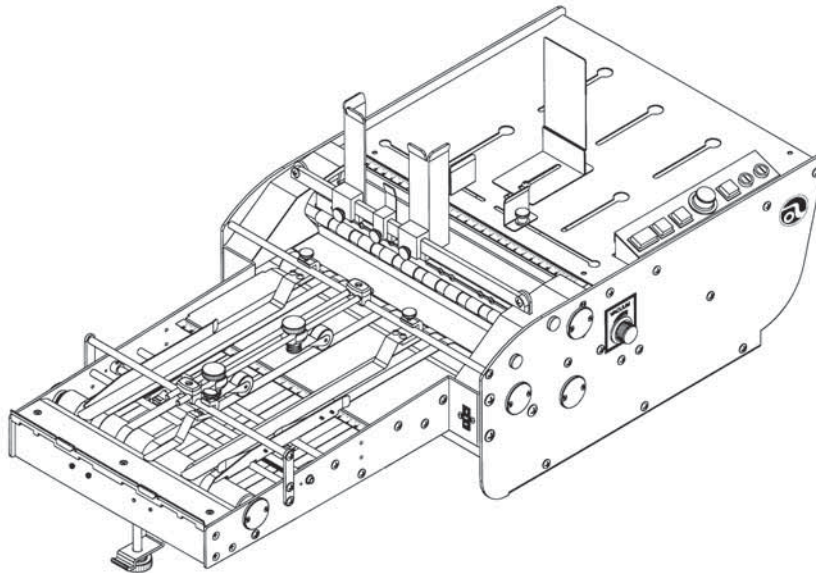




ASTRO



ENVELOPE FEEDER

AMC-2000

INSTALLATION AND OPERATING INSTRUCTIONS

INTRODUCTION

Thank you for purchasing the Astro Envelope Feeder. It is fast, efficient, reliable, and designed to provide many years of trouble-free service.

Numerous built-in features of the Envelope Feeder combined with state-of-the art technology make this unit superior. Top load/bottom vacuum feed provides continuous printing of various sized envelopes, cards, and tags. Uniquely designed conveyor board with its synchronized side guides and push guide provides accurate registration for secondary color operations. Photoelectric sensor is the key element in the synchronization of the Envelope Feeder to the Duplicator and is designed to give many years of virtually trouble-free operation.

Flexibility. Optional Auxiliary Installation Kit provides compatibility to additional presses or duplicators of the same type. An optional Dual Stream Feed Kit is available for feeding different size envelopes simultaneously, to double your production needs.

SPECIFICATIONS*

VOLTAGE REQUIREMENTS:	115 VAC, 60 Hz, 10 A
OPTIONAL AVAILABILITY:	220 VAC, 50 Hz, 5 A
ENVELOPE DIMENSIONS:	Minimum: 3" x 5" (7.6 x 12.7 cm) Maximum: 11" x 16-1/4" (27.9 x 41.3 cm)
MAXIMUM FEEDING SPEED:	Governed by Press
MACHINE DIMENSIONS:	Width: 20" (50.8 cm) Length: 37" (94 cm) Height: 42" (106.7 cm) Weight: 150 lbs. (68 kg)
AVAILABLE OPTIONS:	Conveyor Delivery (CD-100) Pulse Generator Kits (A-202) Dual Stream Feed Kit (A-203)

* Manufacturer reserves the right to change specifications without written notice.

SAFETY PRECAUTIONS

**THIS EQUIPMENT PRESENTS NO PROBLEM WHEN USED PROPERLY.
OBSERVE SAFETY RULES WHEN OPERATING FEEDER.**

READ THIS MANUAL CAREFULLY AND FOLLOW RECOMMENDED PROCEDURES.

1. KEEP HANDS, HAIR, AND CLOTHING CLEAR OF ROLLERS, TAPES AND OTHER MOVING PARTS.
2. ALWAYS TURN MACHINE OFF BEFORE MAKING ADJUSTMENTS OR CLEANING MACHINE.
3. DISCONNECT POWER CORD WHEN MAKING ANY MACHINE ADJUSTMENTS OR PERFORMING ANY MAINTENANCE NOT COVERED IN THIS MANUAL.

CAUTION

**THIS EQUIPMENT MUST BE CONNECTED TO A PROPERLY GROUNDED OUTLET.
FAILURE TO DO SO CREATES A POTENTIAL DANGER OF ELECTRICAL SHOCK.**

PARTS LIST

The following parts are included with this machine.

