

PAPER SHREDDER S16

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ILLUSTRATED PARTS LIST AND SERVICE INSTRUCTIONS



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PREFACE

SERVICE PREPARATION

This manual provides the instructions for the replacement of all the components that may become worn or damaged during normal usage of the machine.

“Illustrated Parts Lists”

- For each machine give full details of the replacement part numbers with supporting diagrams to show the location of the components.

“Service Instructions”

- For each machine give the recommended servicing procedure with supporting pictorial diagrams for added clarity

WARNING

1. Check the machine RATING PLATE DETAILS are compatible with the electrical mains supply.
2. Disconnect the electrical mains supply before removing any covers.
3. The machine **MUST** have a sound Electrical Earth Connection.

NOTE: THE ELECTRIC MOTOR IS PROTECTED BY AN AUTOMATIC THERMAL OVERLOAD CUT-OUT



ILLUSTRATED PARTS LIST

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SERVICE INSTRUCTIONS

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ILLUSTRATED PARTS LIST

FRAME & COVER PANELS ASSEMBLY

NO	PART NO	DESCRIPTION	QTY	COMMENTS
1	25384	REAR COVER PANEL	1	
2	D25400	LH FRONT COVER PANEL ASSY	1	
3	25065	FRAME ASSEMBLY	1	
4	TRU67	GRIP RING	1	
5	SCM43	M3 X 20 POZI PAN SCREW	2	
6	NM8	M5 NUT	4	
7	25238	SAFETY SWITCH BRACKET	1	
8	SHK3	M5 SHAKEPROOF WASHER	8	
9	SHK1	M3 SHAKEPROOF WASHER	4	
10	NM7	M3 NUT	2	
11	SL23-12	DOOR CATCH MAGNET	1	
12	25418	LINKAGE ASSEMBLY	1	
13	25244	LINKAGE BRACKET	1	
14	SCM40	M5 X 12 POZI HEAD SCREW	4	
15	D25398	RH FRONT COVER PANEL ASSY	1	
16	SL18-281	HANDLE	1	
17	SL18-184	LOCKING CASTOR	2	
	SL18-297	NON-LOCKING CASTOR	2	
18	PLN5	M8 PLAIN WASHER	16	
19	SHK5	M8 SHAKEPROOF WASHER	16	
20	SCM38	M8 x 16 HEX HEAD SCREW	16	
21	25402	DOOR ASSEMBLY	1	
22	25419	HINGE	1	
23	RTS37	POP RIVET	20	
24	SCM15	M6 x 12 SCREW HEX HEAD	11	
25		M6 PLAIN WASHER	11	
26		M6 SHAKEPROOF WASHER	11	



FRAME & COVER PANELS ASSEMBLY

CASING ASSEMBLY

NO	PART NO	DESCRIPTION	QTY	COMMENTS
1	25467	TOP COVER ASSY COMPLETE	1	
2	25397	SIDE PANEL UPPER CASE LH	1	
3	25396	REAR PANEL UPPER CASE	1	
4	NM8	M5 HEXAGON NUT	2	
5	SHK3	M5 SHAKEPROOF WASHER	2	
6	PLN3	M5 PLAIN WASHER	2	
7	39019	LOCATING PEG	2	
8	14312	CAUTION CLOTHING DECAL	1	
9	45659	PLASTIC CAP	2	
10	SCM122	M5 x 20 SOCKET CAP SCREW	2	
11	A25434	FEED CHUTE	1	
12	25394	FACIA PANEL	1	
13	25080	SIDE PANEL UPPER CASE RH	1	
14	SCM81	M4 x 12 COUNTERSUNK RAISED HEAD SCREW	4	
15	D000104	REXEL LOGO DECAL	1	
16	D000238	FACIA DECAL	1	
17	25072	SIDE PANEL CASE LH	1	
18	D000157	INSTRUCTION DECAL	1	
19	X1468	RATING PLATE	1	
20	RTS19	POP RIVET	2	
21	25073	SIDE PANEL CASE RH	1	
22	PLN4	M6 PLAIN WASHER	4	
23	SHK4	M6 SHAKEPROOF WASHER	8	
24	SCM13	M6 x 40 HEXAGON HEAD SCREW	4	
25	25143	FRONT PANEL CASE S/W ASSY	1	
26	SCM31	M6 x 30 HEXAGON HEAD SCREW	4	
27	25094	FEED SHELF	1	
28	25075	REAR PANEL	1	
	NM5	M6 HEXAGONAL NUT	4	



