

LITTLE DAVID

OWNERS MANUAL



CF5/C

THE LOVESHAW CORPORATION
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UNIT 9, BRUNEL GATE
W. PORTWAY INDUSTRIAL ESTATE
ANDOVER, HAMPSHIRE SP103SL
ENGLAND
44-264-3575-11

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GENERAL SAFETY PRECAUTIONS

BEFORE INSTALLING, OPERATING, OR SERVICING THIS EQUIPMENT, READ THE FOLLOWING PRECAUTIONS CAREFULLY:

1. THIS MACHINE IS EQUIPPED WITH MOVING PARTS. DO NOT PLACE HANDS IN THE MACHINE WHEN PARTS ARE MOVING.
2. DO NOT BYPASS ANY DESIGNED-IN SAFETY FEATURES SUCH AS INTERLOCKS, GUARDS OR SHIELDS.
3. DO NOT PLACE HANDS OR BODY INSIDE CONFINES OF MACHINE WHILE IT IS RUNNING.
4. SAFETY GLASSES SHOULD BE WORN WHEN WORKING ON OR AROUND MACHINE.

MACHINE SPECIFICATIONS

MACHINE MODEL:	CF5	
<u>INFEEED/OUTFEED HEIGHT:</u>	MINIMUM: 22 1/4"	MAXIMUM: 30 1/4"
<u>BOX CAPACITY:</u>	MINIMUM:	MAXIMUM:
LENGTH:	8" (203 mm)	26 1/2" (672 mm)
WIDTH:	6" (152 mm)	20" (508mm)
HEIGHT:	3.5" (89 mm)	unlimited
MACHINE SPEED:	UP TO 15 BOXES PER/MIN., DEPENDING ON BOX SIZE AND OPERATOR'S DEXTERITY.	
<u>MACHINE SIZE:</u>		
LENGTH:	37.5" (953 mm)	
WIDTH:	26" (660 mm)	
HEIGHT:	22" (559 mm)	
AIR REQUIREMENTS:	3 SCFM @ 40 - 50 PSI	

CF5 FEATURES:

- * ERECTS BOXES WITHOUT USING ANVIL PLATE
- * ERECTED BOXES ARE POSITIONED ON ROLLER BED FOR EASY TRANSFER TO CASE SEALER
- * THREE POINT SAFETY SWITCH ACTUATION PROTECTS AGAINST ACCIDENTAL STARTING
- * ONE MINUTE BOX SIZE CHANGE-OVER
- * FLAP FOLDING SYSTEM POWER FOLDS ALL BOTTOM FLAPS
- * MAJOR FLAPS, KEEP BOTTOM FLAPS OF BOX ALIGNED FOR HASSLE FREE FOLDING
- * MECHANICAL BOX HOLD DOWN, KEEPS BOX IN PLACE FOR HANDS FREE BOX LOADING
- * CAN BE EASILY INCORPORATED WITH ANY CASE SEALER IN THE INDUSTRY
- * STAINLESS STEEL COVERS
- * CORROSION RESISTANT CONSTRUCTION
- * WELDED FRAME
- * POWDER COAT FINISH
- * SLIDE AND LOCK LEGS
- * ARTICULATING SIDE ROLLER DESIGN FOR EASE OF LOADING
- * PROGRAMMABLE LOGIC CONTROL SEQUENCE

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. UNPACK MACHINE AND REMOVE ANY MATERIALS USED TO PROTECT COMPONENTS DURING SHIPPING.

IF MACHINE IS PLACED DIRECTLY ON FLOOR, FRAME BASE MUST BE LEVEL TO ENSURE PERSONAL SAFETY, PREVENT UNDO STRESS TO THE FRAME, AND MAXIMUM PERFORMANCE.

THE CF5 IS INTENDED TO OPERATE IN A HORIZONTAL POSITION. DO NOT ATTEMPT TO TILT THE CF5 TOWARD THE OPERATOR, THIS WILL CAUSE EXCESSIVE WEAR ON THE BOX WIDTH ADJUSTMENT ASSEMBLY AND MAY CAUSE IT TO JAM OR EVEN DAMAGE THE WIDTH ADJUSTMENT SCREW.

THE CF5 SHOULD BE SECURELY MOUNTED IN-LINE WITH ADJOINING EQUIPMENT TO PREVENT IT FROM MOVING AS IT OPERATES.

AIR SUPPLY MAY COME FROM EITHER A SEPARATE SOURCE OR BY TAPPING OFF THE SUPPLY OF AN ADJOINING CASE SEALER. THE AIR SUPPLY TO THE MACHINE SHOULD BE CLEAN AND DRY, AS THE FILTER IS ONLY MEANT TO REMOVE MINOR PARTICLES OR SLIGHT AMOUNTS OF MOISTURE IN THE AIR LINE. DIRT OR MOISTURE CAN CAUSE THE ERRATIC OPERATION OF CONTROL VALVES.

AIR SHOULD BE SET AT 50 PSI, WITH A MINIMUM OF 40 PSI AND A MAXIMUM OF 60 PSI.

MACHINE ADJUSTMENTS

CAUTION:

BEFORE MAKING ANY CHANGES OR ADJUSTMENTS, SWITCH OFF OR DISCONNECT ELECTRICAL AND AIR SUPPLY TO THE MACHINE (*). FOLLOW OSHA LOCK OUT / TAG OUT PROCEDURE.

MACHINE SET UP:

SET-UP FOR THE CF5 CONSISTS OF THREE SEPARATE ADJUSTMENTS:

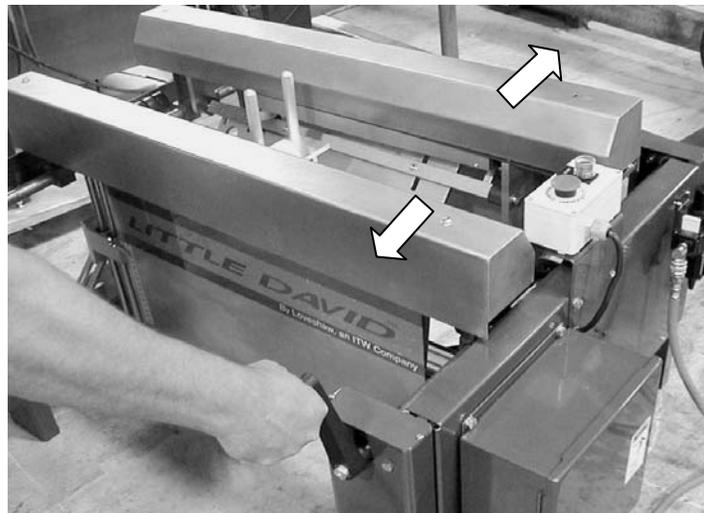
- BOX WIDTH (*)
- BOX LENGTH
- POSITION OF MAJOR FLAP FOLDER PLATES (**)

(*) THIS ADJUSTMENT REQUIRES MACHINE TO BE TURNED ON.

(**) AFTER INITIAL SET-UP, THIS ADJUSTMENT IS REQUIRED ONLY WHEN THERE IS A LARGE DIFFERENCE IN BOX SIZE.

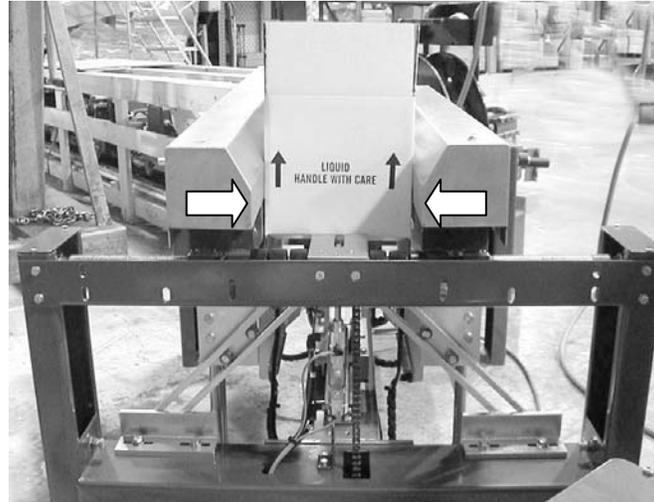
BOX WIDTH (1):

1. ATTACH THE HAND CRANK (SUPPLIED WITH THE MACHINE) ON THE SQUARE SHAFT THAT EXTENDS FROM EITHER SIDE OF THE FRAME. OPEN THE FRAME WIDER THAN THE BOX.



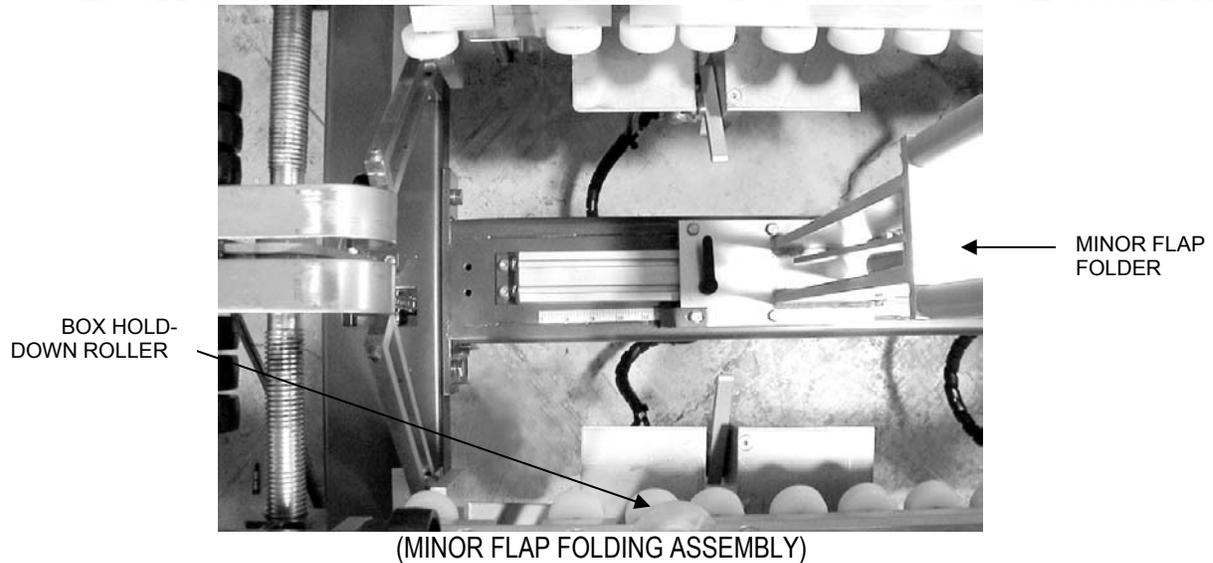
2. TURN MACHINE ON. THIS MOVES ROLLER PLATES AND ROLLERS OUT OF THE WAY SO OPERATOR CAN MAKE AN EASY AND PROPER ADJUSTMENT.
3. OPEN A BLANK BOX AND INSERT IT INTO THE MACHINE.

4. USING THE HAND CRANK, TURN WIDTH ADJUSTMENT UNTIL THE BOX HOLD-DOWN ROLLERS ARE LIGHTLY GRIPPING THE SIDES OF THE BOX. IT SHOULD BE EASY TO INSERT THE BOX WITHOUT FORCE.



