



## **System 2000 Instruction Manuals**

**Gerbil 2010**  
**Gerbil 2020**



**IN THE INTERESTS OF SAFETY, IT IS IMPORTANT THAT THIS MANUAL IS READ  
BEFORE ANY ATTEMPT IS MADE TO OPERATE THE MACHINE.**

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## 1.0 Specifications

<b>Table size:</b>	400 x 400 mm
<b>Table Height:</b>	310 mm
<b>Motor:</b>	0.07kw 1340 rpm 240 volt Single Phase Full Load Current 1.2 Amps
<b>Machine Weight:</b>	2010 - 19kg                      2020 - 21kg
<b>Cutting Capacity:</b>	Acrylic sheet to 3 mm thick

### 1.1 Standard Equipment with Gerbil 2010

- Tungsten Carbide Disc
- Multi-tool Adaptor
- Fixed Wooden Top
- Small Standard Handwheel for Cutter Height Adjustment
- Allen Keys 3 & 4 mm
- Electrical Controls, Cable and 3 Amp, Fused, 3 Pin Plug
- Sub-Frame Capable of Upgrading to 2020 Model

### 1.2 Standard Equipment with Gerbil 2020

- Tungsten Carbide Disc
- Flange Cutter
- Drum Sander
- Multi-tool Adapter
- Adjustable Tilting Table
- Dust Extraction Fence Incorporating Guard for Tooling
- Guide Fence
- Metric Scale for Measurement Guide
- Large Hand Wheel for Cutter Height Adjustment
- Allen Keys 3 & 4 mm
- Electrical Controls, Cable and 3 Amp, Fused, 3 Pin Plug



## **2.0 General Description and Use**

This machine is designed for trimming the waste material from around vacuum formings made from plastic sheet up to a maximum thickness of 3 mm. It consists of a 15 mm thick MDF work surface (2010 model) or a pressed steel table (2020 model), mounted on a twin legged steel frame. Attached to the underside of the structure is a pressed steel adjusting slide, which carries the motor. Underneath this is a protective plate, designed to reduce access to the motor. An adaptor is attached to the motor shaft, and a hole in the work surface enables the mounted tool to protrude. The tools are attached to an arbor, which is inserted into the motor adaptor and secured by means of a socket set screw. The vertical position of the tool is adjusted by means of the hand wheel underneath. Four levelling screws and a simple control panel which houses the electrical, no volt release, relay, and the On/Off push switch complete the system.

### **2.1 Installation**

After careful removal of the packaging, locate the four adjusting feet and screw them into the holes in the bottom of the base. The machine should then be placed on a firm clean surface, typically at desktop height, so that the top of the unit is at a comfortable working height. A minimum area of 600mm x 600mm will be required for this purpose. Once positioned, the unit should be levelled, by means of the adjustable feet, until the tabletop is horizontal side to side and front to back.

Check that the fitted tool is positioned clear of the machine table, and is secure, before any attempt is made to switch on the machine. The machine can now be plugged into a 240v, 13amp socket and switched on. It is strongly recommended that the socket be protected by an RCD device or similar, so that in the unlikely event of a short circuit the supply would be isolated automatically.

## 2.2 Features, Adjustments and Upgrades

The 2010 model can be upgraded to include the 20-20 features by ordering the relevant parts from RJH Morrisflex. Please refer to the section 7.3 for details. All of these can be fitted by the user, with the exception of the large hand wheel for cutter height adjustment, which must be factory fitted.

A multi-tool adaptor is attached to the motor of the 2010 & 2020 models (Fig 1).



**Fig 1**

**To change the tool** the machine must be switched off and isolated. Raise the height of the tool until the Allen key fitting is exposed above the table. Insert the 4mm Allen Key into the socket and turn anticlockwise to release. Withdraw the tool and put another in its place. If a flat exists on the spindle of the tool it should be positioned so that the clamp screw will tighten against it. Tighten the socket screw and remove the Allen Key.