CASING ASSEMBLY

ILLUSTRATED PARTS LIST

CUTTING HEAD

NO	PART NO	DESCRIPTION	QTY	COMMENTS
1	25453	CUTTING HEAD COMPLETE	1	
2	D25435	INFEED EXTENSION 1	2	
2	D25440	PAPER GUIDE	2	UP TO S/N 661559
	D25454	PAPER GUIDE	2	FROM S/N 661559
3	BR22	BEARING C/W SNAP RING	2	
4	BR15	BEARING	2	
5	D25443	STRIPPER BAR	2	
6	D25445	CUTTER DRIVE SHAFT	1	
7	D25446	CUTTER DRIVEN SHAFT	1	
8	D25437	CUTTER	268	
9	KEY31	KEY 8 x 7 x 18 (ROUND ONE END)	2	
10	D25444	COLLAR	2	
11	TAB5	TAB WASHER 40	2	
12	NM29	NUT NOTCHED M40 x 1.5	2	
13	D25436	MOTOR DUST COVER	1	
14	45625	TIE ROD	4	
15	45535	SUPPORT BUSH	2	
16	D25427	BIN FULL FLAP	1	
17	D25448	DEFLECTOR PLATE	1	
18	A25429	SIDE PLATE LH ASSEMBLY	1	
19	D25439	STRIPPER LOCATION PLATE LH	1	
20	D25438	STRIPPER LOCATION PLATE RH	1	
21	NM22	NUT NYLOC M8	2	
22	D25442	GEARBOX COVER	1	
23	26010	33 TOOTH GEAR	1	
24	TRU84	GEAR CASING CIRCLIP	1	
25	A25428	SIDE PLATE RH ASSEMBLY	1	
26	PLN5/L	WASHER PLAIN	6	
27	SHK5	SHAKEPROOF WASHER	16	
28	SCM32	M8 x 20 HEX HEAD SCREW	8	
29	SCM38	M8 x 16 HEX HEAD SCREW	10	
30	45541	DE-JAM KICK PLATE	1	
31	45539	SPACER	2	
32	SL22-82	BELT	1	
33	45667	GEARBOX COMPLETE	1	
34	D25441	REAR HEAD SUPPORT PANEL	1	
35	TRU70	CIRCLIPS	3	
36	45820	STRIPPERS	268	
37	45585	COLLARS	2	



CUTTING HEAD



ILLUSTRATED PARTS LIST

BIN ASSEMBLY

NO	PART NO	DESCRIPTION	QTY	COMMENTS
1	25387	FIBRE BIN	1	
2	D-NUT36	M8 DOME NUT	4	
3	SHK5	M8 SHAKEPROOF WASHER	4	
4	PLN27	WASHER LARGE	8	
5	25452	BASE REINFORCEMENT	1	
6	254113	BASE STIFFENER	2	
7	SL18-242	CASTOR STEM INSERT (M8 x 15)	4	
8	SL18-40	CASTOR	4	
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BIN ASSEMBLY

