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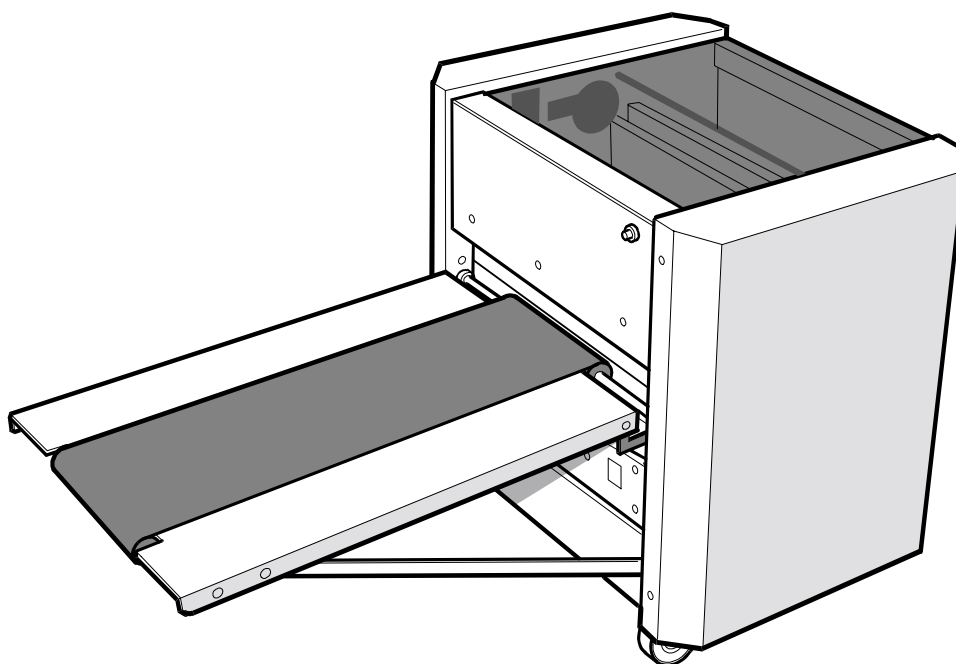
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SPRINT TRIMMER

TECHNICAL MANUAL
Including OPERATION

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Appendix D:

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1 INTRODUCTION

The Sprint Trimmer is a single knife Trimmer for books or stapled sets of documents.

The Sprint Trimmer is designed to cut up to 50 sheets of 80 gsm paper, handling book sizes between 8½ x 11 and 5½ x 8½ and also trimmer smaller books down to 5½ x 4¼. It is compatible with most of the Sprint range of Bookletmakers including the Sprint, Sprint 2000 and Sprint 5000. It can be fitted to the above Bookletmaker models which are already in the field although some electrical modification will be required.

The Trimmer has a “no cut” facility whereby if one does not want to trim a book or is processing corner or edge stapled work, one can turn off the knife and documents can pass through without being trimmed.

There is miss and jam detection on entry and exit from the machine.

If the Trimmer does stop because an error sensor has been triggered the appropriate light on the panel illuminates. There is an electrical link to the Bookletmaker so that this will not process any more documents either. If there is a Collator on-line this will also stop.

2. SPECIFICATION

MAXIMUM CUTTING THICKNESS: 50 sheets of 80 GSM bond

BOOK SIZES 5½" x 4¼" to 11" x 8½"

DIMENSIONS
Width 22½".
Height 24½".
Length 19¼" (Conveyor stored).
Length 40" (Conveyor in use).

WEIGHT 84 Kg.

POWER
110v 60Hz
Consumption approx. 180 Watts
Fuse: Mains inlet - 10 amp 110V.
24Vdc power supply - 2.5 amp 110V

3. SAFETY

1. The Trimmer should only be connected to a proper grounded source.
 2. The Trimmer is protected by safety covers and these should never be removed other than by a trained Technician.
 3. **Never try to override safety covers.**
 4. The Trimmer has a guard system to protect the operator from access to the cutting blade. However, there has to be space to allow paper to travel through the machine. So great caution should be used if cleaning or removing paper from the Trimmer by hand.
 5. Always install machines on a firm, even floor.
-

4. OPERATION AND CONTROLS

1. The Trimmer is of the correct height to align to the Bookletmaker on a level floor. Do not stand one item on a soft floor (carpet, etc.) and not the other.
2. Position the machine near to a suitable socket outlet and ensure outlet is not covered and is easily accessible.
3. Check that the power supply is of the correct voltage for the machine. Once connected, the machine is ready for use.

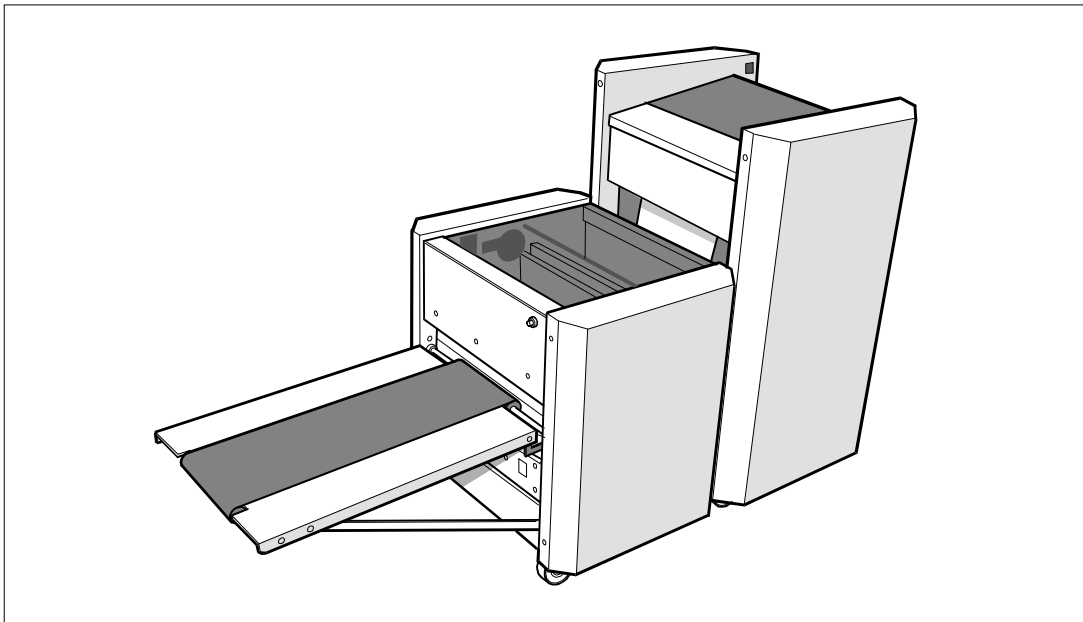


Figure 1

4. Push the Trimmer so that the input guide plates fit between the side frames of the Bookletmaker. The Trimmer will push up to within approximately 5 mm of Bookletmakers. Lock the two lockable castors.
5. Switch on power to the Trimmer.
6. Open top safety cover.
The machine will not operate with the top safety cover in the raised position. After closing the cover it is necessary to press the 'reset' button on the outfeed side of the machine.
7. Set the *paper back stop* for the length of book required. The stop for aligning the book correctly for the trim is adjusted in the same manner as the stop on the Bookletmaker; merely by turning the *backstop adjustment thumbwheel*.

8. Depending on the number of sheets (thickness of book) to be fed through the system, it is necessary to adjust the *outfeed conveyor belt* pressure. As a guide, open them to their minimum setting and then if the trimmed book appears marked or damaged open the roller by small increments until the marking stops. The *Infeed roller* is automatically gapped when the outfeed conveyor belts are parted more than a certain amount.