BOX LENGTH (2):

1. REMOVE BOX. LOOSEN THE CLAMP AT THE BASE OF THE FRONT MINOR FLAP FOLDING ASSEMBLY.



2. REINSERT BOX INTO THE MACHINE AND POSITION IT 1/2" BACK FROM THE MINOR FLAP FOLDER AT THE EXIT END OF THE MACHINE. PUSH THE MINOR FLAP FOLDER FORWARD UNTIL IT JUST CONTACTS THE BACK OF THE BOX. REMOVE THE BOX AND TIGHTEN THE MINOR FLAP FOLDER CLAMP.



MAJOR FLAP FOLDER PLATES (3):

THERE ARE TWO MAJOR FOLDER PLATES ON EACH SIDE OF THE MACHINE, ONE SMALLER AND ONE LARGER THAT ARE ADJUSTED INDIVIDUALLY.

THE MAJOR FLAP FOLDING PLATES AND WHEELS MAY BE EXTENDED TO PROVIDE ADDITIONAL SUPPORT FOR WIDE HEAVY BOXES OR RETRACTED FOR NARROW BOXES.

CAUTION:

DO NOT SET MAJOR FLAP FOLDING PLATES IN THE EXTENDED POSITION WHILE RUNNING VERY NARROW BOXES. THIS WILL CAUSE THE MAJOR FLAP FOLDING WHEELS TO CONTACT THE MINOR FLAP FOLDING ASSEMBLY AND WEDGE AGAINST THE BOTTOM CONTROL/FLAP OPENER BRACKET. IF FORCED, EITHER OF THESE CONDITIONS CAN DAMAGE MACHINE COMPONENTS.

1. ON EACH SIDE, LOOSEN THE FOUR SOCKET HEAD CAP SCREWS THAT HOLD THE FOLDER PLATES IN PLACE. SLIDE THE FRONT (LARGER) MAJOR FOLDER PLATE TO DESIRED POSITION AND RETIGHTEN THE SCREWS. REPEAT PROCEDURE FOR THE REAR (SMALLER) FOLDER PLATE.

FRONT (LARGER)
MAJOR FOLDER
PLATE

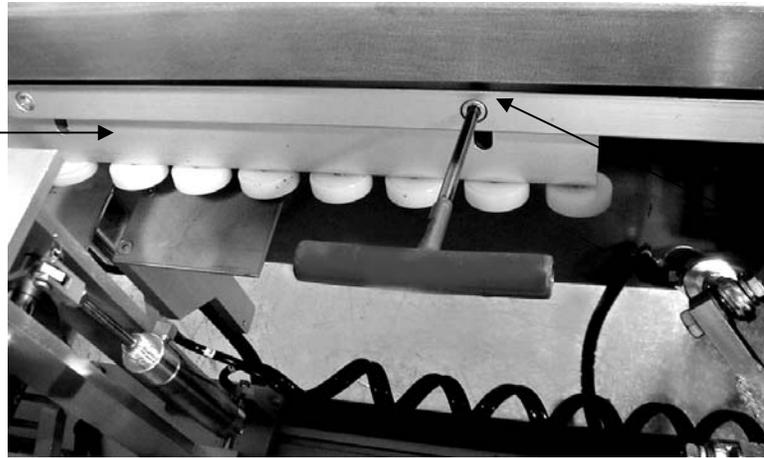


PLATE ADJUSTMENT
SOC. HEAD CAP
SCREWS

CAUTION:

FOR VERY WIDE BOXES, THE SMALLER FOLDER PLATE WILL NOT BE ABLE TO BE EXTENDED AS FAR AS THE LARGER PLATE.

REAR (SMALLER)
MAJOR FOLDER
PLATE



MACHINE OPERATION

BEFORE STARTING MACHINE, DISCONNECT COMPRESSED AIR AND ELECTRICAL POWER TO THE UNIT. ACTUATE ALL MOVING PARTS BY HAND TO CHECK ADJUSTMENTS FOR ANY MECHANICAL OBSTRUCTION. RECONNECT UTILITIES AND TURN ON MACHINE. KEEP HANDS CLEAR OF MOVING PARTS.

ERECTING A BOX:

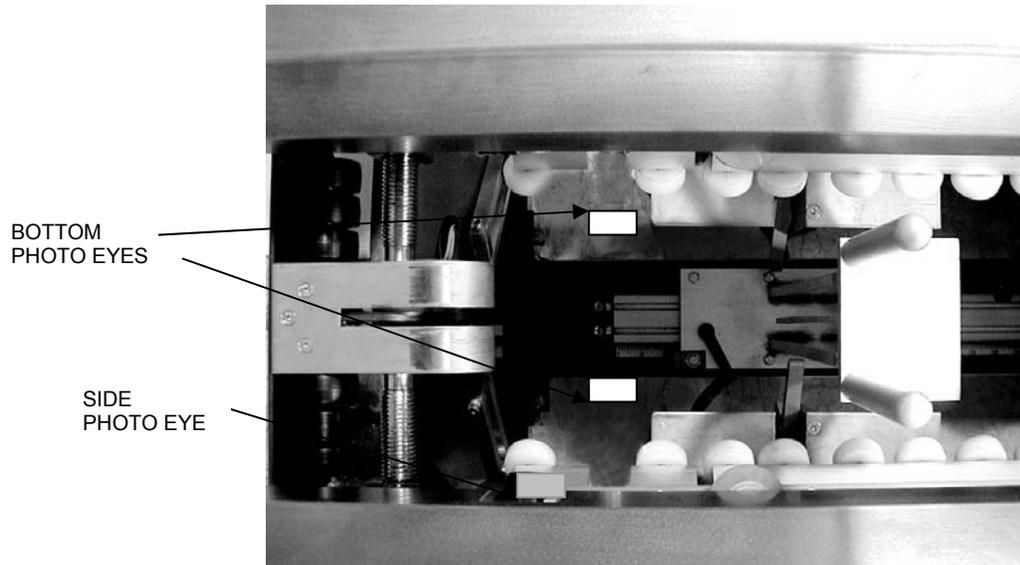
1. OPEN AND SQUARE OFF BOX.



2. PLACE BOX, BOTTOM OPEN, INTO CF5. PUSH THE BOX DOWN UNTIL IT MAKES CONTACT WITH THE TWO BOTTOM PHOTO EYES.
3. THE MACHINE WILL FOLD THE FRONT AND REAR MINOR FLAPS FIRST, AND THEN THE TWO SIDE MAJOR FLAPS. THE BOX IS HELD IN PLACE AND IS READY TO FILL, IF DESIRED.
4. WHEN THE BOX IS ERECTED (AND FILLED), PUSH IT OUT OF THE CF5 FOR THE NEXT OPERATION.
5. AS THE TRAILING END OF THE BOX BREAKS CONTACT WITH THE PHOTO EYE, THE CF5 WILL AUTOMATICALLY RESET FOR THE NEXT BOX.

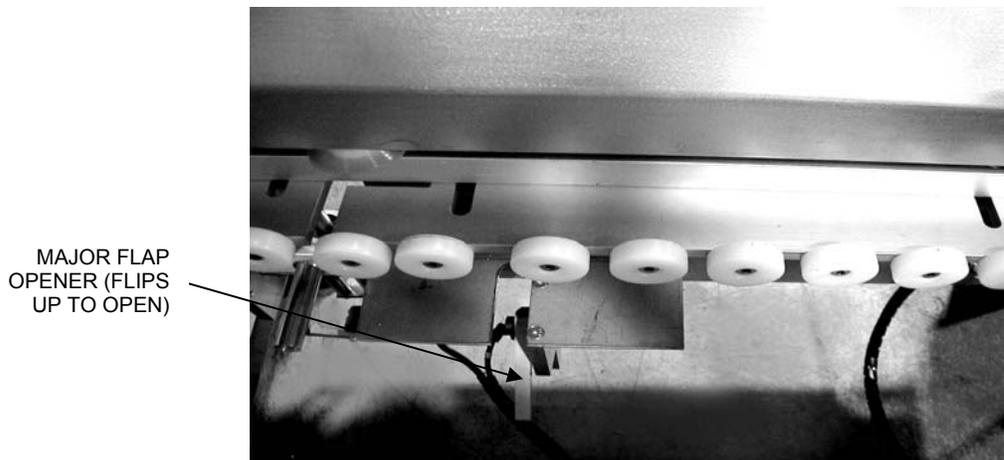
OPERATING CYCLE:

1. THERE ARE THREE PHOTO EYES THAT MUST BE ACTUATED FOR THE MACHINE CYCLE TO START. THE TWO PHOTO EYES (NOT SHOWN) ACTUATED BY THE BOTTOM EDGES OF THE MAJOR FLAPS, AND THE SIDE PHOTO EYE (NOT SHOWN) ACTUATED BY THE SIDE OF THE BOX.



(PHOTO EYE PLACEMENT)

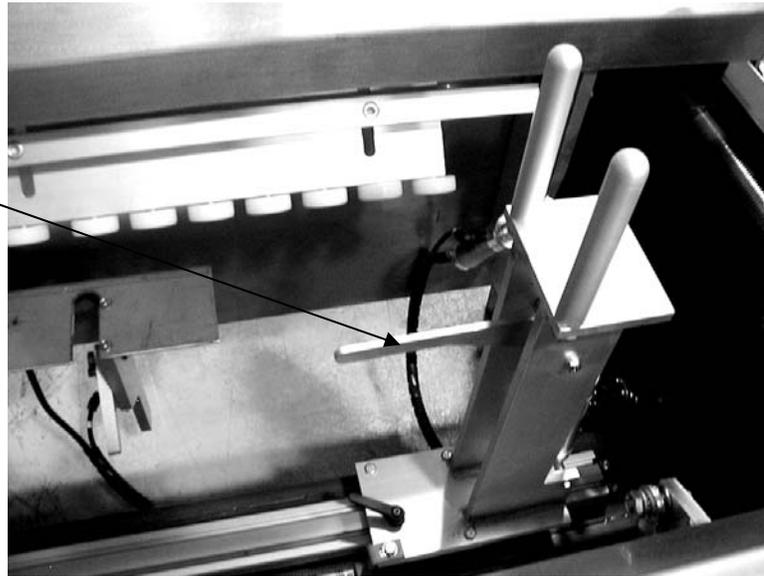
2. THE TWO SMALL LEVERS OF THE MAJOR FLAP OPENERS TEMPORARILY OPEN THE MAJOR FLAPS AS THE MINOR FLAPS ARE FOLDED.



(MAJOR FLAP OPENERS)

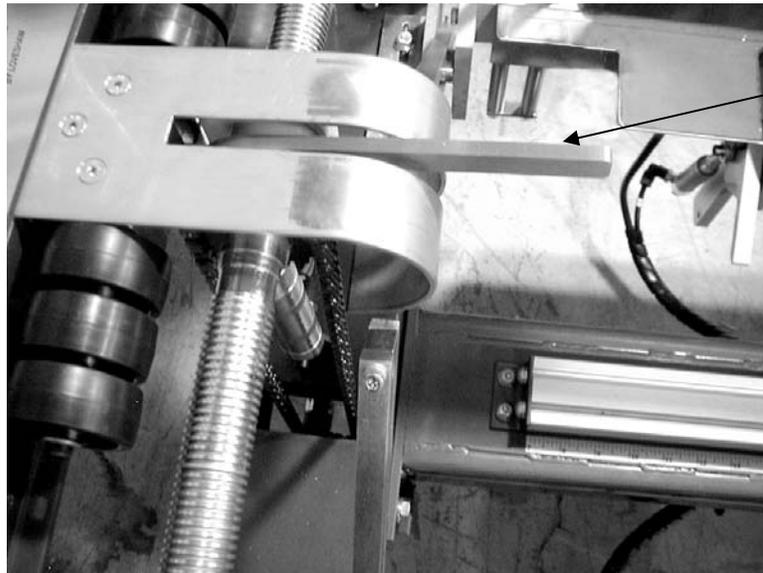
3. THE MINOR FLAP FOLDERS FOLD BOTH END FLAPS ON THE BOTTOM OF THE BOX AND THEN RETRACT.