ILLUSTRATED PARTS LIST

ELECTRICS

NO	PART NO	DESCRIPTION	QTY	COMMENTS
	25455	SWITCH/CONTROL UNIT COMPLETE	1	
1	NM7	NUT M3	2	
2	SKH1	SHAKEPROOF WASHER	6	
3	SL8-107	MICROSWITCH	1	
4	SCM78	SCREW M3 x 16mm POZI PAN	4	
5	SL6-33	CAPACITOR 90-112uF	1	
6	NM5	NUT M6	2	
7	SHK4	SHAKEPROOF WASHER	2	
8	PLN4	PLAIN WASHER	2	
9	SCM87	SCREW M6 x 16mm	2	
10	SL6-22	CAPACITOR 16uF	1	
11	PEG6	PIN 30 x 5mm	1	
12	SL26-10	MOTOR FAN	1	
13	SL20-255	MOTOR 600W 220-240V	1	C/W CAPACITORS (2) UP TO S/N 690498
	SL20-265	MOTOR 600W 220-240V 50Hz	1	FROM S/N 690498
14	SHK6	SHAKEPROOF WASHER M8	4	
15	SCM38	SCREW M8 x 16mm HEX HEAD	4	
16	KEY 1	KEY 5 x 5 x 40mm	1	
17	SCM27	SOCKET SET SCREW M5 x 10mm	1	
18	45621	MOTOR PULLEY	1	
19	SL9-11	6-WAY TERMINAL BLOCK	1	
20	SCM43	SCREW M3 x 20mm POZI PAN	2	
21	NM13	NUT M3 PILLAR TYPE	4	
22	SL5-67	CONTACTOR	2	UP TO S/N 690498
	SL5-80	CONTACTOR 115V	2	FROM S/N 690498
23	NM8	M5 NUT	8	
24	SHK3	SHAKEPROOF WASHER M5	9	
25	PLN3	PLAIN WASHER M5	8	
26	23516	INSULATION - SAFETY SWITCH	1	
27	SL8-72	SAFETY SWITCH	1	
28	SCM6	M4 x 30mm POZI PAN SCREW	2	
29	SCR559B	2BA x 1" BRASS SCREW	1	
30	X1466	INSULATION	2	
31	SL9-19	16A TERMINAL BLOCK	1	
32	SL5-69	MECHANICAL INTERLOCK	1	
33	V2132/1	EARTH TAG	1	
34	NUT 5B	2BA BRASS NUT	3	
35	SL17-41	SHELL CLAMP	4	
36	PLN3B	2BA PLAIN BRASS WASHER	3	
37	SL17-131	BAR CLAMP	2	
38	SHK2	SHAKEPROOF WASHER M4	1	
39	NM3	M4 NUT	1	
40	SL4-28	CABLE	1	UP TO S/N 773879
	SL4-29	CABLE 115V	1	FROM S/N 773879
41	SL17-112	SELF-ADHESIVE CABLE CLIP	3	
42	SL17-126	CABLE ENTRY CLAMP	1	
43	SL17-127	ENTRY CLAMP BUSH	1	
44	SCM22	SCREW M6 x 20mm HEX HEAD	1	



ELECTRICS

ELECTRICS

NO	PART NO	DESCRIPTION	QTY	COMMENTS
45	D000200	CONTROL PANEL DECAL	1	
46	SL10-45	RED NEON INDICATOR LIGHT	1	
	SL10-62	RED NEON LIGHT 115V	1	
47	SL10-46	RED LED INDICATOR LIGHT	1	
48	SL8-117	EMERGENCY STOP SWITCH	1	
49	SCM81	M4 x 12mm COUNTERSUNK RAISED HEAD SCREW	4	
50	25350	SWITCH BRACKET S/W ASSY	1	
51	SL17-147	3-PHASE SWITCH PANEL	1	
52	SL8-118	SWITCH MOUNTING CONNECTOR	1	
53	SL8-119	DP CONTACTOR BLOCK	1	
54	W142	WIRING KIT	1	UP TO S/N 773879
	W159	WIRING KIT 115V	1	FROM S/N 773879
	WD283	WIRING DIAGRAM	1	
55	SL17-143	PCB LUG SUPPORT	4	
56	25290	PCB BRACKET S/W ASSEMBLY	1	
57	SL17-182	CONTROL PCB	1	UP TO S/N 773879
	SL17-238	CONTROL PCB 115V	1	FROM S/N 773879
58	SL18-198	CABLE CLAMP	2	
59	SCR543	NO.6 x 1/4" POZI PAN (TYPE Z)	2	