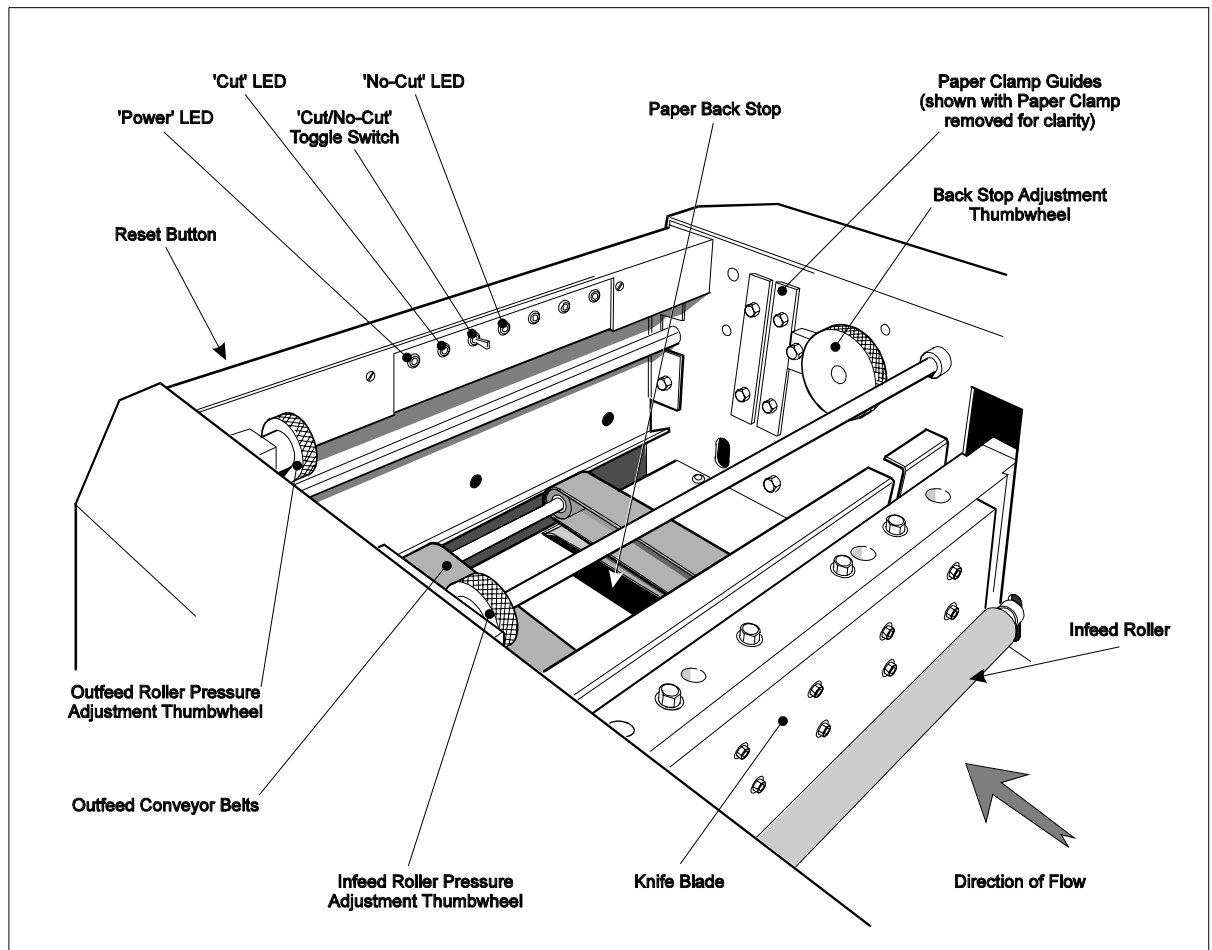


Figure 2

9. To start the Trimmer press the 'reset' button.
10. Always ensure that when starting the machine that the knife and the paper stops are in the up position. If there is any doubt press and hold the 'reset' button for approximately 5 seconds. This will start the Trimmer and reset the knife and timing shaft automatically ready for operation.
11. Should the Trimmer be set for the wrong size book and a large offcut is left in the trim area because it will not fall through the hole provided, it should be pushed through the machine by using a wooden rule or similar article. One could also free trimmings by pushing a thin plastic or wooden article down through the top of the machine between the knife and knife guard.

The top knife is extremely sharp and the knife guards should not be removed except by specifically trained personnel, when changing the top knife.

One can part the feeding roll by adjusting the gap in the front end of the transport belts to the maximum.

5. INDICATOR LIGHTS

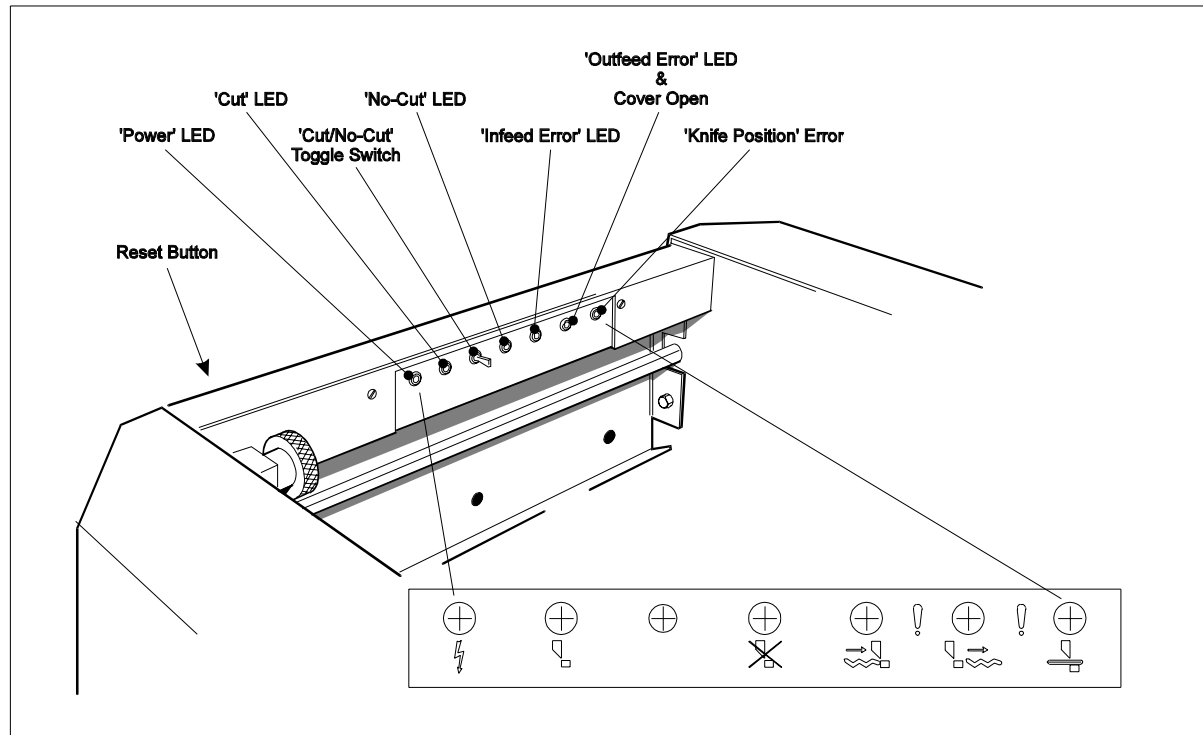


Figure 3

1. *Infeed Error*: A paper jam before the knife. Open top cover, remove book and press 'reset'.
2. *Outfeed Error*: A paper jam after the knife. Open top cover, remove book and press 'reset'. If it is not possible to remove the book as it is trapped by the knife, close the cover and press and hold the 'reset' for 5 seconds. This will complete the cycle and release the book. Open cover and clear the paper path of any remaining paper.
3. *Knife Position Error*: Open top cover, remove any paper, then press and hold the 'reset' button.
4. *Cut / No cut switch*: If the work being processed does not require trimming, the toggle switch should be set to the 'No cut' LED.

6. PROBLEM SOLVING.

PROBLEM	POSSIBLE CAUSES	REMEDY
Motor will not start	Blown Fuse	Switch off and unplug machine. Check and replace fuses as necessary
Machine will not start when paper is inserted	Powerful light source from above	Shield safety cover from light or move machine
Machine will not cycle	Machine in jam mode	Remove paper from machine in stapling section to allow photo-cell to reset
On-line equipment will not start	Trimmer is not running.	Press reset on Trimmer
Paper passes through machine without trimming	Trimmer set to 'by-pass' mode Paper stop fingers in down position	Set to 'cut' mode Press and hold reset
M/c jams at machine entry	Knife blade in wrong position	Press and hold reset

Appendix A: INSTALLATION AND INITIAL SET UP

1. Remove the bolts holding the machine to the pallet.
2. Castors are already fitted to the machine, lift from the pallet onto an even surface.
3. The Trimmer is of the correct height to align to the Bookletmaker on a level floor. Do not stand one item on a soft floor (carpet, etc.) and not the other.
4. Position the machine near to a suitable socket outlet and ensure outlet is not covered and is easily accessible.
5. Check that the power supply is of the correct voltage for the machine.