REAR MINOR
FLAP FOLDER



(REAR MINOR FLAP FOLDER)

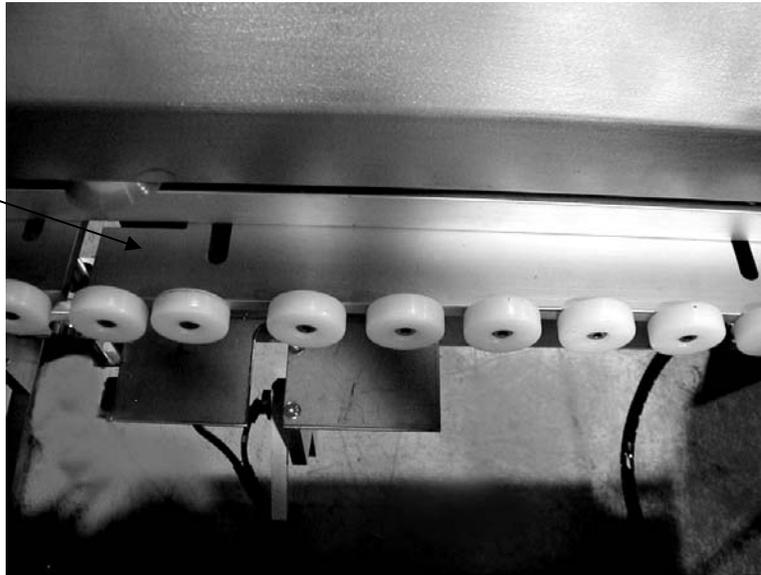
FRONT MINOR
FLAP FOLDER



(FRONT MINOR FLAP FOLDER)

4. THE MAJOR FLAP FOLDERS THEN FOLD BOTH SIDE FLAPS ON THE BOTTOM OF THE BOX AND STAY IN POSITION TO SUPPORT THE BOX FOR FILLING. THE HOLD DOWN ROLLERS THEN EXTEND OUTWARD TO HOLD THE BOX IN POSITION.

MAJOR FLAP
FOLDERS AND
WHEELS

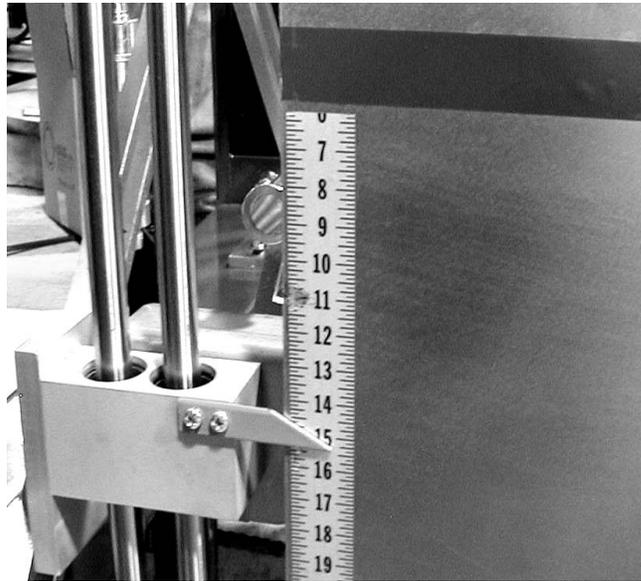


(MAJOR FLAP FOLDERS)

5. AS THE OPERATOR PUSHES THE BOX OUT OF THE MACHINE, THE WHEELED BODY SWITCH RESETS AND THE MACHINE IS READY FOR THE NEXT BOX.



(BOX LENGTH SCALE)



(BOX WIDTH SCALE)

TROUBLESHOOTING GUIDE

- A. DURING FOLDING OR FILLING CYCLE, BOX RELEASES, ALL FLAPS DROP. CONTACTS**
1. CHECK TO SEE IF WIDTH ADJUSTMENT IS CORRECT. IF IT IS TOO WIDE, THE PHOTO EYE THAT THE SIDE OF THE BOX WILL RESET AND CAUSE THE MACHINE TO RETURN TO THE START POSITION.
 2. SHAKING THE BOX TO LEVEL THE CONTENTS CAN CAUSE THE PHOTO EYE TO RESET.
- B. MAJOR FLAPS HAVE PROBLEMS FOLDING AND CAUSE INNER EDGES OF MINOR FLAPS TO BE FOLDED OVER.**
1. MAKE SURE THE MAJOR FLAP OPENERS ARE SET CORRECTLY SO THEY TEMPORARILY OPEN THE MAJOR FLAPS WIDER AND ALLOW THE MINOR FLAPS TO CLEAR THE INSIDE OF THE MAJOR FLAPS BEFORE RELEASING.
 2. CHECK THAT AIR PRESSURE IS ADEQUATE AND THAT AIR PRESSURE DOES NOT DROP DURING THE CYCLE.
- C. DURING MINOR FLAP FOLDING, BACK OR FRONT OF BOX COLLAPSES INWARD.**
1. BE SURE THAT THE BOX WIDTH SETTING DOES NOT HOLD BOX TOO TIGHTLY.
 2. CHECK THE AIR PRESSURE SETTING.
 3. CHECK THAT THE SCORING ON THE BOX IS ADEQUATE AND PROMOTES FOLDING.
- D. BOX TRANSFER FROM CF5 INTO CASE SEALER IS NOT SMOOTH.**
1. CHECK THE HEIGHT OF THE ROLLERS AT THE OUTFEED END OF THE CF5 AND THAT THE BOX CLEARS THE MACHINE FRAME.
 2. CHECK THE ALIGNMENT OF THE MACHINES TO EACH OTHER. MAKE SURE THE WORKING SURFACE (HEIGHT) OF BOTH MACHINES ARE CO-PLANAR.

WARNING:

ALTHOUGH THE CF5 CAN BE USED WITH COMPETITIVE CASE SEALER/TAPERS, LOVESHAW ASSUMES NO RESPONSIBILITY FOR SAFETY ISSUES RESULTING FROM THESE APPLICATIONS. WE DO NOT RECOMMEND USING THE CF5 IN CLOSE PROXIMITY WITH CONVENTIONAL KICKERS AND/OR THREE FLAP FOLDERS.

CAUTION:

BEFORE CONNECTING THE AIR SUPPLY TO THE MACHINE, BE SURE THAT THE MAIN ON/OFF AT THE AIR CONNECTION IS SHUT OFF AND THAT THE RED EMERGENCY STOP BUTTON IS PUSHED DOWN. FOLLOW OSHA LOCK OUT / TAG OUT PROCEDURES.

BEFORE DOING ANY MAINTENANCE OR SERVICE, BE SURE THAT THE MACHINE IS DISCONNECTED FROM THE AIR SOURCE AND ELECTRICAL POWER. THIS WILL PREVENT ACCIDENTAL MACHINE MOVEMENTS THAT COULD RESULT IN PERSONAL INJURY.

NEVER LEAVE THE MACHINE UNATTENDED WHILE THE MACHINE IS TURNED ON.

MACHINE SHOULD ONLY BE OPERATED BY QUALIFIED PERSONNEL!!!!!!

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.)

For: CASE FORMER MODEL
CF5

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:

<u>DRIVE MOTOR</u> -	1 YEAR
<u>GEAR REDUCER</u> -	1 YEAR
<u>TAPE CARTRIDGE</u> -	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.)

<u>PLC</u> -	1 YEAR
<u>ALL OTHER PARTS</u> -	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

2206 EASTON TURNPIKE, BOX 83 SOUTH CANAAN, PA 18459
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ILLUSTRATED REPLACEMENT PARTS

