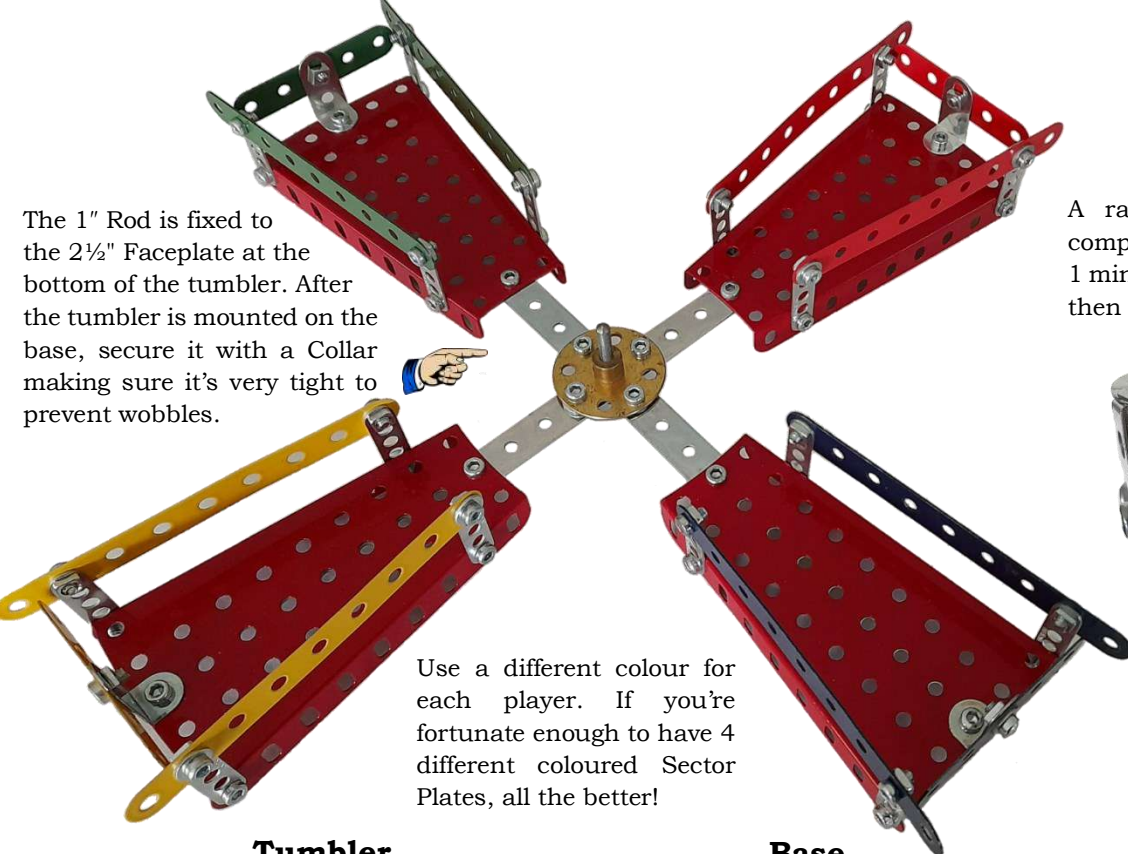
The circles formed by the 89a Curved Strips are 4" wide. This presents a difficulty as there are no 4" Strips to allow me to get a centre so I used a 2½" Faceplate and quarter inch spaced Narrow Strips as shown below.

There are 16 x ¼" spaced Narrow Strips arranged around the middle of the tumbler for the Tri Flat Rods to go through. Care must be taken where they are bolted to the slot of the part 12 Angle Brackets to make sure there is room for a Tri Flat Rod to fit in all the empty holes. I put a Rod through before I tighten the bolts to make sure.



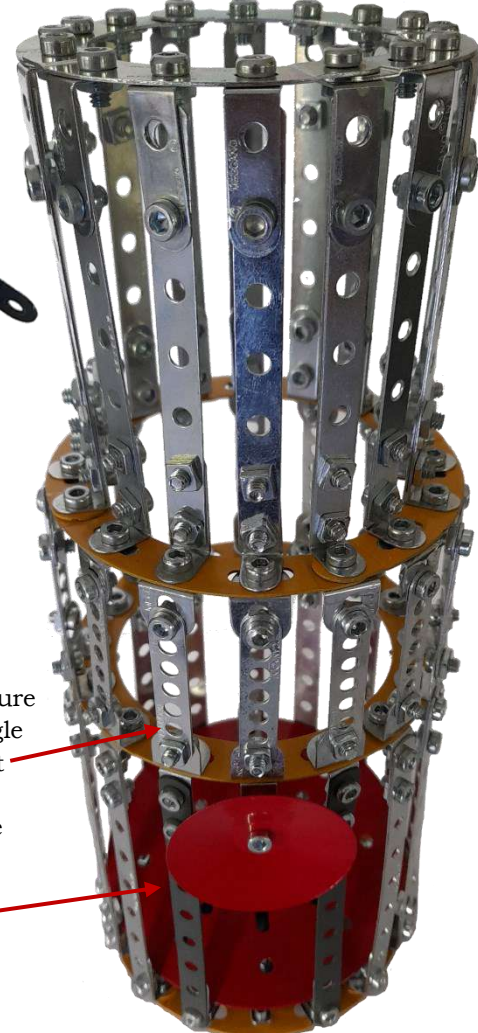
A random selection of Tri Flat Rods comprised of 5", 3½" and 3". It takes about 1 minute to poke all the long Rods through then fill up the gaps with short Rods.

Start by bolting together the 4 x 89a Curved Strips with the Angle Brackets and the Narrow Angle Brackets. This is the most difficult part of the build because the brackets turn as you tighten them. The top ring has the Narrow Angle Brackets inwards to give a smaller opening for the marbles.



The 1" Rod is fixed to the 2½" Faceplate at the bottom of the tumbler. After the tumbler is mounted on the base, secure it with a Collar making sure it's very tight to prevent wobbles.

Use a different colour for each player. If you're fortunate enough to have 4 different coloured Sector Plates, all the better!



Make sure the Angle Bracket doesn't foul the hole.

Tumbler

Part No.	Description	Qty
12	Angle Bracket ½" x ½"	32
89a	Curved Strip 3"	12
90a	Curved Strip 2½"	4
109	Face Plate with boss 2½"	1
146a	Face Plate bossless 4"	1
187a	Conical Disk	1
235b	Narrow Strip 7 hole	16
235d	Narrow Strip 9 hole	15
812b	Narrow Angle Bracket 1" x ½"	64
812d	Narrow Angle Bracket obtuse	1
C768	QI Narrow Strip 5 hole	4
C769	QI Narrow Strip 7 hole	16

Base

Part No.	Description	Qty
1	Strip 12½"	2
2a	Strip 4½"	8
5	Strip 2½"	4
12b	Angle Bracket 1" x ½"	4
18b	Rod 1"	1
24	Bush Wheel 8 hole	1
54	Flanged Sector Plate	4
59	Collar	1
C768	QI Narrow Strip 5 hole	16

Use different coloured Narrow Strips and a part 187a Conical Disk to highlight the exit chute to be lined up for each player.

Control your models with a smartphone

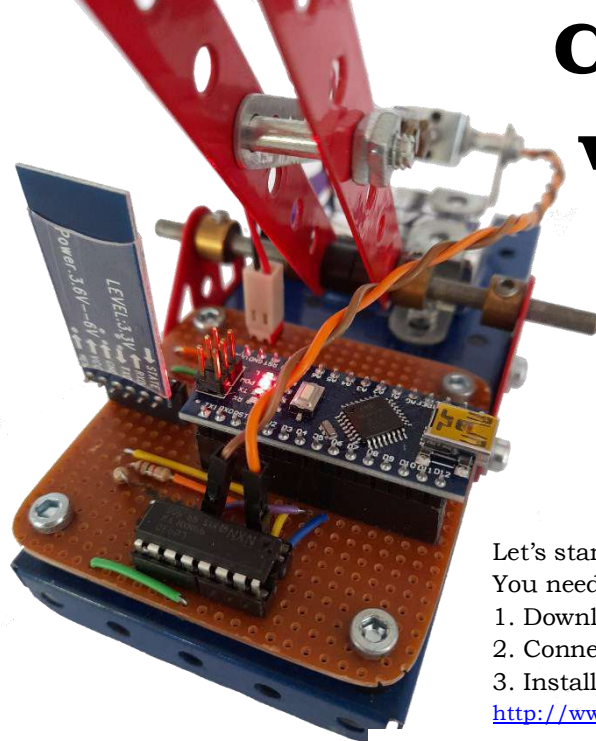


Remember the old days of Remote Control? Radio transmitters for model planes, infrared remotes that must be pointed at your TV. These days everybody has a smartphone in their pocket. Since covid even the Luddites have gone out and purchased smartphones to use apps for QR code check-ins and proof of vaccination to be allowed into places. All these phones can download apps and they all have Bluetooth so it's not really that difficult to use these features to control your models. This article will show you how to build the bare basics using a free app on your phone to control a motor with just 3 commands; Forward, Reverse and Stop. Once you have it working, it's then easy to expand to 10 commands using the same components with just a few more connecting wires.

Let's start with the KISS (Keep It Simple, Stupid) version. You need to do 3 things.

