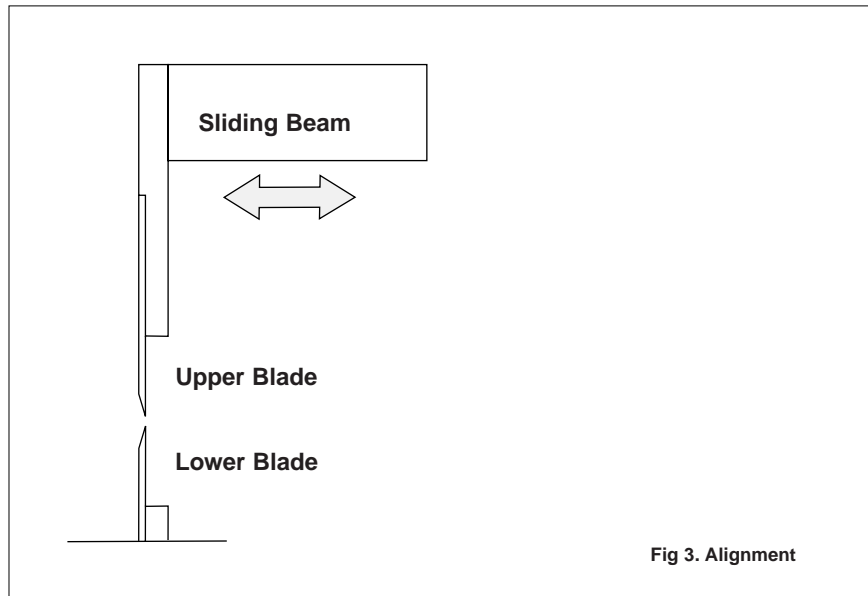


OP1.1 BLADE ALIGNMENT



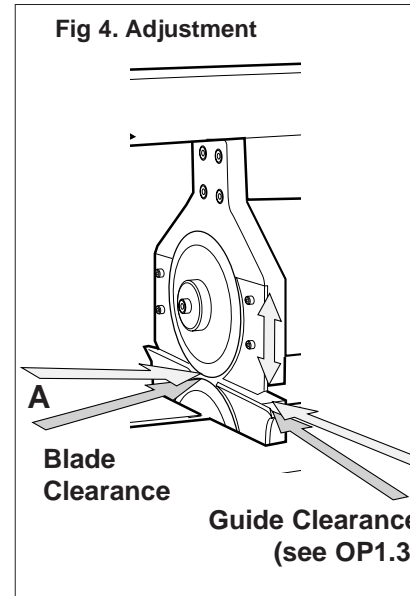
Note: Study Figure 3 The Circuit unit is pre-aligned at the factory and should not need adjustment. However, new blades or bearings may cause mis- alignment.

WARNING: ISOLATE MACHINE FROM POWER SUPPLY BEFORE CARRYING OUT ADJUSTMENT

1. Guides & Blades should be vertically aligned.
2. If adjustment is necessary, loosen three M6 socket bolts located in the sliding beam.
3. Gently tap sliding beam into the required position.
4. Tighten socket bolts and re-check

WARNING: FAILURE TO ALIGN BLADES & GUIDES CAN RESULT IN POOR QUALITY CONDITIONING AND DISTORT THE TRAVEL OF PANELS THROUGH THE BLADES

OP1.2 BLADE ADJUSTMENT

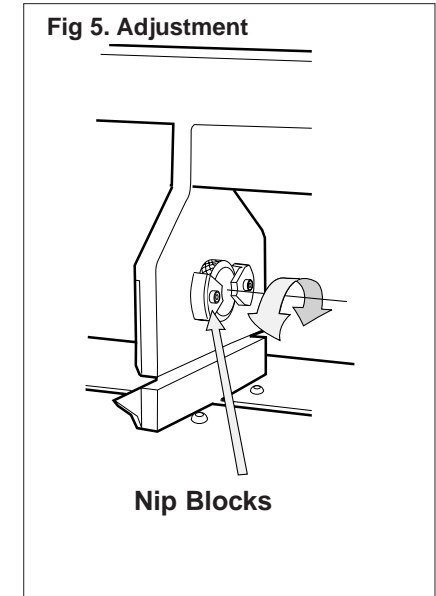


Note: Study Figure 4 - the Blades are preset at the factory with a 2mm clearance to avoid damage in transit.

