

# The Vicmarc Eccentric Chuck



## Owner's Manual



Vicmarc Machinery Pty Ltd

Manufacturers of Quality Woodturning  
Lathes and Accessories



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# Manufacturers of Quality Woodturning Lathes, Chucks and Accessories

Vicmarc Machinery, a family owned and operated business, has been manufacturing wood turning lathes and accessories for the hobbyist and professional since 1984. The company is dedicated to providing machinery of the highest quality and precision engineering which has secured sales worldwide.

Through constant improvement, Vicmarc retains its place as a leader in the field. Vicmarc lathes and chucks are known and respected internationally for their robust design and ease of use. Only the best materials and latest high precision, computer controlled machinery are used in the manufacture of Vicmarc products. The company continues to respond to the demands of the market, updating and improving at all stages of manufacture.

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## CHUCK DESCRIPTION

The Vicmarc Eccentric Chuck #3 and #4 expands the possibilities for off centre turning.

The main feature of this chuck is its infinitely variable axis setting capacity. With a range of 0 to 30mm each setting gives a different turning axis. In addition to this the rotating cup chuck allows you to create an even wider variety of shapes, depending on the chosen axis. The optional Ball Adaptor (V00367) allows the workpiece to be swivelled up to 15° off the z axis for even more flexible turning.

(See diagram on page 10)

Being able to turn on a variety of centres, without having to remove the workpiece, enables the creative turner to make very personal and original pieces

Manufactured from K1045 (medium tensile steel - 45 tonne) the chucks have a higher durability ensuring a longer life and a very high quality finish which is less susceptible to rust. All Cup Chucks, Ball Adaptor and Eccentric Balls have been case hardened to provide additional durability. The Vicmarc Eccentric Chucks are guaranteed for 12 months and a large variety of accessories are available to suit them.

## IMPORTANT SAFETY INFORMATION

The Vicmarc Eccentric Chucks are designed with maximum safety in mind. It is, however, recommended that the below steps are followed to ensure safe use.

- Make sure that the timber is correctly mounted in the cup chuck.
- Ensure any accessories mounted to the chuck are fastened correctly.
- Check that all 3 screws on the front pickup of the Chuck (holding the Cup Chuck) are tight.
- Before starting the machine check that the timber clears the Toolrest by turning the Chuck by hand.
- Ensure that the lathe speed is appropriate (Always start off slow).
- Keep your hands behind the toolrest while turning.
- **IMPORTANT** make sure that before adjusting the offset with the bolt (part 15 – page 13) located on the side of the chuck, that the M6 locking screws (Part 12 – page 13) at the front are loosened one turn with the 10mm spanner provided.

# SAFETY PRECAUTIONS

- 1. READ AND UNDERSTAND INSTRUCTION MANUAL BEFORE OPERATING WOOD LATHE.**
2. Always wear eye protection.
3. Do not wear gloves, neckties, jewellery or loose clothing.
4. Do not operate without guards in place.
5. Rough out workpiece before installing on face plate.
6. Do not mount a split workpiece or one containing a knot.
7. Tighten all locks before operating.
8. Rotate workpiece by hand before applying power.
9. Use slowest speed when starting a new workpiece and do not exceed permitted speed.
10. Disconnect machine from power source before making repairs or adjustments.
11. Do not operate while under the influence of drugs alcohol or medication.
12. Remove the tool rest before sanding or polishing.

# GENERAL MAINTENANCE

Vicmarc Chucks are manufactured from the highest quality materials to ensure a long working life. To ensure that your chuck is kept at its optimum performance please take note of the following:

- After using the chuck several times it is recommended that the front plate be removed and that the interior mechanism is thoroughly cleaned with a rag or a blower. Then lightly oil all interior parts.