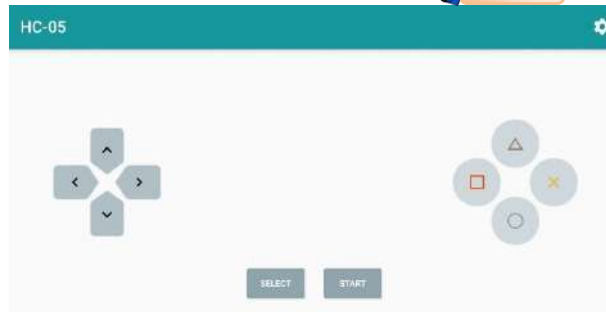
1. Download the app to your phone.
2. Connect the components.
3. Install the supplied sketch for the Arduino.

<http://www.nzmeccano.com/image-165505>



Connect in

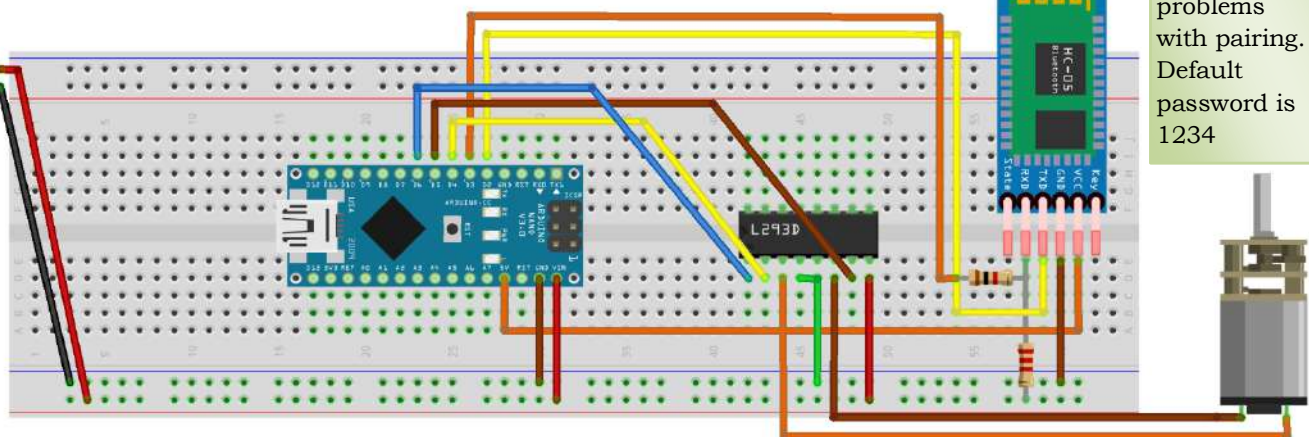
- Controller mode
- Switch mode
- Dimmer mode
- Terminal mode



Note: Make sure you use this HC-05 module. Others caused me problems with pairing. Default password is 1234

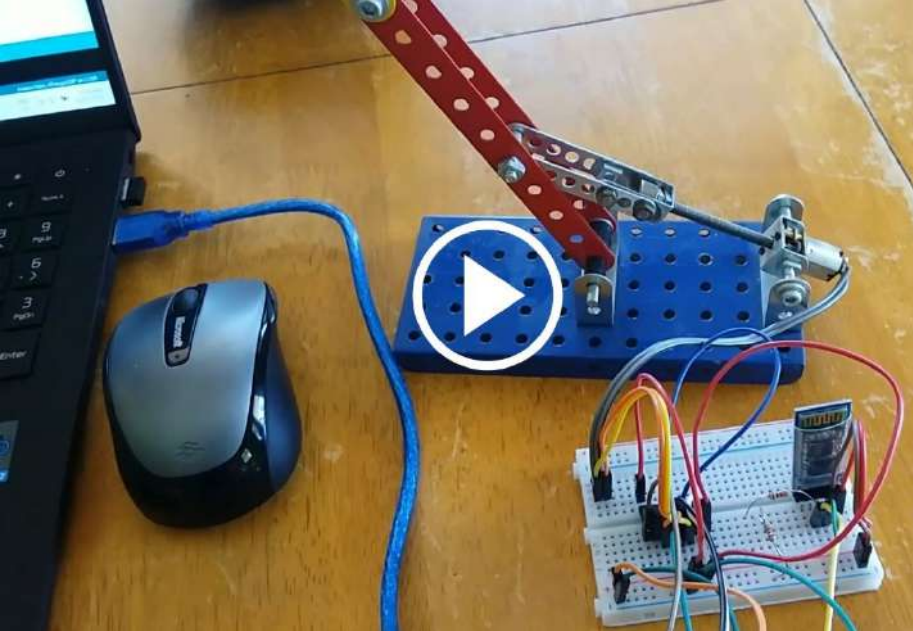
1. The App.

I use a Samsung A21S which is Android, so my apps come from Play Store. Apple users need to download apps from App Store. I chose Arduino Bluetooth Controller by Giumig Apps because it was free, simple and had a keyboard layout with 10 buttons similar to a PlayStation. When you open the app the first screen shows you available Bluetooth devices. Select HC-05. Then it will ask what mode you want. Select Controller mode. You will now see a PlayStation keyboard. Tap on the gear icon top right and you will get a screen showing the 10 symbols. Tap on up arrow and set it to send the number 1. It could be A, B, C but let's go with 1, 2, 3 for this project.



2. The Hardware.

You need a HC-05 Bluetooth module to receive the data from your phone, an Arduino microcontroller to interpret the data and set output pins high or low and a H bridge to control the motor because a microcontroller can't supply enough current. Connect the Arduino, L293D H bridge and Bluetooth module as shown. I've used a Nano but a Uno will work just the same. The resistors are there because the HC-05 Bluetooth module is designed for 3.3V operation and the Arduino uses 5V. So, although you can power up the Bluetooth module with 5V, if you apply 5V to the receive pin you may well release the magic smoke. I've used a voltage divider consisting of a 2.2k ohm resistor from RXD to Ground and a 1k ohm resistor from RXD to digital pin D3 on the Nano. The 9V battery supplies enough power for the motor but you shouldn't connect the Bluetooth module to 9V. Run the 5V from the Nano to VCC on the HC-05. Connect Ground and Vin on the Nano to the 9V rails on the breadboard. Next connect D3 to IN1 (pin 2) and D4 to IN2 (pin 7) on the L293D then connect D6 to ENA (pin 1). Pins 4 and 5 on the L293D go to Ground, and finally, pins 3 and 6 on the L293D go to the motor. Double check then triple check your connections BEFORE you connect the battery. Next step is to write the sketch to tell the Arduino what to do if it receives a 1, 2 or 3 from the Bluetooth module.



```

#include <SoftwareSerial.h>
//this is the library for serial communication with bluetooth
SoftwareSerial mySerial(2, 3); //pins 2 and 3 are RX and TX
int IN1 = 4;
int IN2 = 5;
int ENA = 6;
void setup()
{
  pinMode (ENA, OUTPUT);
  pinMode (IN1, OUTPUT);
  pinMode (IN2, OUTPUT);
  digitalWrite (ENA, HIGH);
  mySerial.begin(9600); //using default baud rate for this module
  Serial.begin(9600);
}
void loop()
{
  int datain;
  if (mySerial.available())
  {
    datain = mySerial.read();
    Serial.println("DATA RECEIVED:");
    if (datain == '1') //if a text 1 is received by bluetooth
    {
      digitalWrite (IN1, LOW);
      digitalWrite (IN2, HIGH);
      Serial.println("Motor forward");
    }
    if (datain == '2') //if a text 2 is received by bluetooth
    {
      digitalWrite (IN1, HIGH);
      digitalWrite (IN2, LOW);
      Serial.println("Motor reverse");
    }
    if (datain == '3') //if a text 3 is received by bluetooth
    {
      digitalWrite (IN1, LOW);
      digitalWrite (IN2, LOW);
      Serial.println("Motor stopped");
    }
  }
}

```

Watch the breadboard prototype on YouTube.