Set blade clearance "A" to 0.025 to 0.050mm as follows:

WARNING: ISOLATE MACHINE FROM POWER SUPPLY BEFORE CARRYING OUT ADJUSTMENT

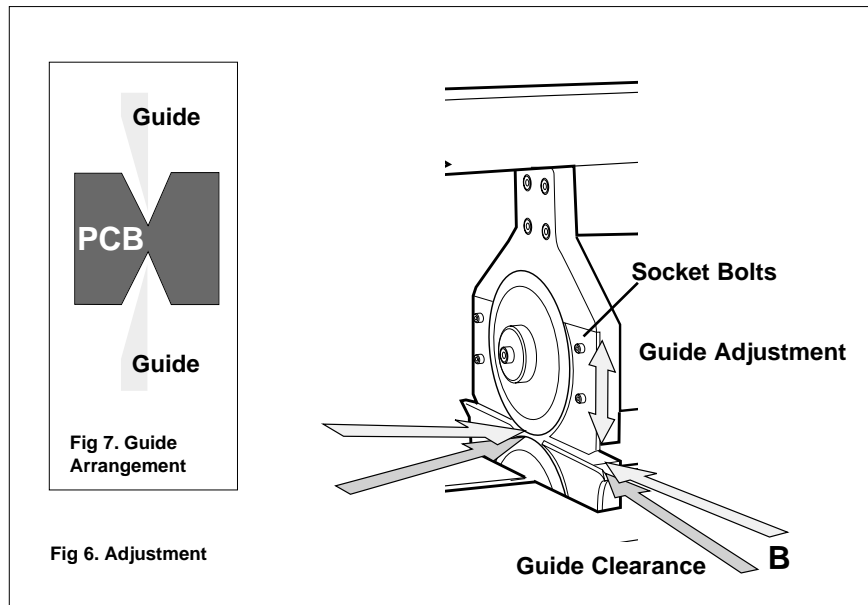
1. Select the required thickness feeler gauge.
2. Slacken two socket bolts securing the nip blocks.



3. Rotate the knurled wheel clock-wise to decrease Clearance A and anti-clock wise to increase it.
4. Insert feeler gauge and adjust wheel accordingly.
6. Tighten socket bolts.

WARNING: DO NOT FORCE the Upper Blade in an anticlockwise direction over its widest setting - Damage to the Blade will occur!

OP1.3 GUIDE ADJUSTMENT



Note: Study Figure 6 - the FRONT Guide Clearance requires setting whenever the score web thickness alters. The front guide utilizes the score channel to direct the panel through the blades. Lower Guides are preset at the factory and do not require adjustment.

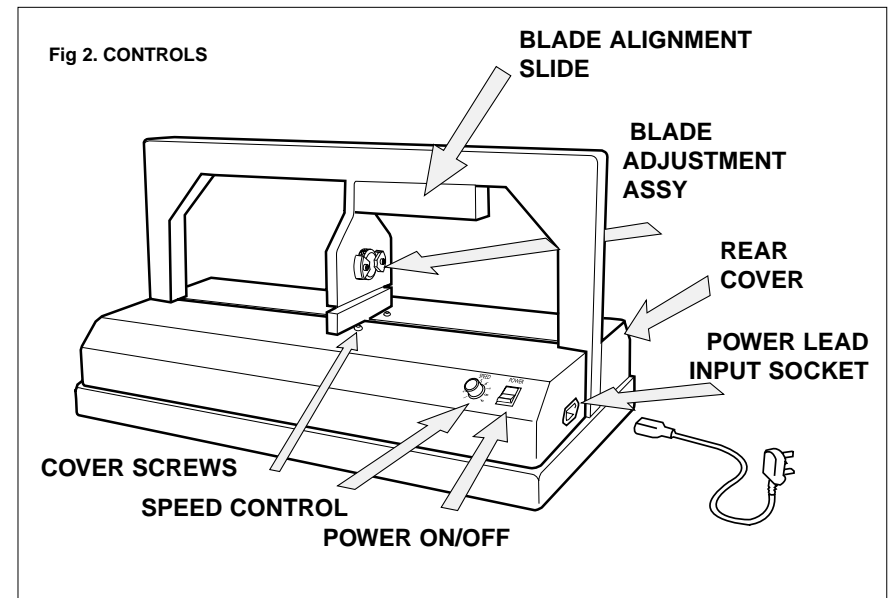
WARNING: ISOLATE MACHINE FROM POWER SUPPLY BEFORE CARRYING OUT ADJUSTMENT

1. Follow the Quick Reference Guide (Section SY 3.2).to calculate the guide depth requirement.
2. Select the required thickness feeler gauge from the calculations.
3. Slacken two socket bolts securing the top front guide plate.

4. Insert feeler gauge and adjust plate accordingly.
5. Tighten socket bolts.

WARNING: DO NOT FORCE the Upper Blade in an anticlockwise direction over its widest setting - damage to the blade will occur!

