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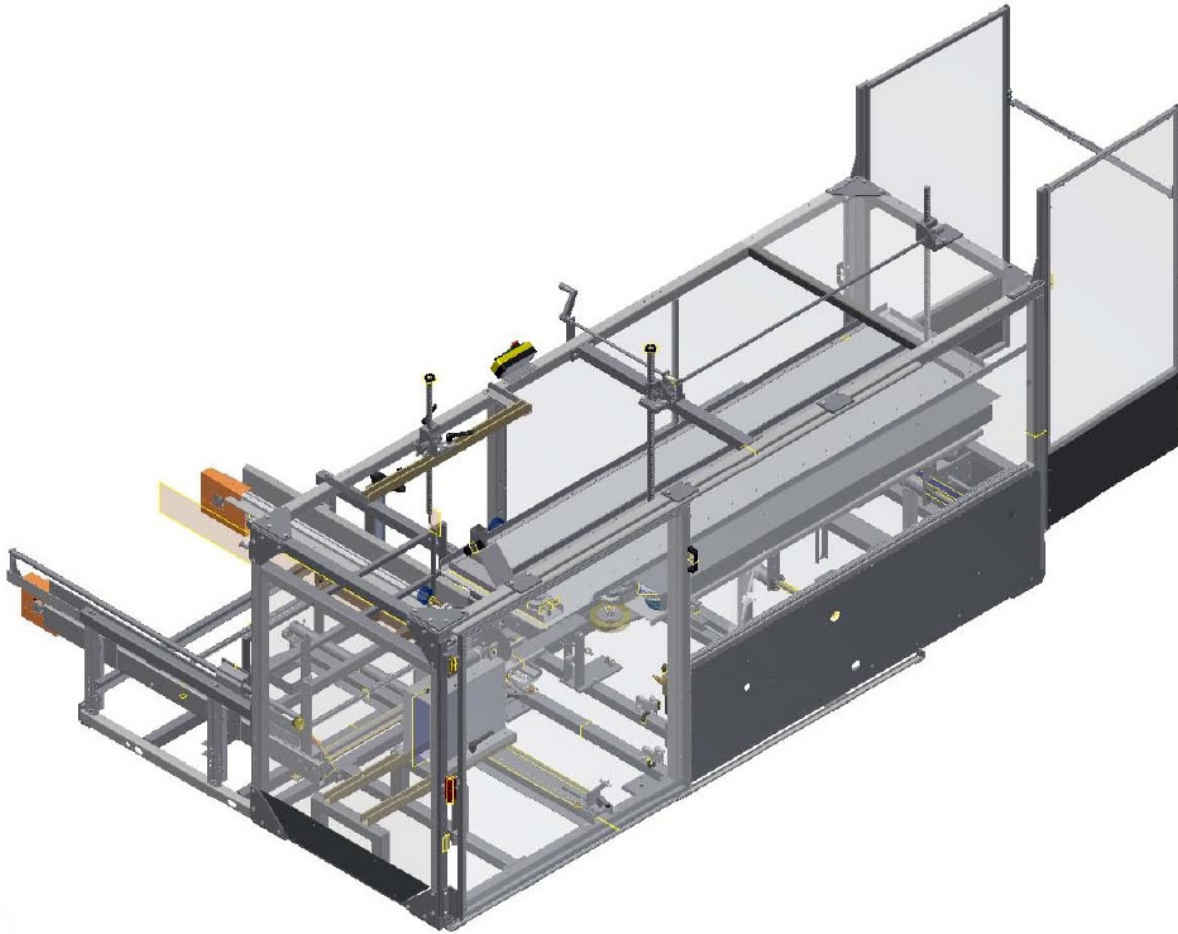
Little David™ Case Erector

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**CF50T / XL**

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Case Erector



Operator's Manual

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## Contact Information

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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. ALWAYS USE A ROLLER-TYPE EXIT CONVEYOR, AND ALWAYS REMOVE BOXES AFTER THEY CLEAR THE EXIT END OF THE MACHINE.
3. USE CAUTION WHEN NEAR CARTRIDGE KNIFE OR WHEN THREADING TAPE. KNIFE IS VERY SHARP, AUTOMATICALLY OPERATED AND LINKED TO THE WIPE-DOWN ROLLERS.
4. DO NOT ATTEMPT TO OPEN OR WORK ON ELECTRICAL BOX, JUNCTION BOXES, OR OTHER ELECTRICAL COMPONENTS WITHOUT FIRST DISCONNECTING POWER TO THE MACHINE. SHOCK HAZARD EXISTS IF POWER IS NOT DISCONNECTED.
5. DO NOT BYPASS ANY DESIGNED-IN SAFETY FEATURES SUCH AS INTERLOCKS, GUARDS OR SHIELDS.
6. DO NOT PLACE HANDS OR BODY INSIDE CONFINES OF MACHINE WHILE IT IS RUNNING.
7. ALWAYS DISCONNECT POWER SOURCE AND AIR SUPPLY (IF APPLICABLE) BEFORE SERVICING MACHINE.
8. SAFETY GLASSES SHOULD BE WORN WHEN WORKING ON OR AROUND MACHINE.

## MACHINE SPECIFICATIONS

MACHINE MODEL: CF50T/XL

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:

PRIMARY VOLTAGE: 220 VOLTS, 1 PHASE, 50 HERTZ

CONTROL VOLTAGE: 220 VOLTS, 1 PHASE, 50 HERTZ

### CASE CAPACITY:

LENGTH: 7" (178mm) MIN. TO 24" (610mm) MAX.

WIDTH: 6" (152mm) MIN. TO 20" (406mm) MAX.

HEIGHT: 4" (102mm) MIN. TO 20" (508mm) MAX.

LUG DRIVE SPEED: 85 FEET/MIN.

MACHINE SPEED: STANDARD: 10 CASES/MIN.

CLOSURE MATERIAL: 2" OR 3" PRESSURE SENSITIVE TAPE

MAXIMUM ROLL DIAMETER: 15"

AIR REQUIREMENTS: 15 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. JAM DETECTION

## INSTALLATION PROCEDURE

1. EXERCISE CARE WHEN HANDLING THIS MACHINE. A SUDDEN JOLT OR JAR MAY CAUSE SERIOUS DAMAGE.
2. 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.
3. RAISE OR LOWER THE MACHINE TO THE DESIRED OPERATING ELEVATION USING THE LEVELING JACK SCREWS AND LEVEL THE MACHINE.
4. A GREAT DEAL OF TROUBLE MAY BE CAUSED IF THE ELECTRICAL CURRENT IS SUPPLIED BY LINES WHICH ARE NOT HEAVY ENOUGH. IF THIS OCCURS, THE MOTOR 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.
5. 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.
6. THE COMPRESSED AIR SUPPLIED 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.
7. CONNECT THE AIR SUPPLY TO AN AIR SOURCE WITH A MINIMUM LINE PRESSURE OF 80 PSI.
8. BEFORE STARTING THE MACHINE, LOAD THE TAPE CARTRIDGE WITH TAPE AND THREAD THE TAPE. SEE THREADING DIAGRAM ON TAPE UNIT.
9. FOR PROPER START-UP PROCEDURE, SEE THE START-UP PROCEDURE SECTION OF THIS MANUAL.
10. SAFETY GLASSES SHOULD BE WORN WHEN WORKING ON OR AROUND MACHINE.

## SEQUENCE OF OPERATION

### INITIAL CONDITIONS:

- A. MAIN AIR VALVE TURNED ON.
- B. POWER CORD CONNECTED.
- C. EMERGENCY STOP BUTTON IS PULLED OUT.
- D. SELECTOR SWITCH IS SET TO "AUTO".
- E. HOPPER HAS BLANKS PROPERLY LOADED.

### GENERAL SEQUENCE:

1. PRESS THE "START" PUSH-BUTTON (PB1). MOTOR CONTACTOR (K1) IS ENERGIZED AND THE MOTOR STARTS.
2. NORMALLY OPEN CONTACT (K1) CLOSSES, PROGRAMMABLE CONTROLLER IS ENERGIZED, AND THE SEQUENCE STARTS.
3. THE CASE PUSHER (SOL 4) AND VACUUM TROLLEY (SOL 5) GO TO HOME POSITION.
4. AS SOON AS PROXIMITY SWITCHES 1 (TROLLEY) AND 3 (PUSHER) ARE ACTIVATED, AND PHOTOCELL 3 (HOPPER) IS BLOCKED, OUTPUT 2 ENERGIZES THE VACUUM VALVE (SOL 2) AND THE VACUUM TROLLEY (OUTPUT 1) MOVES FORWARD TO PICK UP A BLANK.
5. AT THE TROLLEY EXTENDED POSITION, PROXIMITY SWITCH 2 ACTIVATES (INPUT 1), ENERGIZING TIMER 4. AFTER A PRE-SET TIME, TIMER 4 TIMES OUT, DE-ENERGIZING THE VACUUM TROLLEY SOLENOID (OUTPUT 1).
6. THE VACUUM CUP TROLLEY THEN RETURNS TO THE HOME POSITION, ACTIVATING PROXIMITY SWITCH 1 (INPUT 0), ENERGIZING THE MINOR FLAP FOLDER (SOL 6, OUTPUT 3).
7. PROXIMITY SWITCH 1 ENERGIZES TIMER 3. AFTER A PRESET TIME, TIMER 3 TIMES OUT DE-ENERGIZING THE VACUUM VALVE (SOL 2, OUTPUT 2). THE FORMED CASE IS RELEASED, READY FOR TRANSFER.
8. AS THE CHAIN LUG IS DETECTED BY PHOTOCELL 1 (PC1), THE INTERNAL RELAY 1004 TURNS ON THE CASE PUSHER VALVE (SOL4, OUTPUT 5). THE FORMED CASE IS PUSHED INTO THE FEED ROLLERS, AND THEN ACCELERATED INTO THE CHAIN LUG DRIVE.

9. AT THE EXTENDED POSITION OF THE CASE PUSHER, PROXIMITY SWITCH 4 IS ACTIVATED, ENERGIZING THE INTERNAL RELAY 1003. THIS RELAY THEN DE-ENERGIZES THE CASE PUSHER VALVE (SOL4, OUTPUT 5), SENDING THE CASE PUSHER TO THE HOME POSITION.
10. AS OUTPUT 5 IS DE-ENERGIZED, TIMER 6 STARTS TIMING. WHEN TIMER 6 TIMES OUT, THE MINOR FLAP FOLDER (SOL 6, OUTPUT 3) IS DE-ACTIVATED. THE MACHINE IS NOW READY FOR THE NEXT CYCLE.
11. REPEAT SEQUENCE STARTING AT GENERAL SEQUENCE #4.

**NOTE 1:**

THE CASE-ON-DEMAND PHOTOCCELL (PC2) IS LOCATED DOWNSTREAM FROM THE MACHINE. IF THIS SWITCH IS BLOCKED, INPUT 8 IS ENERGIZED AND THE CASE PUSHER WILL NOT PUSH ANYMORE CASES INTO THE LUG DRIVE UNTIL THE PHOTOCCELL IS CLEARED.

**NOTE 2:**

GS1, GS2, OR GS3 OPEN IF THEIR RESPECTIVE SAFETY DOOR IS OPENED. THE MOTOR THEN STOPS AND THE MAIN AIR SUPPLY IS DUMPED (SOL1, OUTPUT 0). ALL THE AIR CYLINDERS WILL LOOSE AIR PRESSURE. THE SAFETY DOORS MUST BE CLOSED TO RE-START THE MACHINE.



## **CONTROL DESCRIPTION 24V**

<b>DEVICE</b>	<b>DESCRIPTION</b>	<b>PART NUMBER</b>
GS1, GS2, GS3	SAFETY GATE SWITCHES	A195SG-MECHAN-2
PROX1	PROXIMITY SWITCH ACTIVATES WHEN TROLLEY IS HOME	302575-IFM
PROX2	PROXIMITY SWITCH ACTIVATES WHEN TROLLEY IS PICKING BOX	A219-IFM-10
PROX3	PROXIMITY SWITCH ACTIVATES WHEN CASE PUSHER IS RETRACTED	A219-IFM-10
PROX4	PROXIMITY SWITCH ACTIVATES WHEN CASE PUSHER IS EXTENDED	A219-IFM-10
PROX5	OPTIONAL – LOW HOPPER	
PROX6	OPTIONAL – CASE JAM (USED W/ PC5)	
PC1	CHAIN LUG DETECTOR	A219-IFM-15-PNP
PC2	CASE DEMAND	303528
PC3	HOPPER DEMAND	A219-IFM-15-PNP
PC4	OPTIONAL – LOW TAPE DETECTION	
PC5	OPTIONAL – CASE JAM (USED W/ PROX6)	
PC6	OPTIONAL – NO TAPE DETECTION	
PC7	OPTIONAL – CASE AT TAPE INSPECTION	
SOL 1	MAIN AIR SLOW START/DUMP VALVE	N402-100/24VDC
SOL 2	CONTROLS VACUUM ON / OFF	N402-133/24VDC
SOL 3	CONTROLS BLANK HOPPER DRIVE	N402-133/24VDC
SOL 4	CONTROLS CASE PUSHER	N402-133/24VDC
SOL 5	CONTROLS TROLLEY	N402-133/24VDC
SOL 6	CONTROLS FLAP FOLDERS	N402-133/24VDC
PB1	CYCLE START BUTTON	
PB2	E-STOP BUTTON	
PB3	STEP MODE PUSH BUTTON	
SS1	MANUAL/AUTO MODE SWITCH	

## SET UP and SIZE CHANGE OVER

**NOTES:     TURN POWER OFF BEFORE MAKING ANY ADJUSTMENTS  
   TO THIS MACHINE.  
   REFER TO ASSEMBLY DRAWINGS FOR ITEM I. D.**

### 1.     HOPPER WIDTH ADJUSTMENT:

**SET POINT:    WIDTH OF BLANK + 1/8"**

TO ADJUST HOPPER WIDTH, FIRST LOOSEN THE LOCKING CLAMP (ITEM # 19), THEN, TURN ADJUSTING RATCHET (ITEM # 20) UNTIL THE BLANK FITS LOOSELY (1/8" CLEARANCE) BETWEEN THE ADJUSTABLE BLANK GUIDE (ITEM # 14) AND THE FIXED BLANK GUIDE (ITEM # 23). TIGHTEN THE LOCKING CLAMP BEFORE STARTING MACHINE.

### 2.     HOPPER HEIGHT ADJUSTMENT:

**SET POINT:    1/2" THE WIDTH OF THE ERECTED BOX**

TO ADJUST HOPPER HEIGHT, ROTATE THE HANDLE ON THE TOP OF THE HYDRAULIC PUMP (ITEM # 10). CLOCKWISE TO RAISE AND COUNTERCLOCKWISE 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.**

### 3.     FINGER ASSEMBLIES:

**SET POINT:    CENTER OF SLOT, 1/4" DEEP**

THE TOP AND BOTTOM FINGERS 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. FIRST, SET BOTH FINGERS SO THAT THEY ARE APPROXIMATELY 3/8" FROM THE FRONT FACE OF THE CASE. THIS IS ACCOMPLISHED BY LOOSENING AND ROTATING THE (2) SET SCREWS THAT HOLD THE FINGERS. ONCE SET, THIS ADJUSTMENT SHOULD NOT NEED TO BE CHANGED FOR DIFFERENT BOXES.

#### **TOP FINGER:**

SET THE HORIZONTAL POSITION OF THE FINGER SO THAT IT LIES IN THE CENTER OF THE SLOT. LOOSEN THE RATCHET HANDLE (ITEM # 23) AND SLIDE THE ASSEMBLY BY HAND THEN RE-TIGHTEN THE RATCHET HANDLE. SET THE VERTICAL POSITION OF THE FINGER SO THAT APPROXIMATELY 1/4" OF THE FINGER TIP IS IN THE SLOT. VERY WIDE BOXES MAY REQUIRE MORE FINGER AND VERY STIFF BOXES MAY REQUIRE LESS. MOVE THE FINGER UP OR DOWN BY LOOSENING THE RATCHET HANDLE WHILE HOLDING THE GEAR KNOB (ITEM # 13). TURN THE GEAR KNOB TO ACHIEVE THE PROPER SETTING AND RE-TIGHTEN THE RATCHET HANDLE.

#### **BOTTOM FINGER:**

THE BOTTOM FINGER REQUIRES THE SAME SET-UP AS THE TOP FINGER. HOWEVER, ONCE THE VERTICAL POSITION IS SET INITIALLY, IT SHOULD NOT NEED ADJUSTMENT FOR MOST OTHER BOXES BECAUSE THE BOTTOM OF THE CASE IS ALWAYS THE SAME DISTANCE FROM THE FINGER. THE HORIZONTAL POSITION IS SET BY LOOSENING THE CLAMP KNOB AND SLIDING THE FINGER BY HAND. RE-TIGHTEN THE CLAMP KNOB.

#### **4. CASE PUSHER:**

##### **SET POINT: LENGTH OF ERECTED BOX**

THE CASE PUSHER/REAR FLAP FOLDER ASSEMBLY WILL BE SET SO THAT THE PUSHER PLATE (ITEM # 4) IS APPROXIMATELY 1/4" AWAY FROM THE REAR MINOR PANEL OF THE FORMED CARTON, AS IT SITS ERECTED ON THE BOTTOM FLAP FOLDERS. TO ACCOMPLISH THIS, LOOSEN THE (2) RATCHET HANDLES (ITEM # 22) AND SLIDE THE ASSEMBLY. ALIGN THE REAR EDGE OF THE CASE PUSHER FRAME TO THE SCALE EQUAL TO THE LENGTH OF THE CARTON. TIGHTEN RATCHET HANDLES BEFORE STARTING MACHINE.

**EXAMPLE:** IF THE CASE YOU ARE RUNNING IS 16" LONG, YOU WOULD ALIGN THE FRAME WITH 16" ON THE SCALE.

#### **5. VACUUM TREE:**

##### **SET POINT: CENTER OF MAJOR PANEL**

##### **CASE LENGTH ADJUSTMENT:**

THE VACUUM TREE SHOULD BE POSITIONED HORIZONTALLY IN THE CENTER OF THE MAJOR PANEL (LENGTH OF THE BOX). TO SET, PUSH THE TROLLEY TOWARD THE HOPPER SO THAT IT IS NEAR THE BLANK. LOOSEN RATCHET HANDLE (ITEM # 39) AND SLIDE THE TREE TO THE MIDDLE OF THE MAJOR PANEL. RE-TIGHTEN RATCHET HANDLE.

##### **VACUUM CUP POSITION:**

THE VACUUM CUPS SHOULD BE SET ON EACH CORNER OF THE MAJOR PANEL TO PROVIDE THE BEST SUPPORT. TRY NOT TO HAVE ANY CUPS LANDING OVER A SCORE LINE ON THE

BLANK. THE CUPS SHOULD BE OFFSET FROM THE EDGES BY ABOUT 1/4". WHENEVER POSSIBLE USE ALL FOUR CUPS TO RUN THE BOXES. TWO CUPS MAY BE USED IF THE MAJOR PANEL IS TOO SMALL. FOR TALL BOXES (OVER 10") THE VACUUM POST EXTENSION MAY BE USED. TO SET, LOOSEN THE CENTER KNOBS FOR VERTICAL POSITION. LOOSEN

THE OUTER KNOBS TO ALLOW THE ARMS TO SWEEP THROUGH THEIR ARC. THIS PROVIDES BOTH WIDTH AND HEIGHT ADJUSTMENT. BE SURE TO TIGHTEN ALL KNOBS WHEN FINISHED. TO REMOVE A SET OF CUPS (2), DISCONNECT THE HOSES AT THE QUICK RELEASE COUPLING, LOOSEN THE CENTER KNOB AND SLIDE THE BAR UP AND OFF THE POST.

**IMPORTANT!!!!** BEFORE STARTING MACHINE, PUSH THE TROLLEY BY HAND BACK AND FORTH THROUGH THE FORMING AREA TO CHECK FOR INTERFERENCE WITH THE FLAP FOLDERS.

## **6. TROLLEY STOP:**

**SET POINT:** 1/2 THE WIDTH OF THE ERECTED BOX

THE TROLLEY STOP SETTING IS BASED ON THE WIDTH OF THE BOX. IT ALIGNS THE ERECTED BOX WITH THE LUG DRIVE SYSTEM. THE STOP WILL BE SET TO HALF THE WIDTH OF THE BOX USING THE SCALE PROVIDED AND THE REAR EDGE OF THE STOP.

**EXAMPLE:** IF THE CASE YOU ARE RUNNING IS 10" WIDE, YOU WOULD SET THE STOP TO 5" ON THE SCALE.

## **7. LUG DRIVE WIDTH ADJUSTMENT:**

**SET POINT:** 1/2 THE WIDTH OF THE ERECTED BOX

TO SET, TURN THE HANDWHEEL ON THE OPERATORS SIDE OF THE MACHINE. TURNING THE HAND WHEEL CLOCKWISE WILL OPEN THE DRIVE, COUNTER-CLOCKWISE WILL CLOSE UP THE DRIVE. OPEN THE SLIDING GATES AND USE THE SCALE TO GET AN APPROXIMATE SET POINT. ALIGN THE EDGE OF THE DRIVE ANGLE WITH THE SCALE USING 1/2 THE WIDTH OF THE BOX AS THE PARAMETER.

**EXAMPLE:** IF THE CASE YOU ARE RUNNING IS 10" WIDE, YOU WOULD ALIGN THE EDGE WITH 5" ON THE SCALE. TO CHECK, PUT A FULLY FORMED CARTON INTO THE DRIVE SECTION AT DISCHARGE END. THERE SHOULD BE APPROXIMATELY 1/8" CLEARANCE ON EACH SIDE OF CARTON.

## **8. TOP SLED ADJUSTMENT:**

**SET POINT:** HEIGHT OF ERECTED BOX + 1/16"

TO SET, PUT A FULLY FORMED CARTON INTO THE DRIVE SECTION AT THE DISCHARGE END. USE THE CRANK HANDLE LOCATED NEAR THE OPERATOR'S STATION TO RAISE OR LOWER THE SLED UNTIL IT CONTACTS THE TOP OF THE BOX FLAPS. THE BOX SHOULD HAVE

LIGHT PRESSURE ON IT, NOT BINDING. ALIGN THE SCALE TO THE TOP OF THE BRACKET AT A MEASUREMENT EQUAL TO THE HEIGHT OF THE BOX PLUS 1/2 THE WIDTH (IN INCHES).

#### OTHER SET-UP CONSIDERATIONS:

- WHEN HANDLING SMALL CASES, ONLY TWO VACUUM CUPS WILL BE REQUIRED. REMOVE ONE OF THE VACUUM CUP BARS ALONG WITH THE VACUUM CUPS. DISCONNECT THE TWO HOSES USING THE QUICK RELEASE FITTINGS WHICH WILL AUTOMATICALLY SEAL OFF THE VACUUM SYSTEM.
- WHEN RUNNING A TALL BOX, USE THE VACUUM POST EXTENSION SO THE CUPS WILL REACH THE UPPER CORNERS OF THE MAJOR PANEL.
- TWO SETS OF FLAP FOLDING TOOLS ARE PROVIDED. THE SMALLER SET SHOULD BE USED FOR BOXES UP TO 12" IN LENGTH. THE LARGER SET SHOULD BE USED FOR BOXES LONGER THAN 12" IN LENGTH.
- TWO PUSHER DISKS ARE PROVIDED. THE SMALLER DISK SHOULD BE USED FOR BOXES UP TO 8" IN WIDTH. THE LARGER DISK SHOULD BE USED FOR BOXES OVER 8" WIDE.
- THE FORMING BAR, (ALONG WITH THE FINGERS) HELPS OPEN THE BLANK AS IT IS PULLED INTO THE FORMING AREA. IT SHOULD STRIKE THE CENTER OF THE MINOR PANEL AND CAUSE A GRADUAL OPENING. IT IS ADJUSTABLE IN TWO DIRECTIONS, TOWARD THE HOPPER AND TOWARD THE LUG DRIVE. FOR MOST BOXES, NO ADJUSTMENT WILL BE NECESSARY. IF YOU ARE HAVING DIFFICULTY OPENING A BOX, YOU CAN TRY ADJUSTING HOW SOON AND WHERE THE BAR STRIKES THE MINOR PANEL. MOST BOXES (PROVIDED THEY MEET THE CORRUGATED SPEC), WILL RUN SATISFACTORILY BY ADJUSTING THE FINGER DEPTH AND FORMING BAR POSITION.
- **IMPORTANT!!!!!!:** MAKE SURE TO TIGHTEN ALL FASTENERS AFTER CHANGING TOOLS OR MAKING ADJUSTMENTS BEFORE STARTING MACHINE.

## 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. RETURN BOX SUPPORT ANGLE TO THE TOP OF THE SLED. MAKE SURE THE ANGLE IS NOT HANGING OVER WHERE IT COULD GET CAUGHT BY A BLANK.
4. PULL OUT THE E-STOP BUTTON.
5. SET SELECTOR SWITCH TO MANUAL.
6. PRESS THE START BUTTON (LUG DRIVES SHOULD START).
7. PRESS THE STEP BUTTON TO ADVANCE THE MACHINE THROUGH A CYCLE. CHECK EACH STAGE TO MAKE SURE SET-UP IS CORRECT.
8. INSPECT INITIAL BOX FOR FORMING AND TAPING QUALITY.
9. SET SELECTOR SWITCH TO AUTO. MACHINE WILL START PROCESSING BOXES AUTOMATICALLY.

### ***IF MACHINE DOES NOT START, CHECK THE FOLLOWING:***

- SAFETY GATES ARE CLOSED.
- HOPPER DEMAND PHOTO EYE IS BLOCKED.  
(ORANGE INDICATOR SHOULD BE ON)
- DOWNSTREAM CASE-ON-DEMAND EYE IS NOT BLOCKED.  
(RED FLASHING INDICATOR SHOULD NOT BE ON)

## SHUT DOWN PROCEDURE

### EMERGENCY SHUT DOWN.

TO SHUT THE MACHINE DOWN IN AN EMERGENCY, PRESS THE E-STOP BUTTON OR OPEN A SAFETY GATE.

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. LET THE MACHINE FINISH THE CYCLE OF CASES BEING FORMED.
2. PRESS THE E-STOP BUTTON.

## MAINTENANCE SCHEDULE

### TURN MACHINE OFF BEFORE PERFORMING ANY MAINTENANCE.

#### ELECTRICAL

##### CHECK MONTHLY:

1. CHECK OVER-CURRENT RELAY SETTINGS. TIME ( $\Delta T$ ) MUST BE SET TO 0. CURRENT ( $\Delta I$ ) SET JUST ABOVE THRESHOLD OF RED LIGHT COMING ON.
2. INSPECT FOR LOOSE WIRES THROUGHOUT THE MACHINE AND INSIDE THE PANEL BOX.
2. INSPECT FOR MOISTURE INSIDE THE PANEL BOX.
3. CLEAN LENS ON PHOTOCELLS.

#### PNEUMATIC

##### CHECK DAILY:

1. CHECK THAT THE REGULATOR IS SET TO 80 PSI.
2. CHECK FLOW CONTROL SETTINGS TO ENSURE CYLINDERS ARE NOT RUNNING HARDER THAN NECESSARY. IF THE CYLINDER SPEED IS NOT METERED PROPERLY, EXCESSIVE NOISE AND PREMATURE WEAR OF THE COMPONENTS WILL RESULT.