# ECENTRIC CHUCK #3 and #4



Includes
Eccentric Chuck #3 or #4
Tommy Bar 9.5mm (M45 x 2 only)
5mm Allen T-Bar
4mm Allen T-Bar
4mm Allen L-Bar
#3 Gauge
10mm Spanner
40mm Cup Chuck
Owner's Manual

The Ecc #3 Chuck Body is made up of two parts. The outer body (128mm diameter) is screwed onto the inner body (threaded part) with four bolts. These bolts are located under the cover (Part No. 7). Unlike the Ecc #4 which is screwed directly to the threaded body. Both the Ecc #3 and Ecc #4 are available in three spindle threads; M33x 3.5 and 1 ¼ x 8 are direct threads – M45 x 2 is for insert type Chucks. The only difference between these two Chucks is that the Ecc #3 has 3 in-built counterweights whereas the Ecc #4 does not. A circular recess in the rear plate of the Ecc #3 holds these counterweights and they can be rotated 360 degrees. This allows you to balance the workpiece easily. The cup chuck pickup at the front has three M8 grub screws to allow you to rotate and secure the accessories to your required position.

As a safety feature the cup chuck pickup cannot be adjusted past the outer body, even in its outermost position. This makes the chuck safe for the hands when rotating. However once the workpiece is set up with cup chuck in position, it essential to keep hands clear while turning.



Chuck removal using the tommy bar

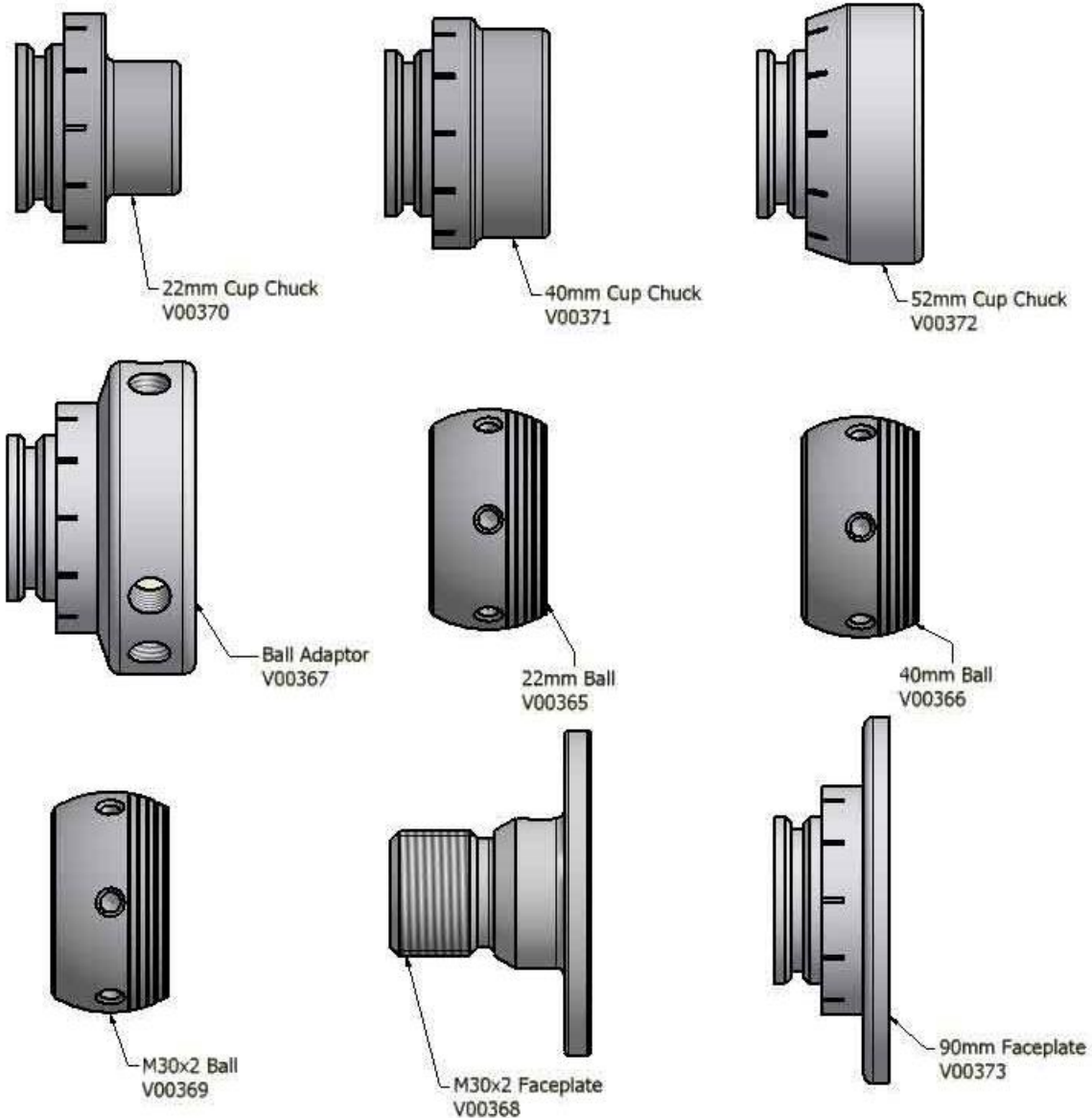


Optional Safety Collar (Part No. V00975)