ELECTRICS



REED SWITCH AND SENSING COIL

ELECTRONIC ADJUSTMENTS

ELECTRONIC ADJUSTMENTS - Sensing Coils

The sensor is mounted on the printed circuit board (PCB) (fig. 11b) and detects the high current drawn when the motor stalls due to the cutting head jamming. The magnetic field of the wire passing through the coil is sensed by the coil and operates the potentiometer, which forms part of the logic circuit controlling the contactors that directly switch the motor.

When jamming occurs, after a short pause, the motor will automatically reverse momentarily and then stop; the unshredded paper having been returned to the feed chute. The illuminated controls will now indicate the 'STOP' mode. Manual reverse can be obtained by pressing the reverse button on the control panel to give momentary reverse and then stop.

The waste container door is linked to a safety switch which is connected in the logic circuit and when open also reverts the machine to the 'STOP' mode. This condition is indicated by an illumination on the switch control panel.

A 'Fail-Safe' circuit is incorporated within the logic circuit, to detect any interruption in the power supply that may cause the machine to suddenly cease working. When the power supply is restored the machine will automatically be reset into the 'STOP' mode.

Machine Not Cutting the Required Number of Sheets

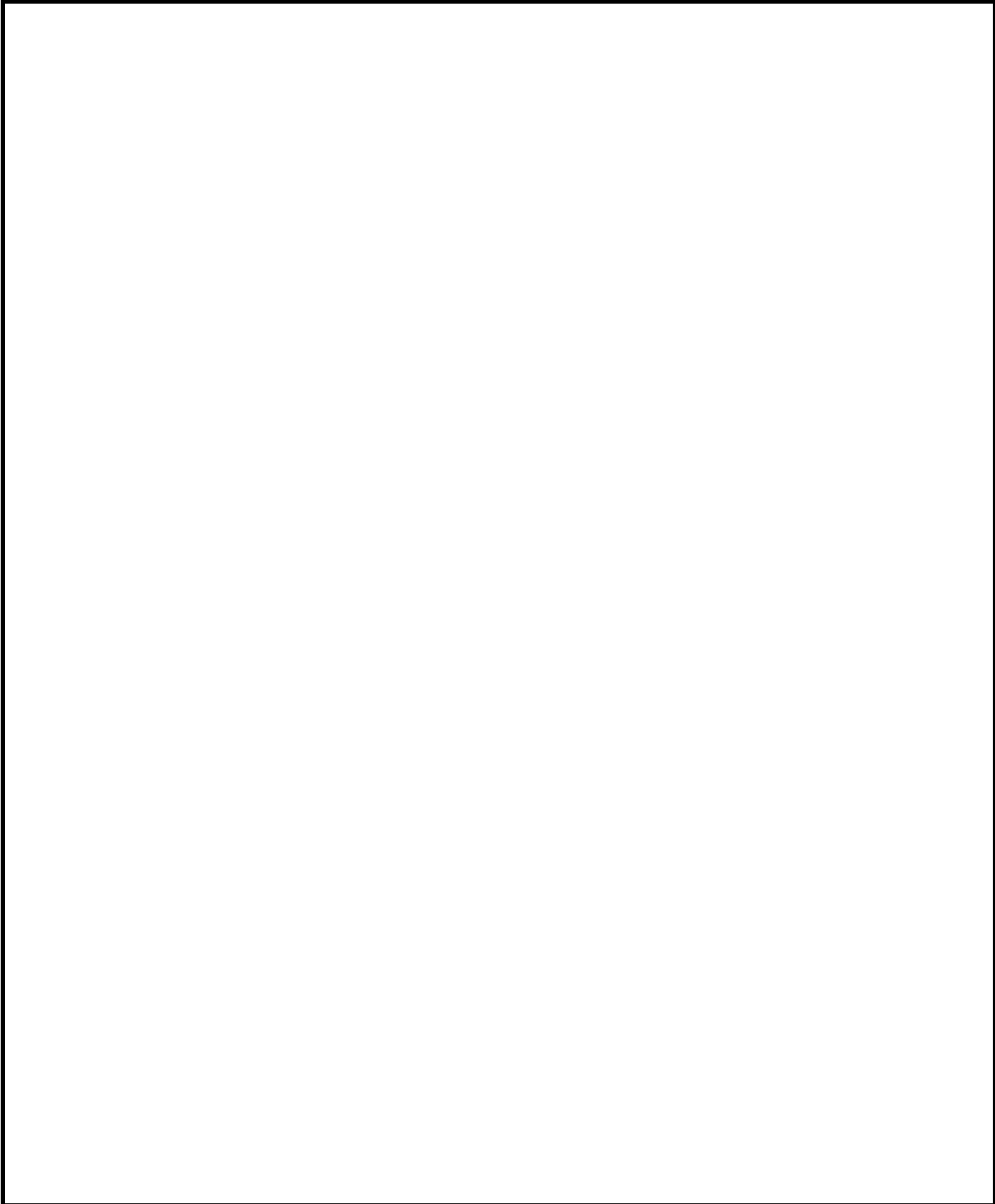
Each machine is set at the factory to achieve the cutting of the maximum number of sheets. The electrical control is achieved by setting the potentiometer on the PCB (fig. 11b). The electrical setting is checked using the 2-pin test plug located by the potentiometer and checking the electrical resistance (ohms); compare the value with the factory-setting value for each machine (see Section 3, page 1).