0.6 CONTROLS



Note: Study Figure 2 and know the layout of the machine. The power lead supplied with this unit should not be modified. DO NOT SWITCH ON

1. With the unit in position, install the power lead to wall socket and to the Circuit unit.
2. The rocker switch is the power isolator-On/Off
3. The dial to the left of the power switch, controls the variable speed of the separator (1 = Slow : 9 = V. Fast) Set the dial to '3'.
4. Check Guide alignment. Adjust if necessary (Section OP1.3)
5. Blade adjustment is achieved by rotation of a knurled wheel, secured

by two nip blocks. (see Section OP1.2)
6. Cover screws to the right of the separator assembly allow access for drive belt adjustment through the rear cover.

0.5 SAFETY INSTRUCTIONS

1. Read this instruction manual carefully BEFORE operating the machine. Do not attempt to operate the machine until you are totally familiar with its safe operation.
2. Do not operate the machine with any safety guards or safety switch mechanisms removed.
3. Do not tamper or modify any safety guards or devices.
4. Do not perform any setting up procedures with the machine switched on.
5. Do not place hands near the separator assembly whilst machine is in use.
6. Do not wear loose clothing, jewelry or unrestrained hair styles whilst operating this machine.

7. Always disconnect the power supply from the machine BEFORE carrying out repairs or maintenance.
8. Always wear safety glasses or a face shield when operating this machine
9. Always wear gloves when adjusting the separators.
10. This machine MUST be operated by only ONE person at a time.

MT2.1 MAINTENANCE

WARNING: ISOLATE MACHINE FROM POWER SUPPLY BEFORE CARRYING OUT ANY MAINTENANCE

Circuit has been designed for very low maintenance. However, it is vital that regular inspection of the blades and their setting be carried out by the operator.

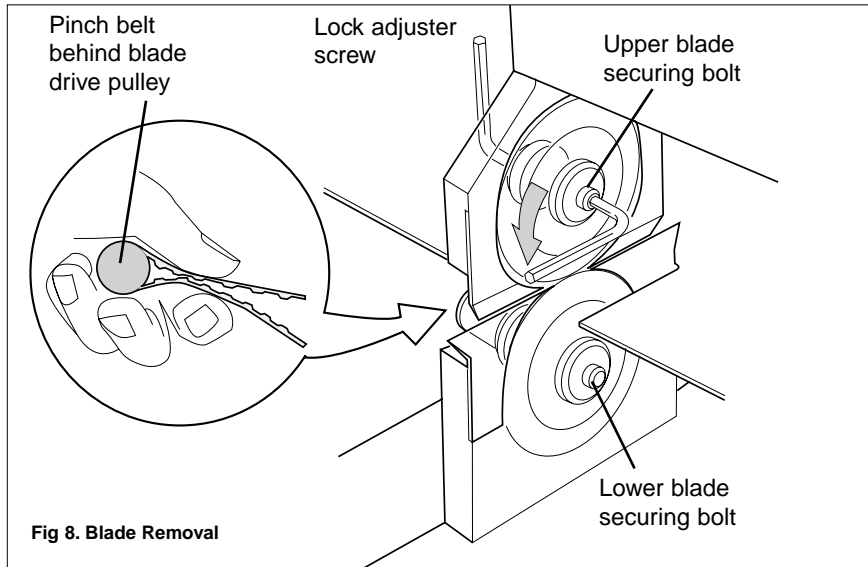
DAILY

1. Check blade condition
2. Run unit at slow speed (setting 1) and inspect the tip of the blade for warpage or flat spots

MONTHLY

1. Check drive belt for adjustment or wear
2. Check Blade bearings for play. No appreciable float should register

MT2.2 BLADE REPLACEMENT



WARNING: ISOLATE MACHINE FROM POWER SUPPLY BEFORE CARRYING OUT ANY MAINTENANCE - SEPARATOR BLADES ARE VERY SHARP & DELICATE! HANDLE WITH CARE