Before the Chuck is mounted on the Lathe, make sure that all the threads and face are thoroughly clean and free of debris. This will ensure that the chuck will run true.

To remove the Chuck from the Lathe use the tommy bar provided as per picture (for insert type only). For the direct thread Chucks you will need to use a 41mm spanner (Vicmarc Lathe Spanner). Available for Vicmarc Lathes is an optional Safety Collar which enables the Chuck to be turned in reverse.

## OPTIONAL EXTRA ACCESSORIES

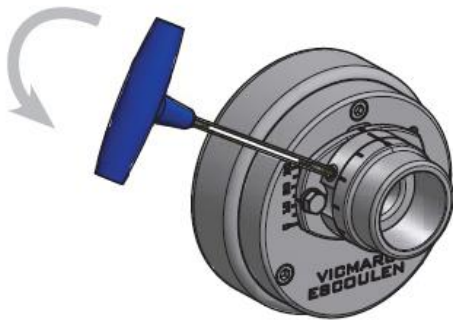


The steel Cup Chucks, 90mm Face Plate, Ball Adaptor and Balls are all case hardened. The cups have hollow centres of 22, 40 or 52mm and are used for jam chucking. These accessories are held into the cup chuck pickup (Part No. 9) with three pointed screws. These parts have 12 marks on them, one is a designated "0" and the other 11 marks are spaced 30° apart on the rim. These marks allow variability of setting options and a reference when positioned on the pickup.

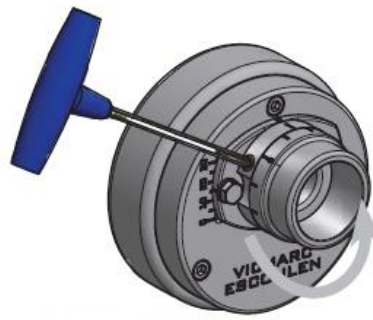
To be able to move the work piece off the Z axis (see page 10) you will need the Ball Adaptor and Balls. The M30x 2 Face Plate is designed to fit into the M30x 2 Ball. The zero position is marked on the front cover (Part No. 7) and when the cup chuck pickup has its mark position on this point it is perfectly central. For the Eccentric #3 Chuck the three counterweights need to be positioned on the central marks to achieve a balance before the introduction of your workpiece.