N.B. The setting screw located on the top of the potentiometer is used to achieve adjustment if necessary. Turning the screw clockwise will increase the maximum number of sheets cut.

Should any other problems be encountered with the electronics, the complete PCB should be replaced.



PRINTED CIRCUIT BOARD LAYOUT



PRINTED CIRCUIT BOARD REPLACEMENT - Reed Switch

1. Remove the casing (see page 4).
2. Note the wiring connections and disconnect the 2 wires from the terminal block on the PCB (1, fig. 12).
3. Disconnect the 8-way plug (2, fig. 12) and the 10-way ribbon (3, fig. 12) from the PCB.
4. Remove the PCB from its support and replace with the new board.
5. Reconnect the wires and plugs as originally fitted (refer to wiring diagrams)
6. Reassemble the machine in the reverse sequence. Run the machine and test the operation.

PRINTED CIRCUIT BOARD REPLACEMENT - Sensing Coil

1. Remove the casing (see page 4).
2. Note the wiring connections and disconnect at the (7 connectors) terminal block on the PCB.
3. Disconnect the 10-way ribbon plug from the PCB.
4. Disconnect the Over Current Wire from the Auto Reset Switch and remove from the centre of the Over-Current Coil.
5. Remove the PCB from its support and replace with the new board.
6. Reconnect wires and plugs as originally fitted (refer to wiring diagrams).
7. Reassemble the machine in the reverse sequence. Run the machine and test the operation.



PCB TERMINAL BLOCK AND PLUGS

LUBRICATION OF CUTTING HEAD

To avoid a build-up of paper dust, the cutting head should be cleaned thoroughly on a regular basis followed by the application of a small amount of shredder oil to lubricate the cutters. Oil penetration can be assisted by running the machine in reverse and forward modes alternatively.

When the machine is used regularly it is recommended that cleaning and oiling is carried out at weekly intervals.

At six monthly intervals chains, sprockets and gears should be cleaned and re-coated with Rexel Shredder Oil.