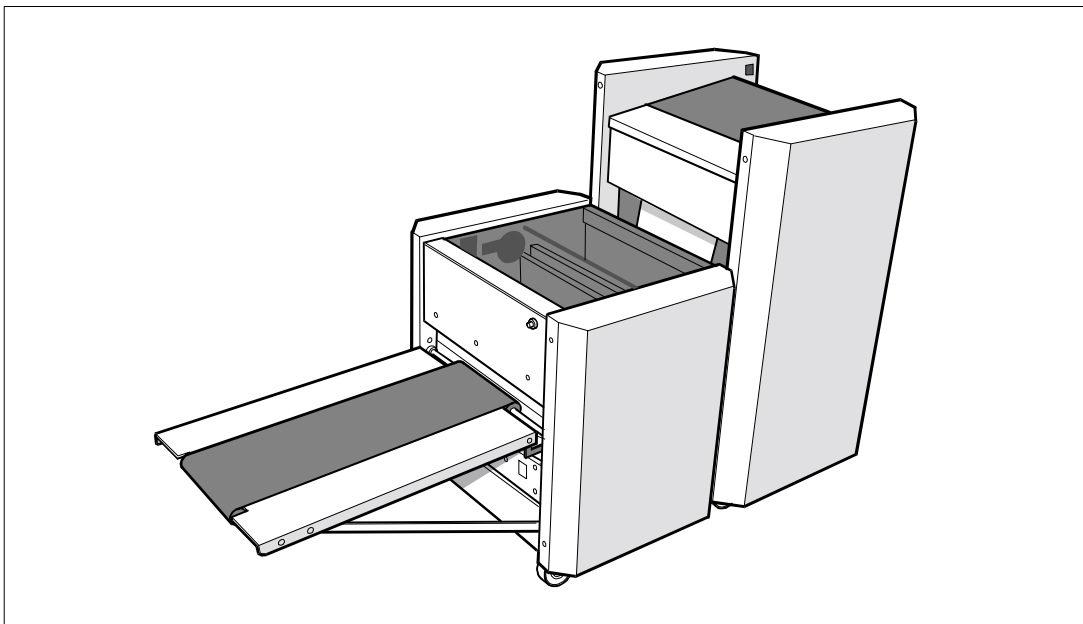


Figure 4

6. When fitting the Trimmer on-line to a Bookletmaker it is necessary to remove the conveyor from the Bookletmaker, this same conveyor should be fitted to the Trimmer. A low voltage electrical connection must also be made between the Bookletmaker and Trimmer so that if the Trimmer is stopped for any reason, the Bookletmaker will also stop.
7. **Ensure power has been removed from the machine before continuing.**
8. Remove the side covers on the Bookletmaker.

9. The first step is to remove the belt from around the conveyor. To do this lift the conveyor to a vertical position, this slackens the belt and makes removing the belt easier. Then remove the holding screws from part number 6.02, the conveyor will now be free from the Bookletmaker.

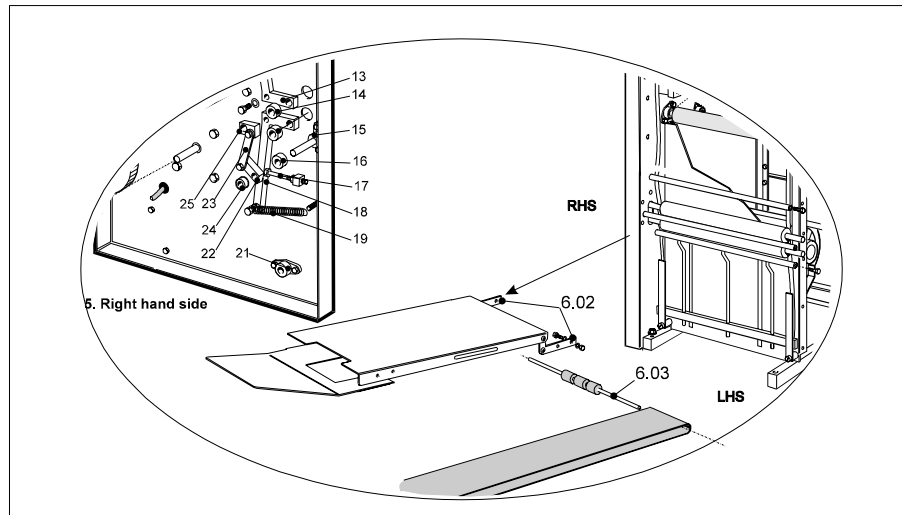


Figure 5

10. Next remove both brackets, part number 6.02 from the Bookletmaker and discard.
11. Now remove the shaft, part number 6.03 from the Bookletmaker which will allow removal of the belt. This is achieved by first removing the shaft drive, part numbers; 5.22, 5.23 & 5.25, then loosen retaining collars. The shaft and belt will now be free.
12. The conveyor & belt has now to be fitted to the Trimmer.
13. On the Trimmer exit there is a shaft with rubber sponges fitted. Loosen the retaining collar on the right hand side, then slide the shaft and at the same time gently twist the shaft to the right. This will free the left hand end allowing the conveyor belt to be placed around the shaft. Replace the shaft and tighten the collar.
14. Next place belt around the conveyor, then using screws and nuts removed from part number 6.02, fit the conveyor to the brackets on the Trimmer, when the machine is running ensure the conveyor belt runs centrally. This can be achieved by adjusting the sponge rubbers on the drive shaft.
15. The Trimmer is now ready for use.
16. Push the Trimmer so that the input guide plates fit between the side frames of the Bookletmaker. The Trimmer will push up to within approximately 5 mm of Bookletmakers. Lock the two lockable castors.
17. Connect the communications lead to the Bookletmaker as per wiring diagram in the appendices. Plug the Jack plug into the socket on the Trimmer.

Appendix B: BLADE REPLACEMENT and ADJUSTMENT.

BLADE REPLACEMENT

** Only a skilled technician with the correct training should carry out this operation.*

** Please be aware that knife blades are brittle and can be chipped or damaged easily.*

1. Ensure that the knife (top blade) is in a safe position. The knife should be in an up position and the knife crank (P/No. 4.19) should be resting against the safety plate (P/No. 4.17). In this position the knife can not drop accidentally. Unplug the machine.
2. For easy access to the knife, remove the top infeed cover (P/No. 1.03). Then loosen the infeed knife guard (P/No. 2.62), so that you can pivot the guard to gain access to the bottom row of retaining nuts.

THE KNIFE IS NOW EXPOSED AND MUST BE TREATED WITH GREAT RESPECT.

3. To remove the knife, loosen and remove the eight retaining nuts from (P/No. 2.61). This will leave the knife ready for removing. Now take the two 8 mm studs and thread into the 8 mm threaded holes that are in the knife. These studs now act as handles for removing the knife. Store the knife in a safe place.
 4. To replace the knife, carry out the above operations in reverse.
 5. When replacing the knife, make sure that there are no foreign objects between the knife mount (P/No. 2.60), and the knife. After replacing the knife, turn the knife operation over by hand to make sure that the knife (top blade) and doctor (bottom knife) pass each other smoothly.
 6. To remove the doctor (bottom knife, P/No. 2.18), it is advisable to first remove the top knife for safety reasons. To do this, carry out instructions 1 to 3, then 7 to 9.
 7. Loosen and remove the four clamping screws (P/No. 2.46) and washers from the doctor. To reach the screws, you will find four clearance holes in the top knife mount allowing an extended Allen key to reach the screw heads. The doctor can now be removed.
 8. To replace the doctor, carry out instruction number 7 in reverse.
 9. After replacing knives, always turn the machine over by hand to make sure the knives pass each other smoothly.
-

BLADE ADJUSTMENT.

** Only a skilled technician with the correct training should carry out this operation.*

** Please be aware that knife blades are brittle and can be chipped or damaged easily.*

As and when a blade adjustment becomes necessary, **only** the bottom blade (doctor) has to be adjusted.

Top Blade (knife).