##### CHECK WEEKLY:

1. INSPECT AIR FILTER AND DRAIN IF NECESSARY. WATER IN THE AIR LINES WILL CAUSE THE MACHINE TO RUN ERRATICALLY AND WILL EVENTUALLY CAUSE THE SOLENOID VALVES TO FAIL.
2. INSPECT AND CLEAR THE VACUUM GENERATOR. CHECK THAT VACUUM LINES ARE IN GOOD CONDITION AND FREE FROM DEBRIS.
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.

##### CHECK MONTHLY:

1. INSPECT AIR CYLINDERS FOR BUSHING AND BUMPER WEAR.
2. INSPECT THE VACUUM HOSES FOR CRACKS OR CRIMPS.



## MECHANICAL

### CHECK WEEKLY:

1. INSPECT THE BOTTOM FLAP FOLDER ASSEMBLIES. CHECK FOR BEARING WEAR. LUBRICATE PIVOT BUSHINGS WITH A GREASE GUN AND A *MULTI-PURPOSE LITHIUM GREASE*. CHECK THE CLEVIS FOR WEAR AND LUBRICATE WITH A *TEFLON BASED SPRAY SUCH AS DUPONT TEFLON LUBRICANT WITH MOLY*. CHECK AIR CYLINDER MOUNTINGS FOR TIGHTNESS.
2. INSPECT ALL LEAD SCREWS AND CHAINS THROUGHOUT THE ENTIRE MACHINE. CLEAN AND LUBRICATE ALL SCREWS AND CHAINS WITH A TEFLON LUBRICANT.
3. INSPECT THE LUG CHAIN DRIVES. ADJUST CHAIN TENSION AND LUBRICATE WITH A TEFLON LUBRICANT AS NECESSARY. CHECK FOR CHAIN AND SPROCKET WEAR. CHECK SPROCKET ALIGNMENT. TIGHTEN ALL FASTENERS.
4. INSPECT THE MOTOR/REDUCER ASSEMBLY. CHECK OIL LEVEL IN REDUCER BY REMOVING THE BREATHER AND INSERTING A LONG THIN PIECE OF MATERIAL (A ZIP-TIE WORKS WELL) UNTIL IT TOUCHES THE FLOOR OF THE BOX. WITHDRAW THE PIECE AND CHECK THE DEPTH OF THE OIL. IT SHOULD BE APPROXIMATELY 1.25" DEEP. IF NECESSARY, ADD 90 WT. GEAR OIL SUCH AS *MOBILGEAR 600 XP 150*. ADJUST AND LUBRICATE THE DRIVE CHAIN WITH A TEFLON LUBRICANT.  
NOTE: RIGHT ANGLE GEAR BOXES (LUG DRIVE) ARE PERMANENTLY LUBRICATED AND MAINTENANCE FREE.
5. CHECK TAPE CARTRIDGE KNIFE FOR DEBRIS. CLEAN WITH AN OILY RAG. NEVER USE SHARP OBJECTS TO CLEAN KNIFE.

## **HOW TO ORDER SPARE PARTS**

**FOR GENERAL INFORMATION AND ORDERING PARTS CONTACT:**

**SIGNODE – LITTLE DAVID**

**LOVESHAW**

**2206 EASTON TURNPIKE, BOX 83 SOUTH CANAAN, PA. 18459**

**TEL: 1-800-572-3434**

PLEASE HAVE YOUR MACHINE MODEL AND SERIAL NUMBER WHEN CALLING FOR PARTS OR SERVICE. THEY CAN BE FOUND ON THE LABEL LOCATED ON THE OUTSIDE OF THE ELECTRICAL PANEL BOX.

### **WHEN CALLING FOR PARTS:**

- A.** GIVE THE MACHINE MODEL AND SERIAL NUMBER.
- B.** GIVE THE ASSEMBLY PART NUMBER AND DESCRIPTION. (I.E.,  
**.TSACF50/A** - TOP SLED 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 CORRECT PARTS FOR YOUR MACHINE AND ELIMINATE ANY MISUNDERSTANDING 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.

## OVER CURRENT RELAY SET UP

The overcurrent relay “OCR” monitors the amount of current that the chain lug drive motor is drawing. If a rise of AC current is detected in a short amount of time, this signifies a box jam condition. The OCR needs to be set to the AC current draw of an erector processing boxes. If the OCR is not set properly the main power fuse will now be the only protection in the system.

Set up procedure:

Locate the OCR in the main electrical enclosure on the top left center of the back panel. The image below represents the OCR that will be found in the enclosure.



1. Extreme caution must be taken when adjusting the OCR since it done while the machine is operating. **Proper PPT is required to protect against accidental contact with energized components.**
2. Turn the large white dial on the OCR fully clockwise to its maximum setting.
3. Start the machine and process boxes in Automatic mode.
4. While the machine is processing boxes turn the white dial on the OCR counterclockwise lowering the AC current trip point.
5. When the red light on the OCR illuminates it signifies that the current being drawn by the motor is greater than the trip point of the OCR.
6. Slightly increase the trip point of the OCR by turning the white dial clockwise.
7. Restart the machine and begin processing boxes in Automatic. It maybe necessary to increase the set point setting if nuisance tripping is occurring. The AC current trip point setting must not be increased to a point where it does not offer protection. The final adjusted trip point setting must be with a few degrees of the original trip value.

## RECOMMENDED SPARE PARTS KIT MODEL CF50T/XL

PART #	QTY	DESCRIPTION
.CAC60 (*)	1	TAPE CARTRIDGE 2"
PSC11B60-4 (*)	4	KNIFE BLADE 2"
.CAC61 (**)	1	TAPE CARTRIDGE 3"
PS4117A60-4 (**)	4	KNIFE BLADE 3"
CF50-0103-4	2	WHEEL, POLYURETHANE
203214	2	THRUST WASHER
SPR-1037	2	SPRING, EXTENSION
204143	2	LINK, CHAIN
HC202	2	MASTER LINK
HC302	2	HALF LINK
200287	1	BUMPER
N401-245	1	CYLINDER, FLAP FOLDER
N531	1	ROD CLEVIS
202822-2	1	SPRING, HOPPER BACKSTOP
N576	1	VACUUM GENERATOR
N402-99	1	VALVE, VACUUM
N402-97	2	VALVE, STACK (SINGLE REPLACEMENT)
N596	1	SWITCH BAND
N597	2	REED SWITCH
N590	1	FLOW CONTROL
N600	1	FILTER ELEMENT
N400-46	1	FLOW CONTROL, QUICK EXHAUST
SHK-007	1	SHOCK ABSORBER
N594	1	ROD CLEVIS, TROLLEY CYLINDER
203075	1	ROD EYE BEARING
201816	2	KNOB, VACUUM ARM
203220A	4	VACUUM CUP (BLUE)
SPR-1073	4	SPRING
202146	1	KNOB
202669	1	RATCHET HANDLE, LOCKING
204823	1	RATCHET HANDLE, LIFTING
203354	2	BRUSH HOPPER 10"
A125SB-10-R	1	FUSE, 10 AMP
A125SB-2/10-312	1	FUSE, 2/10 AMP
303526	1	PHOTOELECTRIC SENSOR
302575	1	PROXIMITY SWITCH
A195SG-TM1	1	SWITCH, SAFETY GATE
A195SG-TM1 KEY	1	SWITCH KEY, SAFETY GATE
N401-242/R	1	SEAL KIT, 40 mm CYLINDER
N401-241/R	1	SEAL KIT, 50 mm CYLINDER

(\*) THESE COMPONENTS ARE FOR 2" MACHINE, (\*\*) THESE COMPONENTS ARE FOR 3" MACHINE.

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## TROUBLE SHOOTING

IF THE MACHINE WILL NOT START CYCLING OR STOPS IN MID-CYCLE. IT IS LIKELY A SENSOR OR SWITCH IS NOT IN THE CORRECT STATE. REFER TO THE "SEQUENCE OF OPERATION" SECTION AND CHECK EACH COMPONENT.

1. CHECK THE SAFETY GATES TO ENSURE THAT THEY ARE CLOSED.
2. CHECK THAT PROXIMITY SWITCHES AND PHOTOCELLS ARE BEING TRIPPED.
3. INSPECT WIRING FOR LOOSE CONNECTIONS.
4. INSPECT AIR LINES FOR LOOSE CONNECTIONS OR LEAKS.

### PROBLEM

### SOLUTION

1. VACUUM SYSTEM IS NOT OPERATIONAL.

A. SOLENOID VALVE MAY BE DEFECTIVE. PUSH MANUAL OVERRIDE TO SEE IF VALVE FUNCTIONS. IF SO, CHECK SOLENOID FOR CONTINUITY. REPLACE IF DEFECTIVE.

B. SPOOL IN VALVE MAY BE STUCK. DISASSEMBLE VALVE, CLEAN THOROUGHLY, REPLACE DEFECTIVE PARTS. REASSEMBLE.

C. SYSTEM MAY BE BLOCKED. CHECK SUPPLY LINES AND GENERATOR FOR BLOCKAGE. REMOVE OR REPLACE PART IF NECESSARY.

2. VACUUM TROLLEY WILL NOT MOVE TOWARD HOPPER TO PICK UP BLANK. (CYLINDER IN RETRACTED POSITION).

A. SOLENOID VALVE MAY BE DEFECTIVE. PUSH MANUAL OVERRIDE TO SEE IF VALVE FUNCTIONS. IF SO, CHECK SOLENOID FOR CONTINUITY. REPLACE IF DEFECTIVE.

B. SPOOL IN VALVE MAY BE STUCK. DISASSEMBLE VALVE, CLEAN THOROUGHLY, REPLACE DEFECTIVE PARTS. REASSEMBLE.

C. HOME POSITION PROXIMITY SWITCH (PROX 1) MAY BE DEFECTIVE OR OUT OF ADJUSTMENT. ADJUST POSITION SLIGHTLY UNTIL INDICATOR LIGHT TURNS ON. IF NOT, CHECK FOR CONTINUITY. IF DEFECTIVE, REPLACE.

## PROBLEM

3. VACUUM TROLLEY WILL NOT MOVE BACK FROM BLANK PICK UP POSITION (CYLINDER IN EXTENDED POSITION).

4. VACUUM CUPS WILL NOT PICK A BLANK OUT OF THE HOPPER.

## SOLUTION

A. SOLENOID VALVE MAY BE DEFECTIVE. PUSH MANUAL OVERRIDE TO SEE IF VALVE FUNCTIONS. IF SO, CHECK SOLENOID FOR CONTINUITY. REPLACE IF DEFECTIVE.

B. SPOOL IN VALVE MAY BE STUCK. DISASSEMBLE VALVE, CLEAN THOROUGHLY, REPLACE DEFECTIVE PARTS. REASSEMBLE.

C. PICK UP POSITION PROXIMITY SWITCH (PROX 2) MAY BE DEFECTIVE OR OUT OF ADJUSTMENT. ADJUST POSITION SLIGHTLY UNTIL INDICATOR LIGHT TURNS ON. IF NOT, CHECK FOR CONTINUITY. IF DEFECTIVE, REPLACE.

A. VACUUM PRESSURE MAY BE INSUFFICIENT. TEST BY PLACING A BLANK ON THE CUPS WITH THE VACUUM ON. YOU SHOULD NOT BE ABLE TO EASILY PULL THE BLANK OFF OF THE VACUUM CUPS. IF SO, CHECK FOR:

- CORRECT AIR PRESSURE AND SUPPLY (80 PSI, 10 CFM)
- DAMAGED OR WORN CUPS
- DAMAGED OR WORN HOSES
- CLOGGED SYSTEM COMPONENTS

B. HOPPER OUT OF ADJUSTMENT.

CHECK THE FOLLOWING SET-UPS:

- HOPPER RETAINER BAR AND BRUSH OVERLAP THE BLANK TOO FAR.
- TOO MUCH PRESSURE ON THE LEADING BLANK. MOVE HOPPER DEMAND PHOTO EYE BACK SLIGHTLY.
- OPEN HOPPER RAILS 1/8"
- MAKE SURE BLANK ISN'T HITTING TOP SLED ON THE WAY IN. IF SO, LOWER HOPPER AND RE-ADJUST TOP FINGER.
- TOO MUCH FINGER PRESSURE. SEE SET-UP SECTION FOR PROPER ADJUSTMENT.

## PROBLEM

## SOLUTION

5. MINOR FLAP FOLDERS WILL NOT EXTEND.

A. SOLENOID VALVE MAY BE DEFECTIVE. PUSH MANUAL OVERRIDE TO SEE IF VALVE FUNCTIONS. IF SO, CHECK SOLENOID FOR CONTINUITY. REPLACE IF DEFECTIVE.

B. SPOOL IN VALVE MAY BE STUCK. DISASSEMBLE VALVE, CLEAN THOROUGHLY, REPLACE DEFECTIVE PARTS. REASSEMBLE.

C. CHECK VACUUM TROLLEY HOME POSITION PROXIMITY SWITCH (PROX 1). THIS SWITCH MUST BE MADE FOR FLAPS TO EXTEND.

6. CASE PUSHER WILL NOT EXTEND TO PUSH A FORMED CASE INTO THE LUG DRIVE.

A. SOLENOID VALVE MAY BE DEFECTIVE. PUSH MANUAL OVERRIDE TO SEE IF VALVE FUNCTIONS. IF SO, CHECK SOLENOID FOR CONTINUITY. REPLACE IF DEFECTIVE.

B. SPOOL IN VALVE MAY BE STUCK. DISASSEMBLE VALVE, CLEAN THOROUGHLY, REPLACE DEFECTIVE PARTS. REASSEMBLE.

C. PUSHER RETRACTED POSITION PROXIMITY SWITCH (PROX 3) MAY BE DEFECTIVE OR OUT OF ADJUSTMENT. SEE SOLUTION 2C.

7. CASE PUSHER WILL NOT RETRACT.

A. SOLENOID VALVE MAY BE DEFECTIVE. PUSH MANUAL OVERRIDE TO SEE IF VALVE FUNCTIONS. IF SO, CHECK SOLENOID FOR CONTINUITY. REPLACE IF DEFECTIVE.

B. SPOOL IN VALVE MAY BE STUCK. DISASSEMBLE VALVE, CLEAN THOROUGHLY, REPLACE DEFECTIVE PARTS. REASSEMBLE.

C. PUSHER EXTEND POSITION PROXIMITY SWITCH (PROX 4) MAY BE DEFECTIVE OR OUT OF ADJUSTMENT. SEE SOLUTION 2C.

## PROBLEM

## SOLUTION

### 8. CASE IS NOT SQUARE AT DISCHARGE.

- A. PUSHER LUGS OUT OF ALIGNMENT.  
TO CORRECT:
- STOP THE MACHINE SO THAT THE LUGS ARE IN THE AREA OVER THE TAPE CARTRIDGE. REMOVE THE CARTRIDGE.
  - DISCONNECT THE ELECTRICAL SUPPLY.
  - REMOVE OPERATOR SIDE CHAIN DRIVE COVER.
  - LOCATE THE DRIVE SPROCKET AT THE DISCHARGE END OF THE SYSTEM. USING A 3 mm HEX KEY, LOOSEN THE (6) SOCKET HEAD CAP SCREWS FROM THE TOP OF THE ADJUSTABLE BUSHING. TAKE 3 OF THE SCREWS AND THREAD THEM INTO THE ADJACENT JACKING HOLES. THIS WILL DRIVE THE BUSHING APART AND ENABLE IT TO TURN ON THE SHAFT.
  - USING A 12" SQUARE, ALIGN THE LUGS BY PLACING THE SQUARE BETWEEN THE CHAIN GUIDES AND AGAINST THE RIGHT-SIDE CHAIN LUG. INDEX THE LEFT-SIDE LUG BY TURNING THE SPROCKET UNTIL IT IS EVEN WITH THE OTHER SIDE. BE SURE TO PUSH BACK ON LUGS TO ELIMINATE DRIVE SYSTEM LASH.
  - RE-INSTALL SCREWS AND TIGHTEN THE TAPERED BUSHING IN A CRISS-CROSS PATTERN GRADUALLY WORKING YOUR WAY AROUND UNTIL ALL 6 SCREWS ARE TIGHT. AS YOU DO THIS, MAKE SURE THE SPROCKET AND CHAIN ARE ALIGNED VERTICALLY WITH THE GUIDES.
  - REPLACE LUG DRIVE COVER.

B. FOLDING PANELS OUT OF ADJUSTMENT.  
TO CORRECT:

- THE LEXAN FOLDING PANELS THAT CLOSE THE MAJOR FLAPS SHOULD BE SET AT ANGLE OF APPROXIMATELY 75 DEG. BETWEEN THE PANELS. TO ADJUST, LOOSEN THE (4) HOSE CLAMPS WITH A 1/4" SOCKET AND ROTATE THEM ON THE FOLDING BAR SO THAT THE BODY OF THE CLAMP SUPPORTS THE PANEL AT THE DESIRED ANGLE. BE CAREFUL TO NOT OVER-TIGHTEN THE CLAMPS.

### 9. MACHINE SHUTS OFF SUDDENLY WHILE PUSHING A CASE THROUGH THE LUG DRIVE.

- A. CHECK THE OVER CURRENT RELAY (OCR1) LOCATED IN THE PANEL BOX. IF IT IS TRIPPING OUT UNDER NORMAL (NON-JAM) CONDITIONS, ADJUST IT AS FOLLOWS:
- WHILE MACHINE IS RUNNING SET CURRENT LEVEL (I) BY TURNING ADJUSTER CLOCKWISE UNTIL RED LIGHT *DOES NOT* COME ON DURING THE CYCLE.
  - MAKE SURE TIME (T) IS SET TO MIN.



## **Little David®** Warranty

### **For:** CASE FORMER MODELS

CF20T, CF30T, CF40T, CF40TXL, CF50T, CF50T-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:** ALL CASE FORMER MODELS

\*LIMITED WARRANTY – **SIGNODE LITTLE DAVID**, (HEREIN AFTER "**LITTLE DAVID**") 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 **LITTLE DAVID** UNDER THIS WARRANTY IS STRICTLY LIMITED TO THE COST OF REPAIRING OR REPLACING, AS **LITTLE DAVID** MAY ELECT, ANY PART OR PARTS THAT PROVE IN **LITTLE DAVID'S** JUDGMENT TO HAVE BEEN DEFECTIVE IN MATERIAL OR WORKMANSHIP AT THE TIME THE GOODS WERE SHIPPED FROM **LITTLE DAVID'S** PLANT. ANY WARRANTY CLAIM NOT MADE IN WRITING TO **LITTLE DAVID** 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 **LITTLE DAVID** BE LIABLE FOR INCIDENTAL, SPECIAL OR CONSEQUENTIAL DAMAGES.

IF REQUESTED BY **LITTLE DAVID**, PURCHASER SHALL RETURN ANY DEFECTIVE PART OR PARTS TO **LITTLE DAVID'S** PLANT, FREIGHT PREPAID. ALL WARRANTY PART REPLACEMENTS AND REPAIRS MUST BE MADE BY **LITTLE DAVID** OR A **LITTLE DAVID** AUTHORIZED TO HANDLE THE GOODS COVERED BY THIS WARRANTY. ANY OUTSIDE WORK OR ALTERATIONS DONE WITHOUT **LITTLE DAVID'S** PRIOR WRITTEN APPROVAL WILL RENDER THIS WARRANTY VOID. **LITTLE DAVID**, 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 **LITTLE DAVID'S** RECOMMENDED PROCEDURES **LITTLE DAVID** 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 **LITTLE DAVID**. 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  
2206 EASTON TURNPIKE SOUTH CANAAN, PA 18459  
TEL: 570.937.4921 -800.572.3434 -FAX: 570.937.3229

# ILLUSTRATED MACHINE ASSEMBLIES

FRAME ASSEMBLY

MAIN DRIVE ASSEMBLY

DRIVE CHAIN ASSEMBLY

HOPPER FRAME ASSEMBLY

HOPPER DRIVE ASSEMBLY  
BOTTOM FINGER ASSEMBLY

HOPPER GATE ASSEMBLY

TOP FINGER ASSEMBLY

VACUUM TROLLEY ASSEMBLY

VACUUM BAR ASSEMBLY

VACUUM CUP ASSEMBLY

FRONT FLAP FOLDER ASSEMBLY

REAR FLAP FOLDER ASSEMBLY

TOP SLED ASSEMBLY

PLOW BAR ASSEMBLY

SAFETY GUARD ASSEMBLY

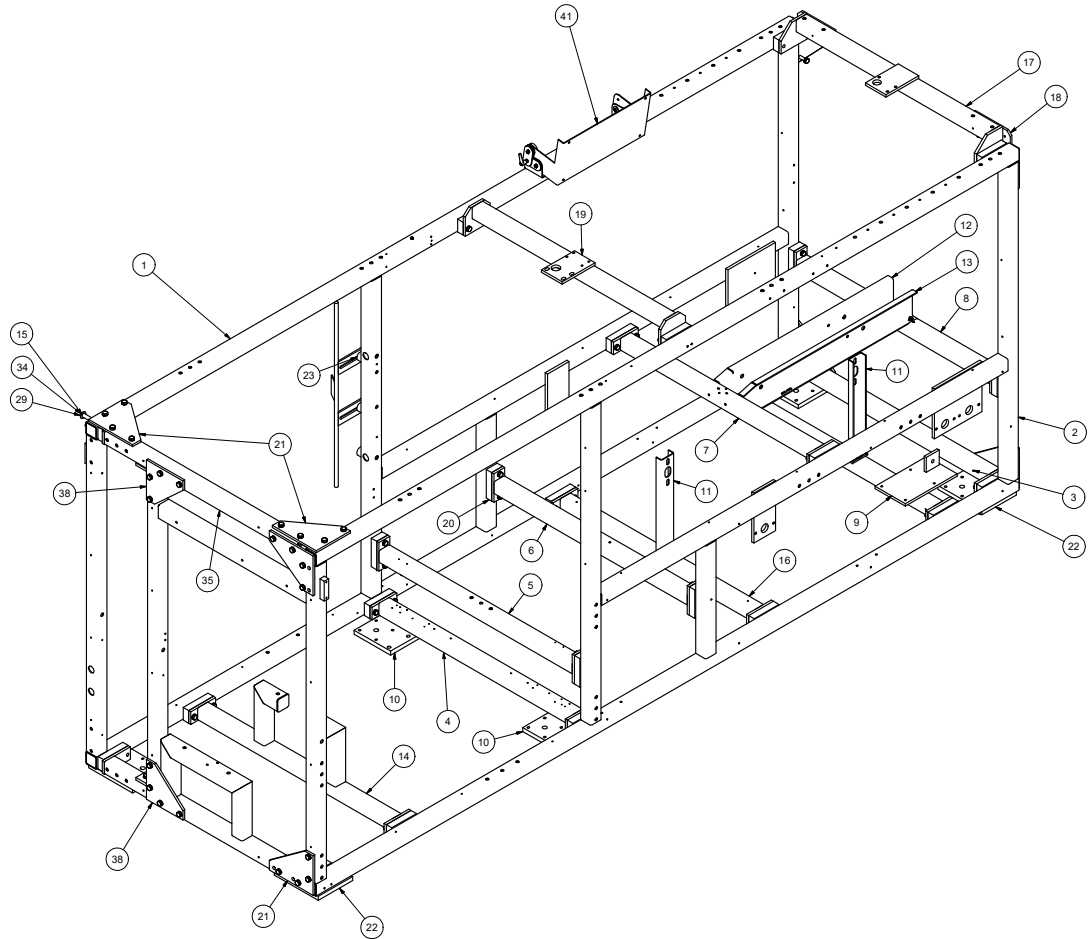
PNEUMATIC COMPONENTS

PNEUMATIC SCHEMATIC

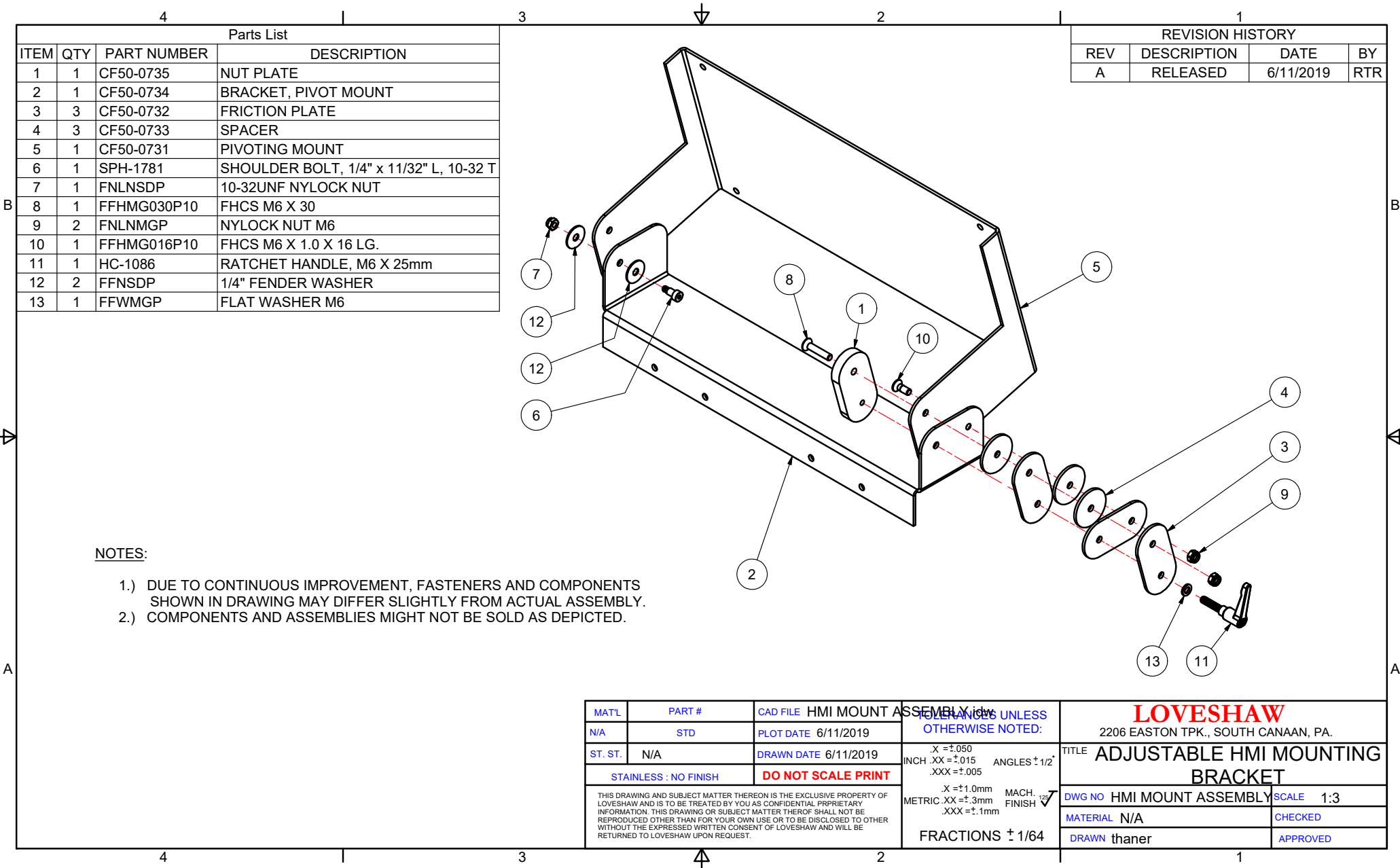
ELECTRICAL

ITEM		QTY	PART NUMBER	Parts List	DESCRIPTION
1	1	CF50-0338L-6	FRAME, LEFT SIDE, XL		
2	1	CF50-0008R-6	FRAME, SIDE, RIGHT		
3	1	CF50-0010-4	CROSSMEMBER, END		
4	1	CF50-0011-4	CROSSMEMBER, MID		
5	1	CF50-0016-4	CROSSMEMBER, FRONT FLAP FOLDER		
6	1	CF50-0017-4	CROSSMEMBER, FOLDING BAR SUPPORT		
7	1	CF50-0018-5	CROSSMEMBER, CARTRIDGE SUPPORT REAR		
8	1	CF50-0019-4	CROSSMEMBER, CARTRIDGE SUPPORT FRONT		
9	1	CF50-0020-4	CROSSMEMBER, BEARING SUPPORT		
10	2	CF50-0022-4	GUSSET, LEVELING PAD		
11	2	CF50-0068-4	SUPPORT, LEAD SCREW		
12	1	CF50-0113L-5	TAPE CARTRIDGE SIDE PLATE, LEFT		
13	1	CF50-0113R-5	TAPE CARTRIDGE SIDE PLATE, RIGHT		
14	1	CF50-0131A-4	CROSSMEMBER, BOX PUSHER, MODIFIED		
15	1	CF50-0185-3	HOOKE, HOPPER GATE		
16	1	CF50-0196-4	CROSSMEMBER, DRIVE SUPPORT		
17	1	CF50-0342-4	CROSSMEMBER, END, SLED SUPPORT		
18	2	CF50-0343-4	GUSSET, XL, SPECIAL		
19	1	CF50-0344-4	CROSS MEMBER, SLED SUPPORT, XL		
20	26	CF50-0347-4	BLOCK, FRAME SPACER		
21	6	CF50-0348-4	GUSSET, XL		
22	4	CF50-0349-5	GUSSET, LEVELING PAD, XL		
23	3	CF50-0408-3	SPACER, BLANK HOLDER		
24	2	FFWMGP	FLAT WASHER M6		
25	2	FFWMIP	FLAT WASHER M10		
26	2	FHHM016P10	HHCS M6 X 16		
27	2	FHHMF010P10	HHCS M5 X 0.8 X 10 LG.		
28	4	FHHMG030P10	HHCS M6 X 30		
29	1	FHHMH016P10	HHCS M6 X 16		
30	97	FHHM030P88	HHCS M10 X 30		
31	2	FLWMFP	LOCK WASHER M5		
32	6	FLWMGP	LOCK WASHER M6		
33	98	FLWMIP	LOCK WASHER M10		
34	1	SPH-1286	FENDER WASHER, 8MM		
35	1	CF50-0340-4	CROSSMEMBER, END, XL		
36	1	CF50-0339-6	POST, FRAME, XL		
37	1	CF50-0341-4	CROSSMEMBER, END, XL		
38	2	CF50-0021-4	GUSSET, FRAME		
39	1	CF50-0370-4	SUPPORT, REAR GUARD		
40	1	PC600183	BLANK HOLDER EXTENDED		
41	1	HMI MOUNT ASSEMBLY	ADJUSTABLE HMI MOUNTING BRACKET		