<https://youtu.be/vdULXNkYjTg>

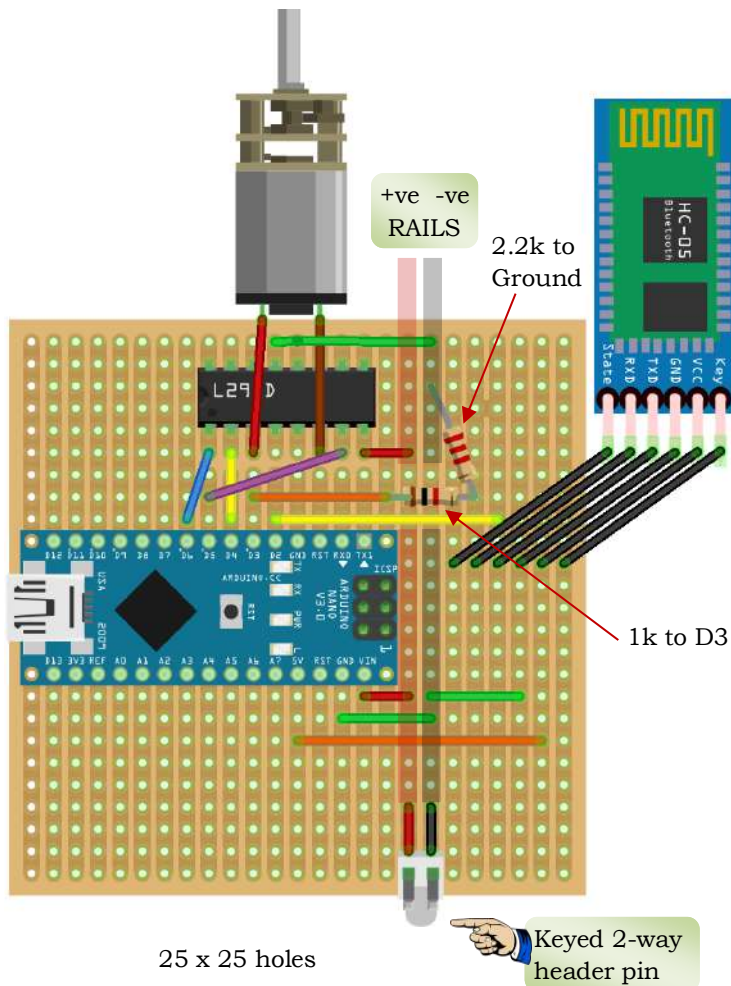
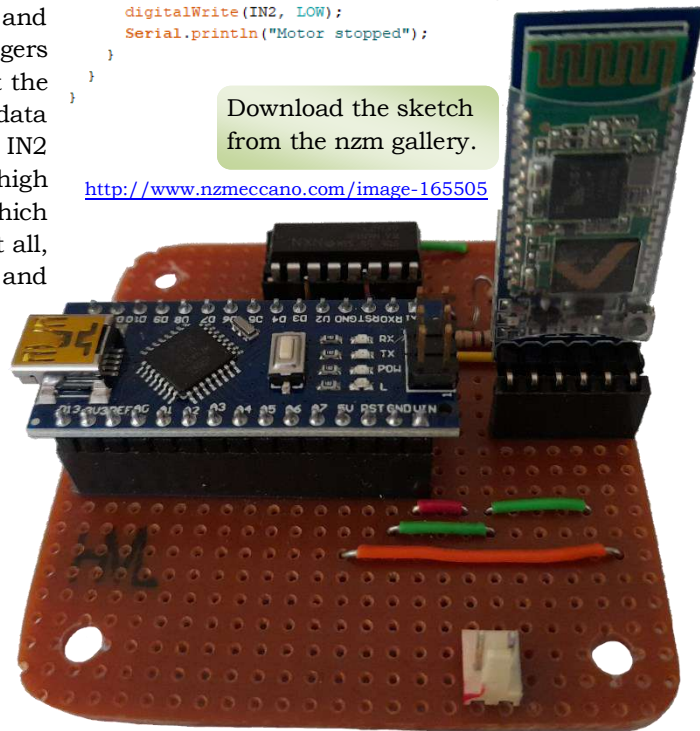
3. The Sketch.

You can build this with zero knowledge of the code required. Just copy paste my sketch into your IDE. (The Arduino app for writing sketches.)

Basically, the sketch starts with the library for the Bluetooth module and assigns pin D2 to RX (Receive) and pin D3 to TX (Transmit). Next the integers are defined for the Enable and Input 1 and 2 pins on the H bridge. Set the ENA high to turn on the H bridge. Then we have a loop that reads the data coming in from the Bluetooth module and if it's a 1, set the IN1 low and IN2 high which results in the motor going forward. If it's a 2 then set IN1 high and IN2 low resulting in reverse and finally if it's a 3, set both to low which is stopped. That's about it really. Later, when you're comfortable with it all, you can use the other side of the H bridge and connect another motor and repeat the code for more pins.

Download the sketch from the nzm gallery.

<http://www.nzmeccano.com/image-165505>

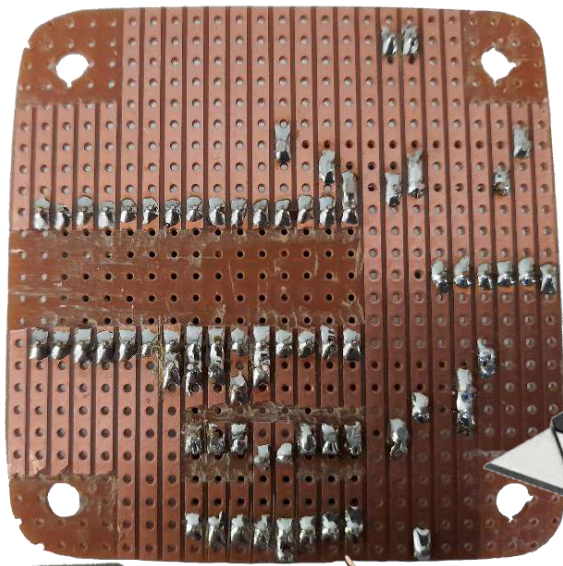


Optional 4th step. Build it on Strip Board.

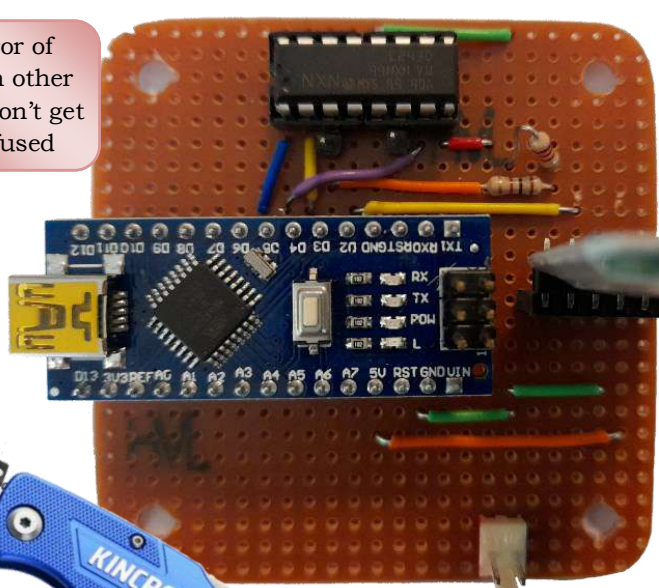
Your mission, should you choose to accept, is to bravely go where bread-boarders rarely tread. Get your soldering iron out and make your own PC board. Strip Board is also known as Vero Board and being a Meccanoboy, I cut a piece out the same size as a Meccano part 72 Flat Plate which is 2.5" x 2.5". These boards have hole spacing of 0.1" which means 10 holes per inch so when you hold a Meccano Flat Plate over the board as a template, you'll notice every 5th hole in the Strip Board lines up perfectly. Drill 4mm holes in each corner to match the Flat Plate then bolt on the Strip Board and sand or file it back using the Flat Plate as your template. Scrape off the copper track around each hole to prevent a steel bolt shorting things out. I've found a Stanley knife is best. I absolutely love my new Kincrome folding knife! Interesting brand name. It's like they can't spell King or Chrome. How many of you call it Kingchrome? Now, the next part is very important. Position the header sockets on the board and turn it over to mark where you'll cut keeping in mind that it's a mirror image when you flip the board.

25 x 25 holes

Keyed 2-way header pin



Mirror of each other so don't get confused

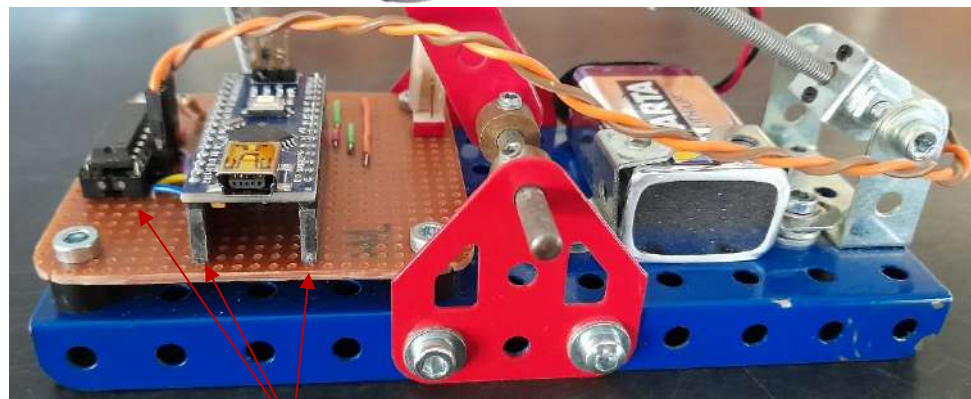


Use a keyed 2-way header pin for the 9V input to prevent reverse polarity.



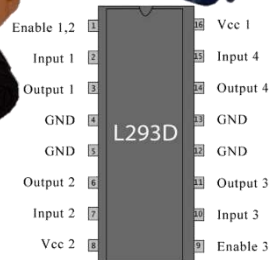
Cut away the track between the Nano header sockets and between the H bridge pins. Leave the track between the GRD pins.

L293D H bridge pinouts shown at bottom of page.

