SHACKNEWS

HIGHVELD AMATEUR RADIO CLUB
FEBRUARY 2009

COMMUNICATION IS THE NAME OF THE GAME

Meeting   Ton gave a very interesting talk with diagrams on repeaters and what makes them work. There was also emphasis on how our club repeater is made up.
The next meeting will held on 7 March 2009 at the usual venue. The speaker, Jaap Lourens from SENTECH, has been arranged thanks to Ray ZS6QM.

SSC Meeting The meeting was held at the home of Doug and Merle. A reasonable turnout of members enjoyed the eats which were also brought by the ladies. Thanks to Doug and Merle for the use of their home. The next get together will probably be in May with the venue to be announced later.

---oooOOOooo---

I've learned....

That to ignore the facts does not change the facts.

That when you plan to get even with someone, you are only letting that person continue to hurt you.

That love, not time, heals all wounds.

That the easiest way for me to grow as a person is to surround myself with people smarter than I am.

That everyone you meet deserves to be greeted with a smile.

That opportunities are never lost; someone will take the ones you miss.

That when you harbor bitterness, happiness will dock elsewhere.

That one should keep his words both soft and tender, because tomorrow he may have to eat them.

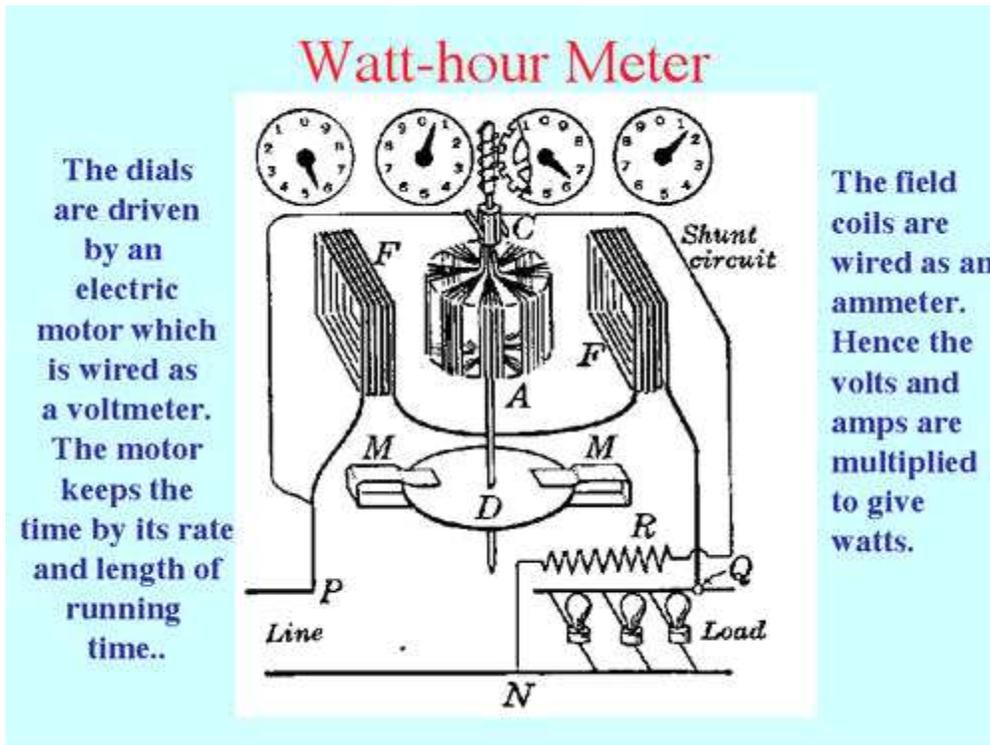That a smile is an inexpensive way to improve your looks.

That it is best to give advice in only two circumstances;
when it is requested and when it is a life threatening situation.

---oooOOOooo---

1- A group of chess enthusiasts checked into a hotel and were standing in the lobby discussing their recent tournament victories. After about an hour, the manager came out of the office and asked them to disperse. "But why," they asked, as they moved off. "Because", he said, "I can't stand chess-nuts boasting in an open foyer."

2- An invisible man marries an invisible woman. The kids were nothing to look at either.

3- I went to buy some camouflage trousers the other day, but I couldn't find any.