FRAME ASSEMBLY

FRONT MINOR FOLDER ASSEMBLY

REAR MINOR FLAP FOLDER ASSEMBLY

WIDTH ADJUSTMENT ASSEMBLY

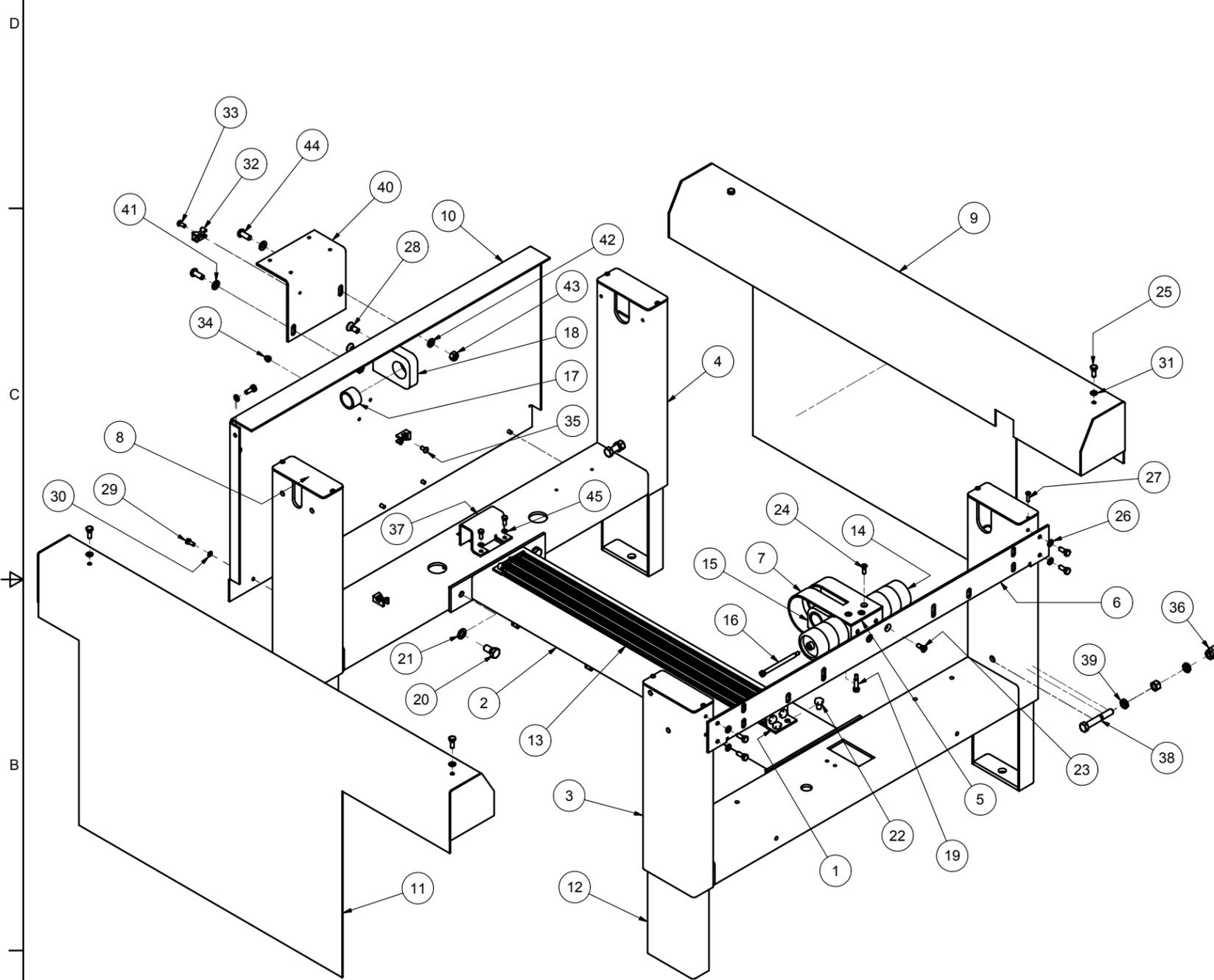
PRE FOLDER ASSEMBLY

MAJOR FLAP FOLDER ASSEMBLY

PNEUMATIC ASSEMBLY

ELECTRICAL

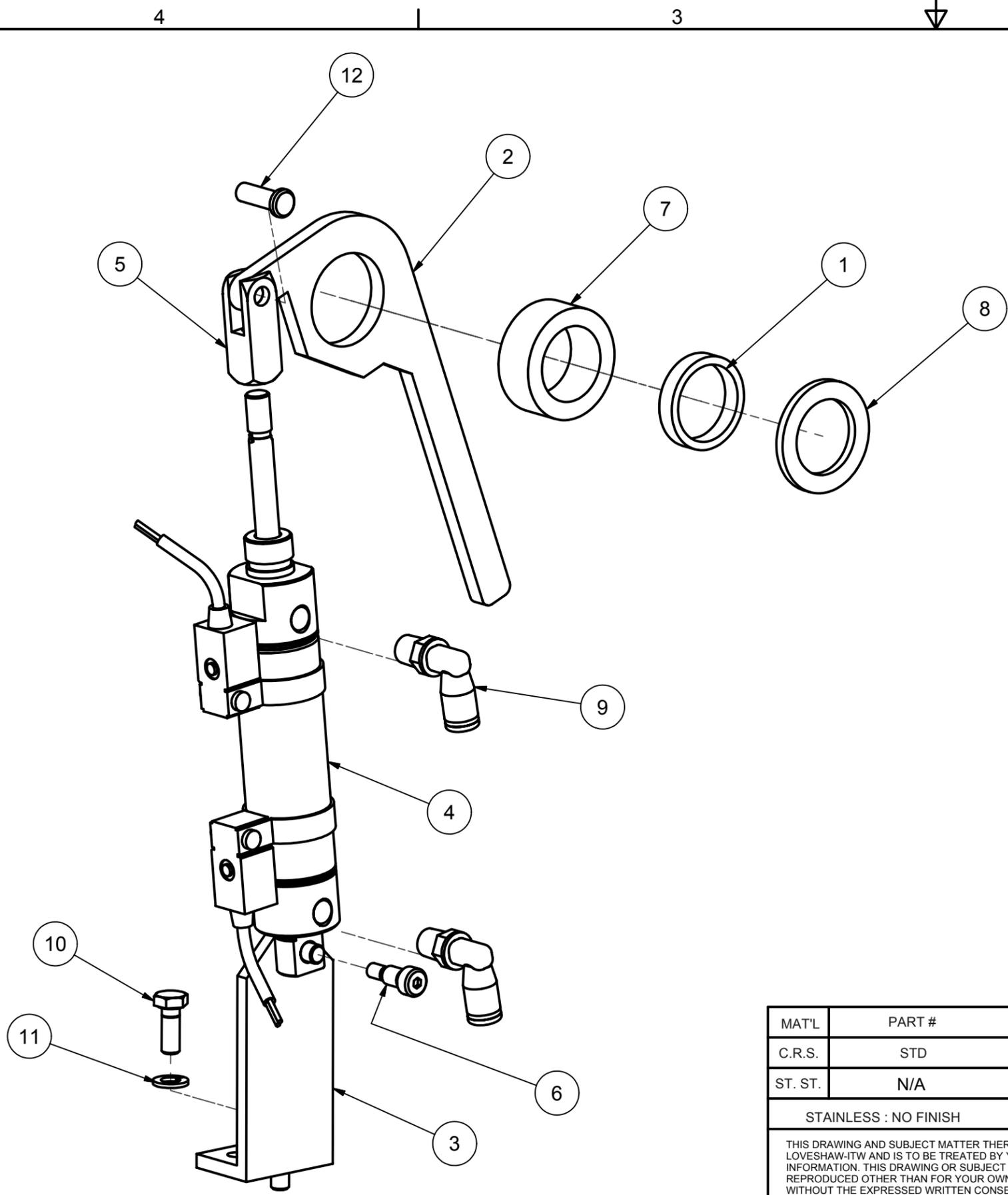
REVISION HISTORY			
REV	DESCRIPTION	DATE	BY
A	RELEASED	12/6/2005	AMYR



Parts List			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	2	PFF-0001-4	80/20 MOUNT BRACKET
2	1	PFF-0000-6	BOTTOM MAIN BEAM
3	1	PFF-0054-6	FRONT U-FRAME ASSEMBLY
4	1	PFF-0055-6	REAR U-FRAME ASSEMBLY
5	1	PFF-0033-4	SUPPORT MOUNT
6	1	PFF-0030-6	FRONT BRACE
7	1	PFF-0038-4	SKID PLATE
8	4	PFF-0039-4	CAP - TUBING
9	1	PFF-0041-6SS	GUARD RIGHT
10	1	PFF-0040-6	COVER REAR
11	1	PFF-0042-6SS	GUARD LEFT
12	4	PFF-0049-6	LEGS
13	1	PFF-0057-4	T-SLOT EXTRUSION
14	6	RL-1000	ROLLER
15	1	PFF-0035-4	LEAD SCREW SUPPORT
16	2	FSBSC300B08	SHOULDER BOLT 1/4 X 3 X #10-24, 3/8L
17	2	BSG-1063	BRONZE BUSHING
18	1	PFF-0062-4	LEAD SCREW SUPPORT
19	2	FSBSC075B08	SHOULDER BOLT, 1/4 x 3/4 LG
20	4	FHHMI020P88	HHCS M10 X 20
21	4	FLWMIP	SPRING WASHER M10
22	8	FHHMH012P10	HEX HEAD M8 X 12
23	2	FFHMG016P10	FLAT HD. CAP SCREW M6 X 16
24	3	FFHMF014P10	FLAT HEAD SCREW M5 X 14mm
25	10	FHHMG016P10	HEX HEAD SCREW M6 X 16
26	4	FLWMGP	LOCK WASHER M6
27	8	FBHME016P10	BUTTON HEAD M6-1.0 X 16
28	2	FFHMH020P10	FLAT HEAD CAP SCREW M8 X 20 LG.
29	6	FHHMF012910	HHS M5 X 12
30	4	FFWMFP	FLAT WASHER M5
31	6	FFWMGP	FLAT WASHER M6
32	9	AH203	WIRE / HOSE CRADLE
33	2	FBHMF012P10	HEX SOC. BUTT. HD. SCREW
34	1	FHDNMFP	HEX DOME NUT M5
35	1	FBHMF010P10	BUTT. HD. SCREW M5 X 10
36	4	SPH-1194	TOGGLE PAD
37	1	PFF-0069-4	HOSE GUARD
38	4	SPH-1240	HEX HEAD SCREW 3/8-16 X 2 1/2
39	8	FHJNSJP	HEX NUT 3/8-16
40	1	PFF-0088-4	E-STOP MOUNT
41	2	FFWMHP	FLAT WASHER M8
42	2	FLWMHP	LOCK WASHER M8
43	2	FHFNMHP	HEX NUT M8
44	2	FBHMH020P10	BUTT. HD. CAP SCREW M8 X 1.25 X 20
45	2	FLWMFP	LOCK WASHER M5

MATL	PART #	CAD FILE	FRAME ASSY (REVA)	AMT	TOLERANCES UNLESS OTHERWISE NOTED:	LOVESHAW an ITW Company RT. 296, SOUTH CANAAN, PA.	
C.R.S.	STD	PLOT DATE	1/25/2006			TITLE FRAME ASSEMBLY (REV A)	
ST. ST.	N/A	DRAWN DATE	12/2/2005		.X = ±.050 INCH .XX = ±.015 ANGLS ± 1/2° .XXX = ±.005	DWG NO .FRACF5 SCALE N/A MATERIAL N/A CHECKED DRAWN AMYR APPROVED	
STAINLESS : NO FINISH		DO NOT SCALE PRINT			X = ±1.0mm MACH. FINISH ✓ METRIC .XX = ±.3mm .XXX = ±.1mm		
THIS DRAWING AND SUBJECT MATTER THEREON IS THE EXCLUSIVE PROPERTY OF LOVESHAW-ITW AND IS TO BE TREATED BY YOU AS CONFIDENTIAL PROPRIETARY INFORMATION. THIS DRAWING OR SUBJECT MATTER THEREOF SHALL NOT BE REPRODUCED OTHER THAN FOR YOUR OWN USE OR TO BE DISCLOSED TO OTHER WITHOUT THE EXPRESSED WRITTEN CONSENT OF LOVESHAW-ITW AND WILL BE RETURNED TO LOVESHAW-ITW UPON REQUEST.					FRACTIONS ± 1/64		

REVISION HISTORY			
REV	DESCRIPTION	DATE	BY
A	RELEASED	5/20/2005	AMYR



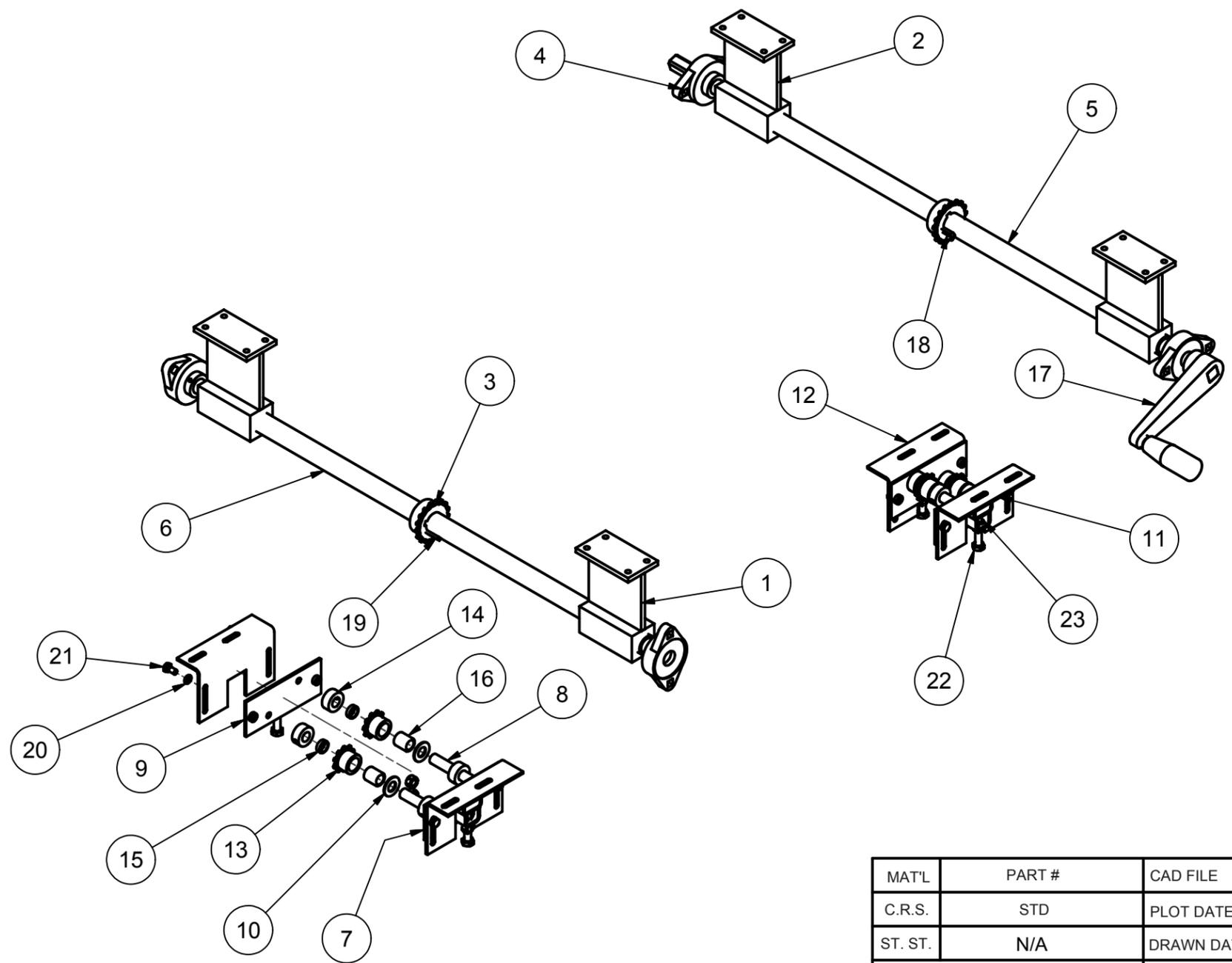
Parts List			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	BSG-1061R1-3	BUSHING, REWORK
2	1	PFF-0004-4	MINOR FOLDER, FRONT
3	1	PFF-0017-4	CYLINDER MOUNT, MINOR, FRONT
4	1	N401-217	CYLINDER
5	1	N559	CLEVIS
6	1	FSBSC038B08	SHOULDER BOLT 1/4 x 3/8, 10-24 THRD
7	1	PFF-0043-3	SPACER
8	1	PFF-0043A-3	SPACER
9	2	N400-25	FITTING
10	2	FHHMG016P10	HEX HEAD SCREW M6 X 16
11	2	FLWMGP	LOCK WASHER M6
12	1	CLP-1014	CLEVIS PIN

