OPERATION - MAINTENANCE - & PARTS MANUAL

MACHINE MODEL
CASEFORM 40

THE LOVESHAW CORPORATION
2206 EASTON TURNPIKE, BOX 83
SOUTH CANAAN, PA.
18459

TEL. (570) 937-4921

JUL/04

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MACHINE SPECIFICATIONS

MACHINE MODEL:	CASEFORM 40
SERIAL NUMBER:	????
STANDARD DISCHARGE HEIGHT:	23"
AMERICAN ELECTRICAL REQUIREMENTS:	
PRIMARY VOLTAGE:	110 VOLTS, 1 PHASE, 60 HERTZ
CONTROL VOLTAGE:	110 VOLTS, 1 PHASE, 60 HERTZ
EUROPEAN ELECTRICAL REQUIREMENTS:	220 VOLTS, 1 PHASE, 50 HERTZ
PRIMARY VOLTAGE:	220 VOLTS, 1 PHASE, 50 HERTZ
CONTROL VOLTAGE:	
CASE CAPACITY:	
LENGTH:	7" (178mm) MIN. TO 24" (609mm) MAX.
WIDTH:	6" (152mm) MIN. TO 16" (406mm) MAX.
HEIGHT:	4" (102mm) MIN. TO 16" (406mm) MAX.
FLIGHT BAR SPEED:	85 FEET / PER / MIN.
MACHINE SPEED:	UP TO 14 CASES PER / MIN.
CLOSURE MATERIAL:	2" OR 3" PRESSURE SENSITIVE TAPE
MAXIMUM ROLL DIAMETER:	15"
AIR REQUIREMENTS:	11 S.C.F.M. AT 14 CASES PER /MIN. AT 80 PSI.
MACHINE OPTIONS:	1. LOW TAPE ALARM. 2. LOW HOPPER ALARM 3. CASTERS 4. LEVELING PADS 5. EUROPEAN GUARDING

INSTALLATION PROCEDURE

Exercise care when handling this machine. a sudden jolt or jar may cause serious damage.

Do not remove the shipping skid until machine has been moved to a point of installation. The skid is designed for easy and safe handling of your machine.

Raise or lower the machine to the desired operating elevation using the leveling jack screws and level the machine.

A great deal of trouble may be caused if the current is supplied by lines which are not heavy enough. if this occurs, the motors and controls cannot operate at their full capacity and over heating may result. A similar condition will exist if poor electrical connections are made. It's therefore worthwhile to make sure that everything is electrically correct.

Electrical polarity must be supplied to the machine exactly as shown on the electrical diagram. Power must be supplied to L1 side of the circuit and the L2 side will be neutral. If this is not correct, the circuit protectors (ECP 1) will trip out because of a short circuit.

The air to the machine should be clean and dry, as the filter is only meant to remove minor particles or slight amounts of moisture. Dirt or moisture in the air line can cause the erratic operation of control valves.

Connect the air supply to an air source with a minimum line pressure of 80 PSI.

Before starting the machine, load the tape cartridge with tape and thread the tape. See threading diagram on tape unit.

For proper start-up procedure see the start-up procedure section of this manual.

SEQUENCE OF OPERATION

INITIAL CONDITIONS:

A. MAIN AIR ON
B. POWER SWITCH OFF.
C. VACUUM CUP TROLLEY CYLINDER IS EXTENDED. (SOL. 5)
D. MINOR FLAP FOLDER CYLINDERS ARE RETRACTED. (SOL. 6)
E. CASE PUSHER CYLINDER IS RETRACTED. (SOL. 4)
F. VACUUM SWITCH IS ON.

GENERAL SEQUENCE:

1. Press the **"START"** push-button (PB 2). Motor contactor (M1) is energized and the motor starts.

2. Normally open contact (M1) closes, programmable controller is energized, and the sequence starts.

3. The case pusher and vacuum cup trolley go to home position.

4. As soon as proximity switches 2 and 3 are activated , the vacuum cup trolley (output 102) moves forward to pick-up a blank.

5. At the extended position, the vacuum cup trolley activates proximity switch 1 (input 002) energizing timer 4. After a pre-set time, timer 4 times out, de-energizing vacuum cup trolley solenoid (output 102).

6. The vacuum cup trolley then returns to the home position, activating proximity switch 2 (input 003) energizing the minor bottom flap folders (output 104).

7. Proximity switch 2 energizes timer 3. After a preset time, timer 3 times out de-energizing the vacuum solenoid (output 103). The formed case is released, ready for case transfer.

8. As the chain lug is detected by photocell 1 (PC 1), the internal relay 1004 turns on the case pusher solenoid (output 106), allowing the case pusher to move forward and push the formed case towards the feed rollers, and then into the chain lug drive.

9. At the extended position of the case pusher, proximity switch 4 (Prox. 4) is activated, energizing the internal relay 1003. This relay then de-energizes the case pusher extend solenoid (output 106), sending the case pusher back to the home position.

10. As output 106 is de-energized, timer 6 starts timing. When timer 6 times out, the minor flap folder solenoid (output 104) is de-activated. The machine is now ready for the next cycle.

11. Repeat sequence starting at general sequence #5.

NOTE 1: PC 2 is located downstream from the machine. During normal production, this switch being closed, will signal the case pusher to push the next formed case out of the forming area.

NOTE 2: SLS 1 and SLS 2 open when safety door is opened. The motor then stops and all the air cylinders will loose air pressure. The safety doors must be closed to re-start the machine.

NOTE 3: Pushing the cycle button on the hand-held control station or if contact with the downstream photocell (PC 2) is made, will activate the machine to feed a case into the taping section.

NOTE 4: All machine motions are pneumatically controlled from sequence switching, which will not allow a defective case to be discharged from the machine.

CONTROL DESCRIPTION

SLS 1	SAFETY LIMIT SWITCH OPERATES WHEN SAFETY GATE IS CLOSED.
SLS 2	SAFETY LIMIT SWITCH OPERATES WHEN SAFETY GATE IS CLOSED.
PROX. 1	PROXIMITY SWITCH ACTIVATES WHEN TROLLEY IS HOME.
PROX. 2	PROXIMITY SWITCH ACTIVATES WHEN TROLLEY IS PICKING BOX.
PROX. 3	PROXIMITY SWITCH ACTIVATES WHEN CASE PUSHER IS RETRACTED.
PROX. 4	PROXIMITY SWITCH ACTIVATES WHEN CASE PUSHER IS EXTENDED.
PROX. 5	BLANK HOPPER DRIVE SAFETY.
SOL 1	CONTROLS AIR SUPPLY TO SOLENOID VALVES.
SOL 2	CONTROLS VACUUM ON / OFF.
SOL 3	CONTROLS BLANK HOPPER DRIVE.
SOL 4	CONTROLS FORWARD MOVEMENT OF CASE PUSHER.
SOL 5	CONTROLS MOVEMENT OF TROLLEY.
SOL 6	CONTROLS MOVEMENT OF FLAP TUCKERS.
PC 1	SENSES CHAIN PUSHER LUG.
PC 2	CASE DEMAND SWITCH IS ACTIVATED WHEN THERE IS NO BOX IN FRONT OF SENSOR.
PC 3	CYCLE START BUTTON.
SS 1	VACUUM OFF / ON SWITCH.

SIZE CHANGE OVER

NOTE:
TURN POWER OFF BEFORE MAKING ANY ADJUSTMENTS TO THIS MACHINE.

HOPPER DRIVE ASSEMBLY
(C622922)

A. HOPPER WIDTH ADJUSTMENT:

TO SET, Loosen ratchet handle (item #19) and turn handknob (item #20) until the blank that is about to be run fits loosely between the adjustable blank guide (item #14) and the fixed side blank guide (item # 23).

Tighten ratchet handle before starting machine.

B. HOPPER BOTTOM FINGER ADJUSTMENT:

TO SET, The case bottom finger will need to be adjusted for almost every different case size handled by the machine. This finger must be positioned in a manner as to slip through the slots of the knock-down case at the manufacturers joint and slightly hold the inside rear panel, as the vacuum cups pull the case from the hopper. This finger aids in forming the knock-down case by breaking the case at the scoring. Set the finger so that it is approximately 3/8" from the front face of the case and 1/4" deep into the slot.

HOPPER FRAME ASSEMBLY
(C622920)

HOPPER HEIGHT ADJUSTMENT:

To adjust the hopper height rotate the handle on the top of the hydraulic pump (item #10) clockwise for raising and anti-clockwise to lower.
You can set this adjustment using the scale on the side of the hydraulic cylinder (item #6), divide the width of the case in 2, and set the pointer (item #21) to that position on the scale.
When you are finished adjusting this assembly put the handle on the hydraulic pump back into its locked position.
EXAMPLE: If the case you are running is 10" wide, you would set the pointer to 5" on the scale.

FRONT FLAP FOLDER ASSEMBLY
(C622911-1)

There are no adjustments needed for the front flap folder assembly, other than cylinder cushion adjustment, if required, and folder plate change parts.

REAR FLAP FOLDER ASSEMBLY
(C622264)

A. CASE PUSHER ASSEMBLY

TO SET, Loosen ratchet handles (item #10) and slide the rear flap folder assembly until the pusher plate (item #9) is approximately a 1/4"away from the rear edge of the formed carton, as it sits erected on the bottom flap folders.
You can set this adjustment using the scale on item #7.

Tighten ratchet handles before starting machine

EXAMPLE: If the case you are running is 16" long, you would set the pointer to 16" on the scale.

B: REAR FLAP FOLDER ASSEMBLY

There are no adjustments needed for the rear flap folder, other than cylinder cushion adjustment, if required, and folder plate change parts.

FORMING GUIDE ASSEMBLY
(C622277)

The forming guide assembly starts to fold the case end panel as the knock-down case is pulled from the hopper, across the front face of the case pusher.

TO SET, Arrange the guide assembly so that a gradual transfer is obtained as the knock-down case is pulled from the hopper across the forming guide, to the front of the pusher plate. The forming guide assembly should be set so that the roller strikes the center of the case.

Make sure to tighten all nuts and bolts on this assembly before starting machine.

TOP FINGER ASSEMBLY
(C622276)

TO SET, The case top finger will need to be adjusted for almost every different case size handled by the machine. This finger must be positioned in a manner as to slip through the slots of the knock-down case at the manufacturers joint and slightly hold the inside rear panel, as the vacuum cups pull the case from the hopper. This finger aids in forming the knock-down case by breaking the case at the scoring.
Set the finger so that it is approximately 3/8" from the front face of the case and 1/4" deep into the slot.

VACUUM TROLLEY ASSEMBLY
(C622268)

A. CASE LENGTH ADJUSTMENT:

TO SET, Loosen ratchet handle (item #18) and slide the whole assembly across until the center of the vacuum post (item #5) is centered on the center of the blank length panel, or you can set this adjustment using the scale on the frame under the U-channel (item #2), divide the length of the case in 2, and set the trolley assembly to that position on the scale.

Tighten ratchet handle before starting machine.

EXAMPLE: If the case you are running is 16" long, you would set the vacuum cup trolley to 8" on the scale.

B. CASE WIDTH ADJUSTMENT:

TO SET, Loosen ratchet handle (item #9) and slide the stop bracket (item #5) until the center of the formed carton, as it sits erected on the bottom flap folders is always at the center line of the machine. You can set this adjustment using the scale under the stop bracket (item #5), divide the width of the case in 2, and set the back of the stop bracket (item #5) to that position on the scale.

EXAMPLE: If the case you are running is 10" wide, you would set the stop bracket to 5" on the scale.

BOX PUSHER ASSEMBLY:

A. Adjustment of the pusher assembly is attained only by loosening the two locking levers on the side of the unit. Slide the front face of pusher plate to approximately ¼" back from the rear edge of the formed case, as it sits on the bottom folder plates in their extended positions. adjust the pusher/folder to the desired case length setting. Refer to the scale and the pointer.

B. See the folder plate change parts instructions.

C. Adjust the cylinder cushions, if required.

TOP GUIDES ASSEMBLY:

A. TOP GUIDE HEIGHT ADJUSTMENT:
Adjustment to the top guide is made by unlocking the locking lever and turning the hand wheel until the top guide is approximately 1/16" above the top of the case flaps of a fully formed carton at the discharge end of the machine. Use the scale on the main frame for approximate measurement.

B. The carton top tensioner unit is used to hold and feed the cartons in the magazine in an upright position.

VACUUM CUP ASSEMBLY:

A. There is really no specific formula for setting the configuration of the vacuum cups on the case body. For small or extremely flimsy cases, the vacuum cups can be set to pick up the top and bottom knock-down case flaps. Small cases will require only two vacuum cups, while the larger cartons will require all four.

B. Position spring loaded vacuum cups as close as possible to the edge of the case length panel to prevent cases from collapsing when pulled from the magazine.

C. When handling small cases (example 7" long), only two vacuum cups will be required. Remove one of the vacuum cup bars and two of the vacuum cups. Disconnect the two hoses using the quick release fittings which will automatically seal off the vacuum system.

D. When handling a small height case, the vacuum post extension will need to be changed.

VACUUM CUP ADJUSTING INSTRUCTIONS:

A. Although there is really no specific formula for setting the vacuum cup pattern on your case, these few simple rules should be followed. The carton will open better and stand less chance of collapsing, if the cups are positioned approximately ½" from the case edge and ½" up and down from the top and bottom score lines.

B. Unless the case is less than 8" wide, then you will have to raise the lower two vacuum cups to approximately 1 ¼" above the bottom score line to avoid interference with the case pusher assembly.

C. Positioning the vacuum cups on the carton score line, is not best practice, but in some cases it may be necessary.

CASE WIDTH ADJUSTMENT

Put a fully formed carton into the drive section at the discharge end. Loosen locking lever and turn hand wheel until you have approximately 1/8" clearance on each side of carton. Use the scale for approximate measurement.

BLANK HOPPER ASSEMBLY

A. When loading different length knocked-down cartons into the magazine, remember the long side guide rail will have to be adjusted. The short rail side never moves, this is your fixed point.

B. Adjustment to the case retainer bar and the brush will probably not be needed. But if adjustment is desired, the round retainer rod right and brushes left, via the adjustment slots. The rod and brushes slightly hold the cartons in an upright position, as the vacuum cup assembly pulls the cartons from the magazine.

C. The case bottom opening finger will need to be adjusted for every different case size handled by the machine. This finger must be positioned in a manner as to slip through the slots of the knocked-down case at the manufacturers joint and slightly hold the inside rear panel as the vacuum cups pull the cases from the magazine. This finger aids in forming the knocked-down case by breaking case at the scoring.

D. Set finger so that it is approximately 3/8" from the front face of the case and ¼" deep into the slot.

E. At the front of the case magazine, is located an elevation adjustment. This hand wheel, when turned clockwise, raises the bottom score line of the knocked-down case, and counterclockwise, lowers the score line.