Watt-hour Meter

The dials are driven by an electric motor which is wired as a voltmeter. The motor keeps the time by its rate and length of running time..

Shunt circuit

F

F

C

A

M   M

D

R
www

P

Line

Q

Load

N

The field coils are wired as an ammeter. Hence the volts and amps are multiplied to give watts.

12V Fluorescent Tube Inverters

Very Easy Fluorescent Tube Inverter Circuit 12 DC to 220 AC 6 -20 W

+ 12 V

1M

555

8   4

6

2   3

0.1–
0.001 ===

5   1

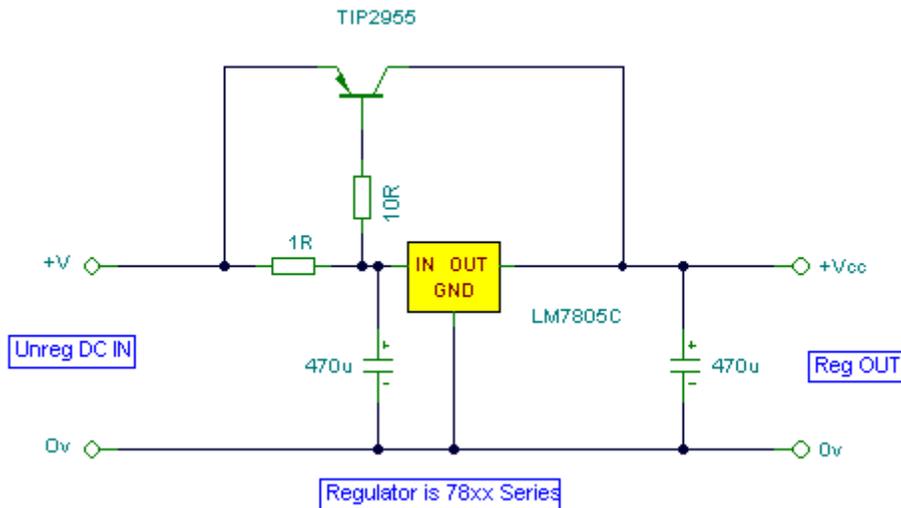.01===

12v
1A

220v

b

100
R
4k7

TIP
41

c

e
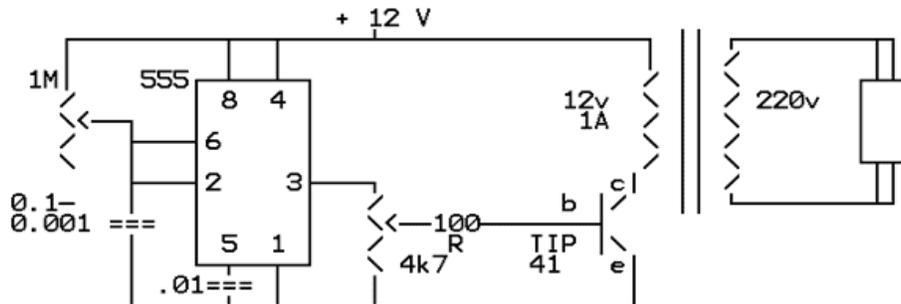
Tune 1M for +-10 KHz, and maximum efficiency / resonance from transformer.
Tune 4k7 for desired current / brightness.
Heatsink TIP 41 for currents > 300 ma.