REVISION HISTORY			
REV	DESCRIPTION	DATE	BY
A	RELEASED	12/19/2011	RM

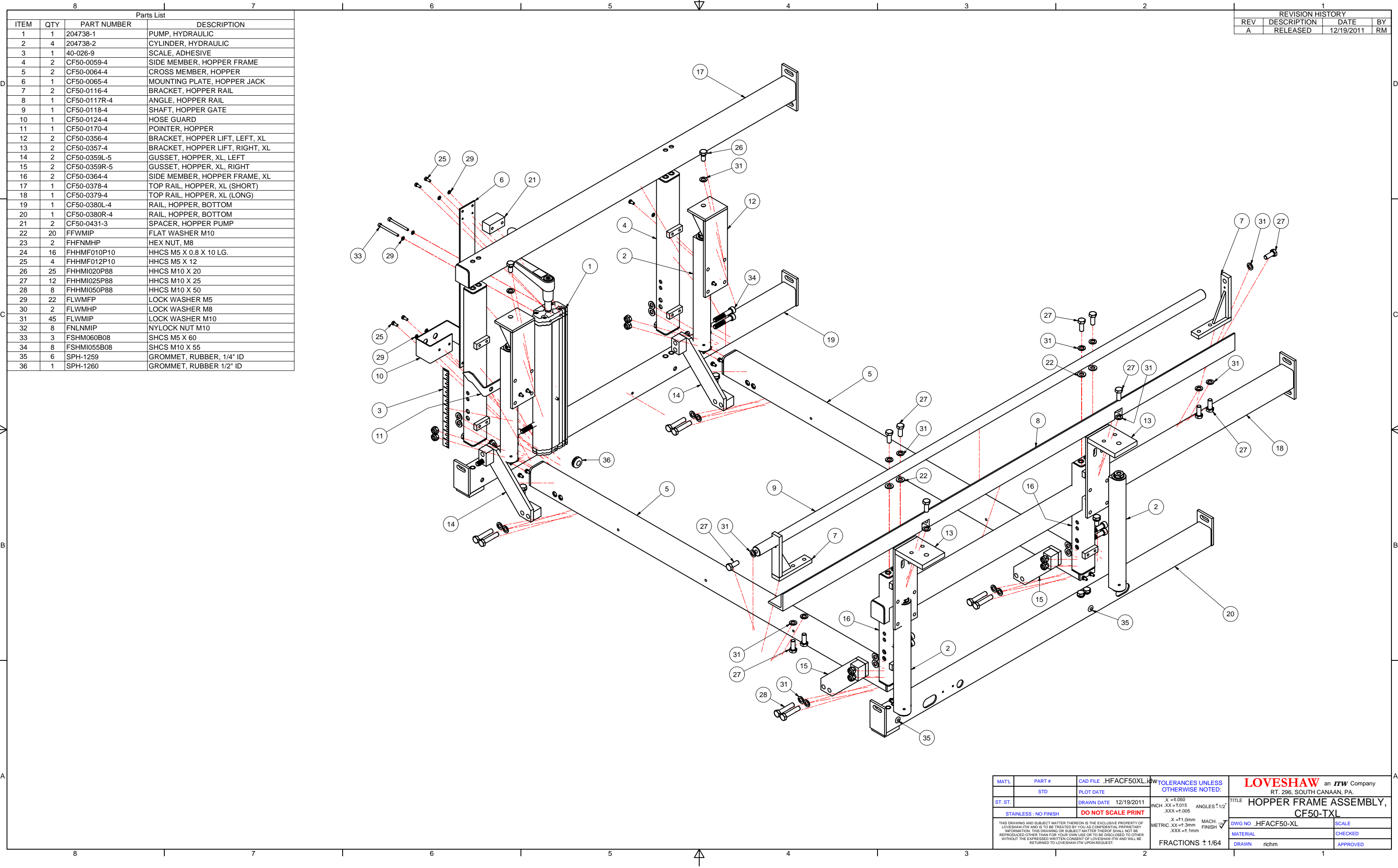


MATL	PART #	CAD FILE	FRAC50XL.dwgTOLERANCES UNLESS OTHERWISE NOTED:		LOVESHAW an ITW Company RT. 296, SOUTH CANAAN, PA.	
BT	ST	PLOT DATE	12/19/2011	X = ±.000 INCH .XX = ±.015 XXX = ±.005	ANGLES: 1/2°	TITLE FRAME ASSEMBLY, CF50-XL
STAINLESS - NO FINISH		DO NOT SCALE PRINT		X = ±.12mm METRIC .XX = ±.3mm XXX = ±.1mm	MACH. FINISH	DWG NO. FRAC50XL SCALE
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FRACTIONS 1/64						CHECKED
						APPROVED









Parts List			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	204738-1	PUMP, HYDRAULIC
2	4	204738-2	CYLINDER, HYDRAULIC
3	1	40-026-9	SCALE, ADHESIVE
4	2	CF50-0059-4	SIDE MEMBER, HOPPER FRAME
5	2	CF50-0064-4	CROSS MEMBER, HOPPER
6	1	CF50-0065-4	MOUNTING PLATE, HOPPER JACK
7	2	CF50-0116-4	BRACKET, HOPPER RAIL
8	1	CF50-0117R-4	ANGLE, HOPPER RAIL
9	1	CF50-0118-4	SHAFT, HOPPER GATE
10	1	CF50-0124-4	HOSE GUARD
11	1	CF50-0170-4	POINTER, HOPPER
12	2	CF50-0356-4	BRACKET, HOPPER LIFT, LEFT, XL
13	2	CF50-0357-4	BRACKET, HOPPER LIFT, RIGHT, XL
14	2	CF50-0359L-5	GUSSET, HOPPER, XL, LEFT
15	2	CF50-0359R-5	GUSSET, HOPPER, XL, RIGHT
16	2	CF50-0364-4	SIDE MEMBER, HOPPER FRAME, XL
17	1	CF50-0378-4	TOP RAIL, HOPPER, XL (SHORT)
18	1	CF50-0379-4	TOP RAIL, HOPPER, XL (LONG)
19	1	CF50-0380L-4	RAIL, HOPPER, BOTTOM
20	1	CF50-0380R-4	RAIL, HOPPER, BOTTOM
21	2	CF50-0431-3	SPACER, HOPPER PUMP
22	20	FFWMIP	FLAT WASHER M10
23	2	FHFNHMP	HEX NUT, M8
24	16	FHHMF010P10	HHCS M5 X 0.8 X 10 LG.
25	4	FHHMF012P10	HHCS M5 X 12
26	25	FHHMI020P88	HHCS M10 X 20
27	12	FHHMI025P88	HHCS M10 X 25
28	8	FHHMI050P88	HHCS M10 X 50
29	22	FLWMFP	LOCK WASHER M5
30	2	FLWMHP	LOCK WASHER M8
31	45	FLWMIP	LOCK WASHER M10
32	8	FNLNMIP	NYLOCK NUT M10
33	3	FSHM060B08	SHCS M5 X 60
34	8	FSHMI055B08	SHCS M10 X 55
35	6	SPH-1259	GROMMET, RUBBER, 1/4" ID
36	1	SPH-1260	GROMMET, RUBBER 1/2" ID

REVISION HISTORY			
REV	DESCRIPTION	DATE	BY
A	RELEASED	12/19/2011	RM

MATL	PART #	CAD FILE .HFACF50XL.dwg	TOLERANCES UNLESS OTHERWISE NOTED:	LOVESHAW an ITW Company RT. 296, SOUTH CANAAN, PA.	
ST. ST.	STD	PLOT DATE		TITLE HOPPER FRAME ASSEMBLY, CF50-TXL	
		DRAWN DATE 12/19/2011		DWG NO .HFACF50-XL	SCALE
		DO NOT SCALE PRINT		MATERIAL	CHECKED
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.				DRAWN richm	APPROVED

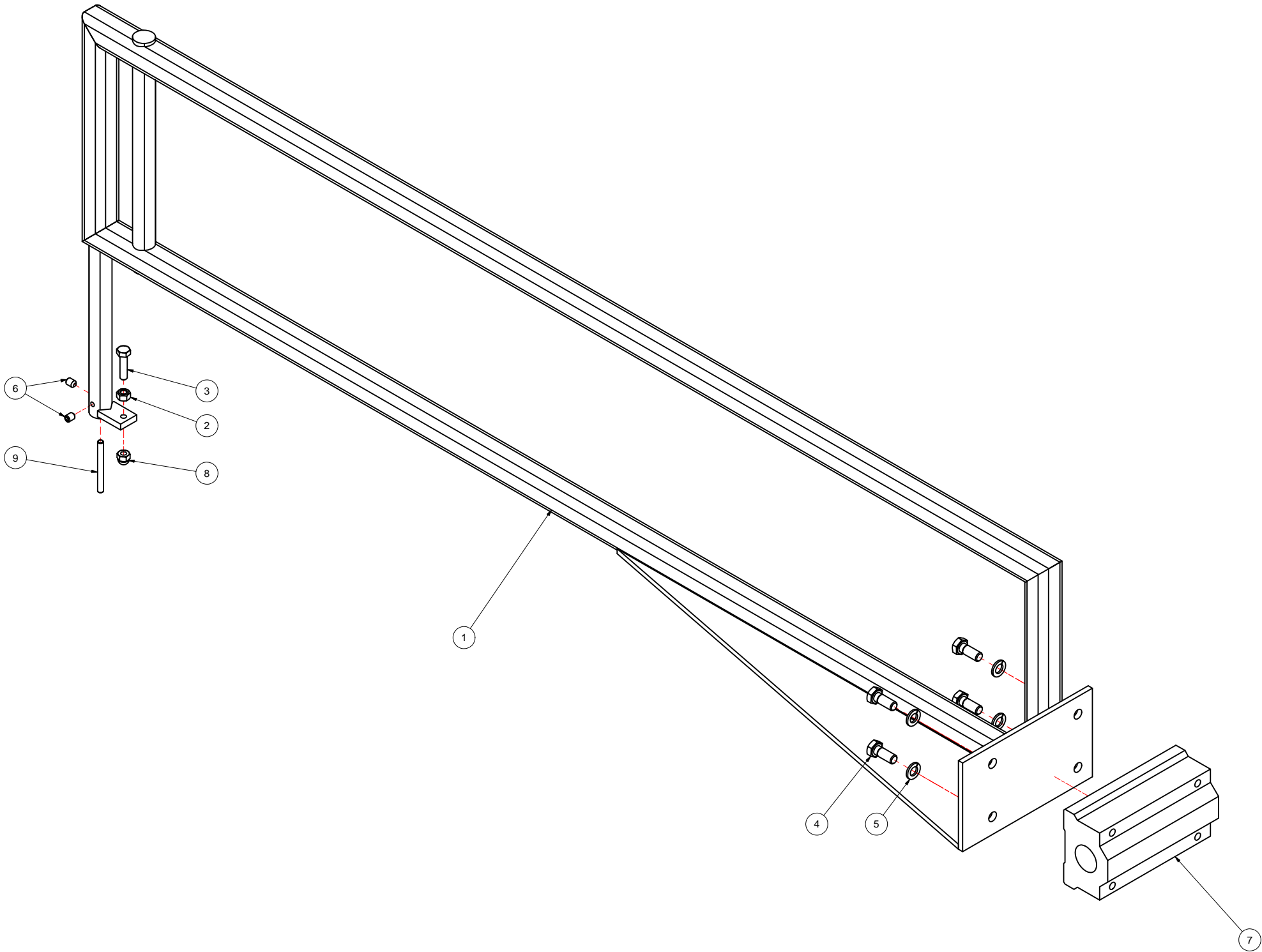






Parts List			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	CF50-0367L-5	HOPPER GATE, XL, STD
2	1	FHFNMGP	HEX NUT M6
3	1	FHHMG025P10	HHCS M6 X 25
4	4	FHHMH020P10	HHCS M8 X 20
5	4	FLWMHP	LOCK WASHER M8
6	2	FSSMG008B10	SSCP M6 X 8
7	1	PB25-SB-2	LINEAR PILLOW BLOCK
8	1	SPH-1256	ACORN NUT, M6
9	1	SPH-1413	PIN, HOPPER GATE

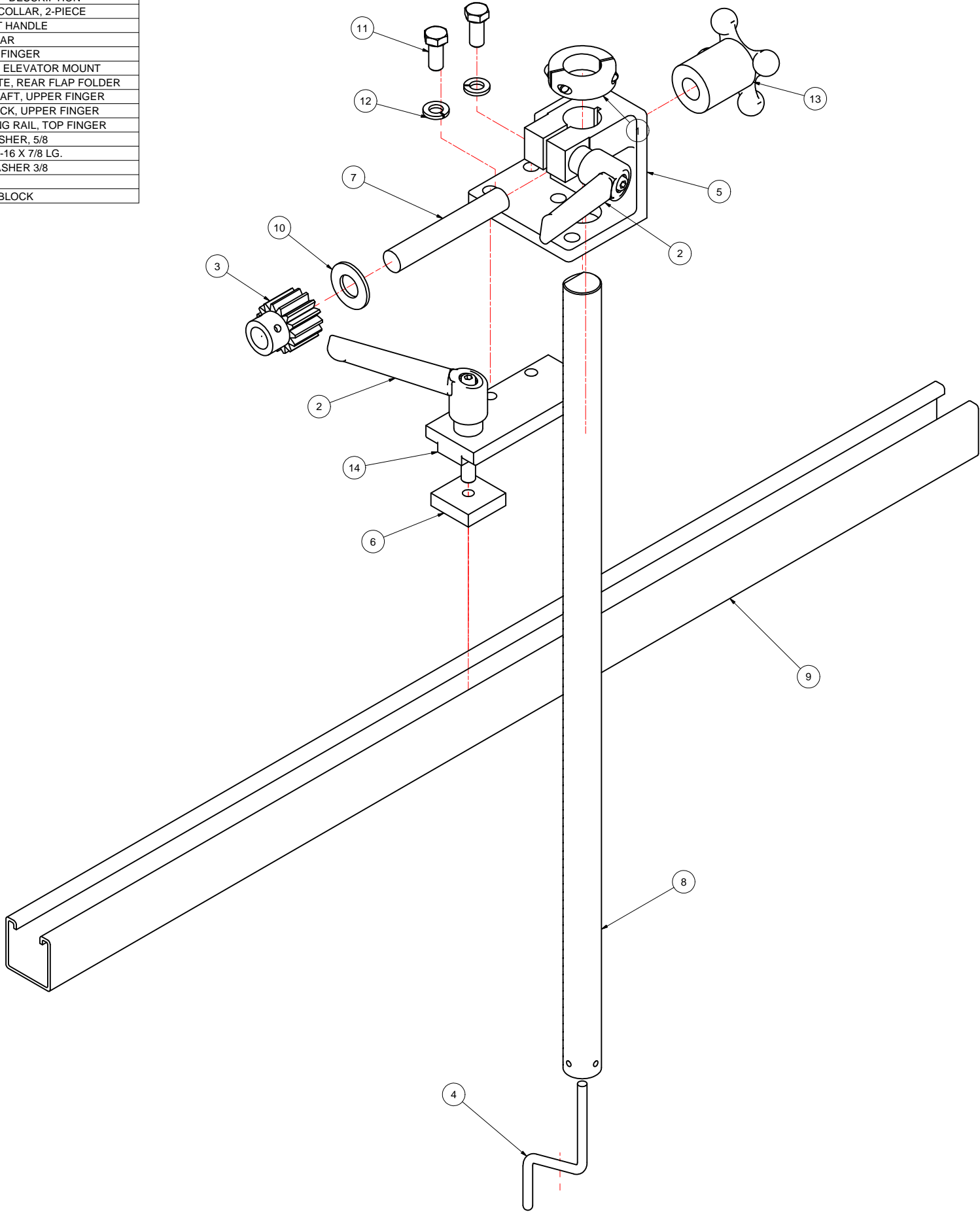
REVISION HISTORY			
REV	DESCRIPTION	DATE	BY
A	RELEASED	12/20/2011	RM



MATL	PART #	CAD FILE .BPACF50-DC-XL.dwg	LOVESHAWS UNLESS OTHERWISE NOTED:	LOVESHAW an ITW Company RT. 296, SOUTH CANAAN, PA.	
ST. ST.	STD	PLOT DATE 12/20/2011		TITLE BOX PUSHER ASSEMBLY, XL	
		DRAWN DATE 12/20/2011		DWG NO .BPACF50-DC-XL	SCALE 1/2:1
		STAINLESS : NO FINISH	DO NOT SCALE PRINT	MATERIAL	CHECKED
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Parts List			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	202203	1" SPLIT COLLAR, 2-PIECE
2	2	202669	RATCHET HANDLE
3	1	202766-10	SPUR GEAR
4	1	A622966	BOTTOM FINGER
5	1	C170390-PG	LOCKING ELEVATOR MOUNT
6	1	CF50-0089-3	NUT PLATE, REAR FLAP FOLDER
7	1	CF50-0168-3	GEAR SHAFT, UPPER FINGER
8	1	CF50-0174C-4	GEAR RACK, UPPER FINGER
9	1	CF50-0384-4	MOUNTING RAIL, TOP FINGER
10	1	FFWSIP	FLAT WASHER, 5/8
11	2	FHHSJ088P05	HHCS 3/8-16 X 7/8 LG.
12	2	FLWSFP	LOCK WASHER 3/8
13	1	HC-1028	KNOB
14	1	PB600417	SLIDING BLOCK

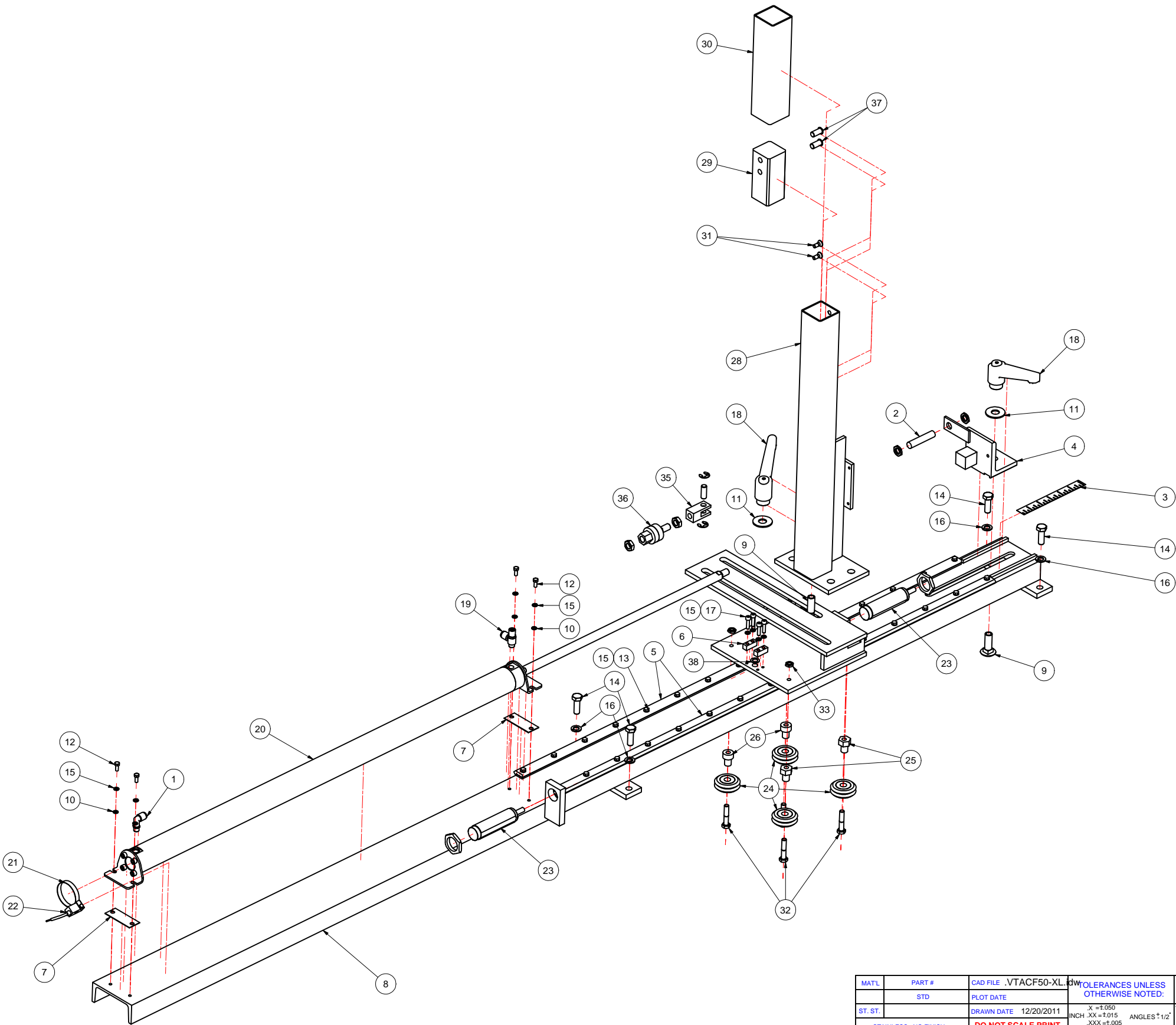
REVISION HISTORY			
REV	DESCRIPTION	DATE	BY
A	RELEASED	3/30/2007	AMYR



MATL	PART #	CAD FILE .UFACF50-XL	TOLERANCES UNLESS OTHERWISE NOTED:	<b>LOVESHAW</b> an <i>ITW</i> Company RT. 296, SOUTH CANAAN, PA.	
C.R.S.	STD	PLOT DATE 3/29/2007	.X =±.050 INCH .XX =±.015 ANGLES ±1/2° .XXX =±.005	TITLE UPPER FINGER ASSY CF50T-XL	
ST. ST.		DRAWN DATE 3/30/2007	.X =±1.0mm MACH. FINISH ✓ METRIC .XX =±.3mm .XXX =±.1mm	DWG NO .UFACF50-XL	SCALE
STAINLESS : NO FINISH		DO NOT SCALE PRINT		MATERIAL	CHECKED
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	DRAWN AMYR	APPROVED

Parts List			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	14441	ELBOW, 1/4 TUBE X 1/8 NPT
2	1	302575	PROXIMITY SWITCH
3	1	40-026-6	SCALE
4	1	CF50-0072R-5	TROLLEY STOP
5	2	CF50-0387-5	VEE TRACK, XL
6	2	CF50-0399-3	GUIDE, TROLLEY CLEVIS
7	2	CF50-0403-3	SHIM, TROLLEY CYLINDER
8	1	CF50-0404-6	CHANNEL, VACUUM TROLLEY
9	2	FCBSN150P05	CARRIAGE BOLT, 1/2-13 X 1 1/2"
10	4	FFWMFP	FLAT WASHER M5
11	2	FFWSHP	FLAT WASHER 1/2"
12	4	FHHMF012P10	HHCS M5 X 12
13	30	FHHMF016P10	HEX HEAD M5 x 16
14	4	FHHM030P88	HHCS M10 X 1.5 X 30
15	38	FLWMFP	LOCK WASHER M5
16	4	FLWMIP	LOCK WASHER M10
17	4	FSHMF020P10	SHCS M5 X 20
18	2	HC-1027	RATCHET HANDLE
19	1	N400-201	FLOW CONTROL, TAMPER PROOF
20	1	N401-347	TROLLEY CYLINDER, XL
21	1	N595	SWITCH BRACKET
22	1	N597	REED SWITCH
23	2	SHK-007	SHOCK ABSORBER
24	4	204225	VEE WHEEL
25	2	204226	BUSHING, ECCENTRIC
26	2	204227	BUSHING, CONCENTRIC
27	1	CF50-0071R-5	CARRIER, VACUUM TROLLEY
28	1	CF50-0073-5	VACUUM TREE
29	1	CF50-0075-3	INSERT, VACUUM TREE
30	1	CF50-0076-4	EXTENSION, VACUUM TREE
31	2	FFHMG016P10	FHCS M6 X 16
32	4	FHHMH040P10	HHCS M8 X 40
33	4	FHJNMHP	HEX JAM NUT, M8, PLATED
34	1	FHJNSMP	7/16-20 HEX JAM NUT
35	1	N594	ROD CLEVIS
36	1	N629	FLOATING JOINT
37	2	SPH-1309	SPRING PLUNGER
38	2	SPH-1454	SHIM

