PS800
Pressure Seal Manual
Technical Issue 3 10-1-2008

Chapter 1

Description

This chapter introduces you to the Pressure Seal PS800 Sealer. Use the information here to familiarise yourself with component names and locations, and to gain a better understanding of the physical and performance characteristics of the PS800.

In Chapter 1 you'll find the following topics:

?? General description

?? Which side is which?

?? Features

?? Technical information

?? System overview

General Description

The PS800 Sealer is used in conjunction with the MB CAS38 (single fold unit) fitted with a delivery table (AM52). These units are connected together to provide a complete system that will fold and seal laser printed cut-sheet documents into self-mailers at speeds of up to 40,000 documents per hour. In one smooth operation, the PS800 folds and seals single sheets into self-mailers quickly and economically. Pressure activated cohesives provide an instantly secure seal on all sides of the document, whether you use a “V”, “C” or “Z” fold.

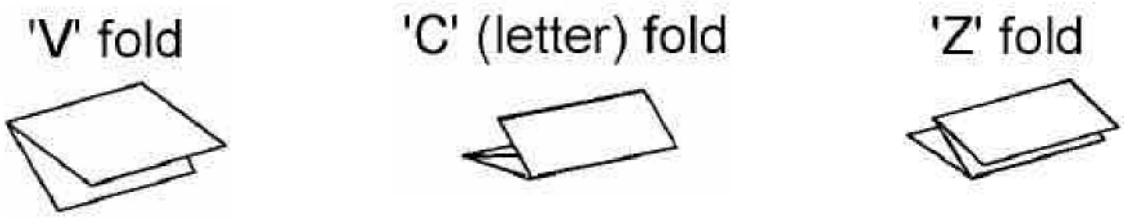


Figure 1. Types of fold produced by the PS800.

Which side is which?

The terms “infeed” or “entry”, “outfeed” or “exit” and “operator side” are used throughout this manual to identify the sides of the PS800 (see figure 2 below).

?? The infeed is the side into which documents are fed.

?? The outfeed is the side out of which the finished mailers exit.

?? The operator side of the PS800 is the side on your left when you’re facing the infeed of the PS800.

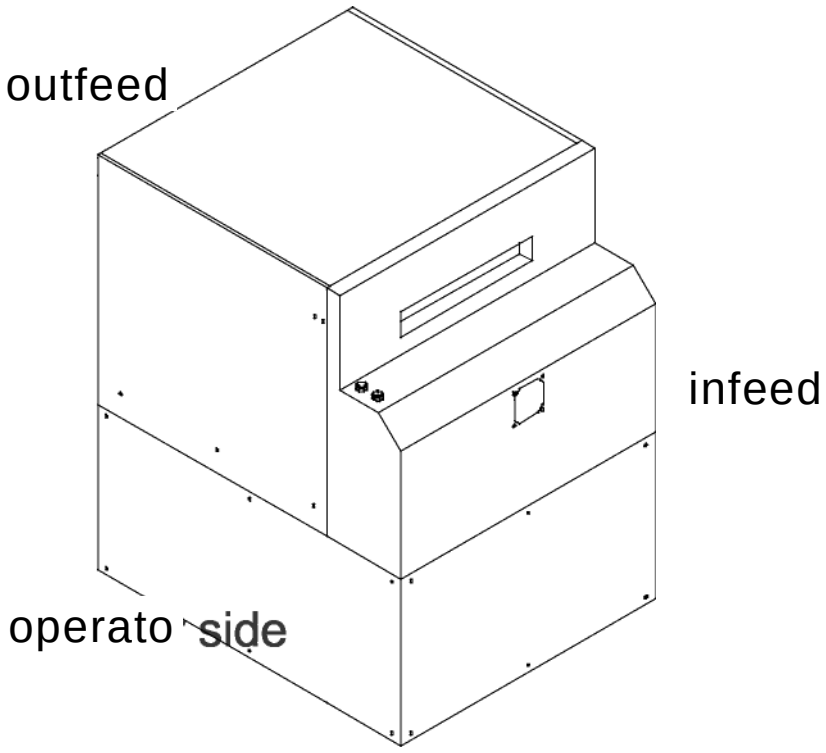


Figure 2. The sides of the PS800.

Features

This section guides you through the features of the Pressure Seal PS800 Sealer. The component names introduced in this section are used throughout this manual.

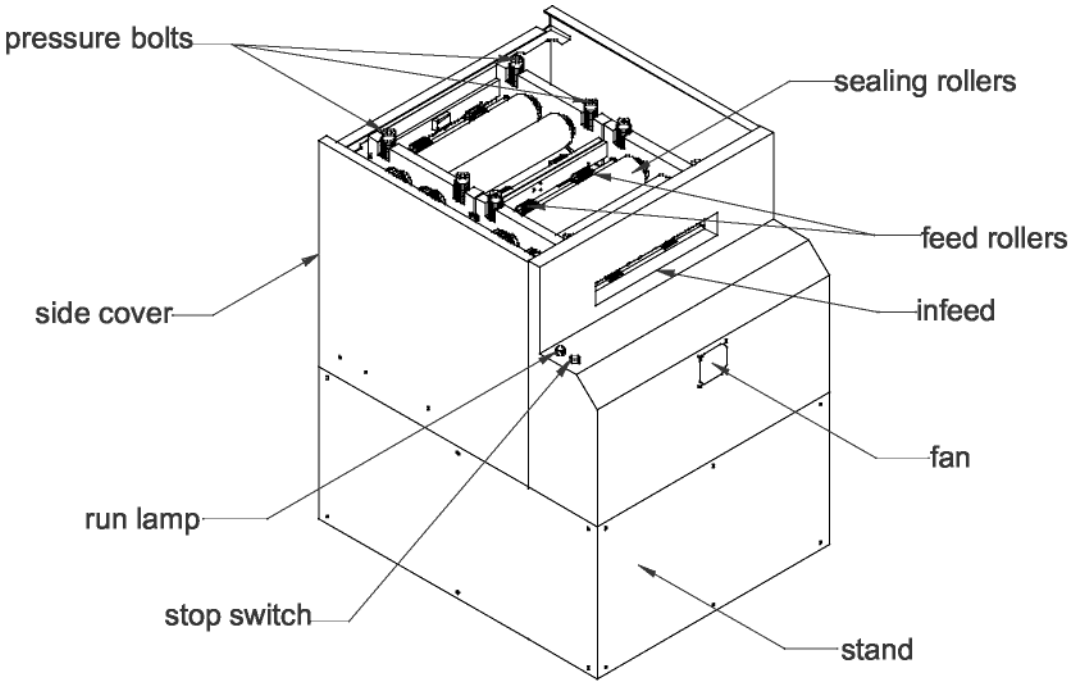


Figure 3. The PS800's features.

Jam detection and document counting circuitry

Infeed and outfeed sensors

These detect document misfeed and immediately shut down the PS800 minimising the risk of spoiled documents.

Operator Controls

The start and stop status of the PS800 sealer is controlled by the MB CAS38 central operator panel. Whenever the fold roller drive button is selected, the fold unit drive and the sealer drive motor operate together.

Lid Release switch

The green push button is used to release the top cover latch once the motor has come to rest. It does not require operation while the sealer is functioning normally.

The green led indicator reports the state of the sealer. It has three states:

?? **On continuously –** indicates that the sealer is awaiting forms to process

?? **Flashing on and off once per second –** indicates that the sealer is ready but the operator is required to pull back the top cover to check that the processing pathway is clear

?? **Off –** indicates that the PS800 is not ready for processing forms

Stop switch

Pressing the red switch stops the folder from feeding further forms into the sealer. This would, however, be interpreted as an abnormal stoppage by the folder.

The red led indicates when there is an operating error. To clear an error condition:

?? Slide the PS800 top cover to the left

?? Clear any mishandled documents

When the top cover is returned to the closed position the sealer's error condition is automatically cleared and the sealer's READY indication should be on continuously.

Power and safety components

Connectors

To connect the sealer unit to the CAS38 requires a qualified technician to ensure that the 3-phase supply, feeding the CAS38, has been switched off.

Cover

The cover provides access to the sealing components. The cover has a safety interlock switch that disable operation of the PS800 when it is open.

Sealing and stacking components

Pressure Bolts

These allow you to release the pressure on the sealing rollers for clearing mishandled documents with the Allen key that is provided.

Sealing rollers

The sealing rollers provide the pressure required to tightly seal the edges of the document.

Technical information

Sealer specifications

Construction
Formed sheet metal steel side frames

Sealer
Integral eight-roller system

Size
765mm(L) x 635mm(W) x 1050mm(H)

Weight
242kg

Power
1650 Watts @ 3 x 416V/50Hz/N/PE or 3 x 208 – 230V/60Hz/PE

Speed
40,000 documents per hour (A4 Z fold)

Environment

Operating	10? – 40? C
	15% - 40% humidity
Non-operating	5? – 50? C
	5% - 80% humidity

Colour
Light graphite

Linear Velocity
88 metres per minute

Document Specification

Weights
80 gsm minimum; 120gsm maximum

Sizes
W 203mm (8in) x L 280mm (11 in) minimum W 300mm (11 .8in) x L 420mm (16.5in) maximum Cut-sheet

Fold Configuration
Z, V and C folds

System overview

This section illustrates the locations of the major parts of the PS800 Sealer. Refer to figures 4 and 5 below.

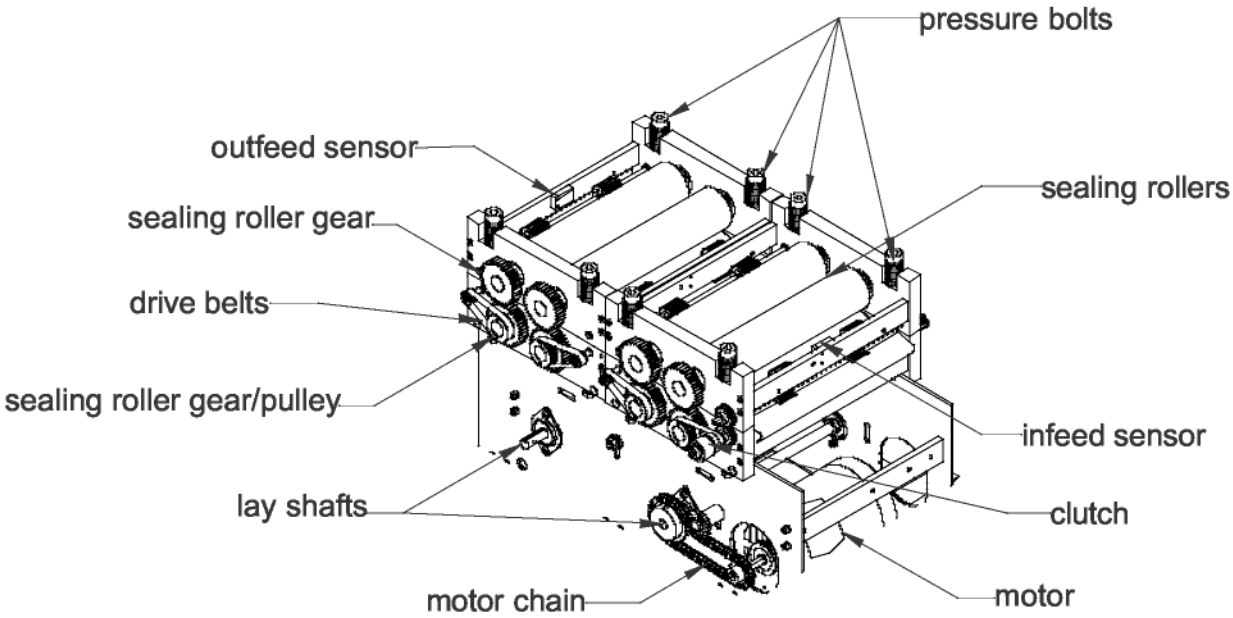


Figure 4. The PS800's components (operator side view).