FEED CHUTE REMOVAL AND REPLACEMENT

1. Remove the two plastic screw covers (1, fig. 1) by prising upwards with a screwdriver.
2. Remove the two set screws (2, fig. 1), lift front of feed chute, slide forward to unplug at the rear and lift free.
3. Assemble in reverse sequence.
4. NOTE: if replacing feed chute the two plugs (3, fig.1) can be removed and refitted to a new feed chute by removal of nuts and washers (4,5,6, fig.1).

REMOVAL OF CASING

1. Remove the four screws (1, fig. 1), securing the operating switches assembly to fascia panel.
2. Lower the switch assembly to the inside of the machine.
3. Open the hinged door and withdraw the waste bin (1, fig.3).
4. Remove the four nuts and washers (1, fig.4) securing the casing to the frame assembly. These are situated within the main frame, upper section.
5. Remove the casing from the main frame assembly (2, fig.4).
6. Assemble in reverse sequence.

CUTTING HEAD ADJUSTMENT

Ensure that machine is disconnected from the electricity supply.

Too much clearance between adjacent cutters can cause incorrect shredding.

To rectify:-

1. Remove the casing (section 2 page 4).
2. Remove open locking washers on both shafts on the gearbox end.
3. Tighten locknuts equally to a finger tight position using a 'C' spanner or by pushing on notches with a screwdriver.
4. Peen over locking tabs on to locknuts to secure in position.
5. Run machine and test for quality of cut.
6. If cut quality is unacceptable repeat stages 2-5 and tighten lock nuts equally in one notch steps until an acceptable quality of cut is obtained.
7. Refit casing and test operation.

REPLACING DRIVE BELT

1. Remove the casing (section 2, page 4).
2. NOTE: The gearbox pulley and motor drive are on fixed centres. To remove belt, slaken socket set screw securing motor pulley and wind belt off gearbox pulley as shown (fig. 5).
3. to fit replacement belt, position motor pulley half way onto motor shaft. Fit belt and 'wind' onto gearbox pulley.
4. Align motor pulley with gearbox and secure with grub screw.
5. Refit cover and test.

REPLACING CUTTING HEAD

1. Remove the casing (section 2, page 4).
2. Remove the motor dust cover and lift out the bin full flap.
3. Note and disconnect motor wires from the rear terminal block, capacitor and earth screw. Disconnect the wires from the bin full switch.
4. Remove the drive belt (section 2, page 6) and motor (section 2, page 12).
5. Unscrew 4 cutting head fixing screws and lift out the cutting head assembly. **NOTE:** 4 holes are provided in the sideplates for lifting with a hoist if required.
6. Replace the new cutting head assembly and reassemble in the reverse sequence.
7. Test the operation and adjust the cutter tension if necessary.

SERVICE INSTRUCTIONS

REPLACING GEARBOX

1. Remove the cutting head unit (section 2 page 7), drive belt (section 2 page 6), and motor (section 2 page 10).
2. Support the cutting head with the gearbox uppermost and remove the screws securing the de-jam plate, gearbox cover and tie rods. Lift away the side plate and gearbox assembly.
3. Remove the circlip securing the gearbox and withdraw the gearbox from the side frame. Retain the de-jam plate.
4. On separation of the gearbox, part of the gear train may remain in the gearbox position.

Remove the gears and clean gearbox cover.

NOTE: Examine the shaft bearings and 1/1 gears for wear and replace if required.

5. Should the gears have become dislodged from the replacement gearbox position the centre dowel gear as shown (fig. 7) into drive pulley, locate the centre dowel and engage assembled 1st stage gear. Pack with LM2 grease. Engage the assembled 2nd stage planet gear carrier with the 1st stage drive gear.

Restrain the gear carrier and rotate the drive pulley to seat the gears.