F. The breaking point of the bottom leading and trailing case flaps, as the bottom folder plates fold inner flaps upward, must remain the same on all cases as they enter the forming section of the machine from the case magazine.

START UP PROCEDURE

THIS MACHINE IS TO BE USED, AS DESCRIBED, BY PROPERLY TRAINED PERSONNEL.

WARNING:

***NEVER*.....START THE MACHINE UNTIL ALL PERSONNEL ARE CLEAR.**

***NEVER*.....LUBRICATE OR REPAIR THE MACHINE WHILE IT IS RUNNING.**

***NEVER*.....PUT YOUR HANDS IN THE MACHINE WHILE IT IS RUNNING.**

***NEVER*.....ALLOW ANY PART OF YOUR BODY TO COME IN CONTACT WITH MOVING PARTS OF THE MACHINE WHILE IT IS RUNNING.**

1. CLOSE THE SAFETY DOORS.

2. LOAD BLANKS INTO THE HOPPER.

3. UNLATCH THE FEED BAR ON THE SLIDE HOPPER ASSEMBLY.

4. PRESS THE START BUTTON. (THE PUSHER LUGS ON THE CHAIN DRIVE WILL START.)

5. TO TEST AND CYCLE THE MACHINE, TURN THE VACUUM SWITCH TO OFF. PRESS THE CYCLE BUTTON. GO THROUGH THE CYCLE TWO OR THREE TIMES TO MAKE SURE EVERYTHING IS RUNNING PROPERLY.

6. TURN THE VACUUM SWITCH TO ON. (THE MACHINE WILL START FORMING CASES AND IT WILL STOP AUTOMATICALLY AS SOON AS THE BOX IS IN FRONT OF THE CASE DEMAND PHOTOCELL.

SHUT DOWN PROCEDURE

EMERGENCY SHUT DOWN.

TO SHUT THE MACHINE DOWN IN AN EMERGENCY, PRESS THE STOP BUTTON) ON THE HAND-HELD CONTROLLER.

NOTE: YOU WILL HAVE TO CLEAR ANY CASES THAT WERE BEING FORMED BY THE MACHINE BEFORE YOU CAN RESTART THE MACHINE.

NORMAL SHUT DOWN.

1. TURN THE VACUUM SWITCH TO **OFF**.

2. LET THE MACHINE FINISH THE CYCLE OF CASES BEING FORMED.

3. PRESS THE STOP BUTTON ON THE HAND-HELD CONTROLLER.

MAINTENANCE SCHEDULE

TURN MACHINE OFF BEFORE PERFORMING ANY MAINTENANCE.

ELECTRICAL

CHECK MONTHLY:

1. INSPECT FOR LOOSE WIRES THROUGHOUT THE MACHINE AND INSIDE THE PANEL BOX.

2. INSPECT FOR MOISTURE INSIDE THE PANEL BOX.

3. CLEAN LENS ON PHOTOCELL.

PNEUMATIC

CHECK WEEKLY:

1. INSPECT AIR FILTER AND DRAIN IF NECESSARY. WATER IN THE AIR LINES WILL CAUSE THE MACHINE TO ERRATICALLY CYCLE AND ALSO GUM UP THE SOLENOID VALVES.

2. INSPECT AND CLEAR THE VACUUM GENERATORS.

3. INSPECT THE COMPONENTS AND THE AIR LINES FOR LEAKS. LOSS OF AIR MEANS LOSS OF SPEED AND EFFICIENCY.

4. INSPECT THE VACUUM CUPS FOR CRACKS OR TEARS. (EVEN IF ONLY (1) VACUUM CUP IS DAMAGED, TOTAL VACUUM WILL BE LOST FOR THE COMPLETE SYSTEM.)

5. CHECK THAT VACUUM LINES ARE FREE FROM DEBRIS.

6. CHECK THAT REGULATOR IS SET TO 80 PSI.

CHECK MONTHLY:

1. INSPECT AIR CYLINDERS TO SEE THAT CUSHIONS ARE SET PROPERLY.

2. INSPECT THE VACUUM HOSES FOR CRACKS OR CRIMPS.

MECHANICAL

1. INSPECT THE BOTTOM FLAP FOLDER ASSEMBLIES. CHECK FOR BEARING WEAR. CHECK AIR CYLINDER MOUNTINGS FOR TIGHTNESS.

2. INSPECT ALL ADJUSTING SCREWS AND CHAINS THROUGHOUT THE ENTIRE MACHINE. LUBRICATE ALL SCREWS AND CHAINS.

3. INSPECT THE CASE CARRIER CHAIN ASSEMBLY. CHECK FOR CHAIN AND SPROCKET WEAR. LUBRICATE ALL BEARINGS, CHAINS AND DRIVES.

4. INSPECT THE DRIVE UNIT ASSEMBLY. CHECK OIL LEVEL IN REDUCTION AND LUBRICATE THE DRIVE CHAIN.

5. CHECK KNIFE FOR DEBRIS. CLEAN WITH OILY RAG. NEVER USE SHARP OBJECTS TO CLEAN KNIFE.

NOTICE:

RIGHT ANGLE GEAR BOXES ARE PERMANENTLY LUBRICATED.

HOW TO ORDER SPARE PARTS

FOR GENERAL INFORMATION AND ORDERING PARTS CONTACT:
THE LOVESHAW CORPORATION
2206 EASTON TURNPIKE, BOX 83
SOUTH CANAAN, PA.
18459

TEL: 1-800-962-2633

It is necessary that before you contact Loveshaw for parts or service, that you know the machine model and serial number.
Locate the label on the outside of the electrical panel box. You will see the machine model and serial number printed on it.

WHEN CALLING LOVESHAW FOR PARTS:

A. Give the machine model and serial number.

B. Give the assembly part number and description.
(i.e., B570975 Major Flap Retainer Assembly.)

C. Give item number, part number and description.
(i.e., item #7, 204330, 1/2"I.D. x 5/8"O.D. Flange Bushing.)

By following the procedure described above, you will assist us in supplying you with the correct parts for your machine and eliminate any mis-understanding between your purchasing agent and our parts department.

See the list of suggested spare parts on the next page, by stocking these parts, you will eliminate excessive down time waiting for shipment of parts.

LITTLE DAVID

LOVESHAW an ITW Company — Quality Engineered

CF40 2 INCH

RECOMMENDED SPARE PARTS KIT FOR

MODEL CF40 with CAC50 SIDE THREAD CARTRIDGE

KIT PART # .REPKIT-CF40

KIT LIST PRICE: $2600.00

PART #	QTY	DESCRIPTION	LIST PRICE
.CAC50	***1***	***TAPE CARTRIDGE***	***$1050.00***
A180584-P	*2*	*WHEEL POLYURETHANE*	*$171.60*
PSC11B-4	4	KNIFE BLADE	$100.00
200045	4	ROD END BEARING	$167.84
200241	2	FLANGE BUSHING	$7.34
200287	1	BUMPER	$28.74
203220A	4	VACUUM CUP (BLUE)	$88.12
201863	2	SPRING	$4.88
202146	1	KNOB	$6.12
202669	1	RACHET HANDLE	$27.17
202822	1	SPRING	$17.38
203169	2	TENSION SPRING	$8.00
203214	2	THRUST WASHER	$2.14
203354	1	BRUSH HOPPER 10”	$44.82
A125SB-10-R	1	FUSE, 10 AMP	$16.53
A125SB-2/10-312	1	FUSE, 2/10 AMP	$6.21
402537A	1	REED SWITCH CYLINDER	$60.24
303526	1	PHOTOELECTRIC SENSOR	$74.36
400962	3	FLOW CONTROL VALVE	$263.58
401118	1	SHOCK ABSORBER	$221.94
402527A	1	VALVE	$209.85
402317C	1	CASE PUSHER CYLINDER	$275.50
402310C	1	TROLLY CYLINDER	$333.17
302575	1	PROXIMITY SWITCH	$111.36

TOTAL PURCHASED SEPARATELY **$3296.89**

KIT LIST PRICE: $2600.00

SAVINGS ***$696.89***

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LITTLE DAVID

LOVESHAW an ITW Company — Quality Engineered

CF40 3 INCH

RECOMMENDED SPARE PARTS KIT FOR

MODEL CF40 with CAC51 SIDE THREAD CARTRIDGE

KIT PART # .REPKIT-CF40/3

KIT LIST PRICE: $2800.00

PART #	QTY	DESCRIPTION	LIST PRICE
.CAC51	***1***	***TAPE CARTRIDGE***	***$1375.00***
A180584-P	2	WHEEL POLYURETHANE	$171.60
PS4117A-4	4	KNIFE BLADE	$120.00
200045	4	ROD END BEARING	$167.84
200241	2	FLANGE BUSHING	$7.34
200287	1	BUMPER	$28.74
203220A	4	VACUUM CUP (BLUE)	$88.12
201863	2	SPRING	$4.88
202146	1	KNOB	$6.12
202669	1	RACHET HANDLE	$27.17
202822	1	SPRING	$17.38
203169	2	TENSION SPRING	$8.00
203214	2	THRUST WASHER	$2.14
203354	1	BRUSH HOPPER 10”	$44.82
A125SB-10-R	1	FUSE, 10 AMP	$16.53
A125SB-2/10-312	1	FUSE, 2/10 AMP	$6.21
402537A	1	REED SWITCH CYLINDER	$60.24
303526	1	PHOTOELECTRIC SENSOR	$74.36
400962	3	FLOW CONTROL VALVE	$263.58
401118	1	SHOCK ABSORBER	$221.94
402527A	1	VALVE	$209.85
402317C	1	CASE PUSHER CYLINDER	$275.50
402310C	1	TROLLY CYLINDER	$333.17
302575	1	PROXIMITY SWITCH	$111.36

TOTAL PURCHASED SEPARATELY **$3641.89**

KIT LIST PRICE: $2800.00

SAVINGS ***$841.89***

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TROUBLE SHOOTING

1. INSPECT WIRING FOR LOOSE CONNECTIONS.
2. INSPECT SIR LINES FOR LOOSE CONNECTIONS.
3. CHECK THAT PROXIMITY SWITCHES AND PHOTOCELLS ARE BEING TRIPPED.
4. CHECK THE SAFETY GATE TO ENSURE THAT IT IS CLOSED.

PROBLEM	**SOLUTION**
1. VACUUM SYSTEM IS NOT OPERATIONAL.	A. SOLENOID VALVE MAY BE DEFECTIVE. CHECK SOLENOID 2 FOR CONTINUITY. REPLACE IF DEFECTIVE. B. SPOOL IN VALVE MAY BE STUCK. SQUIRT OIL IN VENT HOLE OF VALVE, DISASSEMBLE VALVE. CLEAN THOROUGHLY, REPLACE DEFECTIVE PARTS. LUBRICATE AND REASSEMBLE. C. CHECK THAT FLOW CONTROLS ARE SET PROPERLY.
2. VACUUM TROLLEY WILL NOT MOVE TOWARD BLANK MAGAZINE TO PICK UP A BLANK. (CYLINDER IN RETRACTED POSITION.)	A. SOLENOID VALVE MAY BE DEFECTIVE. CHECK SOLENOID #3 FOR CONTINUITY. REPLACE SOLENOID COIL IF DEFECTIVE. B. SPOOL IN VALVE MAY BE STUCK. SQUIRT OIL IN VENT HOLE OF VALVE, DISASSEMBLE VALVE. CLEAN THOROUGHLY, REPLACE DEFECTIVE PARTS. LUBRICATE AND REASSEMBLE. C. PROXIMITY SWITCH (PROX 1) MAY BE DEFECTIVE. CHECK CONTINUITY. REPLACE IF DEFECTIVE.

3. VACUUM TROLLEY WILL NOT MOVE BACK FROM BLANK MAGAZINE. (CYLINDER IN EXTENDED POSITION).	A. SOLENOID VALVE MAY BE DEFECTIVE. CHECK SOLENOID #3 FOR CONTINUITY. REPLACE IF DEFECTIVE. B. SPOOL IN VALVE MAY BE STUCK. SQUIRT OIL IN VENT HOLE OF VALVE, DISASSEMBLE VALVE, CLEAN THOROUGHLY, REPLACE DEFECTIVE PARTS, LUBRICATE AND REASSEMBLE.
4. MINOR FLAP FOLDERS WILL NOT EXTEND.	A. SOLENOID VALVE MAY BE DEFECTIVE. CHECK SOLENOID #6 FOR CONTINUITY. REPLACE IF DEFECTIVE. B. SPOOL IN VALVE MAY BE STUCK. SQUIRT OIL IN VENT HOLE OF VALVE, DISASSEMBLE VALVE, CLEAN THOROUGHLY, REPLACE DEFECTIVE PARTS, LUBRICATE AND REASSEMBLE. C. PROXIMITY SWITCH #2 MAY BE DEFECTIVE. CHECK FOR CONTINUITY. REPLACE IF DEFECTIVE.
5. CASE PUSHER WILL NOT ADVANCE TO PUSH A FORMED CASE INTO CHAIN ASSEMBLY.	A. SPOOL IN VALVE MAY BE STUCK. SQUIRT OIL IN VENT HOLE OF VALVE, DISASSEMBLE VALVE, CLEAN THOROUGHLY, REPLACE DEFECTIVE PARTS, LUBRICATE AND REASSEMBLE. B. PROXIMITY SWITCH (PROX 4) MAY BE DEFECTIVE. CHECK FOR CONTINUITY. REPLACE IF DEFECTIVE. C. CHECK PHOTOCELL (PC1) FOR SENSING LUGS ON CHAIN. REPLACE IF DEFECTIVE.

6. CASE PUSHER WILL NOT RETRACT.	A. SOLENOID VALVE MAY BE DEFECTIVE. CHECK SOLENOID #4 FOR CONTINUITY. REPLACE SOLENOID COIL IF DEFECTIVE. B. SPOOL IN VALVE MAY BE STUCK. SQUIRT OIL IN VENT HOLE OF VALVE, DISASSEMBLE VALVE, CLEAN THOROUGHLY, REPLACE DEFECTIVE PARTS, LUBRICATE AND REASSEMBLE. C. PROXIMITY SWITCH (PROX 4) MAY BE DEFECTIVE, CHECK FOR CONTINUITY. REPLACE IF DEFECTIVE.
7. VACUUM CUPS WILL NOT PICK BLANK FROM THE MAGAZINE.	A. IF LOW VACUUM, CLEAN VACUUM SYSTEM, VACUUM GENERATOR AND VALVES. B. VACUUM CUPS MAY BE WORN. REPLACE CUPS. C. CHECK VACUUM LINES FOR LEAKS OR LOOSE CONNECTIONS.
8. CASE IS NOT SQUARE AT DISCHARGE.	A. CHECK CASE PUSHER SPEED. PUSHER MUST ADVANCE AT SAME OR SLIGHTLY FASTER THAN CARRIER LUGS. B. CHECK THE CHAIN LUG ALIGNMENT. MOVE THE ADJUSTABLE SPROCKET AS NECESSARY. (SEE INSTRUCTION BELOW).