# OPERATION

## Rotating the Cup Chuck

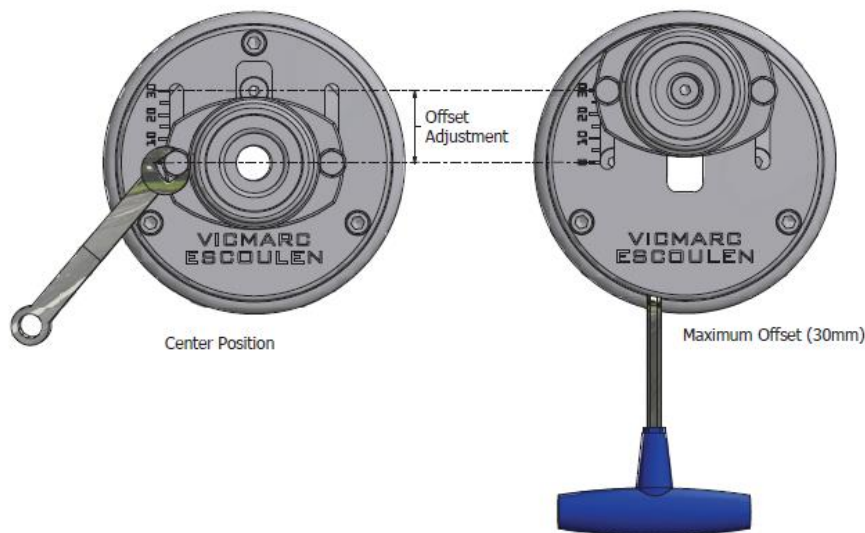


Unlock the 3 M8 Set Screws



Rotate Cup Chuck to the desired position and relock the three set screws

## Setting the workpiece off centre



1. To offset the cup chuck pickup, use the 10mm Spanner provided and slightly loosen the 2 x M6 bolts at the front.
2. M6 bolts at the front.
3. Then by rotating the M6 Allen bolt on the side of the chuck (using the 5mm T-bar Allen Key provided) you can move the work piece to the new centre required.
4. Then re-tighten the M6 bolts with the Spanner at the front of the chuck. By positioning the tailstock close to the piece, it is easy to establish the new axis in relation to the axis of the lathe.

**Important Note:** make sure that when adjusting the offset with the Allen bolt on the side of the Chuck, that the M6 locking screws at the front are loosened with the 10mm Spanner provided otherwise damage may occur.

**Important Note:** Do not operate this chuck without re-tightening the 2 x M6 bolts.

# Counterweight adjustment positions

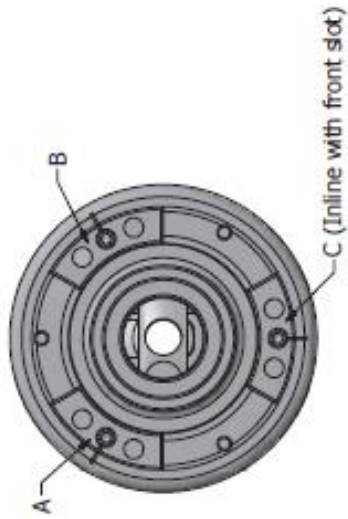


Maximum out of balance position



Move weights to desired position and retighten

Move weights A and B equally towards C to balance the offset



Or move weights to suitable position until the workpiece is balanced



Central balance position



Insert 4mm Allen Key and loosen screw to adjust



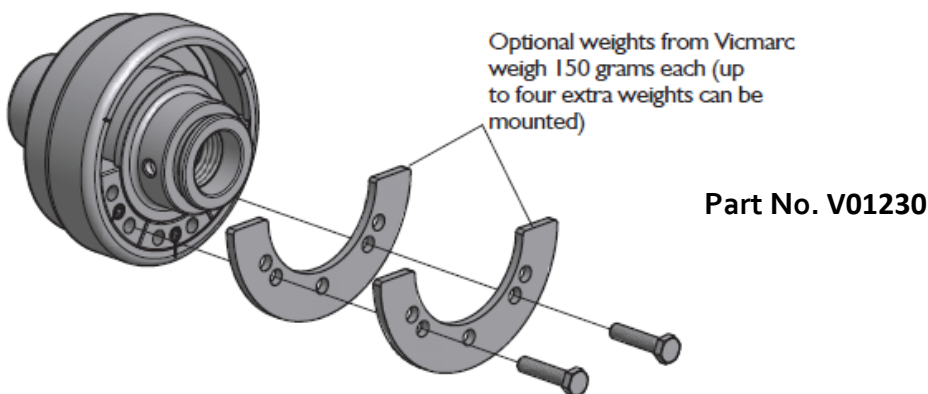
## Positioning the Counterweights for ECC#3 Chuck

Don't try to set the counterweights too precisely. Setting counterweights will be a compromise to ensure turning is safe. Even if the workpiece is perfectly balanced at the beginning the size of the workpiece will change during turning and will make the piece off balance again.

When the Cup Chuck is in the centre it is easy to align the counterweights with the marks on the rear of the Chuck. You can then turn at a normal speed. If for example you have a 10cm diameter piece of wood with an offset at its maximum value then the counterweights should be moved to the opposite side of the offset to balance using the Allen Key (see picture).

It is best to start with the Lathe speed set at its slowest, and then gradually increase the speed until the vibration begins. If there is no vibration then it is suitable for off centre turning. If a vibration still occurs then the counterweights will need adjusting. Stop the machine and reset the counterweights and repeat the previous procedure until the job is running smoothly.

Optional extra weights are also available for larger workpieces from Vicmarc.