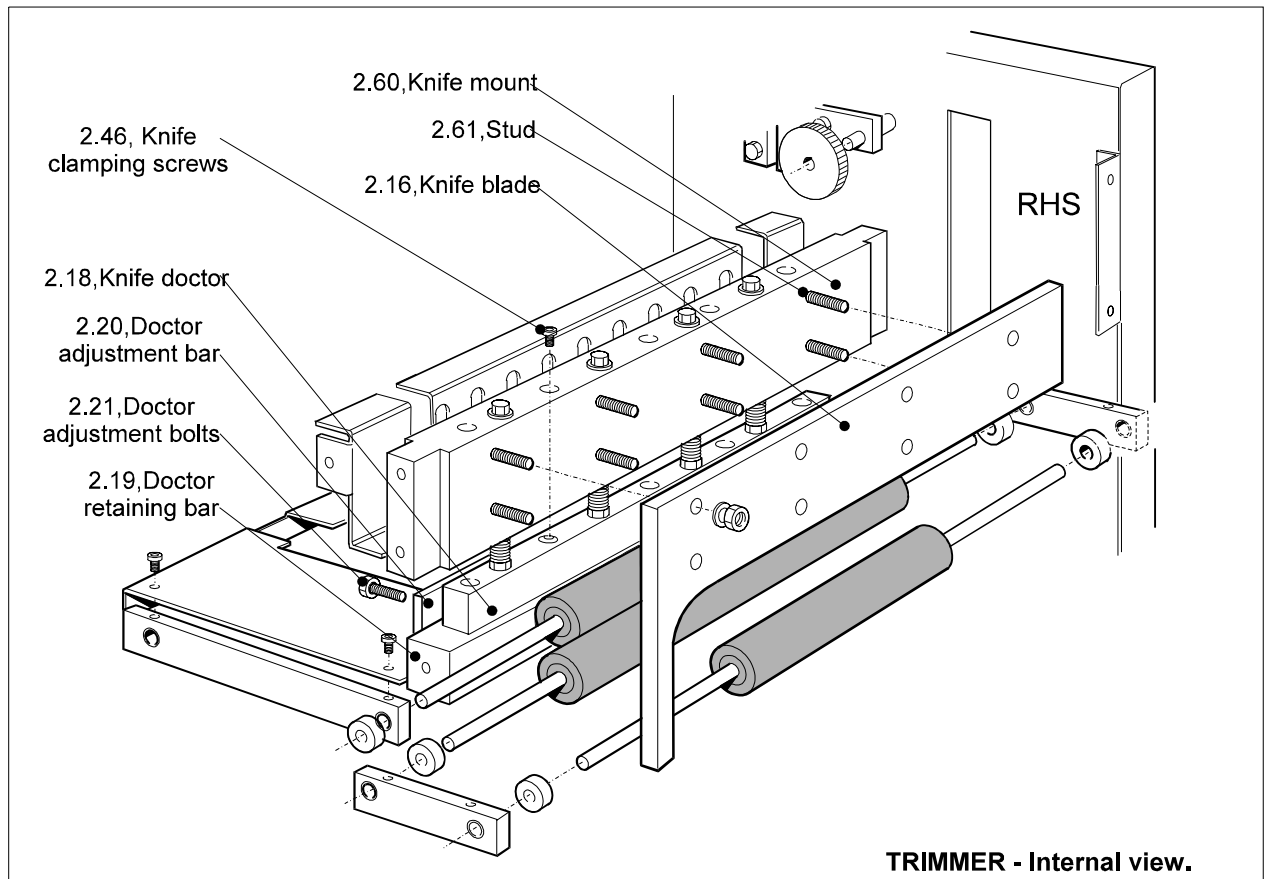
The top knife assembly, i.e. the aluminium block and the two mounting arms, were fitted together as a unit prior to being fitted in the Trimmer.

The bolts holding these components together should never be loosened. The mounting bars run between four ball races on either side of the machine. The blocks holding the two ball races on either side nearest the feed-in side of the machine are retained by pins as well as bolts. This is to ensure that they are never moved after their factory setting. If in time it is necessary to adjust them for the wear that has taken place between the mounting bar and the ball races, it should be done by moving the blocks that have not been pinned.

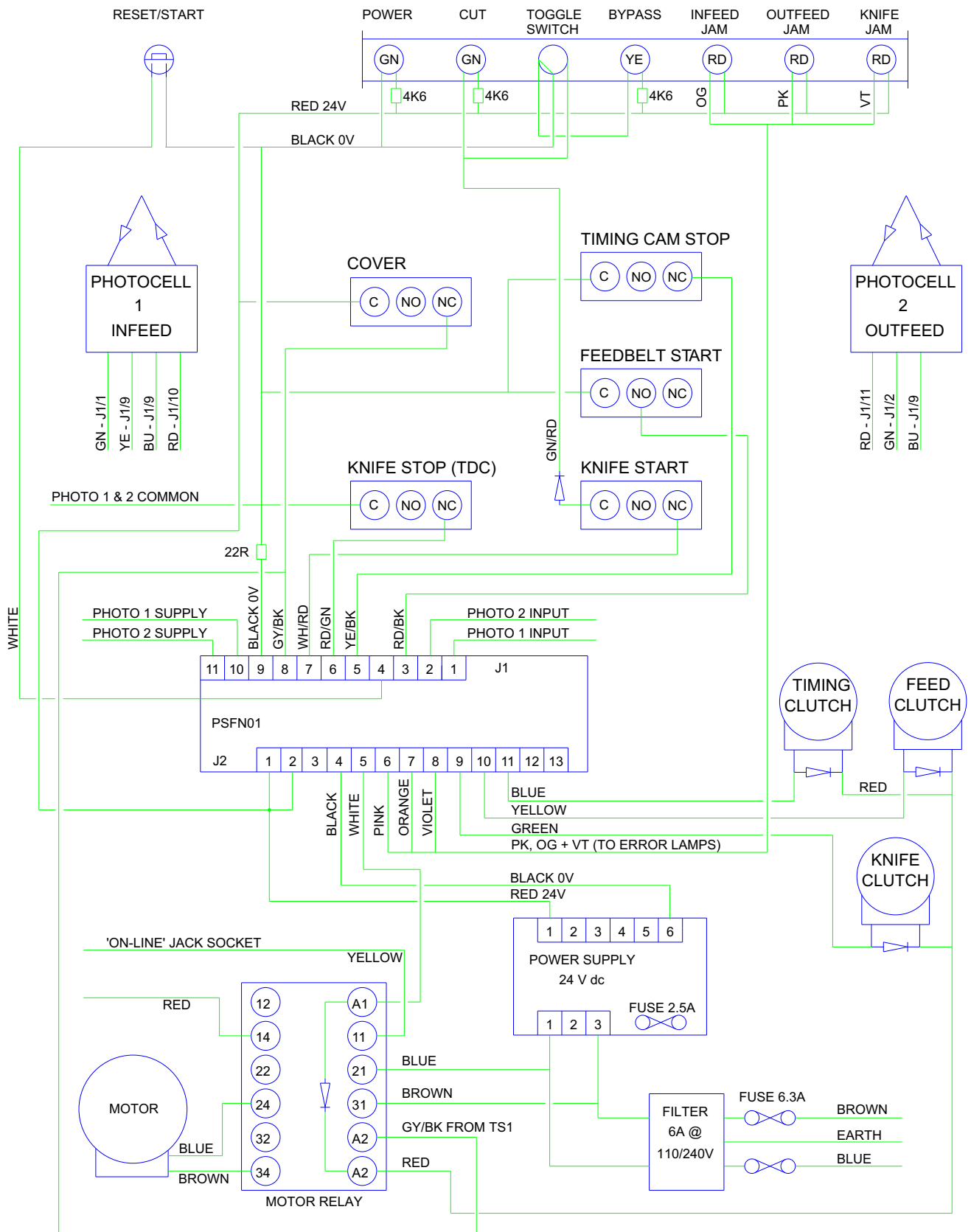
Bottom Blade (doctor).

1. To carry out this operation you have to loosen the doctor (P/No. 2.18). The blade is held in position by four clamping screws (P/No. 2.46). These are accessed through the holes in the top knife assembly (P/No. 2.60).
 2. After loosening the doctor, lower the top knife to it's lowest position.
 3. The doctor can now be adjusted forward by turning the four adjusting screws (P/No. 2.21, which are found directly behind the doctor) until the doctor is parallel with the top knife. These adjusting screws should only be turned in increments of approximately one degree.
 4. After each adjustment, re-tighten the doctor and test cut paper until a clean cut is achieved. A recommended check is to cut one sheet of paper, then in multiples of five and up to twenty five sheets make adjustments until a clean cut is achieved.
 5. Always ensure after adjusting the doctor, that you turn the knife assembly over by hand to make sure that the knives pass each other smoothly.
 6. The top knife assembly, i.e. the aluminium block and the two mounting arms, were fitted together as a unit prior to being fitted in the Trimmer.
-

7. The bolts holding these components together should never be loosened. The mounting bars run between four ball races on either side of the machine. The blocks holding the two ball races on either side nearest the feed-in side of the machine are retained by pins as well as bolts. This is to ensure that they are never moved after their factory setting. If in time it is necessary to adjust them for the wear that has taken place between the mounting bar and the ball races, it should be done by moving the blocks that have not been pinned.