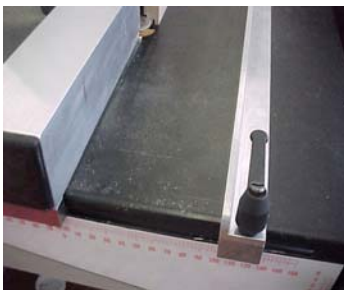
The 2020 model is supplied with a tilting table (Fig 2). Which can also be supplied as an accessory for the 2010 model. The table can be tilted up to 10 degrees, enabling draft angles to be produced on wooden moulds. **Note: The tilting table is designed for use with the drum sander only!**



**Fig 2**

**To tilt the table**, release the two ball knob screws at the front, lift the table to the desired angle, and then re-secure both knobs. **To upgrade the table** from the MDF table surface (2010 model) to the tilting table (2020 model), switch off the machine and remove the tool. Remove the four screws from underneath the MDF table, and lift off the table top. Place the tilt table in position and fix with two screws in the side at the back, and two ball knob screws in the side at the front.

The 2020 model is supplied with two fences, which are attachable to the tabletop. They are also supplied as accessories for the 2010 model.



**Fig 3**

**To install the fences**, first position the Dust Extraction Guard Fence to the rear of the table, and engage the left-hand side stepped reaction block of the fence into the longitudinal slot on the left-hand side of the table. **Gently** fix the right-hand side of the Dust Extraction Guard Fence into the Docking Block located in the longitudinal slot on the right-hand side of the table (Fig 3). The Guard is now secured by tightening the Kip lock on the right-hand side. Removal is simply a reversal of this procedure. The guide fence is mounted in exactly the same way.

### 3.0 Safety

#### 3.1 Dos and Don'ts

<b>Do</b>	<b>Don't</b>
Y Wear eye protection	Ψ Ever touch rotating tools
Y Plug machine into RCD protected circuit.	Ψ Exert undue force
Y Keep hands well clear of cutting tools.	Ψ Use equipment on anything other than wood or plastics
Y Isolate machine before changing tools.	Ψ Place hands under the machine whilst the motor is running
Y Use both hands to guide the workpiece	Ψ Exceed capacity of them machine.
Y Use extraction and guards whenever possible, on the 2020 model	Ψ Incline table while using Tungsten Carbide Disc Ψ Touch tools immediately after use; they may be hot

## 4.0 Trimming Techniques

### 4.1 How to cut out a vacuum forming with a straight edge using the Tungsten Carbide Disc Cutter

- 1) Place the vacuum forming over the top of the cutter and make sure that it is seated flat on the table. The cutter should be hidden beneath the vacuum forming.
- 2) Hold the forming in place by applying pressure to the waste plastic around the edge and, if required, rest a hand on the forming to guide it as you cut.
- 3) Switch on the machine. Holding the vacuum forming as described in 2), push the forming against the rotating blade so that it cuts through the wall of the forming; about half of the cutter will now be visible (Fig. 4). On the 2020, use the table top cross hairs to give the estimated position of the disc.



**Fig 4**

- 4) Gradually move the cutting disc around the vacuum forming, keeping the disc moving through the plastic at a slow, steady rate.
- 5) When the disc is within 20mm of the starting point, reduce the rate at which you are cutting and gradually complete the operation.
- 6) Switch off the Gerbil, remove the vacuum forming and clear the waste plastic from the table.
- 7) Allow the forming to cool.
- 8) The base of the forming may now need a small amount of finishing work. This should be done in two stages, when the forming is cool:
  - Break off any large pieces of swarf plastic with your fingers.
  - Use the Gerbil drum sander (supplied as an accessory with 2010 model and as standard with 2020 model) to sand off any remaining rough edges. In the absence of the drum sander, you can use the edge of a steel rule, or a piece of abrasive paper. When sanding, do not dwell too long on one spot, as this may rub away too much material

#### 4.2 How to cut out a vacuum forming with a flanged base using the Flange Cutter.

- 1) Place the vacuum forming to be trimmed alongside the cutter, seated flat on the table top of the Gerbil.
- 2) Switch on the machine. Holding the forming as instructed in 4.1, part 2), guide the forming towards the cutter, allowing the tool to cut a path through the waste plastic to the edge of the forming. The bearing at the top of the flange cutter should be visible all the time, moving over the top of the plastic.
- 3) When the cutter reaches the forming, so that the bearing is resting against it, start cutting around the forming, keeping the cutter moving at a steady rate (see Figs 6 & 7).