## Turning Speed

The turning speed will depend not only on the diameter, length and weight of the wood but also how far off centre you set the piece. If the counterweights balance the piece correctly then the speed can be normal. If the setting causes vibration then reduce the speed until the vibration disappears. Use the tailstock as much as possible for safety.

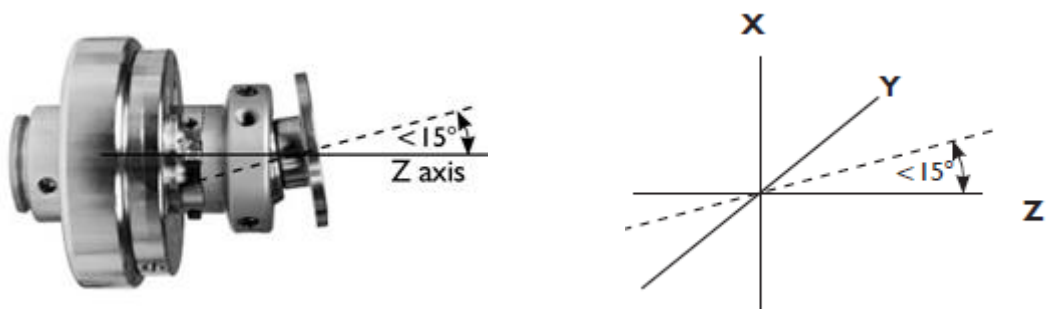
A speed that is too slow can also be a problem. This can cause the turning tool to catch in wood resulting in an accident. Turning at speed excessive is always dangerous especially without the use of the tailstock.

# OPERATION

## Selecting the Ball Adaptor, Balls or Cup chucks

The Ball Adaptor allows the workpiece to be swivelled up to  $15^\circ$  off the Z axis for even more flexible turning (see diagram). The choice of the sizes for the Balls are reliant on the size of the workpiece.

- The 22mm Ball and Cup Chuck has an internal bore diameter of 22mm and allows the turning of pieces with a diameter of approximately 40mm and a maximum length of 90mm.
- The 40mm Ball and Cup Chuck has an internal bore diameter of 40mm and allows the turning of pieces with a maximum diameter of approximately 100mm and a maximum length of 140mm
- The 52mm Cup Chuck has an internal bore diameter of 52mm and allows the turning of pieces with a maximum diameter of approximately 140mm and a maximum length of 220mm
- The M30 x 2 Ball has an internal thread which is designed to have the M30 x 2 faceplate mounted in it (see picture below). It allows the turning of larger pieces.



## Ball Adaptor preparation

When placing the Ball into the Ball Adaptor make sure you place it into the slot as shown - or it will not fit. The grooves on the ball should be visible once the ball has been swivelled into place. It is then locked to suit your work requirements.

The grooves on the Ball enable you to set angles at  $5^\circ$  increments up to  $15^\circ$ .

Once the workpiece is set at the required angle, lock the Ball in place using the T-Bar Allen Key. It should be locked in two places with the screws. It is strongly recommended that any screws not needed for the locking process be removed for safety purposes.

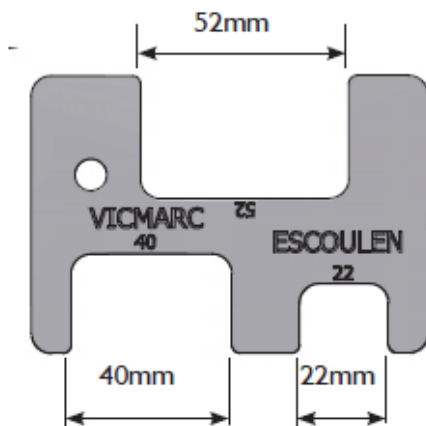


# OPERATION

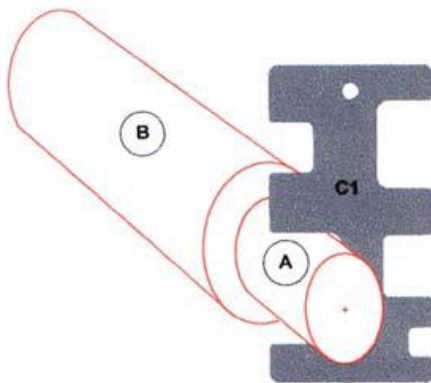
## Workpiece preparation

In order to use the Cup Chuck successfully the workpiece must be prepared a certain way.