NOTE: Blades must be replaced as a pair

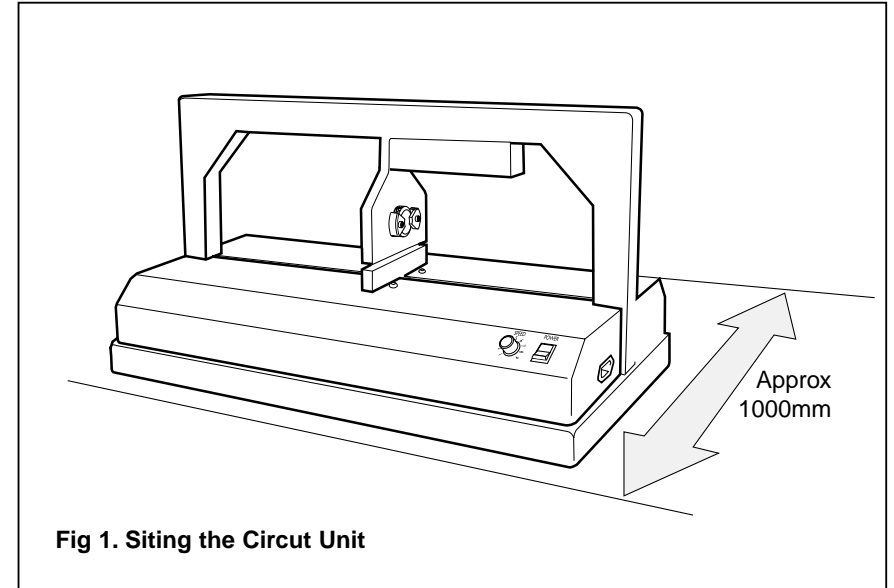
1. Remove Rear Cover securing screw
2. Lift cover away (the cover is gripped by three locating pins in the frame and require even force)
3. Remove the two cover jointing strips
4. Remove the lower blade securing centre bolt (6mm Hex socket) It may be necessary to pinch the drive belt together to prevent the blade rotating.

5. Remove the upper blade by installing a 6mm hex key in the centre of the adjuster wheel and a similar key in the blade-side socket securing centre bolt.
6. Loosen upper blade adjuster nip blocks and rotate the Knurled wheel anticlockwise until the hub is upper most (when the blade is installed it will provide the widest gap)

NOTE: Worn or Reground blades will be different sizes to new items - it is important not to force a new blade onto its hub whilst an old blade is still in position on the opposite hub

7. Installation is the reverse of removal
8. Reset blades (see Section OP1.2)

0.4 INSTALLATION



1. Uncrate the Circuit machine and position it on a workbench with sufficient work space around it (see figure 1).
2. Ensure all components are present (See Check List Section 0.3)
3. Locate the unit close to a 13 amp power socket
4. Consideration should be made for stacking space adjacent to the unit for panels and separated pcb's
5. Read & Fully understand the Safety Instructions (section 0.5) and Operator Manual before turning the unit on.

0.3 CHECK LIST

The following equipment has been packed & checked before despatch.

Uncrate the Circuit CAREFULLY! Do not handle Circuit roughly. Ensure that all of the equipment is unwrapped from its packaging before discarding the packaging.

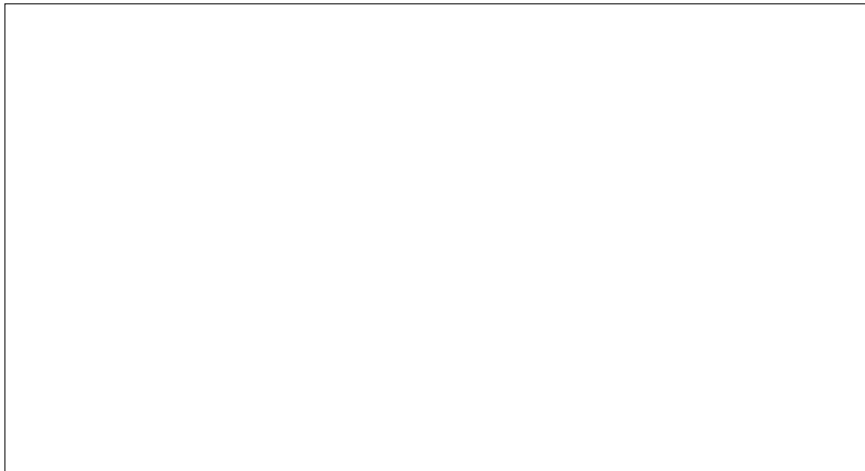
IMPORTANT NOTICE

The guarantee on this equipment will be invalidated if damage occurs either through negligence, mishandling or incorrect installation.