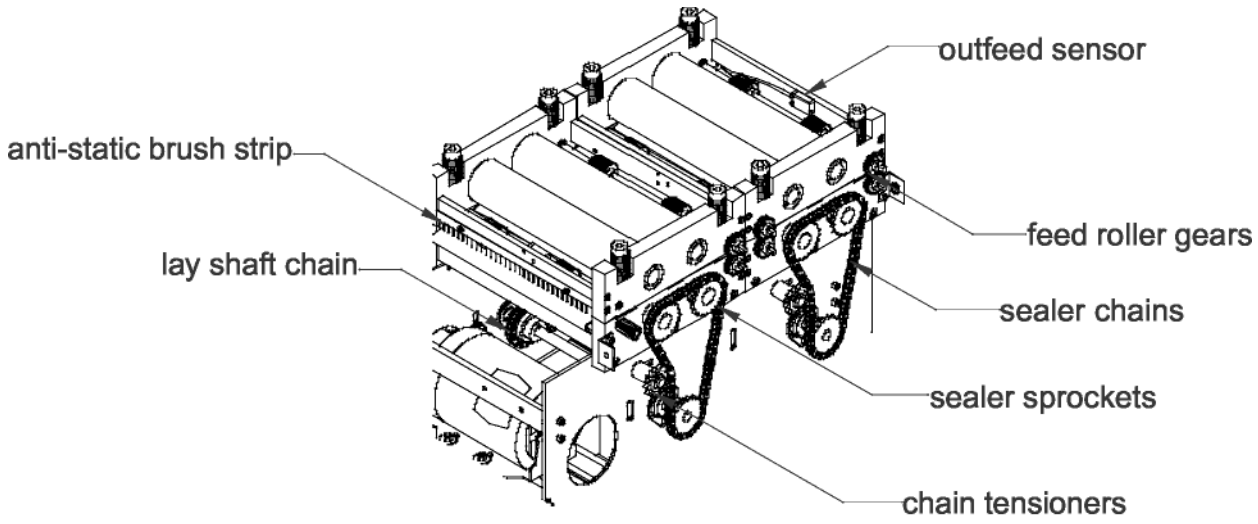


Figure 5. The PS800's components (non-operator side view).

Chapter 2

Installation

This chapter describes the site requirements and the sequence of tasks you must perform to successfully install the PS800 Sealer to a MB CAS38 FSA or BPA Single Fold Unit, with the transfer bridge attached, and the Fanned Delivery AM52. Installation tasks include:

Site requirements

Unpacking the PS800

Inspecting the PS800

Setting up the CAS 38 and verifying operation

Training the operator

Finishing the installation

Site Requirements

Floor space requirements

For the PS800 sealer only the working area required is 1600mm x 1600mm. The complete system (including CAS 38) requires a working area of 4400mm x 1600mm.

Places to avoid

?? Avoid placing the PS800 under a blowing air duct or beside an open window. Strong air currents can disrupt document feeding, resulting in mishandled documents.

?? Avoid locations subject to direct sunlight, excessive heat, moisture or dust.

?? Avoid locations where the floor may be uneven.

?? The machine size and weight should be taken into consideration when deciding on a suitable location.

?? Store Pressure Seal documents away from UV light sources. UV light degrades adhesives, shortening document shelf life.

Unpacking the PS800

If the PS800 is exported it is shipped assembled in a wooden crate. Although some variation in packing is possible, the unit should arrive at the customer site as described opposite.

Warning: *The PS800 sealer weighs 242 kg. Therefore, a forklift truck is required to lift the PS800 sealer from the crate's base.*

To unpack the PS800

1. Locate the crate immediately next to the location where the PS800 will be set up and operated.

2. Remove the lid of the case and examine the cross-timber arrangement.

3. Carefully remove the cross-timbers.

4. Once the cross-timbers have been removed, carefully remove the front side of the case.

5. Now remove the end and backside of the case.

6. Cut and remove any steel banding that may be evident

7. Examine around the base of the machine and remove any timber blocks and discard.

8. Cut away any barrier foil and examine the machinery to establish method of lifting from timber base.

9. Gently lift and place machine in required position.

10. Discard base and any relevant materials.

Inspecting the PS800

1. Visually inspect the exterior of the PS800 for damage.

2. Remove the six dome headed screws securing the lower panel (facing the Operator) and find the Lid Release cord. Pull the cord downwards to release the solenoid plunger that locks the lid. As the cord is pulled slide the top cover to the left. Release the cord and push the lid to the extreme left hand side to expose the two sealing heads.

3. Check that the drive belts to the feed rollers are in place.

4. Check that the drive chains are in place.

5. To protect the rollers from finger marks, use protective gloves as the sealing rollers can be turned by hand. Whilst turning the rollers, ensure there is free movement and that nothing has found its way into the form-processing path.

6. Replace the covers.

Setting up the CAS 38 and verifying operation

It is essential that the CAS38 is installed and levelled so that the height of the top surface of the Transfer Bridge (green belt) is at a height of 875mm [34 & 7/16 inches] above the surface of the floor on which the PS800 will stand. The aim is to ensure that the forms, fed from the CAS38, are allowed to enter the PS800 on a level thus avoiding an upward or downward delivery into the sealing entry gap.

1. Connect up the CAS38 without the PS800 to ensure that the Folder can operate correctly at the desired processing rate and with the various form sizes and folds. Once this is achieved, switch off the CAS38 at the Main switch and isolate from the supply voltage. Remove the AM38 Fanned Delivery Unit plug connection from the CAS38, i.e. from X15, the 50-way plug at the rear of the Fold Unit, and then move the Fanned Delivery Unit to one side to allow the PS800 to be manoeuvred into position.

2. The PS800 has fixed castors at the front (form entry end) and steered ones at the rear. It is necessary to align the PS800 to the CAS 38 to ensure that both surfaces fronting the Operator's position are inline with one another. This will allow the forms to emerge from the CAS38 and to enter the PS800 down the centre line of the sealing heads. To achieve this the PS800 is manoeuvred back and forth to until the alignment is within 5mm or better. The final position is to move the Sealer to butt up against the Transfer Bridge buffers.

3. With the PS800 now manoeuvred into the correct position the large 50 way AMP and the 7 way BINDER connectors can be connected up to the CAS38 at the rear of the Folding Unit (X15). Power supply feed to the PS800 is provided via the CAS38's 50 Way Amp connector.

4. The Fanned Delivery Unit can now be aligned to collect the forms as they emerge from the PS800. It may be necessary to adjust the Delivery Unit's stand off buffer to allow a small gap between the conveyors belts and the PS800 Fanned Delivery Unit exit guide plate.

5. Connect the Fanned Delivery Unit to the PS800 Contactor Panel.

6. Ensure that the PS800 Top cover (Lid) is closed.

7. Reconnect the CAS38 to the supply and switch on at the Main switch. If the CAS38 Operator's display does not become active, check the overload switch at the rear of the folding unit.

8. Ensure that the paper loaded into the CAS38 delivery feeder is that last used to test the Folder prior to connecting up the PS300.

9. The CAS38 Pump and the Fold roller drive can be started. When the Fold roller drive is selected the PS800 Sealer drive motor should also start up.

10. Operate the system as instructed in the Operator's Manual.

11. If any problems are encountered then turn to the Troubleshooting Section.

Training the operator

Operator training is an important part of the installation process, and is the key to proper machine performance. By doing a thorough job in this area, you can reduce the number of service calls for typical performance issues such as document mishandling. Take the time to make sure the operator understands his or her role in making the PS800 a successful performer.

Using the Operator Manual as a guide, review the following information with the person(s) who will be responsible for operating the PS800.

1. Explain the features of the PS800 and the major components the operator will use to set up and operate the PS800.

2. Check that the operator has been trained to operate the CAS 38 Folder. If not, ensure that training is given prior to demonstrating the PS800 sealer.

3. Demonstrate and discuss the types of errors indicated by the PS800 Sealer's Error LED and the resultant message displayed on the CAS 38 operator display.

4. Point out the areas of the PS800 that require periodic maintenance. Emphasise the importance of cleaning the machine on a regular basis and ensuring that such tasks are performed with the CAS 38 isolated from the Main Supply.

5. Review the PS800's technical specifications to ensure that environmental requirements are maintained.

Finishing the installation

Once you've trained the operator, make sure you complete the following steps to successfully complete the installation.

1. Review with the customer the service agreement coverage on the PS800.

2. Explain how to place calls for service and to the Help Desk.

3. Provide procedure for ordering cleaning kits.

4. Record the model, serial number and date of installation.

Chapter 3

Electrical Operation

This chapter provides a comprehensive look at the electrical components and circuits of the PS800 Sealer.

In Chapter 3 you'll find the following information on the electrical operation of the PS800. The areas covered include:

?? Electrical components list

?? Theory of operation

?? Troubleshooting electrical components

?? Electrical diagrams

Electrical components list

The PS800's electrical system includes the following primary components.

?? SW1	Stop switch and associated red LED
?? SW2	Lid Release switch and associated green LED
?? ENS	Entry sensor
??MS	Motion sensor
?? EXS	Exit sensor
??MC ??	Magnetic Clutch
SSW ??	Safety switch
LS	Lid Solenoid
?? PLC	Programmable Logic Controller
?? MF	Main supply line filter
?? RL11 ?? PSU	Relay 24v DC (PLC's 24v supply status)
?? F***S***11& F***S***12	Power Supply 24v 15 watts
??M	Line fuses (3.15 Amp)
?? RL23	Motor
?? RL22	Relay contactor 24v DC 4PST NO
?? RL21	Relay contactor 220v AC 4PST NO
?? ***RL20***	Relay 220v AC SPCO (Folder On status)
??CS	***Relay 24v AC DPST***
	Contact Suppresser

?? F***S***21, F***S***22 & F***S***23 Fuses 10 Amp

?? ***FS24 & FS25*** ***Fuses 100 mAmp***

Theory of Operation

Normal operation consists of loading the documents into the CAS38 feeder and processing as folded documents. The CAS38 allows a single form to be processed to check the fold and seal quality. Pressing the Fold Roller Drive key for longer than 2 seconds allows the CAS38 to progress to continuous or batch processing mode. The following is a step-by-step description of events that take place in processing a form, once it has emerged from the CAS38 ejector rollers and moves onto the Transfer Bridge.