To begin the workpiece must be turned between centres at one end. The length of this Tenon must be approximately 15mm and slightly conical (about  $1^\circ$  off centre with an average diameter corresponding to your chosen ball and socket size).

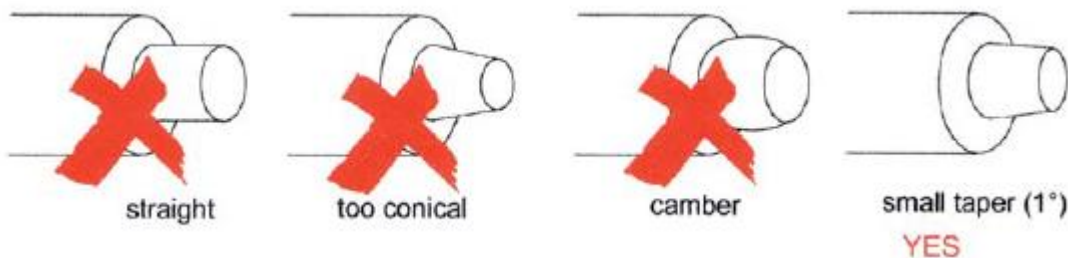


The Gauge is designed to measure the Tenon size prior to inserting it into the Cup Chuck or Ball. The dimensions can be seen in the picture (Gauge #3).



By using the supplied Gauge #3 you can easily check the accuracy of the Tenon. Progressively remove the wood until the 15- 20mm Tenon fits into the Gauge.

It is also recommended that the slightly conical Tenon be humidified. This will expand the wood fibres creating an even tighter grip in the chuck.

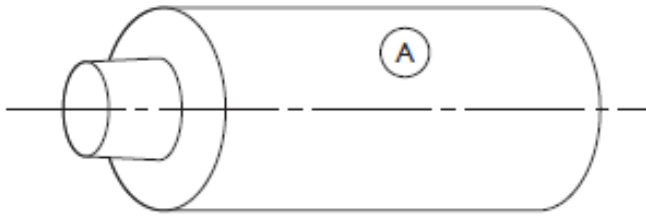


## Tip

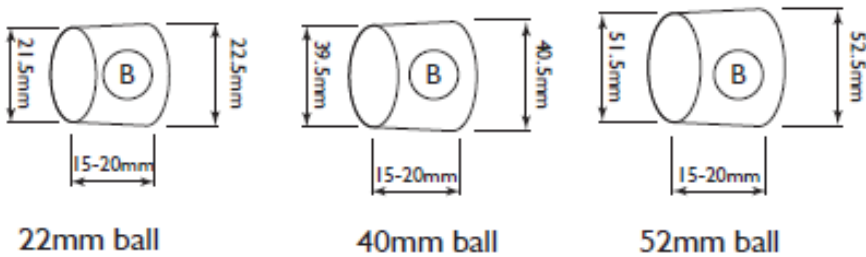
The diameter of the Tenon must be made with precision. If the Tenon is too straight, too convex or too conical it will not fit inside the Cup Chuck or Ball. It only needs to be very slightly conical.

# OPERATION

## Workpiece preparation



- Preparation procedure
1. turn workpiece (A)
  2. turn end spigot to suit ball and socket (B)



## Assembling

Once the workpiece has been prepared it is recommended that you follow the mounting procedure.

## Mounting Procedure

1. Turn the Tenon
2. Place the workpiece into the Cup Chuck or Ball
3. Put the Cup Chuck or Ball onto a wood plate or bench.
4. Hammer the workpiece into the Cup Chuck or Ball.
5. Mount the Cup Chuck or Ball onto the Eccentric Chuck.
6. Use tailstock to support the workpiece.
7. Balance the workpiece.
8. Choose appropriate speeds.
9. START TURNING.
10. Good Luck and have fun!