3V

3 volt LED flasher

10K   47

0.68uF
+|(

680

+

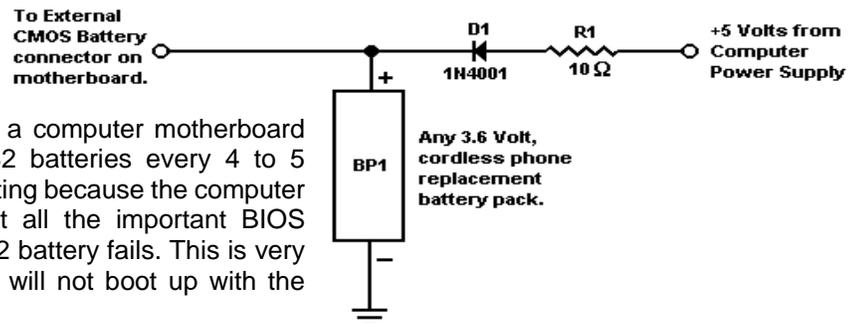100uF
6V

2907

4.7K

4.7M

2222
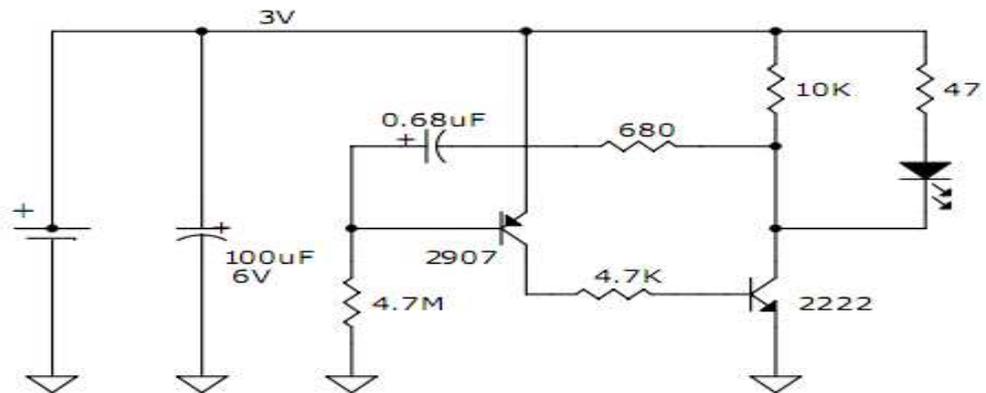
AVERAGE CURRENT = 30uA
PEAK LED CURRENT = 15mA
2mS PULSE   2 SEC BETWEEN FLASHES
APPROX. 6 MONTHS OPPERATION FROM 150mA-HR CELL

Increasing Regulator Current

TIP2955

IN OUT
GND

LM7805C

+V   Unreg DC IN

10R

1R

470u

Ov

+Vcc

470u   Reg OUT

Ov

Regulator is 78xx Series

Although the 78xx series of voltage regulators are available with different current outputs, you can boost the available current output with this circuit. A power transistor is used to supply extra current to the load the regulator, maintaining a constant voltage. Currents up to 650mA will flow through the regulator, above this value and the power transistor will start to conduct, supplying the extra current to the load. This should be on an adequate heat sink as it is likely to get rather hot. Suppose you use a 12v regulator, 7812. The input voltage should be a few volts higher to allow for voltage drops. Assume 20 volts. Lets also assume that the load will draw 5amps. The power dissipation in the transistor will be Vce * Ic or (20-12)*8=40watt.
It may keep you warm in the Winter, but you will need a large heatsink with good thermal dissipation.

To External CMOS Battery connector on motherboard.

D1
1N4001

R1
10 Ω

+5 Volts from Computer Power Supply

BP1

+

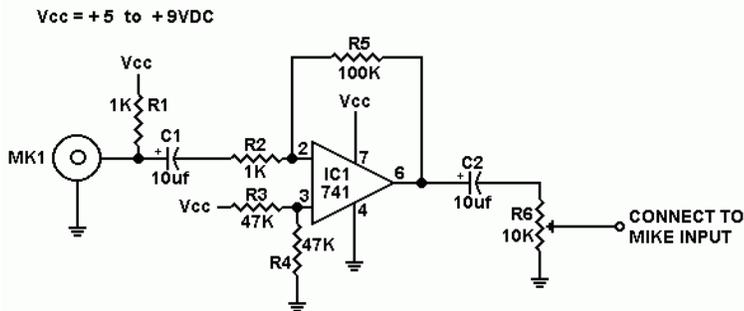Any 3.6 Volt, cordless phone replacement battery pack.

−

Occasionally one comes across a computer motherboard that seems to eat those CR2032 batteries every 4 to 5 months. This is particularly frustrating because the computer works perfectly once booted but all the important BIOS settings are lost when the CR2032 battery fails. This is very irritating if the affected computer will not boot up with the default BIOS settings.

