

Rapid-Air

Operating Instructions

200TX Servo Feed CTL
Control Ver. 'C'



4601 Kishwaukee Street, Rockford, IL 61109
815.397.2578
www.rapidair.com

Thank you for purchasing a Rapid-Air Cut-to-Length (CTL) system. The system is configured from our proven line of servo feeds and stock cutters. Rapid-Air Corp. designed and built its first servo driven roll feed and cutter combination in 1994. As with the whole Rapid-Air product line there has been an ongoing program of product improvement.

Our roots are in stamping and our engineering expertise is extensive. Many of our earliest products remain in use today, in small shops and large factories worldwide. Some of these products are still manufactured, with only slight modifications to the original design allowing for modern manufacturing technologies to be used in their production.

All Rapid-Air products are built right here in our own U.S. factory. No inconsistent design, differing parts or sourcing problems. Just the same reliable quality, renowned support and lasting value you can always expect from Rapid-Air.

TABLE OF CONTENTS

Mechanical Specifications.....	2
Electrical Specifications.....	3
Mechanical Set-up.....	4-8
Servo Feed Operation.....	9-16
Troubleshooting.....	17
Flat Stock Cutter Operation.....	18
Warranty.....	19
Drawing Appendix	

MECHANICAL SPECIFICATIONS

CTL Max Material Width:

208TX / FSC6	6" (152mm)
212TX / FSC12	12" (304mm)
218TX / FSC18	18" (457mm)
224TX / FSC24	24" (609mm)

CTL Max Thickness Capacity at Full Width:

208TX / FSC6	0.046" (1.17mm)*
212TX / FSC12	0.068" (1.73mm)*
218TX / FSC18	0.080" (2.03mm)*
224TX / FSC24	0.090" (2.28mm)*

* based on low carbon steel, commercial grade

Servo Max Thickness Capacity

208TX	0.125" (3.175mm)
212TX	0.125" (3.175mm)
218TX	0.100" (2.54mm)
224TX	0.100" (2.54mm)

Max Cutter Blade Opening

FSC6	0.180" (4.57mm)
FSC12	0.100" (2.54mm)
FSC18	0.180" (4.57mm)
FSC24	0.090" (2.28mm)

Roll Position Repeatability:

± 0.0025"

Roll Type:

8620 C.R.S. Hardened & Ground

Blade Type:

M2 DCF Tool Steel Heated & Tempered to 62-65 Rc

Stock Entrance:

Cascade Rollers and Edge Guides Standard

Options:

Pneumatic Operated Roller Release
Special Rolls – Contact Factory
Self-Centering Edge Guides
Carbide Cutter Blades

ELECTRICAL SPECIFICATIONS

Electrical

Line Voltage:	230 VAC, 3Ø, 50/60 Hz
Rated Input Current:	9.2 Amps
Max Inrush Current:	10.0 Amps
Max Operating Temperature:	30° C Ambient
Controller:	Trio Motion Coordinator MC403
AC Servo Drive:	Kollmorgen AKD-B01206
Display:	Beijer H-T60b-S
Enclosure	
Rating:	IP65
Dimensions:	20" x 20" x 10" (508mm x 508mm x 254mm)
Inputs:	Use PNP sensor or isolated contact Min 3.5 VDC / Max 30 VDC Min 2 mA / Max 15 mA
Outputs:	Sourcing: 24VDC @ 250 mA max.
Options:	460 VAC, 3Ø, 50/60 Hz AC Cooled Enclosure Adjustable Mounting Stand