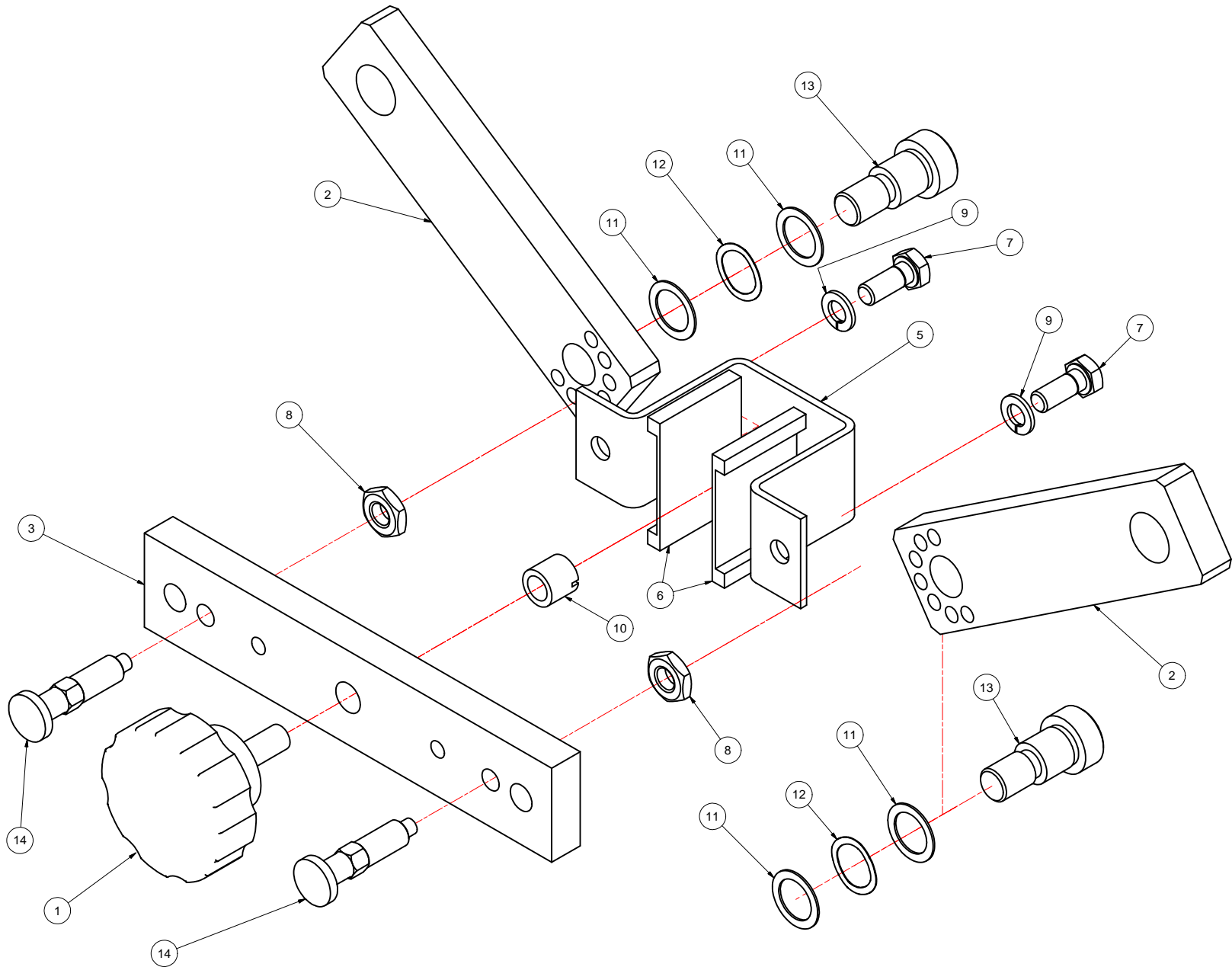
REVISION HISTORY			
REV	DESCRIPTION	DATE	BY
A	RELEASED	12/20/2011	RM



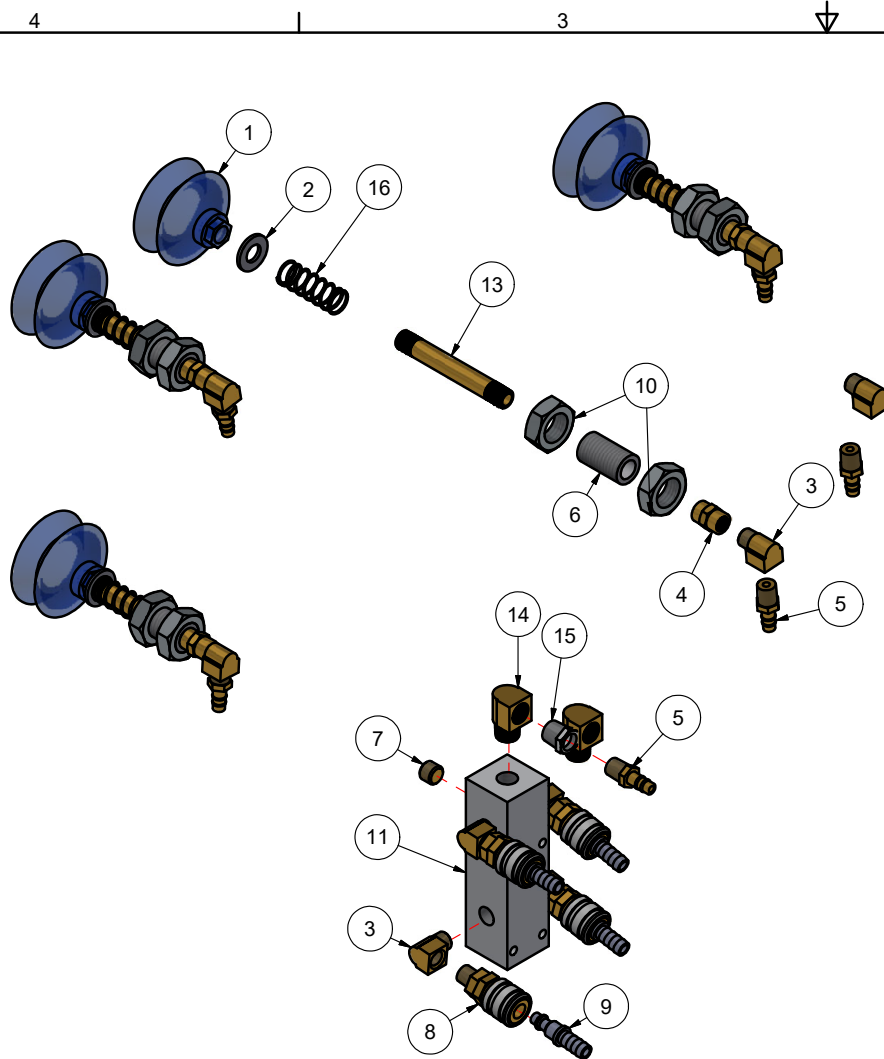
MATL	PART #	CAD FILE .VTACF50-XL.dwg	TOLERANCES UNLESS OTHERWISE NOTED:	LOVESHAW an <i>ITW</i> Company RT. 296, SOUTH CANAAN, PA.	
ST. ST.	STD	PLOT DATE	X = ±1.050 INCH .XX = ±0.015 .XXX = ±1.005	TITLE VACUUM TROLLEY ASSY CF50-TXL	
STAINLESS : NO FINISH		DO NOT SCALE PRINT	ANGLES ±1/2° X = ±1.0mm METRIC .XX = ±1.3mm .XXX = ±1.1mm	DWG NO .VTACF50XL	SCALE
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.				MATERIAL	CHECKED
FRACTIONS ± 1/64				DRAWN richm	APPROVED

Parts List			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	201816	KNOB, 3/8-16
2	2	CF50-0078-4	ARM, VACUUM CUP
3	1	CF50-0079-4	BRACKET, VACUUM CUPS
NS	1	CF50-0079A-4	BRACKET, VACUUM CUPS, LONG BOX
5	1	CF50-0175-4	BRACKET, VACUUM TREE
6	2	CF50-0205-4	SPACER, VACUUM BAR
7	2	FHHMH020P10	HHCS M8 X 20
8	2	FHJNMIP	HEX JAM NUT, M10, PLATED
9	2	FLWMHP	LOCK WASHER M8
10	1	SPH-1219	THREADED INSERT
11	4	SPH-1319	SHIM
12	2	SPH-1320	WAVE WASHER
13	2	SPH-1321	SHLDR. BOLT 5/8" DIA. X 5/8" LG., 1/2-13 THRD.
14	2	SPH-1325	SPRING PLUNGER, NON-LOCKING

REVISION HISTORY			
REV	DESCRIPTION	DATE	BY
A	RELEASED	9/25/2007	AMYR



MATL	PART #	CAD FILE	.VBACF50-PIN	TOLERANCES UNLESS OTHERWISE NOTED:	LOVESHAW an <i>ITW</i> Company RT. 296, SOUTH CANAAN, PA.						
C.R.S.	STD	PLOT DATE	9/9/2009		TITLE						
ST. ST.	N/A	DRAWN DATE	9/25/2007	$X = +0.050$ INCH .XX $\pm 0.015$ XXX $\pm 0.05$ ANGLES $\pm 1/2^\circ$	VACUUM BAR ASSEMBLY						
STAINLESS : NO FINISH		DO NOT SCALE PRINT			DWG NO	.VBACF50-PIN	SCALE	N/A			
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				FRACTIONS $\pm 1/64$							
								MATERIAL	N/A	CHECKED	
								DRAWN	AMYR	APPROVED	



Parts List			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	4	203220A	VACUUM CUP
2	4	FFWSHS	WASHER 1/2"
3	9	PF-10	BRASS STREET ELBOW, 90, 1/4" NPT
4	4	PF-8	COUPLING, 1/4" NPT
5	6	PF-16	HOSE BARB FITTING, 1/4" NPT x 3/8" TUBE
6	4	A621688	THREADED INSERT
7	1	PF-9	PLUG, HEX SOC. PIPE 1/4" NPT
8	4	PF-21	SOCKET, QUICK COUPLING, 3/8" NPT
9	4	PF-45	QUICK DISCONNECT PLUG, 3/8" HOSE BARB
10	8	40-010	HEX JAM NUT 7/8"-9 UNC
11	1	CF50-0074-4	VACUUM MANIFOLD
12	10 FT.	H801-6	VACUUM HOSE 3/8" ID
13	4	N400-192	NIPPLE, 1/4 X 4, BRASS
14	2	PF-34	STEET ELBOW, 3/8 NPT
15	1	PF-38	REDUCER, 3/8 X 1/4 NPT, BRASS
16	4	SPR-1073	COMPRESSION SPRING 2IN L

CAD FILE .VCACF50.idw

PLOT DATE 10/21/2015

DRAWN DATE 5/24/2006

**DO NOT SCALE PRINT**

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TITLE

**VACUUM CUP ASSEMBLY**

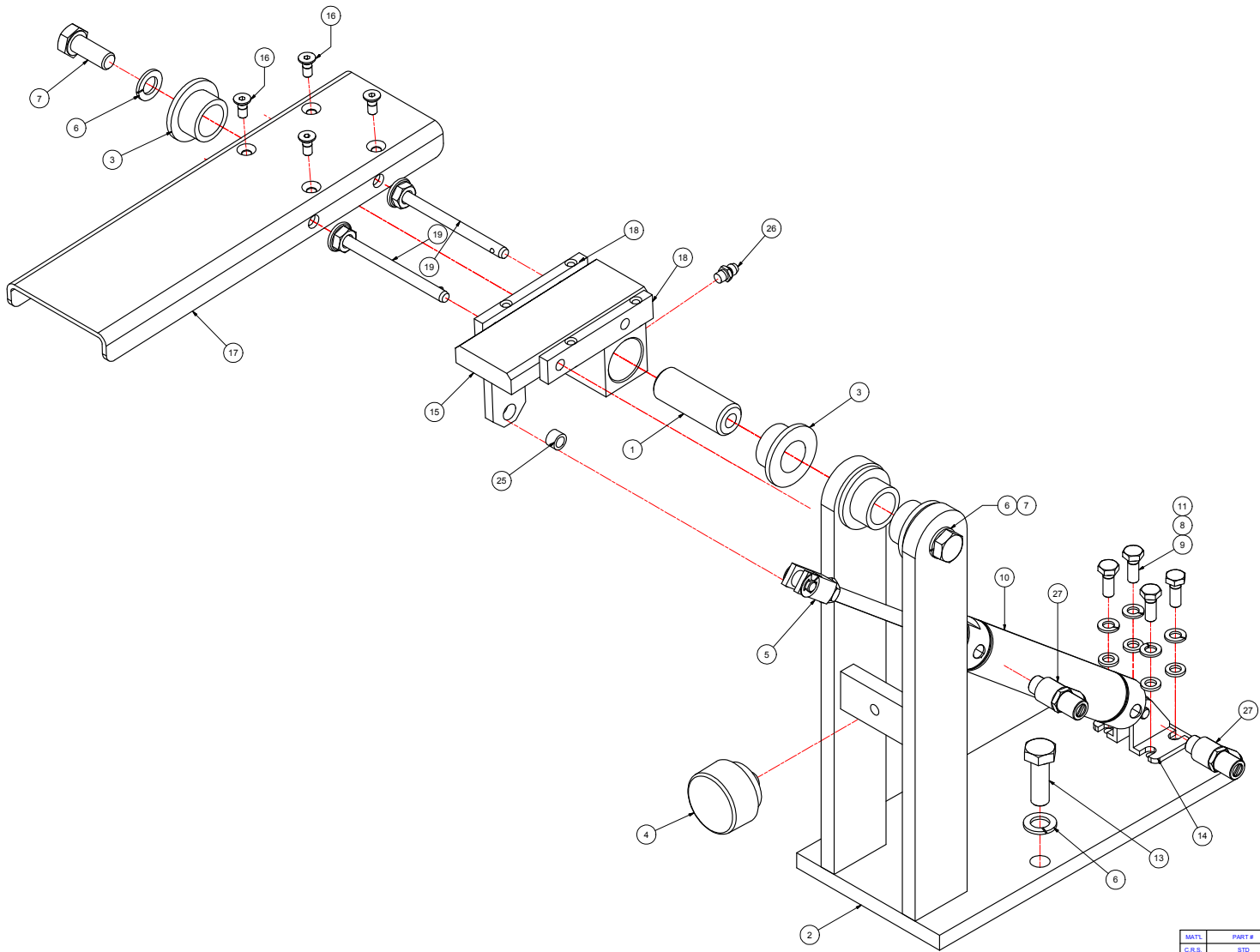
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SCALE

DRAWN

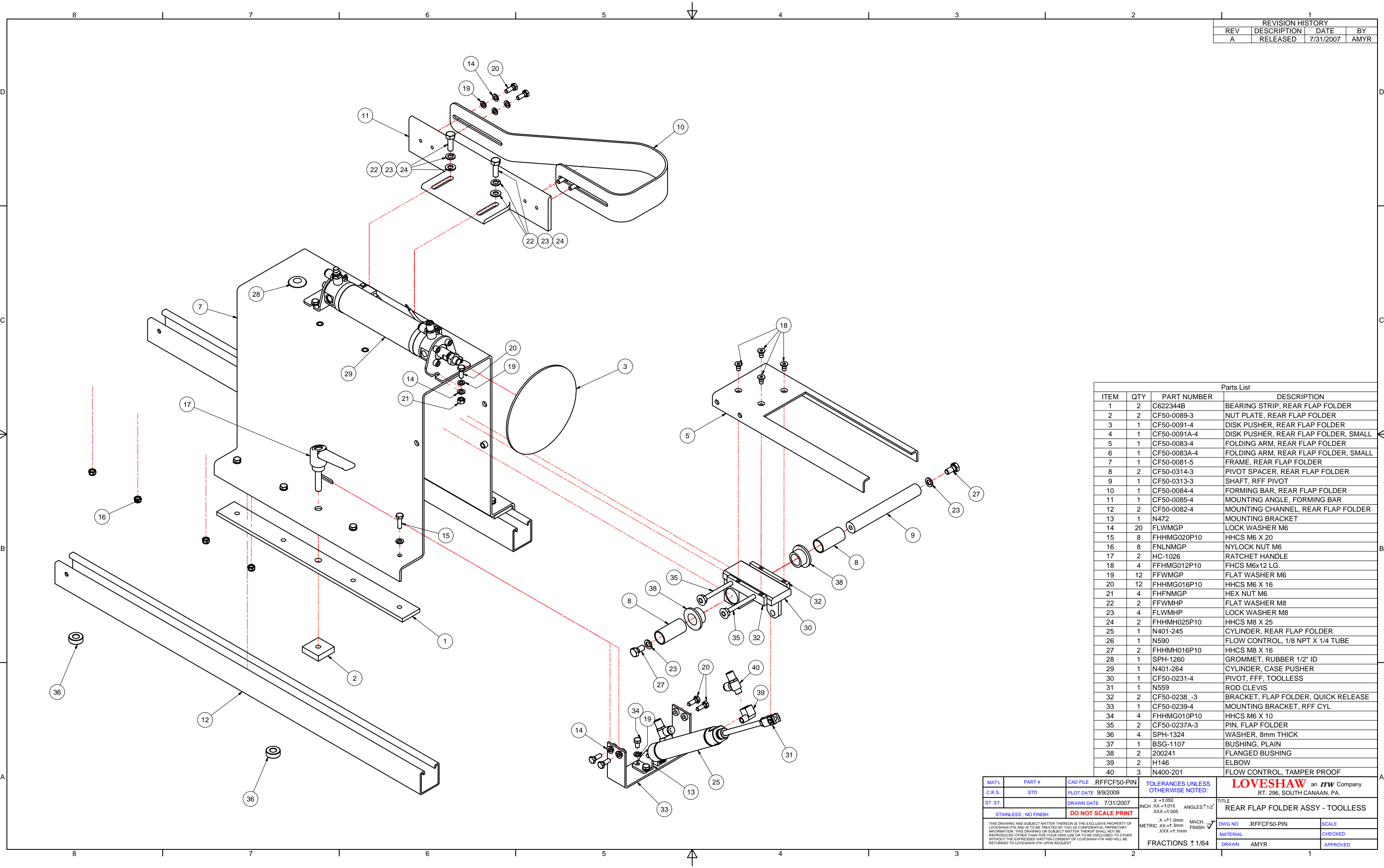
APPROVED

REVISION HISTORY			
REV	DESCRIPTION	DATE	BY
A	RELEASED	7/31/2007	AMJR



Parts List			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	CF50-0092-3	PIVOT SHAFT, FRONT FLAP FOLDER
2	1	CF50-0095-5	FRAME, FRONT FLAP FOLDER
3	2	200241	FLANGED BUSHING
4	1	200287	BUMPER
5	1	N531	ROD CLEVIS
6	4	FLWMIP	LOCK WASHER M10
7	2	FHHM025P88	HHCS M10 X 25
8	4	FLWMGP	LOCK WASHER M6
9	4	FHHMG016P10	HHCS M6 X 16
10	1	N401-245	CYLINDER, REAR FLAP FOLDER
11	4	FFWMGP	FLAT WASHER M6
13	2	FHHM030P88	HHCS M10 X 30
14	1	N472	PIVOT BRACKET
15	1	CF50-0231-4	PIVOT, FFF, TOOLLESS
16	4	FFHMF012P10	FHCS M5 X 0.8 X 12 LG.
17	1	CF50-0228A-4	FOLDER, FRONT FLAP
-	1	CF50-0228B-4	FOLDER, FRONT FLAP
18	2	CF50-0238_-3	BRACKET, FLAP FOLDER, QUICK RELEASE
19	2	CF50-0237B-3	PIN, FLAP FOLDER
25	1	BSG-1107	BUSHING, PLAIN
26	1	SPH-1368	GREASE FITTING, 1/4-28UNF
27	2	N400-201	FLOW CONTROL, TAMPER PROOF

MATL	PART #	CAD FILE	FFFCF50-PIN	TOLERANCES UNLESS OTHERWISE NOTED:	LOVESHAW an ITW Company RT. 286, SOUTH CANAAN, PA.	
C.R.B.	STD	PLOT DATE	9/8/2009	X = ±.000 INCH .XX = ±.015 XXX = ±.005	FRONT FLAP FOLDER TOOLLESS	
BT	ST	DRAWN DATE	7/31/2007	X = ±1.0mm METRIC .XX = ±.1mm XXX = ±.1mm	DWG NO	FFFCF50-PIN
STAINLESS - NO FINISH				DO NOT SCALE PRINT	MATERIAL	AMJR
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				FRACTIONS 1/64	DRAWN	AMJR

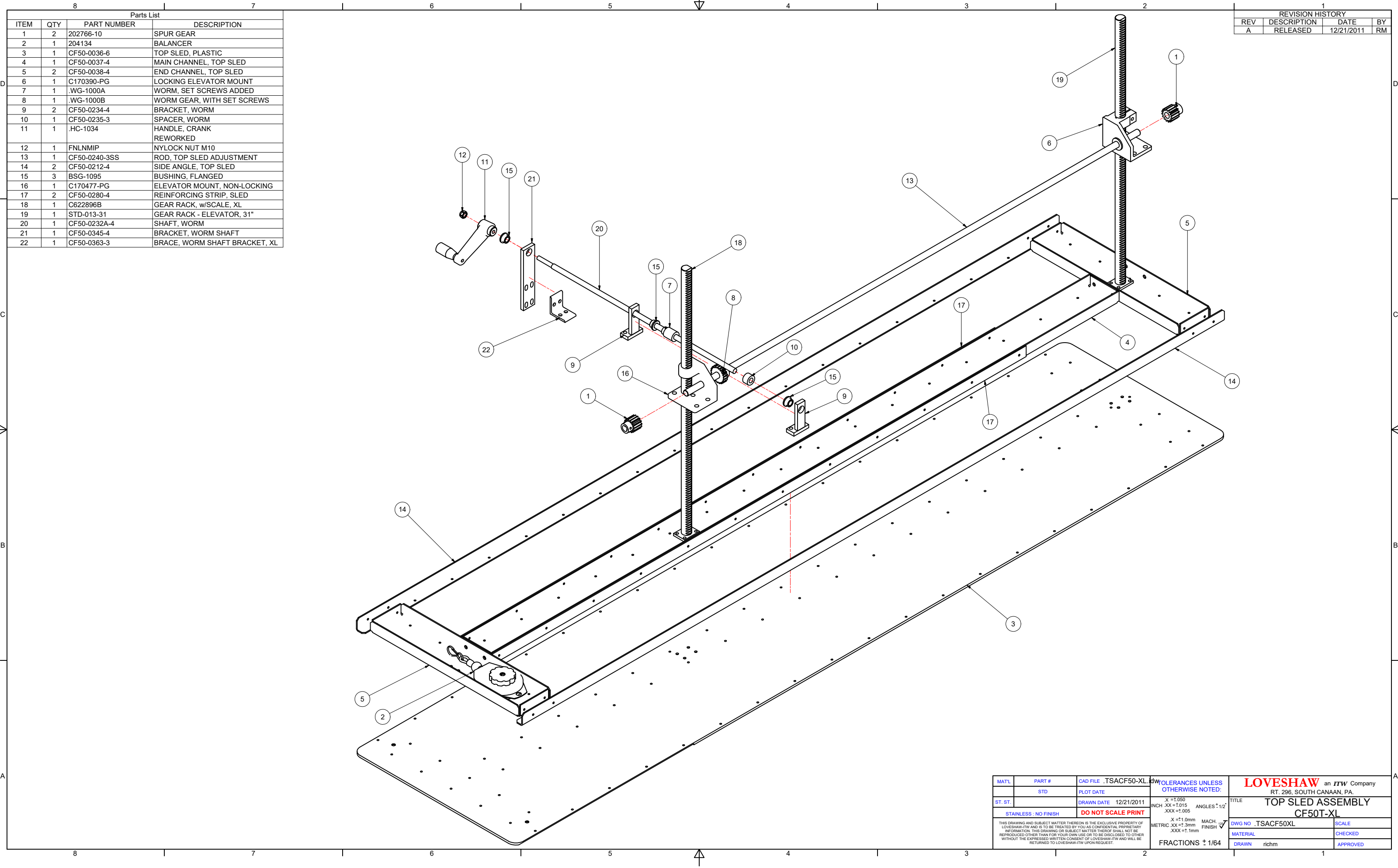


REVISION HISTORY			
REV	DESCRIPTION	DATE	BY
A	RELEASED	7/31/2007	AMYR

Parts List			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	2	C622344B	BEARING STRIP, REAR FLAP FOLDER
2	2	CF50-0089-3	NUT PLATE, REAR FLAP FOLDER
3	1	CF50-0091-4	DISK PUSHER, REAR FLAP FOLDER
4	1	CF50-0091A-4	DISK PUSHER, REAR FLAP FOLDER, SMALL
5	1	CF50-0083-4	FOLDING ARM, REAR FLAP FOLDER
6	1	CF50-0083A-4	FOLDING ARM, REAR FLAP FOLDER, SMALL
7	1	CF50-0081-5	FRAME, REAR FLAP FOLDER
8	2	CF50-0314-3	PIVOT SPACER, REAR FLAP FOLDER
9	1	CF50-0313-3	SHAFT, RFF PIVOT
10	1	CF50-0084-4	FORMING BAR, REAR FLAP FOLDER
11	1	CF50-0085-4	MOUNTING ANGLE, FORMING BAR
12	2	CF50-0082-4	MOUNTING CHANNEL, REAR FLAP FOLDER
13	1	N472	MOUNTING BRACKET
14	20	FLWMGP	LOCK WASHER M6
15	8	FHHMG020P10	HHCS M6 X 20
16	8	FNLNMGP	NYLOCK NUT M6
17	2	HC-1026	RATCHET HANDLE
18	4	FFHMG012P10	FHCS M6x12 LG.
19	12	FFWMGP	FLAT WASHER M6
20	12	FHHMG016P10	HHCS M6 X 16
21	4	FHFNMGP	HEX NUT M6
22	2	FFWMHP	FLAT WASHER M8
23	4	FLWMHP	LOCK WASHER M8
24	2	FHHMH025P10	HHCS M8 X 25
25	1	N401-245	CYLINDER, REAR FLAP FOLDER
26	1	N590	FLOW CONTROL, 1/8 NPT X 1/4 TUBE
27	2	FHHMH016P10	HHCS M8 X 16
28	1	SPH-1260	GROMMET, RUBBER 1/2" ID
29	1	N401-264	CYLINDER, CASE PUSHER
30	1	CF50-0231-4	PIVOT, FFF, TOOLLESS
31	1	N559	ROD CLEVIS
32	2	CF50-0238_-3	BRACKET, FLAP FOLDER, QUICK RELEASE
33	1	CF50-0239-4	MOUNTING BRACKET, RFF CYL
34	4	FHHMG010P10	HHCS M6 X 10
35	2	CF50-0237A-3	PIN, FLAP FOLDER
36	4	SPH-1324	WASHER, 8mm THICK
37	1	BSG-1107	BUSHING, PLAIN
38	2	200241	FLANGED BUSHING
39	2	H146	ELBOW
40	3	N400-201	FLOW CONTROL, TAMPER PROOF