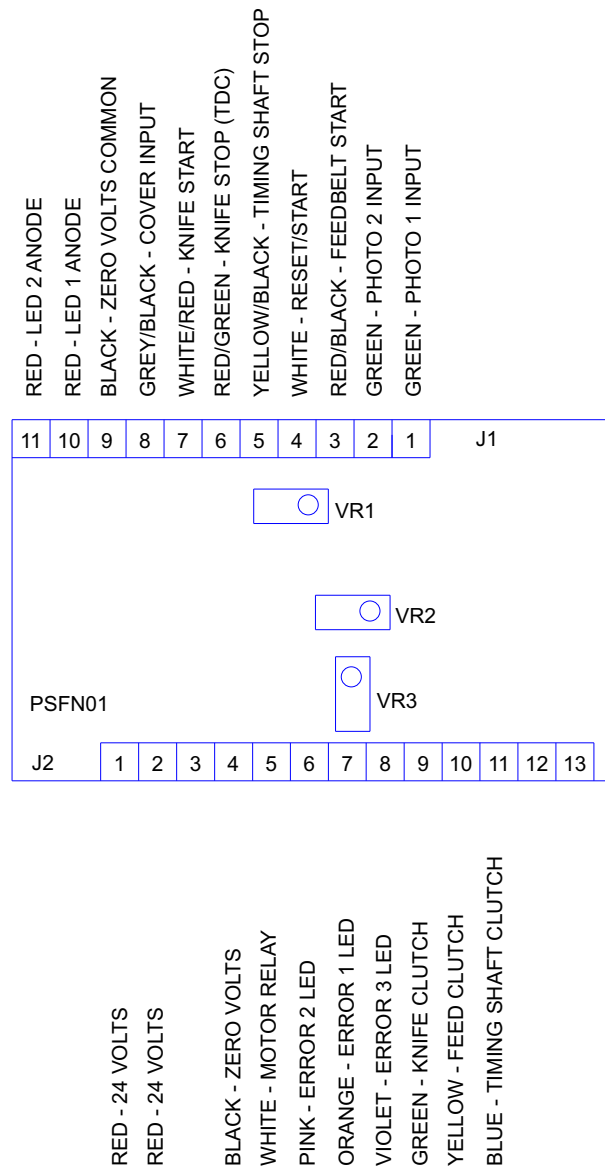


TRIMMER WIRING CONNECTIONS



When wiring a Trimmer to a 240v AC Bookletmaker, move the wire from the Trimmer motor relay base junction 14 and put it in junction 12.

TRIMMER CPU CONNECTIONS.



NOTE:

VR1 - ERROR 3 DELAY: CYCLE TIME FOR KNIFE.

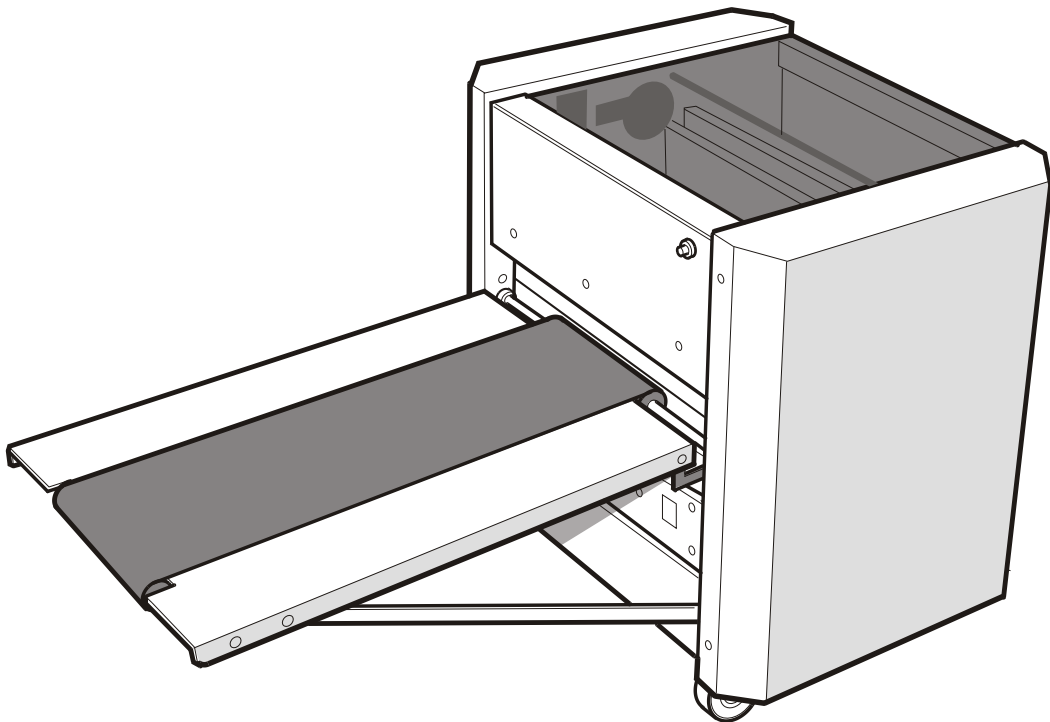
VR2 - ERROR 1 DELAY: TIME BETWEEN LEADING EDGE CUTTING PHOTO 1 TO CUTTING PHOTO 2.

VR3 - TIME DELAY FROM LEADING EDGE CUTTING PHOTO 2 TO STOPPING FEEDBELTS

CLOCKWISE TO INCREASE TIME.

TRIMMER

Parts Lists and Drawings



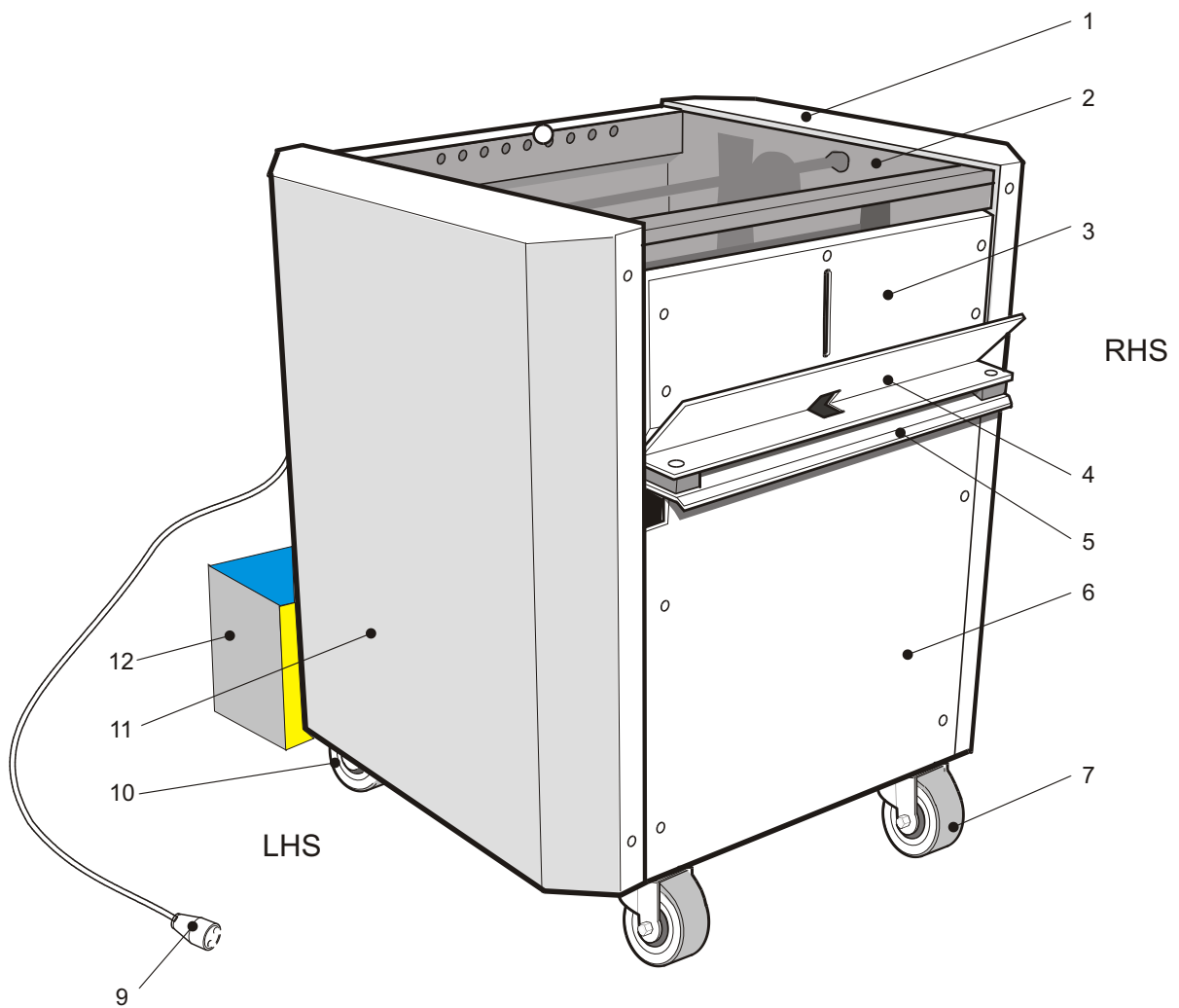


Fig 1. TRIMMER - Panels.