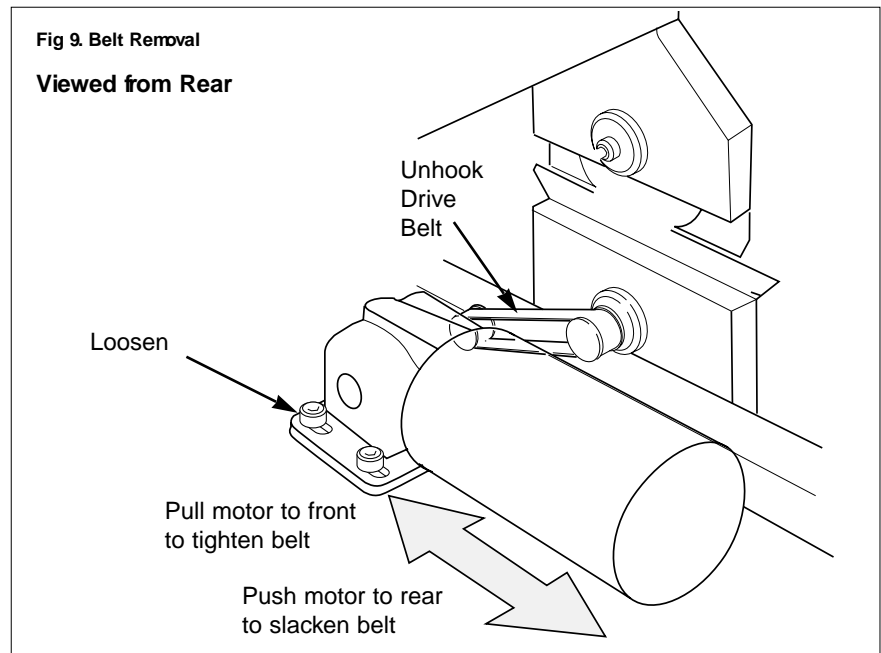
Packing List

- Circuit machine with separators fitted.
- Feeler Gauges
- Set of Allen key tools
- Cabling & plug

Additional items shipped with this consignment



MT2.3 BELT REPLACEMENT



WARNING: ISOLATE MACHINE FROM POWER SUPPLY BEFORE CARRYING OUT ANY MAINTENANCE

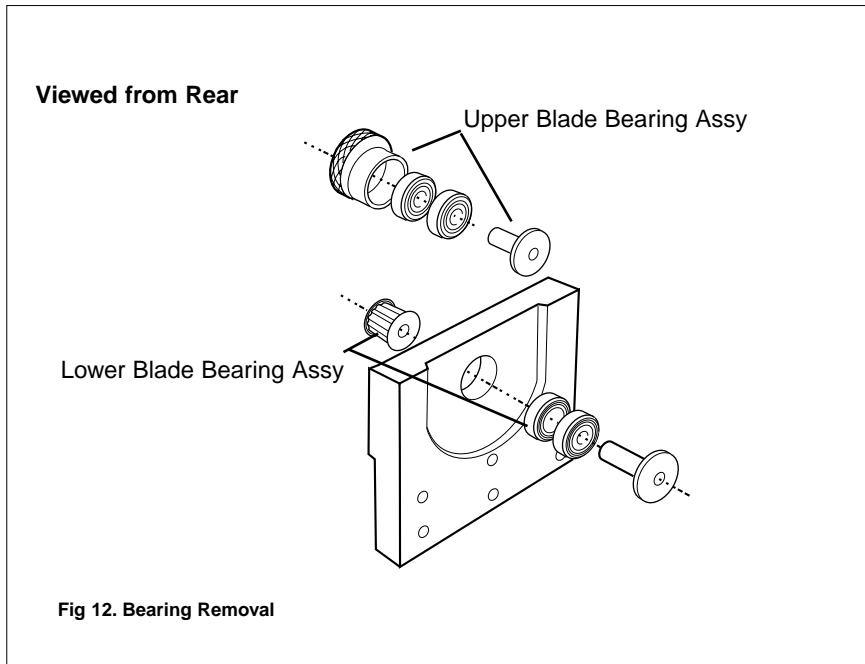
1. Remove Front & Rear Cover securing screw
2. Lift covers away (the cover is gripped by three locating pins in the frame and require even force)
3. Remove the two cover jointing strips
4. Loosen four 6mm hex socket bolts Push motor & gear assembly to the rear of the unit.
5. Remove the drive belt

6. Install new belt and tension the belt by drawing the motor assembly forward.
7. Correct tension will allow approx 5mm deflection at the centre point between the pulleys

NOTE: Worn belts will cause the blades to skip and distort. Correct speed and depth setup will ensure long belt & blade service.

8. Installation is the reverse of removal

MT2.4 BEARING OVERHAUL



WARNING: ISOLATE MACHINE FROM POWER SUPPLY BEFORE CARRYING OUT ANY MAINTENANCE

1. Remove Front & Rear Covers
2. Remove Blades
3. Remove Drive belt & Motor
4. Remove Top Blade adjuster Nip Blocks
5. Withdraw Top Adjuster with Spindle and bearings
6. Remove Spindle and use a suitable press tool to press out bearings
7. Remove six socket screws securing the lower blade Mounting Plate
8. Withdraw Drive Pulley & Spindle

9. Use a suitable press tool to press out bearings
10. Installation is the reverse of removal
11. Recalibrate Blade alignment (OP1.1)
12. Reset Blade clearance (OP1.2)
13. Adjust Drive belt (MT2.3)

0.2 TECHNICAL DATA

Specification

Length	800mm
Width	450mm
Height	430mm
Weight	58Kg

Maximum panel size	700 x 700mm (27 x 27ins)
Panel Clearance -Top	34mm
Panel Clearance -Bottom	28mm
Separator Speed	1 - 24m/minute (Variable)
Cutter diameter & angle	120mm @12°
Panel positioning	Ground score guides
Separator depth adjustment	Single action acentric adjuster
Separator positioning	Manual

Electrical supply Single phase 240V x 6amp



the manufacturer. reserve the right to change or alter the specification without notice.