TO ALIGN PUSHER LUGS

INSERT A PIECE OF ¼" DIA. ROD INTO THE TRANTORQUE SPROCKET AND USING THE SPECIAL WRENCH (SUPPLIED WITH MACHINE), LOOSEN THE SQUARE NUT ON TOP OF THE TRANTORQUE ASSEMBLY. THEN USING THE ROD, ROTATE THE SPROCKET UNTIL THE LUGS ARE INLINE WITH EACH OTHER. CHECK THAT THE CHAIN IS AT THE RIGHT HEIGHT AND IS INLINE WITH ALL THE SPROCKETS. IF THERE IS ANY MISALIGNMENT, IT WILL CAUSE THE CHAIN TO RUN ROUGH AND WILL CAUSE WEAR ON BOTH THE CHAIN AND THE SPROCKETS. BE SURE CHAIN IS PROPERLY TENSIONED USING TENSIONING IDLER.

9. MACHINE KEEPS SHUTTING ITSELF DOWN.	A. CHECK THAT THE ELECTRONIC CIRCUIT PROTECTOR (ECP 1) IS NOT BEING OVERLOADED. B. CHECK THAT THE OVERLOAD CURRENT RELAY (OCR 1) IS SET CORRECTLY. (SEE INSTRUCTION BELOW).

ADJUSTING THE OVERLOAD RELAY.

SET THE CURRENT KNOB 10-15% OVER NORMAL CURRENT OF THE MOTOR.
SET THE TIME DELAY KNOB TO 1-2 SECONDS.
THE CURRENT MONITOR IGNORES IN / RUSH CURRENT.
SETTING THESE ADJUSTMENTS (CURRENT / DELAY) TO LOWER VALUES WILL PROVIDE BETTER PROTECTION BUT WILL INCREASE THE CHANCE OF NUISANCE TRIPPING.

Little David® Warranty

For: CASE FORMER MODELS
CF20-T, CF30-T, CF40-T, CF40T-XL MODELS

1 YEAR WARRANTY ON DRIVE MOTOR
1 YEAR WARRANTY ON GEAR REDUCER
3 YEAR WARRANTY ON TAPE CARTRIDGE (EXCEPT FOR MOVING PARTS THAT ARE SUBJECT TO NORMAL WEAR, TEAR AND REPLACEMENT, WHICH ARE WARRANTED ONLY TO BE FREE FROM DEFECTS IN MATERIAL AND WORKMANSHIP.)

1 YEAR ON PLC
1 YEAR ALL OTHER PARTS (EXCEPT FOR WEAR AND MOVING PARTS.)

*LIMITED WARRANTY – ***LOVESHAW,*** AN ***ITW*** COMPANY (HEREIN AFTER "***LOVESHAW***") WARRANTS ONLY THAT THE GOODS SOLD BY IT SHALL BE FREE FROM DEFECTS IN MATERIAL AND WORKMANSHIP, UNDER PROPER AND NORMAL USE AND MAINTENANCE, AS FOLLOWS:

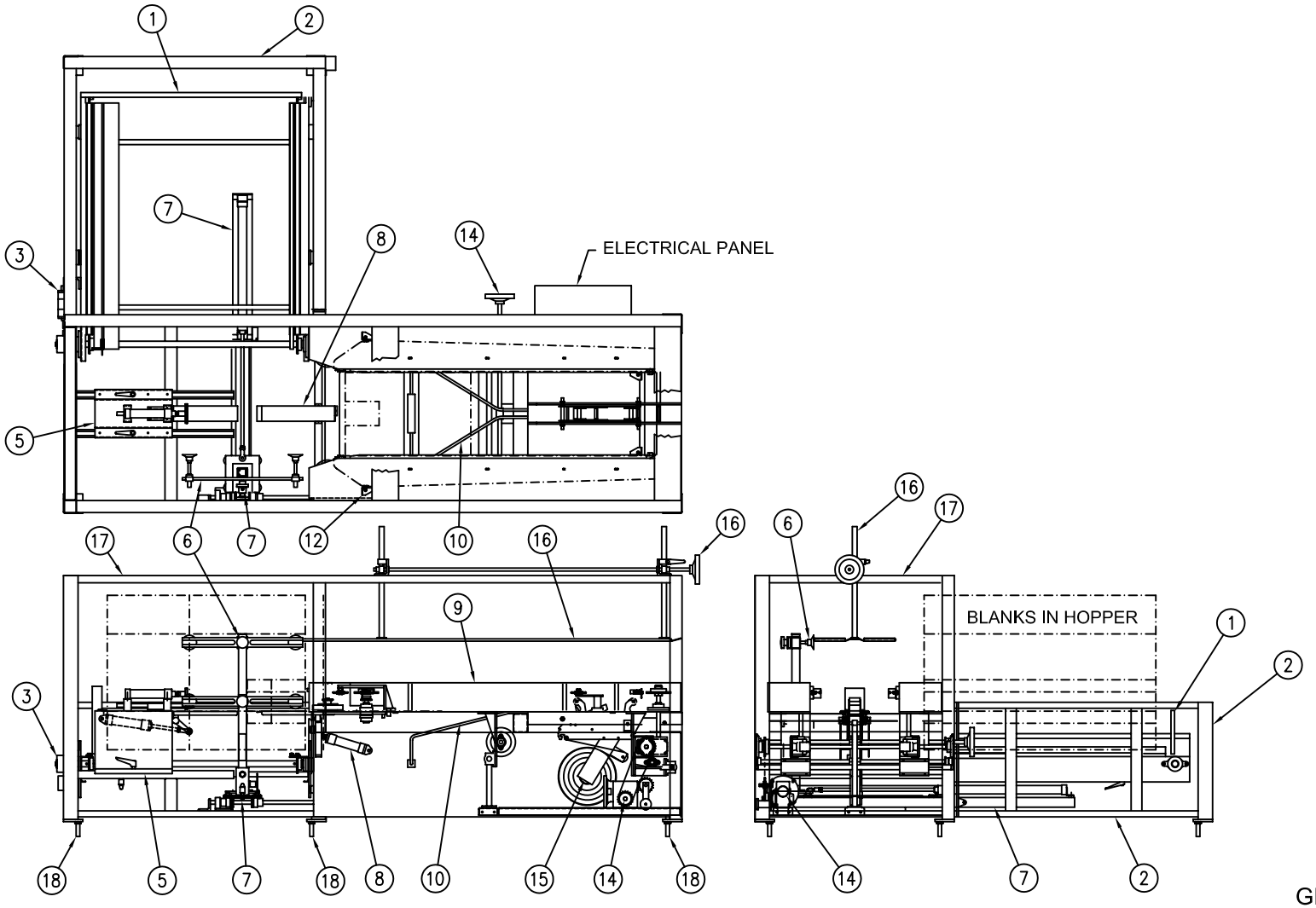
DRIVE MOTOR -	1 YEAR	
GEAR REDUCER -	2 YEARS	
TAPE CARTRIDGE -	3 YEARS	(EXCEPT FOR MOVING PARTS THAT ARE SUBJECT TO NORMAL WEAR, TEAR AND REPLACEMENT, WHICH ARE WARRANTED ONLY TO BE FREE FROM DEFECTS IN MATERIAL AND WORKMANSHIP.)
PLC -	1 YEAR	
ALL OTHER PARTS -	1 YEAR	(EXCEPT FOR MOVING PARTS THAT ARE SUBJECT TO NORMAL WEAR, TEAR AND REPLACEMENT, WHICH ARE WARRANTED ONLY TO BE FREE FROM DEFECTS IN MATERIAL AND WORKMANSHIP.)

THE WARRANTY PERIOD SHALL COMMENCE AS OF THE DATE OF DELIVERY TO THE PURCHASER. THE OBLIGATION OF LOVESHAW UNDER THIS WARRANTY IS STRICTLY LIMITED TO THE COST OF REPAIRING OR REPLACING, AS LOVESHAW MAY ELECT, ANY PART OR PARTS THAT PROVE IN LOVESHAW'S JUDGMENT TO HAVE BEEN DEFECTIVE IN MATERIAL OR WORKMANSHIP AT THE TIME THE GOODS WERE SHIPPED FROM LOVESHAW'S PLANT. ANY WARRANTY CLAIM NOT MADE IN WRITING TO LOVESHAW AT ITS HOME OFFICE WITHIN THE APPLICABLE WARRANTY PERIOD AND WITHIN 10 DAYS OF FAILURE WILL NOT BE VALID. THIS IS THE SOLE AND EXCLUSIVE REMEDY AVAILABLE UNDER THIS WARRANTY. UNDER
NO CIRCUMSTANCES WILL LOVESHAW BE LIABLE FOR INCIDENTAL, SPECIAL OR CONSEQUENTIAL DAMAGES.

IF REQUESTED BY LOVESHAW, PURCHASER SHALL RETURN ANY DEFECTIVE PART OR PARTS TO LOVESHAW'S PLANT, FREIGHT PREPAID. ALL WARRANTY PART REPLACEMENTS AND REPAIRS MUST BE MADE BY LOVESHAW OR A LOVESHAW AUTHORIZED TO HANDLE THE GOODS COVERED BY THIS WARRANTY. ANY OUTSIDE WORK OR ALTERATIONS DONE WITHOUT LOVESHAW'S PRIOR WRITTEN APPROVAL WILL RENDER THIS WARRANTY VOID. ***LOVESHAW,*** AN ***ITW*** COMPANY WILL NOT ASSUME ANY EXPENSE OR LIABILITY FOR ANY REPAIRS MADE TO ITS GOODS OUTSIDE ITS WORKS WITHOUT ITS PRIOR WRITTEN CONSENT. THIS WARRANTY SHALL NOT APPLY TO ANY ITEM THAT HAS NOT BEEN USED, OPERATED, AND MAINTAINED IN ACCORDANCE WITH LOVESHAW'S RECOMMENDED PROCEDURES LOVESHAW SHALL HAVE NO LIABILITY WHATSOEVER WHERE THE GOODS HAVE BEEN ALTERED, MISUSED, ABUSED OR INVOLVED IN AN ACCIDENT.

NO PERSON IS AUTHORIZED TO MAKE ANY WARRANTY OR TO CREATE ANY LIABILITY BINDING UPON LOVESHAW. WHICH IS NOT STATED IN THIS WARRANTY. THIS WARRANTY IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES OF ANY KIND, EXPRESSED OR IMPLIED, WHICH ARE HEREBY EXCLUDED. IN PARTICULAR, THE IMPLIED WARRANTY OF MERCHANTABILITY, AS WELL AS THE IMPLIED WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE ARE HEREBY EXCLUDED.

LOVESHAW AN ITW COMPANY
ROUTE 296, SOUTH CANAAN, PA 18459
TEL: 570.937.4921 - 800.572.3434 - FAX: 570.937.3229



GENERAL ASSEMBLY
DRAWING NO.
C622980

ASSEMBLY NO.: C622980
ASSEMBLY NAME: GENERAL ASSEMBLY
MACHINE TYPE: CASEFORM 40

ITEM	QTY	PART NO.	DESCRIPTION
1	1	C622921	BLANK PUSHER ASSEMBLY
2	1	C622920	HOPPER FRAME ASSEMBLY
3	1	C622922-2	HOPPER DRIVE ASSEMBLY
4	1	C622276	TOP FINGER ASSEMBLY
5	1	C622264-3	REAR FLAP FOLDER ASSEMBLY
6	1	C622710	VACUUM CUP ASSEMBLY
7	1	C622268-3	VACUUM TROLLEY ASSEMBLY
8	1	C622911-3	FRONT FLAP FOLDER ASSEMBLY
9	1	D622261C	FEED ROLLER DRIVE ASSEMBLY
10	1	C622265	PLOW BAR ASSEMBLY
11 *	1	D622280C	SLIDING DOOR ASSEMBLY
12	1	C62274C	CHAIN ASSEMBLY
12 //	1	C62274C-1	3 LUG CHAIN ASSEMBLY
12 //	1	C62274C-2	NARROW 2 LUG CHAIN ASSEMBLY
13			
14	1	C622598-1	MAIN DRIVE ASSEMBLY
15	1	C622930	TAPE CARTRIDGE ASSEMBLY
16	1	C622263	TOP PLATE ASSEMBLY
17	1	C622820	FRAME ASSEMBLY
18	5	40-001	3/4-10 BOLT X 2” LG.
	3	40-002	3/4-10 ALL THREAD BOLT X 4” LG.
//	8	203670	LEVELING PADS
//	8	201763	CASTERS
//	3	B622715	CASTER MOUNTING PLATE
19	1	C622277	FORMING GUIDE ASSEMBLY
20	1	C622271A-2	PNEUMATIC SCHEMATIC
21	1	B621837	JAM DETECTOR BRACKET
22	11	40-011	3/4-10 JAM NUT

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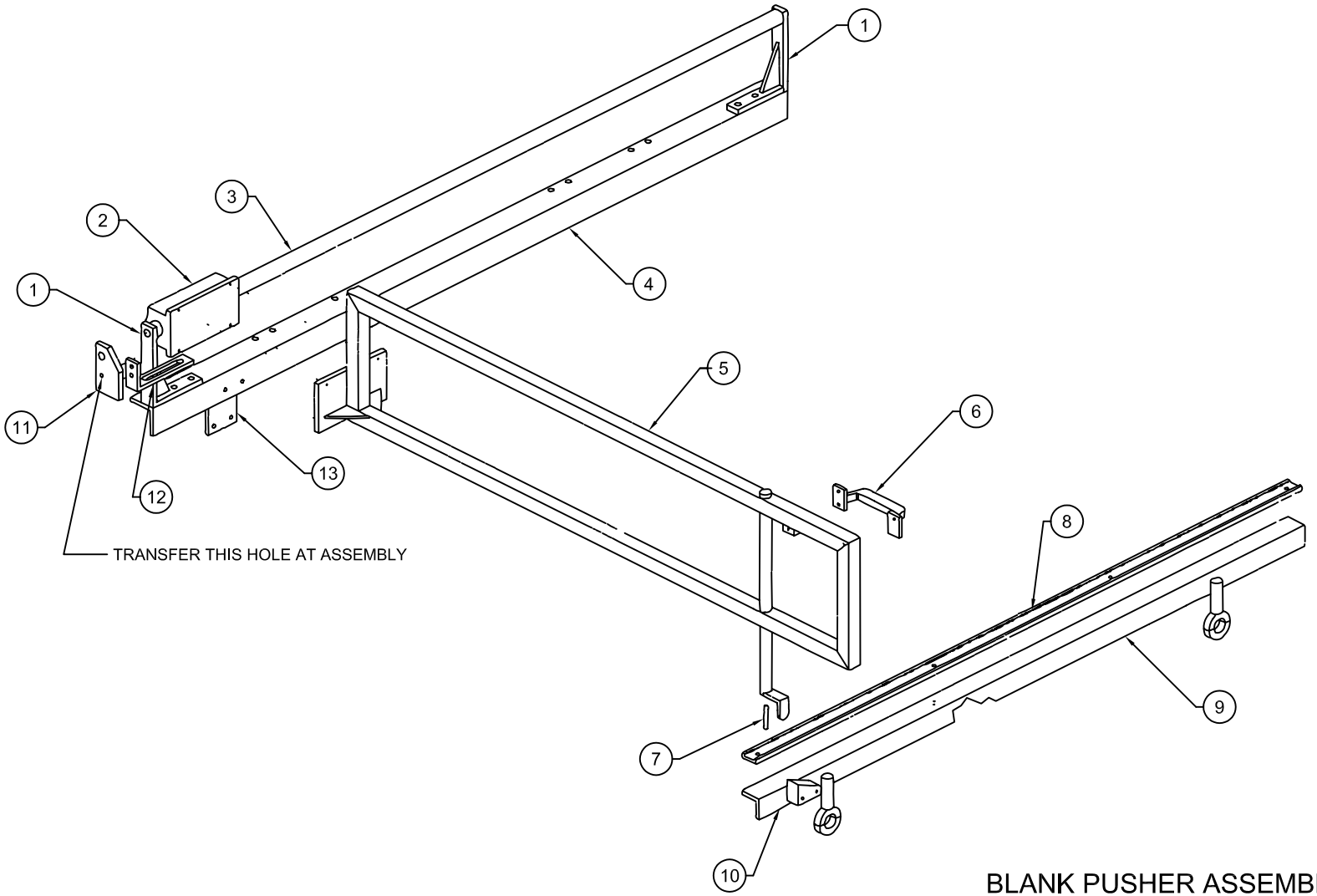
// OPTIONAL



BLANK PUSHER ASSEMBLY

DRAWING NO.