 The circuit is an inexpensive rechargeable CMOS battery system that can be built from readily available parts. The heart of the circuit is the 3.6 volt rechargeable cordless phone battery pack. he particular brand used is not important only that it is a 3.6 volt (3 nicad cell) type. To get the necessary 5 volts from the computer power supply, a Y power connector is needed. One of the power leads has 12 volts and the other has 5 volts. Since wire colour coding schemes vary, use a voltmeter to connect to the right lead. The remaining two black leads go to ground. A connector will also be needed to connect the battery system to the external battery connector on the motherboard. It may be necessary to add or remove a jumper on the motherboard to use an external CMOS battery. Check the computer motherboard documentation for information on using an external CMOS battery. Resistor R1 is a 10 ohm ¼ watt resistor and D1 is a 1N4001 diode.

The resistor limits charging current to about 40 to 50 milliamps and diode D1 prevents the battery from discharging through the computer power supply when it is turned off. When the circuit is first installed it will be necessary to run the computer for several hours to get the battery pack charged up. After this initial charge, the computer can be run for as little as 2 hours a week.

Home Brew a Condenser Microphone

Vcc = +5 to +9VDC

The circuit consists of an electret condenser microphone with a 741 op amp chip giving enough gain to drive any transceiver's microphone input. In the circuit, resistor R1 gives a small amount of current which is required to operate the condenser element. Capacitor C1 blocks the DC currents and couples the audio to the amplifier circuit. Input resistor R2 and feedback resistor R5 set the gain of the amp to 100 which is calculated by dividing R5 by R2. Resistors R3 and R4 provide a voltage divider network to allow the 741 op amp to operate from a single voltage source in lieu of a dual polarity voltage supply. Capacitor C2 couples the audio output and blocks the DC voltages in the op amp circuit. Resistor R6 controls the output level from the op amp circuit.

If you find that the circuit has too much gain for your transceiver, eliminate all components except MK1, R1 and C1. Connect the microphone input of your transceiver to the output of C1. Since the condenser element has a built in amplifier circuit yielding a small amount of gain, the 741 op amp may not be needed for some transceivers. This circuit will operate anywhere from 5 to 9 volts. If you must operate it at 12 or 14 volts, increase R1 to 2.2K.

PARTS LIST:
R1,R2   1K Resistor
R3,R4   47K Resistor
R5   100K Resistor
R6   10K variable resistor. Use PC mount typer potentiometer as desired.
C1,C2   4.7 or 10 microfarad electrolytic capacitor.
IC1   741 op amp IC.
MK1   Electret Condenser Mike element.

CLUB INFORMATION

Postal address PO Box 19937   Sunward Park   1470

Monthly meeting venue

Website   http://www.qsl.net/zs6hvb/
e-mail   zs6hvb@gmail.com
Repeater   145.1875 MHz input - 145.7875 MHZ output
Linked to 70 cm - 438.850 MHz

Witwatersrand Rifles HQ
Cnr Barlow and Cavaleros Str
Industries West
Germiston

Bulletins   Sunday morning - 145.7875 MHz & 7062 KHz @ 08h45.
       Relay - 80M - 3662KHz