1. As soon as the ***CAS 38*** Main switch is ***switched on*** relays K2-7/8 and K3-7/8 close. In the CAS38 these series connected contacts are broken when the Emergency-**Stop** button is activated. These contacts will provide ***230 volts AC (via L1 and L3) to the Control Unit. In the Contactor Panel the 24 volts AC, derived from the Emergency-Stop line, will energise RL20 and in turn will energise RL22.*** Providing there are no detectable Errors (RED LED active) the READY LED will be on, the Sealer will remain in this state until the Fold Roller Drive (FRD) key is pressed.

2. When the FRD key is pressed, RL21, in the Contactor Panel, closes its normally open (NO) contacts, which will turn on PLC Input (i/p) 7. This results in the three-phase supply being fed, via the relay contacts of RL22 (already energised), to the motor contactor relay RL23 thus supplying power to drive the motor, which in turn drives the sealing rollers.

3. If the motor fails to start the Motion Sensor will not have provided a pulse to PLC i/p 0. The PLC detection logic will cause the PS800 Sealer to stop the Folder by turning on PLC o/p 6. This will cause the CAS38 Folder to display a message stating "STOP BY EXTERNAL CONTROL". The PS800 Sealer will display the cause of the stoppage by flashing the RED ERROR LED once every 3 seconds.

4. At the same time as the motor starts, the in-feed clutch (MC) will be engaged due to PLC o/p 5 being turned on. This will allow a form that arrives at the end of the Transfer Bridge (TB) to be fed by the feed rollers into the sealing rollers.

5. The PS800 remains in this state until a form arrives. When a form arrives, the length of the form is measured by counting the number of pulses from the Motion Sensor (MS), sent to PLC i/p 0, during the time the form transitions the Entry Sensor (ENS), sent to PLC i/p 1. This value is compared with the value set by the PLC left hand Analogue Potentiometer (AP0). If the form length exceeds the value set then a miss-folded form error is detected. In this case it will cause the PS800 Sealer to stop the CAS38 Folder, by turning on PLC o/p 6 to close the contacts across the CAS38 connector (X4) pin 5&6. This in turn will cause a message to be sent to the CAS38 Display stating "STOP BY EXTERNAL CONTROL". The PS800 Sealer will display this Error by flashing the RED ERROR LED three times every 3 seconds.

6. After receiving the first correct length form, the measured length is stored, awaiting the arrival of the second form. This too is measured in a similar manner to that of the previous paragraph. If it is successfully processed, then its length value will be added to the first and the results stored.

7. After receiving the third form, and it being processed in a similar manner, the sum of the 3 form lengths are averaged and this value becomes the new comparison for all subsequent forms plus a 50% tolerance factor.

8. If a period of 10 seconds has elapsed before the next form arrives at the sealer or the FRD key on the CAS38 Display panel is pressed to stop the Folder, then the count is cleared and steps 5 to 7 are repeated once the FRD key is again pressed.

9. The PS800 Sealer monitors the progress of forms once they have entered the sealer. For every form that enters the sealer a count is incremented, so that no more than 7 forms can remain in the sealer before the condition is detected and processing is stopped. No Error condition is reported but both the READY and ERROR LEDs will be off and the CAS38 Display will state "STOP BY EXTERNAL CONTROL".

   If the PLC detects from the Exit Sensor (EXS), via PLC i/p 2, that a form that has not been seen by the Entry Sensor (ENS) then again the processing is stopped. No Error condition is reported by the PS800 except that both the READY and ERROR LEDs will be off. As in this and the above cases the CAS38 Display will state "STOP BY EXTERNAL CONTROL".

Interrupt operation

The PS800 stops during normal operation when any of the following occurs:

1. STOP switch (SW1) is pressed.

2. Main CAS 38 switches Q1 or S1 are turned off.

3. Forms are mishandled in the Folder and passed on to the sealer which then detects an out of tolerance form length, i.e. 50% longer than the expected form length.

4. Forms arrive at the sealer too close together, indicating that a delivery rate is greater than the sealer can handle.

5. The motor stops due to loss of drive caused by a belt or chain breakage or a motor failure.

6. Emergency-***Stop*** button pressed.

7. Forms blocking the Sealer's entry.

8. Forms blocking the Sealer's exit.

9. More than seven forms in the sealer.

10. Forms detected by the Exit Sensor but not the Entry Sensor.

PLC1 functions

Programmable logic controller PLC1 controls almost all of the functions of the PS800. The following is a description of PLC1 inputs and outputs:

Inputs	0	Motion Sensor
	1	Entry Sensor
	2	Exit Sensor
	3	not used
	4	Lid Release Button
	5	Stop Button
	6	not used Folder
	7	On/Off
	10	not used
Outputs	0	Ready LED
	1	Error LED
	2	not used
	3	Lid Release Solenoid
	4	Motor Contactor (RL23)
	5	Clutch
	6	Folder Stop

Troubleshooting electrical components

Use the following information for diagnosing PS800 electrical component failures.

Failed component	Symptom(s)
Safety switch (SSW)	No PS800 LED indications and CAS38 Display stating "STOP BY EXTERNAL CONTROL".
Line fuses (F11/F12)	No PS800 LED indications and CAS38 Display stating "STOP BY EXTERNAL CONTROL".
Line Filter (MF)	No PS800 LED indications and CAS38 Display stating "STOP BY EXTERNAL CONTROL".
PLC internal 24v supply	CAS38 Display stating "STOP BY EXTERNAL CONTROL".
24-volt power supply (PSU)	No PS800 LED indications and CAS38 Display stating "STOP BY EXTERNAL CONTROL".
Relay (RL11)	CAS38 Display stating "STOP BY EXTERNAL CONTROL".
Motor (M)	CAS38 Display stating "STOP BY EXTERNAL CONTROL".
Clutch	PS800 and the CAS38 start up but both stop with forms collecting at TB. The CAS38 Display stating "STOP BY EXTERNAL CONTROL".
Entry Sensor (ENS)	PS800 and the CAS38 start up but only one or two forms appear on the Fanned Delivery conveyor. The CAS38 Display stating "STOP BY EXTERNAL CONTROL".
Exit Sensor (EXS)	PS800 and the CAS38 start up but both stop with forms collecting at TB and inside the sealer. The CAS38 Display stating "STOP BY EXTERNAL CONTROL".
Motor Contactor (RL23)	RED LED flashing once every 3 seconds. CAS38 Display stating "STOP BY EXTERNAL CONTROL".
E***S*** Contactor (RL22)	RED LED flashing once every 3 seconds. CAS38 Display stating "STOP BY EXTERNAL CONTROL".

Failed component	Symptom(s)
Stop switch (SW1)	Unable to stop PS800 sealer except by pressing the FRD key.
Lid Release switch (SW2)	Unable to open PS800 sealer lid.
Motion Sensor (MS)	The CAS38 Display stating "STOP BY EXTERNAL CONTROL".

ES Relay (RL20) RED LED flashing once every 3 seconds. CA S38 Display stating "STOP BY EXTERNAL CONTROL ".

Chapter 4

Assemblies and Adjustments

This chapter describes how to remove, replace and where applicable adjust the major mechanical and electrical components of the PS800 Sealer. By following these procedures, you can quickly and correctly service a customer's PS800.

Refer to figures 4 and 5 on page 8, and the illustrated parts list in chapter 6 of this manual to help you understand the text-only procedures in this chapter.

Note: *Only authorised service people are allowed to work on and repair this device. Unauthorised repair work can result in extensive damage to the machine, serious injury to people, and invalidation of the warranty.*

Covers and panels

This section shows you how to remove and replace the PS800's:

?? Top cover

?? Side cover

?? Infeed panel

?? Stand panels

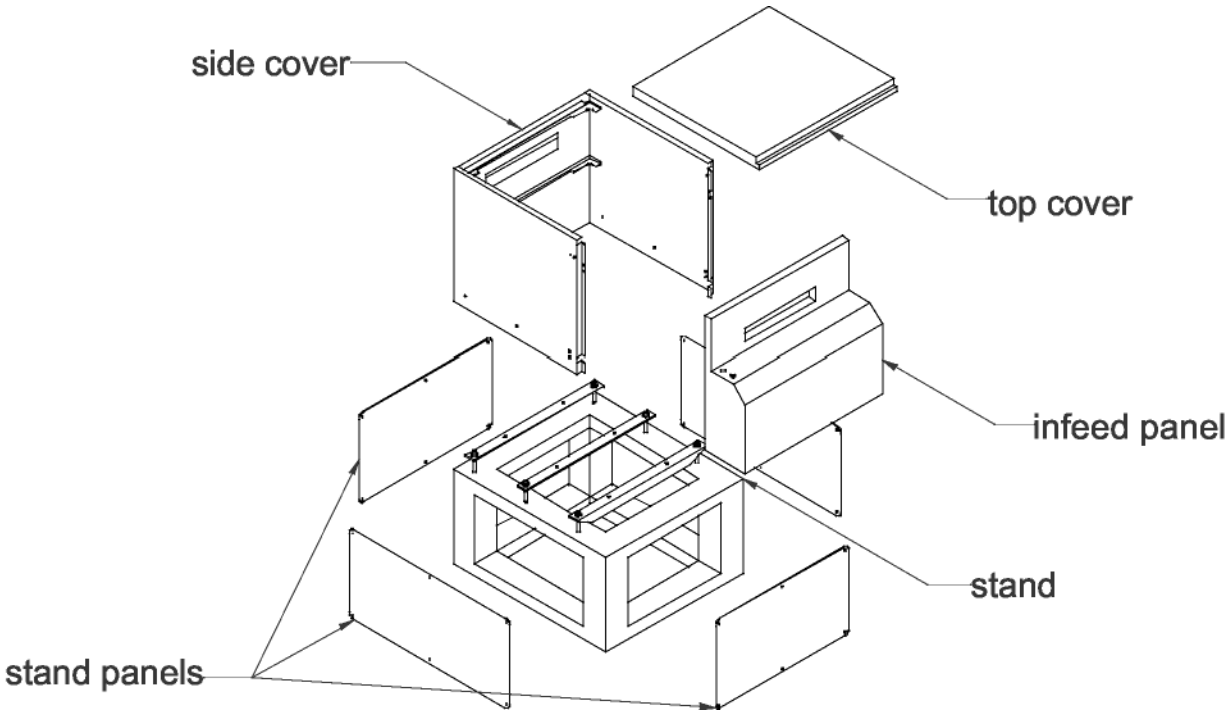


Figure 9. The top cover, side cover and in feed panel.

Removing the top and side covers

The top and side covers should be removed as a single unit to gain access to the sealer, sealing roller gears and sprockets, motor chain, sealer chains and the clutch.

1. Isolate the sealer from the 3-phase power supply by turning off at the CAS38 Operator's main switch and wall box switch. Then disconnect the Sealer's 50-way Amp plug and the 6-way binder plug from the CAS38.
1.

2. Pull the sealer clear of the CAS38 so it can easily be accessed.

3. Remove the stand panel (facing the operator) and find the lid release cord. Pull the cord downwards to release the solenoid plunger that locks the lid in place. As the cord is pulled, slide the top cover to the left.

4. Remove the three M5 screws located at the bottom of both sides of the side cover and the two M8 screws at the outfeed.

5. Pull back the top and side covers as a single unit keeping it level until it can be lifted clear of the sealer unit.

To replace the top and side covers, complete the steps of this procedure in reverse order.