MAT'L	PART #	CAD FILE	FRONT MINOR FOLDER ASSY
C.R.S.	STD	PLOT DATE	5/20/2005
ST. ST.	N/A	DRAWN DATE	5/20/2005
STAINLESS : NO FINISH		DO NOT SCALE PRINT	
THIS DRAWING AND SUBJECT MATTER THEREON IS THE EXCLUSIVE PROPERTY OF LOVESHAW-ITW AND IS TO BE TREATED BY YOU AS CONFIDENTIAL PROPRIETARY INFORMATION. THIS DRAWING OR SUBJECT MATTER THEREOF SHALL NOT BE REPRODUCED OTHER THAN FOR YOUR OWN USE OR TO BE DISCLOSED TO OTHER WITHOUT THE EXPRESSED WRITTEN CONSENT OF LOVESHAW-ITW AND WILL BE RETURNED TO LOVESHAW-ITW UPON REQUEST.			

TOLERANCES UNLESS OTHERWISE NOTED:	
.X = ±.050	ANGLES ± 1/2°
INCH .XX = ±.015	
.XXX = ±.005	
.X = ±1.0mm	MACH. FINISH 125
METRIC .XX = ±.3mm	
.XXX = ±.1mm	
FRACTIONS ± 1/64	

LOVESHAW an <i>ITW</i> Company	
RT. 296, SOUTH CANAAN, PA.	
TITLE FRONT MINOR FOLDER ASSEMBLY	
DWG NO	.FMFACF5
MATERIAL	N/A
DRAWN	AMYR
SCALE	N/A
CHECKED	
APPROVED	

REVISION HISTORY			
REV	DESCRIPTION	DATE	BY
A	RELEASED	5/25/2005	AMYR



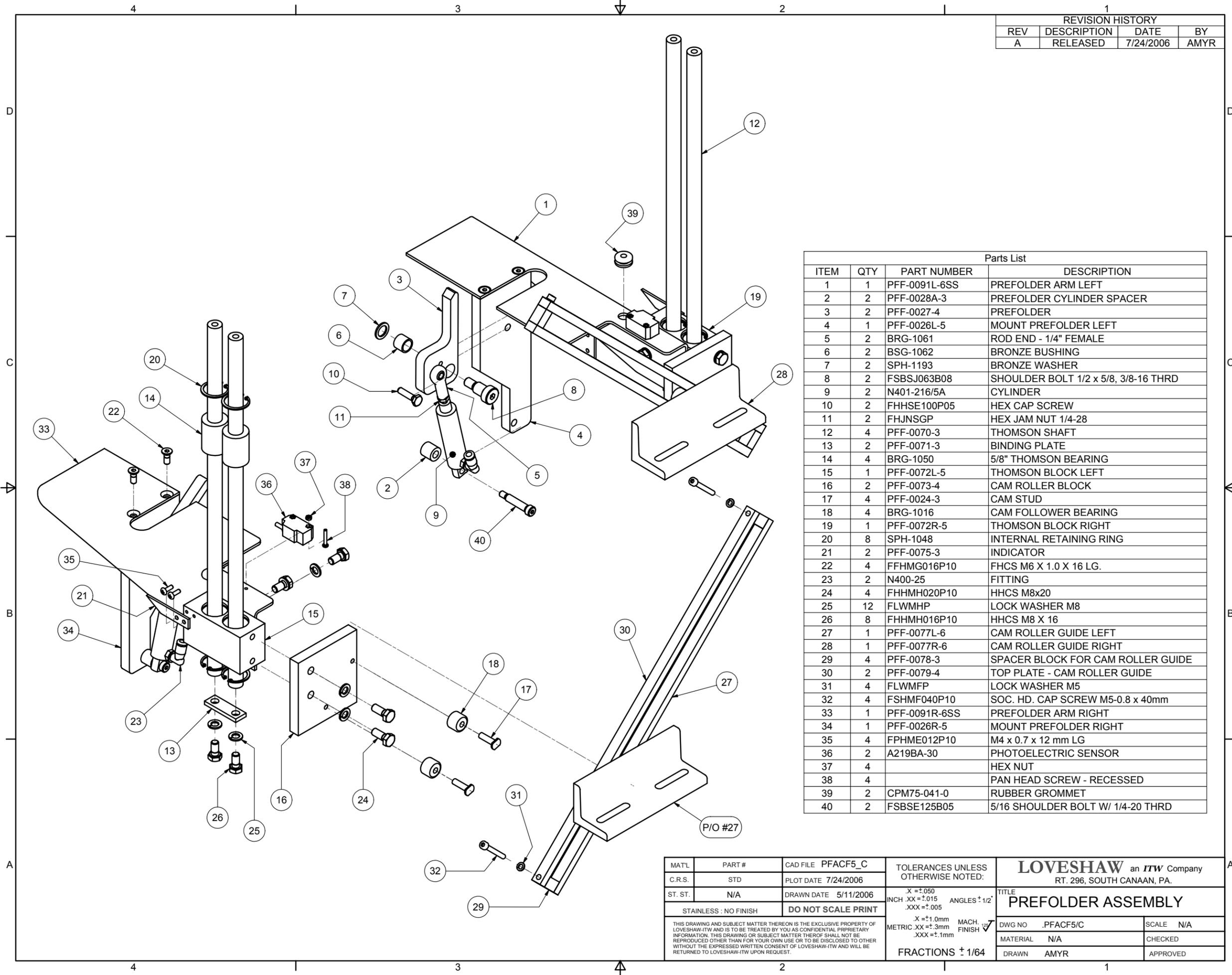
Parts List			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	2	PFF-0007A-5	LEAD NUT RIGHT
2	2	PFF-0008A-5	LEAD NUT LEFT
3	2	SPK-0092	SPROCKET
4	4	BRG-1024	MOUNTED BEARING
5	1	PFF-0034A-6	LEAD SCREW - HANDLE
6	1	PFF-0056A-6	LEAD SCREW - IDLER
7	2	PFF-0059R-4	SPROCKET MOUNT PLATE RIGHT
8	4	PFF-0060-3	SPROCKET SHAFT
9	2	PFF-0059L-4	SPROCKET MOUNT PLATE LEFT
10	4	BSG-1066	BRONZE BUSHING
11	2	PFF-0061R-4	SPROCKET ADJ. PLATE RIGHT
12	2	PFF-0061L-4	SPROCKET ADJ. PLATE LEFT
13	4	SPR-0094R1-3	SPROCKET
14	8	SC50	COLLAR
15	4	J144R1-3	BUSHING REWORK
16	4	BRG-1066	NEEDLE BEARING
17	1	HC-1023	CRANK HANDLE
18	1	KSC01.00	KEY 1/4 x 1 LG
19	1	KSC01.25	KEY 1/4 x 1.25 LG
20	8	FFWMGP	FLAT WASHER M6
21	8	FHHMG012P10	HHCS M6 X 12
22	4	FHHMH045P10	HEX HEAD M8 X 45mm LG
23	8	FHFNMHP	HEX NUT, M8

MAT'L	PART #	CAD FILE	WAACF5
C.R.S.	STD	PLOT DATE	7/1/2005
ST. ST.	N/A	DRAWN DATE	5/25/2005
STAINLESS : NO FINISH		DO NOT SCALE PRINT	
<small>THIS DRAWING AND SUBJECT MATTER THEREON IS THE EXCLUSIVE PROPERTY OF LOVESHAW-ITW AND IS TO BE TREATED BY YOU AS CONFIDENTIAL PROPRIETARY INFORMATION. THIS DRAWING OR SUBJECT MATTER THEREOF SHALL NOT BE REPRODUCED OTHER THAN FOR YOUR OWN USE OR TO BE DISCLOSED TO OTHER WITHOUT THE EXPRESSED WRITTEN CONSENT OF LOVESHAW-ITW AND WILL BE RETURNED TO LOVESHAW-ITW UPON REQUEST.</small>			

TOLERANCES UNLESS OTHERWISE NOTED:	
.X = ±.050	ANGLES ± 1/2°
INCH .XX = ±.015	
.XXX = ±.005	
.X = ±1.0mm	MACH. FINISH <input checked="" type="checkbox"/>
METRIC .XX = ±.3mm	
.XXX = ±.1mm	
FRACTIONS ± 1/64	

LOVESHAW an <i>ITW</i> Company	
RT. 296, SOUTH CANAAN, PA.	
TITLE WIDTH ADJUSTMENT ASSEMBLY	
DWG NO	.WAACF5
MATERIAL	N/A
DRAWN	AMYR
SCALE	N/A
CHECKED	
APPROVED	