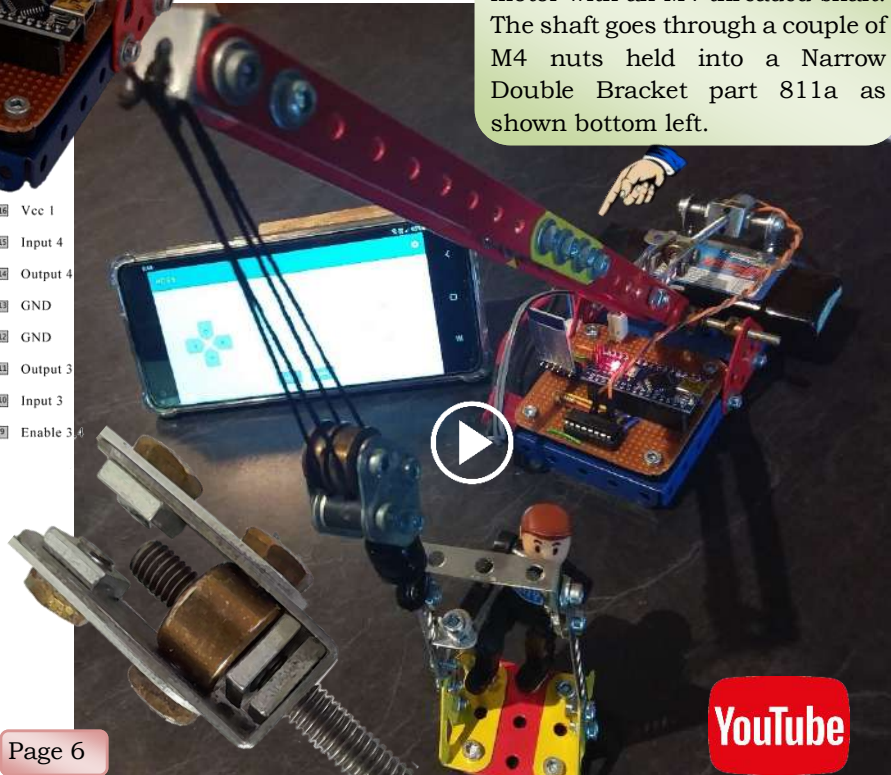


Always use chip sockets and header sockets because if a component fails, it's a nightmare trying to unsolder it. I've use two 15-pin header sockets for the Nano and a 16-pin chip socket for the H bridge. The HC 05 Bluetooth module is mounted on a 6-pin header socket. You can buy 40 pin header sockets and cut them to length with a Stanley knife

This little demo crane is an N20 motor with an M4 threaded shaft. The shaft goes through a couple of M4 nuts held into a Narrow Double Bracket part 811a as shown bottom left.



L293D H bridge pinouts.



Watch the final working model.



RPM measurement using your phone

Back in August I showed how to measure the RPM of motors using a neat little gadget from eBay that shone a light onto a reflective strip. Great idea but it cost au \$24. Recently Mick Berg from the US alerted me to a phone app that measures RPM from magnetic impulses. It's called Magnetic Counter - RPM Meter from UAB Sailracer and is available for free from the Google Playstore.

<https://play.google.com/store/apps/details?id=lt.magneticcounter>

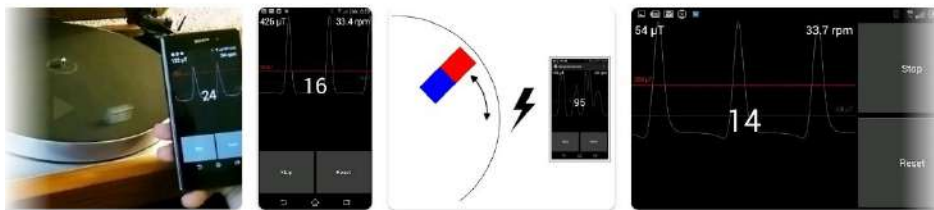


4.1★
483 reviews

50K+
Downloads

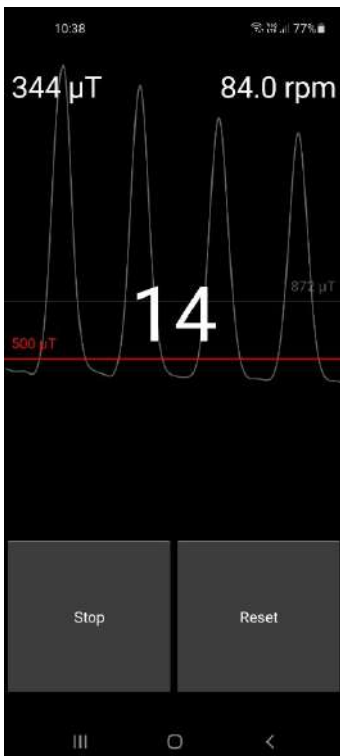
3+
Rated for 3+ ⓘ

ⓘ This app may not be optimised for your device



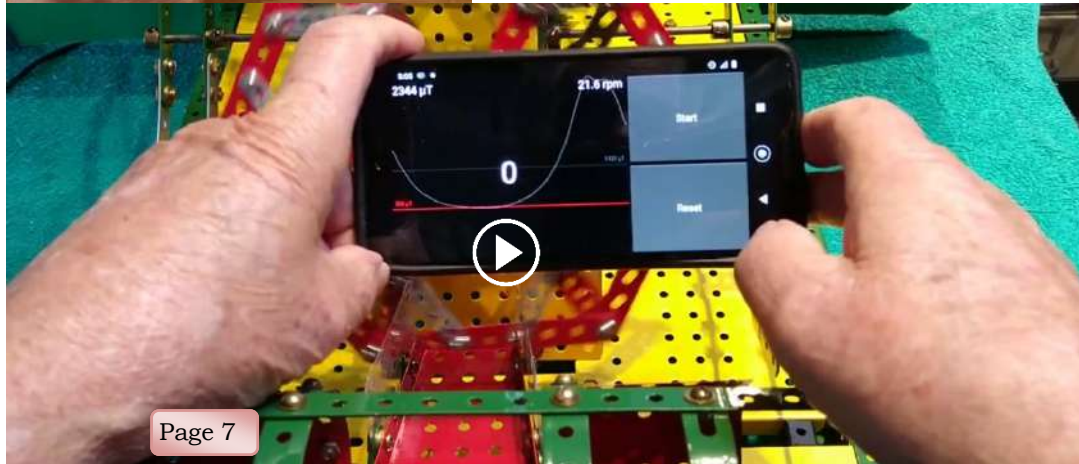
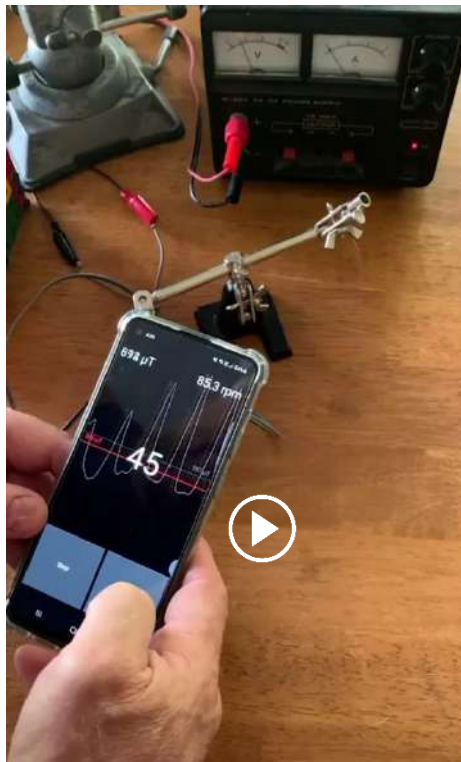
About this app

Magnetic field counter. RPM Meter. Works in a combination with a magnet.



Screenshot from my Samsung A21s

Graham Jost is a very savvy bloke who has no hesitation trying out the latest technological advances and as soon as he saw my video demonstration on Facebook, he tried it on his phone. Within 10 minutes of downloading the free app he was happily measuring the RPM of his newest Meccano marvel, the redesigned, ultra-small, Hexcalator.



Thank you to Mick Berg for alerting us to this. 🙌

Why buy one of these when you can use your phone. And who doesn't have a smartphone these days. I suspect covid check-ins and vaccination proof forced even the most diehard luddites to buy a smartphone.



From the Samsung website

Magnetic sensor includes a sensing chip having a magneto resistive element for sensing a magnetic vector and a magnet for biasing the magnetic vector sensed by the magneto resistive element.

The sensing chip senses change in the magnetic vector for detecting a behaviour of a magnetic body based on a variation of a resistance value of the magneto resistive element when biasing of the magnetic vector is caused by the magnet in cooperation with the magnetic body that is in motion in proximity of the sensing chip.

Magnetic sensor is used for compass functionality. Compass functionality is available in Navigation menu.

Note the number 45 in the middle of the screen. That's NOT the RPM. That's the running time and it shows that I had been measuring the RPM for 45 seconds while I was fiddling around trying to convince one of the kids to hold the phone and video me trying to use it. Yes, I know, I must get a camera tripod!

So the average RPM is shown in my example as 85.3 RPM which would be correct for this N20 geared motor running unloaded on 6 volts. You can see below that Graham is reading his Hexcalator RPM as 21.6.