First Saturday of the month at 14:30

Committee

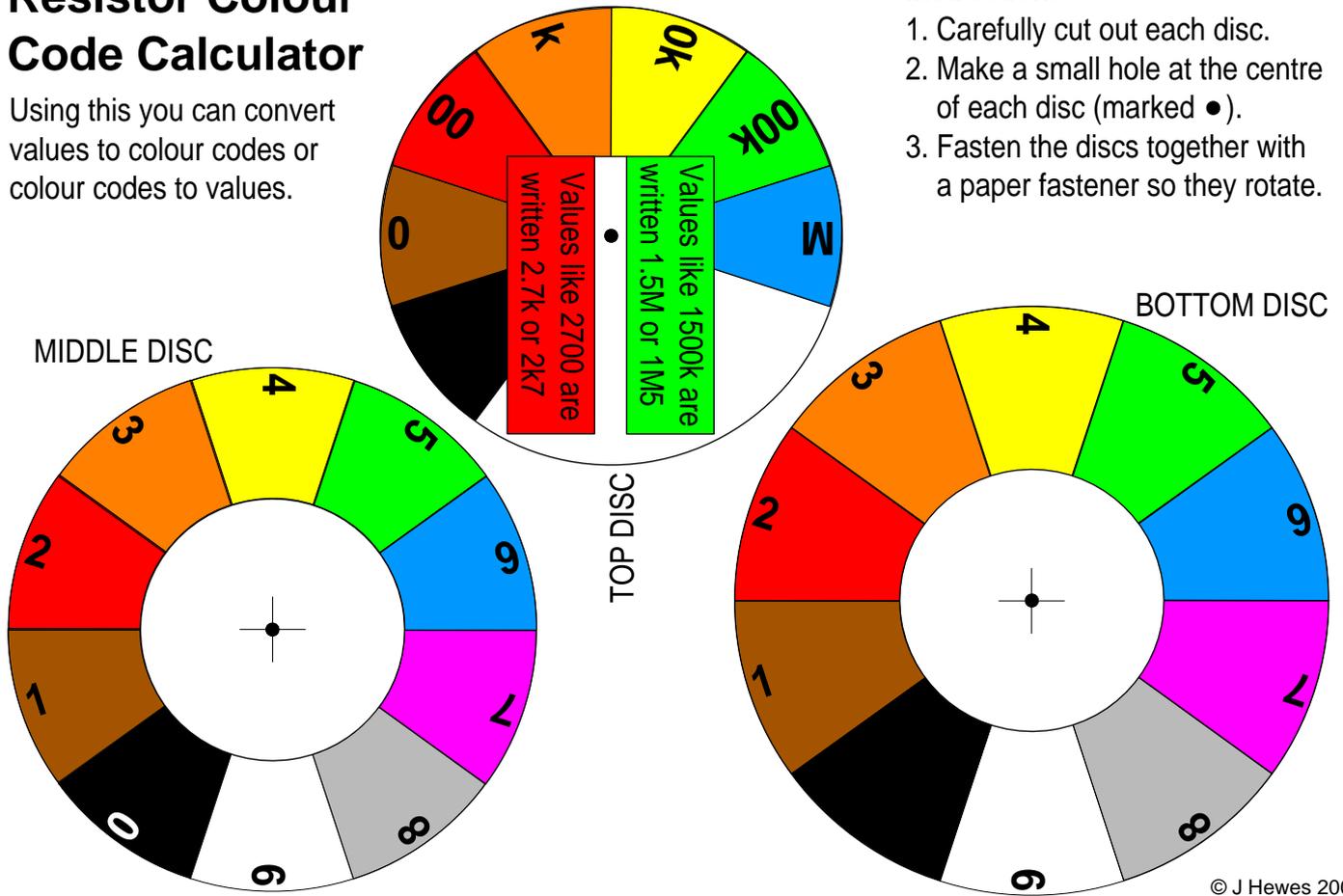|			
Chairman	Frank van Wensveen	ZS6TMV	082-294-2648
Vice Chairman	Frank Mercier	ZS6MER	011-845-1146
Secretary/Treasurer	Berridge Emmett	ZS6BFL	011-893-1291
Assistant Secretary	Marianne Treyvellan	ZR6JMT	084-403-3355
Repeater/Packet/Technical	Ton van Dijk	ZS6ANA	011-432-5494
Shacknews Editor	Berridge Emmett	ZS6BFL	011-893-1291
Shacknews Printing	Harry Lautenbach	ZS6LT	011-888-5362
Webmaster	Yvonne van Dijk	ZR6TBL	011-432-5494
Assistant Webmaster	Marianne Treyvellan	ZR6JMT	084-403-3355

Club bank details
First National Bank - Current Account 62116557309
Branch Code 201209 - Sunward Park

Resistor Colour Code Calculator

Using this you can convert values to colour codes or colour codes to values.