Removing the infeed panel

Removing the infeed panel allows access to the infeed sensor and cover switch.

1. Isolate the sealer from the 3-phase power supply by turning off at the CAS38 Operator's main switch and wall box switch. Then disconnect the Sealer's 50-way Amp plug and the 6-way binder plug from the CAS38 .

2. Pull the sealer clear of the CAS38 to allow access to the infeed panel.

3. Remove the stand panel (facing the operator) and find the lid release cord. Pull the cord downwards to release the solenoid plunger that locks the lid in place. As the cord is pulled, slide the top cover to the left.

4. Remove the four M8 screws securing the infeed panel to the PS800 sealer.

5. Carefully lift the infeed panel away from the sealer so that none of the cables are pulled, and if possible place on a chair or object of similar height close to the PS800 sealer.

At this point the panel is still attached to the machine by cables. To disconnect completely, trace the cables, remove any cable clamps, note colour and location of wires then disconnect.

To replace the infeed panel, complete the steps of this procedure in reverse order.

Removing the stand panels

Removing the stand panels allows access to the PLC and electrical components.

1. Isolate the sealer from the 3-phase power supply by turning off at the CAS38 Operator's main switch and wall box switch. Then disconnect the Sealer's 50-way Amp plug and the 6-way binder plug from the CAS38 .

2. Remove the six screws that hold the required stand panel in place, and then remove the panel.

To replace the panel, complete the steps of this procedure in reverse order.

Document feed system

This section shows you how to remove and replace the PS800's:

?? Feed roll and paper separator

?? Clutch

Removing the top feed rollers

1. Isolate the sealer from the 3-phase power supply by turning off at the CAS38 Operator's main switch and wall box switch. Then disconnect the Sealer's 50-way Amp plug and the 6-way binder plug from the CAS38 .

2. Remove the top and side covers.

3. Remove the gear and collar from the end of the feed roll shaft.

4. Remove the circlips holding the shaft in place and then slide out the shaft to gain access to the feed roller securing screws.

5. Loosen the two securing screws and slide the old feed roller from the shaft.

When reinstalling the feed roller shaft, make sure the circlips are properly seated in the grooves.

It is recommended that feed rollers be replaced in pairs on the same shaft.

Removing the lower feed rollers

To gain access to the lower feed rollers, the top of the sealing head must be removed.

1. Isolate the sealer from the 3-phase power supply by turning off at the CAS38 Operator's main switch and wall box switch. Then disconnect the Sealer's 50-way Amp plug and the 6-way binder plug from the CAS38 .

2. Remove the top and side covers.

3. Remove the sealer pressure bolts from the upper bearing housings

4. Trace the sensor cables and remove from the PLC.

5. Remove the upper sealer assemblies, shims and paper guide plates.

6. Remove the drive belts, pulleys, gears and collars from the end of the feed roll shafts.

7. Remove the circlips holding the shaft in place and then slide out the shaft to gain access to the feed roller.

8. Loosen the two securing screws and slide the old feed roller from the shaft.

When reinstalling the feed roll shaft, make sure the circlips are properly seated in the grooves.

Replacing the feed rollers

Replace the feed rollers when wear is apparent and could cause a feeding problem.

Isolate the sealer from the 3-phase power supply by turning off at the CAS38 Operator's main switch and wall box switch. Then disconnect the Sealer's 50-way Amp plug and the 6-way binder plug from the CAS38

Remove the circlips and/or collars retaining the shaft and the two grub screws securing each feed roller. Pull the shaft out to remove the old feed rollers from the shaft. Reverse the procedure to install a new feed roller.

Removing the clutch

1. Isolate the sealer from the 3-phase power supply by turning off at the CAS38 Operator's main switch and wall box switch. Then disconnect the Sealer's 50-way Amp plug and the 6-way binder plug from the CAS38 .

2. Remove the top and side covers.

3. Remove the collar holding the clutch in place.

4. Disconnect the cable to the clutch solenoid and remove the clutch. To

replace the clutch, complete the steps of this procedure in reverse order.

Document sealing system

This section shows you how to remove and adjust the PS800's:

?? Sealer chain

?? Sealer belt

?? Sealer

Removing the sealer chain

The sealer sprocket drives the sealer chain on the sealer drive shaft. The chain drives the sealing rollers.

1. Isolate the sealer from the 3-phase power supply by turning off at the CAS38 Operator's main switch and wall box switch. Then disconnect the Sealer's 50-way Amp plug and the 6-way binder plug from the CAS38 .

2. Remove the top and side covers.

3. Loosen the nut located on the inside of the machine that secures the chain tensioner in place.

4. Move the tensioner away from the chain.

5. Locate the connecting link on the chain. Using a flat blade screwdriver, remove the retaining clip holding the connecting link in place. Be careful not to lose the retaining clip.

6. Remove the sealer chain from the sprockets. This process may be

repeated for the second sealer chain if required.

Replacing the sealer chain

1. Install the sealer chain around the top of the two sealing roller sprockets.

2. Draw the chain taut around the lower sealer sprocket and connect both ends using the connecting link. Force the retaining clip over the connecting link stud in order to hold the connecting link in place.

3. Move the tensioner into position against the chain. Tighten the nut that secures the chain tensioner in place.

4. Check and adjust the chain tension according to the next procedure.

Adjusting the sealer chain tensioner

When reinstalling the chain or performing preventative maintenance, make sure the chain tensioner is adjusted to apply the correct amount of force on the chain.

1. Press the chain at its midpoint between the outfeed sealer sprocket and lower sealer sprocket.

2. Measure how much the chain deflects. The chain should deflect approximately 4mm.

3. If the chain does not deflect 4mm, loosen the chain tensioner and either move the tensioner away from the chain to increase the amount of deflection, or move it toward the chain to decrease the amount of deflection.

Replacing the sealer module

The PS800's sealing rollers, bearings and bearing blocks are not field replaceable. When any of these components fail, you must replace the complete sealer module.

Removing the sealing roller assembly:

1. Isolate the sealer from the 3-phase power supply by turning off at the CAS38 Operator's main switch and wall box switch. Then disconnect the Sealer's 50-way Amp plug and the 6-way binder plug from the CAS38 .

2. Remove the top and side covers.

3. Remove both sealer chains.

4. Remove the infeed and outfeed sensors from the sealer (described later in this chapter).

5. While supporting the sealing roller assembly, remove the twelve screws (six per side) that mount it to the PS800 sealer chassis. Remove the assembly and set it aside.

When installing the replacement sealer module, complete the steps of this procedure in reverse order. Return the existing sealer module to the factory in the shipping container that held the replacement sealer module.

Adjusting the sealing roller pressure

The process of removing lodged documents by releasing the sealing roller pressure is covered in the operator's manual.

The sealing roller pressure is factory set and is not field adjustable. If the sealing roller pressure is suspect, the complete sealer assembly must be replaced.

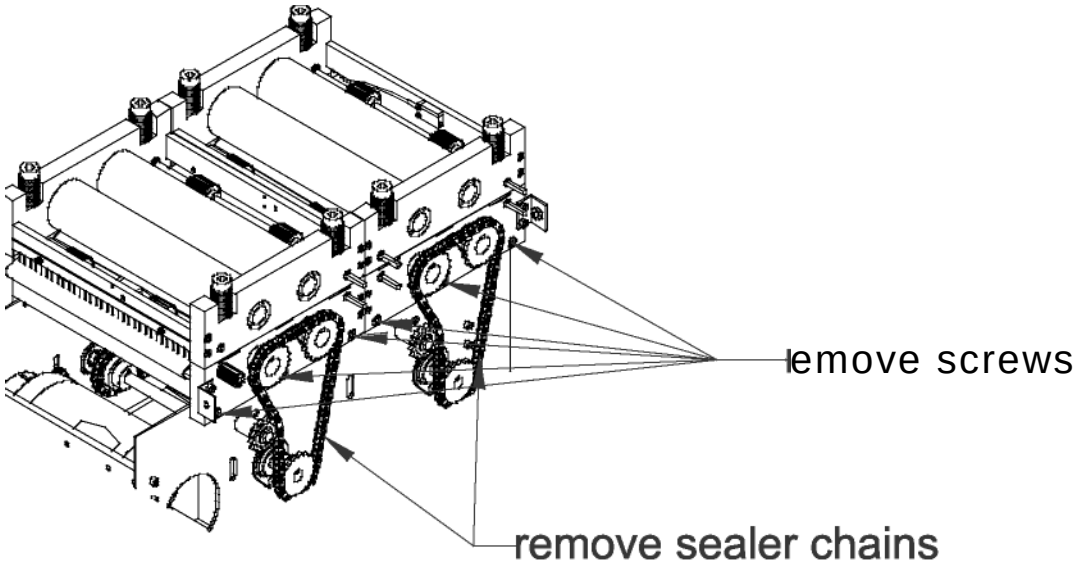


Figure 10. Removing the sealer module.

Electrical system

This section shows you how to remove and replace the following electrical components:

?? Cover switch

?? DIN rail (includes programmable logic controller and power supply)

?? Infeed sensor

?? Outfeed sensor

?? Motor

Removing the cover switch

1. Remove the infeed panel as described on page 24.

2. Remove the two socket head cap screws that mount the cover switch to the infeed panel.

3. Using a flat bladed screwdriver, unsnap the switch's wiring access cover by placing the screwdriver blade in the slot and moving the handle downward to lever the cover open.

4. Note the colour and location of wires connected to the switch, and then disconnect the wiring to completely remove the switch.

To replace the cover switch, complete the steps of this procedure in reverse order.

Removing the infeed or outfeed sensor

1. Isolate the sealer from the 3-phase power supply by turning off at the CAS38 Operator's main switch and wall box switch. Then disconnect the Sealer's 50-way Amp plug and the 6-way binder plug from the CAS38 .

2. Remove the top and side covers.

3. Remove the two upper socket head screws that secure the outfeed tie bar to the bearing housings on the upper roller assembly, and then loosen the lower tie-bar mounting screws.

4. Pivot the tie bar enough to expose the sensor, and then remove the screws and washers that mount the sensor to the tie bar.

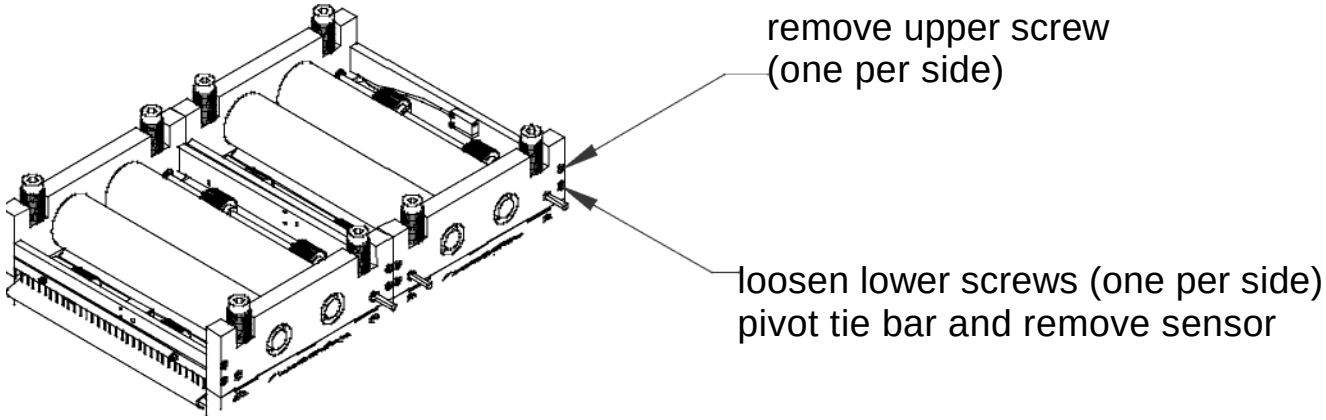


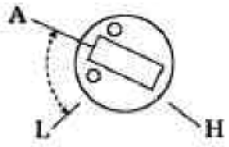
Figure 11. Removing the in feed or outfeed sensor.