Click or tap on either photo to see the videos. Mine <https://youtu.be/qghHLufOaGg> Graham's <https://youtu.be/Vn7ip7ixU6U>

Show Us Your Meccano Room



Depardieu Olivier - France



John Sidoli - UK



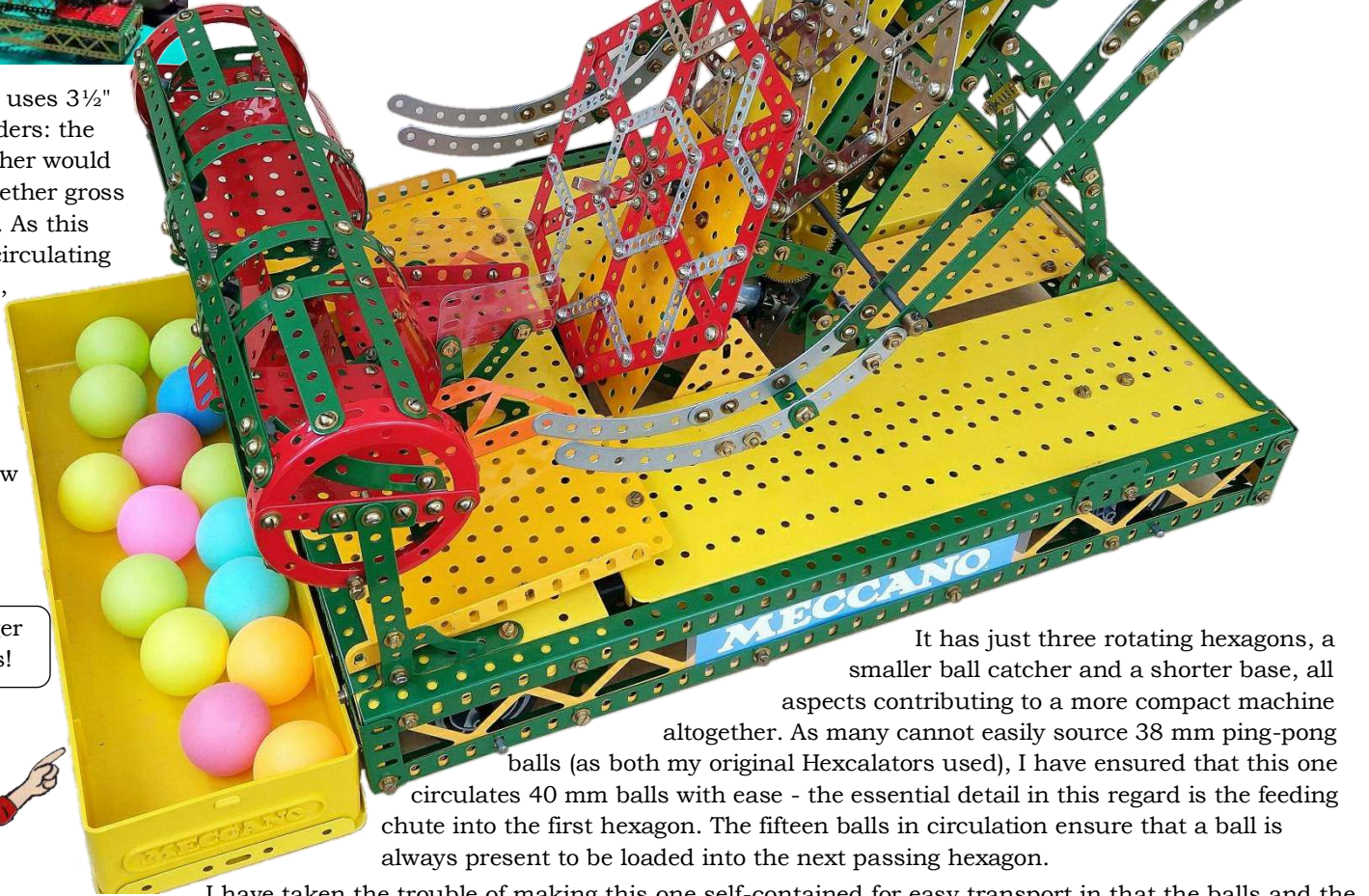
Mini Hexcalator

by Graham Jost



This Hexcalator was developed after I took the big one to a Meccano Show, our first since Covid restrictions were removed. That Hexcalator performed beautifully for all three days of the exhibition, but I found it rather a pain in terms of convenience in transport and storage. This smaller Hexcalator is the outcome.

This catcher uses 3½" Circular Girders: the original catcher would appear altogether gross at this scale. As this machine is circulating 40 mm balls, it is crucial to use an obsolete 8-hole/4" Sector Plate chute to allow the balls to pass freely.

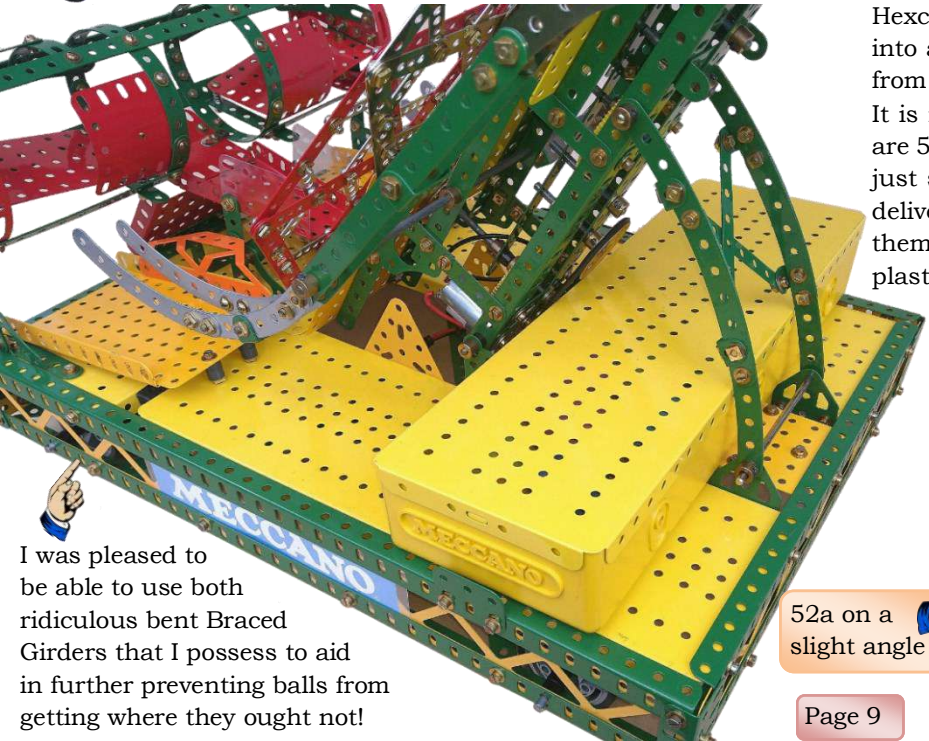


It has just three rotating hexagons, a smaller ball catcher and a shorter base, all aspects contributing to a more compact machine altogether. As many cannot easily source 38 mm ping-pong balls (as both my original Hexcalators used), I have ensured that this one circulates 40 mm balls with ease - the essential detail in this regard is the feeding chute into the first hexagon. The fifteen balls in circulation ensure that a ball is always present to be loaded into the next passing hexagon.

I have taken the trouble of making this one self-contained for easy transport in that the balls and the power-pack to run it all fit inside a #237 Plastic Box which stows under the hexagon staircase.

The layout of this machine is exactly as for my previous Hexcalators; just a little more compact! The balls are loaded into an opening at centre top of the catcher, one at a time from the Plastic Box placed as shown.

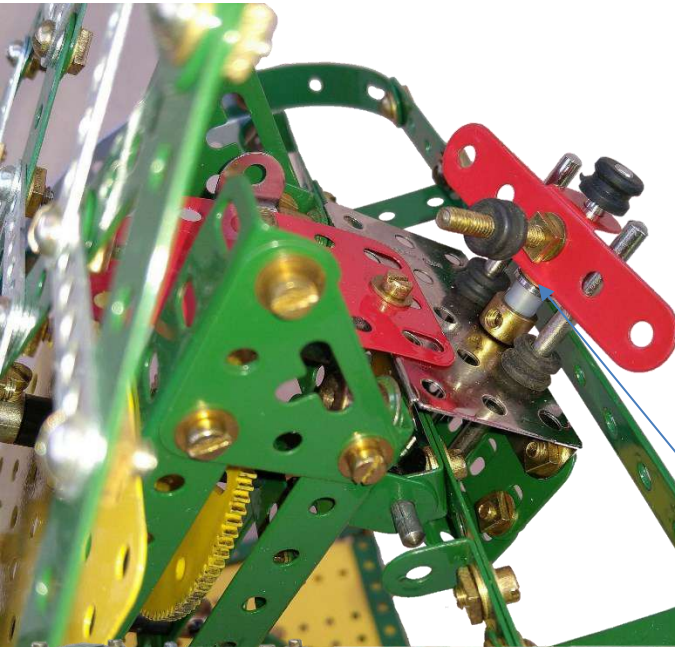
It is not altogether clear in the photo below, but there are 5½" x 3½" Perforated Plates set at a small angle and just sitting on top of the base, one on each side of the delivery chute. These are to catch any balls that find themselves in this region: they then roll down into the plastic box below the catcher. It is a rare event but ...



I was pleased to be able to use both ridiculous bent Braced Girders that I possess to aid in further preventing balls from getting where they ought not!