MATL	PART #	CAD FILE .RFFCF50-PIN	TOLERANCES UNLESS OTHERWISE NOTED:	LOVESHAW an <i>ITW</i> Company RT. 296, SOUTH CANAAN, PA.	
C.R.S.	STD	PLOT DATE 9/9/2009		TITLE REAR FLAP FOLDER ASSY - TOOLLESS	
ST. ST.		DRAWN DATE 7/31/2007	X = ±1.050 INCH .XX = ±0.015 .XXX = ±1.005	DWG NO .RFFCF50-PIN	
STAINLESS - NO FINISH		DO NOT SCALE PRINT	ANGLES ±1/2° X = ±1.0mm MACH. FINISH METRIC .XX = ±1.3mm .XXX = ±1.0mm	MATERIAL	CHECKED
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				AMYR	



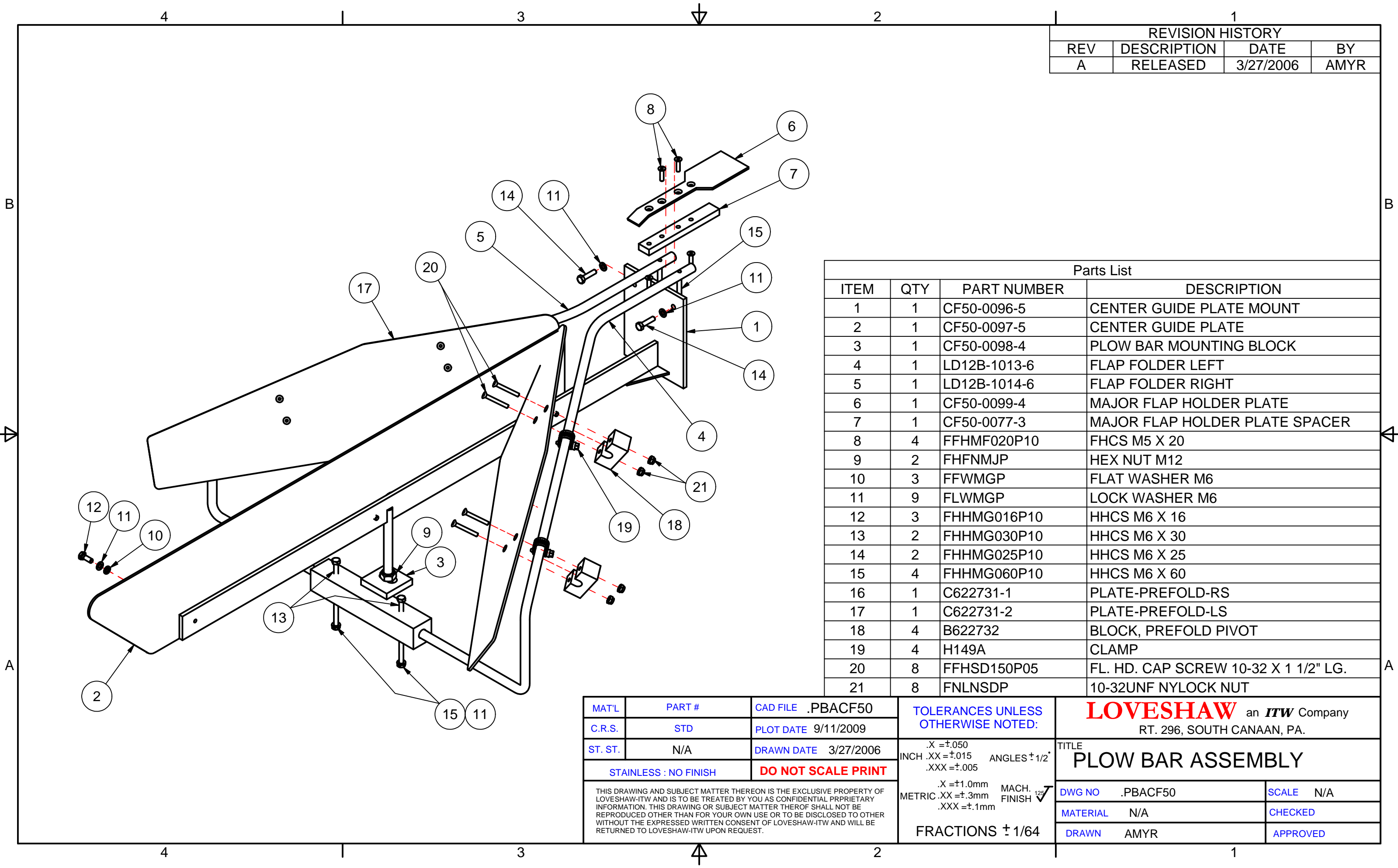


Parts List			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	2	202766-10	SPUR GEAR
2	1	204134	BALANCER
3	1	CF50-0036-6	TOP SLED, PLASTIC
4	1	CF50-0037-4	MAIN CHANNEL, TOP SLED
5	2	CF50-0038-4	END CHANNEL, TOP SLED
6	1	C170390-PG	LOCKING ELEVATOR MOUNT
7	1	.WG-1000A	WORM, SET SCREWS ADDED
8	1	.WG-1000B	WORM GEAR, WITH SET SCREWS
9	2	CF50-0234-4	BRACKET, WORM
10	1	CF50-0235-3	SPACER, WORM
11	1	.HC-1034	HANDLE, CRANK REWORKED
12	1	FNLNMIP	NYLOCK NUT M10
13	1	CF50-0240-3SS	ROD, TOP SLED ADJUSTMENT
14	2	CF50-0212-4	SIDE ANGLE, TOP SLED
15	3	BSG-1095	BUSHING, FLANGED
16	1	C170477-PG	ELEVATOR MOUNT, NON-LOCKING
17	2	CF50-0280-4	REINFORCING STRIP, SLED
18	1	C622896B	GEAR RACK, w/SCALE, XL
19	1	STD-013-31	GEAR RACK - ELEVATOR, 31"
20	1	CF50-0232A-4	SHAFT, WORM
21	1	CF50-0345-4	BRACKET, WORM SHAFT
22	1	CF50-0363-3	BRACE, WORM SHAFT BRACKET, XL

REVISION HISTORY			
REV	DESCRIPTION	DATE	BY
A	RELEASED	12/21/2011	RM

MATL	PART #	CAD FILE .TSACF50-XL.dwg	TOLERANCES UNLESS OTHERWISE NOTED:	LOVESHAW an ITW Company RT. 296, SOUTH CANAAN, PA.	
ST. ST.	STD	PLOT DATE	X = ±.050 INCH .XX = ±.015 .XXX = ±.005	TITLE TOP SLED ASSEMBLY CF50T-XL	
STAINLESS - NO FINISH		DO NOT SCALE PRINT	ANGLES ±1/2° X = ±1.0mm METRIC .XX = ±.3mm .XXX = ±.1mm	DWG NO. .TSACF50XL	SCALE
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FRACTIONS ± 1/64				DRAWN richm	APPROVED



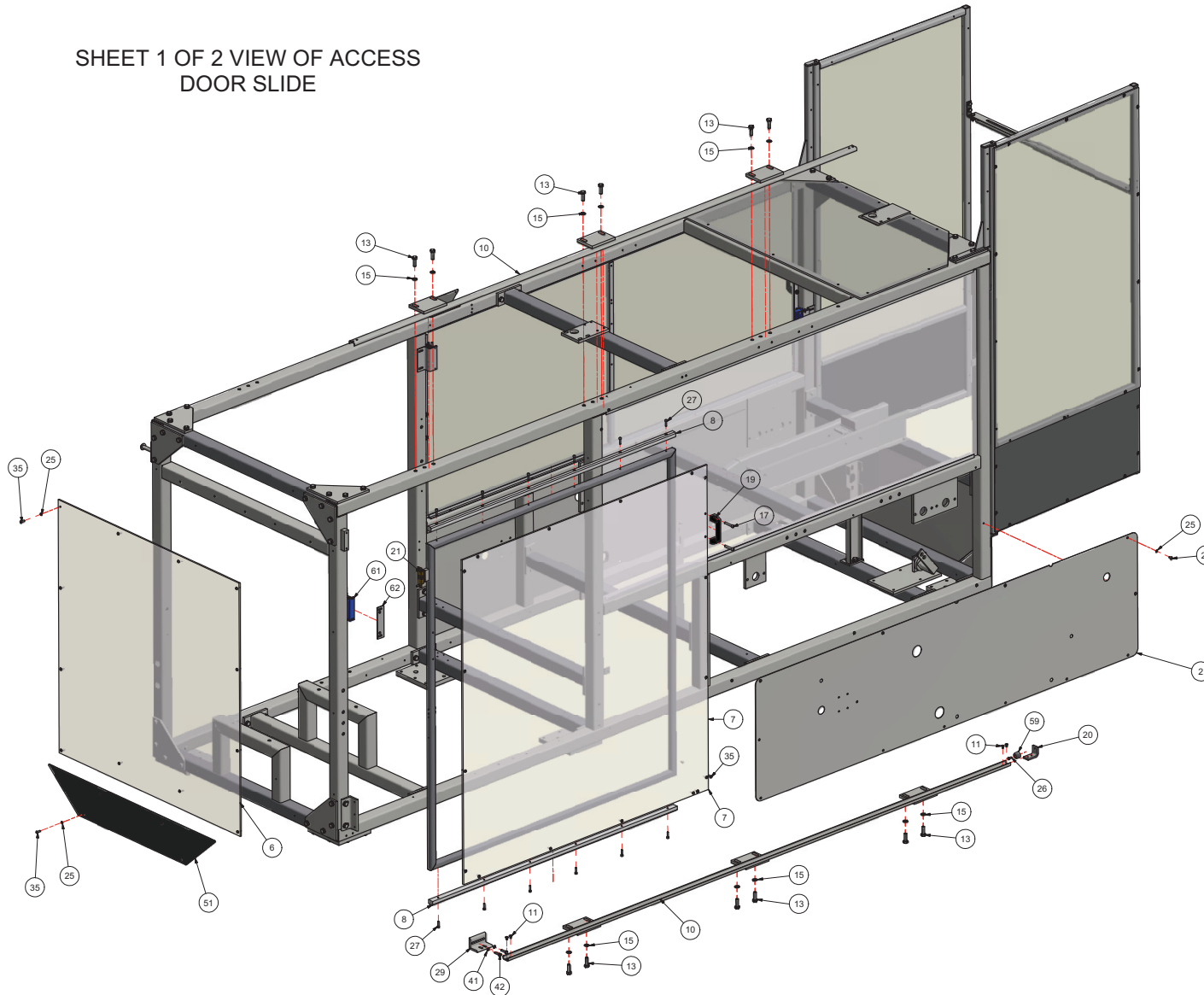


REVISION HISTORY			
REV	DESCRIPTION	DATE	BY
A	RELEASED	3/27/2006	AMYR

Parts List			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	CF50-0096-5	CENTER GUIDE PLATE MOUNT
2	1	CF50-0097-5	CENTER GUIDE PLATE
3	1	CF50-0098-4	PLOW BAR MOUNTING BLOCK
4	1	LD12B-1013-6	FLAP FOLDER LEFT
5	1	LD12B-1014-6	FLAP FOLDER RIGHT
6	1	CF50-0099-4	MAJOR FLAP HOLDER PLATE
7	1	CF50-0077-3	MAJOR FLAP HOLDER PLATE SPACER
8	4	FFHMF020P10	FHCS M5 X 20
9	2	FHFNMJP	HEX NUT M12
10	3	FFWMGP	FLAT WASHER M6
11	9	FLWMGP	LOCK WASHER M6
12	3	FHHMG016P10	HHCS M6 X 16
13	2	FHHMG030P10	HHCS M6 X 30
14	2	FHHMG025P10	HHCS M6 X 25
15	4	FHHMG060P10	HHCS M6 X 60
16	1	C622731-1	PLATE-PREFOLD-RS
17	1	C622731-2	PLATE-PREFOLD-LS
18	4	B622732	BLOCK, PREFOLD PIVOT
19	4	H149A	CLAMP
20	8	FFHSD150P05	FL. HD. CAP SCREW 10-32 X 1 1/2" LG.
21	8	FNLNSDP	10-32UNF NYLOCK NUT

MAT'L	PART #	CAD FILE .PBACF50	TOLERANCES UNLESS OTHERWISE NOTED:  .X =±.050 INCH .XX =±.015    ANGLES ± 1/2° .XXX =±.005  .X =±1.0mm METRIC .XX =±.3mm    MACH. FINISH ✓ .XXX =±.1mm  FRACTIONS ± 1/64	LOVESHAW an ITW Company RT. 296, SOUTH CANAAN, PA.	
C.R.S.	STD	PLOT DATE 9/11/2009		TITLE PLOW BAR ASSEMBLY	
ST. ST.	N/A	DRAWN DATE 3/27/2006			
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 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.	DWG NO .PBACF50    SCALE N/A	
				MATERIAL N/A    CHECKED	
				DRAWN AMYR    APPROVED	

SHEET 1 OF 2 VIEW OF ACCESS  
DOOR SLIDE



REVISION HISTORY			
REV	DESCRIPTION	DATE	BY
A	RELEASED	4/19/2018	AMS

Parts List			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	4	CF20-0123-3	PANEL BRACKET
2	2	CF50-0126-5	LOWER GUARD PANEL
3	1	CF50-0130-4	FRONT PANEL
4	2	CF50-0140-4	SLIDING PANEL
5	4	CF50-0141-4	SLIDING PANEL EDGE
6	1	CF50-0144-4	BACK PANEL
7	1	CF50-0146-5	DOOR PANEL
8	2	CF50-0147-4	WEAR STRIP, GUARDING
9	1	CF50-0148-5	FRAME, SLIDING DOOR
10	2	CF50-0149-5	DOOR CHANNEL
11	8	FFHMF010P10	FHCS M5 X 0.8 X 10 LG.
12	2	FHHMF010P10	HHCS M5 X 0.8 X 10 LG.
13	14	FHHMF030P88	HHCS M10 X 30
14	2	FLWMFP	LOCK WASHER M5
15	14	FLWMFP	LOCK WASHER M10
16	4	FNLSSEP	NYLOCK NUT 1/4-20
17	2	FSHMG040P10	SHCS M8 X 1.0 X 40 LG.
18	4	FSHSE100B05	SHCS 1/4-20 X 1.0 LG.
19	3	HC-1004	U-HANDLE
20	1	CF50-0152-3	DOOR STOP BRACKET
21	1	204238	DOOR LOCK
22	2	FFHMG016P10	FHCS M6 X 1.0 X 16 LG.
23	2	FFHMF012P10	FHCS M5 X 0.8 X 12 LG.
24	31	FBHMF010P10	BHCS M5 X 0.8 X 10 LG.
25	71	FFWMFP	FLAT WASHER M5
26	11	FSHMF012P10	SHCS M5 X 0.8 X 12 LG.
27	12	FSHMF020P10	SHCS M5 X 0.8 X 20 LG.
28	2	FHFNMFP	HEX NUT M5
29	1	CF50-0197-4	SUPPORT BRACKET, DOOR RAIL
30	4	CF50-0195-5	SLIDE, SAFETY GATE
31	4	SPH-1258	RIVET, C/SUNK
32	1	CF50-0193-4	GUARD, DRIVE CHAIN
33	2	FLWMGP	LOCK WASHER M6
34	2	FHHMF012P10	HHCS M6 X 12
35	37	FBHMF016P10	BHCS M5 X 16
36	2	CF50-0211-4	TIE BAR, SAFETY CURTAIN
37	1	SPH-1348	GROMMET, RUBBER
38	1	SPH-1280	GROMMET, RUBBER
39	1	FRACF50	FRAME ASSEMBLY
40	1	CF50-0376-4	STOP, SLIDING DOOR
41	2	FFWMGP	FLAT WASHER M6
42	2	FHHMG025P10	HHCS M6 X 25
43	1	CF50-0127-5	FIXED SIDE PANEL
44	1	CF50-0473-4	TOP EXIT GUARD PANEL
45	2	CF50-0478-6	EXIT GUARD FRAME
46	2	CF50-0481-4	EXIT GUARD GLASS
47	2	CF50-0489-4	EXIT GUARD BOTTOM
48	2	CF50-0489-3	GUARD ANGLE BRKT.
49	2	CF50-0480-4	EXIT GUARD HINGE PIN TOP
50	2	CF50-0479-4	EXIT GUARD HINGE PIN
51	1	CF50-0465-4	FILL PLATE BOTTOM FRAME
52	4	FHHMF016P10	HHCS M8 X 16
53	10	FETLWMFP	Lock Washer Ext. M8
54	6	FHFNMHP	HEX NUT M8
55	6	FHHMF020P10	HHCS M8 X 20
56	4	FFWMFP	FLAT WASHER M8
57	39	FETLWMFP	EXT. LOCK WASHER M5
58	39	FBHMF012P10	HEX SOC. BUTT. HD. SCREW
59	1	F3MB	RUBBER BUMPER
60	1	CF50-0154-4	REAR GUARD SUPPORT
61	3	A195SG-MECHAN-2	MAGNETIC SAFETY GATE SWITCH
62	1	CF50-0661-4	SWITCH BRACKET
63	1	CF50-0662-4	SWITCH BRACKET, OFFSET
64	1	CF50-0663-4	SWITCH BRACKET, LRG. OFFSET

MATL	PART #	CAD FILE	SGCF50_24V.dwg	DIFFERENCES UNLESS OTHERWISE NOTED:	2206 EASTON TPK., SOUTH CANAAN, PA.
BT	ST	PLOT DATE		X = 7.000 Y = 7.000 Z = 7.000 X = 7.000 Y = 7.000 Z = 7.000	
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FRACTIONS 1/64				DWG NO. SGCF50_24V	SCALE
				MATERIAL	CHECKED
				DRAWN brycel	APPROVED

REVISION HISTORY			
REV	DESCRIPTION	DATE	APPROVED
A	RELEASED	6/11/2015	TONYS

Parts List			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	3	A19SSG-TM1	SAFETY GATE SWITCH
2	4	CF20-0123-3	PANEL BRACKET
3	2	CF50-0126-5	LOWER GUARD PANEL
4	1	CF50-0130-4	FRONT PANEL
5	2	CF50-0140-4	SLIDING PANEL
6	4	CF50-0141-4	SLIDING PANEL EDGE
7	2	CF50-0142-3	KEY PLATE
8	1	CF50-0144-4	BACK PANEL
9	1	CF50-0146-5	DOOR PANEL
10	2	CF50-0147-4	WEAR STRIP, GUARDING
11	1	CF50-0148-5	FRAME, SLIDING DOOR
12	2	CF50-0149-5	DOOR CHANNEL
13	1	CF50-0143-3	SAFETY SWITCH SPACER
14	8	FFHMF010P10	FHCS M5 X 0.8 X 10 LG.
15	6	FFHMF010P10	FHCS M5 X 0.8 X 10 LG.
16	14	FHMM030P88	FHCS M10 X 30
17	6	FLWMFP	LOCK WASHER M5
18	14	FLWMFP	LOCK WASHER M10
19	4	FNLNSEP	NYLOCK NUT 1/4-20
20	2	FSHMG040P10	SHCS M6 X 1.0 X 40 LG.
21	4	FSHSE100B05	SHCS 1/4-20 X 1.0 LG.
22	3	HC-1004	U-HANDLE
23	1	CF50-0152-3	DOOR STOP BRACKET
24	1	204238	DOOR LOCK
25	2	FFHMG016P10	FHCS M6 X 1.0 X 16 LG.
26	2	FFHMF012P10	FHCS M5 X 0.8 X 12 LG.
27	31	FBHMF010P10	BHCS M5 X 0.8 X 10 LG.
28	71	FFWMFP	FLAT WASHER M5
29	11	FSHMF012P10	SHCS M5 X 0.8 X 12 LG.
30	12	FSHMF020P10	SHCS M5 X 0.8 X 20 LG.
31	4	FSHME035P10	SHCS M4 X 0.7 X 35 LG.
32	2	FSHME050S10	SHCS M4 X 0.7 X 50 LG.
33	2	FSHMF040P10	SHCS M5 X 0.8 X 40 LG.
34	5	FFHNMFP	HEX NUT M5
35	1	CF50-0197-4	SUPPORT BRACKET, DOOR RAIL
36	4	CF50-0195-5	SLIDE, SAFETY GATE
37	4	SPH-1258	RIVET, C'SUNK
38	1	CF50-0193-4	GUARD, DRIVE CHAIN
39	2	FLWMFP	LOCK WASHER M6
40	2	FFHMG012P10	FHCS M6 X 12
41	40	FBHMF016P10	BHCS M5 X 16
42	2	CF50-0211-4	TIE BAR, SAFETY CURTAIN
43	1	SPH-1348	GROMMET, RUBBER
44	1	SPH-1280	GROMMET, RUBBER
46	1	CF50-0376-4	STOP, SLIDING DOOR
47	2	FFWMFP	FLAT WASHER M6
48	2	FFHMG025P10	FHCS M6 X 25
51	1	CF50-0416-3	SPACER, SAFETY GATE SWITCH, CAT 3
52	1	CF50-0127-5	FIXED SIDE PANEL
53	1	CF50-0473-4	TOP EXIT GUARD PANEL
54	1	CF50-0474-4	TOP EXIT GUARD PANEL SUPPORT
55	2	CF50-0478-6	EXIT GUARD FRAME
56	2	CF50-0481-4	EXIT GUARD GLASS
57	2	CF50-0489-4	EXIT GUARD BOTTOM
58	2	CF50-0469-3	GUARD ANGLE BRKT.
59	2	CF50-0480-4	EXIT GUARD HINGE PIN TOP
60	2	CF50-0479-4	EXIT GUARD HINGE PIN
61	1	CF50-0465-4	FILL PLATE BOTTOM FRAME
62	4	FFHMH016P10	FHCS M8 X 16
63	10	FETLWMFP	Lock Washer Ext. M8
64	6	FFHNMFP	HEX NUT M8
65	6	FFHMH020P10	FHCS M8 X 20
66	4	FFWMFP	FLAT WASHER M8
67	50	FETLWMFP	EXT. LOCK WASHER M5
68	47	FBHMF012P10	HEX SOC. BUTT. HD. SCREW
69	1	F3MB	RUBBER BUMPER

SHEET 2 OF 2  
VIEW OF OPERATOR SIDE

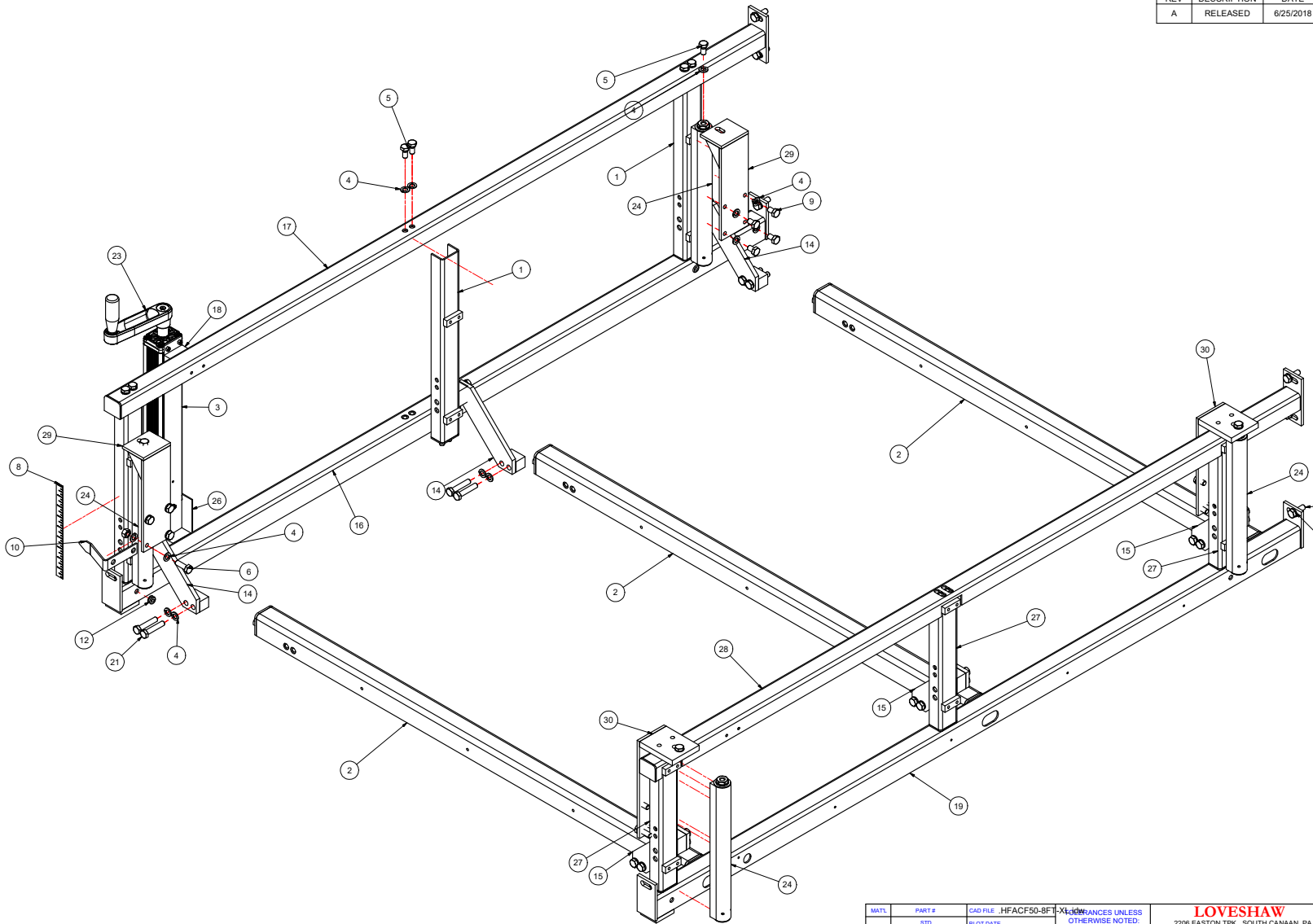
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NOTED	STD	PLOT DATE	6/11/2015	TITLE SAFETY GATE ASSEMBLY	
BT	ST	N/A	DRAWN DATE	6/11/2015	SCALE
STAINLESS - NO FINISH			DO NOT SCALE PRINT	DWG NO	SGACF50 rev 2
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FRACTIONS ± 1/64			APPROVED	TONYS	

## **Optional 8FT XL Foot Hopper Mechanical Drawings**

The drawings in this section represent the mechanical layouts specific to an 8 foot XL hopper.