TOP DISC

Values like 2700 are written 2.7k or 2k7

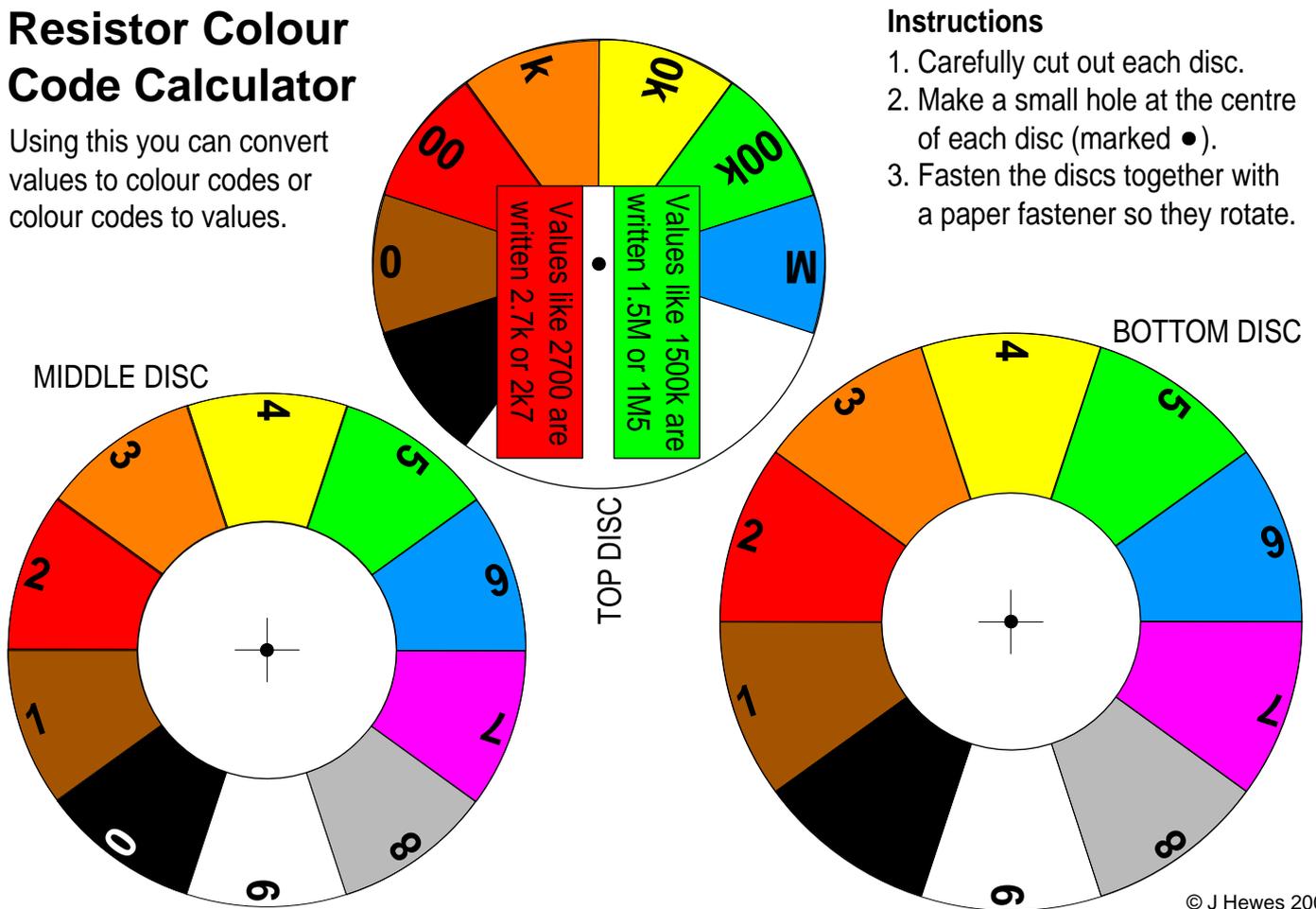Values