Check and identify all parts with those listed below:

A.	ENVELOPE FEEDER	84-000-00
B.	STAND WITH PUMP ASSEMBLY	(See Page 13 & 14)
C.	PULSE GENERATOR ASSEMBLY	84-140-00
D.	PLASTIC TIES (4)	123-0113
E.	FRONT ENVELOPE GUIDE R/H	71-140-08
F.	FRONT ENVELOPE GUIDE L/H	71-140-10
G.	CENTER ENVELOPE GUIDE	71-140-13
H.	REAR ENVELOPE GUIDE	84-108-20
I.	PAPER BOARD STOP	84-100-82
J.	BRACKET, PRESS SIDE GUIDE	84-101-51
K.	HEX NUT	84-101-49
L.	WASHER, 1/4 PLAIN	123-0063
M.	SHEET SEPARATOR (4)	71-109-05
N.	SPRING	84-120-10
O.	SUCTION CUP (4)	71-134-15
P.	ALLEN WRENCH – 1/16"	123-0057
Q.	ALLEN WRENCH – 3/32"	123-0058
R.	FUSE, 2 AMP (FAST BLO)	123-0285
S.	FUSE, 10 AMP (SLO BLO)	123-0090
T.	SUCTION FOOT CAP (2)	123-0415
U.	WHEEL CASTERS (4)	(2) 123-0517, (2) 123-0521
V.	NEEDLE VALVE	84-106-04
W.	SPRING	84-120-31

UNPACKING INSTRUCTIONS

1. Unpack Stand and Feeder. Check parts against Parts List on **Page 1**.
2. Install four casters to base of Stand.
3. Place Feeder on top of Stand by locating two mating points on bottom of Feeder. **[Fig. 1]**
4. Match two mating points with corresponding holes on top of Stand and slide into slots.
5. Locate two thumbscrew holes at front of Stand.
6. Install two (2) 1/4-20 x 1/2 inch thumbscrews provided in **Accessory Kit**.
7. Secure Feeder by tightening thumbscrews into threaded holes.

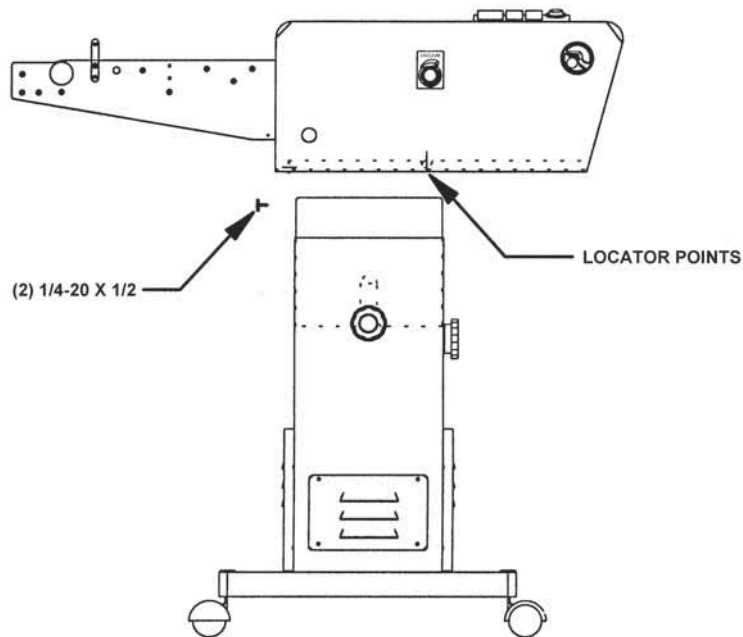


Figure 1

INSTALLATION INSTRUCTIONS

1. Unplug Duplicator.
2. Remove rear right upper Side Cover from Duplicator.
3. Remove cross-brace bolt near buckle control gear.
4. Place Pulse Generator [Fig. 2] lower bracket over cross-brace bolt hole and reinstall bolt. **DO NOT TIGHTEN** at this time.
5. Swing Pulse Generator all the way to the left until gears engage and secure bolt.
6. Route Pulse Generator cable through large hole at rear of Duplicator Side Frame. Use plastic ties (P/N 123-0113) to prevent cable from entering moving parts of Duplicator.

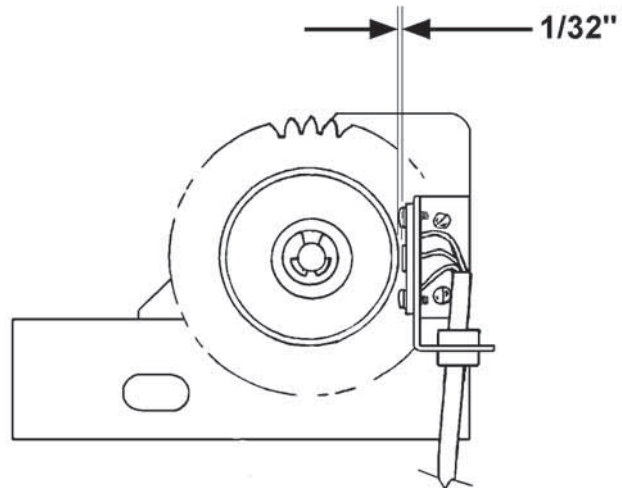


Figure 2

WARNING: FAILURE TO DO THIS RESULTS IN SERIOUS DAMAGE TO ENVELOPE FEEDER AND DUPLICATOR.