C622921

ASSEMBLY NO.: C622921
ASSEMBLY NAME: BLANK PUSHER ASSEMBLY
MACHINE TYPE: CASEFORM 40

ITEM	QTY	PART NO.	DESCRIPTION
1	2	C622915	BLANK PUSHER SHAFT MOUNT
2	1	203470	1” DIA. PILLOW BLOCK
3	1	STD005	1” DIA. GUIDE ROD X 55” LG.
4	1	C622917	BLANK PUSHER SUPPORT ANGLE
5	1	D622914	BLANK PUSHER FRAME
6	1	40-003	CHROME HANDLE
7	1	PB600009	1/4” DIA. SS. ROD X 1 1/2” LG.
8	1	B622602	CHAIN GUIDE
9	1	C622918-1	CHAIN GUIDE MOUNT
10	1	B622919	BLANK PUSHER STOP RAMP
11 *	1	B623070	LOW HOPPER ALARM
12 *	1	C621631	HOPPER DRIVE STOP PHOTOCELL MOUNT

***** USED ONLY ON MACHINES WITH LOW HOPPER ALARM

N/S	1	303526	PHOTOELECTRIC SENSOR

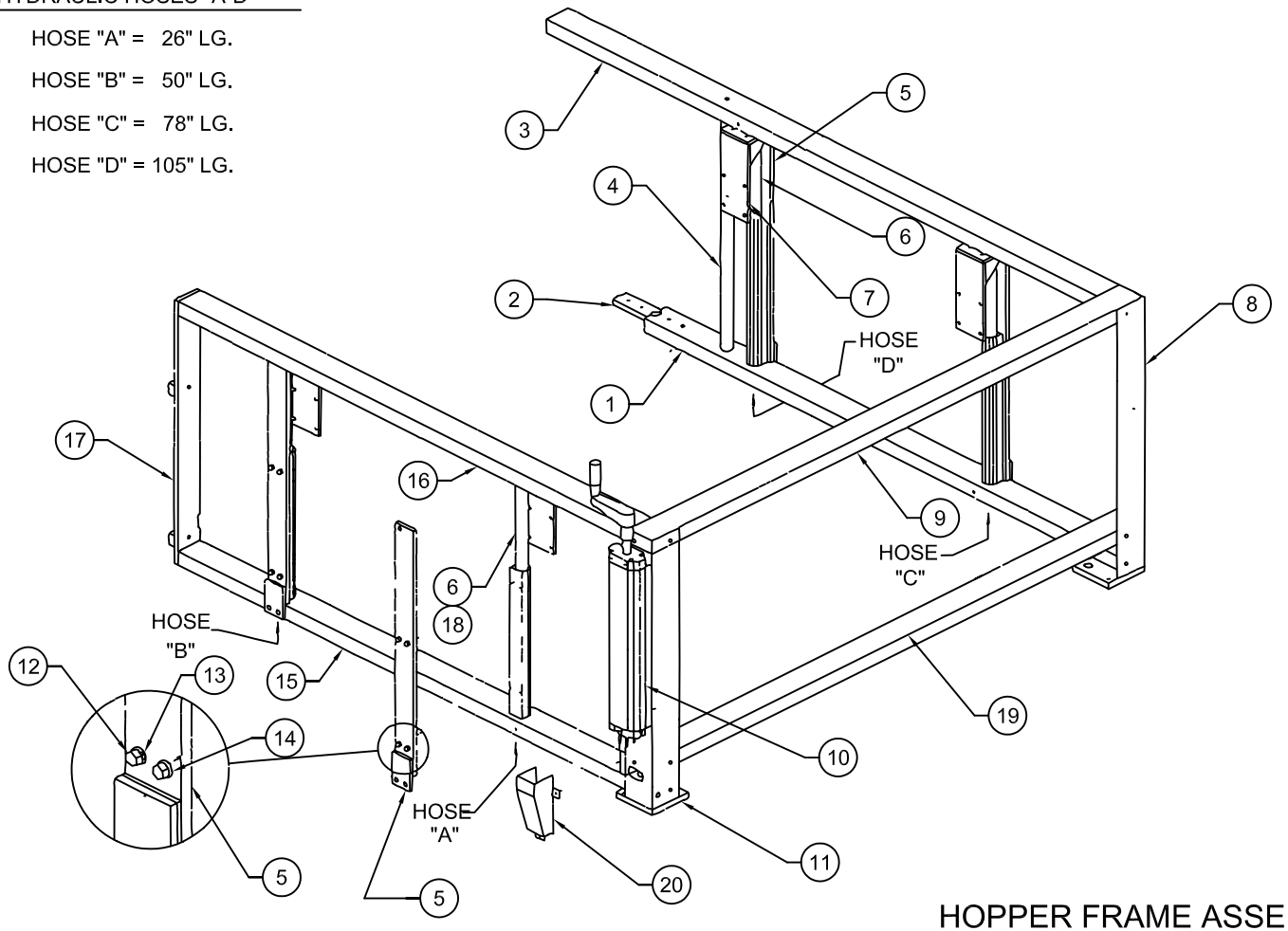
HYDRAULIC HOSES "A-D"

22 HOSE "A" = 26" LG.

23 HOSE "B" = 50" LG.

24 HOSE "C" = 78" LG.

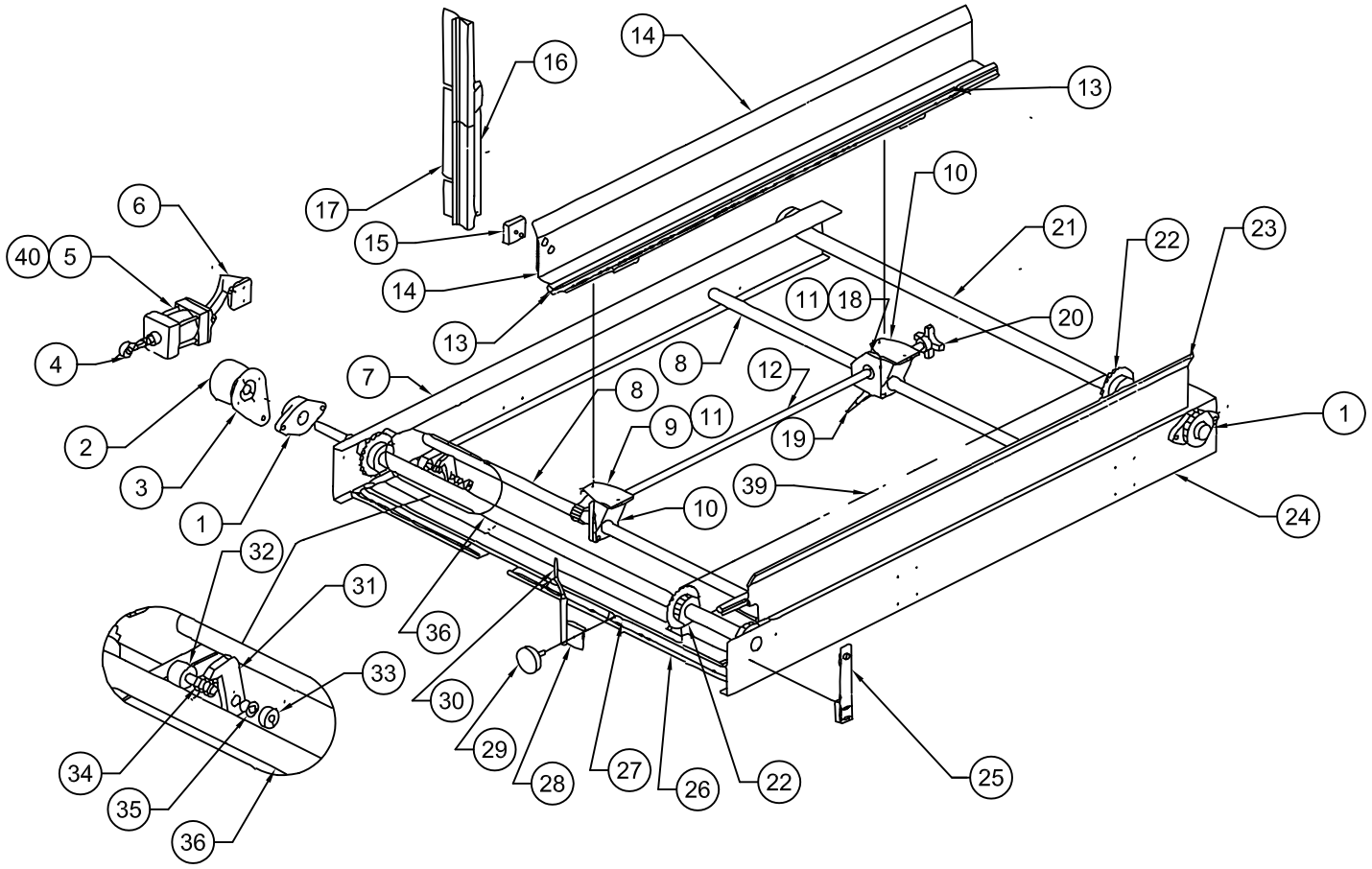
25 HOSE "D" = 105" LG.



HOPPER FRAME ASSEMBLY
DRAWING NO.
C622920

ASSEMBLY NO.: C622920
ASSEMBLY NAME: HOPPER FRAME ASSEMBLY
MACHINE TYPE: CASEFORM 40

ITEM	QTY	PART NO.	DESCRIPTION
1	1	C622723	HOPPER DRIVE SIDE BOTTOM BEAM
2	1	B622563A	CONNECTING PLATE
3	1	C622724	HOPPER DRIVE SIDE TOP BEAM
4	1	B622564A	SUPPORT SHAFT
5	4	C622716	HYDRAULIC LIFT CYLINDER MOUNT PLATE
6	4	204738-2	HYDRAULIC CYLINDER
7	4	C622717	HEIGHT ADJUSTING BRACKET
8	1	C622737-1	HOPPER REAR OUTSIDE LEG
9	1	C622339C	HOPPER FRAME REAR BEAM
10	1	204738-1	HYDRAULIC PUMP
11	1	C622718-1	HOPPER INSIDE REAR LEG
12	16	MS6-M5X18	M5 HEX HEAD BOLT X 3/4” LG.
13	16	MW2-3	M5 LOCK WASHER
14	16	MW1-3	M5 FLAT WASHER
15	1	C622721	HOPPER FIXED SIDE BOTTOM BEAM
16	1	C622722	HOPPER FIXED SIDE TOP BEAM
17	1	C622419B-1	HOPPER FRONT SPACER PLATE
18	4	MS6M10X40	M10 X 1.5 HEX HEAD BOLT
19	1	C622736	HOPPER REAR BOTTOM BEAM
20	1	C622735-1	HYDRAULIC HOSE GUARD
21	1	40-004	HYDRAULIC HOSE
22	1	40-004-26	HYDRAULIC HOSE
23	1	40-004-50	HYDRAULIC HOSE
24	1	40-004-78	HYDRAULIC HOSE
25	1	40-004-105	HYDRAULIC HOSE
N/S	5	40-030	RUBBER GROMMET
N/S	1	PA600023	HOPPER HEIGHT INDICATOR



HOPPER DRIVE ASSEMBLY

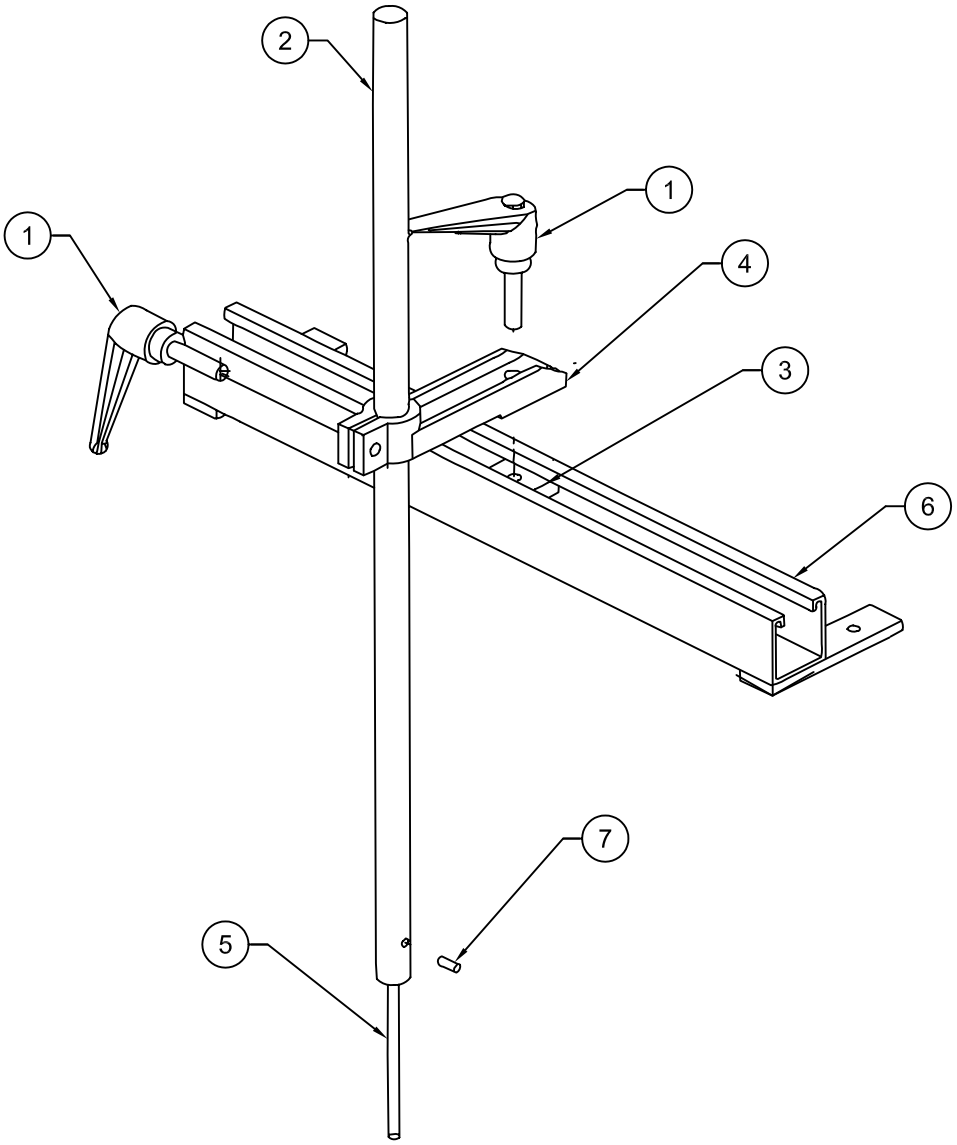
DRAWING NO.