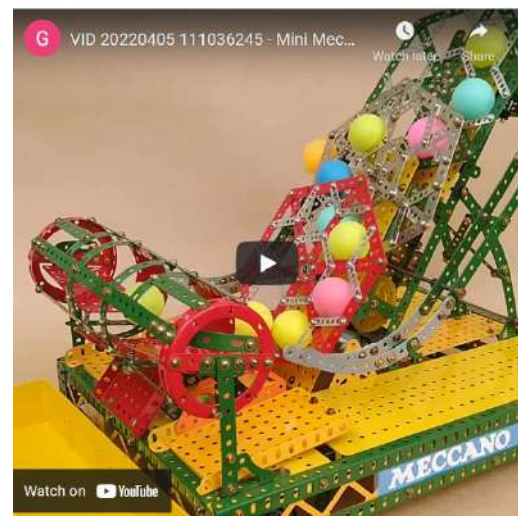
52a on a slight angle





Flip-flop.

Can't let this detail pass without comment! If you look at the larger picture, you will see a micro ball bearing beneath the red Strip. Whether it is essential, I am not sure, but as I have some, I thought I'd use one here! The strip does flop to one extreme or the other quite of its own accord when moved just past top-dead-centre.



<https://youtu.be/8BQ5wKbqHeg>



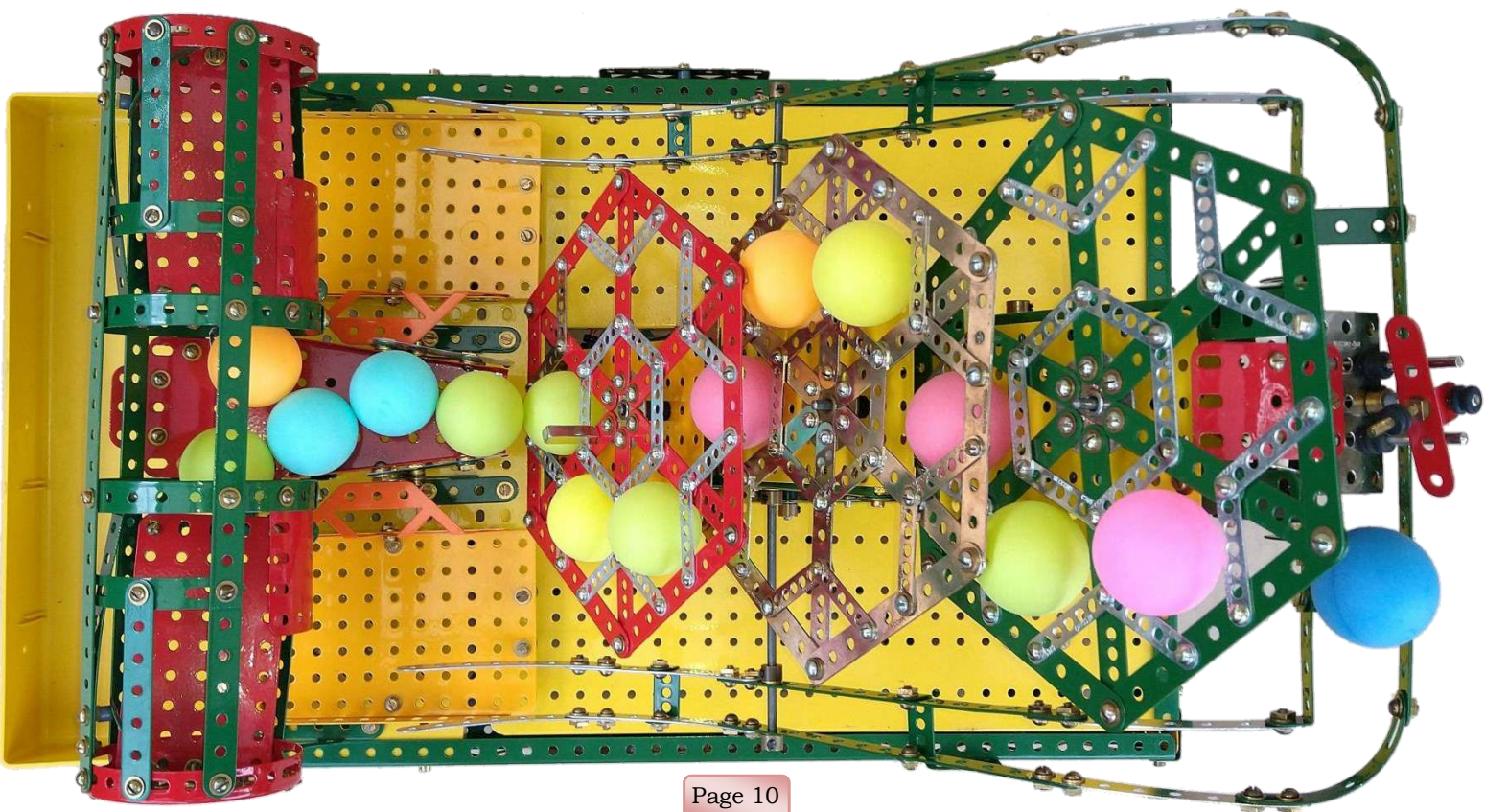
Watch both videos on YouTube by either clicking on the photos or the links below each photo.



<https://youtu.be/-m3w00I6T0w>

Underside.

Nothing special here, but I have found wheels rather than fixed feet helpful in larger models.





Murray Tulett



John Thompson



Mt Colah Church Hall

Sydney Expo 2022



The Claw



KerPlunk!



I'm not sure I want to push that red button.

Rocket Launcher



Keith Burston



Peter Stuart
Photo credit
Joe Rimmer



Ball Bearings!

Jim Osborne

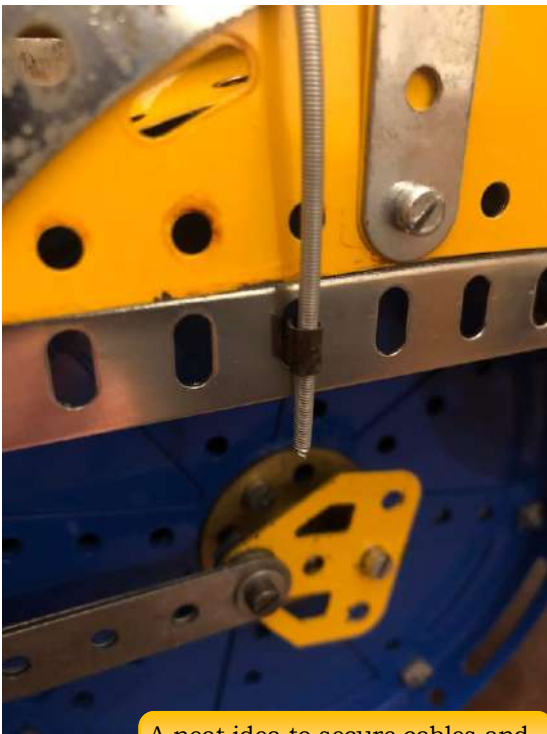


Lee Squires Pres.



Tea Ladies

FROM OUR GOOD IDEAS DEPARTMENT



A neat idea to secure cables and wires from John Slinn – UK.



Push in from the back.

Do NOT try and push in from the front. You may lose an eye.

We don't do this No, No, No!

I saw someone on Facebook who needed a double 1" Pulley. They used self-tapper screws to join a 22a to a 22. I thought there must be a better way to get 2 Pulleys on a boss without mutilation. Richard Payn came up with a few good suggestions.



Slight misalignment.

Bolt an Elektrikit 1" Bush Wheel part 518 to 1" Plastic Pulleys without boss part 22bp.

Bolt a part 22p Plastic Pulley with boss to 1" Plastic Pulleys without boss part 22bp.

Bolt part 22a Pulleys without boss to a part 64a Short Threaded Coupling.



From Mick Berg – USA. I like to use the narrow strips with the 1/4" hole spacing for mechanisms, so I made some narrow cranks to go with them. With a heavy heart I mutilated some scruffy 1" pulleys to get the bosses. Then I realised the bosses could have been made from scratch from 3/8" brass rod, which is what I will do for the next batch. I'll be making some with a short 3-hole arm as well. They fit in much better than the big fat regular ones.



Bolt an Elektrikit part 518 to a part 22p Plastic Pulley with boss. If you use a 1" Bush Wheel from the DBDY Road Wheel set, you will need washers to allow for the peening ridge.

This Month's Meccanoboy

Andy Knox - Scotland



When and where were you born? West coast of Scotland in the early 1960s.

Where did you go to school?

John Neilson in Paisley; 7 years in primary and 6 years in secondary. I left just before my 18th birthday. Hardly a week went by without being in trouble for something. Looking back, probably with some justification, and largely because I think I was bored most of the time. I never got on with languages but really loved being in the physics labs. Some of my more memorable misdemeanours include hooking up a Wimshurst machine to the door handle and dangling a wire attached to the top of a Van de Graaff generator out of the window to see if the kids in the class below would take the bait. I also once managed to cover the PE teacher in chopped up snowball when I threw a snowball through his bathroom extractor fan when he was taking a shower. Happy days!

What does a Scotsman wear under his kilt?

