

Foster KeenCut RotaTrim Rotary Power Cutter

Maintenance Manual



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Rotatrim

P T SERIES POWERCUTTER

PART 2
MAINTENANCE MANUAL

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EUROPEAN COMMUNITY EMC REQUIREMENTS (CE MARKING 1996)

From Serial No. 9603650 this series of cutters has been tested and certified in compliance with the E. E. C. Electromagnetic Compatibility requirements introduced in January 1996.

The equipment must only be used with all guarding and shielding in place. Any replacement components must be of the same type as originally fitted to ensure continued compliance.

MODIFICATION OF THE EQUIPMENT WILL INVALIDATE THE MANUFACTURERS CERTIFICATION OF COMPLIANCE.

LUBRICATION ADJUSTMENTS AND REPLACEMENTS

WARNING
ALWAYS DISCONNECT THE SUPPLY BEFORE UNDERTAKING ANY MAINTENANCE WORK.

The bearings fitted to the belt drive pulleys are self lubricating and require no lubrication.

The circular cutter spindle requires a small amount of molybdenum grease approximately every six months or if the cutting wheel begins to squeak in operation.

The motor and gearbox unit are lubricated for life.

The square guide tube for the cutting head should be lightly greased if it becomes dry.

BELT TENSION ADJUSTMENT

If under load a loud cracking sound is heard from the motor housing assembly, the belt will have become stretched and thus able to jump teeth on the drive pulley.

To tighten the belt, first disconnect the supply and remove the control box cover by releasing the single screw located in the centre back of the cover and lifting the lid from the back and sliding it forwards to disengage the front of the cover from the two retaining hooks.

The belt is tensioned by releasing the four M6 screws holding the motor to the base of the control box and sliding the motor towards the front of the cutter which is accommodated by the slotted holes in the motor baseplate.

In order to achieve sufficient purchase on the motor to tension the belt, it is recommended that a large screwdriver or lever bar up to one half inch diameter is inserted up through the hole in the base of the cutter just below the motor gearbox and leverage applied against the end of the gearbox casing while resecuring the four motor fixing screws.

If the motor has moved as far as is permitted by the slots in the base without achieving sufficient belt tension, then slide the motor fully rearwards (belt slackest position) and remove some of the surplus length from the belt by readjusting the anchorage position on the cutting head (see belt replacement) before repeating the above procedure. Replace motor cover ensuring that the lip at the front of the cover is engaged under the hooks in the base.

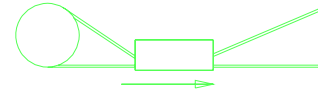
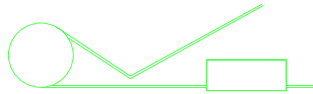
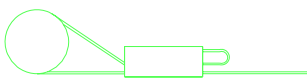
BELT REMOVAL

1. Remove the motor cover and release the motor fixing screws as detailed under belt tension adjustment.
2. Remove the top belt guard by removing the three securing screws in the right hand side end plate and lift the end of the guard vertically upwards until it is clear of the end plate.
3. Pull the guard away from the motor housing thus releasing the left hand end from the three locating pins.
4. Release the ends of the drive belt from the cutting head by the following sequence;

Pull this loop until the free end of the belt is exposed.

Slide the clip along the belt until it is clear of the free end of the belt.

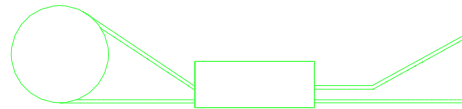
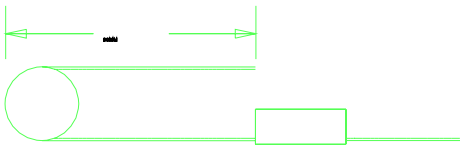
Unwrap the belt from the post & slide the clip clear.



5. Repeat the sequence for the other end of the belt.
6. Remove the belt from the cutter by threading it through the motor housing.

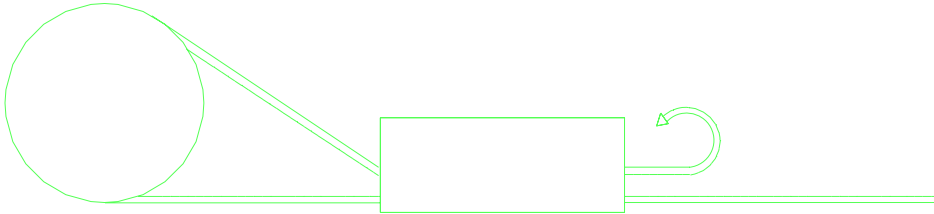
BELT REPLACEMENT

Anchor one end of the belt to the cutting head post following the sequence shown below. Slide the securing clip over the free end of the belt before wrapping the belt around the head post. The bar linking the two head posts must be at the top of the posts i.e. above the belt. Overlap the belt for a distance of approximately 90 mm.