C622922-2

ASSEMBLY NO.: C622922-2
ASSEMBLY NAME: HOPPER DRIVE ASSEMBLY
MACHINE TYPE: CASEFORM 40

ITEM	QTY	PART NO.	DESCRIPTION
1	4	200629G	1 1/4” DIA. FLANGE BEARING
2	1	204664	BACK STOPPING CLUTCH
3	1	C622378AG	HOPPER DRIVE PLATE
4	1	200045	ROD END BEARING
5	1	402307C	AIR CYLINDER 2 1/2” DIA. X 1” STK.
6	1	C622379B-1G	HOPPER CYLINDER MOUNT
7	1	D622923-1G	DRIVE SIDE CHANNEL
8	2	STD-077	GEAR RACK X 46 7/8” LG.
9	1	C170477PG	NON LOCKING CASTING
10	2	C621384	CASTING BRACKET
11	2	202766-10	SPUR GEAR X 5/8” DIA. BORE
12	1	PA600010-49.5	5/8” DIA. CRS ROD X 49 1/2” LG.
13	2	PC600336	GUIDE RAIL
14	1	C622924-1	ADJUSTABLE BLANK GUIDE
15	1	B622844	SPACER BLOCK
16	1	C622981G-1	RETAINING BRUSH MOUNTING ANGLE
17	1	C622601B-1	RETAINING BRUSH
	2	203354	WIPER BRUSH
18	1	C170390PG	LOCKING CASTING
19	1	202669	RATCHET HANDLE
20	1	202668	HANDKNOB
21	1	PA600011-50.375	1 1/4” DIA. CRS ROD X 50 3/8” LG.
22	3	C622579A	IDLER SPROCKET
	3	204373-20	2040B24 SPROCKET X 1 1/4” DIA. BORE
	3	202204	1 1/4” DIA. COLLAR
23	1	C622925-1	FIXED SIDE BLANK GUIDE
24	1	D622926-1G	FIXED SIDE CHANNEL
25	1	B622692	BLANK FEED PHOTOCELL MOUNT
26	1	C622927-1	BOTTOM FINGER CHANNEL
27	1	A621311G	NUT PLATE
28	1	C622928G	BOTTOM FINGER MOUNT
29	1	201816	HANDKNOB
30	1	A622966	BOTTOM FINGER
31	1	B622583AG	SPROCKET BACKSTOP FINGER
32	1	B622584A	SPROCKET BACKSTOP SHAFT
33	1	202186	3/8” DIA. COLLAR
34	1	202822	L. H. SPRING
35	1	200623	3/8” DIA. FLANGE BUSHING
36	1	D622380	HOPPER DRIVE SHAFT
37 *	1	C622547B-1G	BLANK HOLDER
38 *	2	B622548G	BLANK HOLDER MOUNT
39	1	204262	2040 CHAIN X 116” LG.
40	2	PF-40	3/8 NPT TO 3/8 PRESS LOCK ELBOW
41*	2	400962A	3/8 FLOW CONTROL

* THESE PARTS ARE NOT SHOWN ON PRINT



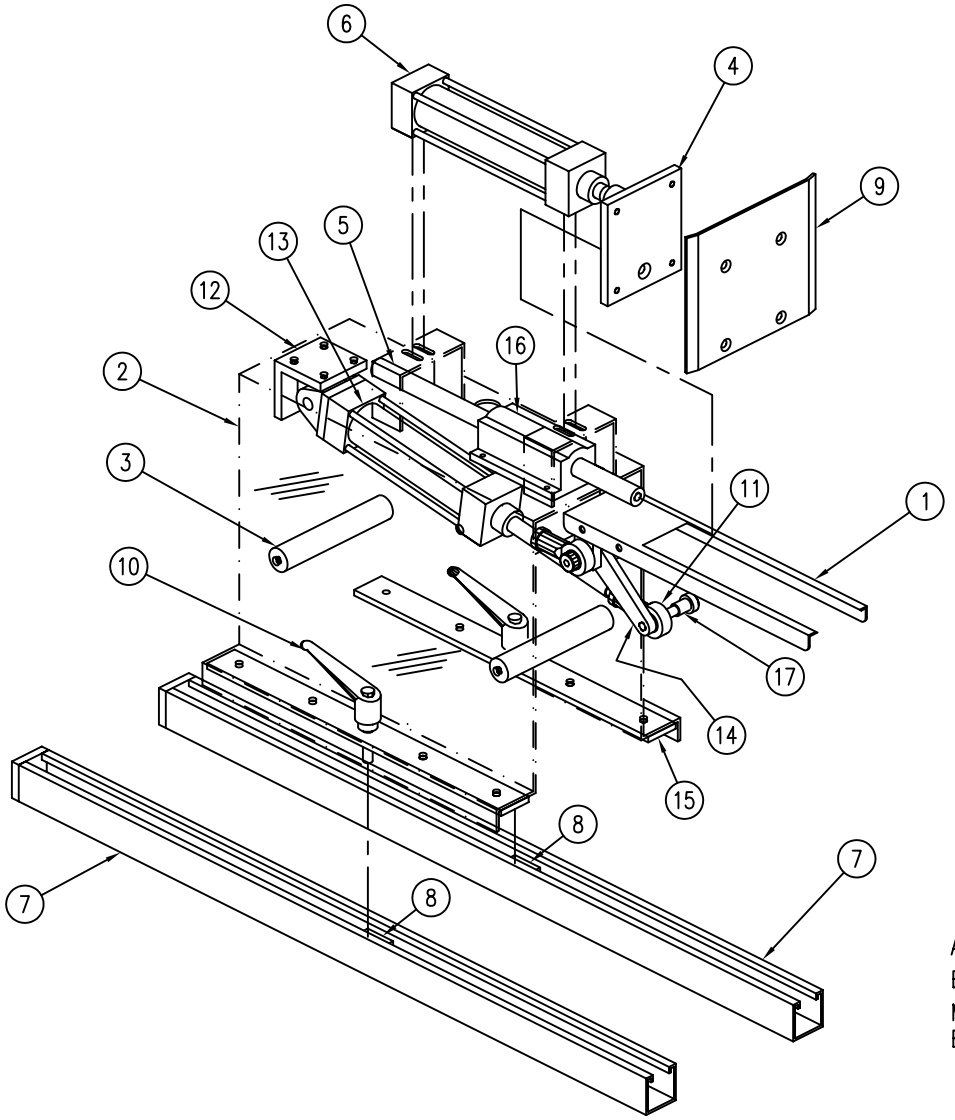
TOP FINGER ASSEMBLY

DRAWING NO.

C622276

ASSEMBLY NO.: C622276
ASSEMBLY NAME: TOP FINGER ASSEMBLY
MACHINE TYPE: CASEFORM 40

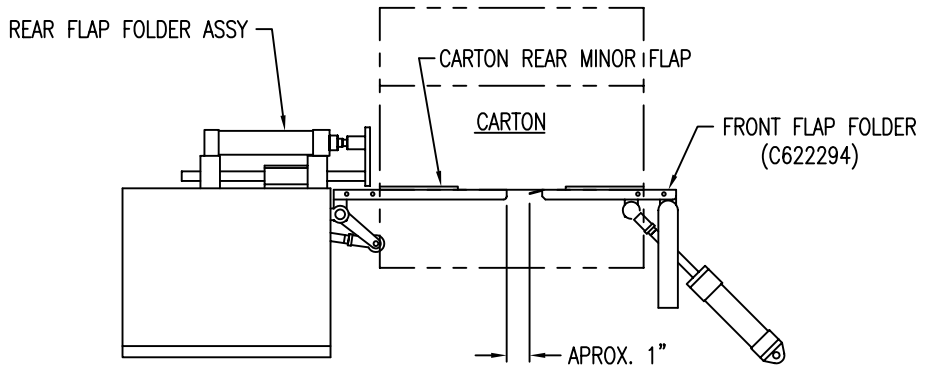
ITEM	QTY	PART NO.	DESCRIPTION
1	2	202669	RATCHET HANDLE
2	1	B621501-1	INDEX BAR
3	1	A621311G	NUT PLATE
4	1	B621407PG	UNDERLOCK CASTING
5	1	PA600053	1/4” DIA. CRS ROD X 8” LG.
6	1	B622402BG	TOP FINGER ASSEMBLY MOUNT
7	1	HS606A	1/4-20 SET SCREW X 1/2” LG.
N/S	1	202201	3/4” DIA. FULL SPLIT COLLAR



NOTE:
BASIC FORMULA TO CALCULATE LENGTH OF FLAP FOLDERS.

LENGTH OF REAR FLAP FOLDER WILL BE 1/2 THE LENGTH OF THE CASE + 4".

LENGTH OF FRONT FLAP FOLDER WILL BE 1/2 THE LENGTH OF THE CASE + 2 1/2".



ALTERATE METHOD:

EACH FLAP FOLDER WILL HANDLE A RANGE OF SIZES.

MAKE SURE THE REAR MINOR FLAP OF THE CARTON IS ON THE FRONT FLAP FOLDER, BEFORE IT LEAVES THE REAR FLAP FOLDER.

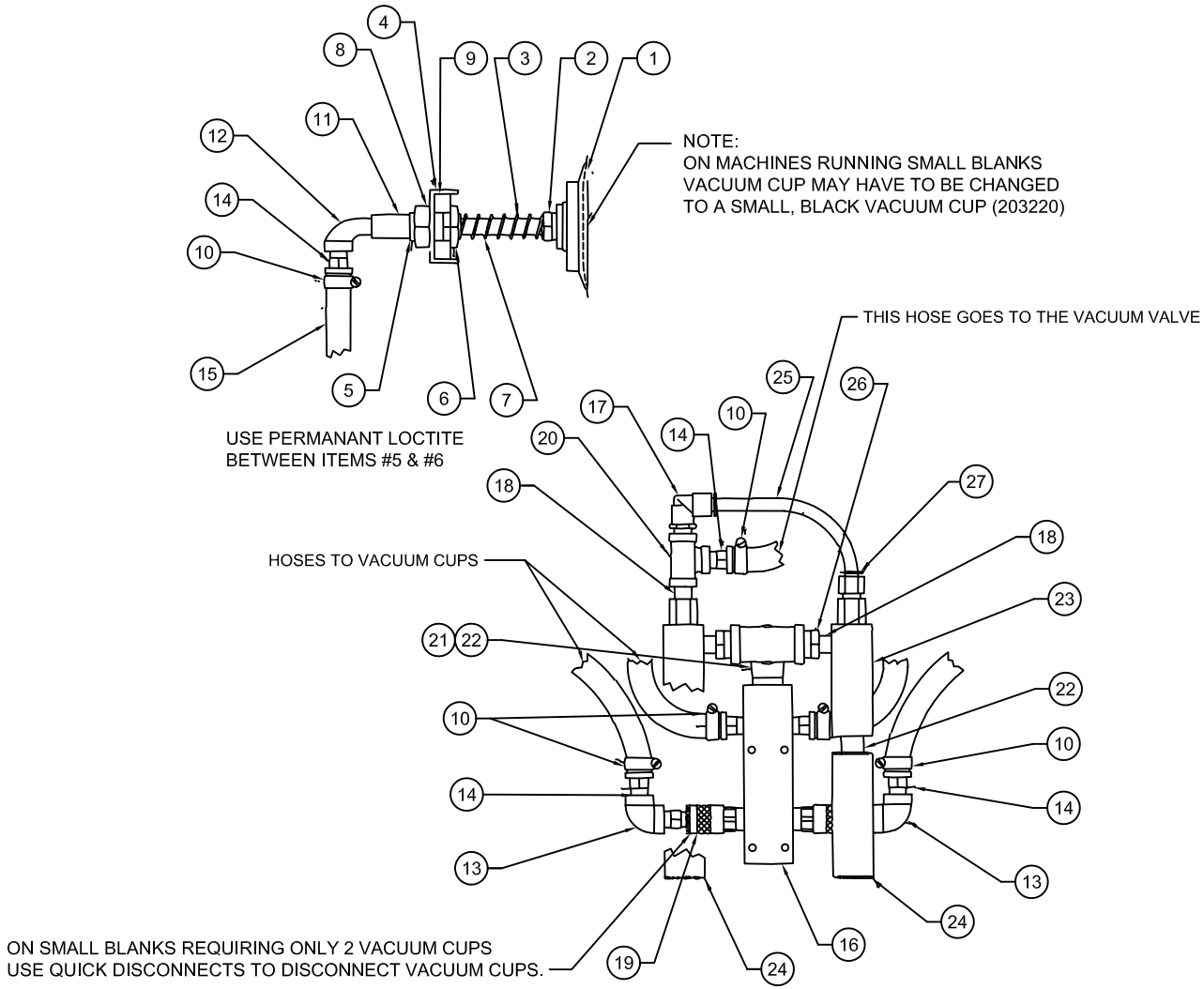
REAR FLAP FOLDER ASSEBMLY

DRAWING NO.