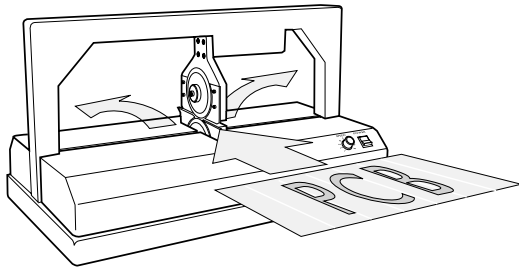
0.1 INTRODUCTION

Design Principles

Circuit has been designed to accurately separate pre-scored, double sided 'V'-cut multi pattern pcb's from master panels. This is an efficient alternative to 'physical' breakout which is time consuming, stress inducing on board & components and ultimately expensive.

Using **Circuit** yield per panel will increase dramatically over traditional methods. The benefits are considerable. Assembly of PCBs in multiple panels, either by hand, auto insertion or pick-and-place prior to separation is a great advantage. **Circuit** suits the requirements of Printed Circuit Manufacturers who produce an extensive variety of PCBs requiring fine edge 'conditioning' without excessive handling.

Circuit is designed for simplicity and effortless operation, achieving clean-cut results without damaging board or components which are installed. Setting the **Circuit's** separator blades is simple and should be calibrated to the depth of score. (see section OP1.1)



Separator speed is variable dependant on materials, thickness of web and of course the operator. Pre-scored panels are presented to the separator blades via the guides using the score channel to locate in the guides. As the panel meets the powered blade, the panel will be drawn thro the separator and exit the rear of the unit in two pieces.

Construction

The unit consists of a stove enamelled steel chassis with polished stainless steel covers. The variable speed blades are hardened and ground to 68R providing exceptional capabilities for any pcb material. The bench-top design is supplied with 13 amp single phase cabling ready for installation and set up which can be carried out in less than 15 minutes.

SY3.1 FAULT FINDING

PROBLEM	REASON	SECTION
SEPARATOR NOT WORKING	Check fuse in switch or plug Check cable is installed Check power switch is ON Increase variable control dial	IN 0.4
CIRCUIT POWERS UP BUT BLADES DO NOT ROTATE	Drive belt worn or broken Drive belt has jumped pulley	MT2.3
PANELS NOT SEPARATING	Blade depth too shallow Web too thick	OP1.2
INTERMITTENT SEPARATION & ROUGH EDGES	Worn blades	MT2.2
BOARD WILL NOT ENTER GUIDES	Score channel too shallow increase depth of score or adjust guide clearance	SY3.2 OP1.3
BOARD ENTERS GUIDE BUT LABOURS THRO' BLADES	Blade clearance &/or Guide clearance calibration incorrect	OP1.2 OP1.3
BOARD SKEWS THRO' SEPARATOR	Upper & Lower blades not aligned Worn blades	OP1.1 MT2.2
BLADES WILL NOT ADJUST TO THE REQUIRED DEPTH	Blades worn or damaged beyond service - replace	MT2.2

NOTE: DO NOT discard used separator blades until they are certified "beyond serviceable" (See section SY3.3) the manufacturer operate a re-profile service. Do not use blades which are not reconditioned or manufactured by any other source. OEM components are manufactured & reconditioned using an extremely hard tempering process.

SY3.2 SCORE REFERENCE

IMPORTANT
 Set separator blades at 0.025mm to 0.050mm clearance
 Set Guide blades to Web Thickness *Plus* 0.20mm Clearance