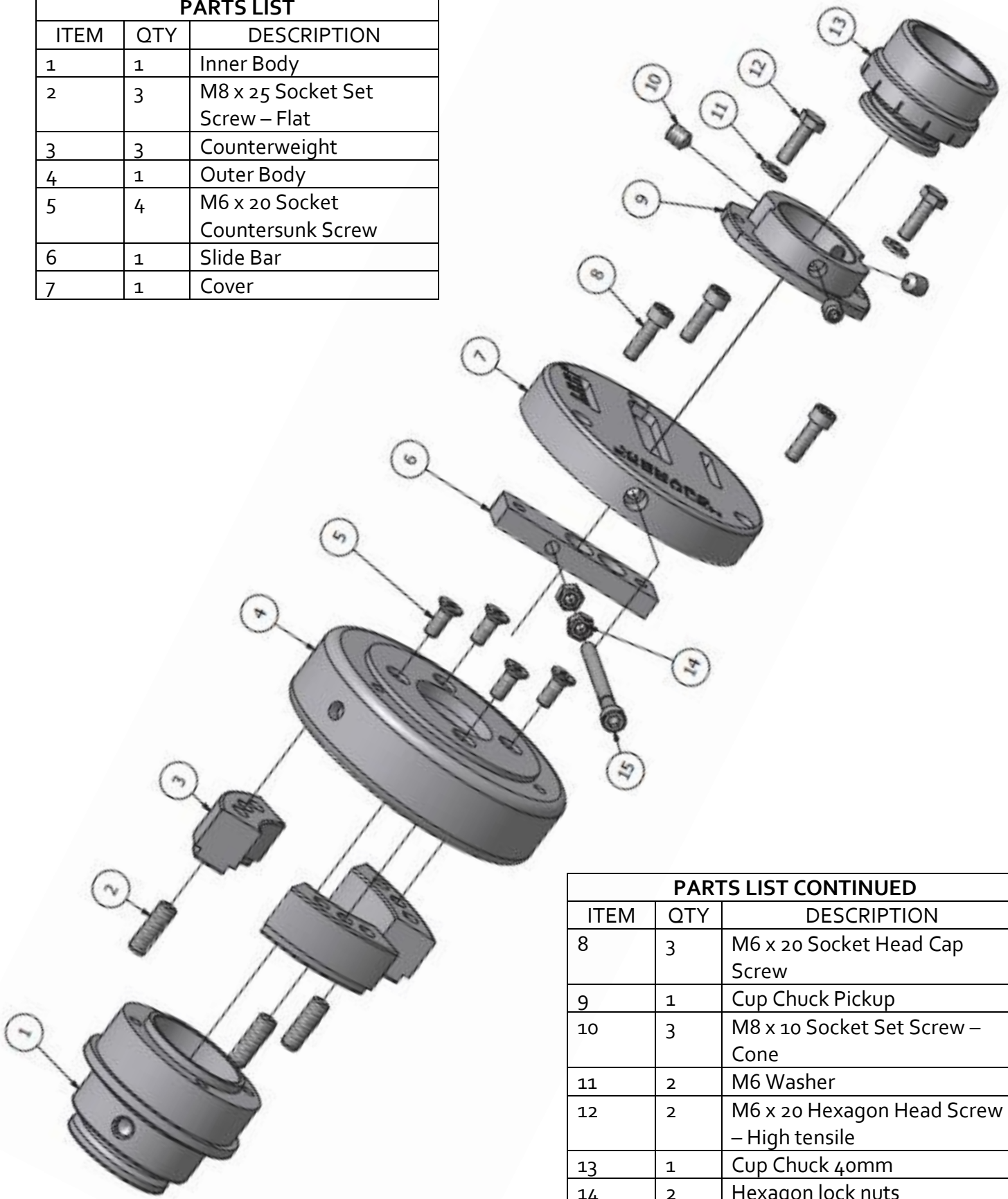
## Removing Workpiece

There are 2 ways to remove the workpiece on completion of turning;

1. Remove the Cup Chuck or Ball from the Chuck then knock out the workpiece.
2. Loosen the two bolts on the front of the Chuck and bring the cup chuck pickup back into its central position using the 5mm T-bar Allen Key provided. Then use a knock out bar through the headstock spindle and Chuck to tap out and remove the workpiece.