5. Trace the sensor cable to the PLC and the terminal block. Note colour and location of wires, and then disconnect the wiring to completely remove the sensor.

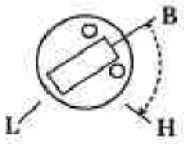
To replace either sensor, complete the steps of this procedure in reverse order. Install new cable clamps and check sensor adjustment.

Adjusting the infeed and outfeed sensors

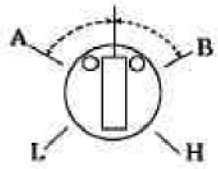
Adjust the gain control potentiometer on both sensors as follows:



Firstly, when receiving the light with an object in the sensing range, turn the sensitivity adjusting control clockwise from L position until the operation indicator goes ON (position A).



Secondly, remove the detected object and turn the sensitivity adjusting control anticlockwise from H position until the operation indicator goes OFF (position B). (If the operation indicator goes OFF at H, point B is at H.)



Set the sensitivity adjusting control in the middle between A and B.

Verify that the PLC input for each sensor is active when the sensor is blocked by a document, and inactive when clear.

Adjust the Motion Sensor

Using a feeler gauge set the minimum gap, between the lowest position of a tooth on the timing spur gear and the top surface of the sensor, to be 0.7mm (0.027”) + or – 0.05mm.

Verify that the PCL input 0 recognises each pulse as the clutch shaft is rotated by hand.

Removing the motor

1. Isolate the sealer from the 3-phase power supply by turning off at the CAS38 Operator's main switch and wall box switch. Then disconnect the Sealer's 50-way Amp plug and the 6-way binder plug from the CAS38 .

2. Remove the top, side and entry covers.

3. Remove the motor chain.

4. Remove the chain between the lay shaft and the motor.

5. Trace the motor cable to the chassis ground, relay and terminal block. Remove any cable clamps that secure the motor to the machine.

6. Note the colour, number and location of motor wires and then disconnect them from motor terminator block to completely remove the motor.

7. Loosen the two screws that hold the motor clamps in place, and then remove the clamps. The motor can then be lifted from the mounting.

8.

To replace the motor, complete the steps of this procedure in reverse order, ensuring that you connect the motor wiring in the way it was prior to removing the motor. Finally, fit the new motor shaft sprocket and key provided and loctite it to the motor shaft so that it is aligned with the lay shaft sprocket.

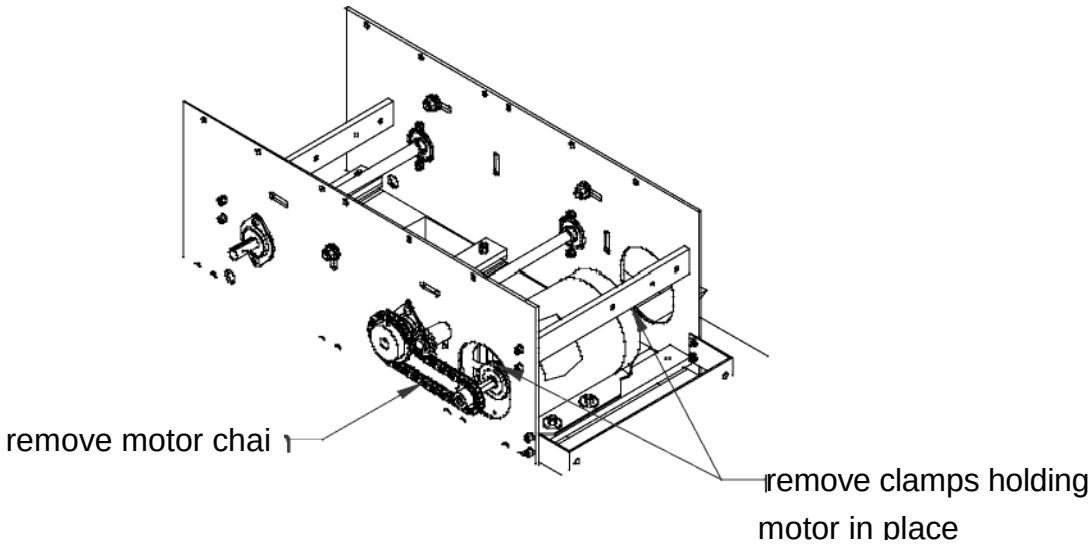


Figure 12. Removing the motor.

Document length and processing speed

Note: *These should not require any adjustment from the original factory settings.*

The two control potentiometers (pots) located on the right hand side of the PLC are used to set the form length and the gap between documents (see figure 1***3).*** To open the door, press it in slightly and then release pressure.

?? Pot 0 (left pot) is used to set the form length for only the first 3 forms received at the start of a run – if the form length being processed exceeds the value set by the potentiometer a miss-folded form error condition is detected.

?? Pot 1 is used to set the minimum gap between the forms – if the gap detected between the forms is smaller than that set by the potentiometer, the sealer interprets this as an error condition.

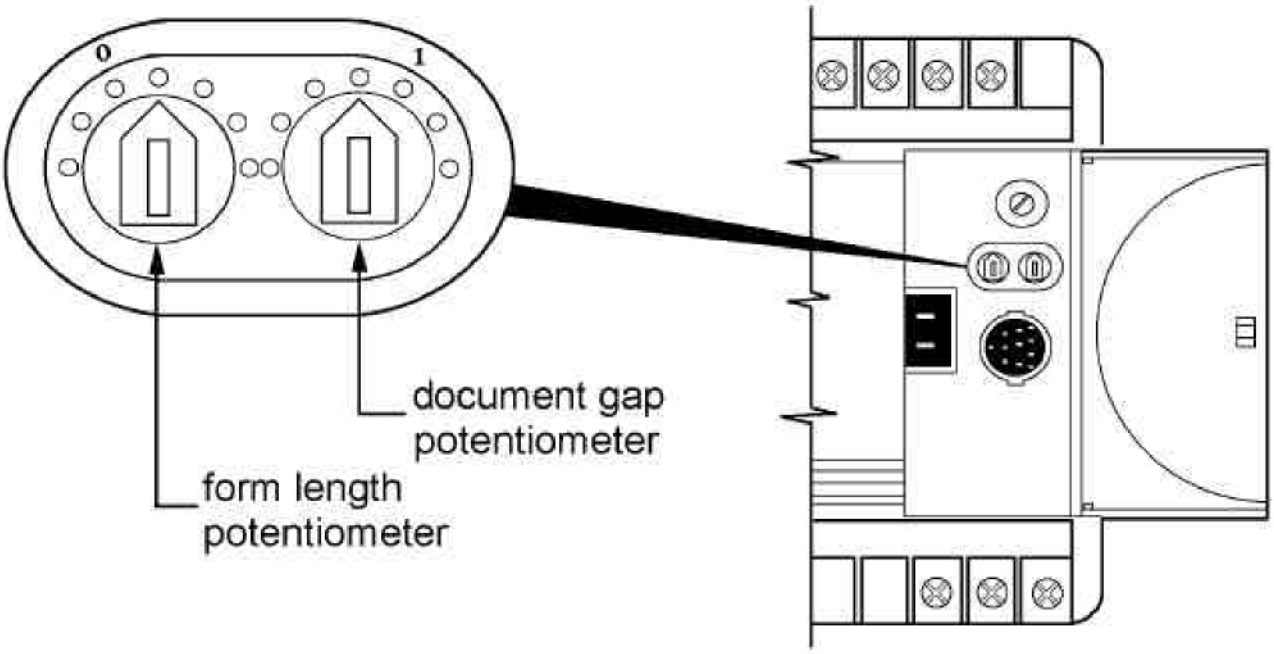


Figure 13. Form length and form gap potentiometers on the PLC.

Chapter 5
Preventative Maintenance

The PS800 requires preventative maintenance every six months or every two hundred thousand documents, whichever occurs first.

This chapter provides you with the preventative maintenance procedures you must perform to successfully maintain the performance of the customer's PS800 sealer. The sequence of tasks you perform at each scheduled preventative maintenance includes:

?? Cleaning the PS800 ??

Lubricating the PS800 ??

Inspecting the PS800

Before you begin

1. Ask the operator about:

   ?? How the machine is performing

   ?? Problems encountered during operation

   ?? Frequency of use and the number of documents processed per month

2. Note any increase in machine usage rate and use this information as a guide for checking the machine

3. Check all operator adjustments and the document being processed

Cleaning the PS800

1. Isolate the sealer from the 3-phase power supply by turning off at the CAS38 Operator's main switch and wall box switch. Then disconnect the Sealer's 50-way Amp plug and the 6-way binder plug from the CAS38 .

2. Wipe the external covers using a soft cloth dampened with a mild household detergent.

3. Pull back the top and side covers.

4. Vacuum all visible paper dust and debris.

5. Clean paper dust from the infeed, outfeed and motion sensors.

6. Clean the feed rollers with a lint-free cloth dampened with isopropyl alcohol.

7. Wipe the surface of all eight sealing rollers with an approved cleaning fluid

Rotate each roller as you clean it. A moderate amount of effort is required to turn the sealing rollers. Be careful not to let anything get caught between the rollers. Always ensure that all traces of cleaning agent are cleared from the machine before restarting it.

Lubricating the PS800 sealer

Lubricate the chains and sprockets with clear chain lube (highly tenacious lubricant).

Inspecting the PS800 sealer

1. Check the following components for cracks, tears or excessive wear. Replace if necessary:

   ?? Feed rollers ??
   Paper guides
   ?? Anti static brushes
   ?? Sealer belts

2. Make sure the chain tensioners are adjusted to apply the correct amount of force on the chain. The chain should deflect approximately 4mm at midpoint between the sealer sprockets.

Note: *A new chain will stretch after several hours of use. Therefore, it's critical to check chain tension at the first preventative maintenance call after installing either the PS800 or a replacement chain.*

3. Check the top cover interlock for proper operation.

4. Check all electrical connections; check for worn or frayed electrical cables.

When completed, replace all removed components and power up the PS800. Verify that the machine operates properly.

If applicable, report higher-than-normal usage rates to your supervisor.