C622264-3

ASSEMBLY NO.: C622264-3
ASSEMBLY NAME: REAR FLAP FOLDER ASSEMBLY
MACHINE TYPE: CASEFORM 40

ITEM	QTY	PART NO.	DESCRIPTION
1	1	PB600008	REAR FLAP FOLDER
2	1	D622315BG	REAR FLAP ASSEMBLY MOUNT
3	2	B622345AG	FLAP FOLDER SPACER
4	1	C622417BG	PUSHER PLATE MOUNT
5	1	STD-002-14.125	3/4” DIA. GUIDE ROD X 14 1/8” LG.
6	1	402317C	CASE PUSHER A/C (1 1/2 X 6” STK.)
7	2	C622343CG	CASE PUSHER MOUNTING CHANNEL
8	1	A621311G	CASE PUSHER NUT PLATE
9	1	C622385A	PUSHER PLATE
10	2	202669	RATCHET HANDLER
11	3	200045	ROD END BEARING
12	1	B621281AG	EYE BRACKET MOUNT
13	1	402309C	REAR FLAP FOLDER A/C (1 1/2 X 5” STK.)
14	1	C622346BG	REAR FLAP FOLDER MOUNT
15	2	C622344B	REAR FLAP FOLDER SLIDING STRIP
16	1	203223	3/4” DIA. PILLOW BLOCK BEARING
17	3	40-009	1/2” DIA. SHOULDER BOLT X 5/8” LG.
18	2	402537A	REED SWITCH
N/S	4	400962A	3/8 FLOW CONTROL
N/S	3	PF-40	3/8 NPT TO 3/8 PRESS LOCK ELBOW
N/S	1	PF-39	3/8 NPT TO 3/8 PRESS LOCK
N/S	4	PF-32	3/8 NPT CLOSE NIPPLE
N/S	2	PF-30	3/8 NPT 2 ½ NIPPLE



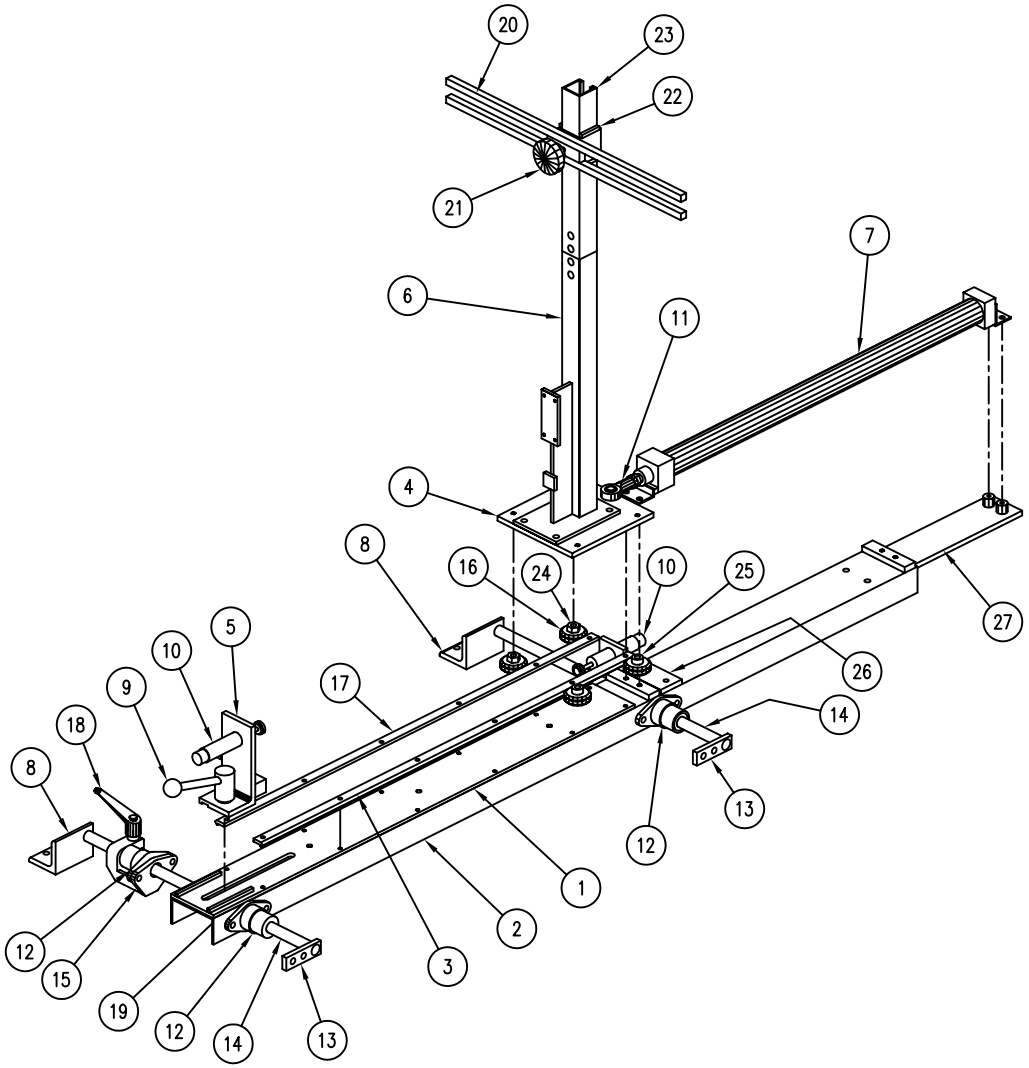
VACUUM CUP ASSEMBLY

DRAWING NO.

C622710-1

ASSEMBLY NO.: C622710-1
ASSEMBLY NAME: VACUUM CUP ASSEMBLY
MACHINE TYPE: CASEFORM 40

ITEM	QTY	PART NO.	DESCRIPTION
1	4	203220A	VACUUM CUP (BLUE)
2	4	PF-4	1/2 NPT MALE TO 1/4 NPT FEMALE REDUCER
3	4	201863	SPRING
4	4	A621484	TIE CUP PLATE
5	4	A621688	THREADED INSERT
6	4	A621486	MODIFIED NUT
7	4	PF-24	1/4 NPT NIPPLE X 5” LG.
8	4	40-010	7/8-9 JAM NUT
9	REF.	C621376A	VACUUM CUP BAR
10	10	H149A	HOSE CLAMP
11	4	PF-8	1/4 NPT COUPLING
12	4	PF-10	1/4 NPT 90 DEGREE STREET ELBOW
13	2	PF-6	1/4 NPT 90 DEGREE ELBOW
14	10	PF-16	1/4 NPT TO 3/8 HOSE BARB
15	A/R	H801-6	3/8 VACUUM AIR HOSE
16	1	B621730	MANIFOLD
17	1	PF-18	1/4 NPT 90 DEGREE CONNECTOR
18	3	PF-32	1/4 CLOSE NIPPLE
19	2	PF-21	QUICK DISCONNECT
20	1	PF-11	1/4 NPT TEE
21	1	PF-2	1/2 NPT 90 DEGREE ELBOW FITTING
22	3	PF-1	1/2 NPT CLOSE NIPPLE
23	REF.	402010	VACUUM TRANSDUCER
24	REF.	402018	VACUUM MUFFLER
25	A/R	40-012	1/4 AIR HOSE
26	2	PF-5	1/2 NPT TO 3/8 NPT REDUCER
27	1	PF-17	1/4 NPT CONNECTOR TO 3/8 PRESS LOCK
N/S	1	PF-9	1/4 NPT PLUG
N/S	1	PF-3	1/2 TEE (FEMALE)



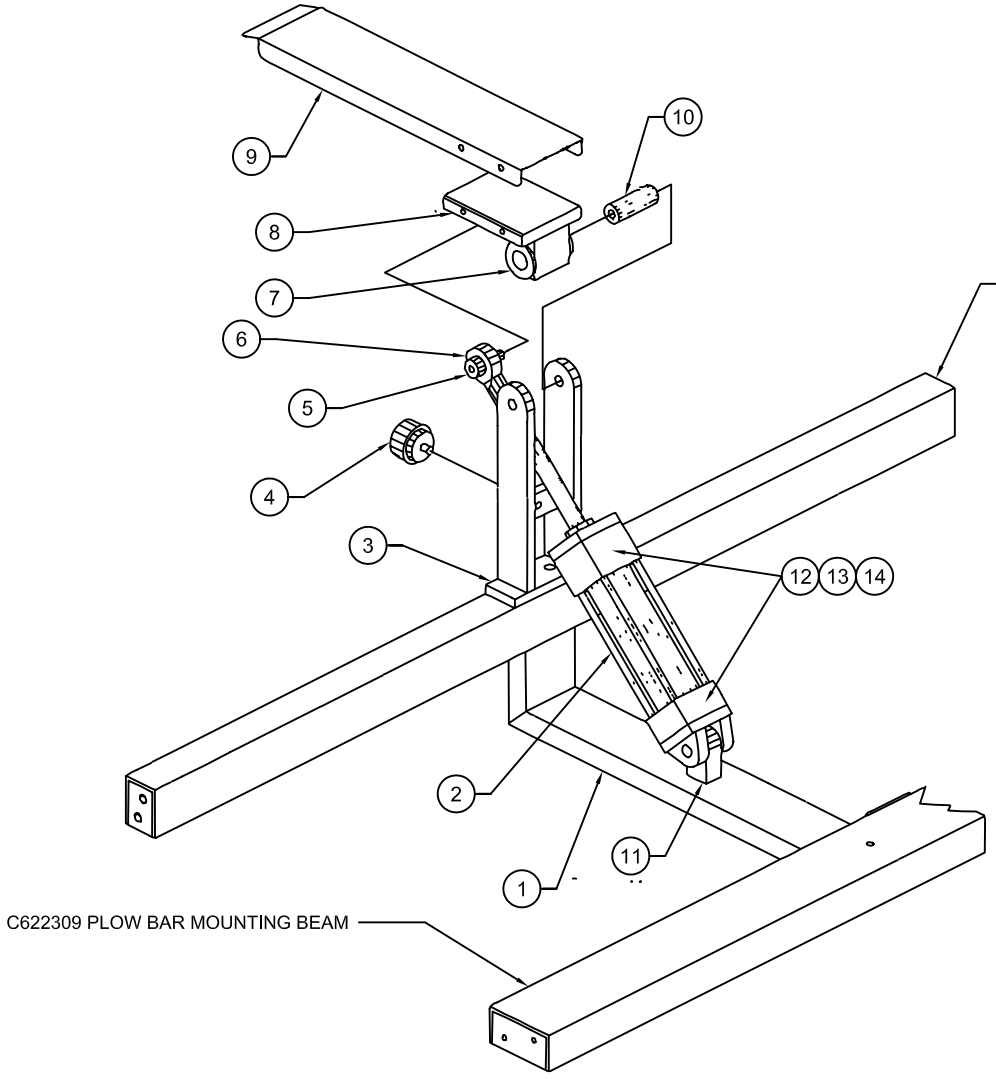
VACUUM TROLLEY ASSEMBLY

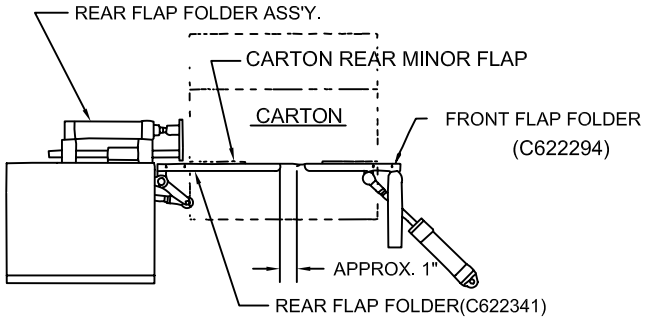
DRAWING NO.

C622268-3

ASSEMBLY NO.: C622268-3
ASSEMBLY NAME: VACUUM TROLLEY ASSEMBLY
MACHINE TYPE: CASEFORM 40

ITEM	QTY	PART NO.	DESCRIPTION
1	1	D622324BG	VEE TRACK PLATE
2	1	D622325CG	TROLLEY U-CHANNEL
3	2	C622400	VEE TRACK
4	1	C622395BG	VEE WHEEL PLATE
5	1	C622396BG	STOP BRACKET
6	1	C622397CG	VACUUM POST
7	1	402310C	AIR CYLINDER 1 1/2” DIA. X 23” STROKE
8	2	C622398BG	TROLLEY MOUNTING ANGLE
9	1	203491	FEMALE RATCHET HANDLE
10	2	401118	SHOCK ABSORBER
11	1	200045	ROD END BEARING
12	4	STD043	3/4” DIA. BEARING ASSEMBLY
	4	B171237P	FLANGE HOUSING CASTING
	4	202610	3/4” DIA. BALL BEARING
	8	40-013	3/4” SNAP RING (INSIDE)
13	2	C622399AG	TROLLEY SHAFT MOUNT
14	2	STD003-21	3/4” DIA. GUIDE ROD X 21” LG.
15	1	B623062	TROLLEY SHAFT MOUNT
16	4	204225	#3 VEE WHEEL
17			
18	1	202669	RATCHET HANDLE
19	1	40-014	1/2” DIA. CARRIAGE BOLT X 1” LG.
20	2	C621376A	VACUUM CUP BAR
21	2	201816	KNOB
22	2	B621377B	VACUUM BAR SPACER
23	1	B621339-2G	VACUUM EXTENSION POST
24	2	204226	#3 ADJUSTABLE BUSHING
25	2	204227	#3 STATIONARY BUSHING
26	1	C622493AG	SHOCK ABSORBER MOUNT
27	2	400962A	3/8 FLOW CONTROL
28	1	402316	3/8 NPT TO 3/8 PRESS LOCK
29	1	PF-40	3/8 NPT TO 3/8 PRESS LOCK ELBOW
30			
31	2	PF-32	3/8 NPT CLOSE NIPPLE
32	1	402316A	VACUUM VALVE SOLENOID
33	1	402537A	REED SWITCH
N/S	1	PF-18	1/4 NPT TO 3/8 PRESS LOCK ELBOW
N/S	1	PF-17	1/4 NPT TO 3/8 PRESS LOCK
N/S	1	PF-6	1/4 ELBOW
N/S	1	PF-16	1/4 NPT TO 3/8 BARBED
N/S	1	PROX-1	TROLLEY EXTENDED





ALTERNATE METHOD:
EACH FLAP FOLDER WILL HANDLE A RANGE OF SIZES.
MAKE SURE THE REAR MINOR FLAP OF THE CARTON IS ON THE FRONT FLAP FOLDER, BEFORE IT LEAVES THE REAR FLAP FOLDER.