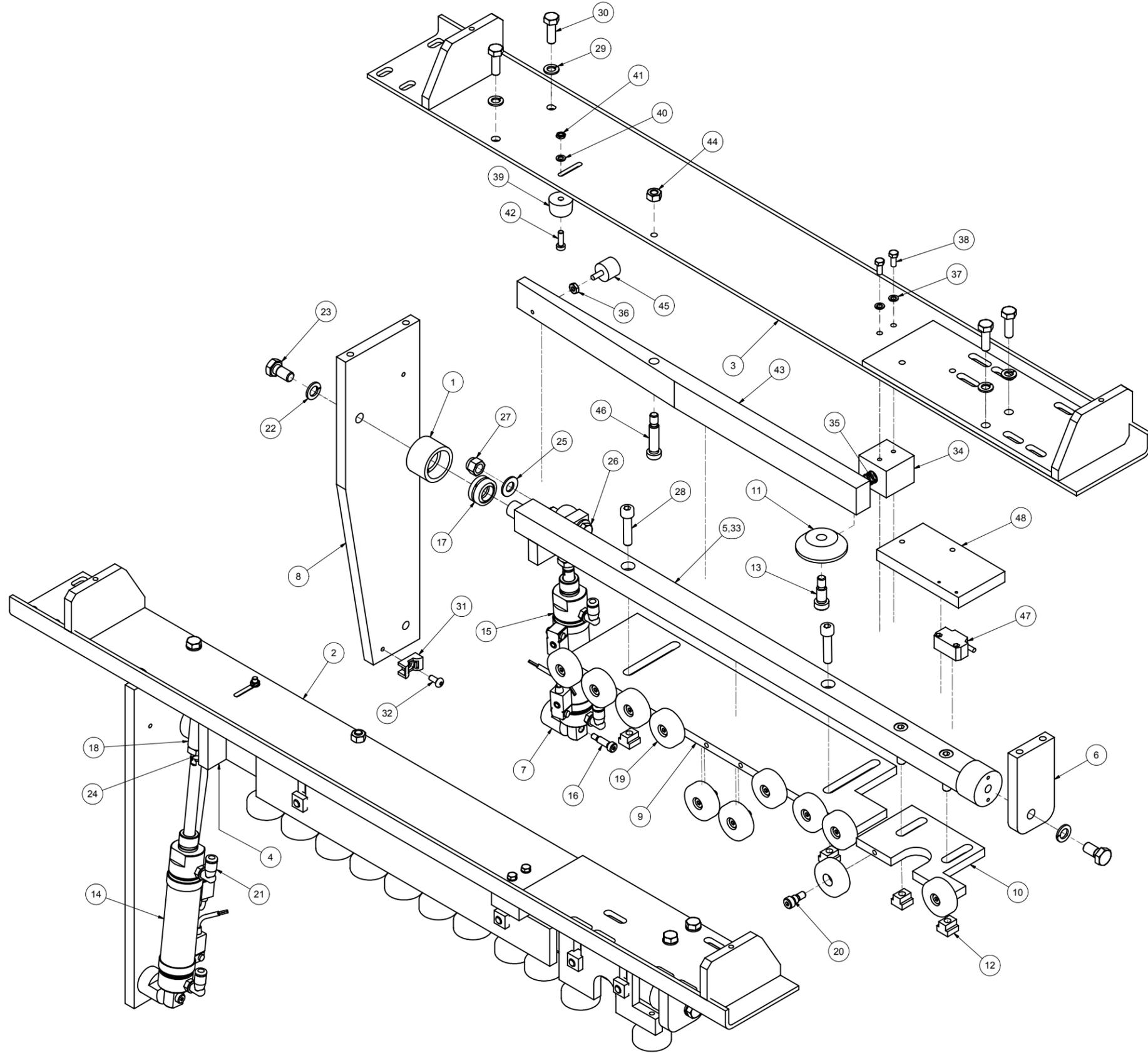
REVISION HISTORY			
REV	DESCRIPTION	DATE	BY
A	RELEASED	7/24/2006	AMYR



Parts List			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	PFF-0091L-6SS	PREFOLDER ARM LEFT
2	2	PFF-0028A-3	PREFOLDER CYLINDER SPACER
3	2	PFF-0027-4	PREFOLDER
4	1	PFF-0026L-5	MOUNT PREFOLDER LEFT
5	2	BRG-1061	ROD END - 1/4" FEMALE
6	2	BSG-1062	BRONZE BUSHING
7	2	SPH-1193	BRONZE WASHER
8	2	FSBSJ063B08	SHOULDER BOLT 1/2 x 5/8, 3/8-16 THRD
9	2	N401-216/5A	CYLINDER
10	2	FHHSE100P05	HEX CAP SCREW
11	2	FHJNSGP	HEX JAM NUT 1/4-28
12	4	PFF-0070-3	THOMSON SHAFT
13	2	PFF-0071-3	BINDING PLATE
14	4	BRG-1050	5/8" THOMSON BEARING
15	1	PFF-0072L-5	THOMSON BLOCK LEFT
16	2	PFF-0073-4	CAM ROLLER BLOCK
17	4	PFF-0024-3	CAM STUD
18	4	BRG-1016	CAM FOLLOWER BEARING
19	1	PFF-0072R-5	THOMSON BLOCK RIGHT
20	8	SPH-1048	INTERNAL RETAINING RING
21	2	PFF-0075-3	INDICATOR
22	4	FFHMG016P10	FHCS M6 X 1.0 X 16 LG.
23	2	N400-25	FITTING
24	4	FHHMH020P10	HHCS M8x20
25	12	FLWMHP	LOCK WASHER M8
26	8	FHHMH016P10	HHCS M8 X 16
27	1	PFF-0077L-6	CAM ROLLER GUIDE LEFT
28	1	PFF-0077R-6	CAM ROLLER GUIDE RIGHT
29	4	PFF-0078-3	SPACER BLOCK FOR CAM ROLLER GUIDE
30	2	PFF-0079-4	TOP PLATE - CAM ROLLER GUIDE
31	4	FLWMFP	LOCK WASHER M5
32	4	FSHMF040P10	SOC. HD. CAP SCREW M5-0.8 x 40mm
33	1	PFF-0091R-6SS	PREFOLDER ARM RIGHT
34	1	PFF-0026R-5	MOUNT PREFOLDER RIGHT
35	4	FPHME012P10	M4 x 0.7 x 12 mm LG
36	2	A219BA-30	PHOTOELECTRIC SENSOR
37	4		HEX NUT
38	4		PAN HEAD SCREW - RECESSED
39	2	CPM75-041-0	RUBBER GROMMET
40	2	FSBSE125B05	5/16 SHOULDER BOLT W/ 1/4-20 THRD

MATL	PART #	CAD FILE PFCF5_C	TOLERANCES UNLESS OTHERWISE NOTED:	LOVESHAW an <i>ITW</i> Company RT. 296, SOUTH CANAAN, PA.
C.R.S.	STD	PLOT DATE 7/24/2006	.X = ±.050 INCH .XX = ±.015 ANGLS ± 1/2° .XXX = ±.005	
ST. ST.	N/A	DRAWN DATE 5/11/2006	.X = ±1.0mm METRIC .XX = ±.3mm MACH. FINISH ✓ .XXX = ±.1mm	TITLE
STAINLESS: NO FINISH			DO NOT SCALE PRINT	PREFOLDER ASSEMBLY
<small>THIS DRAWING AND SUBJECT MATTER THEREON IS THE EXCLUSIVE PROPERTY OF LOVESHAW-ITW AND IS TO BE TREATED BY YOU AS CONFIDENTIAL PROPRIETARY INFORMATION. THIS DRAWING OR SUBJECT MATTER THEREOF SHALL NOT BE REPRODUCED OTHER THAN FOR YOUR OWN USE OR TO BE DISCLOSED TO OTHER WITHOUT THE EXPRESSED WRITTEN CONSENT OF LOVESHAW-ITW AND WILL BE RETURNED TO LOVESHAW-ITW UPON REQUEST.</small>				DWG NO .PFCF5/C
FRACTIONS ± 1/64				SCALE N/A
				MATERIAL N/A
				CHECKED
				DRAWN AMYR
				APPROVED

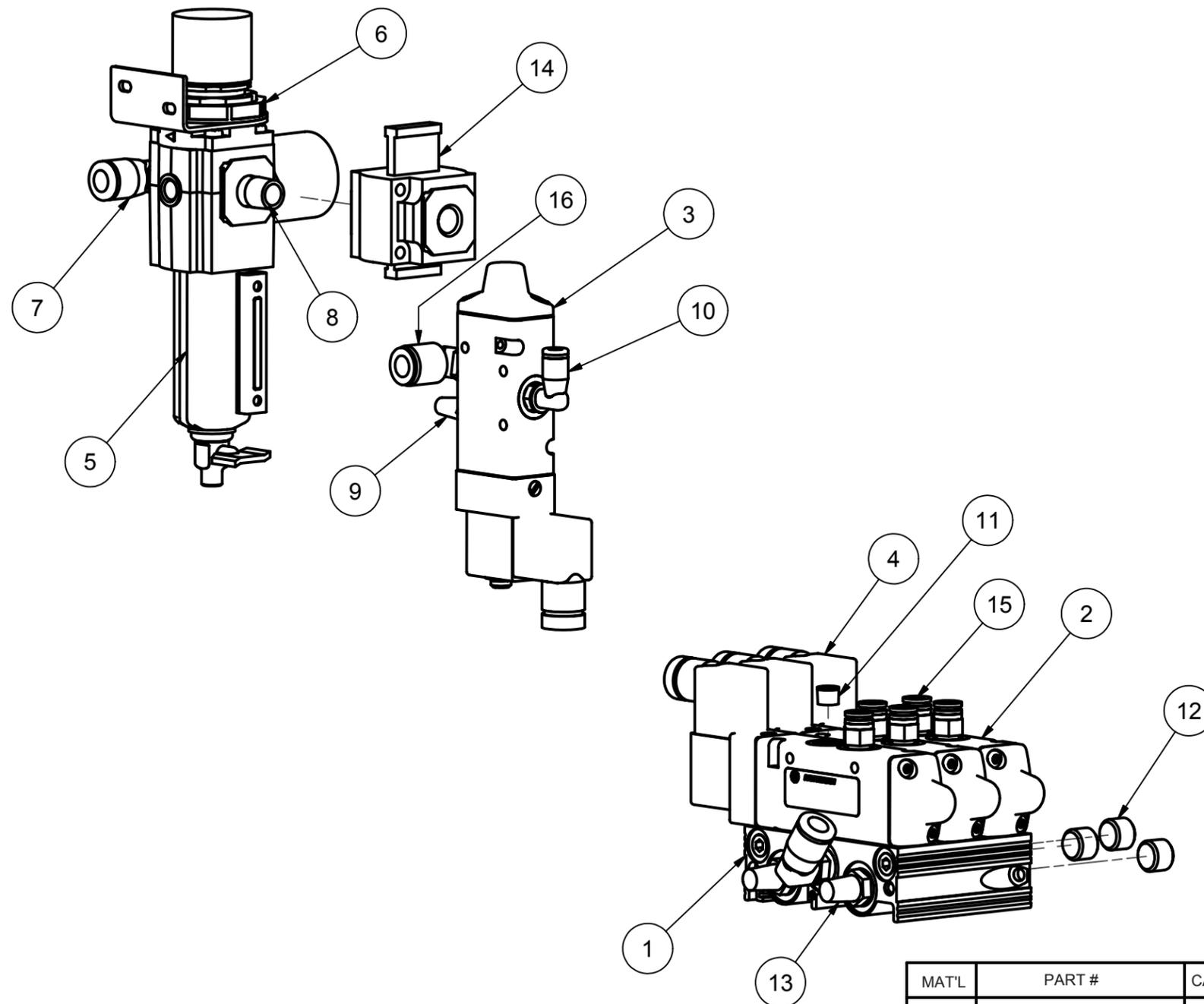
REVISION HISTORY			
REV	DESCRIPTION	DATE	BY
A	RELEASED	5/3/2006	AMYR