Parts List			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	3	CF50-0059-4	SIDE MEMBER, HOPPER FRAME
2	3	CF50-0064-4	CROSS MEMBER, HOPPER
3	1	CF50-0065-4	MOUNTING PLATE, HOPPER JACK
4	80	FLWMIP	LOCK WASHER M10
5	31	FHHMI020P88	HHCS M10 X 20
6	10	FHHMI030P88	HHCS M10 X 30
7	16	FLWMFP	LOCK WASHER M5
8	1	40-026-9	SCALE, ADHESIVE
9	12	FHHMI016P10	HHCS M10 X 16
10	1	CF50-0170-4	POINTER, HOPPER
11	14	FHFNMIP	HEX NUT M10
12	4	SPH-1259	GROMMET, RUBBER, 1/4" ID
13	1	SPH-1260	GROMMET, RUBBER, 1/2" ID
14	3	CF50-0359/LR-5	GUSSET, HOPPER, XL
15	3	CF50-0359/R-5	GUSSET, HOPPER, XL, RIGHT
16	1	CF50-0438/L-6	BOTTOM RAIL, 8' HOPPER, LEFT
17	1	CF50-0437-6	TOP RAIL, 8 FT. HOPPER
18	2	CF50-0431-3	SPACER, HOPPER PUMP
19	1	CF50-0438/R-6	BOTTOM RAIL, 8' HOPPER, RIGHT
20	2	FSHMF045P10	SOC. HD. CAP SCREW M5 X 0.8 - 45 MM LG.
21	24	FHHMI050P88	HHCS M10 X 50
22	8	FHHMF020P10	HHCS M5 X 20
23	1	HP-1012	PUMP, HYDRAULIC LIFT SYSTEM
24	4	204738-2	CYLINDER, HYDRAULIC
25	3	FHFNMFP	HEX NUT M5
26	1	CF50-0124B-4	HOSE GUARD
27	3	CF50-0364-4	SIDE MEMBER, HOPPER FRAME, XL
28	1	CF50-0688R/L-5	TOP RAIL 8FT-XL HOPPER
29	2	CF50-0356-4	BRACKET, HOPPER LIFT, LEFT, XL
30	2	CF50-0357-4	BRACKET, HOPPER LIFT, RIGHT, XL

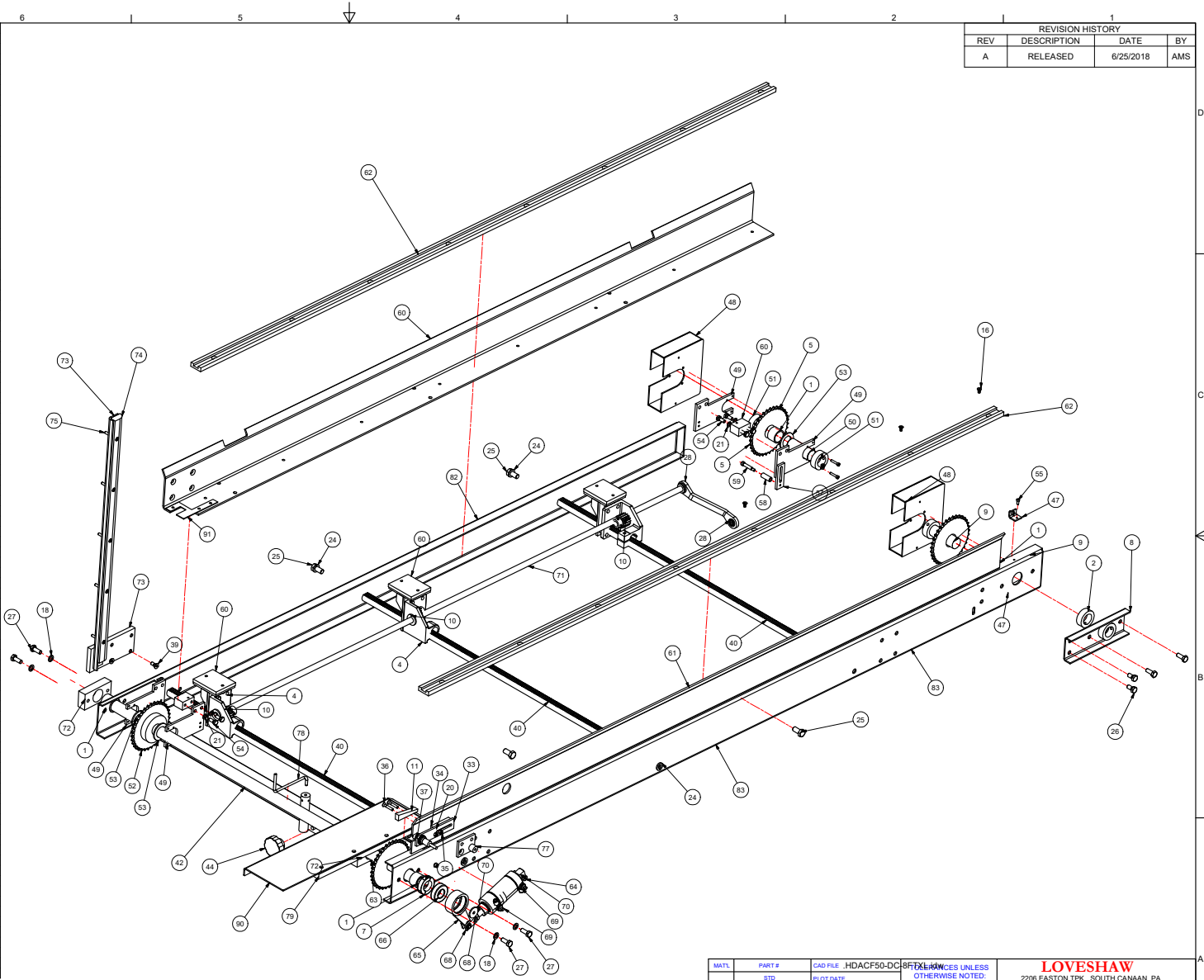
REVISION HISTORY			
REV	DESCRIPTION	DATE	BY
A	RELEASED	6/25/2018	AMS



MATERIAL		PART #	CAD FILE	HFAC50-8FT-XL	FINISHES UNLESS OTHERWISE NOTED:	LOVESHAW	
BT		ST	PLOT DATE	6/25/2018	X = ± 0.005 INCH .XX = ± 0.015 XXX = ± 0.005	2206 EASTON TPK., SOUTH CANAAN, PA.	
STAINLESS - NO FINISH		DO NOT SCALE PRINT		X = ± 1.0mm METRIC .XX = ± 0.1mm XXX = ± 1.0mm		HOPPER FRAME ASSEMBLY	
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DRAWN brycel		CHECKED		FRACTIONS 1/64		APPROVED	



Parts List			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	4	BSG-1074	BUSHING
2	2	SC125	SET COLLAR
3	1	C170390-PG	LOOKING ELEVATOR MOUNT
4	2	C170477-PG	ELEVATOR MOUNT, NON-LOCKING
5	2	SPK-0105	SPROCKET
6	3	CF50-0025-5	BRACKET, ADJUSTABLE GUIDE
7	1	CF50-0055-4	DRIVE SPROCKET, HOPPER
8	1	CF50-0057-5	IDLER BACKER, HOPPER
9	1	CF50-0056-5	IDLER SHAFT, HOPPER
10	3	202766-10	SPUR GEAR
11	1	CF50-0115-3	RAMP
12	1	CF50-0123-4	SHAFT, SPROCKET BACKSTOP
13	1	B622583AG	FINGER, SPROCKET BACKSTOP
14	1	200623	3/8 FLANGE BUSHING
15	1	202186	3/8 COLLAR
16	4	FHMG012P10	FHCS M6x12 LG.
17	1	FSHMG020P10	SHCS M6 X 20
18	6	FLWM1P	LOCK WASHER M10
19	2	FHFM1P	HEX NUT M10
20	3	FLWMGP	LOCK WASHER M6
21	17	FLWM1P	LOCK WASHER M8
22	6	FHFM025P10	HHCS M8 X 25
23	3	FHFM016P10	HHCS M8 X 16
24	5	FLWS1P	1/2" LOCK WASHER
25	5	FHHSN100P05	HHCS 1/2-13 X 1.00 LG.
26	2	FHFM020P08	HHCS M10 X 20
27	6	FHFM025P08	HHCS M10 X 25
28	1	204823	RATCHET HANDLE
29	1	FHHS075P08	HHCS 1/4-20 X 3/4 LG.
30	1	SPH-1206	FENDER WASHER, 1/4"
31	1	FLWSDP	LOCK WASHER 1/4"
32	1	202822-2	SPRING, RIGHT HAND
33	1	CF50-0031-4	BRACKET, BLANK PROX
34	2	FFVMGP	FLAT WASHER M6
35	2	FHFMGP	HEX NUT M6
36	2	FHMG035P10	FHCS M6x35 LG.
37	1	303526	PHOTOELECTRIC SENSOR
38	4	FFVM1P	FLAT WASHER M6
39	2	FFHMG020P10	FLAT HEAD CAP SCREW M8 X 20 LG.
40	3	STD-077 45.00	GEAR RACK
41	8	FHFM1P	HEX NUT M8
42	1	CF50-0118B-4	CHANNEL, BOTTOM FINGER, 42.5"
43	1	CF50-0089-3	NUT PLATE, REAR FLAP FOLDER
44	1	201816	KNOB, 3/8-16
45	1	CF50-0206-4	MOUNT, BOTTOM FINGER
46	1	FSHMF012P10	SHCS M5 X 0.5 X 12 LG.
47	2	CF20-0123-3	PANEL, BRACKET
48	2	CF50-0230-5	GUARD, HOPPER SPROCKET
49	4	CF50-0213-4	FORK, HOPPER DRIVE
50	1	CF50-0216-3	SHAFT, IDLER
51	2	CF50-0218-3	COLLAR, IDLER SHAFT
52	1	CF50-0219-3	DRIVE SPROCKET, ADJUSTABLE SIDE
53	4	BSG-1092	WASHER 1 1/4" X 2 X 1/8
54	8	FHFM020P10	HHCS M8 X 20
55	6	FHFM010B10	SHCS M5 X 10
56	4	FSHMF025B10	SHCS M5 X 25
57	1	CF50-0274-3	BRACKET, HOPPER CHAIN TENSIONER
58	4	CF50-0273-3	ROLLER, HOPPER CHAIN TENSIONER
59	4	SPH-1238	SHOULDER BOLT, 5/16 DIA X 1.25
60	1	CF50-0289-6	HOPPER GUIDE, ADJUSTABLE SIDE, 8" HOPPER
61	1	CF50-0288-6	HOPPER GUIDE, FIXED SIDE, 8" HOPPER
62	2	CF50-0290-5	GUIDE, CHAIN, 8" HOPPER
63	1	CF50-0217A-5	DRIVE SHAFT, HOPPER
64	1	FSBSH100B05	SHOULDER BOLT
65	1	CF50-0031R-4	CLUTCH HOUSING, HOPPER
66	1	CL-1006	CAM CLUTCH
67	1	CF50-0058-3	CLUTCH WASHER, HOPPER
68	1	N483	ROD CLEVIS
69	2	N691	FLOW CONTROL, 1/4 NPT X 1/4 TUBE
70	1	N401-241	AIR CYLINDER
71	1	PA600010-72	ROD, GEAR, 72"
72	2	CF50-0215-4	BLOCK, BUSHING
73	1	CF50-0304-5	BRACKET, HOPPER RETAINER
74	1	CF50-0305-5	BAR, HOPPER RETAINER
75	5	FSHMG040P10	SHCS M6 X 1.0 X 40 LG.
76	1	CF50-0052LR-3	CYLINDER BRACKET, HOPPER
77	1	CF50-0358L-4	CYLINDER BRACKET, HOPPER, XL
78	1	CF50-0362-3	FINGER, BOTTOM, XL
79	1	CF50-0302-4	BAR, WIDE BOX SUPPORT
80	4	FFHMF016P10	FLAT HEAD CAP SCREW M5 X 16 LG.
81	1	CF50-0360-3	SPACER, FINGER CHANNEL XL
82	1	CF50-0692RL-6	CHANNEL, ADJUSTABLE SIDE, 8" XL HOPPER
83	1	CF50-0693LR-6	CHANNEL, FIXED SIDE, 8" XL HOPPER
84	2	SC101	1" ID SHAFT COLLAR
85	1	CF20-0032-3	ROLLER, HOPPER CHAIN
86	2	SC101	1" ID SHAFT COLLAR
87	1	CF20-0032-3	ROLLER, HOPPER CHAIN
88	2	SC101	1" ID SHAFT COLLAR
89	1	CF20-0032-3	ROLLER, HOPPER CHAIN
90	1	CF50-0363-5	PLATE, WIDE BOX SUPPORT
91	1	CF50-0366-3	GUARD, FRONT SPROCKET, ADJ. SIDE



REVISION HISTORY			
REV	DESCRIPTION	DATE	BY
A	RELEASED	6/25/2018	AMS

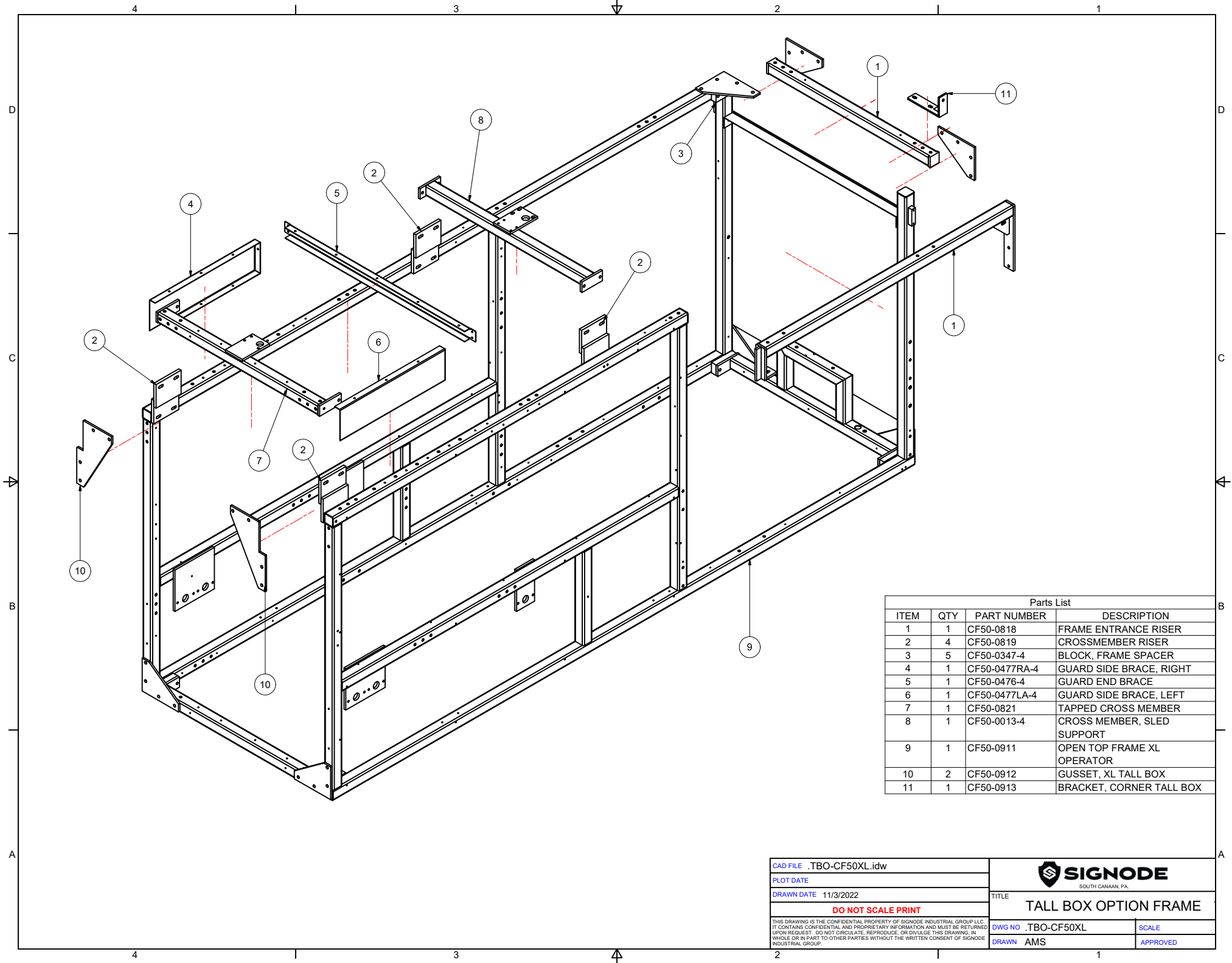
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BT	ST	PLOT DATE	6/25/2018	
STAINLESS: NO FINISH				DO NOT SCALE PRINT
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X=1/16 INCH Y=1/8 INCH Z=1/16 INCH ANGLES: 12° XXX=1/16 INCH				
MACH FINISH				
FRACTIONS: 1/64				
TITLE				2206 EASTON TPK., SOUTH CANAAN, PA.
DWG NO.				HDACF50-DC-8FTXL
HOPPER DRIVE ASSEMBLY				
MATERIAL				CHECKED
DRAWN BY				APPROVED



## **Optional 8FT XL Tall Box Option Mechanical Drawings**


The drawings in this section represent the mechanical layouts specific to a CF50 XL machine with a Tall Box Option.





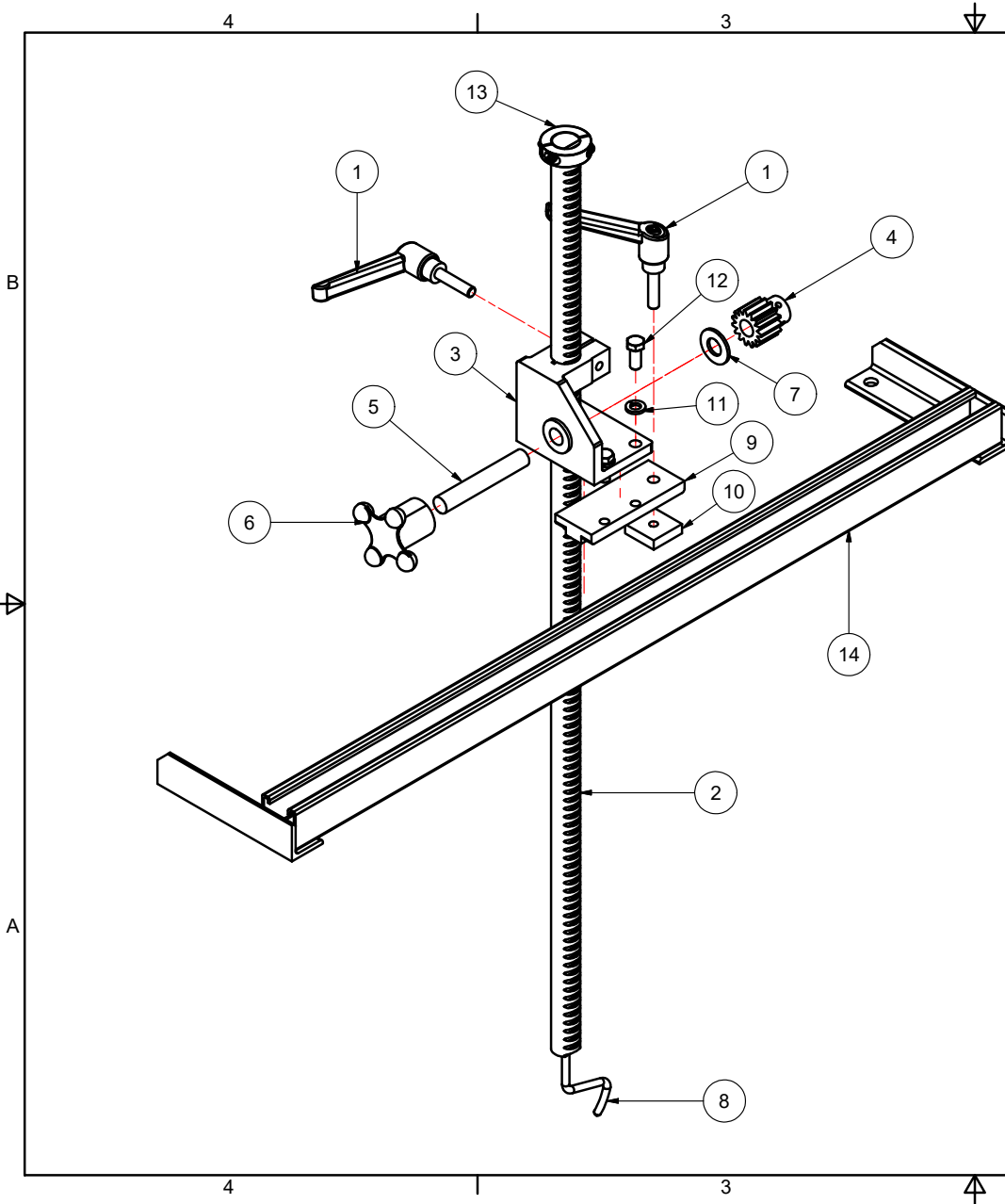
Parts List			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	CF50-0818	FRAME ENTRANCE RISER
2	4	CF50-0819	CROSSMEMBER RISER
3	5	CF50-0347-4	BLOCK, FRAME SPACER
4	1	CF50-0477RA-4	GUARD SIDE BRACE, RIGHT
5	1	CF50-0476-4	GUARD END BRACE
6	1	CF50-0477LA-4	GUARD SIDE BRACE, LEFT
7	1	CF50-0821	TAPPED CROSS MEMBER
8	1	CF50-0013-4	CROSS MEMBER, SLED SUPPORT
9	1	CF50-0911	OPEN TOP FRAME XL OPERATOR
10	2	CF50-0912	GUSSET, XL TALL BOX
11	1	CF50-0913	BRACKET, CORNER TALL BOX

CAD FILE .TBO-CF50XL.idw  
PLOT DATE  
DRAWN DATE 11/3/2022  
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**SIGNODE**  
SOUTH CANAAN, PA.

TITLE  
**TALL BOX OPTION FRAME**

DWG NO .TBO-CF50XL	SCALE
DRAWN AMS	APPROVED



Parts List			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	2	202669	RATCHET HANDLE
2	1	CF50-0174E-4	GEAR RACK, UPPER FINGER XL TBO
3	1	C170390-PG	LOCKING ELEVATOR MOUNT
4	1	202766-10	SPUR GEAR
5	1	CF50-0168-3	GEAR SHAFT, UPPER FINGER
6	1	HC-1028	KNOB
7	1	FFWSIP	FLAT WASHER, 5/8
8	1	A622966	BOTTOM FINGER
9	1	PB600417	SLIDING BLOCK
10	1	CF50-0089-3	NUT PLATE, REAR FLAP FOLDER
11	2	FLWSFP	LOCK WASHER 3/8
12	2	FHHSJ088P05	HHCS 3/8-16 X 7/8 LG.
13	1	202203	1" SPLIT COLLAR, 2-PIECE
14	1	CF50-0442-5	CHANNEL, UPPER FINGER, XL