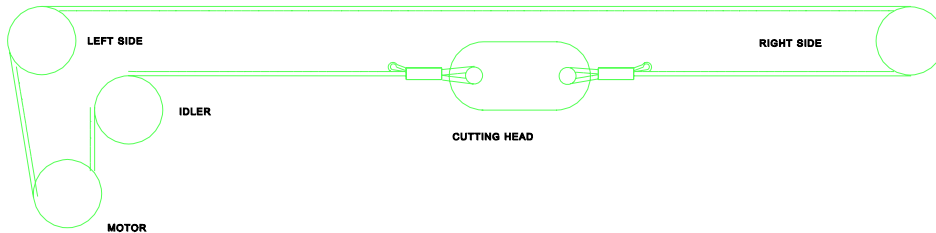


Engage the teeth of the belt together and slide the clip over the belt until it reaches the head post.

Fold the free end of the belt back on itself and feed it into the belt clip as far as it will go.



Thread the belt around the pulleys as shown below.



Ensure that the motor fixing screws have been released as detailed under belt tension adjustment.

Secure the other end of the belt to the cutting head repeating the sequence above, but this time ensure that the belt is pulled as tight as possible during the sequence.

Tension the belt and secure the motor screws as detailed under belt tensioning section.

Replace the belt guard ensuring that all three locating pins are aligned in the left hand side of the cover before pressing home and replacing the three fixing screws at the right hand end.

ACCIDENTAL OVERLOAD PLATE REMOVAL AND REPLACEMENT

The Powercutter is fitted with an overload protection plate as standard equipment to prevent the cutting wheel from riding up over material being cut and jamming on the top of the flat blade thus causing damage to the wheel.

The plate is located around the wheel spindle immediately to the rear of the cutting wheel and is engaged on the underside of the flat blade thus locking the two together to a predetermined dimension.

To remove the plate first disconnect the mains supply and turn the Powercutter upside down to expose the underside of the cutting head.

Slide the black nylon spring bush back along the wheel shaft compressing the wheel spring until the bush is clear of the plate.

While holding the bush clear, slide the plate out of the head by lifting it perpendicular to the wheel shaft.

To replace the overload plate, pull back the nylon spring bush away from the cutting wheel and slide the plate into the two grooves inside each side face of the head formed by the two pairs of ribs.

The folded return carrying the ball race cage must face towards the flat blade such that it will engage beneath it.

Release the nylon bush and check that the spring pressure has located the bush through the centre of the plate and is bearing on the cutting wheel.

TWO WAY CUTTING ACTION

With the overload plate fitted, the direction of cut is restricted to one way, towards the rule.

If light materials only are to be cut then the plate may be removed to permit a two way action.

If thick card, hardboard, plastic or leather materials are to be cut then the plate should remain in position.

Paper and film may be cut without the plate.

If varying materials are to be cut then it is a wise precaution to keep the plate in position all the time.

CAUTION: Damage will result if the cutter is overloaded without the plate fitted.

CUTTING WHEEL REPLACEMENT

In the event of the cutting wheel requiring replacement proceed as follows;

1. Remove the overload plate (see previous section)
2. Locate and identify the two round washers on the wheel spindle at the end of the wheel spring farthest from the cutting wheel.

3. Using a small flat blade screwdriver inserted between the washers, prise them apart to reveal the circlip trapped between them and remove the clip with a pair of narrow nosed pliers.

4. The wheel spindle may now be removed from the head by pushing it out of the head from either end using a small screwdriver.

N.B. Take care to ensure that the wheel spring and bush do not fly out as the shaft is removed.

4. The cutting wheel can now be lifted clear of the housing.

CAUTION: The edge of the cutting wheel is very sharp. Take care not to cut your fingers during handling.

5. Reassemble in reverse order remembering to fit the wheel spring and bush. Apply a smear of grease to the shaft before assembly.

6. Refit overload plate.

CIRCUIT BOARD REPLACEMENT

1. Disconnect the supply from the mains.

2. Remove the central box cover as detailed under the belt tension adjustment section.

3. Disconnect the plugs from the circuit board by gripping the top half of the plug assembly between two fingers and pulling firmly.

All the plugs are polarised or of a different type and therefore are not inadvertently interchangeable.