Parts List			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	4	PFF-0011-3	BEARING HUB
2	1	PFF-0009L-6	SUPPORT ARM LEFT
3	1	PFF-0009R-6	SUPPORT ARM RIGHT
4	1	PFF-0010L-6	PIVOT ARM, MFF, LEFT
5	1	PFF-0010R-6	PIVOT ARM, MFF, RIGHT
6	2	PFF-0012-3	PIVOT MOUNT, FRONT
7	2	PFF-0014-3	CYLINDER MOUNT, MFF
8	2	PFF-0013-4	PIVOT MOUNT BACK
9	2	PFF-0092-4	ROLLER PLATE
10	2	PFF-0089-5	ROLLER PLATE, SMALL
11	2	PFF-0044-3	ROLLER
12	8	SPH-1192	TEE NUT
13	2	FSBSH063B08	SHOULDER BOLT 3/8 x 5/8 ---5/16-18 x 1/2
14	1	N401-218	CYLINDER
15	1	N401-218	CYLINDER
16	2	FSBSC063B08	SHOULDER BOLT 1/4 x 5/8 LG, 10-24 THRD
17	4	BRG-1059	5/8 x 1-1/16 SA BEARING
18	2	BRG-1067	ROD END - 7/16" FEMALE
19	22	PFF-0066-3	ROLLER, UHMW
20	22	FSBSE025B08	SHOULDER BOLT, 5/16 x 1/4 x 1/4-20 THRD
21	4	N400-25	FITTING
22	4	FLWMIP	LOCK WASHER M10
23	4	FHHM020P88	HHCS M10 X 20
24	2	FHJNSMP	7/16-20 HEX JAM NUT
25	6	FFWSFP	FLAT WASHER 3/8
26	2	FHHSJ175P08	HEX HEAD SCREW 3/8-16 X 1 3/4"
27	2	FNLNSJP	NYLOCK NUT 3/8 STD NC
28	8	FSHMH035P10	M8-1.25 x 35mm SHCS
29	8	FLWHP	LOCK WASHER M8
30	8	FHHM025P10	HHCS M8 X 25
31	2	AH203	WIRE / HOSE CRADLE
32	2	FBHMF012P10	HEX SOC. BUTT. HD. SCREW
33	1	PFF-0083L-4	ROLLER PIVOT ARM LEFT
34	2	PFF-0084-3	SPRING MOUNT
35	2	X111-PS	SPRING
36	2	FHJNSCP	#10-24 HEX JAM NUT
37	4	FLWMFP	LOCK WASHER M5
38	4	FHHMF012910	HHCS M5 X 12
39	2	F3MB	RUBBER BUMPER
40	2	FFWMFP	FLAT WASHER M5
41	2	FHJNMFP	M5 HJN
42	2	FSHMF016P10	M5-0.8 x 16 SHCS
43	1	PFF-0083R-4	ROLLER PIVOT ARM RIGHT
44	2	FHFNSHP	HEX NUT 5/16-18
45	2	SPH-1285	RUBBER BUMPER
46	2	FSBSH125B08	SHOULDER BOLT 3/8 x 1.25L x 5/16-18
47	1	A219BA-30	PHOTOELECTRIC SENSOR
48	1	PFF-0094-4	PHOTO EYE MOUNT

MATL	PART #	CAD FILE	MFACTS_C	TOLERANCES UNLESS OTHERWISE NOTED:	LOVESHAW an <i>itw</i> Company RT. 296, SOUTH CANAAN, PA.	
C.R.S.	STD	PLOT DATE	8/3/2006	$X = \pm 0.050$ $INCH \ XX = \pm 0.015$ ANGLES $\pm 1/2^\circ$ $XXX = \pm 0.005$		
ST. ST.	N/A	DRAWN DATE	5/3/2006	$X = \pm 1.0mm$ MACH. ± 0.1 $METRIC \ XX = \pm 0.3mm$ FINISH ± 0.1 $XXX = \pm 0.1mm$	TITLE	
STAINLESS - NO FINISH				DO NOT SCALE PRINT	FRACTIONS $\pm 1/64$	MAJOR FLAP FOLDER ASSEMBLY
<small>THIS DRAWING AND SUBJECT MATTER THEREON IS THE EXCLUSIVE PROPERTY OF LOVESHAW-ITW AND IS TO BE TREATED BY YOU AS CONFIDENTIAL PROPRIETARY INFORMATION. THIS DRAWING OR SUBJECT MATTER THEREOF SHALL NOT BE REPRODUCED OTHER THAN FOR YOUR OWN USE OR TO BE DISCLOSED TO OTHER WITHOUT THE EXPRESSED WRITTEN CONSENT OF LOVESHAW-ITW AND WILL BE RETURNED TO LOVESHAW-ITW UPON REQUEST.</small>					DWG NO. MFACTS/C MATERIAL N/A DRAWN AMYR	SCALE N/A CHECKED APPROVED

REVISION HISTORY			
REV	DESCRIPTION	DATE	BY
A	RELEASED	5/31/2005	AMYR

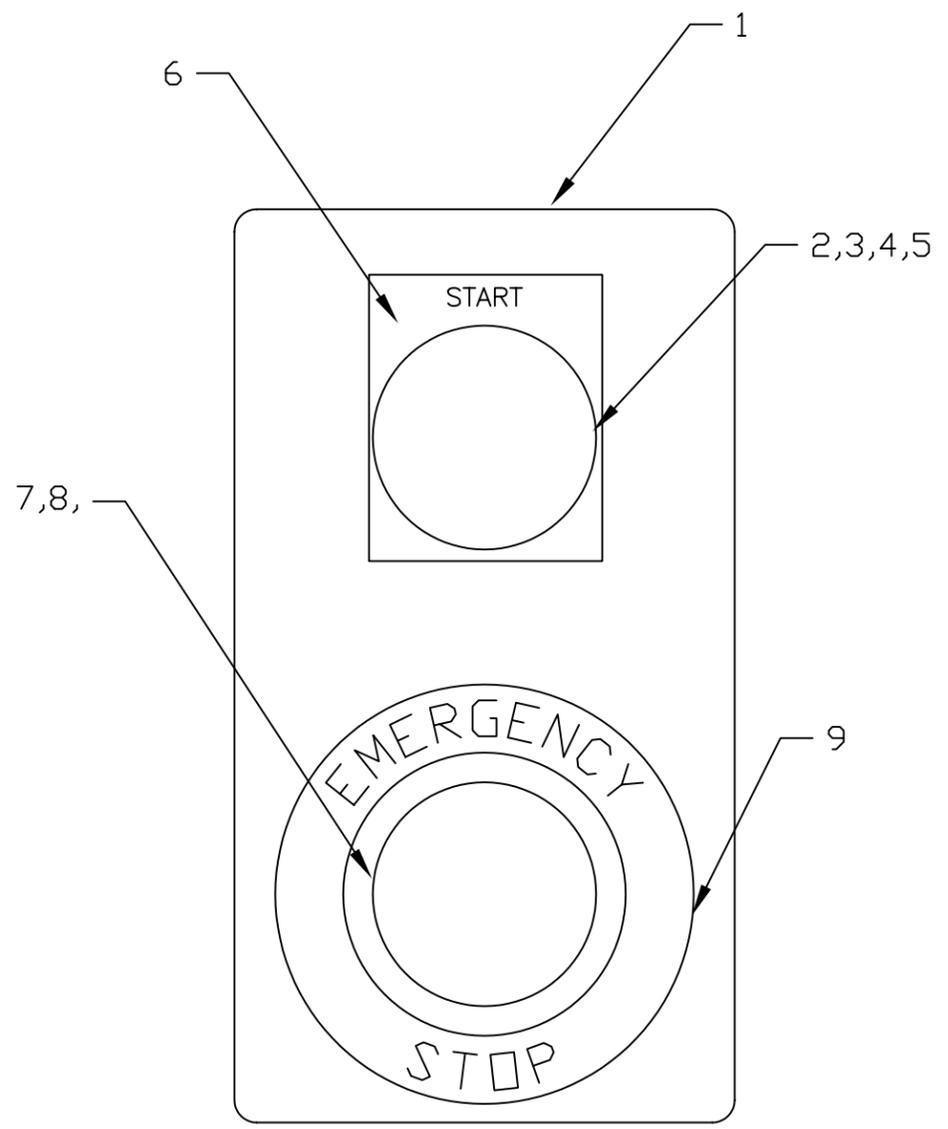


Parts List			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	N402-88_M	VALVE MANIFOLD, 3 STATION
2	3	N402-89	SOLINOID VALVE, 4 WAY
3	1	N402-88	SOLINOID VALVE, 3 WAY
4	4	N402-88_C	DINN CONNECTOR
5	1	N562	FILTER, REGULATOR W/ GUAGE
6	1	N562_MB	MOUNTING BRACKET & NUT
7	2	N400-64	FITTING
8	1	H127	BRASS NIPPLE
9	1	N400-17	MUFFLER
10	1	N400-25	FITTING
11	5	H109B	PLUG
12	3	H109A	PLUG, HEX 1/4 NPT
13	2	N400-16	MUFFLER
14	1	N561	LOCK OUT VALVE, 1/4 NPT
15	5	N400-1	FITTING P.L. 1/8 NPT x 1/4 TUBE
16	1	N400-167	FITTING P.L. 1/8 NPT x 3/8 TUBE

MAT'L	PART #	CAD FILE PNEUMATIC ASSY-1
C.R.S.	STD	PLOT DATE 5/31/2005
ST. ST.	N/A	DRAWN DATE 5/31/2005
STAINLESS : NO FINISH		DO NOT SCALE PRINT
<small>THIS DRAWING AND SUBJECT MATTER THEREON IS THE EXCLUSIVE PROPERTY OF LOVESHAW-ITW AND IS TO BE TREATED BY YOU AS CONFIDENTIAL PRPRIETARY INFORMATION. THIS DRAWING OR SUBJECT MATTER THEROF SHALL NOT BE REPRODUCED OTHER THAN FOR YOUR OWN USE OR TO BE DISCLOSED TO OTHER WITHOUT THE EXPRESSED WRITTEN CONSENT OF LOVESHAW-ITW AND WILL BE RETURNED TO LOVESHAW-ITW UPON REQUEST.</small>		

TOLERANCES UNLESS OTHERWISE NOTED:	
.X = ±.050	ANGLES ± 1/2°
INCH .XX = ±.015	
.XXX = ±.005	
.X = ±1.0mm	MACH. FINISH 125
METRIC .XX = ±.3mm	
.XXX = ±.1mm	
FRACTIONS ± 1/64	