Pneumatic

Shop Air	Filtered and lightly lubricated Working Pressure 80-120 PSI Maximum Pressure 150 PSI
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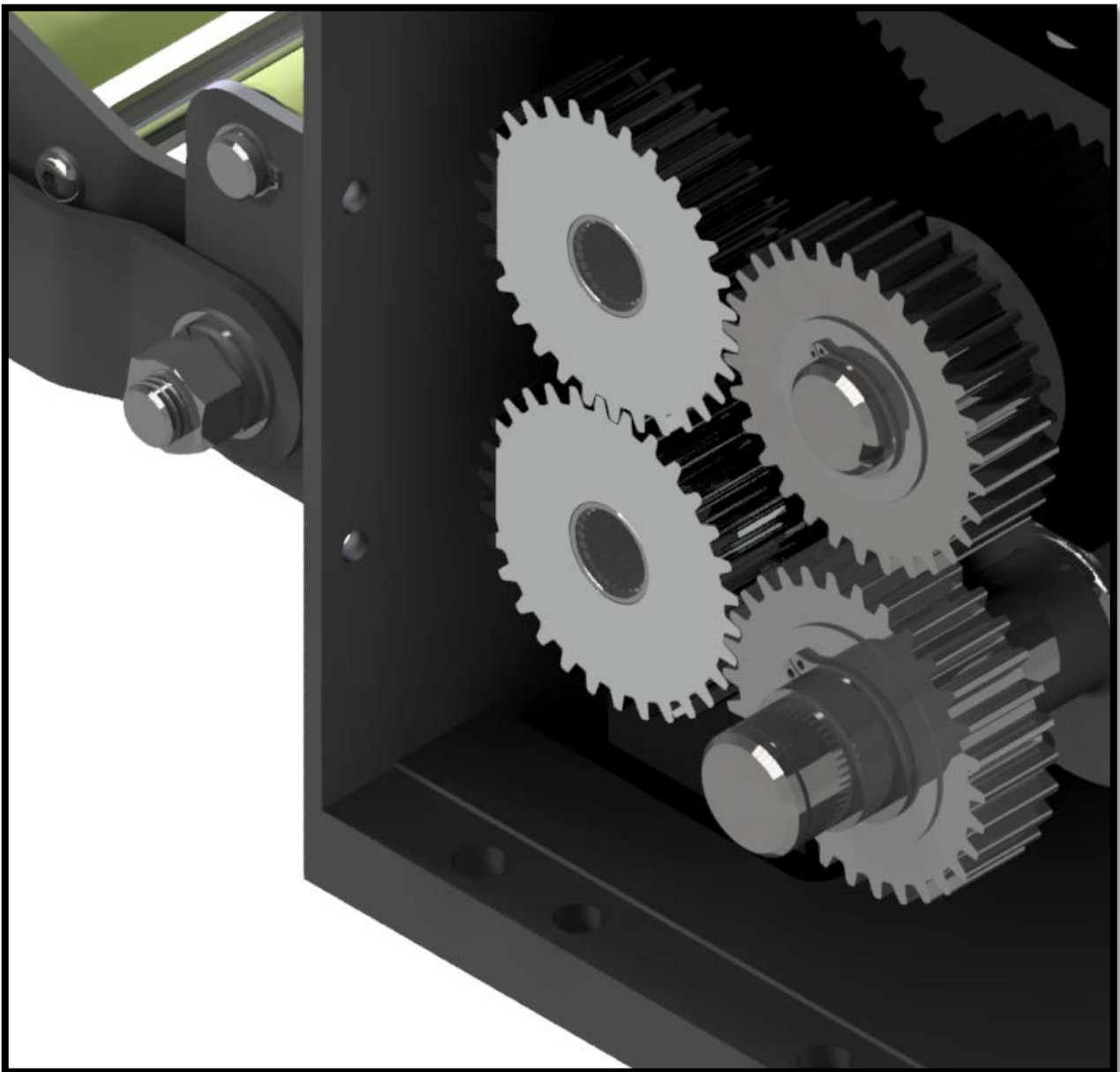
Mechanical Setup

Installation

Since the servo feed and the flat stock cutter have already been mounted on a common base no further mechanical component installation or alignment is required. The CTL cabinet may need to be leveled to steady the entire assembly or optionally it can be anchored to your shop floor. Four ½-13 threaded holes are provided in the cabinet base for this purpose. It will be necessary to bring a compressed air and an electrical service drop to the area you intend to locate the CTL. See the specification pages for requirements.