7. Check gap between Sensor and Magnet Assembly by rotating Duplicator by hand. (*Should be $1/32'' \pm 0.010''$*). Adjust gap by loosening sensor mounting screws and moving bracket.
8. Lift up Flip-up Paper Guide to accommodate Feeder.
NOTE: If Duplicator is equipped with T-51 Head (P/N 84-101-51), mount Guide Support Bracket on Duplicator.
 - a) Remove rear hex nut securing Bail Bar Bracket to Side Frame.
 - b) Place Guide Support (P/N 84-101-51) over bolt and secure in place with nut (P/N 84-101-49).
 - c) Lift Flip Guide up, swing Guide Support up and rest Flip Guide on it.
9. Reinstall Duplicator Side Cover.
10. Remove Bail Bar.
11. Position Paper Guides to widest position.
NOTE: On 8000 Series Duplicators, remove collar on inside of non-operator's side of Side Guide that limits movement of Side Guides. Reinstall on outside of shaft. This permits movement of Side Guides to a position wide enough to accommodate Envelope Feeder.
12. Push down Table Release Lever and move paperboard halfway down.
13. Lift paperboard Stop Lever [Figure 3] and place Paperboard Stop (P/N 84-100-82) on stud. Release lever so it rests in groove of Paper Board Stop. This prevents paperboard from coming up and hitting Feeder.

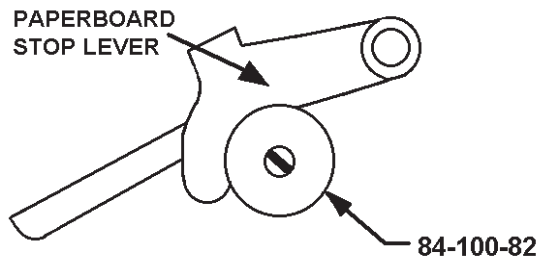


Figure 3

WARNING: FAILURE TO DO THIS RESULTS IN SERIOUS DAMAGE TO ENVELOPE FEEDER AND DUPLCATOR.

14. Move Paper Stack Height Adjustment to low position.

15. Turn Duplicator Hand Wheel so suction feet are in uppermost position. Remove two outer suction feet from Duplicator.

WARNING: FAILURE TO DO SO MAY DAMAGE OUTER SUCTION FEED AND PREVENT PROPER OPERATION OF DUPLICATOR.

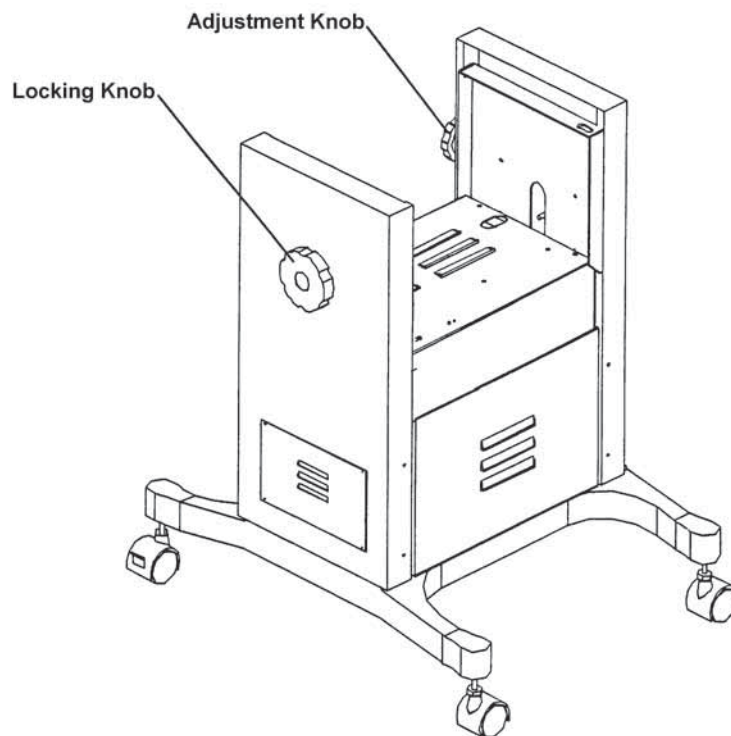


Figure 4

16. Roll Feeder up to Duplicator. Adjust height of Conveyor to match Duplicator Front Apron. If Feeder Front Stop Plate Hook is not even with upper edge of Duplicator's Front Apron, adjust Feed Stand. **To adjust Stand height [Figure 4]:** Loosen two knobs on either side of Stand. Turning locking knobs counterclockwise unlocks Stand, which allows it to be adjusted. Adjust height by turning third knob (*Adjusting Knob*) clockwise to raise height of Stand, and counterclockwise to lower it. Tighten locking knobs after height is adjusted. If Feeder is to be used on more than one Duplicator, adjust Duplicators to one height (*eliminating additional set up time*).
17. Position slots on Feeder Front Stop Plate against Duplicator's Paper Height Regulators. Lift Feeder Conveyor and hook it over Duplicator's Front Apron.
NOTE: Allow proper clearance between Height Regulators and Feeder Stop Plate.
18. Move Duplicator Paper Guides in until they touch Feeder Conveyor. Tighten Feeder Conveyor clamp screw (*located under Conveyor*).
19. Connect Pulse Generator cable to Feeder cable.
Plug Feeder into 115VAC, 15 AMP outlet.
WARNING: POWER FLUCTUATIONS CAUSED BY AN OVERLOAD OF EQUIPMENT ON SAME BRANCH CIRCUIT MAY AFFECT FEEDER PERFORMANCE.
20. Install (84-120-31) Spring on (84-106-04) Needle Valve. Screw Needle Valve Assembly into side of Envelope Feeder. (**Figure 5**)
WARNING: DO NOT OVERTIGHTEN VALVE AS DAMAGE TO VALVE BODY CAN OCCUR.