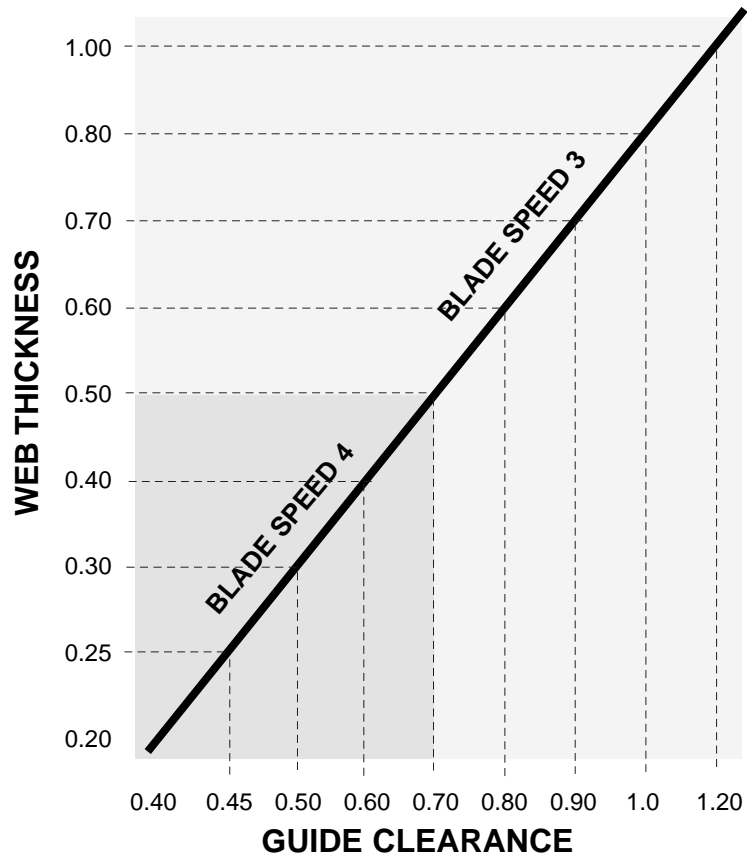


Fig 10. Depth of Blade Reference

Contents

Introduction To Circuit (IN 0.0)	
0.1 Introduction	4
0.2 Technical Data	5
0.3 Check List	6
0.4 Installation Procedure	7
0.5 Safety Instruction	8
0.6 Controls	9
Operating Procedure (OP 1.0)	
1.1 Blade Setting (lateral)	10
1.2 Blade Setting (depth/vertical)	11
1.3 Separator Guide Setting	12
Maintenance Procedure (MT 2.0)	
2.1 Maintenance	13
2.2 Blade Replacement	14
2.3 Drive Belt Replacement	15
2.4 Drive Bearing Replacement	16
Systems Support (SY 3.0)	
3.1 Fault Finding	17
3.2 Quick Reference	18
3.3 Blade Service	19
3.4 Warranty Clause	19
3.5 Spares List	20

CIRCUIT



V-Cut Depanelling System

Instruction Manual
Operator Manual
Maintenance Schedule
Systems Support

Details about this unit:

Ref/Serial Number -----

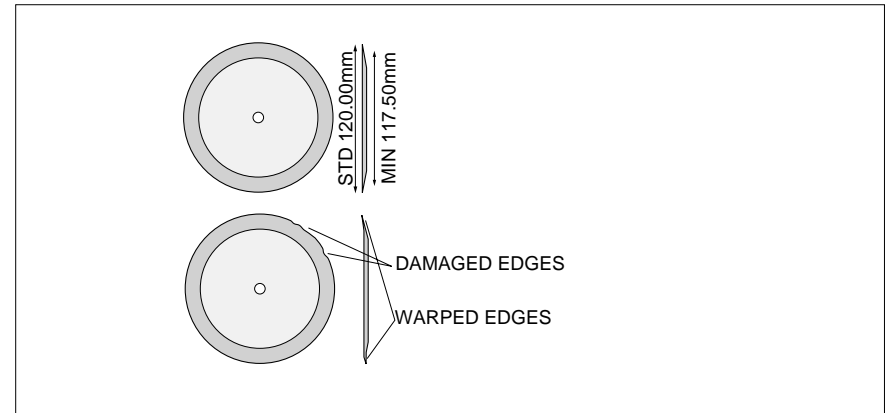
Inspection Date -----



Special Notes regarding this particular unit

Supplied by Seetrax CAE Ltd. Tel No + 44 (0)1425 489666

SY3.3 BLADE SERVICE



1. With blade removed measure overall diameter in across 3 points - *note dimensions.*
2. Inspect the edges for damages and mark with an indelible pen
3. Remeasure across diameter at damaged points marked.
4. If **any overall dimms fall below 117.5mm discard the blade**

5. Use a DTI gauge to check warpage - maximum runout is 0.02mm.

SY3.4 WARRANTY

General

Replacement will be furnished of parts found to be defective in workmanship or material, under normal one-shift conditions, within six months from the date of shipment, upon receipt of the defective goods at our factory. All necessary items or equipment furnished by us with this equipment are subject to the warranty issued by, or considered standard practice, by the representative manufacturers and is warranted or guaranteed by us accordingly. There will be a charge for service calls made by our technicians if the calls are proven to be unnecessary due to the failure of your maintenance department to follow corrective measures on problems given during telephone conversations with our engineering department. These charges will be made at our normal service

charge rate.