Chapter 6

Illustrated Parts List

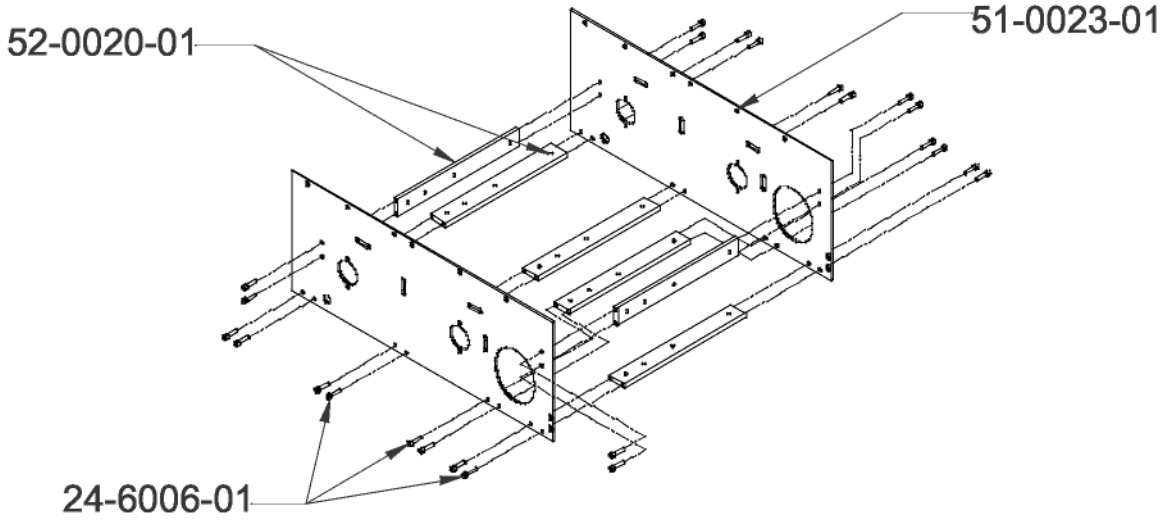
The illustrations on the following pages show the parts that make up the PS800 sealer and how they are assembled. A spare parts listing is included in the back of the manual for engineers' reference and these parts are available from the Pressure Seal Group.

Recommended Spares for Engineers

Part Number	Description	Quantity
12-0005-01	4 roller sealing head assembly	1
20-4001-02	Spirol pin (4mm x 40mm)	8
22-0003-03	E-clip	10
23-1201-01	Disc spring washer	192
29-0001-01	Key	10
32-0020-01	Sealer gear (34T)	4
32-0020-01	12 T gear (8mm bore)	1
32-0021-01	Gear (33T)	4
34-0010-01	Chain connecting link	10
34-0011-01	Belt	10
34-0019-01	Motor chain	2
34-0020-01	Sealer chain	4
34-0021-01	Lay shaft chain	2
40-0011-01	Counter	1
40-0013-01	Magnetic clutch	4
40-0014-01	Fan 24v 2W	2
40-0015-01	Shot bolt	1
40-0016-01	PLC 16 I/O	1
40-0017-01	Power supply 24v DC	1
40-0018-01	Safety switch assembly (attached to infeed cover)	1
40-0019-01	Safety switch key (attached to top cover)	1
41-0006-01	Motor (1 hp, 3 phase, 60 Hz)	1
42-0011-01	Lid release switch	2
42-0012-01	Stop switch	2
43-0020-01	Clutch connector/wire assembly	2
45-0038-01	Contact suppression diode	6
45-0066-00	Fuse 10A aM [10x38]	12
45-0037-00	Fuse 3.15A Anti surge [5x20]	10
45-0065-00	Fuse 100mA Anti surge [5x20]	10
45-0043-01	Motion sensor	2
45-0046-01	Sensor diffuse Type NPN (entry & exit)	2
45-0062-00	EO Contactor relay (230v AC) RL22	1
45-0061-01	Motor Contactor relay (24v DC) RL23	1
45-0063-00	Relay (SPCO 10A 220v AC coil) RL21	2
45-0064-00	Relay (DPCO 10A 24v AC coil) RL20	2
46-0004-01	Relay (SPCO 10A 24v DC) RL11	2
46-0022-01	Motor suppressor	1
50-0004-01	Anti static brush strip	4

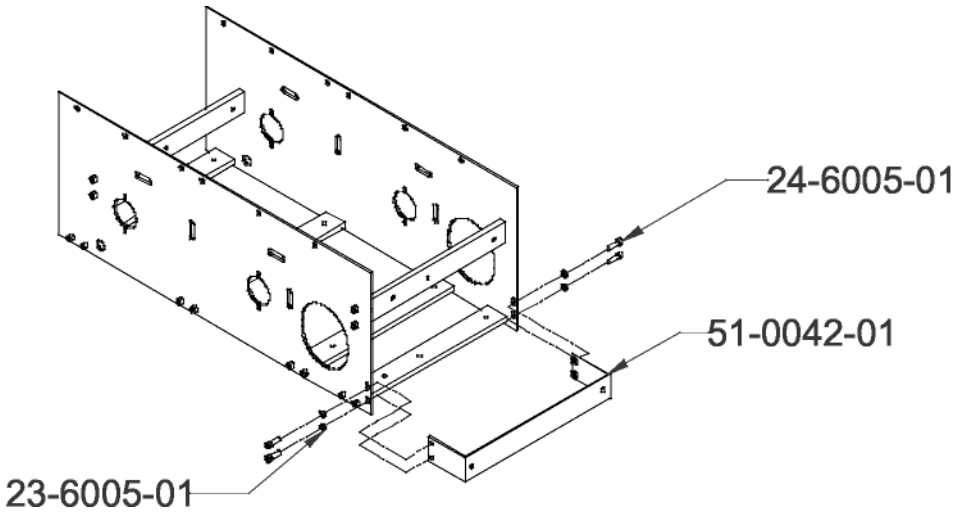
51-0032-01	Paper guide	4
52-0023-01	Clutch shaft	2
52-0026-01	Collar	4
52-0027-01	Upper feeder wheel shaft	4
52-0060-01	Lower feeder wheel shaft	3
60-0024-01	Feed roller	10
60-0025-01	Feed roller hub	10

PS800 chassis



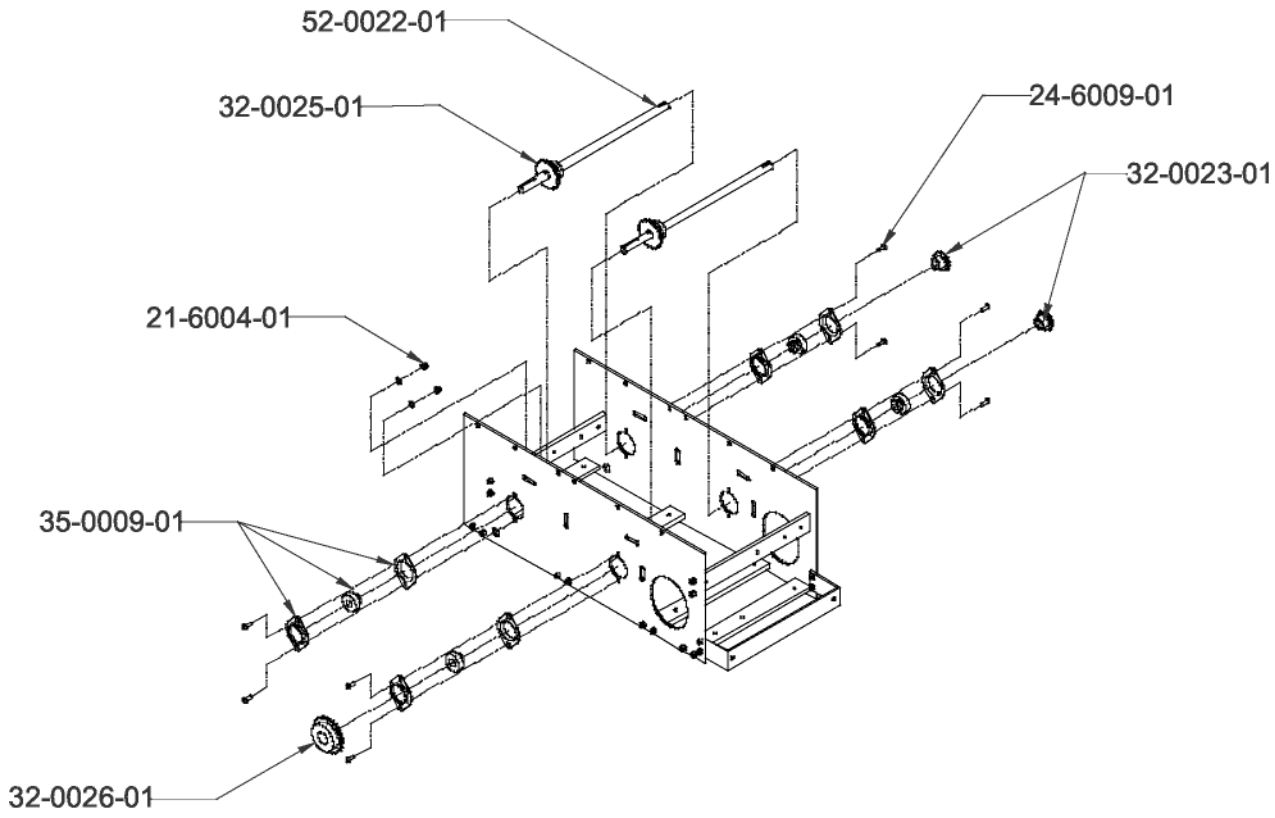
Part Number	Description	Quantity	Notes
24-6006-01	M6 x 25 socket head cap screw	24	
51-0023-01	Chassis side plate	2	
52-0020-01	Separator bar	6	

Infeed cover bracket



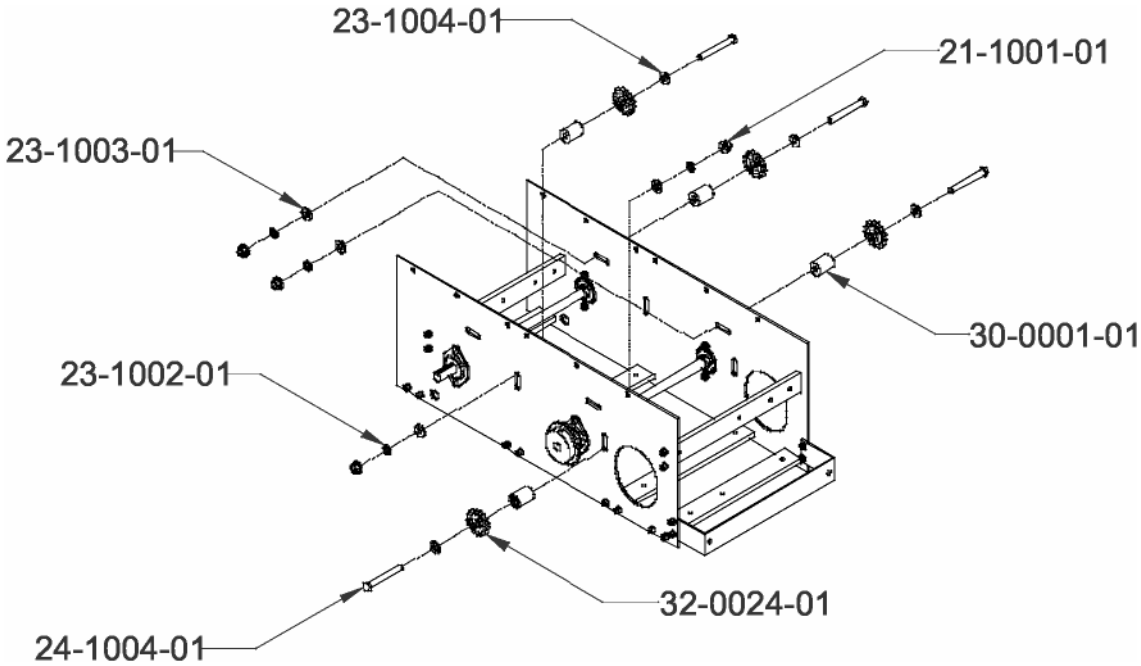
Part Number	Description	Quantity	Notes
23-6005-01	M6 plain washer	4	
24-6005-01	M6 x 20 socket head cap screw	4	
51-0042-01	Infeed cover bracket	1	