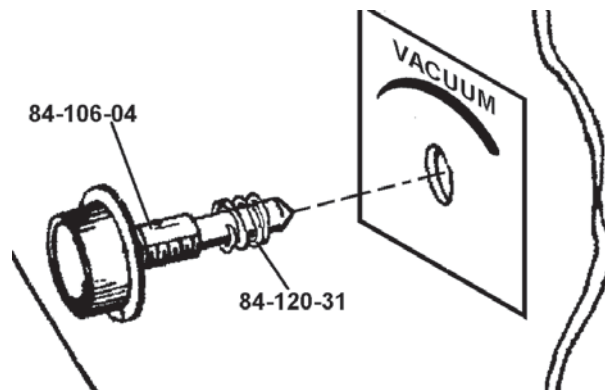


Figure 5

CONTROLS

CONTROL PANEL

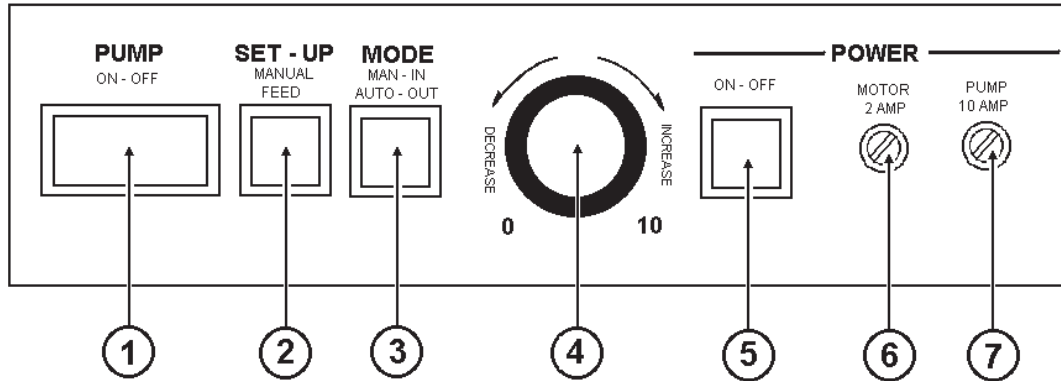


Figure 6

1. **PUMP** – Turns Feeder Pump ON and OFF.
2. **SET-UP** – Feeder makes a full cycle bringing one envelope to Press. Mode Switch (#5) must be on **MANUAL**; Pump Switch (#7) must be ON and drive motor running.
3. **MODE SWITCH** – In depressed position, activates Speed Control (#4). In released position, activates Pulse Generator and synchronizes Feeder with Press.
4. **FEEDER SPEED CONTROL** – In **MANUAL** mode, enables operator to adjust speed of drive motor during set-up.
5. **POWER SWITCH** – Turns Feeder ON and OFF.
6. **FUSE** – Drive Motor, 2 AMPS
7. **FUSE** – Pump, 10 AMPS

VACUUM BLEED VALVE

Vacuum Bleed Valve is located on left-side Feeder Frame. Turning it clockwise increases amount of vacuum going into suction feet. Turning it counterclockwise decreases vacuum.



Figure 7

OPERATING INSTRUCTIONS

1. Adjust Envelope Feeder Stand to height of Press Front Feed Plate.
2. Hook Front Feed Plate on Envelope Feeder over bar on Press' Feeder. Tighten clamp screw assembly securely.
3. Plug Pulse Generator into connector provided on Envelope Feeder. Plug Pump into receptacle on Envelope Feeder.
4. Plug Envelope Feeder into wall receptacle.
5. Attach Front Envelope Guides [#1, Fig. 8] approximately in middle of Feeder (as shown).

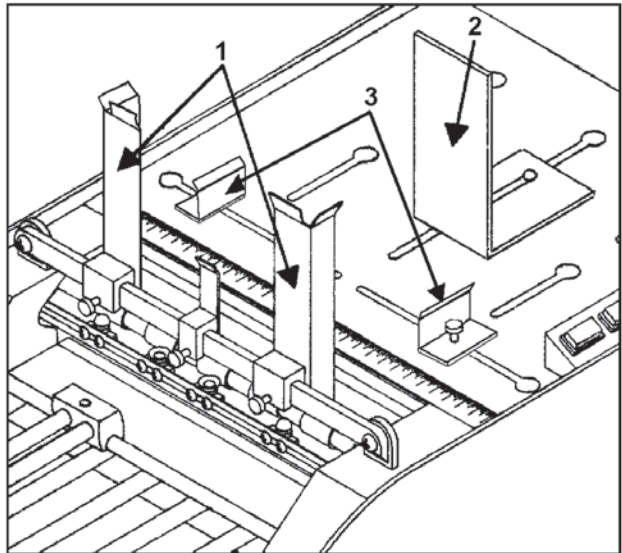


Figure 8

6. Place an envelope in Guides.
7. Attach Rear Envelope Guide [#2, Fig. 8] using slot in Feeder floor nearest rear end of envelope, then adjust Anti-skewing Guides to sides of envelope [#3, Fig. 8].
8. Adjust Envelope Guides so there is no more than 1/16" (1.6 mm) clearance in all directions.