4. Release the screw securing the top stay to the right hand side of the control housing.

5. Release the two screws securing the mounting brackets to the base.

6. Lift the circuit board clear complete with the p.v.c. shield.

7. Reassembly is the reverse of the above procedure. Ensure that all plugs are fully home.

CUTTING HEAD REMOVAL AND REPLACEMENT

If the cutting head requires removal proceed as follows;

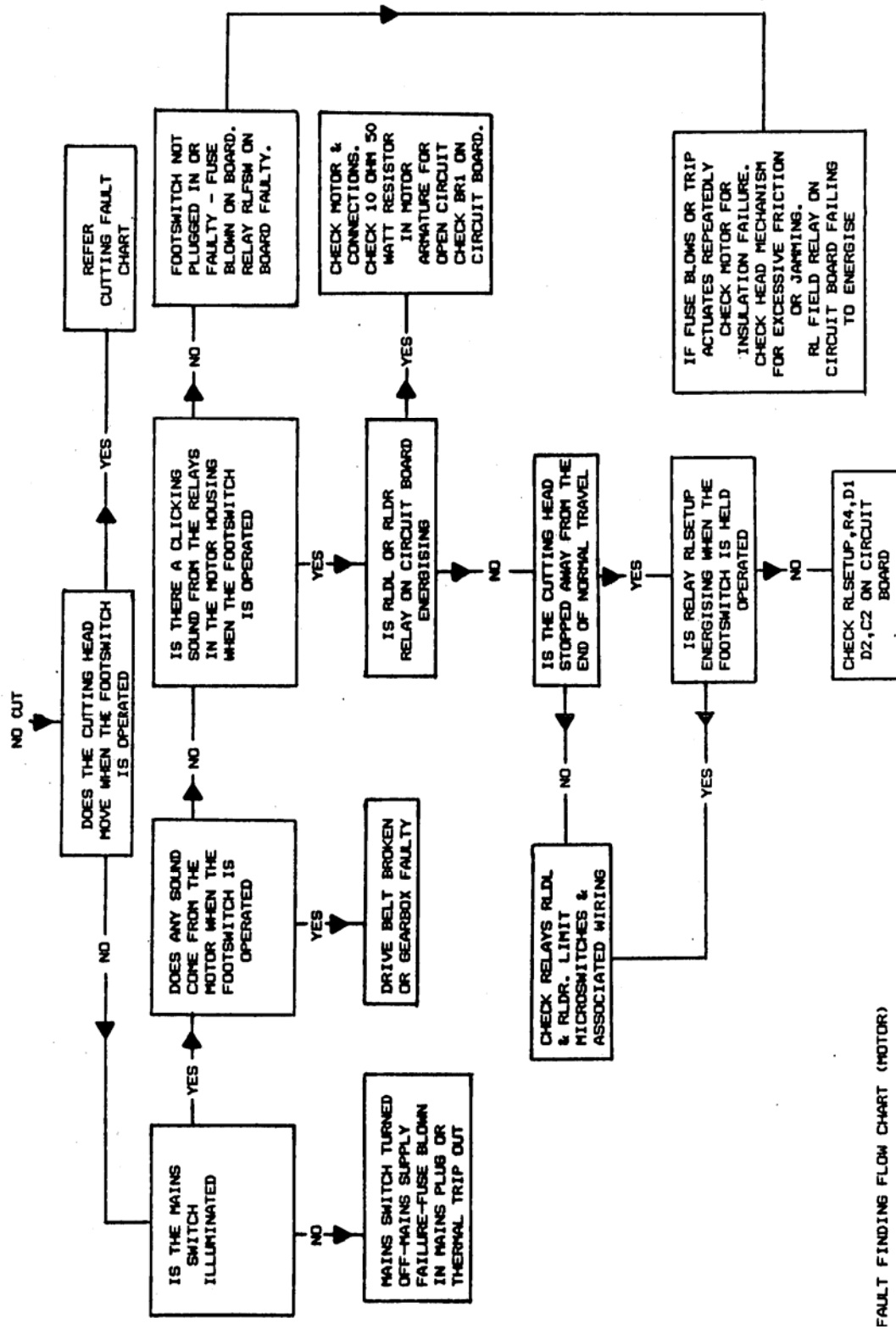
1. Disconnect the supply.
2. Remove the control box cover, belt guard and drive belt as described in previous sections.
3. Remove the right hand side idler pulley.
4. Remove right hand side limit switch assembly.
5. Push the limit switch cables down through the hole in the guide tube such that they are not projecting above the tube surface.
6. Release the three screws securing the right hand side casting to the baseboard and slide the casting off of the end of the tube.
7. Slide the head assembly clear of the tube.
8. Reassemble in reverse order taking note of the following points;
 - a) When fitting the head back on to the tube ensure that the cutting wheel is correctly aligned against the edge of the flat blade and the overload plate is engaged below the flat blade.
 - b) When refitting the end casting to the end of the guide tube, ensure at the same time that the clampstrip hinge pin is correctly located into the slot in the end of the clampstrip extrusion.