Lay Shafts



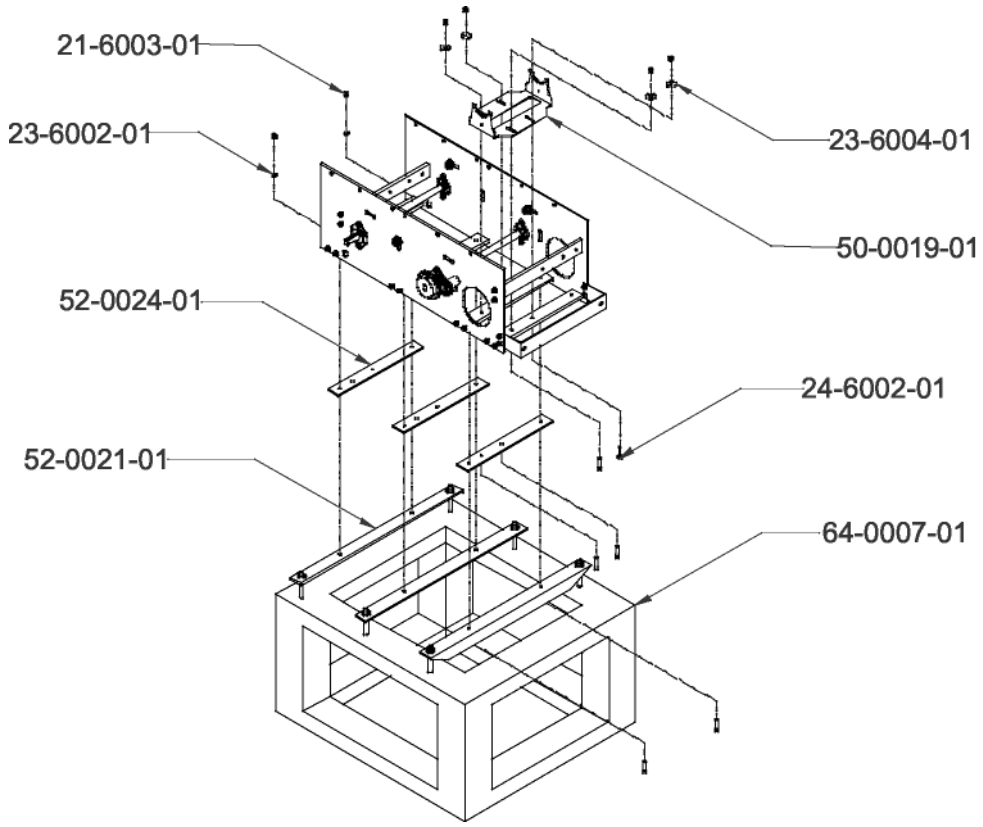
Part Number	Description	Quantity	Notes
21-6004-01	M6 half nyloc nut	8	
23-6005-01	M6 plain washer	8	
24-5007-01	M5 x 6 socket grub screw	13	
24-6009-01	M6 x 16 socket button head screw	8	
32-0023-01	1 2T sprocket	2	
32-0025-01	20T lay shaft sprocket	2	
32-0026-01	25T sprocket	1	
35-0009-01	Bearing and housings	4	
52-0022-01	Lay shaft	2	

Idler sprockets



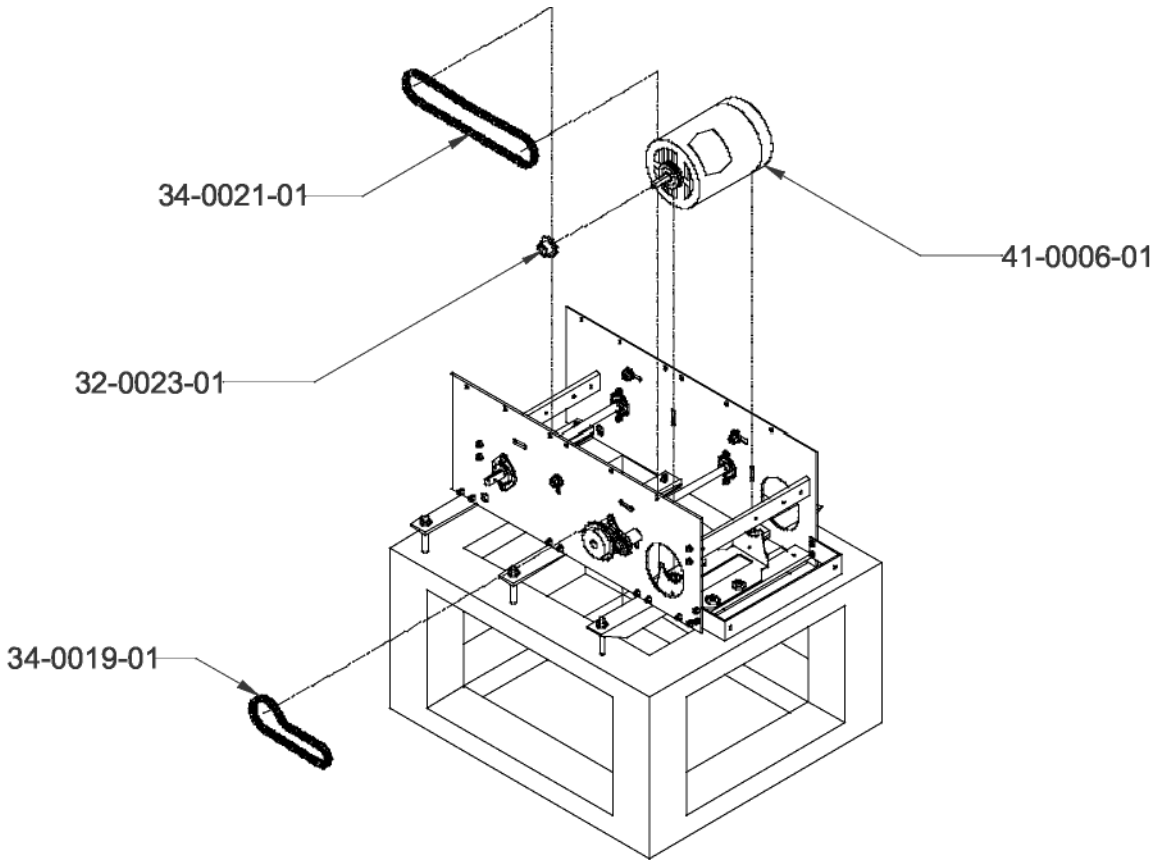
Part Number	Description	Quantity	Notes
21-1001 -01	M10 flange nut	4	
23-1002-01	M10 external shakeproof washer	4	
23-1003-01	M10 thick washer	4	
23-1004-01	M10 thin washer	4	
24-1004-01	M10 x 77 hex. Head machine screw	4	
30-0001-01	Idler spacer	4	
32-0024-01	Idler sprocket	4	

Stand



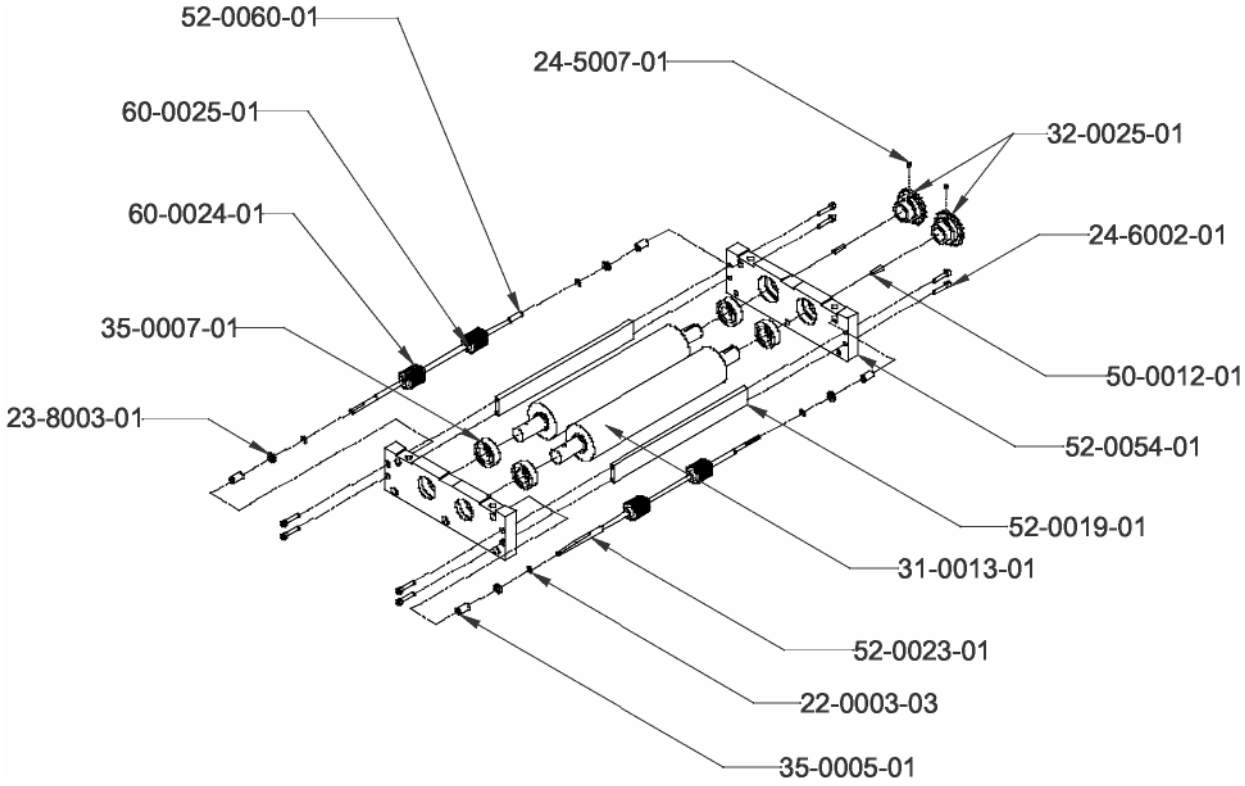
Part Number	Description	Quantity	Notes
21-6003-01	M6 nyloc nut	10	
23-6002-01	M6 shakeproof washer	6	
23-6004-01	M6 mudwing washer	4	
24-6002-01	M6 x 30 socket head cap screw	10	
50-0019-01	Motor mounting bracket	1	
52-0021 -01	Base support bar	3	
52-0024-01	Spacer bar	3	
64-0007-01	Stand	1	