**Fig 6**



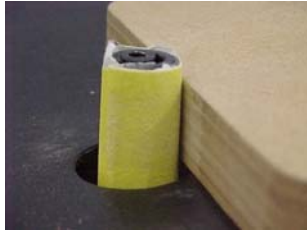
**Fig 7**

- 4) Make sure that the bearing maintains contact with the side of the vacuum forming, so that the flange width is consistent.
- 5) When the cutter is within 20mm of the starting position, slow down and very carefully complete the cut.
- 6) Switch off the Gerbil, remove the forming and the waste material from the machine. Then start the finishing process as instructed in Section 4.1, part 8).



### 4.3 Other Uses

#### 4.3.1 Sanding



**Fig 8**

To produce a vacuum forming, which involves releasing the plastic from the wooden mould, there needs to be a draft on the mould. When the tilt table is inclined, a draft angle can be produced up to 10 degrees using the Drum Sander (Fig 8).

#### 4.3.2 Profiling

Using the two fences and the Tungsten Carbide disc it is possible to produce slots and rebates in wood.

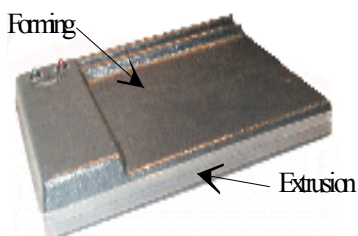
Set the disc to the desired height above the table and then adjust the dust extraction fence guard so that the disc protrudes from the opening to the extent needed for the depth of slot required. The wood can now be placed against the Dust Extraction fence and flat on the table at the right-hand side of the machine. Draw the wood across the disc to produce a narrow slot.

If a rebate is required, then place the wood with the first cut face down on the tabletop. The 2<sup>nd</sup> cut should be made at a right angle to the 1<sup>st</sup> cut, thus forming the rebate (fig 9). The guide fence can also be used for extra guidance.



**Fig 9**

#### 4.3.3 Joining



**Fig 10**

Vacuum forms can be joined together by using a strip of H-Shape Extrusion (Fig 10). Immerse the extrusion in warm water, until it becomes flexible. Fit the extrusion around the edge of the bottom vacuum forming, and trim so that the ends are flush. Now fix the top vacuum forming into the extrusion. For a more permanent joint Tensol cement or equivalent glue can be used together with the extrusion.

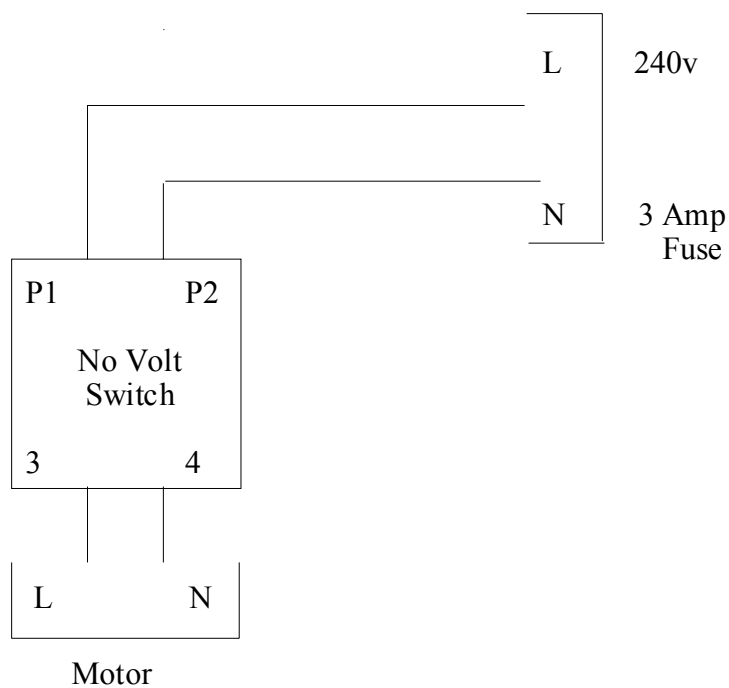
## 5.0 Maintenance

The motor is totally enclosed and fan cooled (TEFC) with sealed bearings and should therefore require no attention. The only other moving part is the motor slide. This is assembled with a degree of inherent stiffness so that the tool maintains its set, vertical position, when in use.