like 1500k are written 1.5M or 1M5
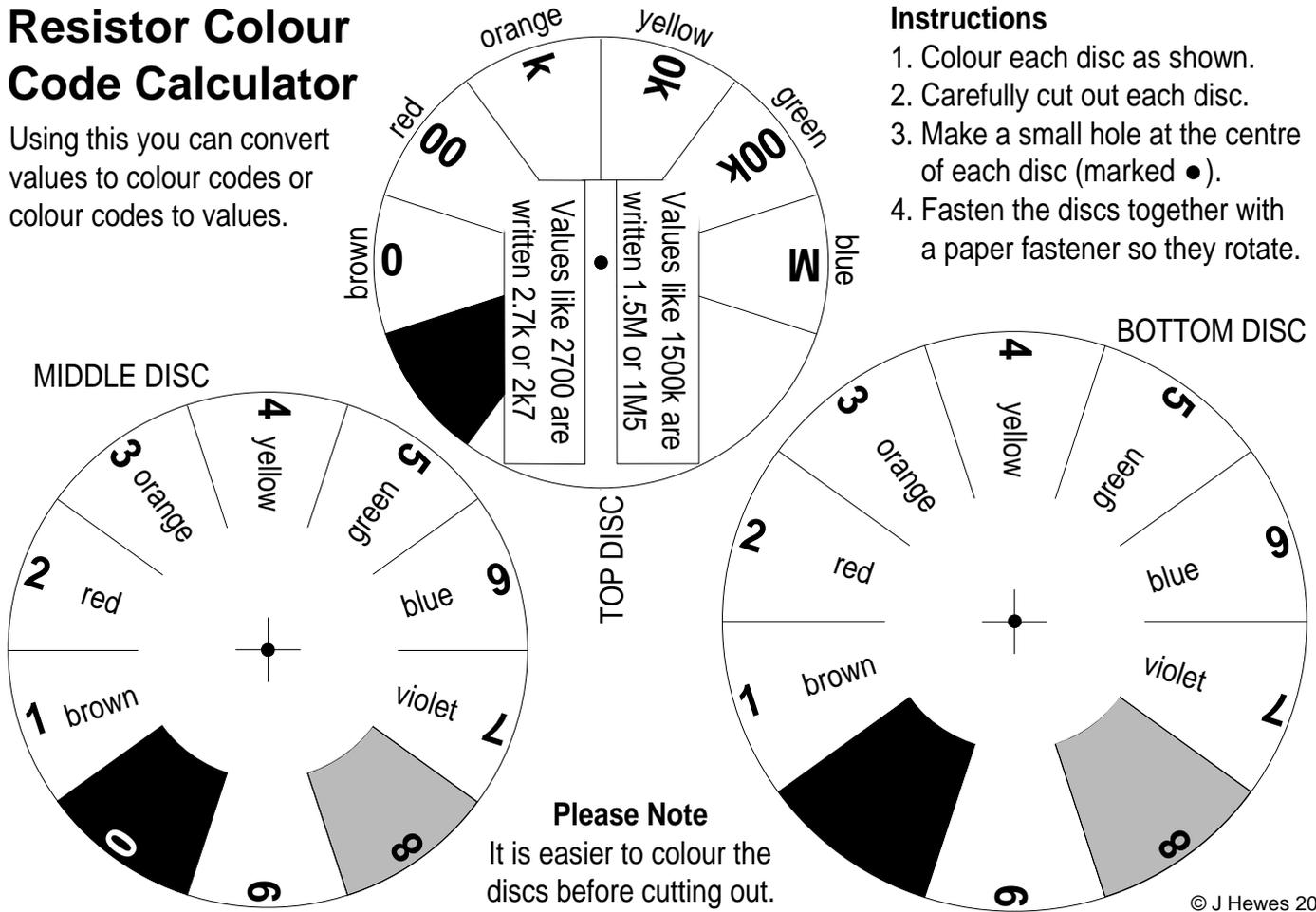
MIDDLE DISC