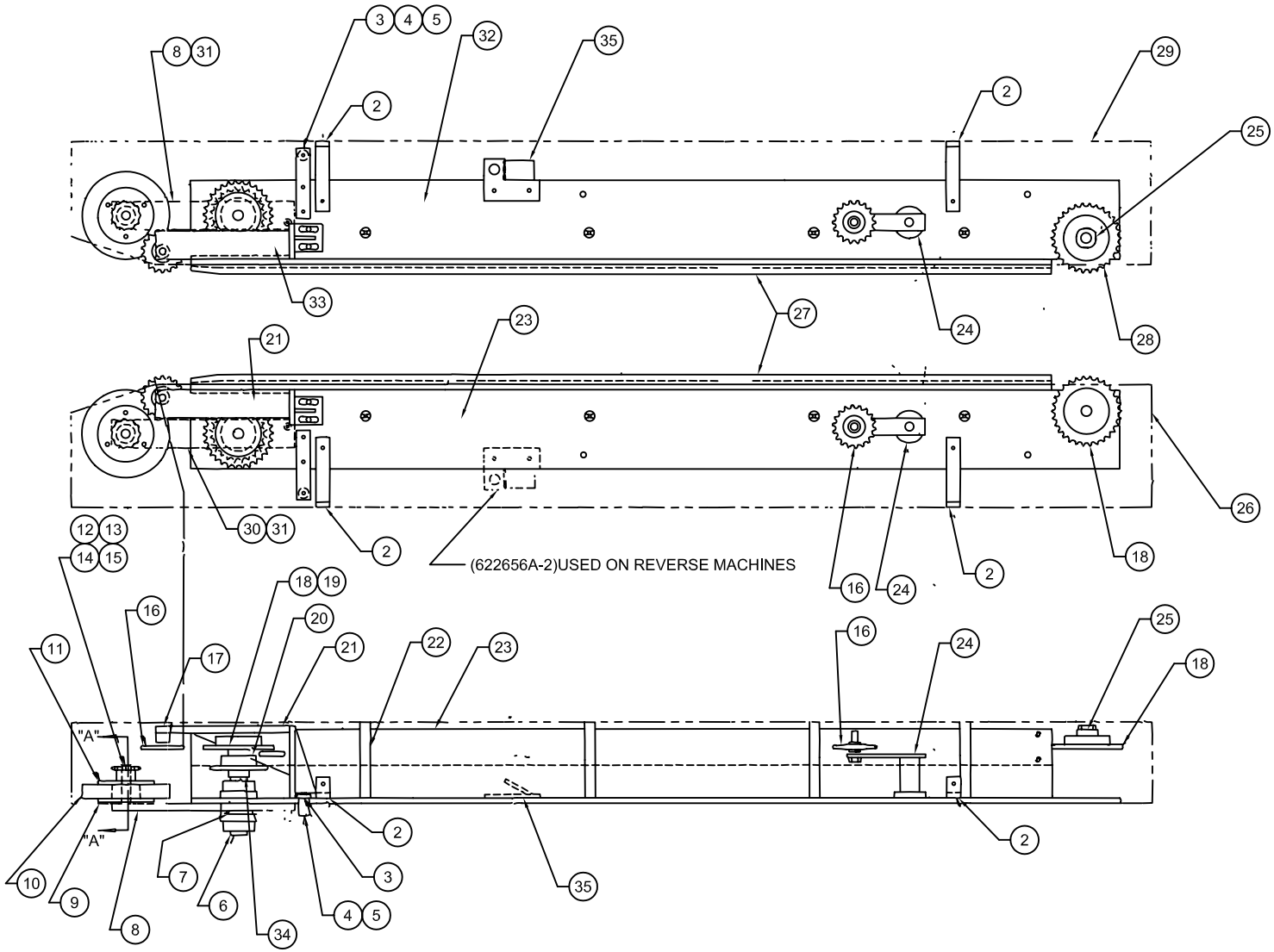
FRONT FLAP FOLDER ASSEMBLY

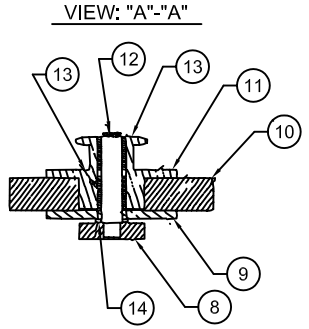
DRAWING NO.

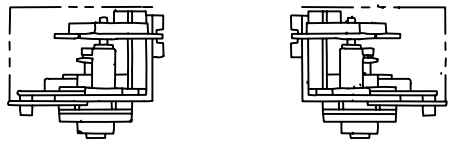
C622911-3

ASSEMBLY NO.: C622911-3
ASSEMBLY NAME: FRONT FLAP FOLDER ASSEMBLY
MACHINE TYPE: CASEFORM 40

ITEM	QTY	PART NO.	DESCRIPTION
1	1	PC600228	FLAP FOLDER CYLINDER MOUNT
2	1	402447C	AIR CYLINDER 1 1/2” DIA. X 4” STROKE
3	1	PC600227	FRONT FLAP FOLDER PIVOT
4	1	200287	BUMPER (GRAY)
5	1	204130	1/2” DIA. SHOULDER BOLT X 5/8” LG.
6	1	200045	ROD END BEARING
7	2	200241	FLANGE BUSHING
8	1	C622912G	FRONT FLAP FOLDER MOUNT
9	1	C622294	FRONT FLAP FOLDER
10	1	B622929	FRONT FLAP FOLDER SHAFT
11	1	B623060	CYLINDER MOUNTING POST
12	2	400962A	3/8 FLOW CONTROL
N/S	2	PF-32	3/8 NPT CLOSE NIPPLE
N/S	2	PF-40	3/8 NPT TO 3/8 PRESS LOCK ELBOW







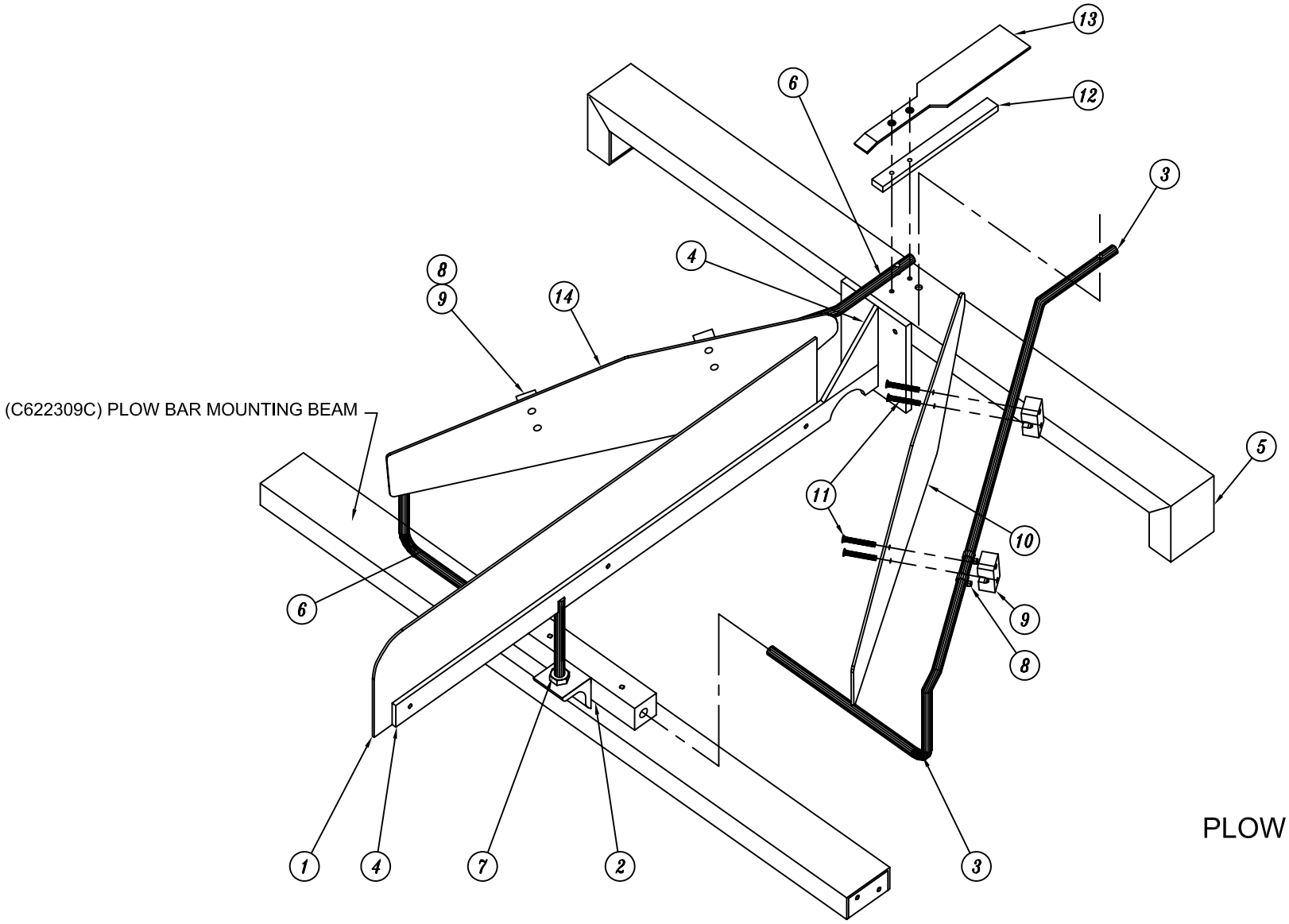
FEED ROLLER DRIVE ASSEMBLY

DRAWING NO.

C622261C

ASSEMBLY NO.: C622261C
ASSEMBLY NAME: FEED ROLLER DRIVE ASSEMBLY
MACHINE TYPE: CASEFORM 40

ITEM	QTY	PART NO.	DESCRIPTION
1			
2	4	A621811	GUARD ATTACHMENT
3	2	A621776	SPRING MOUNT
4	4	203169	SPRING
5	2	B621838	SPRING MOUNTING BRACKET
6	4	200844	3/4” DIA. FLANGE BEARING
7	2	C621856	BEARING MOUNT
8	1	B622533B	WHEEL MOUNTING PLATE
9	2	B622651A	WHEEL CLAMPING PLATE
10	2	A180584-P	RUBBER WHEEL
11	2	C622589AG	WHEEL SPROCKET PLATE
12	2	A621861	WHEEL SHAFT
13	4	204297	5/8” ID NEEDLE BEARING X 1” LG.
14	4	203214	5/8” ID BORE THRUST WASHER
15	2	40-015	5/8” DIA. SNAP RING (OUTSIDE)
16	4	204292	40A18 IDLER SPROCKET
17	2	STD032-10	SPACER X 5/8” LG.
18	3	204298-12	40B30 SPROCKET X 3/4” DIA. BORE
19	2	A621774	WHEEL DRIVE SHAFT
20	2	200104-12	40B24 SPROCKET X 3/4” DIA. BORE
21	1	C622485B-1	TOP SPROCKET MOUNT
22	8	B622486A	GUARD SPACER
23	1	D622483C-1	DRIVE ANGLE
24	2	204133	CHAIN TENSIONER
25	1	204355	TRANTORQUE
26	1	D622342C-1G	DRIVE CHAIN GUARD
27	2	D622360C	CHAIN RETAINER
28	1	A621786	TRANTORQUE SPROCKET
	1	204298	40B30 SPROCKET
29	1	D622342C-2	DRIVE CHAIN GUARD
30	1	B622533B	WHEEL MOUNTING PLATE
31	2	203341	3/4” DIA. BALL BEARING
32	1	D622483C-2	DRIVE ANGLE
33	1	C622485B-2	TOP SPROCKET MOUNT
34	4	202201	3/4” DIA. COLLAR
35	1	C622656A-1G	PHOTOCELL MOUNT
36	2	B622798	COMPRESSION BLOCK
N/S	1	303526	PHOTOELECTRIC SENSOR



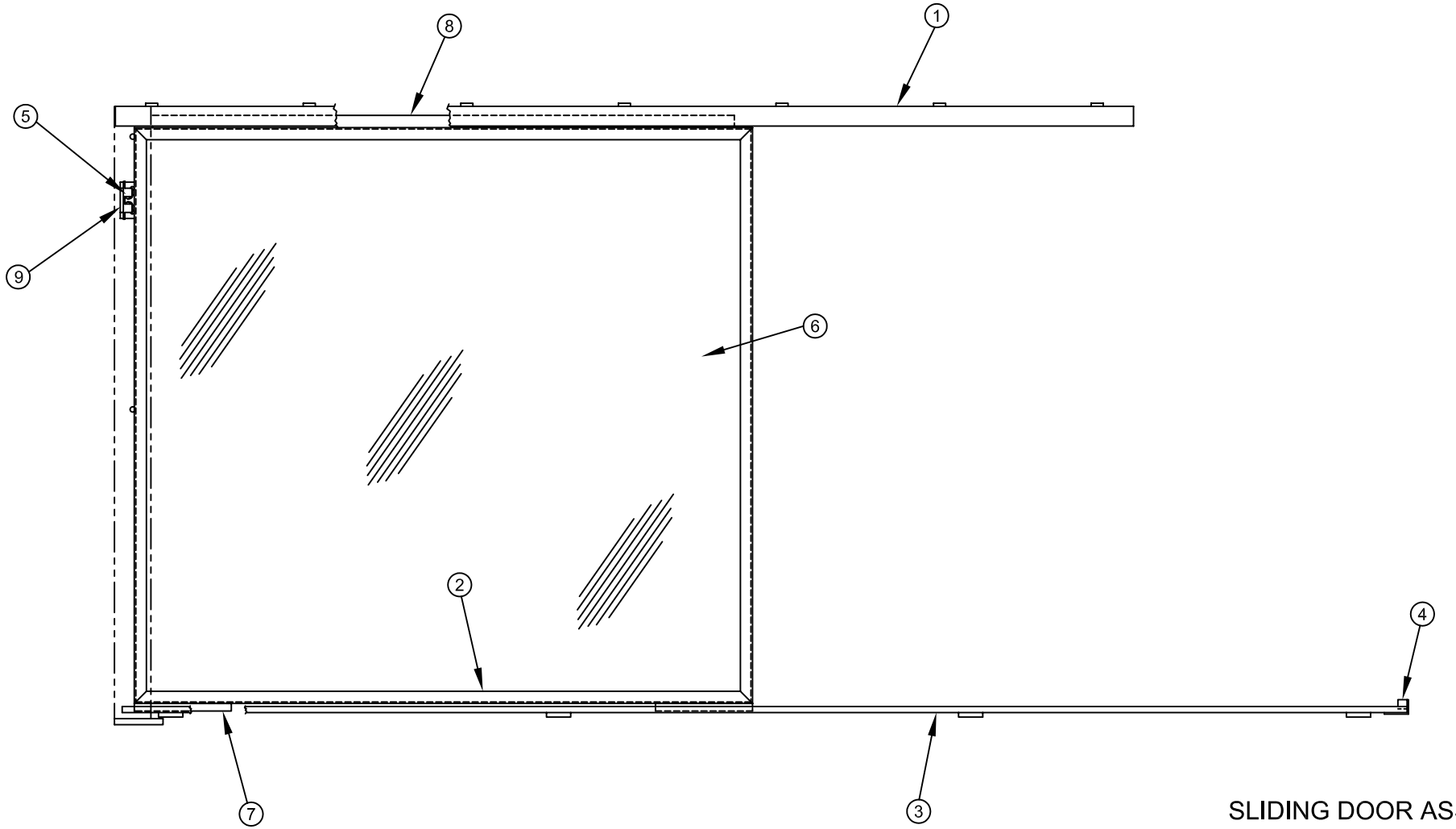
PLOW BAR ASSEMBLY

DRAWING NO.