The bearings on the flange cutter are also sealed and should, likewise, require no maintenance.

After each day, brush down the machine so that it is clear of plastic swarf.

## 5.1 Electrical Drawing



## 6.0 Risk Assessment

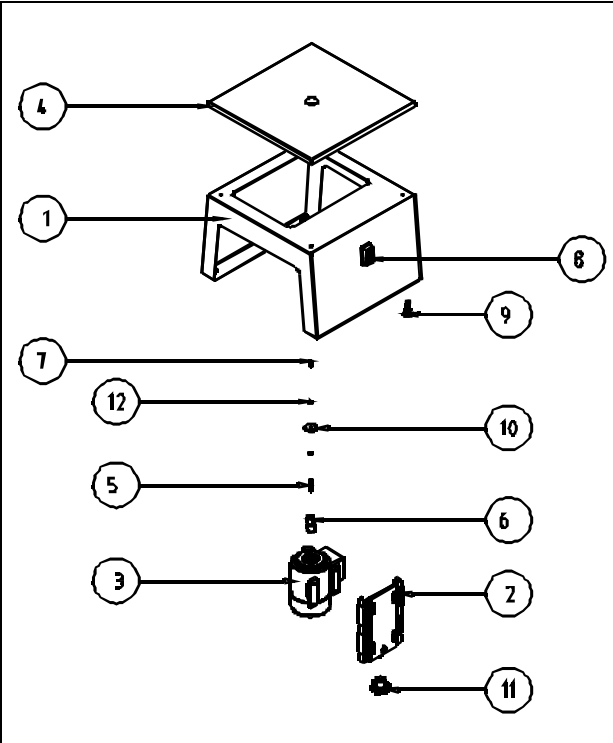
The Gerbil has been in use now for a number of years, in many schools and colleges, and has an enviable safety record. However, even simple machines, especially if they are powered electrically, can be dangerous. It is therefore important that all the risks are assessed, and procedures developed, which will ensure that safe working practices are adopted and maintained.

- **Fire Risk:** the machine is intended for use with non-ferrous materials, therefore there is no direct source of ignition.  
*Risk is considered very low.*
- **Limb Abrasion:** since the machine makes use of rotating cutting tools and a drum sander there is a possibility that the skin could be grazed if contact is made with the rotating tools. Hands must be kept well away from the cutting area.  
*Risk is considered moderate.*
- **Entanglement:** the nature of the process is such that a rotating tool has to be exposed in order that the trimming and sanding operations can be carried out. There is, therefore, some potential for entanglement. It is important that any loose clothing (shirt sleeves, ties etc.) is secured, and hair tied back, before operating the machine. Hands must never be placed under the work surface while the machine is running.  
*Risk is considered moderate.*
- **Burning:** generally there will be insufficient heat generated by the process to cause burning of the skin.  
*Risk is considered low.*
- **Electrocution:** all electrically powered machines can cause an electric shock. However, there are no parts, which require servicing by the user, and access to the controls is denied. It is strongly recommended that only sockets fitted with RCD, or other approved protection devices, be used.  
*Risk is considered low.*
- **Eye Damage:** some dust will be generated, especially when sanding. Extraction and the wearing of safety glasses is strongly recommended.  
*Risk is considered low.*
- **Ejection of Components:** there is always a possibility that the forming could be wrenched from the hand, but by using both hands to guide the forming, and applying adequate downward pressure on the waste material, the risk is minimised.  
*Risk is considered low.*

**There are no particular risks associated with the Gerbil. The adoption of good working practices will ensure that the operations performed on this machine have a Low Risk.**