BOTTOM DISC

Instructions

1. Carefully cut out each disc.
2. Make a small hole at the centre of each disc (marked ●).
3. Fasten the discs together with a paper fastener so they rotate.

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Resistor Colour Code Calculator

Using this you can convert values to colour codes or colour codes to values.

TOP DISC

Values like 2700 are written 2.7k or 2k7

Values like 1500k are written 1.5M or 1M5

MIDDLE DISC

BOTTOM DISC

Instructions

1. Carefully cut out each disc.
2. Make a small hole at the centre of each disc (marked ●).
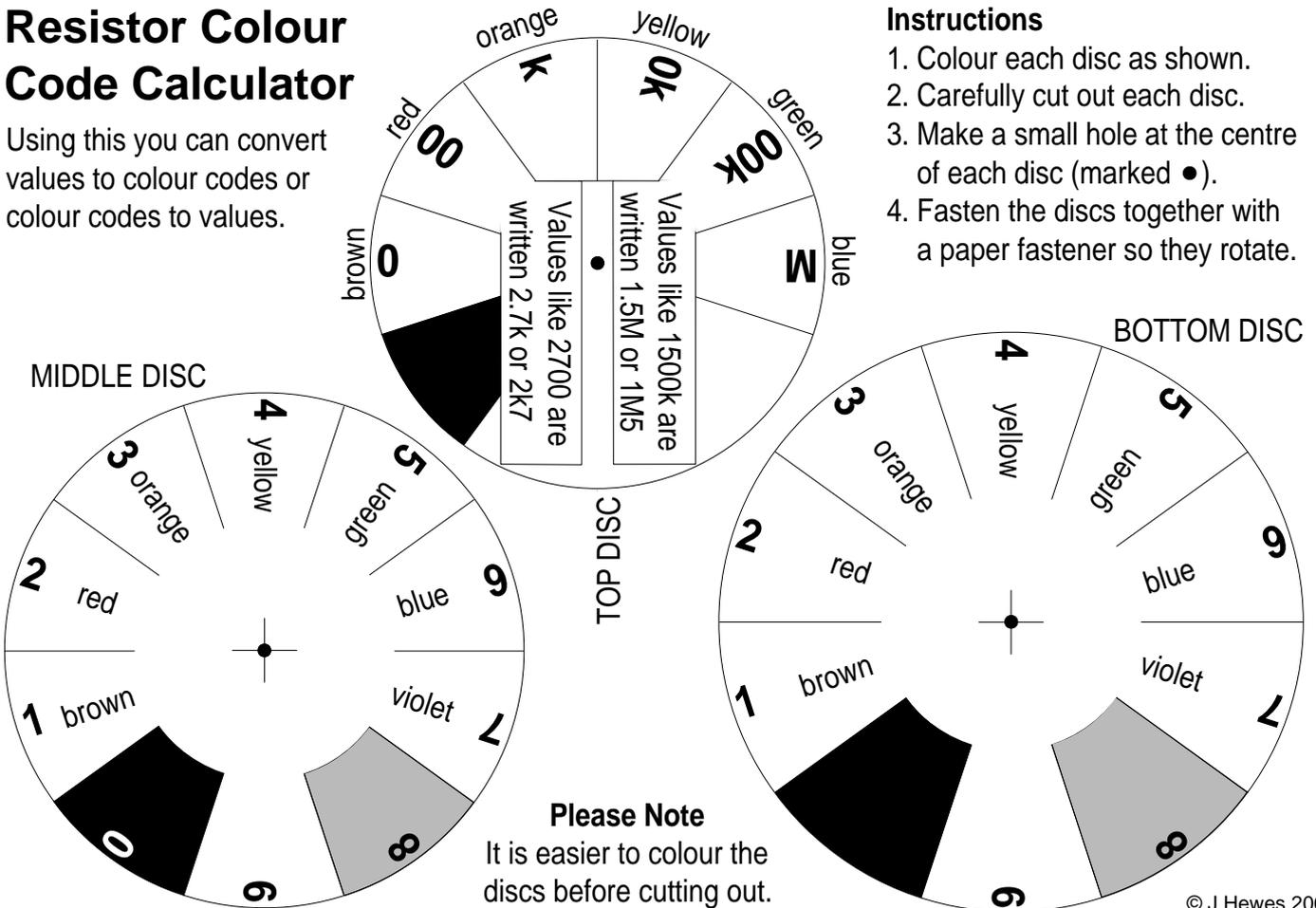3. Fasten the discs together with a paper fastener so they rotate.

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Resistor Colour Code Calculator

Using this you can convert values to colour codes or colour codes to values.

TOP DISC

orange — K
yellow — 0k
green — 00k
blue — M
brown — 0
red — 00

Values like 2700 are written 2.7k or 2k7
Values like 1500k are written 1.5M or 1M5

MIDDLE DISC

2 red
3 orange
4 yellow
5 green
9 blue
7 violet
8
6
0
1 brown

BOTTOM DISC

2 red
3 orange
4 yellow
5 green
9 blue
7 violet
8
6
0
1 brown

Please Note
It is easier to colour the discs before cutting out.

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