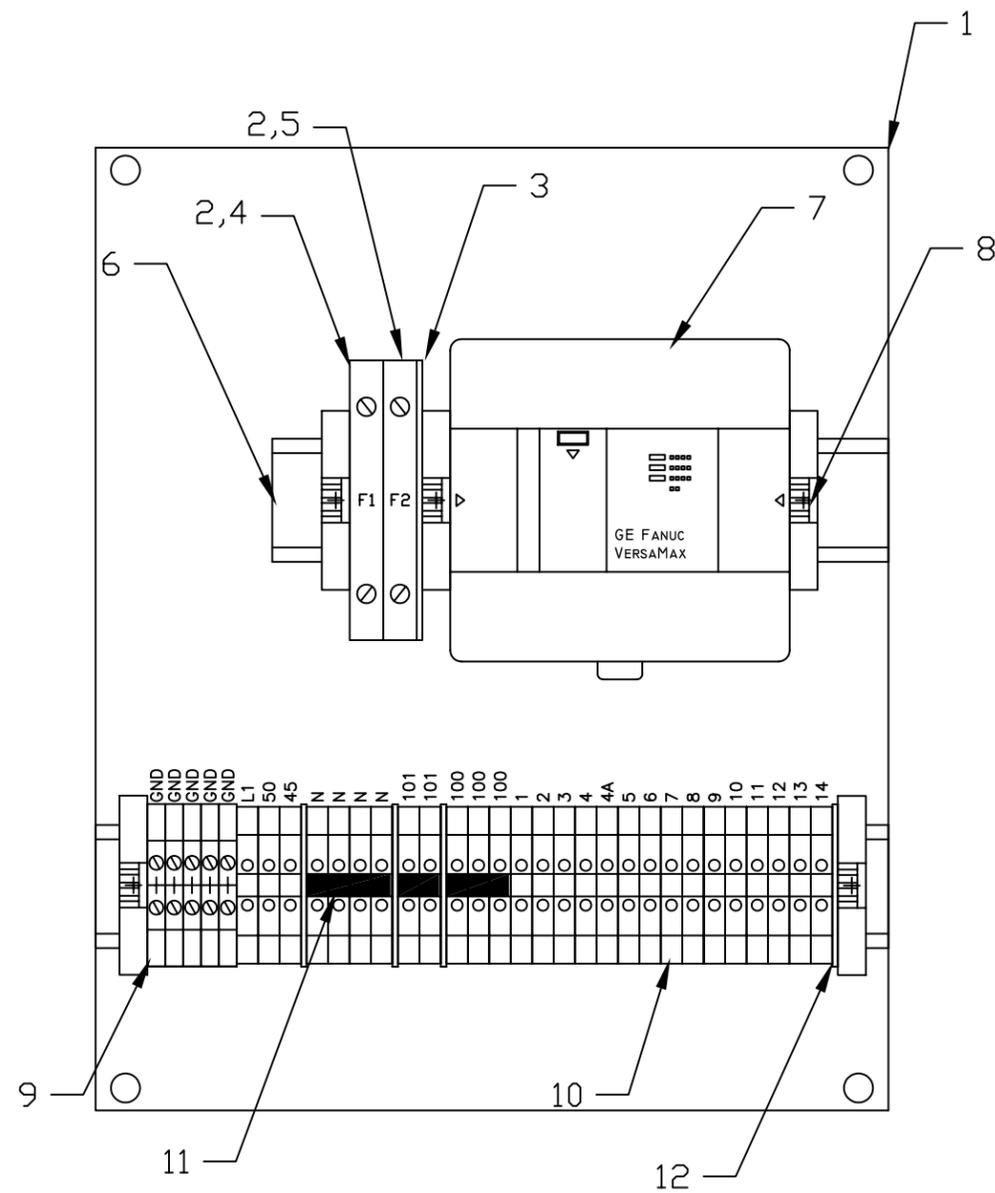
LOVESHAW an <i>ITW</i> Company RT. 296, SOUTH CANAAN, PA.	
TITLE PNEUMATIC ASSEMBLY	
DWG NO .PNEUCF5	SCALE N/A
MATERIAL N/A	CHECKED
DRAWN AMYR	APPROVED



KEY	PART NUMBER	DESCRIPTION
1	A149-SA-2-22MM	PUSH BUTTON ENCLOSURE
2	A149-SA-4	ILLUMINATED PUSH BUTTON
3	A149-SA-4-LH	LAMP HOLDER
4	A149-SA-4-B	BULB
5	A149-SA-ND-1	CONTACT BLOCK - NO
6	A149-SA-4-LP	START LEGEND PLATE
7	A149-SA-3	E-STOP PUSH BUTTON
8	A149-SA-NC	CONTACT BLOCK - NC
9	A149-SA-3-LP	E-STOP LEGEND PLATE

TOLERANCES EXCEPT AS NOTED	THE LOVESHAW CORPORATION RT 296, SOUTH CANAAN, PA.	
DECIMAL (3 PLC) +/- .005	TITLE: PUSH BUTTON STATION ASSY. CF5	
FRACTIONAL +/- 1/64	DWG. NO. ED1518	SCALE: 1 : 1
ANG. - 1/2°	MATERIAL: COMMERCIAL	DATE: 12/16/04
	DESIGNED: MENTA	DRAWN: WM
		APPRVD: --

REVISION RECORD					
REV	DESCRIPTION	DATE	ATH	DR	CK



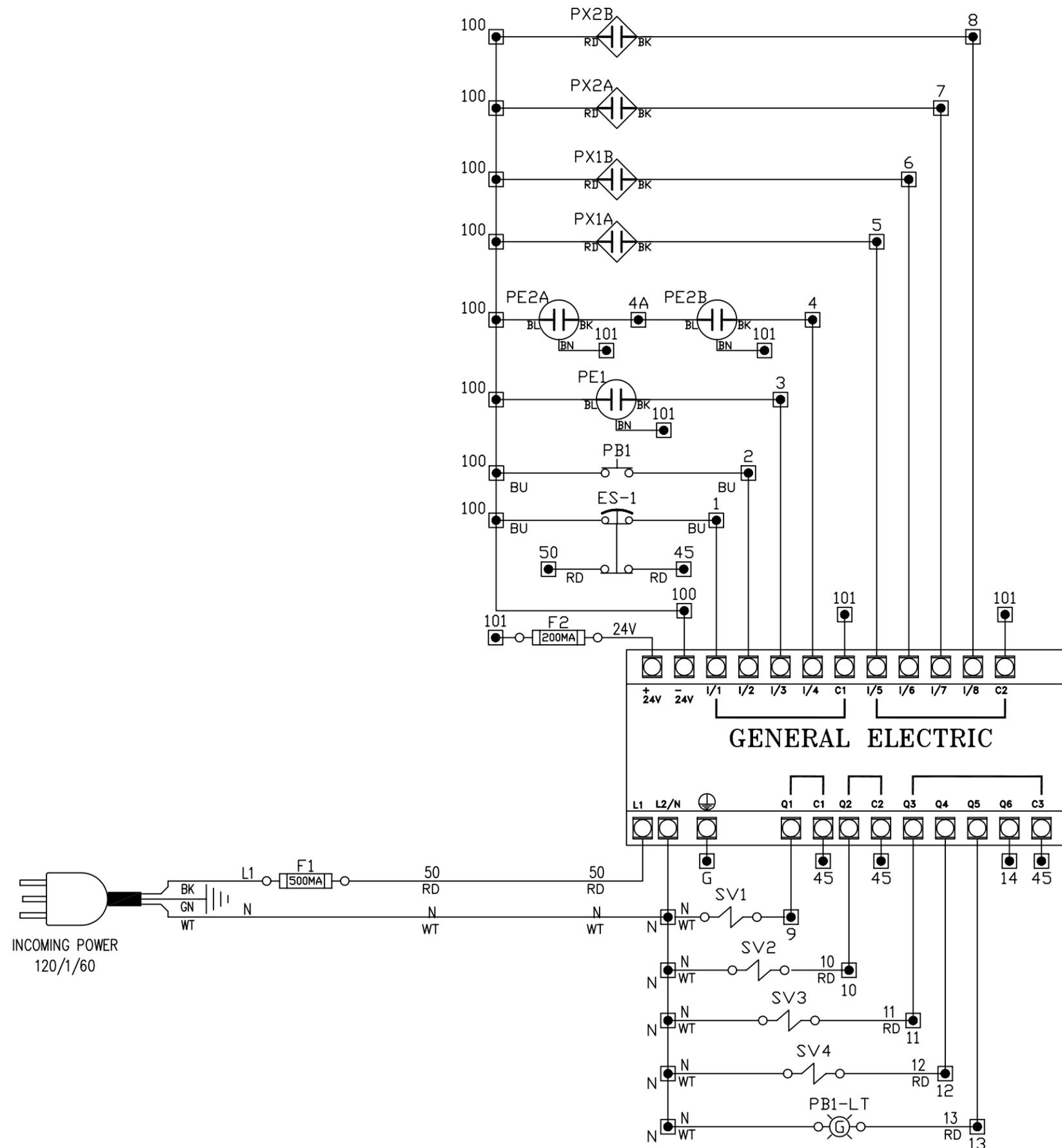
KEY	PART NUMBER	PART DESCRIPTION
1	A100N-1210P-R	ELECTRICAL PANEL
2	SS6-FUSE	FUSE HOLDER
3	SS6-FUSE-EB	FUSE HOLDER BARRIER
4	A125SB-1/2-326	FUSE 1/2 AMP SLOW BLO
5	A125SB-2/10-312	FUSE 200m AMP, FAST BLO
6	SS6-L-1	DIN RAIL
7	A241GE-NANO-1	PLC
8	SS6-C	TERMINAL ANCHOR
9	SS6-B	GROUND TERMINAL
10	SS6-TB1	TERMINAL BLOCK
11	SS6-D-5	TERM. LINK BAR 10 POLE
12	SS6-A1	TERMINAL SEPARATOR
13	SS6-MC	TERMINAL MARKER CARD

TOLERANCES EXCEPT AS NOTED	THE LOVESHAW CORPORATION RT 296, SOUTH CANAAN, PA.	
DECIMAL (3 PLC) +/- .005	TITLE: ELECTRICAL PANEL ASSEMBLY CF5 - 120 VAC	
FRACTIONAL +/- 1/64	DWG. NO. ED1417	SCALE: 1 : 2
ANG. - 1/2°	MATERIAL: COMMERCIAL	DATE: 05/19/04
	DESIGNED: WM	DRAWN: MENTA
		APPRVD: --

REVISION RECORD

REV	DESCRIPTION	DATE	ATH	DR	CK

SYMBOL	DEVICE	FUNCTION
ES-1	E-STOP	EMERGENCY STOP SWITCH
F1	FUSE	MAIN POWER PROTECTION
F2	FUSE	24 VDC POWER PROTECTION
PB1	PUSHBUTTON	MACHINE START
PB1-LT	PUSHBUTTON LIGHT	MACHINE RUNNING VISUAL INDICATOR
PE1	PHOTO SENSOR	BOX PRESENT SENSOR
PE2A	PHOTO SENSOR	RIGHT MAJOR FLAP SENSOR
PE2B	PHOTO SENSOR	LEFT MAJOR FLAP SENSOR
PX1A	PROXIMITY SWITCH	MINOR FLAP FOLDER HOME POSITION
PX1B	PROXIMITY SWITCH	MINOR FLAP FOLDER EXTENDED
PX2A	PROXIMITY SWITCH	MAJOR FLAP FOLDER HOME POSITION
PX2B	PROXIMITY SWITCH	MAJOR FLAP FOLDER EXTENDED
SV1	SOLENOID VALVE	MAIN AIR DUMP VALVE
SV2	SOLENOID VALVE	MINOR FLAP FOLDERS
SV3	SOLENOID VALVE	MAJOR FLAP PRE - FOLDERS
SV4	SOLENOID VALVE	MAJOR FLAP FOLDERS



NOTE:

1. ALL 120VAC LINE WIRES WILL BE 16AWG BLACK UNLESS OTHERWISE NOTED.
2. ALL 120VAC CONTROL WIRES WILL BE 16AWG RED UNLESS OTHERWISE NOTED.
3. ALL 120VAC NEUTRAL WIRES WILL BE 16AWG WHITE UNLESS OTHERWISE NOTED.
4. ALL DC CONTROL WIRING WILL BE 20AWG BLUE UNLESS OTHERWISE NOTED.

TOLERANCES EXCEPT AS NOTED	THE LOVESHAW CORPORATION RT 296, SOUTH CANAAN, PA.	
DECIMAL (3 PLC) +/- .005	TITLE: ELECTRICAL SCHEMATIC CF5 - 120 VAC	
FRACTIONAL +/- 1/64	DWG. NO. ED1701	SCALE: N/A
ANG. - 1/2°	MATERIAL: N/A	DATE: 04/13/06
	DESIGNED: MENTA	DRAWN: WM
		APPRVD: --