## 7.0 Spares & Accessories

### 7.1 Gerbil 2010 Parts Explosion

		Item	Qty	Part Code	Description
		1	1	VFC-1-0001	BASE
		2	1	F 100097	SLIDE BASE
		3	1	F 100096	ELECTRIC MOTOR
		4	1	N 100386	MDF WORK TOP
		5	1	VFC-3-0012	T/C CUTTER MANDREL
		6	1	VFC-3-0014	MULTI TOOL ARBOR
		7	1	M SCS 510	M5X10 SOC CAP HD
		8	1	W 100078	ROCKER SWITCH
		9	4	M 100392	ADJ/TILT FEET
		10	1	VFC-3-0019	CUTTING DISC
		11	1	8161-213	HAND KNOB
		12	2	M W5B	5mm BRIGHT WASHER

#### 7.1.1 Standard Tools

1) Tungsten Carbide Disc

VFC-4-0012



## 7.2 Gerbil 2020 Parts Explosion

Item	Qty	Part Code	Description
1	1	VFC-1-0001	BASE
2	1	W 100078	ROCKER SWITCH
3	4	M 100392	ADJ/TILT FEET
4	1	VFC-2-002	TILT TABLE
5	2	8148-223-18	HAND SCREW
6	1	F 100097	SLIDE BASE
7	1	VFC-3-0011	HAND WHEEL
8	1	VFC-3-0003	FENCE
9	1	VFC-3-0006	DUST EX FENCE
10	2	VFC-3-0009	CLAMP BLOCK
11	1	VFC-3-0008	DUST EX. LOCATION BLOCK
12	1	VFC-3-0004	FENCE LOCATION BLOCK
13	1	VFC-3-0005	FENCE REACTION BLOCK
14	1	VFC-3-0007	DUST EX REACTION BLOCK
15	2	8189-223-20	LOCKING TABLE
16	1	VFC-3-0014	MULTI TOOL ARBOR
17	1	VFC-3-0012	T/C CUTTER MANDREL
18	1	VFC-3-0019	CUTTING DISC
19	1	M SCS 510	M5x10 SOC CAP HD
20	1	F 100096	ELECTRIC MOTOR
21	2	M SCS 310	M3x10 SOC CAP HD
22	2	M WB3	3mm WASHER
23	1		M8x15 SET SCREW
24	2	M W6B	6mm BRIGHT WASHER
25	2	M SCS 612	M6x12 SOC HD BUT.
26	1	VFC-3-0017	SCALE
27	2	M W5B	5 mm BRIGHT WASHER
28	2	7656-211	END CAP 50 x50

### 7.2.1 Standard Tools

- |                          |            |
|--------------------------|------------|
| 1) Drum Sander           | VCF-4-0013 |
| 2) Flange Cutter         | VFC-4-0015 |
| 3) Tungsten Carbide Disc | VFC-4-0012 |



### 7.3 Parts required for 2010 upgrading

- |                                   |                            |
|-----------------------------------|----------------------------|
| 1) Drum Sander                    | VCF-4-0013                 |
| 2) Flange Cutter                  | VFC-4-0015                 |
| 3) Tilting Table                  | VFC-2-002                  |
| 4) Fence                          | VFC-3-0003                 |
| 5) Fence Location Block           | VFC-3-0004                 |
| 6) Fence Reaction Block           | VFC-3-0005                 |
| 7) Dust Extraction Fence          | VFC-3-0006                 |
| 8) Dust Extraction Location Block | VFC-3-0008                 |
| 9) Dust Extraction Reaction Block | VFC-3-0007                 |
| 6) Hand Wheel                     | VFC-3-0011, factory fitted |

**DECLARATION  
Of  
CONFORMITY**

We the company,

**RJH MORRISFLEX Ltd  
Artillery Street,  
Heckmondwike, West Yorkshire  
England WF16 ONR  
Tel: 01924 402490  
Fax: 01924 404647  
hereby declare that**

**Machine Model: Gerbil 20  
Serial Number ..... Built .....**

**Is considered to be in conformity with the following Harmonised Standards:**

**BS EN 292 , BS EN 294, BS EN 418 , BS EN 4163, BS EN 60204-1**

**and meets the Essential Health and Safety Requirements of The Supply  
of Machinery (Safety) Regulations 1992 & 1994 as required by the Machinery  
Directive 89/392 EEC and subsequent amendments. Electrical components  
are also considered compliant with the Electromagnetic Compatibility  
Regulations 1992.**

Signed by



C. GEAR

**Director  
for and on behalf of  
RJH Morrisflex Ltd**

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