# VICMARC ECCENTRIC CHUCK - EXPLODED DIAGRAM

PARTS LIST		
ITEM	QTY	DESCRIPTION
1	1	Inner Body
2	3	M8 x 25 Socket Set Screw – Flat
3	3	Counterweight
4	1	Outer Body
5	4	M6 x 20 Socket Countersunk Screw
6	1	Slide Bar
7	1	Cover



PARTS LIST CONTINUED		
ITEM	QTY	DESCRIPTION
8	3	M6 x 20 Socket Head Cap Screw
9	1	Cup Chuck Pickup
10	3	M8 x 10 Socket Set Screw – Cone
11	2	M6 Washer
12	2	M6 x 20 Hexagon Head Screw – High tensile
13	1	Cup Chuck 40mm
14	2	Hexagon lock nuts
15	1	M6 x 75 Socket Head Cap Screw

# PART NUMBERS

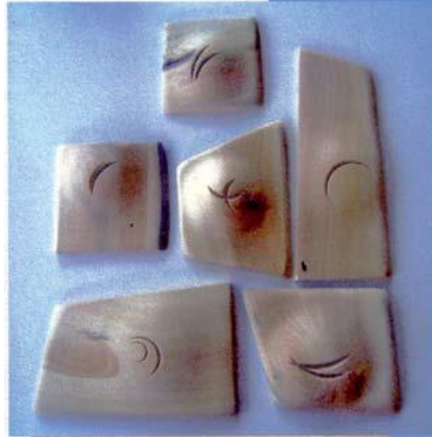
## Eccentric Chucks

Description	Part Number
Eccentric Adaptor M33 - #2 Chuck	V00380-2
Eccentric Adaptor 1 1/4" x 8 - #2 Chuck	V00380-3
Eccentric Adaptor M45x2 - #2 Chuck - Insert Include	V00380-5
Chuck, Eccentric #3 - M33 x 3.5	V00295-2
Chuck, Eccentric #3 - 1 1/4" x 8	V00295-3
Chuck, Eccentric #3 - M45 x 2 - Insert Included	V00295-5
Chuck, Eccentric #4 - M33 x 3.5	V00296-2
Chuck, Eccentric #4 - 1 1/4" x 8	V00296-3
Chuck, Eccentric #4 - M45 x 2 - Insert Included	V00296-5

## Eccentric Chuck Accessories & Spare Parts

Description	Part Number
Eccentric, Ball 22mm	V00365
Eccentric, Ball 40mm	V00366
Eccentric, Ball Adaptor	V00367
Eccentric, Ball Faceplate M30 x 2	V00368
Eccentric, Ball M30 x 2	V00369
Eccentric, Chuck Cup 22MM	V00370
Eccentric, Chuck Cup 40mm	V00371
Eccentric, Chuck Cup 52mm	V00372
Eccentric, Faceplate 90mm	V00373
Gauge - #1, Eccentric Chuck	V00435
Gauge - #3, Eccentric Chuck	V00436
Screw Set, Eccentric Ball Adaptor (set of 6)	V00998
Weights, For Eccentric Chuck - Comes With 2 Pieces	V01230

Some examples of work using the  
Vicmarc Eccentric Chuck (right)  
by Jean Francois Escoulen



Huon Pine Eccentric Bowl (above) Turned  
by Len Mengel using an Eccentric Chuck  
#2 (part No. V00380)

An example of what the Eccentric Chuck  
#3 and #4 can do (left)



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## The Vicmarc® Guarantee

Vicmarc Machinery, manufacturers of Vicmarc machine tools, hereby guarantee the purchaser of the Vicmarc Eccentric Chuck that the chuck was precision engineered from the finest materials available and was thoroughly inspected and tested before leaving the factory.

If, within 12 months following the date of delivery, the chuck is proven to have been defective as a result of faulty materials or workmanship, Vicmarc Machinery will repair or replace the chuck free of charge. This guarantee is subject to the following conditions:

1. The chuck shall be returned to Vicmarc Machinery within 12 months with a brief description of the complaint.
2. The name and address of the purchaser, together with the date of purchase and supplier details shall accompany the parts.
3. Vicmarc Machinery will accept no responsibility whatsoever under the guarantee or otherwise if the chuck is not used strictly in accordance with the instructions supplied, or if the fault can reasonably be explained by carelessness or negligence.
4. The purchaser is responsible for all costs incurred in transport and packaging to and from Vicmarc Machinery.
5. In the case of accident, liability is expressly excluded when the chuck is tampered with or altered without authorisation.

Overseas purchasers are advised to obtain local guarantees from their Vicmarc Eccentric Chuck agent. Conditions may vary to those detailed above.

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