NOTE: EXCESSIVE CLEARANCE RESULTS IN MISFEEDING AND IMPROPER PERFORMANCE.

9. Position suction cups distributed evenly with outside cups approximately 3/4" (2 cm) from ends of envelope. **NOTE THAT ENVELOPE SIZE DETERMINES HOW MANY SUCTION CUPS SHOULD BE USED.**

10. Place suction foot vacuum caps (P/N: 123-415) on suction feet not used.
11. Using scale on Feeder floor and scale on Conveyor, [#1, Fig. 9], and scale on Conveyor, [#2, Fig. 9], roughly adjust Stop Guide, [#4, Fig. 9] and Push Guide, [#3, Fig. 9] so envelope coming down will clear them.

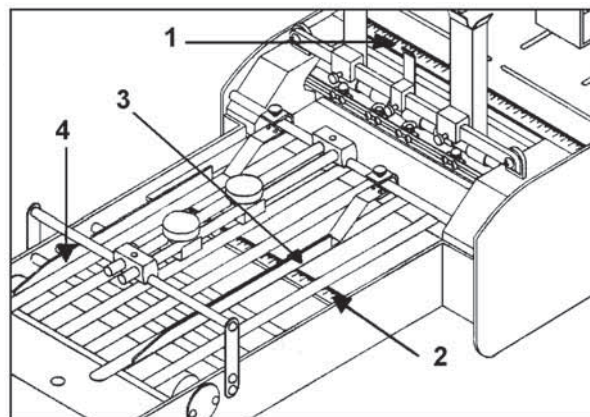


Figure 9

12. Place a small stack of envelopes in Guides.
13. Using adjusting thumbscrew, make sure right edge of Push Guide is perpendicular to Front Stop Plate for accurate squareness.
14. Turn Feeder ON, set Mode Switch to **MANUAL**. Turn Speed Control clockwise so Conveyor Tapes are moving slowly.
15. Turn Vacuum Switch ON.
16. Press SET-UP Switch momentarily. This activates Suction Cup Bar and brings down an envelope. When envelope moves down Conveyor to Duplicator, make sure it clears Push Guide and does not touch springs on Stop Guide.
17. Turn VACUUM Switch OFF and press SET-UP Switch again. This activates jogging mechanism. Adjust Jogger Guide so envelope just touches springs on Stop Guide.

NOTE: TOO MUCH JOG CAN AFFECT REGISTRATION.

18. Adjust Conveyor Tapes by moving Tape Guides (*located under Conveyor portion of Feeder*) while tapes are running slowly.

EXAMPLE: For No. 10 envelopes, use three (3) tapes. One over Stop Guides (approx. 3/8" (1 cm) from springs), one over Push Guide (approx. 1/4" (6 mm) from right edge) and one tape under skid wheel. For wider envelopes, use additional tapes as needed.

19. Adjust retainer straps [#1, Fig. 10] over Stop and Push Guide Tapes.

20. When envelope is against Front Stop Plate, position front skid wheel [#2, Fig. 9] so it lightly touches trailing edge of envelope.

21. Turn Press Pump ON.
22. Turn Press Blowers OFF, turn Press Vacuum Knob to Full.
23. Using Press Hand Wheel; pass envelope through Press.

NOTE: Make sure envelope goes into Grippers firmly. Adjust Buckle Control on Press if necessary.