6. Align the de-jam plate with the gear casing and secure with the new circlip to the side frame.
7. Offer the side frame assembly to the gearbox cover and rotate the drive pulley to locate the gears.
8. Locate the de-jam plate with the gearbox mounting holes and secure.
9. Reassemble the remaining components in the reverse sequence.

SERVICE INSTRUCTIONS

CUTTERS AND STRIPPER REPLACEMENT

1. Remove the cutting head (section 2, page 7) and gearbox and sideframe assembly (section 2 page 8).
2. Remove the 1/1 gears and gearbox cover assembly.
3. Prise open the locking washers and unscrew the locknuts on both shafts. Remove the collars from both shafts and lift away the paper guide plate and infeed extensions.
4. **NOTE:** The assembly order of cutters and stripper and remove cutters and strippers as required.
5. Reassemble the new cutters and stripper onto the shafts in the original order of assembly (i.e in stacks of 4 components).
6. Reassemble the cutting head and test the operation.
7. Adjust the cutter clearance (section 2 page) as necessary to give a good quality cut.

SERVICE INSTRUCTIONS

MOTOR REPLACEMENT

1. Remove the casing (section 2 page 4), the motor dust guard and the bin full flap.
2. Remove the drive belt and motor pulley (section 2 page 6).
3. Note the wiring connections and disconnect the motor wires from the terminal block, capacitor and the motor earth screw.
4. Remove the screws securing the motor to the side frame.
5. Lift away the motor and fit the replacement, ensuring that the details on the motor rating plate are correct for the machine.
6. Reconnect motor wires as originally fitted and reassemble the machine.
7. Run the machine and test the operation.

NOTE: **Should the motor operate in reverse on test, interchange the black and red motor wires.**

SERVICE INSTRUCTIONS**SWITCH PANEL REPLACEMENT**

1. Remove the casing (section 2 page 4).
2. Disconnect the ten way ribbon plug from the PCB (1, fig.9).
3. Note the wiring connections and disconnect the four wires (2, fig.9) from the emergency stop switch.
4. Replace with the new switch panel and reconnect the wires as originally fitted (refer to WD221, fig.9A).
5. Reassemble the machine in the reverse sequence.
6. Run the machine and test the operation.

SERVICE INSTRUCTIONS

SECTION NINE**ELECTRONIC ADJUSTMENTS (REED SWITCHES)**

Two sensors are mounted on the printed circuit board (PCB) 91, fig.11), each of which comprise a coil supported on a terminal block and encircling a reed switch. One sensor detects the high current present in the event of a phase failure, the other detecting the high current drawn when the motor stalls due to the jamming of the cutting head. The magnetic field from the coils operates the reed switches that form part of the logic circuit controlling the contactors which directly switch the motor. (Warning: the glass encapsulated reed switch is fragile). In the event of a phase failure, the machine will cease to operate, and the control 'STOP' button will illuminate.

When jamming occurs, after a short pause, the motor will automatically reverse momentarily and then stop, the unshredded paper having been returned to the feed chute. The illuminated controls will now indicate the 'STOP' mode. Manual reverse can be obtained by pressing the reverse button on the control panel to give momentary reverse and then stop.

The waste container door is linked to a safety switch which is connected in the logic circuit and when open also reverts the machine to the '[STOP' mode. This condition is indicated by an illumination on the switch control panel/

A 'Fail-Safe' circuit is incorporated within the logic circuit to detect any interruption in the power supply which causes the machine to suddenly cease working. When the power supply is restored the machine will automatically be re-set into the 'STOP' mode.

Machine not cutting required number of sheets

to establish whether the fault is mechanical or electrical both sensors on the PCB should be temporarily short circuited as in fig.10. The machine should now be checked on mechanical setting for maximum number of sheets cut and, if satisfactory, will indicate that the fault is electronic, and adjustment is required. During the test avoid stalling the motor for a prolonged period. If the maximum



SERVICE INSTRUCTIONS

1.