No claims will be entertained for loss of production whether related to the use or equipment or delivery of equipment or consequential loss or damage to business incurred by the buyer. No allowance will be made for repairs or alterations unless specifically authorised by the manufacturer.

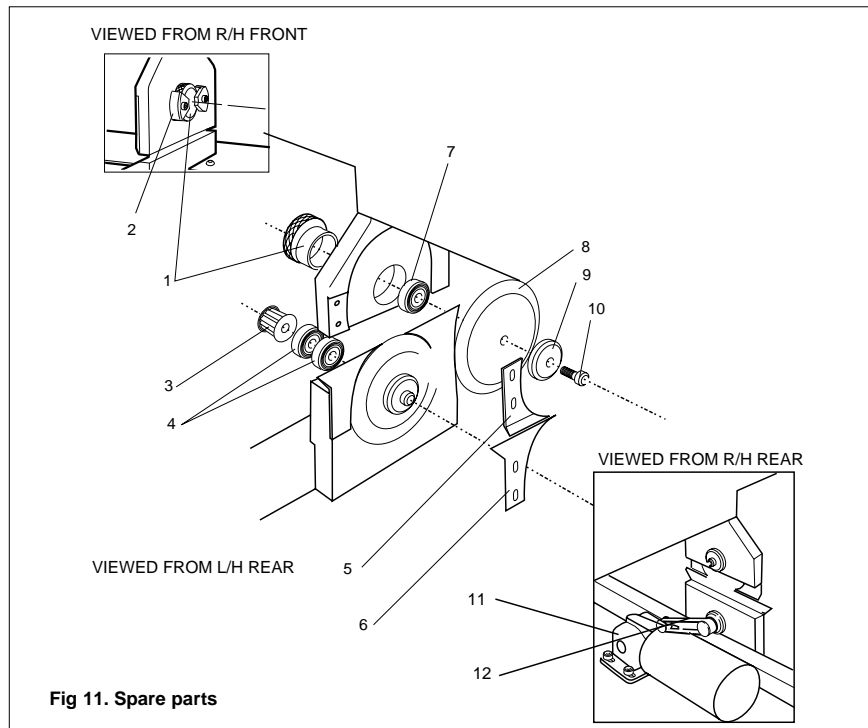
Exemptions

Drive Belts, Separator blades etc supplied with is machine are not covered by this warranty. This warranty will be invalidated if non-Genuine Parts are used on the equipment.

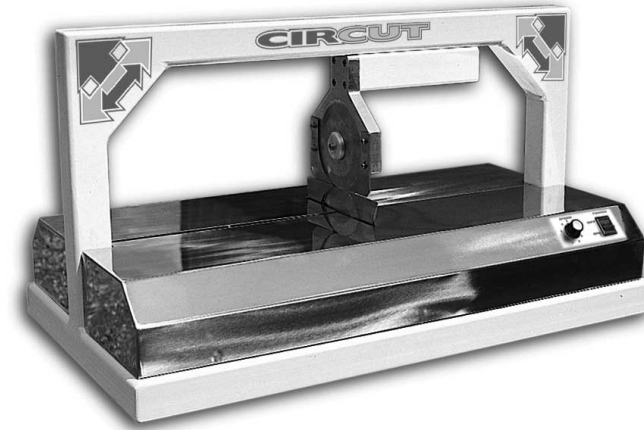
Important

Always quote the Units Serial Number - found at the front of this manual and on the side of the machine - when ordering parts or service.

SY4.5 SPARE PARTS LIST



DESCRIPTION	PART NO	QTY
1 KNURLED WHEEL/ ADJUSTER	SP0118	1
2 ADJUST NIP BLOCKS	SP0132	2
3 DRIVE PULLEY	SP0140	2
4 DRIVE BEARINGS	SP0142	2
5 UPPER GUIDES	SP0116	PAIR
6 LOWER GUIDES	SP0108	PAIR
7 IDLER BEARING	SP0142	2
8 SEPARATOR BLADE	SP0112	PAIR
9 BLADE MOUNTING BLOCK	SP0134	2
10 SECURING SCREW	SP0144	4
11 DRIVE MOTOR & GEARBOX	SP0124	2
12 DRIVE BELT	SP0146	1
13 TOP SPINDLE	SP0120	1
14 LOWER SPINDLE	SP0122	1



OPERATORS MANUAL
 (INCORPORATING SERVICE, MAINTENANCE
 & SPARES SCHEDULES)



MANUAL