24. Set Duplicator on lowest speed.
25. Set Feeder Mode Switch to **AUTO** position.
26. Turn Feeder Vacuum ON.

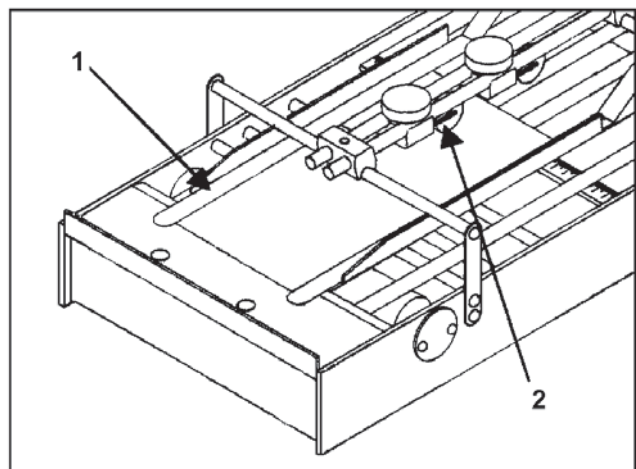


Figure 10

27. Press SET-UP Switch momentarily. This brings down the envelope.

28. Turn Press Vacuum ON.

Feeder is equipped with a Photoelectric Sensor [#1, Fig. 11], which synchronizes Feeder with Press and prevents jam-ups. In case Press does not pick up an envelope, Feeder will not send another envelope. This acts as a built in jam detector. Feeder remains neutral as long as an envelope covers Photoelectric Sensor. To start feeding again, turn Feeder Vacuum and Drive Motor OFF. Correct problem on Press and/or Feeder. Follow **Steps 26-28** to start feeding again.

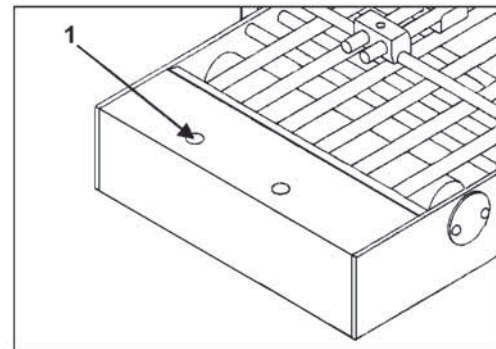


Figure 11

NOTE: Make sure Feeder is set up so envelopes are fed over Photosensor. Also, make sure no foreign objects, (e.g. lint, paper) cover Photosensor. It is essential to Feeder's operation that Photosensor "sees" an envelope.

TO START AND STOP FEEDING: Use Duplicator Pump Switch. DO NOT use Feeder Power Switch. Feeder Power Switch should be turned "ON" when job is started, and remains on until job is complete.

Press speed can be changed while Feeder is feeding envelopes. Electronic circuitry of Envelope Feeder is designed to respond automatically to operational commands of Press.

WARNING: Any speed changes to Press should be done GRADUALLY. Rapid changes of speed affect registration and may cause misfeeding.

OPERATING HINTS

- A. Do not bend envelopes when setting Side Guides. Front and Rear Guides must be snug against envelopes.
- B. Form envelopes as required to maintain flatness to suction cups to improve feeding consistency.
- C. Be sure bottom envelope (*in a stack of envelopes or tag stock*), rests on Sheet Separators.
- D. Front Side Guides contain adjustable sheet separator clips.

Clips project $3/32$ " (2.4 mm) beyond face of Guides. Adjustment is rarely required.

1. Misfeeding may occur if clips extend too far under envelopes. First increase vacuum and test run; then, if required, move clip [#1, Fig. 12] to front using set screw behind them.
2. Double feeding may occur if clips are not under envelopes far enough. First decrease vacuum and test run; then, if required, move clips to front.

Vertical position of clips is also adjustable. Loosen two screws [#2, Fig. 12] and position bottom of clip flush with bottom of Guide.

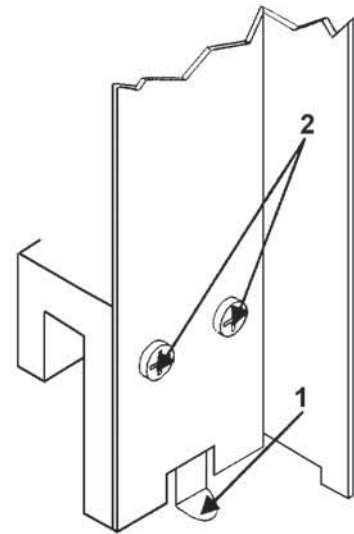


Figure 12

LUBRICATION INSTRUCTIONS

WARNING!

MACHINE MUST BE UNPLUGGED FROM POWER RECEPTACLE WHILE PERFORMING LUBRICATION, MAINTENANCE, OR CLEANING PROCEDURES.

CAUTION

TAKE CARE TO KEEP LUBRICANTS FROM ELECTRICAL TERMINALS, SWITCHES, AS WELL AS ROLLERS, BELTS AND RUBBER PARTS.

When lubricating, pay particular attention to oil holes and all sliding parts.

NOTE: Paper residue, dust, ink and other foreign materials MUST BE REMOVED from gears, working levers, shafts, and mechanisms before new lubricants are applied. This prevents undue wear caused by abrasion from these residues. Areas around or adjacent to lubricated parts and surfaces MUST BE FREE of dust and foreign material.

LUBRICATION INTERVALS

Regular lubrication of oil ports (*indicated by red*) should be performed every 30 days on machines that operate 30-40 hours per week.

LUBRICANTS

OIL: S.A.E. #20 non-detergent engine oil, or equivalent.

GREASE: Commercial lithium grease.

GENERAL LUBRICATION

1. **Cams and Gears** – Clean and lightly oil.
2. **Springs and Levers** – Grease lightly.

NOTE: Before greasing springs and spring levers, existing lubricant MUST BE REMOVED. Apply new grease sparingly – only at hook ends of Spring, not on body.