Item No.	Part	Quantity	Description
TRIM/-,--			
1.00	PANELS		
1.01	Side cover - RHS	1	
1.02	Safety cover	1	
1.03	Top infeed cover	1	
1.04	Angled infeed plate	1	
1.05	Flat infeed plate	1	
1.06	Bottom infeed cover	1	
1.07	Castor	2	
1.08			
1.09	Power lead	1	
1.10	Castor - lockable	2	
1.11	Side cover - LHS	1	
1.12	Waste box - for trimmings	1	

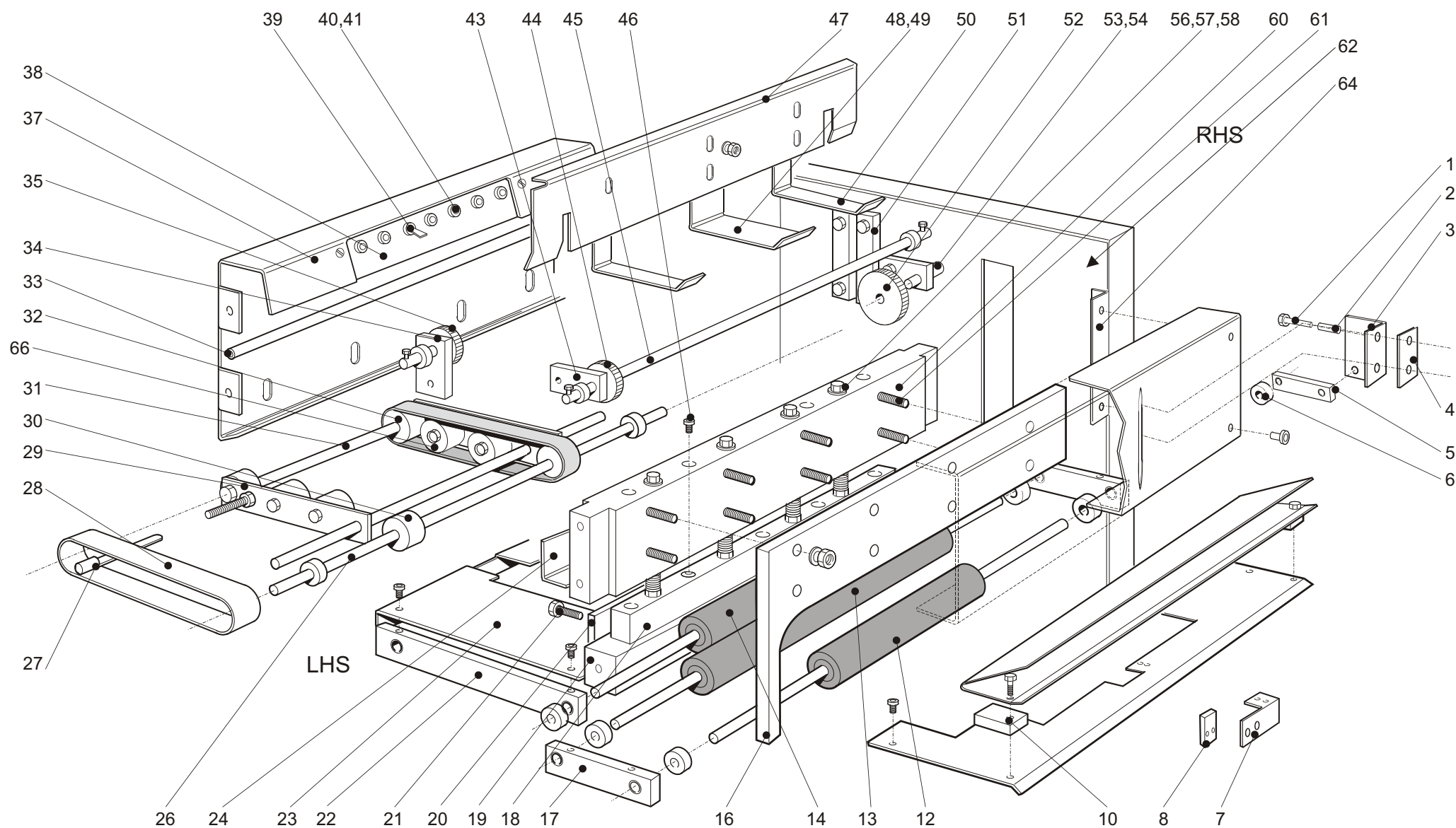


Fig 2. TRIMMER - Internal view.

KAS Trimmer
Internal view
trim02.cdr 11.97

Item No.	Part	Quantity	Description
TRIM/-,-			
2.00	INTERNAL VIEW		
2.01	Locking bolt	1	
2.02	Spacer	1	
2.03	Pivot bracket	1	
2.04	Plate	1	
2.05	Block	1	
2.06	Control wheel	1	
2.07	Photocell mount	1	
2.08	Photocell	1	
2.09			
2.10	Spacer block	2	
2.11			
2.12	First feed roll	1	
2.13	Second feed roll	1	
2.14	Third feed roll	1	
2.15			
2.16	Knife blade	1	
2.17	Block	2	
2.18	Knife doctor	1	
2.19	Doctor retaining bar	1	
2.20	Doctor adjustment bar	1	
2.21	Doctor adjustment bolts	4	
2.22	Block	2	
2.23	Outfeed table	1	
2.24	Outfeed knife guard	1	
2.25			
2.26	Shaft	1	
2.27	Lift arm	1	
2.28	Outfeed conveyor belt	2	
2.29	Plate assembly	2	
2.30	Conveyor wheel - driven	2	
2.31	Shaft	1	
2.32	Conveyor wheel - idle	2	
2.33	Tie bar	1	
2.34	Block	1	
2.35	Thumbwheel	1	Outfeed belt separation
2.36			
2.37	Top outfeed plate	1	
2.38	Control plate	1	
2.39	Toggle switch	1	
2.40	LED	6	Please state colour required
2.41	LED retainer	6	
2.42			
2.43	Block	1	
2.44	Thumbwheel	1	Infeed belt separation
2.45	Shaft	1	
2.45A	Shaft (slotted for steel tapes)	1	
2.46	Knife clamping screws	4	
2.47	Document clamp	1	
2.48	Spacer block	3	
2.49	Clamp skate - wide	1	
2.50	Clamp skate - narrow	2	
2.51	Guide block	4	
2.52	Thumbwheel	1	Trim length
2.53	Block	1	
2.54	Spacer	3	

Please quote M/C type and serial no. with order.

Item No.	Part	Quantity	Description
TRIM/-,-			
2.55			
2.56	Clamp bolt	4	
2.57	Spring	4	
2.58	Clamp head	4	
2.59			
2.60	Knife mount	1	
2.61	Stud	8	
2.62	Infeed knife guard	1	Not shown
2.63			
2.64	Cover bracket	2	
2.65			
2.66	Control wheel	4	
2.67			