CAD FILE .UFACF50-XL-TBO.idw	 SOUTH CANAAN, PA.	
PLOT DATE		
DRAWN DATE 11/7/2022	TITLE UPPER FINGER ASSY CF50XL TBO	
DO NOT SCALE PRINT	DWG NO .UFACF50-XL-TBO	SCALE
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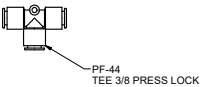
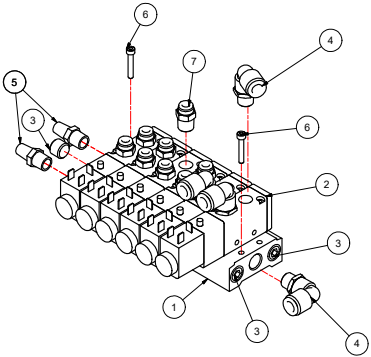
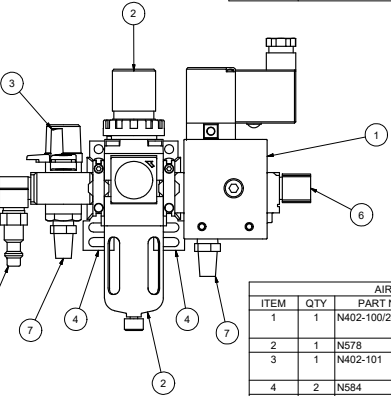
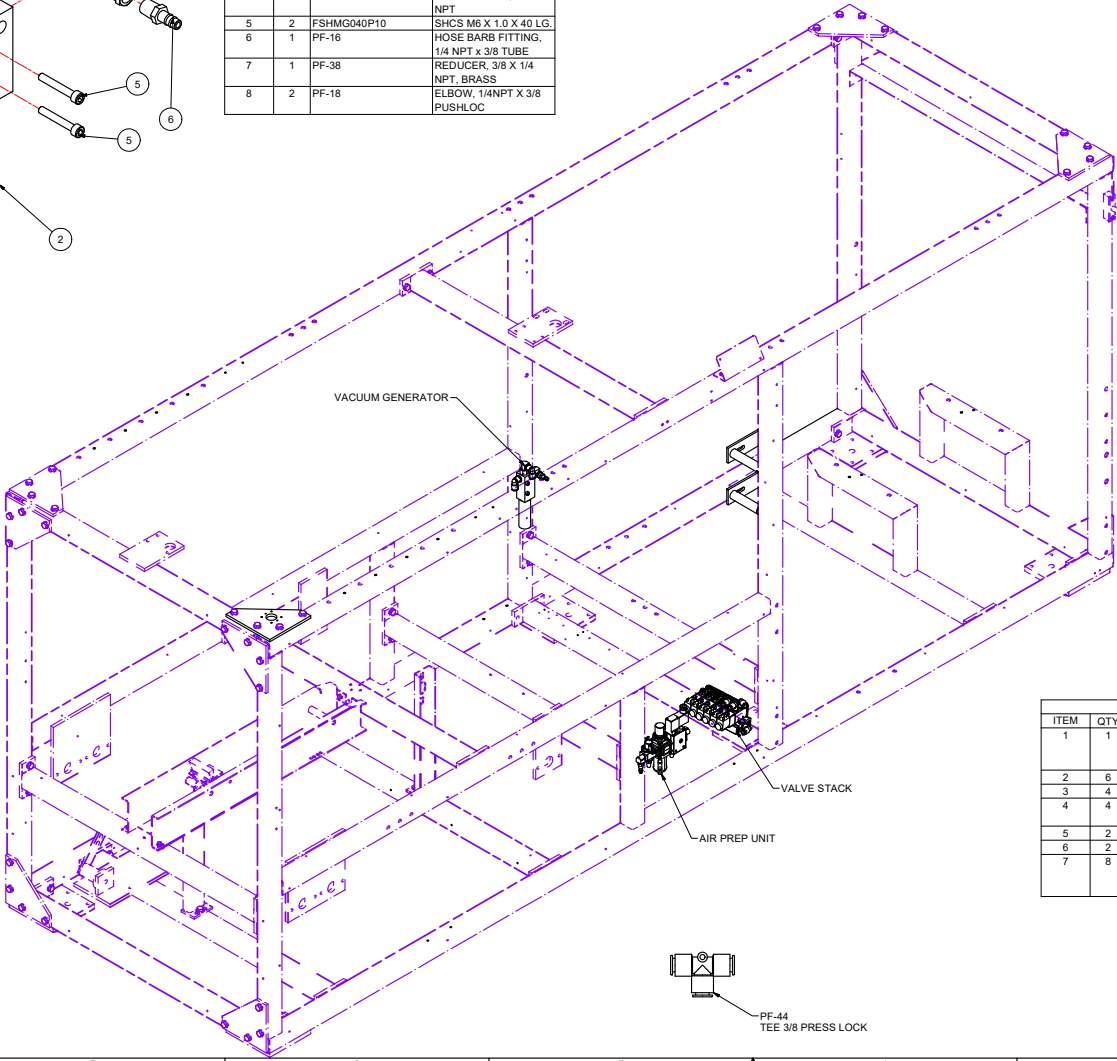
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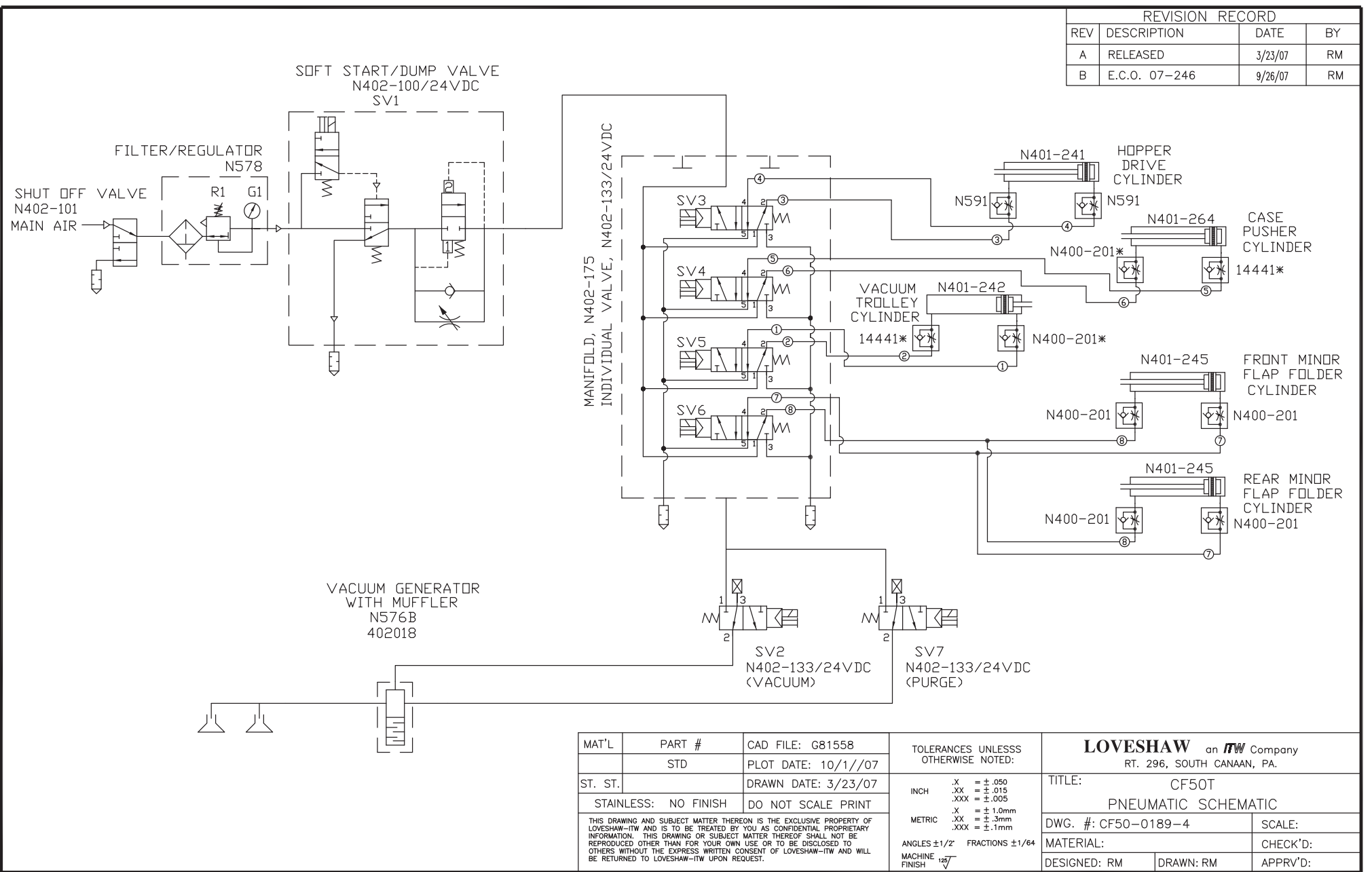
VACUUM GENERATOR			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	N576B	VACUUM GENERATOR
2	1	402018	MUFFLER
3	1	PF-10	BRASS STREET ELBOW, 90, 1/4 NPT
4	1	PF-34	STEET ELBOW, 3/8 NPT
5	2	FSHMG040P10	SHCS M6 X 1.0 X 40 LG.
6	1	PF-16	HOSE BARB FITTING, 1/4 NPT X 3/8 TUBE
7	1	PF-38	REDUCER, 3/8 X 1/4 NPT, BRASS
8	2	PF-18	ELBOW, 1/4NPT X 3/8 PUSHLOC

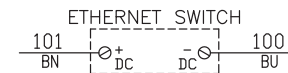
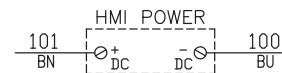
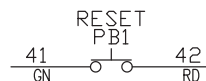
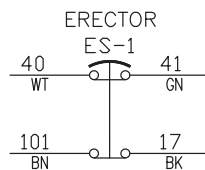
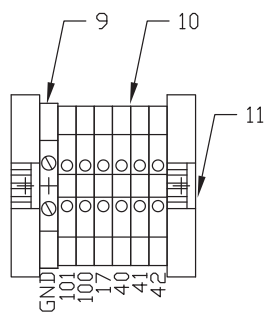
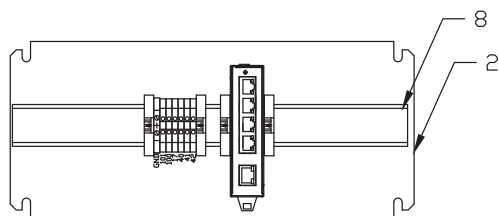
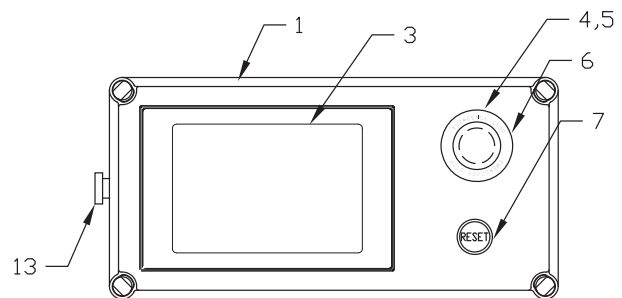
AIR PREP UNIT			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	N402-100/24VDC	SOFT START VALVE 24VDC
2	1	N578	FILTER/REGULATOR
3	1	N402-101	MANUAL SHUT OFF/RELIEF VALVE
4	2	N584	BRACKET
5	1	PF-22	QUICK DISCONNECT PLUG, 1/4 NPT
6	2	PF-10	BRASS STREET ELBOW, 90, 1/4 NPT
7	2	N400-16	MUFFLER

VALVE STACK			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	N402-175	M100M, M200M, M300M, M400M-Manifold
2	6	N402-133/24VDC	VALVE SOL 5/2
3	4	H109A	PLUG, HEX 1/4 NPT
4	4	PF-18	ELBOW, 1/4NPT X 3/8 PUSHLOC
5	2	N400-16	MUFFLER
6	2	FSHME025P10	SHCS M4 X 25
7	8	N400-3	CONNECTOR, STRAIGHT, 1/4 NPT X 1/4 TUBE

MATL	PART #	CAD FILE	DATE	REV	DESCRIPTION	DATE	BY
STAINLESS	NO FINISH	DO NOT SCALE PRINT	5/7/2018	1	FRAME ASSEMBLY	5/7/2018	AMS
BT	ST	DRAWN DATE	5/7/2018	1	FRAME ASSEMBLY	5/7/2018	AMS
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UNLESS OTHERWISE NOTED: X = ±.005 INCH XXX = ±.015 METRIC XXX = ±.005 X = ±1.0mm MACH FINISH XXX = ±.1mm				DRAWN NO. FRACF50 SCALE MATERIAL DRAWN brycef			
FRACTIONS 1/64				SCALE CHECKED APPROVED			







KEY	PART NO.	DESCRIPTION
1	A100N-15X7X7	ENCLOSURE
2	A100N-15X7P	PANEL
3	A241-EATON-HMI	HMI DISPLAY
4	A149-EA-1	45MM RED MUSHROOM HEAD W/INDICATOR
5	A149-EA-NC	NORMALLY CLOSED CONTACT BLOCKS
6	A149-EA-LP-ES	60MM E-STOP LEGEND PLATE
7	A149-EA-2	FLUSH HEAD BLUE PUSHBUTTON W/ N.O. CONTACT BLOCK
8	A209-PX-1	DIN RAIL
9	A124-PX-GND	GROUNDING TERMINAL BLOCK
10	A124-PX-FT	FEED THRU TERMINAL BLOCK
11	A124-PX-EB	TERMINAL END BLOCK
12	A241-PX-ES	5 PORT ETHERNET SWITCH
13	AH200-BH-RJ45	RJ45 BULKHEAD FITTING
n/s	A241-CW-1	CAT 6 PATCH CABLE 1 FOOT

TOLERANCES EXCEPT AS NOTED	<b>THE LOVESHAW CORPORATION</b> RT 296, SOUTH CANAAN, PA.	
DECIMAL (3 PLC) +/- .005	TITLE: CASE ERECTOR HMI - ASSEMBLY	
FRACTIONAL +/- 1/64	DWG. NO. ED3108	SCALE: 1 : 4
ANG. - 1/2°	MATERIAL: COMMERCIAL	DATE: 10/09/17
	DESIGNED: MENTA	DRAWN: WM
		APPRVD: --

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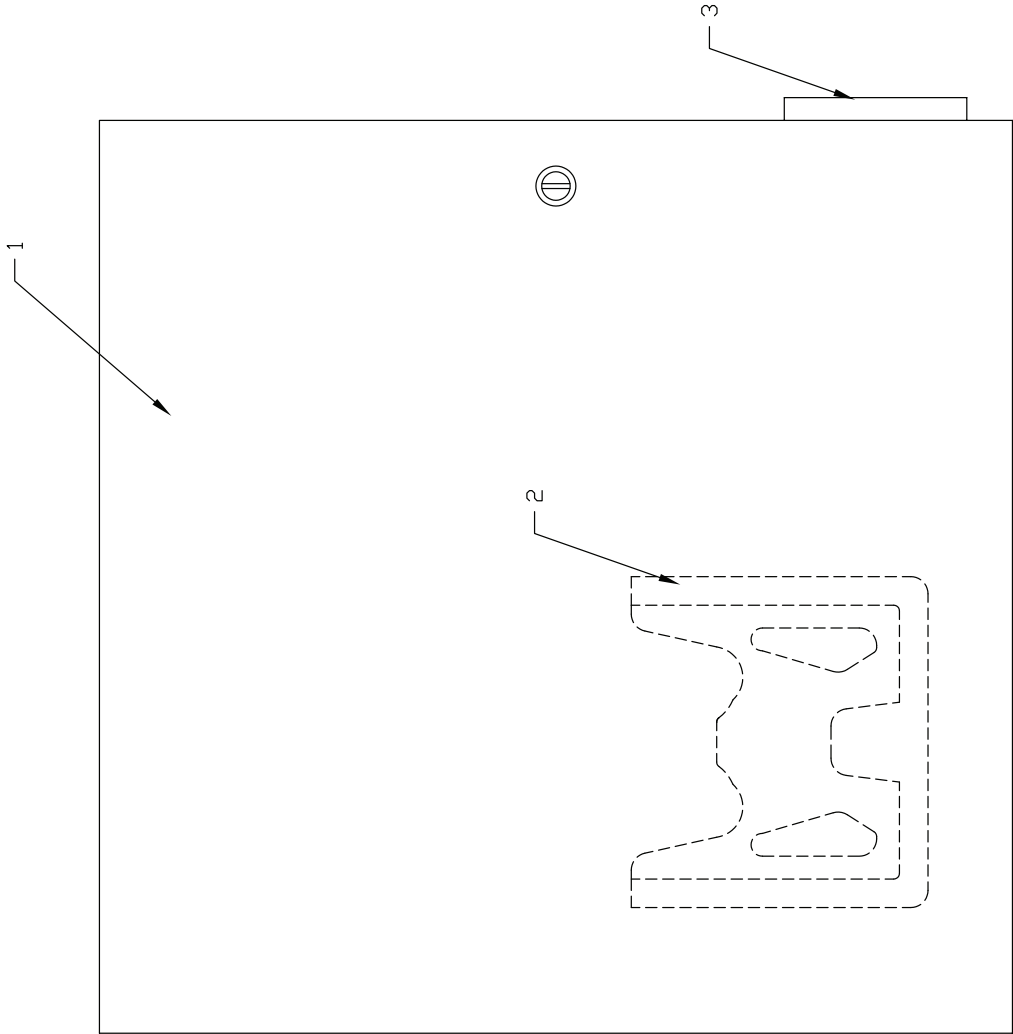
## ELECTRICAL OPTIONS

**MICRO 820 HMI**

120/1/60

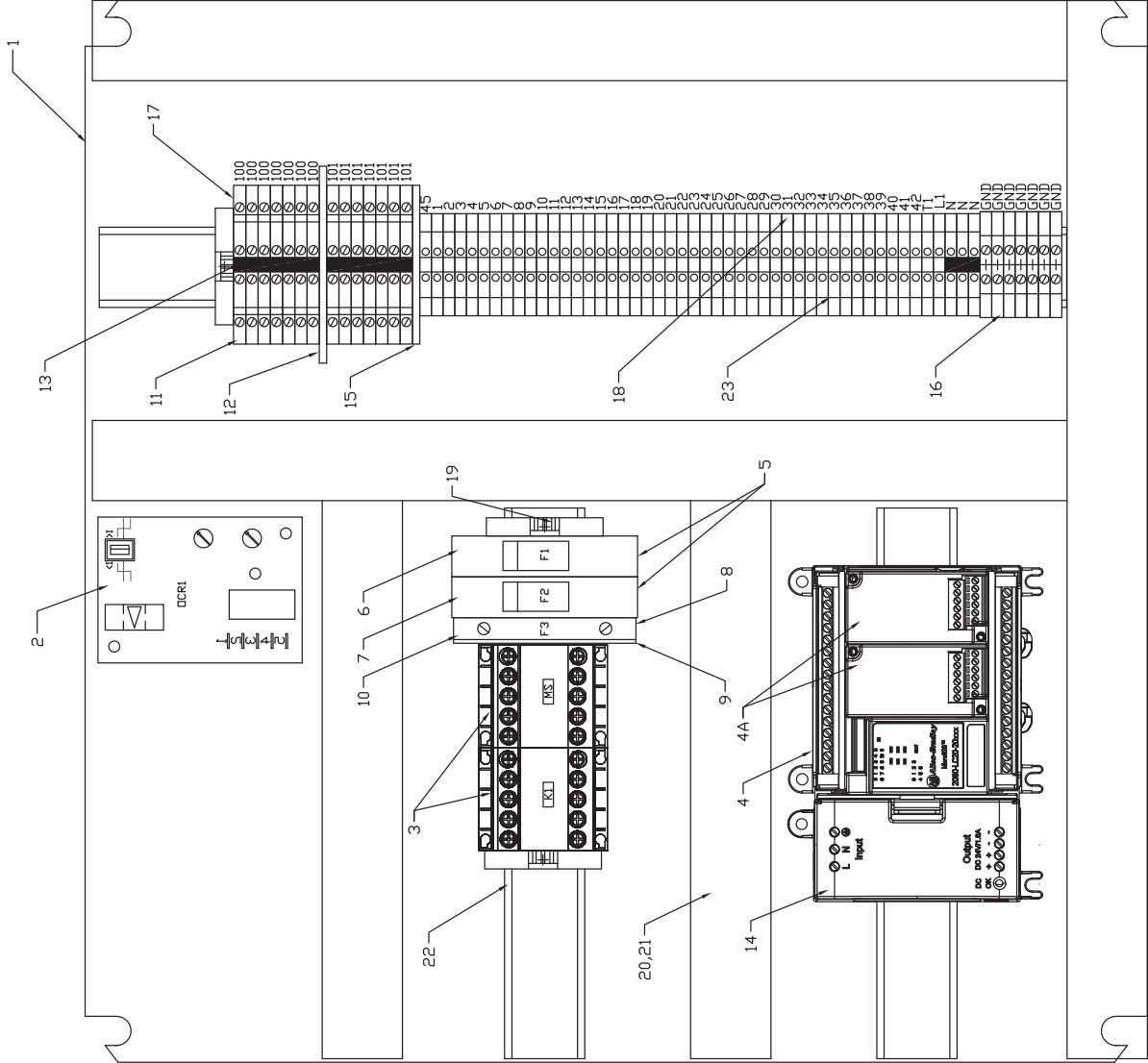
REVISION RECORD				
REV	DESCRIPTION	DATE	ATH	DR CK

KEY	PART NO.	DESCRIPTION
1	A100N-202006B-1	ENCLOSURE
2	A100N-PP-H0F-1	PRINT POCKET
3	AH-CEP-1	CABLE ENTRY PLATE



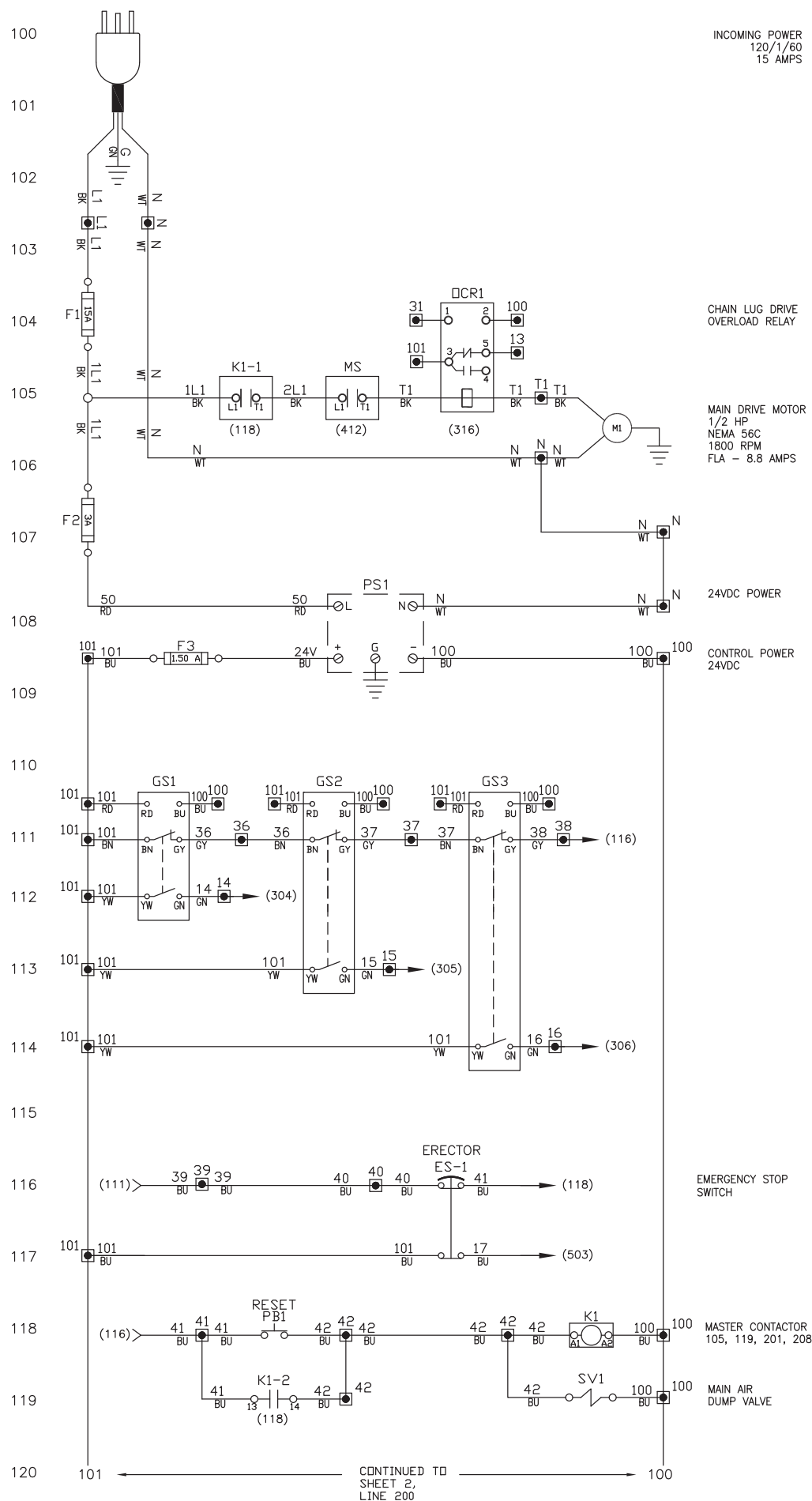
TOLERANCES EXCEPT AS NOTED	<b>THE LOVESHAW CORPORATION</b> RT 296, SOUTH CANAAN, PA.			
DECIMAL (3 PLC) +/- .005	TITLE: ELECTRICAL ENCLOSURE ASSEMBLY CF50T - 120/1/60			
FRACTIONAL	DWG. NO: ED1703	SCALE: 3 : 8		
+/- 1/64	MATERIAL: COMMERCIAL	DATE: 04/27/06		
ANG. - 1/2°	DESIGNED: MENTA	DRAWN: WM	APPRVD: ---	





KEY	PART NO.	DESCRIPTION
1	A100N-2020P-1	PANEL
2	303111-DC	OVER CURRENT RELAY
3	A106-AB-K12-24V	CONTACTOR
4	A241AB-820-1	PLC
4A	A241AB-800-CM	INPUT / OUTPUT CARD
5	A125BH-AB-DIN-3	FUSE HOLDER
6	A125SB-15-R	FUSE, 15 AMP
7	A125SB-3-R	FUSE, 3 AMP
8	A125BH-AB-DIN	FUSE HOLDER
9	A128B-AB16	FUSE BLOCK BARRIER
10	A125SB-150-326	FUSE 150 AMP
11	A124-AB-JD3C	DOUBLE TERMINAL BLOCK
12	A128-AB-PPJD3	PARTITION PLATE
13	A124-AB-CJ-10	10 POLE CENTER JUMPER
14	A241AB-830-PS	POWER SUPPLY
15	A128-AB-EBJD3	END PARRIER PLATE
16	A124-AB-JG4	GROUND TERMINAL
17	A124-AB-MARK-DT	TERMINAL MARKER CARD
18	A124-AB-MARK-ST	TERMINAL MARKER CARD
19	A128-AB-ERL35	TERMINAL ANCHOR
20	A250-PAN-1X2N	WIREWAY
21	A250-PAN-1X2C	WIREWAY COVER
22	A209-AB-2	DIN RAIL
23	A124-AB-J3	SINGLE TERMINAL

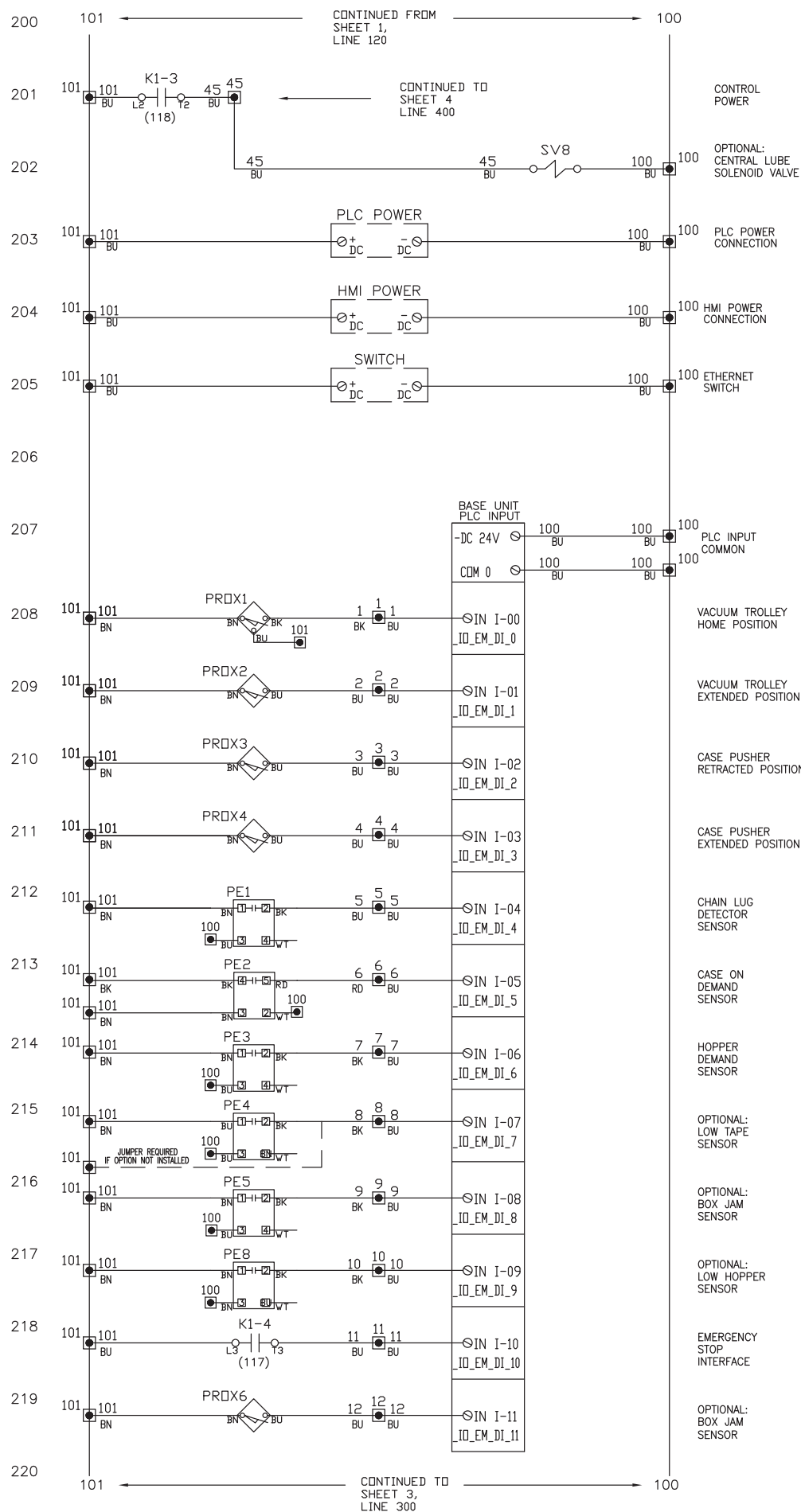
TOLERANCES EXCEPT AS NOTED	<b>THE LOVESHAW CORPORATION</b> RT 296, SOUTH CANAAN, PA.		
DECIMAL (3 PLC) +/- .005	TITLE: ELECTRICAL PANEL ASSEMBLY		
FRACTIONAL +/- 1/64	DWG. NO. ED3118	SCALE: 1 : 2	DATE: 02/13/17
ANG. — 1/2°	MATERIAL: COMMERCIAL	DRAWN: WM	APPRD: ---