3. **Chains and Sprockets** – Lubricate using commercial lithium grease.

NOTE: In order to gain access to most lubricating points, Front Cover Assembly MUST BE REMOVED.

FRONT COVER ASSEMBLY REMOVAL

1. Turn power “ON”.
2. Set MODE Switch to **MANUAL**.
3. Turn Speed Control Knob **CLOCKWISE** so Conveyor tapes move slowly.
4. Press Set Up Switch momentarily.
5. Wait until Upper Pull-Out Roller touches Lower Pull-Out Roller and turn power OFF.
6. Unplug Feeder.
7. Unscrew 4 thumbscrews (2 on each side of Feeder) [#1, Fig. 13].
8. Remove Front Cover Assembly [#2, Fig. 13].

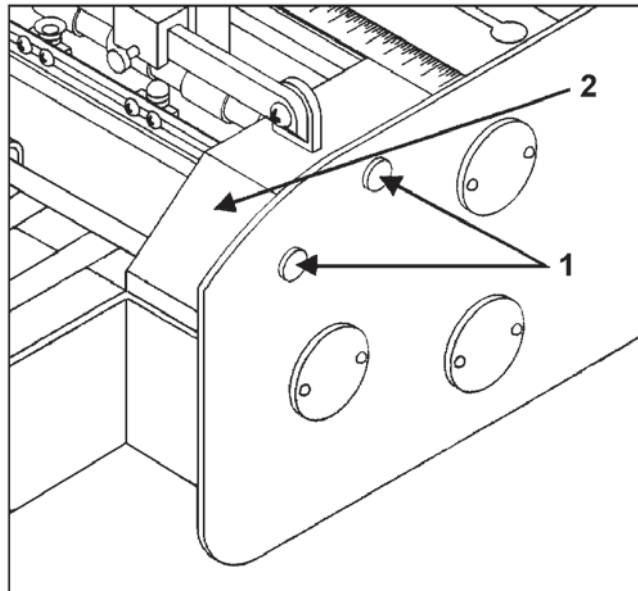
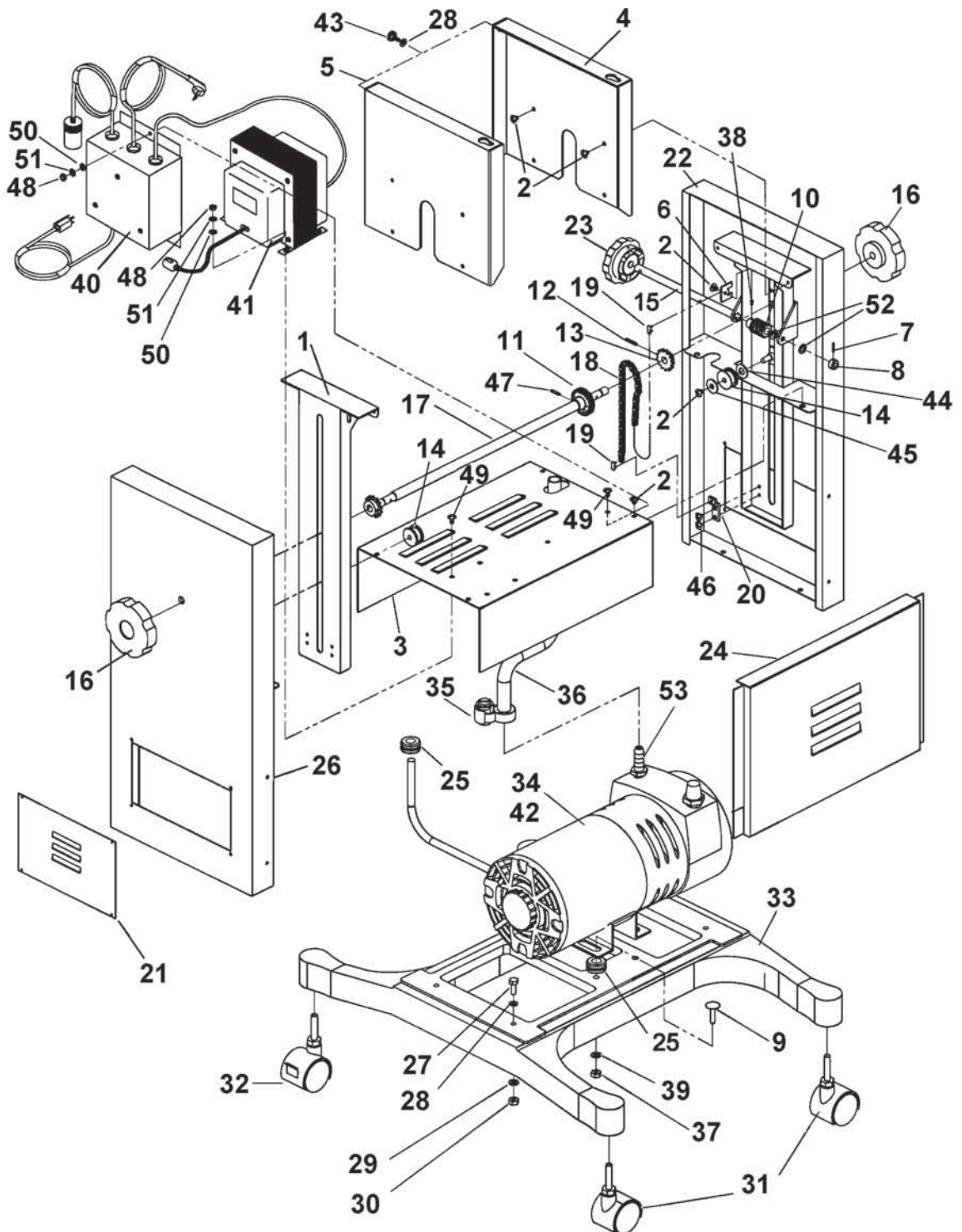