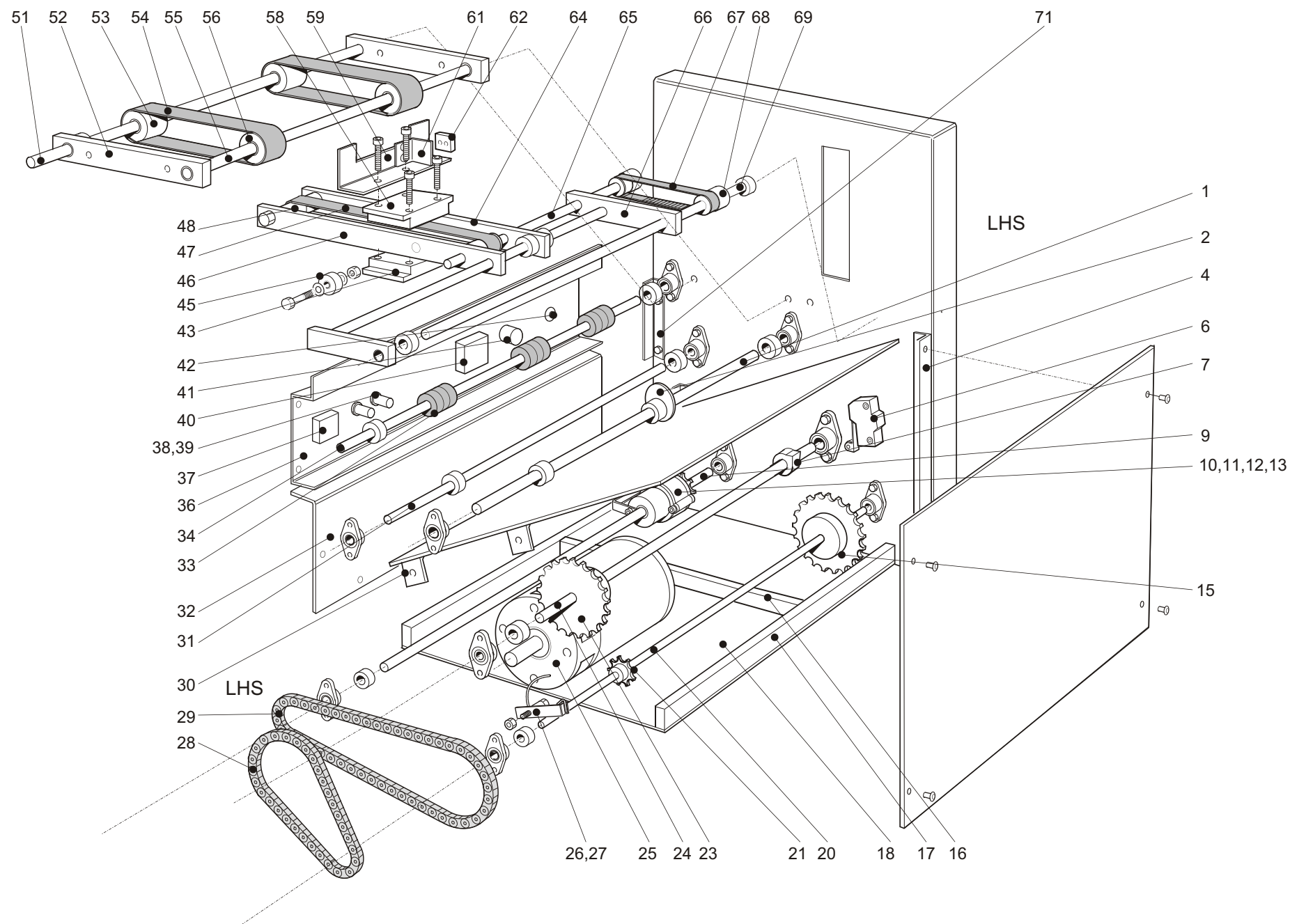


Fig 3. TRIMMER - Drive.

Item No.	Part	Quantity	Description
TRIM/-.--			
3.00	DRIVE		
3.01	Shaft	1	
3.02	Paper stop lift cam	1	
3.03			
3.04	Cover bracket	2	
3.05			
3.06	Roller microswitch	1	
3.07	Timing cam	1	
3.08			
3.09	Shaft	1	
3.10	Clutch	1	
3.11	Clutch pin	1	
3.12	Sprocket	1	12T plate
3.13	Clutch retaining bolt	1	
3.14			
3.15	Sprocket	1	24T
3.16	Tie bar	1	
3.17	Tie bar	2	
3.18	Bottom cover	1	
3.19			
3.20	Shaft	1	
3.21	Sprocket	1	8T
3.22	Chain Link		Same as 4.15 on Bookletmaker
3.23	Sprocket	1	24T
3.24	Shaft	1	
3.25	Motor	1	
3.26	Plate	1	
3.27	Spring tensioner	1	
3.28	Chain		
3.29	Chain		
3.30	Plate	1	
3.31	Shaft	1	
3.32	Outfeed bottom panel	1	
3.33	Conveyor drive rubbers	9	
3.34	Shaft	1	
3.35			
3.36	Fuse panel	1	
3.37	On/Off switch	1	
3.38	Fuse holder	2	
3.39	Fuse	2	6.3 A
3.40	Mains filter	1	
3.41	On-line socket	1	
3.42	Strain relief socket	1	
3.43	Paper stop block - bottom	1	
3.44	On-line Jack plug to bookletmake	1	Not shown
3.45	Collar	1	
3.46	Paper stop guide assembly	1	
3.47	Timing belt	1	160 XL 037
3.48	Pulley	2	12 T
3.49			
3.50			
3.51	Shaft	1	
3.52	Block	2	
3.53	Conveyor wheel - idle	2	
3.54	Conveyor belt	2	
3.55	Shaft	1	

Please quote M/C type and serial no. with order.

Item No.	Part	Quantity	Description
TRIM/-.-			
3.56	Conveyor wheel - driven	2	
3.57			
3.58	Paper stop block - top	1	
3.59	Paper stop	1	
3.60			
3.61	Photocell mount	1	
3.62	Photocell	1	
3.63			
3.64	Plate	1	
3.65	Shaft	1	
3.66	Block	1	
3.67	Timing belt	1	120 XL 037
3.68	Pulley	2	12 T
3.69	Shaft	1	
3.70			
3.71	Cover bracket	2	

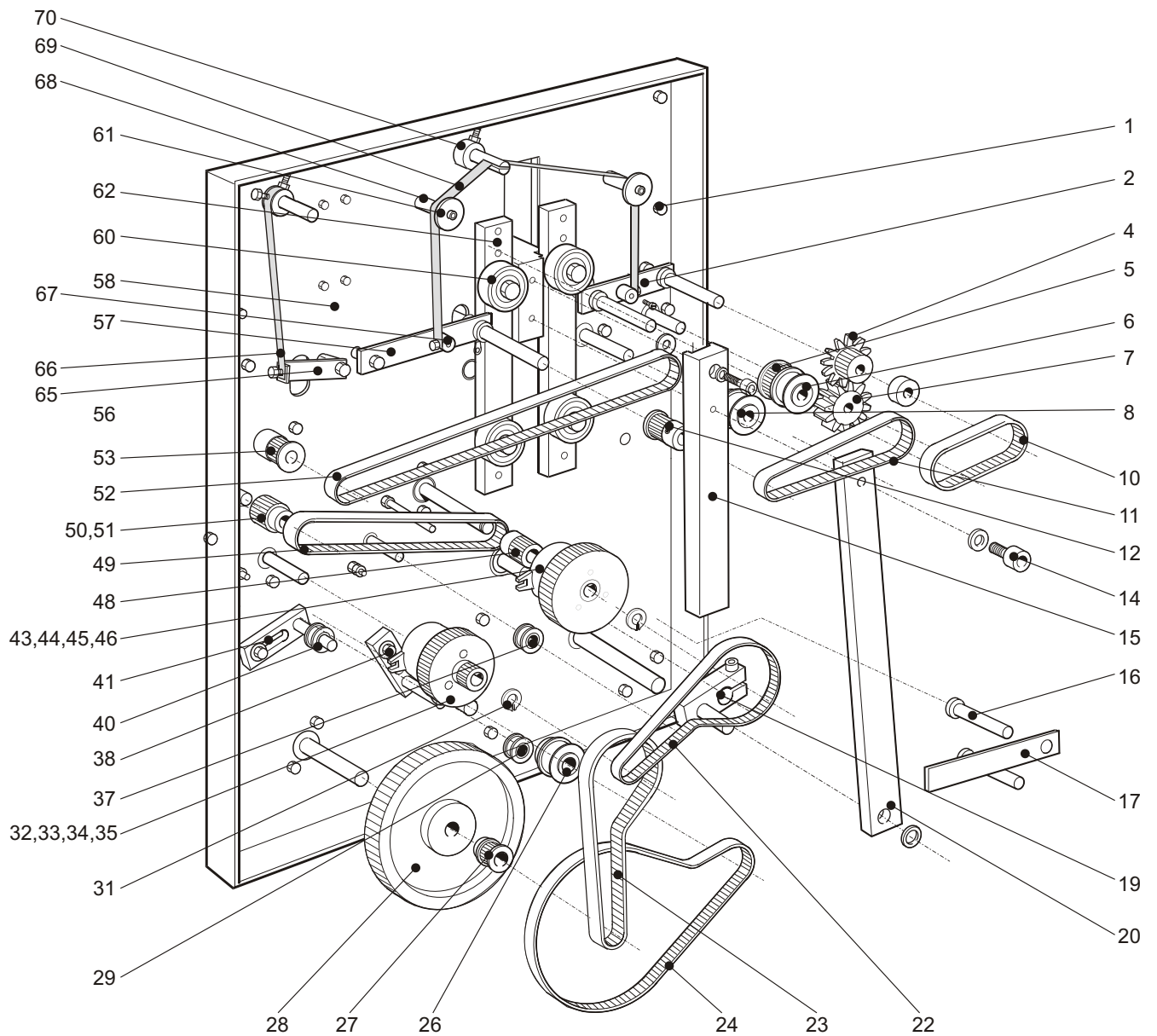


Fig 4. TRIMMER - Left hand side.