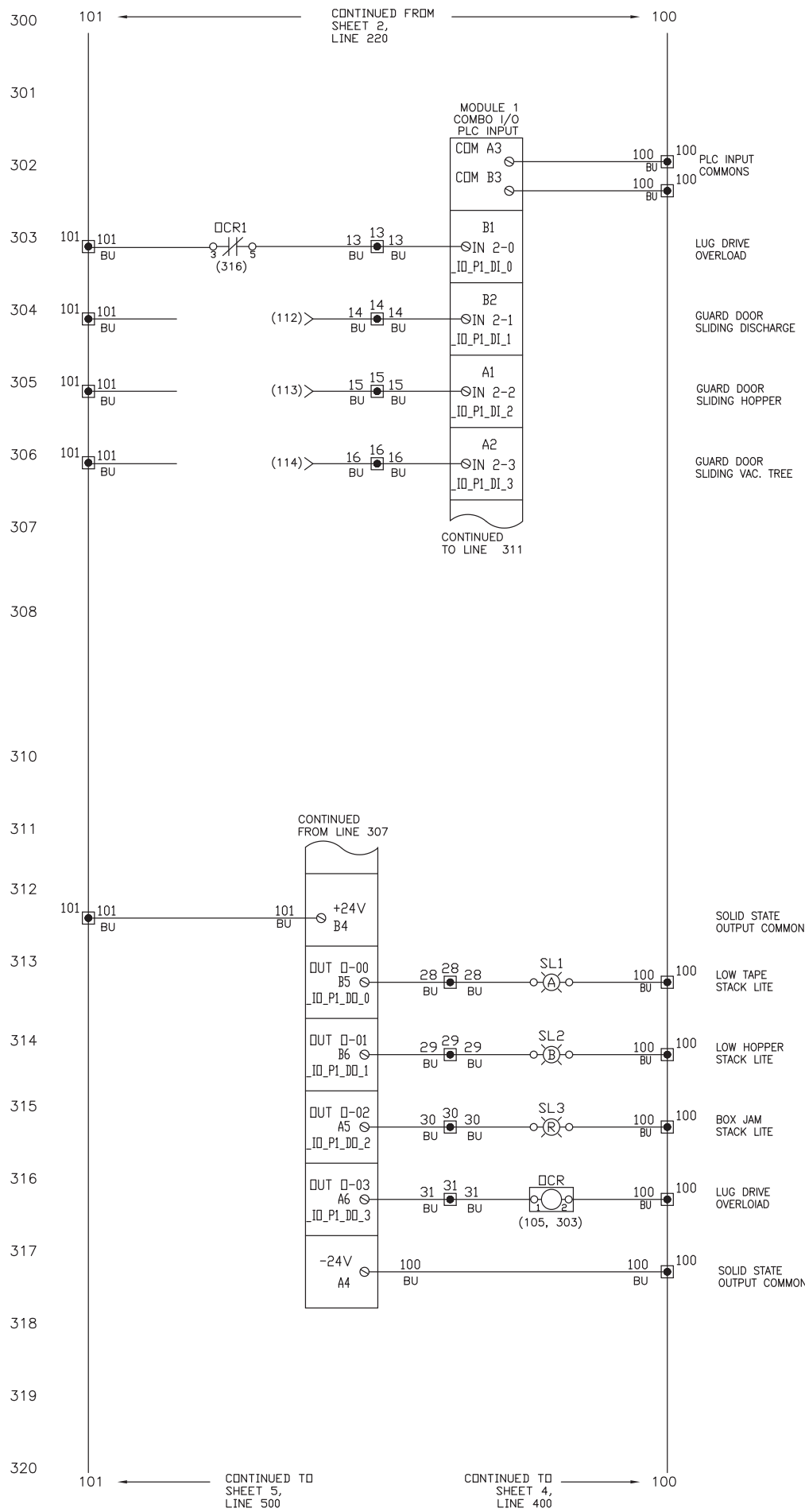
<b>THE LOVESHAW CORPORATION</b> RT 296, SOUTH CANAAN, PA.			
TOLERANCES EXCEPT AS NOTED	TITLE: ELECT. SCHEMATIC - SH. 1 OF 5	DWG. NO. ED3117S1	SCALE: N/A
DECIMAL (3 PLC) +/- .005	CF50 - 120/1/60 MICRO 820	MATERIAL: N/A	DATE: 10/20/17
FRACTIONAL		DESIGNED: MENTA	APPRVD: ---
ANG. - 1/2"		DRAWN: WM	

- WIRING NOTES:
1. WIRE COLORS ARE AS NOTED.
  2. AC CONTROL WIRE MIN. 18 AWG.
  3. DC CONTROL WIRE MIN. 20 AWG.
  4. MOTOR WIRE MIN. 16 AWG.

WIRE CONNECTION KEY
100 TERMINAL BLOCK LOCATED ON TERMINAL STRIP.
100 WIRE CONNECTION ON ELECTRICAL COMPONENT.



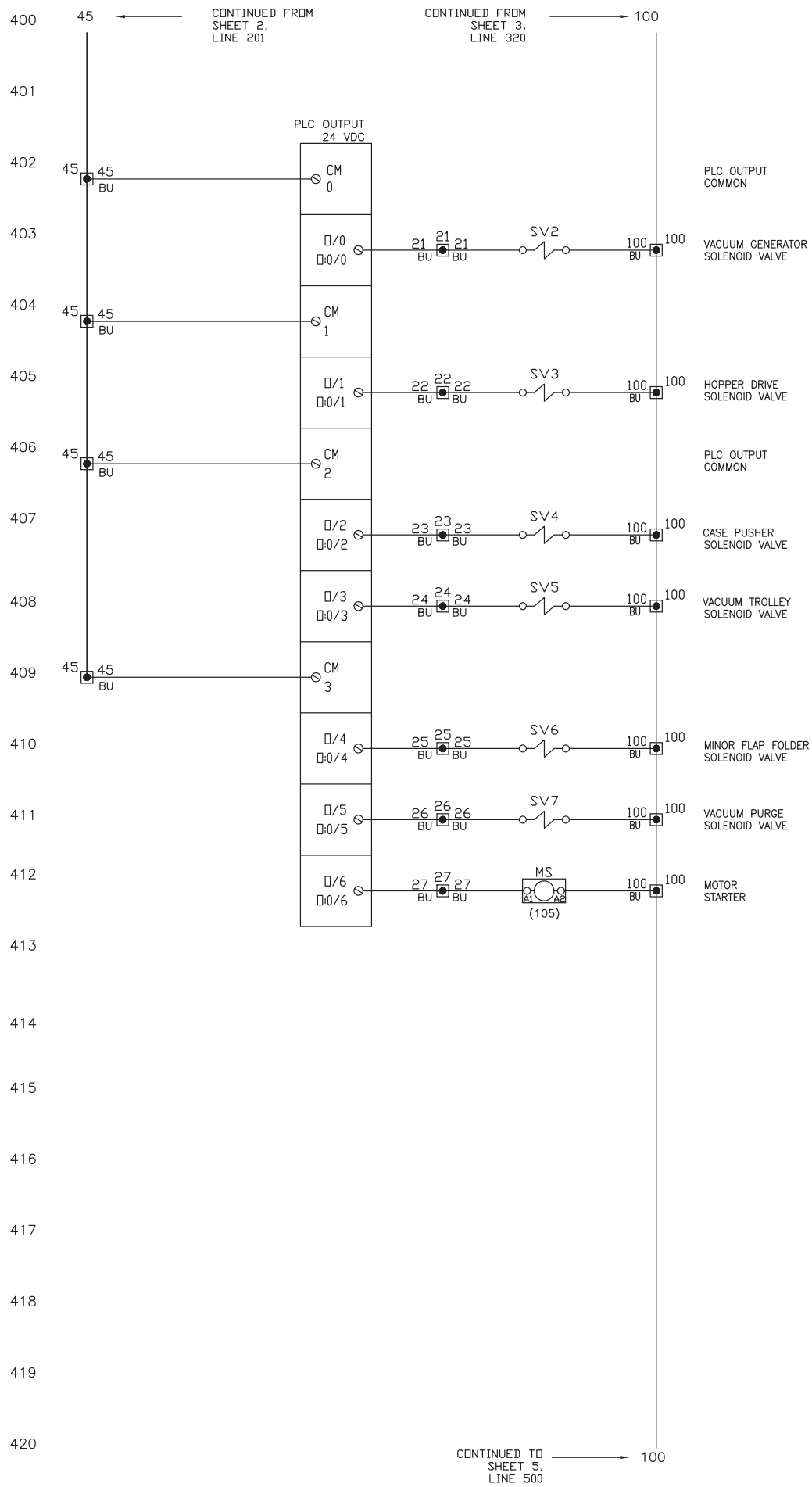
TOLERANCES EXCEPT AS NOTED	<b>THE LOVESHAW CORPORATION</b> RT 296, SOUTH CANAAN, PA.		
	DECIMAL (3 PLC) +/- .005	TITLE:ELECT. SCHEMATIC - SH. 2 OF 5 CF50 - 120/1/60 MICRO 820	SCALE: N/A
	FRACTIONAL	DWG. NO. ED3117S2	DATE: 10/20/17
	+/- 1/64	MATERIAL: N/A	APPRD: --
	ANG. - 1/2"	DESIGNED: MENTA	DRAWN: WM



<b>THE LOVESHAW CORPORATION</b> RT 296, SOUTH CANAAN, PA.			
TOLERANCES EXCEPT AS NOTED	TITLE: ELECT. SCHEMATIC - SH. 3 OF 5	DWG. NO. ED3117S3	SCALE: N/A
DECIMAL (3 PLC) +/- .005	CF50 - 120/1/60 MICRO 820	MATERIAL: N/A	DATE: 10/20/17
FRACTIONAL +/- 1/64		DESIGNED: MENTA	DRAWN: WM
ANG. - 1/2"		APPRVD: ---	

- WIRING NOTES:
1. WIRE COLORS ARE AS NOTED.
  2. AC CONTROL WIRE MIN. 18 AWG.
  3. DC CONTROL WIRE MIN. 20 AWG.
  4. MOTOR WIRE MIN. 16 AWG.

WIRE CONNECTION KEY	
100	TERMINAL BLOCK LOCATED ON TERMINAL STRIP.
100	WIRE CONNECTION ON ELECTRICAL COMPONENT.



THE LOVESHAW CORPORATION RT 296, SOUTH CANAAN, PA.			
TOLERANCES EXCEPT AS NOTED	TITLE:ELECT. SCHEMATIC - SH. 4 OF 5	DWG. NO.ED3117S4	SCALE: N/A
DECIMAL (3 PLC) +/- .005	CF50 - 120/1/60 MICRO 820	MATERIAL: N/A	DATE:10/20/17
FRACTIONAL +/- 1/64		DESIGNED: MENTA	APPRVD: --
ANG. - 1/2°		DRAWN: WM	

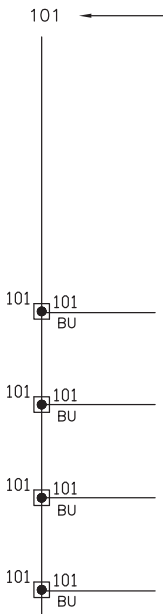
- WIRING NOTES:
1. WIRE COLORS ARE AS NOTED.
  2. AC CONTROL WIRE MIN. 18 AWG.
  3. DC CONTROL WIRE MIN 20 AWG.
  4. MOTOR WIRE MIN. 16 AWG.

WIRE CONNECTION KEY

100 TERMINAL BLOCK LOCATED ON TERMINAL STRIP.

100 WIRE CONNECTION ON ELECTRICAL COMPONENT.

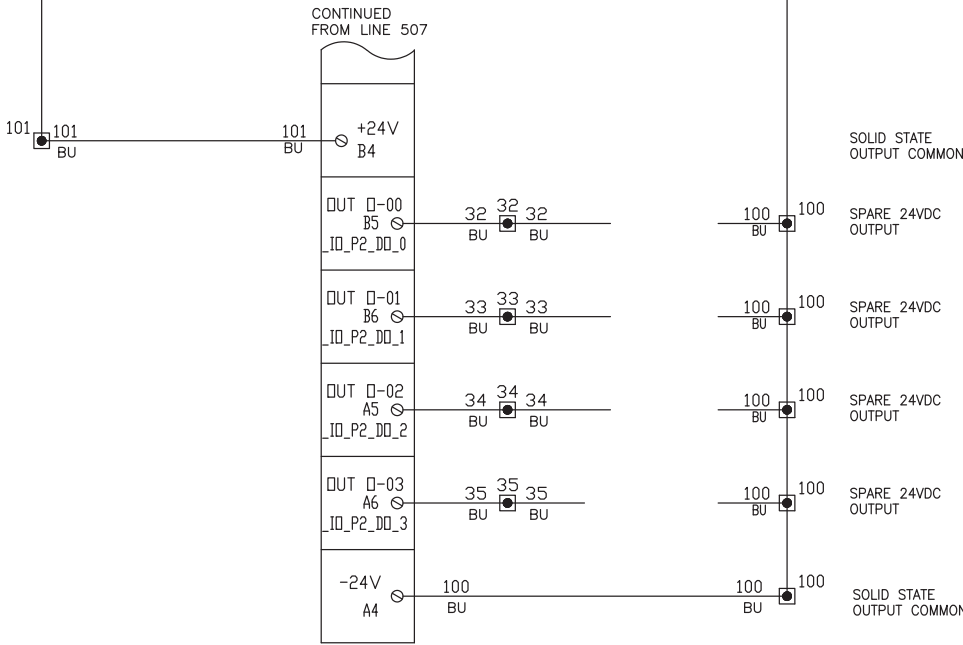
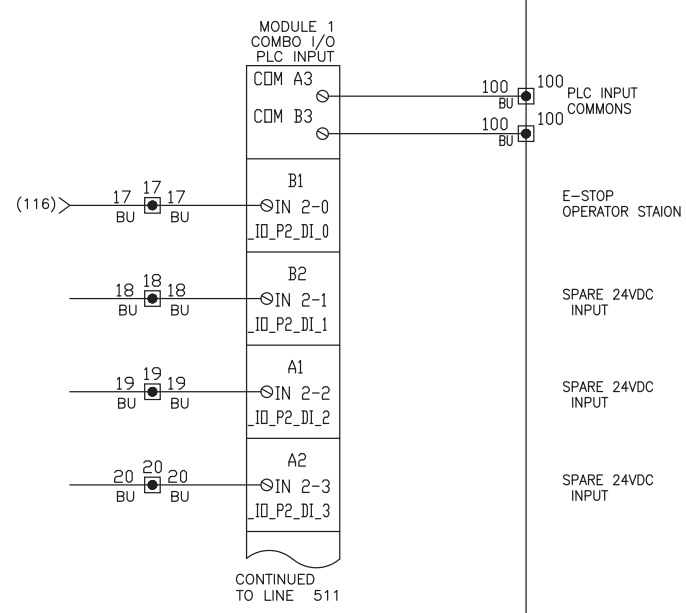
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520



CONTINUED FROM  
SHEET 3,  
LINE 320

CONTINUED FROM  
SHEET 5,  
LINE 520

→ 100



THE LOVESHAW CORPORATION		RT 296, SOUTH CANAAN, PA.	
TOLERANCES EXCEPT AS NOTED	TITLE: ELECT. SCHEMATIC - SH. 5 OF 5	RT 296, SOUTH CANAAN, PA.	
DECIMAL (3 PLC) +/- .005	CF50 - 120/1/60 MICRO 820	DWG. NO. ED3117S5	SCALE: N/A
FRACTIONAL +/- 1/64	MATERIAL: N/A	DATE: 10/20/17	APPROVD: --
ANG. - 1/2°	DESIGNED: MENTA	DRAWN: WM	

- WIRING NOTES:
1. WIRE COLORS ARE AS NOTED.
  2. AC CONTROL WIRE MIN. 18 AWG.
  3. DC CONTROL WIRE MIN. 20 AWG.
  4. MOTOR WIRE MIN. 16 AWG.

WIRE CONNECTION KEY
100 TERMINAL BLOCK LOCATED ON TERMINAL STRIP.
100 WIRE CONNECTION ON ELECTRICAL COMPONENT.

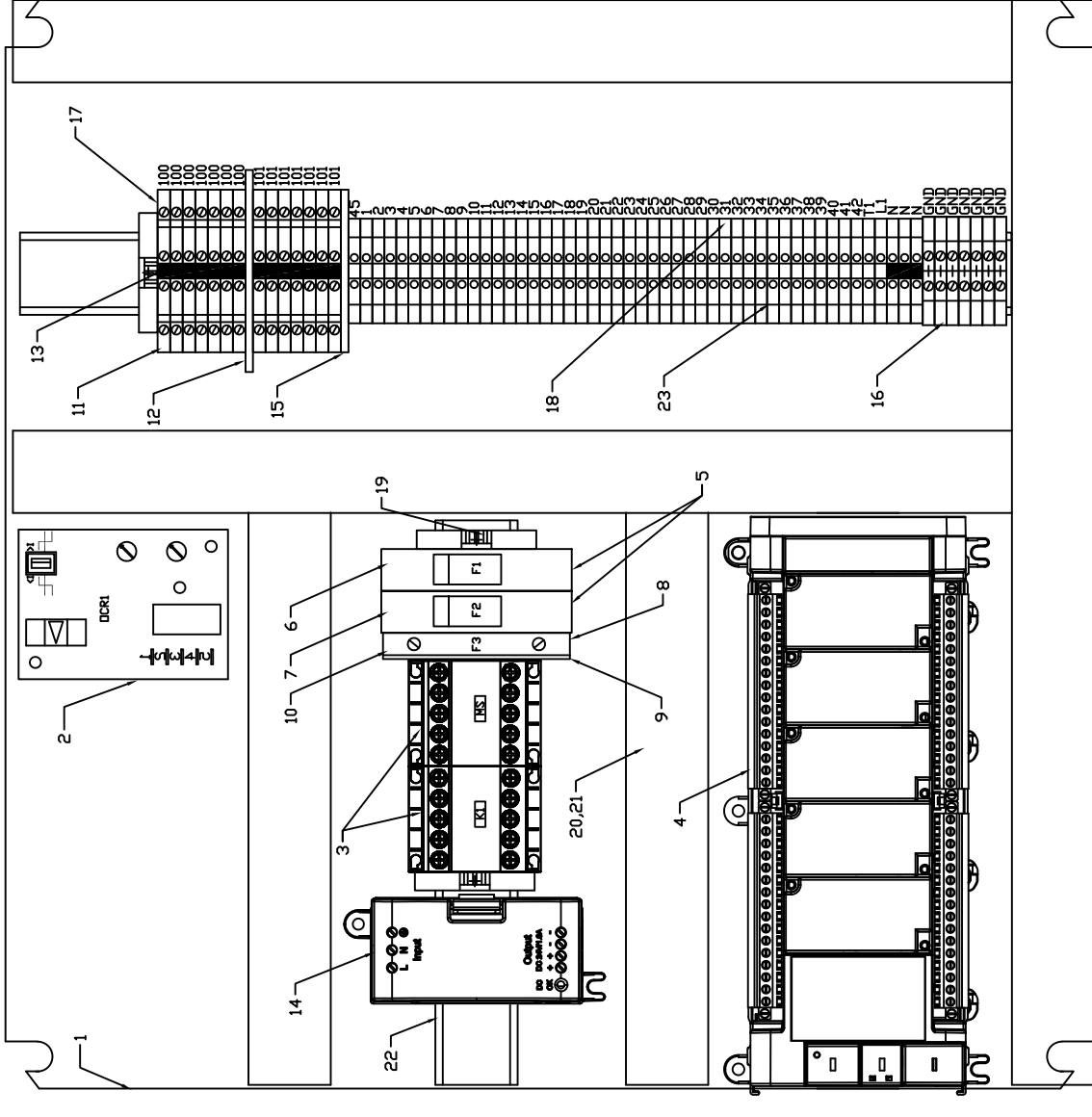
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## *ELECTRICAL OPTIONS*

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MIRCO 850 HMI

120/1/60

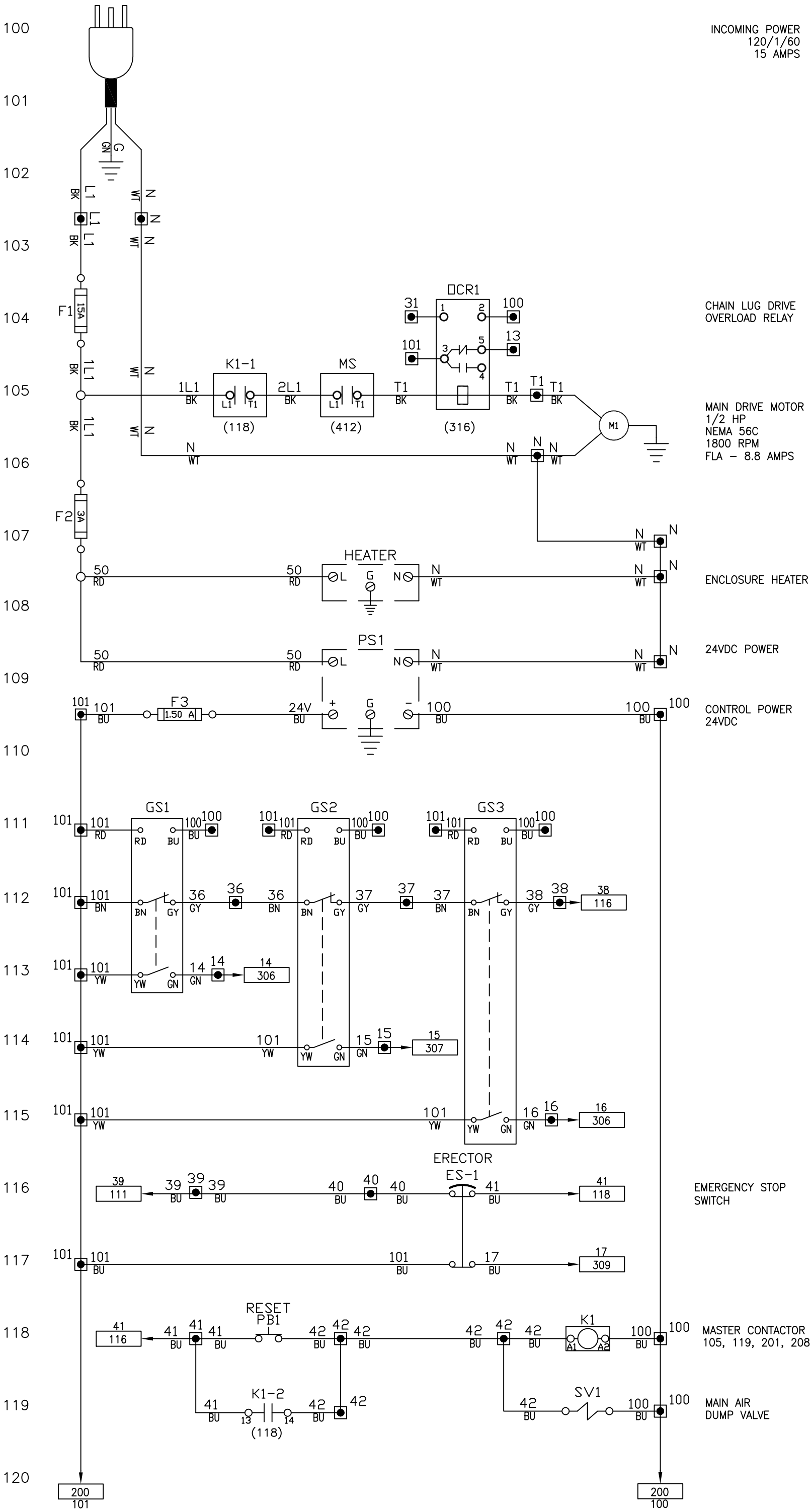


KEY	PART NO.	DESCRIPTION
1	A100N-2020P-1	PANEL
2	303111-DC	OVER CURRENT RELAY
3	A106-AB-K12-24V	CONTACTOR
4	A241AB-850-48I0	PLC
5	A125BH-AB-DIN-3	FUSE HOLDER
6	A125SB-15-R	FUSE, 15 AMP
7	A125SB-3-R	FUSE, 3 AMP
8	A125BH-AB-DIN	FUSE HOLDER
9	A128B-AB16	FUSE BLOCK BARRIER
10	A125SB-150-326	FUSE 150 AMP
11	A124-AB-JD3C	DOUBLE TERMINAL BLOCK
12	A128-AB-PPJD3	PARTITION PLATE
13	A124-AB-CJ-10	10 POLE CENTER JUMPER
14	A241AB-830-PS	POWER SUPPLY
15	A128-AB-EBJD3	END PARRIER PLATE
16	A124-AB-JG4	GROUND TERMINAL
17	A124-AB-MARK-DT	TERMINAL MARKER CARD
18	A124-AB-MARK-ST	TERMINAL MARKER CARD
19	A128-AB-ERL35	TERMINAL ANCHOR
20	A250-PAN-1X2N	WIREWAY
21	A250-PAN-1X2C	WIREWAY COVER
22	A209-AB-2	DIN RAIL
23	A124-AB-J3	SINGLE TERMINAL

 SOUTH CANAAN, PA.	ELECTRICAL PANEL ASSEMBLY		DWG. NO:ED03724	TOLERANCES EXCEPT AS NOTED
	CF50 - 120/1/60 - CF50 HMI		MATERIAL:AS LISTED	DECIMAL (3 PLC) +/- .005
	DESIGNED: MENTA	DRAWN: MENTA	DATE: 09/28/2021	FRACTIONAL +/- 1/64
	NATION: USA	REVISION: RELEASED	SCALE:1 : 2	ANG. - 1/2"


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WIRING NOTES:	
1. WIRE COLORS ARE AS NOTED.	
2. AC CONTROL WIRE MIN. 18 AWG.	
3. DC CONTROL WIRE MIN 20 AWG.	
4. MOTOR WIRE MIN. 16 AWG.	

WIRE CONNECTION KEY	
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100 WIRE CONNECTION ON ELECTRICAL COMPONENT.	<input type="checkbox"/>

 SOUTH CANAAN, PA.	ELECTRICAL SCHEMATIC – SHEET 1 OF 5		DWG. NO:ED03725	TOLERANCES EXCEPT AS NOTED
	CF50 – 120/1/60 – AB MICRO850		MATERIAL:AS LISTED	DECIMAL (3 PLC) +/- .005
	DESIGNED: MENTA	DRAWN: MENTA	DATE: 09/28/2021	FRACTIONAL +/- 1/64
	NATION: USA	REVISION: RELEASED	SCALE:N/A	ANG. – 1/2°

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WIRING NOTES:

1. WIRE COLORS ARE AS NOTED.
2. AC CONTROL WIRE MIN. 18 AWG.
3. DC CONTROL WIRE MIN 20 AWG.
4. MOTOR WIRE MIN. 16 AWG.

WIRE CONNECTION KEY
100 TERMINAL BLOCK LOCATED ON TERMINAL STRIP.
100 WIRE CONNECTION ON ELECTRICAL COMPONENT.