Figure 13

STAND WITH PUMP



STAND WITH PUMP

KEY	PART NO.	DESCRIPTION	QTY.
1.	156-102-18	ELEVATOR BRACKET	2
2.	123-0017	SCREW, 10-32 x 1/4 PH, TRUSS	32
3.	156-103-05	PANEL – BASE, PUMP COVER	1
4.	156-103-07	SIDE PLATE R/H	1
5.	156-103-06	SIDE PLATE L/H	1
6.	156-103-25	ELEVATOR BRACKET SUPPORT	2
7.	123-0695	SPRING PIN, 3/32 x 1/2	1
8.	156-103-27	COLLAR	1
9.	123-0841	CARRIAGE BOLT, 5/16 -18 x 1	4
10.	156-103-12	HELIX ANGLE WORM	2
11.	156-103-11	WORM GEAR 20 TEETH	1
12.	123-0018	ROLL PIN, 1/8 x 3/4 – BLACK	3
13.	156-103-08	SPROCKET 25B13	2
14.	156-103-09	IDLER PULLEY	2
15.	156-103-21	WORM SHAFT	1
16.	123-0135	KNOB	2
17.	156-103-20	DRIVE SHAFT	1
18.	156-103-26	CHAIN, TRANSMISSION ROLLER	2
19.	123-0200	CONNECTING LINK, CHAIN	4
20.	156-103-23	ELEVATOR BRACKET SUPPORT	2
21.	86-103-04	COVER, SIDE PANEL	2
22.	156-103-03	SIDE PANEL, L/H	2
23.	123-0293	KNOB, HEIGHT ADJUSTMENT	1
24.	86-103-06	PUMP COVER, STAND	2
25.	123-0707	RUBBER GROMMET, 1/2 ID x 3/4 OD	1
26.	156-103-04	SIDE PANEL, R/H	1
27.	123-0143	SCREW, HEX 1/4-20 x 5/8	4
28.	123-0063	WASHER, PLAIN 1/4 -MOTOR & PUMP	8
29.	123-0064	LOCK WASHER, 1/4	8
30.	123-0054	NUT, HEX 1/4-20	8
31.	123-0517	CASTER, NON-LOCKING	2
32.	123-0521	CASTER, LOCKING	2
33.	86-103-31	BASE WELDMENT	1
34.	84-103-07	VACUUM PUMP ASSEMBLY, 115V	1
35.	123-0131	CLAMP, HOSE	1
36.	84-106-41	HOSE, PUMP	1
37.	123-0051	NUT, HEX 5/16-18	4
38.	123-0757	SET SCREW, 6-23 x1/4 STD CUP PT	4
39.	123-0855	LOCKING WASHER, 5/16	4
* 40.	84-140-78	RELAY BOX 220V / 50 Hz	1
* 41.	123-0436	TRANSFORMER, 220V / 50 Hz	1
* 42.	84-103-10	VACUUM PUMP, 220V / 50 Hz	1
43.	56-108-22	THUMBSCREW	1
44.	123-0096	WASHER, PLASTIC 3/8 x 3/4 x 1/16	2
45.	123-0311	WASHER, PLASTIC 9/32 x 3/4 x 1/16	2
46.	123-0701	SCREW, 10-32 x 3/16 PH TRUSS HD	4
47.	123-0034	ROLL PIN, 1/8 x 5/8	1
*48.	123-0050	NUT, 10-32 x 5/16 HEX ZINC	6
*49.	123-0024	SCREW, 10-32 x 3/8 PH TRUSS HD MS ZINC	6
*50.	123-0237	STAR WASHER, #10 EXTERNAL	6
*51.	123-0262	WASHER, #10 3/16 x 3/8 x .032	6
52.	123-0312	WASHER, PLASTIC 5/16 x 1/2 x .030	2
53.	123-0145	FITTING	1
**	K247	SERVICE KIT, OLD STYLE PUMP	
**	K478	SERVICE KIT, NEW STYLE PUMP	
**	AK524	FELT, NEW STYLE PUMP ONLY	

* ITEMS 40, 41, 42 ARE FOR 220V / 50 Hz ONLY.

** PARTS NOT SHOWN.

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Elk Grove Village, Illinois 60007
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