Insect repellent. Lots of it! Especially in Summer. It's a common misconception that Hadrian's Wall was built to keep the Scots in Scotland. The real reason it was built was to serve as a reminder to the Romans that travelling further North was not advisable because of the discomfort of the Scottish midge, Romans in leather tunics and no underwear.

Did you have Meccano as a child?

I had Lego since I can remember, then I was given a few bits of blue gold that I think belonged to my paternal grandfather. Expressions involving ducks and water come to mind. I gradually accumulated odds and sods until at the age of about 12 when I got a set 8 in BYZ. A couple of gear sets and a Power Drive Motor soon followed. The manuals had pictures of all the extra bits in sets 9 & 10 but it was to be many, many years before I expanded my collection. In retrospect I actually found a set 8 quite frustrating because it was enough to provide the temptation but couldn't meet the desire to build the things I imagined. Confession: I don't think I have ever built a "standard" model. It wasn't until the noughties that I built the block setter and I did that using Metallus due to the cost of Meccano parts. I think everyone who builds SML4 modifies the design in some way. Mine included a boom based on the Finnieston Crane and I made it all-wheel drive with articulated bogies. It would climb up quite a steep gradient. Now I have fairly extensive collections collections of both Metallus and Meccano and quite often combine the two in large models. Meccano definitely has the upper hand when it comes to gears and mechanisms whereas Metallus has lots of useful parts for structural elements. During my teenage years the other major inanimate distraction was a massive Hornby train set and I still have a few engines.

Did you go to university?

Yes, several times! First to Glasgow University as an undergraduate in the early 80s studying electrical engineering, then in the late 90s to do a PhD in electron optics, followed by a 2-year secondment from IBM to the Computer Science department (they call it "Informatics") of Edinburgh University to help with the research underpinning grid computing (now we call it the "cloud"), then as an IBM visiting professor back at Glasgow in both the Engineering and Computing Science departments. In 2007 I gave up being a visiting professor, resigned from IBM after 23 years and became a real one in Electrical Engineering at Glasgow. I planned to stay for 10 years but it turned out to be 11 before I could embark on the last stage of my career plan.

What do you do for a living? I have had a really interesting and varied career.

I don't think there was ever any doubt I would have done something technical, and until I was about 16 I thought I wanted to be either a civil or mechanical engineer. From a conceptual point of view these disciplines are much less abstract than electronics. We had a wee stream at the bottom of the garden, and I was always either damming it up or building a bridge over it. I also made a front wheel drive bicycle but that wasn't too successful: turning right caused the chain to fall off and turning left caused an accident. I also made the family lawnmower go really fast by reversing a couple of chain sprockets that drove the rear roller drum. (It was a Suffolk Punch.) Then my uncle (both he and his father were electrical engineers, and both were the General Manager of Laurence Scott Electromotors in Norwich at some point in their careers) gave me a Scientific American publication called "Microelectronics" (Vol. 237, No. 3. September 1977; still available online). This was a collection of papers about various aspects of electronic systems integration and it absolutely fascinated me, not only for what was being done, but also because it was evident this was just the beginning. That's about when I stopped messing about with high voltages and turned my attention to transistors and logic. After my first degree I went to IBM to design CRT monitors (back to high voltage) and then we started adding microcontrollers to the Multisync models. I ended up in quite a senior position and spent a lot of time in IBM Research in Almaden, Yamato (Japan) and Yorktown (NY). I've never been south of the equator but plan to do that one day. As already mentioned, I left IBM and went to Glasgow University - whilst there I started a company called Thermoelectric Conversion Systems Ltd with a bunch of my PhD and post-docs. Three years ago, I took early retirement from the university to join TCS full time as the technical director. I also have my own consultancy but I'm winding that down a bit now.

Wow! Sounds impressive. Do you write papers on technical stuff?

At IBM I wrote 40 or 50 papers and authored over 60 patents. You'll find me on Google Scholar under IBM and Glasgow University. At the university I wrote loads of papers.... not esoteric stuff but some really useful studies on the industrial applications for the areas I was working on. Even my PhD thesis found a good home.... Philips proved my electron space charge models were pretty close to reality and they used them to design the emission source in new x-ray machines.

Lawn
Mower
Man

Are you married? Any kids?

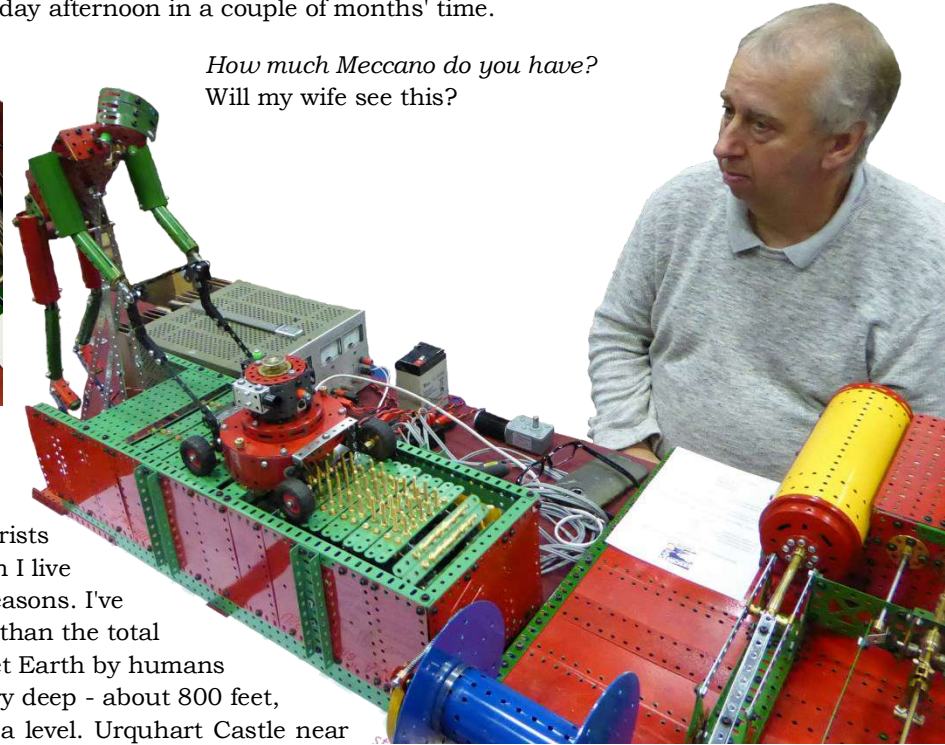
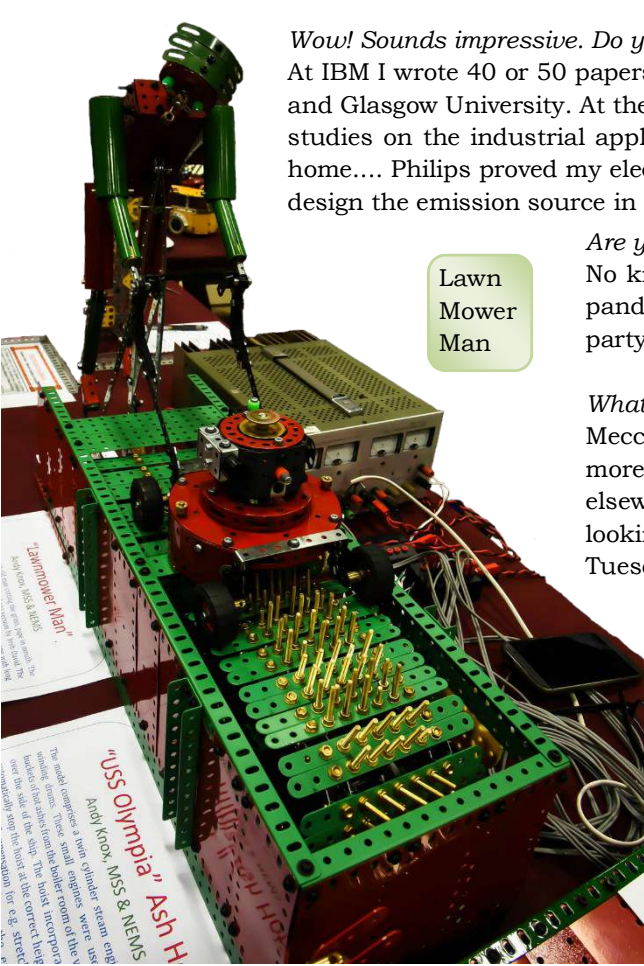
No kids that I know of. Last year I remarried, which was no mean feat during a pandemic. We took over an hotel in the Scottish Highlands and had one hell of a party with all the family we wanted there and nobody we didn't.

What Meccano clubs are you in?

Meccano Society of Scotland and NEMS in England around the North-East. That's more a statement of the UK geography although I have been known to turn up elsewhere periodically. I really like Skegness (the people, not the place!) and I'm looking forward to someone calling out "Hello Scotland!" when I turn up on the Tuesday afternoon in a couple of months' time.

How much Meccano do you have?

Will my wife see this?



Have you ever seen the Loch Ness Monster?