Motor



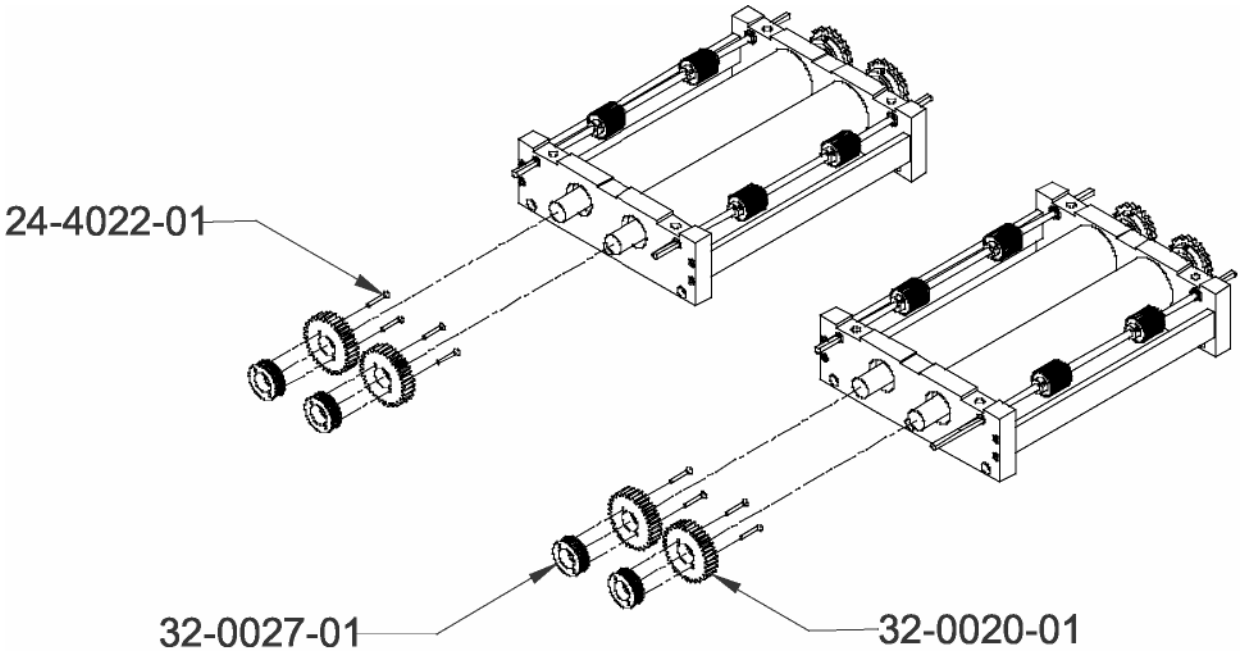
Part Number	Description	Quantity	Notes
32-0023-01	1 2T motor sprocket	1	
34-0019-01	Motor chain	1	
34-0021-01	Lay shaft chain	1	
41 -0006-01	Motor	1	
50-0016-01	Motor clamps and screw	2	

Lower sealer assembly



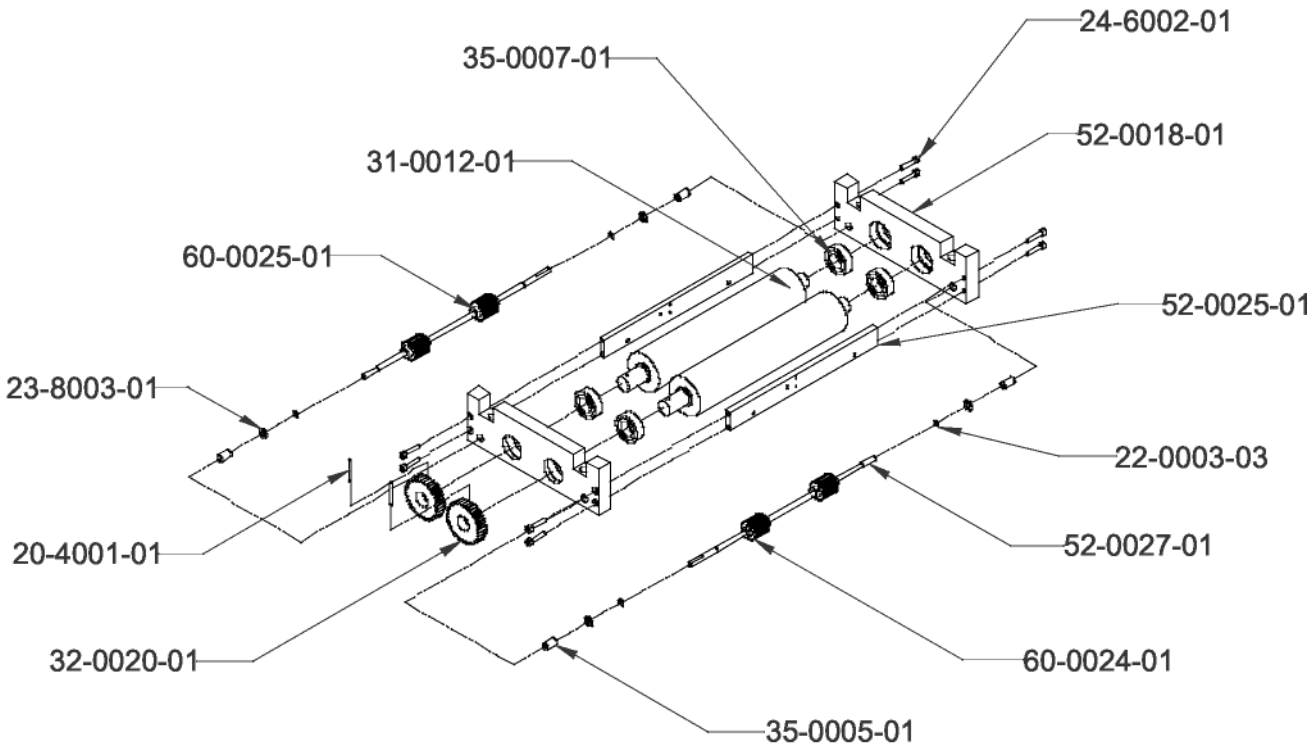
Part Number	Description	Quantity	Notes
22-0003-03	6.4mm external circlip	8	
23-8003-01	M8 brass washer	8	
24-3002-01	M3 x 12 socket button head screw	16	
24-5007-01	M5 x 6 socket grub screw	4	
24-6002-01	M6 x 30 socket head cap screw	16	
31-0013-01	Lower sealer roller	4	
32-0025-01	Sealer roller sprocket	4	
35-0005-01	Oilite bush (8 x 12 x 12)	8	
35-0007-01	Sealer bearing	8	
50-0012-01	Key for sealer roller sprocket	4	
52-0019-01	Lower sealer spacer bar	4	
52-0023-01	Feed roll/clutch shaft	1	
52-0054-01	Lower sealer bearing housing	4	
52-0060-01	Lower feed roller shaft	3	
60-0024-01	Feed roller	8	
60-0025-01	Feed roller hub	8	

Gears and pulleys



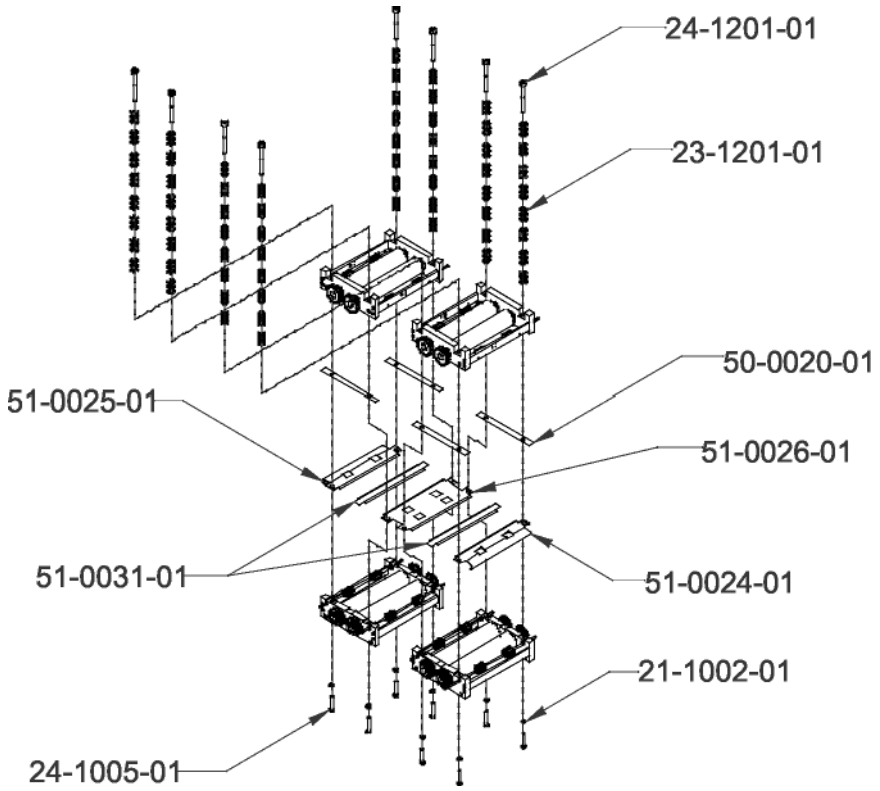
Part Number	Description	Quantity	Notes
20-4001 -01	M4 x 40 selok pin	4	
24-4022-01	M4 x 30 countersunk screw	8	
32-0020-01	Sealer gear	4	
32-0027-01	Timing pulley (55T)	4	

Upper sealer assembly



Part Number	Description	Quantity	Notes
20-4001-01	M4 x 40 selok pin	4	
22-0003-03	6.4mm external circlip	8	
23-8003-01	M8 brass washer	8	
24-3002-01	M3 x 12 socket button head screw	16	
24-6002-01	M6 x 30 socket head cap screw	16	
31-0012-01	Upper sealer roller	4	
32-0020-01	Sealer gear (34T)	4	
35-0005-01	Oilite bush (8 x 12 x 12)	8	
35-0007-01	Sealer bearing	8	
52-0018-01	Upper sealer bearing housing	4	
52-0025-01	Upper sealer spacer bar	4	
52-0027-01	Upper feed roller shaft	4	
60-0024-01	Feed roller	8	
60-0025-01	Feed roller hub	8	

Sealer assembly



Part Number	Description	Quantity	Notes
21-1002-01	M10 half nut	8	
23-1201 -01	M12 disc spring washer	192	
24-1005-01	M10 x 60 hex head machine screw	8	
24-1201 -01	M12 x 130 socket head cap screw	8	
50-0020-01	Sealer shim	4	
51 -0024-01	Infeed guide plate	1	
51 -0025-01	Outfeed guide plate	1	
51 -0026-01	Midfeed guide plate	1	
51-0031-01	Roller guide plate	2	