CIRCUIT BOARD PARTS LIST
(220 VOLT VERSION)

REF.	DESCRIPTION
RLDL & RLDR	4 POLE C/OVER RELAY 240 VAC COIL
FSWR	3 POLE C/OVER RELAY 240 VAC COIL
RLFIELD/SETUP	3 POLE C/OVER RELAY 100 VDC COIL
R1	47 OHMS 17 WATT RESISTOR
R3	15K OHMS 7 WATT RESISTOR
R4	8K2 OHMS 7 WATT RESISTOR
R5 & R6	1K OHMS 4 WATT RESISTOR
C1 & C2	10 MFD 450 VDC CAPACITOR
DI TO D7	1N4007 DIODE
VDR1 & 2	280 V VARI STOR
BR1	KBPC808 8A 800V BRIDGE

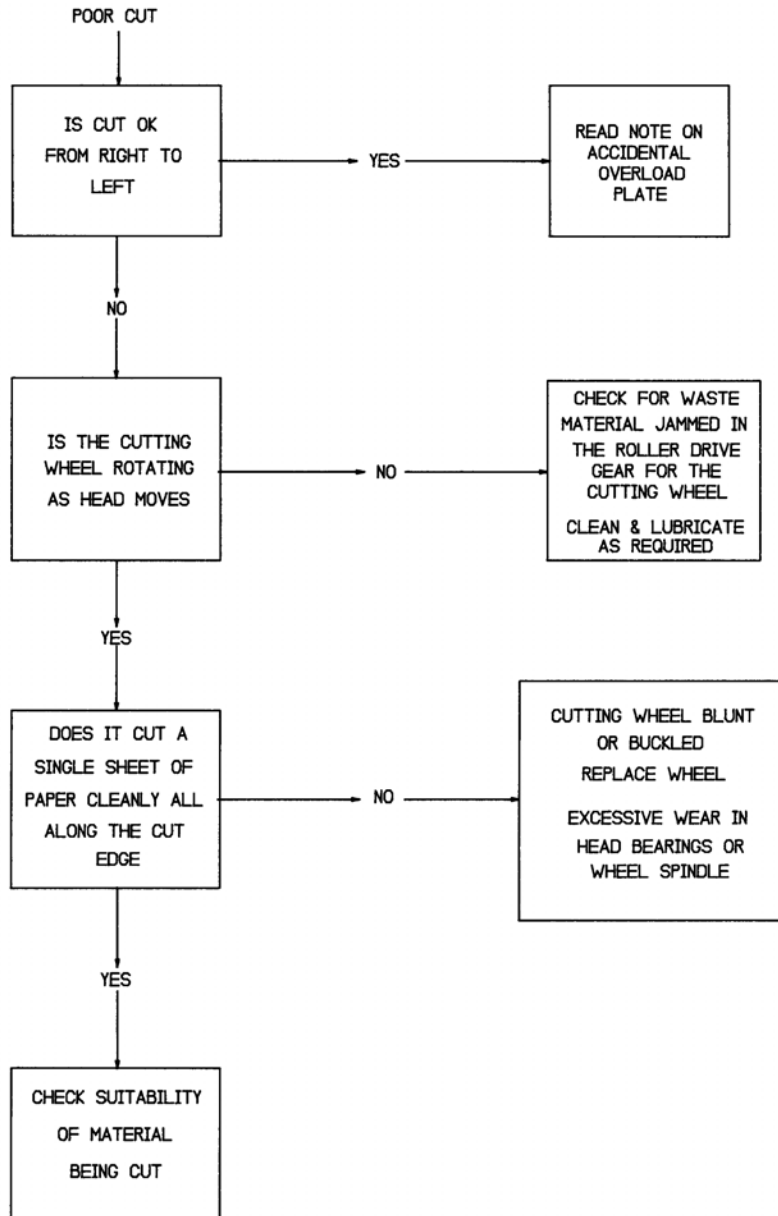
(110 VOLT VERSION)

REF.	DESCRIPTION
RLDL & RLDR	4 POLE C/OVER RELAY 110 VAC COIL
FSWR	3 POLE C/OVER RELAY 110 VAC COIL
RLFIELD/SETUP	3 POLE C/OVER RELAY 48 VDC COIL
R1	10 OHMS 17 WATT RESISTOR
R3	2K2 OHMS 7 WATT RESISTOR
R4	2K2 OHMS 7 WATT RESISTOR
R5 & R6	220 OHMS 4 WATT RESISTOR
C1	33 MFD 450 VDC CAPACITOR
C2	100 MFD 100VDC CAPACITOR
DI TO D7	1N4007 DIODE
VDR1 & 2	280 V VARI STOR
BR1	KBPC808 8A 800V BRIDGE



FAULT FINDING FLOW CHART (MOTOR)

FAULT FINDING FLOW CHART (CUTTING)



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