I could give a flippant answer and say, "Yes, she's called Shiela, is about 60 years old and lives in a houseboat at the South end of the loch. Preys on tourists and the Tree Haggis." The real answer is no, although I live in hope. Loch Ness is a remarkable place for many reasons. I've heard it said that the volume of Loch Ness is greater than the total volume of oil that has ever been extracted from planet Earth by humans since they started digging it up. Loch Ness is also very deep - about 800 feet, which means the bottom is about 750 feet below sea level. Urquhart Castle near Drumnadrochit is the most common place for sightings and has been since the 14th Century. (As an aside, Urquhart Castle played a role in the Wars of Scottish Independence some 600 years ago and they haven't finished fighting about it yet.) In the 19th century they built something called the Caledonian Canal that connects the West and East coasts, from Fort William via Neptune's Staircase to Inverness via Loch Ness and a few other lochs. This effectively divided Scotland in two and an unfortunate side effect was it severed the migration route for the Haggis (plural Haggi, offspring Hagglets), which tend to hibernate on the West side of the Loch and spend the summer months in the sunnier East where there is more insect life. Rumour has it the monster would often be seen feeding on the Haggi swimming across the loch. For anyone that doesn't know what a Haggis is, they're like Koala Bears but have a long reddish-brown coat. They are quite timid, but the wee buggers will give you a nasty bite if cornered.

What sort of models do you prefer to build?

I tend to alternate between building things for shows and exhibitions and models to understand how mechanical things work. A couple examples of the latter: I built a feathering paddle wheel as seen on old paddle steamers e.g., the Waverley. The angle of the paddles changes as the wheel rotates. I couldn't figure out how until I built it. Similarly, years ago I built one bank of cylinders from a Deltic engine, along with the phasing gears that connect the three cranks to a common output shaft. This is really amazing to watch working and I still have no idea of how to calculate the firing order and cam timing for 36 cylinders (where is TDC when there are 3 cranks and no cylinder heads??) Exhibition models have to do something, preferably unattended, so the builder can have a chat with friends and colleagues, go in search of the beer tent or track down the van selling Venison Burgers. The ball roller I took to Skegness a few years ago was entertaining to watch but half the exhibitors were regularly bringing me back Ping-Pong balls that had escaped.



Andy at SkegEx 2017 holding his Issigonis shield.

What was your best model?

That's a tough one. I built a BMC 'A' series engine to 1/4 scale that had just about everything on it: oil & water pumps, fan, distributor, cams and followers, valves, rockers, pistons, cranks, rods. It even had a radiator. I was very pleased with it but nobody seemed to appreciate it. I also built a model of the Kempton Great Engine and water pumps - that was hard work, but it really looked the part. That actually went down to Kempton Park to a Meccano exhibition there and it was on loan for about a year. If the length of time a model is kept is indicative of being "good" - the Finnieston Crane. That's 6 feet tall and still standing in the corner of my study. It's almost too heavy to lift but I might give it an outing this summer.

Have you travelled much to attend Meccano expos?

Not too often, but maybe when I properly retire, I'll have more time for that.

Any success at SkegEx?

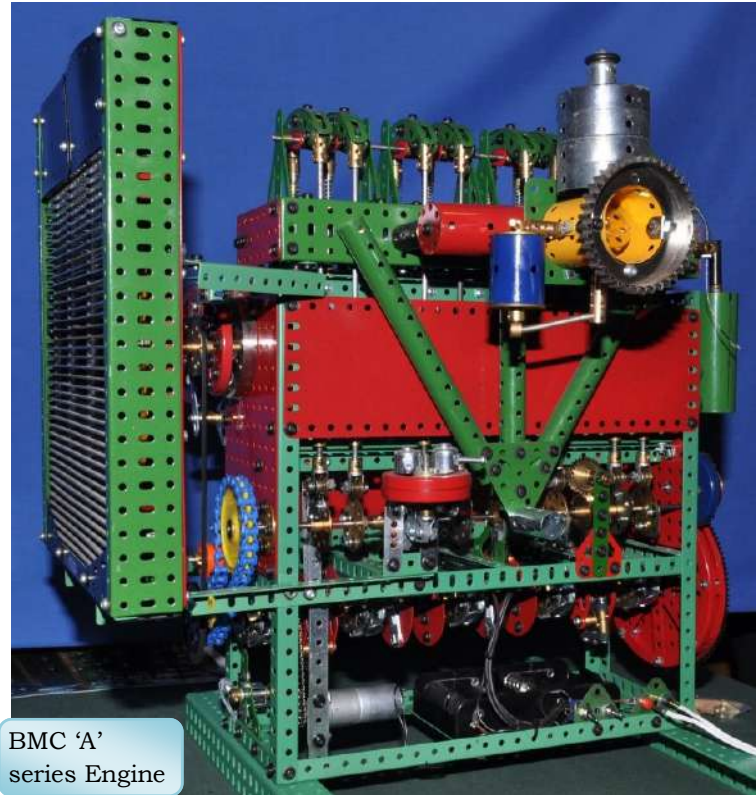
Some, much to my surprise. The Lawnmower Man and the ball roller were popular amongst the exhibitors. Some of the things getting built with Meccano now are remarkable and I have nothing but admiration for the people doing it.

What do you think of the direction Spin Master is taking Meccano?

I don't like the plastic stuff much, but I don't think that's the problem. The world is a different place now and I think the reason Lego and e.g., Hornby are still successful is more to do with how kids are educated in their formative years. Lego just clicks together whereas Meccano needs some quite good dexterity to build things. It also needs a level of understanding that Lego doesn't. Meccano also usually stays together whereas Lego models readily fall apart. Lego can also be used on the carpet whereas Meccano parts get lost too easily. At exhibitions it is quite obvious that most of the kids don't actually know how to turn a handle on a model crane - they are lacking a whole set of skills people my age just take for granted. So, I think Spin Master are fighting a lost cause frankly.

What are your plans for the future?

Keep going! I always wanted to work in a small company and make a difference. I have that now. I also thoroughly enjoy the technical challenges; less so some of the customers, but they're what I would call a necessary evil. I usually get into trouble from some of my colleagues for the nicknames I give dodgy customers. We recently had a really awkward Norwegian whom I refer to as "Nogbad the Bad" (check it out on Google), I often use characters from Asterix cartoons. We had a customer in Cyprus (professor) who couldn't agree with his research assistant on the level of control a particular piece of equipment we were designing ought to have. So, I called one "Fulliautomatix" and the other "Semiautomatix". In these days of political correctness there are some names I would love to use, but can't: Vitalstatistix and Geriatrix being examples. We also had a Dr Theopolis once who was known as Twiki (from Buck Rogers).



BMC 'A' series Engine



YouTube  [CLICK ON THE IMAGE](https://youtu.be/a2eivMy1dyg) 

<https://youtu.be/a2eivMy1dyg>

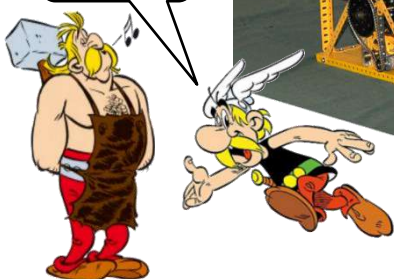
Do you have any advice for kids today?

This probably sounds quite negative, but I would be wasting my breath. Kids are going to always do what they want and make their own mistakes. There does seem to be a reticence to try new things for fear of failure, but that's how to learn. If things always work out as expected life would be quite dull.

Hmmmm



Did you break Andy's balls?!



Fullyautomatix

Asterix

Ball Roller. Issigonis Shield winner 2017.

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An Engineer, a priest, and a thief were each sentenced to death by guillotine.

They bring out the priest first, and he says "Please. Allow me to lie in the guillotine facing up, so that I might face towards God as I am about to join him."

The guards allow it and place his head through the slot. The guard pulls the lever, and the blade comes down but stops just inches short of the priest's head. It's regarded as such a freak occurrence that the priest is pardoned and set free.

Next up is the thief. "Heck, it worked for the priest. Put me in face up too," he says.

Again, the guards allow it, and again they pull the lever. The blade comes falling down, but again stops just short of the thief's neck. Like the priest, the thief is granted a pardon and set free, due to the marvellously good turn of fortune.

Finally, the engineer is brought out. "If you don't mind, could you put me in facing up?" he asks.

The guards agree and place him in the machine. The guard grabs a hold of the lever, but just before he can pull, the engineer points up and says: "Oh hey, I think I see where the problem is..."

While I was being given a tour of a mental asylum, I asked the psychiatrist, "How do you establish whether or not a person should be committed to your institution?" The doctor answered, "We have a standard test. We fill up a bathtub with water, then give the person a spoon, a cup, and a bucket, and ask him or her to empty the bathtub." "I see," I said. "A normal person would use the bucket because it's much bigger than the spoon or the cup." "No," said the doctor, "a normal person would pull the drain plug. Would you like a bed near the window?"



Meccgear Jeff Clark New Zealand sales@meccgear.co.nz No website yet but a pricelist with photos can be downloaded here <http://www.nzmeccano.com/image-151916> Bespoke parts from Corlust Meccano Club Ian Wilson bespokecraftshack@gmail.com Mike Rhoades. Link to price list below. <https://www.nzmeccano.com/image-165106>

Finding one of her students making faces at others on the playground, Ms. Smith stopped to have a talk with the child. Smiling sweetly, the Sunday School teacher said, "Johnny, when I was a child, I was told if that I made ugly faces, it would freeze, and I would stay like that." Johnny looked up and replied, "Well, Ms Smith, you can't say you weren't warned."