TRIMMER
LHS
trim04a.cdr 05.99

Item No.	Part	Quantity	Description
TRIM/-.--			
4.00	LEFT HAND SIDE		
4.01	Left hand panel	1	
4.02	Plate	1	
4.03			
4.04	Acetyl gear & pulley combination	1	
4.05	Pulley	1	20T
4.06	Pulley	1	16T
4.07	Acetyl gear	1	
4.08	Pulley	1	16T
4.09			
4.10	Timing belt	1	90 XL 037
4.11	Timing belt	1	110 XL 037
4.12	Pulley	1	12T
4.13			
4.14	Retaining bolt	1	
4.15	Knife arm	1	
4.16	Stub shaft	2	
4.17	Plate	1	
4.18			
4.19	Knife crank	1	
4.20	Knife link arm	1	
4.21			
4.22	Timing belt	1	180 XL 037
4.23	Timing belt	1	180 XL 037
4.24	Timing belt	1	170 XL 037
4.25			
4.26	Pulley	1	220v - 16T, 110v - 13T
4.27	Pulley	1	12T
4.28	Pulley	1	72T
4.29	Idle pulley	1	
4.30			
4.31	Circlip	2	
4.32	Clutch	1	
4.33	Clutch pin	1	
4.34	Pulley	1	32T & 12T
4.35	Clutch retaining bracket	1	
4.36			
4.37	Pulley	1	Idle
4.38	Idle block	1	
4.39			
4.40	Idle pulley	1	
4.41	Idle block	1	
4.42			
4.43	Clutch	1	
4.44	Clutch pin	1	
4.45	Pulley	1	48T
4.46	Clutch retaining bracket	1	
4.47			
4.48	Pulley	1	12T
4.49	Timing belt	1	170 XL 037
4.50	Pulley	1	15T
4.51	One-way roller clutch	1	
4.52	Timing belt	1	250 XL 037
4.53	Pulley	1	12T
4.54			
4.55			

Please quote M/C type and serial no. with order.

Item No.	Part	Quantity	Description
TRIM/-.-			
4.56	Plate	1	
4.57	Plate	1	
4.58	Cable		
4.59			
4.60	Ball race	4	
4.61	Spacer	2	
4.62	Block	2	
4.63	Cable		
4.64			
4.65	Lift plate	1	
4.66	Steel adjustment tape	1	
4.67	Adjustment collar	2	
4.68	Spacer	1	
4.69	Steel adjustment tape	1	
4.70	Stop	1	

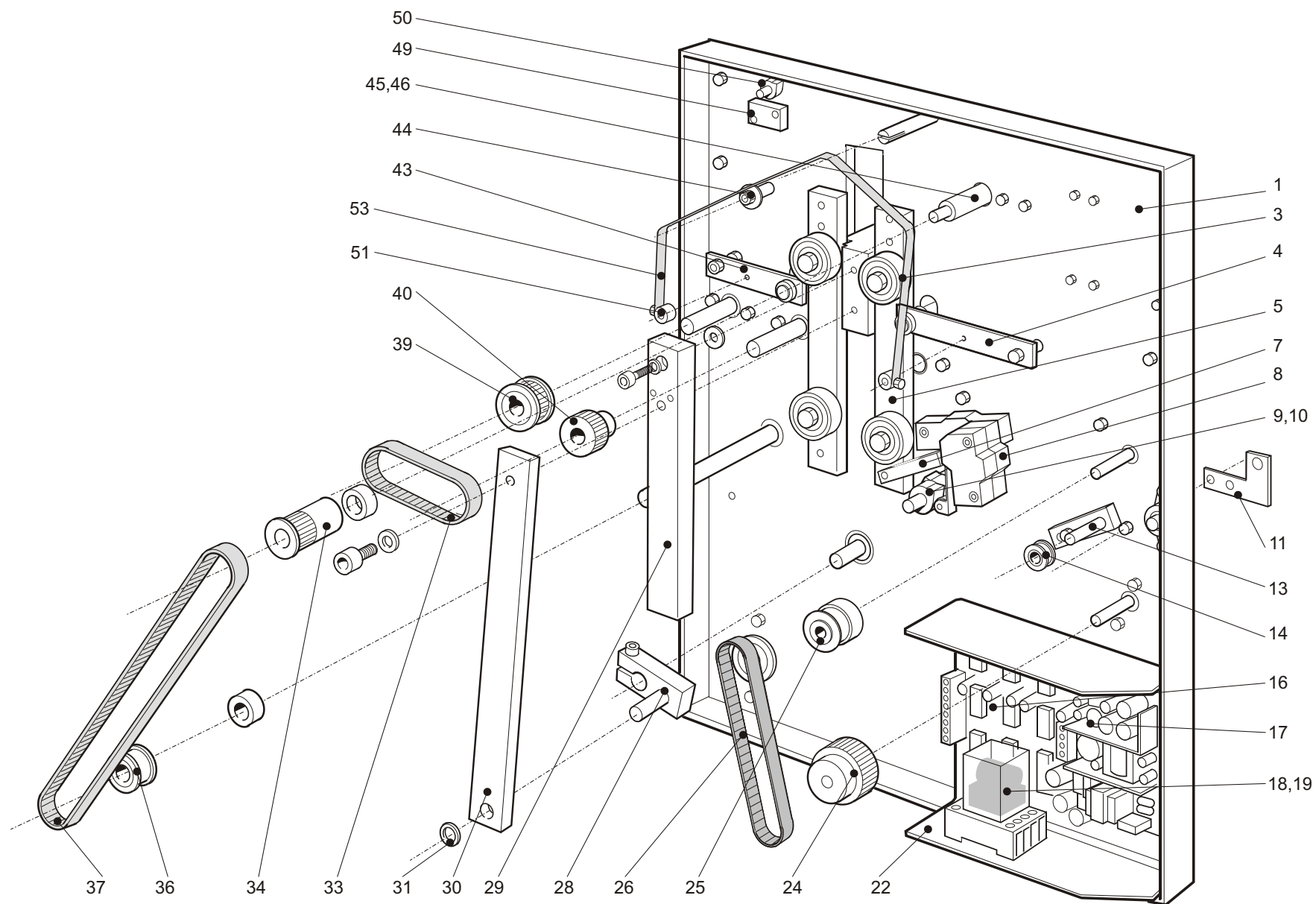


Fig 5. TRIMMER - Right hand side.

Item No.	Part	Quantity	Description
TRIM/-.--			
5.00	RIGHT HAND SIDE		
5.01	Right hand panel	1	
5.02			
5.03	Ball race	1	
5.04	Plate	1	
5.05	Block	2	
5.06			
5.07	Anti-backlash plate	1	
5.08	Roller microswitch	3	
5.09	Timing collar	2	
5.10	Timing collar - special	1	
5.11	External conveyor mount plate	2	Supplied with Bookletmaker
5.12			
5.13	Idle block	1	
5.14	Idle pulley	1	
5.15			
5.16	Control board	1	
5.17	24 V power supply board	1	
5.18	Relay	1	
5.19	Relay base	1	
5.20			
5.21			
5.22	Electrical panel	1	
5.23			
5.24	Pulley	1	32T
5.25	Pulley	1	15T
5.26	Timing belt	1	140 XL 037
5.27			
5.28	Knife crank	1	
5.29	Knife arm	1	
5.30	Knife link arm	1	
5.31	Circlip	1	
5.32			
5.33	Timing belt	1	90 XL 037
5.34	Pulley	1	12T
5.35			
5.36	Pulley	1	15T
5.37	Timing belt	1	240 XL 037
5.38			
5.39	Pulley	1	20T
5.40	Pulley	1	20T
5.41			
5.42	Cable		
5.43	Plate	1	
5.44	Spacer	1	
5.45	Block	1	
5.46	Spacer	1	
5.47			
5.48			
5.49	Cover microswitch	1	
5.50	Cam	1	
5.51	Adjustment collar	2	
5.52			
5.53	Steel adjustment tape	1	
5.54			
5.55			

Please quote M/C type and serial no. with order.

Item No.	Part	Quantity	Description
TRIM/-.-			