C622265-1

ASSEMBLY NO.: C622265-1
ASSEMBLY NAME: PLOW BAR ASSEMBLY
MACHINE TYPE: CASEFORM 40

ITEM	QTY	PART NO.	DESCRIPTION
1	1	C622374B	CENTER GUIDE PLATE
2	1	C622376AG	PLOW BAR MOUNTING BLOCK
3	1	204660	PLOW BAR (LEFT)
4	1	D622375BG	CENTER GUIDE PLATE MOUNT
5	1	D622340BG	PLOW BAR TOP MOUNTING BEAM
6	1	204661	PLOW BAR (RIGHT)
7	2	40-016	1/2-13 FLANGE NUT
8	4	H149A	HOSE CLAMP
9	4	B622732	PREFOLD PIVOT BLOCK
10	1	C622731-1	MAJOR FLAP PREFOLD PLATE (RIGHT SIDE)
11	8	HS548A	10-32 FLAT HEAD SCREW
12	1	B622734G	MAJOR FLAP HOLDER PLATE SPACER
13	1	C622733	MAJOR FLAP HOLDER PLATE
14	1	C622731-2	MAJOR FLAP PREFOLD PLATE (LEFT SIDE)
15	8	40-017	10-32 NYLOCK NUTS



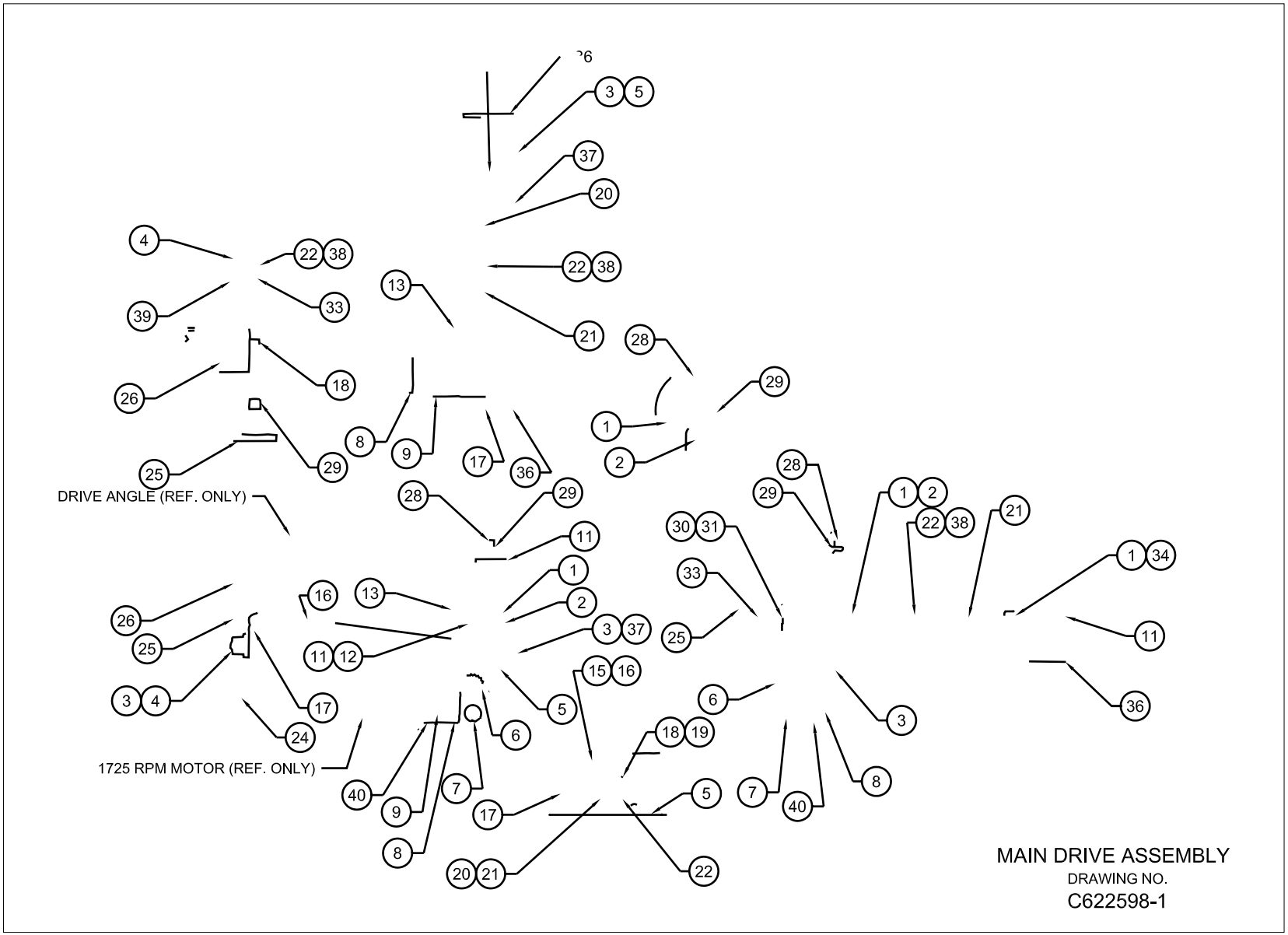
SLIDING DOOR ASSEMBLY

DRAWING NO.

D622280C

ASSEMBLY NO.: D622280C
ASSEMBLY NAME: SLIDING DOOR ASSEMBLY
MACHINE TYPE: CASEFORM 40

ITEM	QTY	PART NO.	DESCRIPTION
1	1	D622287C	DOOR TOP GUIDE
2	1	D622288C	DOOR
3	1	D622286C	DOOR BOTTOM GUIDE
4	1	B621646	DOOR STOP
5	1	204238	DOOR LOCK
6	1	PA600033	1/8 PLEXIGLAS 47 1/4 X 50 3/4 LG.
7	2	B621644	DOOR BOTTOM RUNNER
8	1	B621643	DOOR TOP GUIDE
9	1	B622603A	DOOR LOCK MOUNT
N/S	1	HC-1004	HANDLE
N/S	1	PM947	“LITTLE DAVID” LABEL
N/S	1	PA6000102	BUCKING PLATE - HANDLE


DRIVE ANGLE (REF. ONLY)
1725 RPM MOTOR (REF. ONLY)
MAIN DRIVE ASSEMBLY
DRAWING NO.
C622598-1

ASSEMBLY NO.: C622598-1
ASSEMBLY NAME: MAIN DRIVE ASSEMBLY
MACHINE TYPE: CASEFORM 40

ITEM	QTY	PART NO.	DESCRIPTION
1	2	C622593BG	TOLOMATIC MOUNTING BRACKET
2	1	204707-R	R. H. TOLOMATIC GEAR DRIVE
3	4	203470	1” DIA. PILLOW BLOCK
4	1	B622368A	SUPPORT SHAFT
5	2	C622597B	PILLOW BLOCK MOUNT
6	1	204292	40A18 IDLER SPROCKET
7	1	204133G	CHAIN TENSIONER
8	1	204662	20:1 GEAR REDUCER
9	1	200076-12	40B17 SPROCKET X 3/4” DIA. BORE
10	4	200844G	FLANGE BUSHING 3/4” DIA.
11	1	B622356A	DRIVE SHAFT HORIZONTAL
12	2	D622596AG	DRIVE ANGLE FRONT MOUNT
13	2	204694-16	35B15 SPROCKET X 1” DIA. BORE
14	1	200433	#35 CHAIN - 68” LG.
15	4	LD3SB2-2025	ALIGN LUBE BEARING 1” DIA.
16	2	PB600115	LH NUT PLATE
17	2	PB600116	RH NUT PLATE
18	2	PB600103	DRIVE ADJUSTING SLAVE SHAFT
19	1	C622369BG	SHAFT CENTER SUPPORT
20	1	LD3SB2-2024-5	HANDWHEEL X 1” BORE
21	2	D622367BG	ADJUSTING MOUNT
22	2	B622354B	DRIVE SHAFT VERTICAL 14 1/16” LG.
**	2	PB600061	DRIVE SHAFT VERTICAL 16 1/16” LG.
23	4	202201	3/4” DIA. COLLAR
24	1	203174-12	40B23 SPROCKET X 3/4” DIA. BORE
25	1	201765	#40 CHAIN 30 1/2” LG.
26	1	PB600104	DRIVE SHAFT - ADJUSTING
27	1	204708-L	LH TOLOMATIC GEAR DRIVE
28	2	C622399AG	TROLLEY SHAFT MOUNT
29	1	B622599A	SUPPORT SHAFT

RAISED DRIVE OPTION.

N/S	4	C622652	DRIVE RAISING POST

** SPECIAL LENGTH USED WHEN USING RAISED LUG.

ASSEMBLY NO.: C622274C
ASSEMBLY NAME: CHAIN ASSEMBLY
MACHINE TYPE: CASEFORM 40

ITEM	QTY	PART NO.	DESCRIPTION
1	2	B621727-1	PUSHER LUG
2	2	B621727-2	PUSHER LUG
3	2	B622410-1	PUSHER PLATE
4	2	B622410-2	PUSHER PLATE
5	4	A621728	CHAIN SPACER
6	4	204143	CONNECTING LINK
7	4	40-021	6-32 CAP SCREW X 1” LG.
8	4	40-022	6-32 NYLOCK NUT
9	4	201765	#40 CHAIN X 72” LG.
10	8	40-023	10-24 FLAT HEAD SCREW X 1/2” LG.

ASSEMBLY NO.: C622930
ASSEMBLY NAME: TAPE CARTRIDGE ASSEMBLY
MACHINE TYPE: CASEFORM 40

ITEM	QTY	PART NO.	DESCRIPTION
1	1	C622909-1	TAPE CARTRIDGE SIDE PLATE
2	1	C622909-2	TAPE CARTRIDGE SIDE PLATE
3	2	B622714	MODIFIED CAP SCREW
4	2	40-007	1/2-13 THREADED ROD X 6 1/2" LG.
5	6	HN216	1/2-13 NUT
6	2	40-024	1/2-13 NYLOCK NUT
7**	1	PA600015	3/4" OD X 1/2" ID STL. TBG X 3 5/16" LG.
8	1	C622708	COMPRESSION BRUSH
9*	1	.CAC50	2 " TAPE CARTRIDGE
10***	1	C622910G	LOW TAPE ALARM
N/S	1	PB600016	3/4" OD X 1/2" ID STL. TUBING X 4 5/16 LG.

FOR 3" TAPE CARTRIDGE OPTION
*REPLACE WITH .CAC51 3" TAPE CARTRIDGE
**THIS ITEM WILL BECOME 4 5/16" LG. (ITEM 11)
***LOW TAPE OPTION ONLY

ASSEMBLY NO.: C622263
ASSEMBLY NAME: TOP PLATE ASSEMBLY
MACHINE TYPE: CASEFORM 40

ITEM	QTY	PART NO.	DESCRIPTION
1	1	D622322C	TOP PLATE
2	1	C170390-P	LOCKING ELEVATOR MOUNT
3	1	C170477-P	NON-LOCKING ELEVATOR MOUNT
4	1	PB600010-66	5/8” DIA. CRS ROD X 66” LG.
5	1	202759	HANDWHEEL
6	1	202669	RATCHET HANDLE
7	1	202203	1” DIA. FULL SPLIT COLLAR
8	1	STD013-25	ELEVATOR RACK X 25” LG.
9	2	202766-10	SPUR GEAR X 5/8” DIA. BORE
10	1	204134	TENSIONER
11	1	C622626	BLANK HOLD-UP ANGLE
	1	40-003	CHROME HANDLE
12			
13	1	40-026	SCALE (3” TO 26-5/8”)
14	1	C622896	SCALE ELEVATOR GEAR RACK X 25” LG.
15	1	40-025	1/4-20 EYEBOLT
16	REF.	C622726	TOP PLATE SPRING ASSEMBLY

ASSEMBLY NO.: C622820-1
ASSEMBLY NAME: FRAME ASSEMBLY
MACHINE TYPE: CASEFORM 40

ITEM		QTY	PART NO.	DESCRIPTION
1		1	D622328CG	REAR LEG
2		1	D622319CG	MAIN FRAME REAR PANEL
3		1	C622314CG	FRAME REAR TOP BEAM
4		1	D622330CG	FRAME REAR BOTTOM BEAM
5		1	D622321DG	MAIN FRAME TOP BEAM
6		2	C622320CG	FRAME MIDDLE UPRIGHT BEAM
7		1	C622306-1G	TOP PLATE MOUNTING BEAM
8		1	C622306-2G	TOP PLATE MOUNTING BEAM
9		2	C622323CG	FRAME MAIN LEG ANGLES
10		REF.		ELECTRICAL PANEL
11				
12		1	D622636CG	HOPPER SIDE MAIN PANEL
13		1	D622308CG	FRONT PANEL
14		1	C622639BG	FRONT PANEL COVER
15	*	REF.	40-011	3/4-10 JAM NUT
16	*	REF.	40-001	3/4-10 BOLT X 2” LG.
17		1	C622307CG	MOTOR MOUNTING BEAM
18				
19		1	C622338BG	MOTOR MOUNT CROSS BEAM
20		1	D622340G	PLOW BAR TOP MOUNTING BEAM
21		1	D622637CG	DRIVE SIDE MAIN PANEL
22		1	C622640AG	DRIVE SPROCKET GUARD
23		1	C622309CG	PLOW BAR MOUNTING BEAM
24	*	REF.	40-002	3/4-10 ALL THREAD BOLT X 4” LG.
25		1	C622291CG	FRONT FLAP FOLDER CROSS BEAM
26		1	PC600229	FRAME PIVOT MOUNTING BEAM
27		1	D622331BG	CASE PUSHER ASSEMBLY MOUNTING BEAM
28		2	C622334CG	FRAME TROLLEY MOUNTING BEAM
29		REF.	C622343CG	CASE PUSHER MOUNTING CHANNEL
30		1	D622531DG	MAIN FRAME TOP BEAM
31		1	D622931G	SUPPORT FRAME

***** THESE PARTS MAY BE REPLACED WITH OPTIONAL ITEMS.

ASSEMBLY NO.: C622277
ASSEMBLY NAME: FORMING GUIDE ASSEMBLY
MACHINE TYPE: CASEFORM 40

ITEM	QTY	PART NO.	DESCRIPTION
1	1	C622641AG	FORMING GUIDE MOUNT
2	1	PA600017	1” DIA. CRS ROD X 10 1/2” LG.
3	1	C621638G	MOUNTING CHANNEL
4	1	203693	ROLLER
5	1	B621301PG	MOUNT