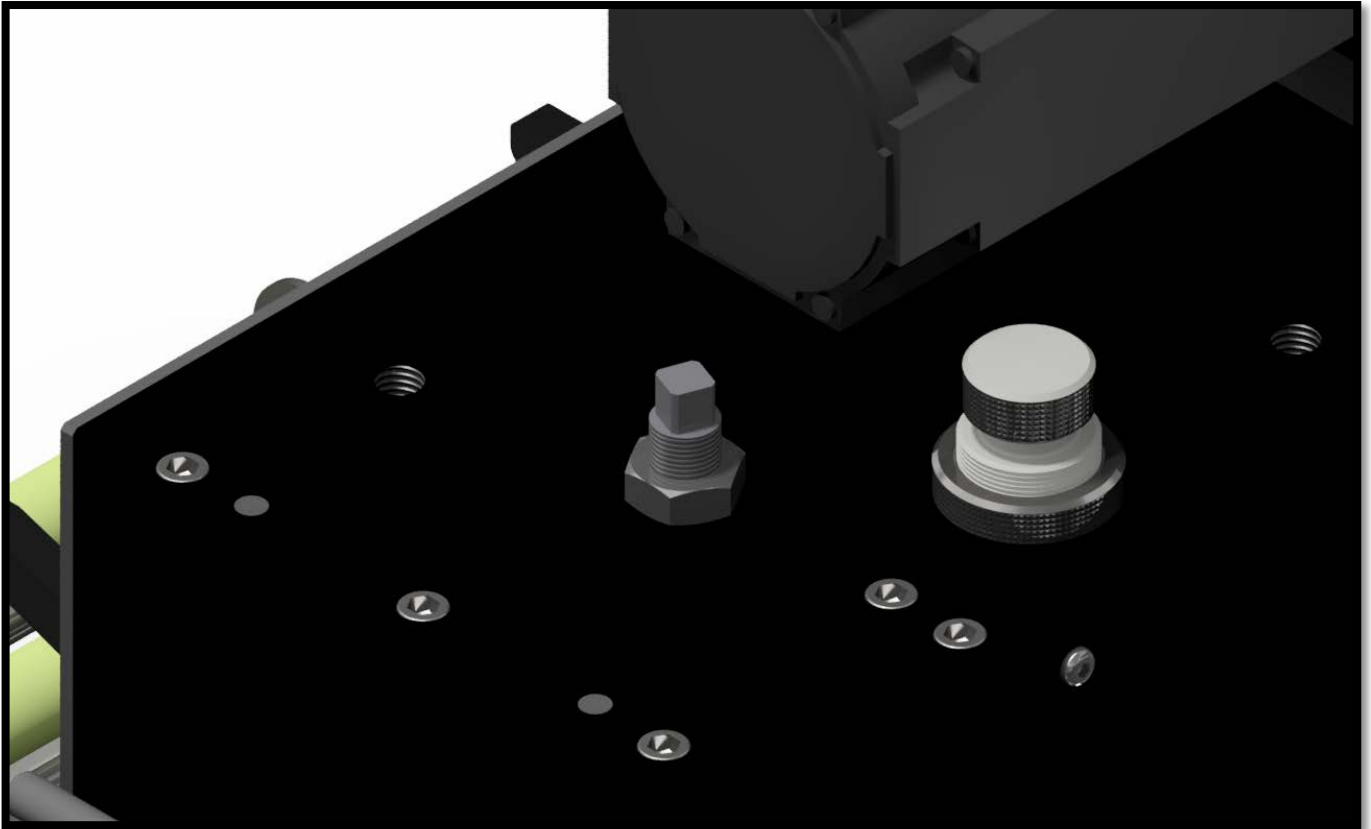
Gear Train

The gear train is located on the same side as the roll release handle. Gear train has been lubricated at the factory, only future maintenance will be required. Use MOBILTAC 375 NC.



Pilot Release Stop

Our 200T(X) series servo feeds are equipped with a pilot release stop as standard. In a press feeding application higher speed applications may benefit from adjusting the pilot release stop. By limiting the amount the rolls can open, time is not wasted by the rolls traveling full open and close. The pilot release stop adjustment is mounted next to the roll pressure knob and should be set to let the rolls open about 0.005/.010" to free the material during piloting. *In a CTL application there is no reason to adjust the pilot release stop.*

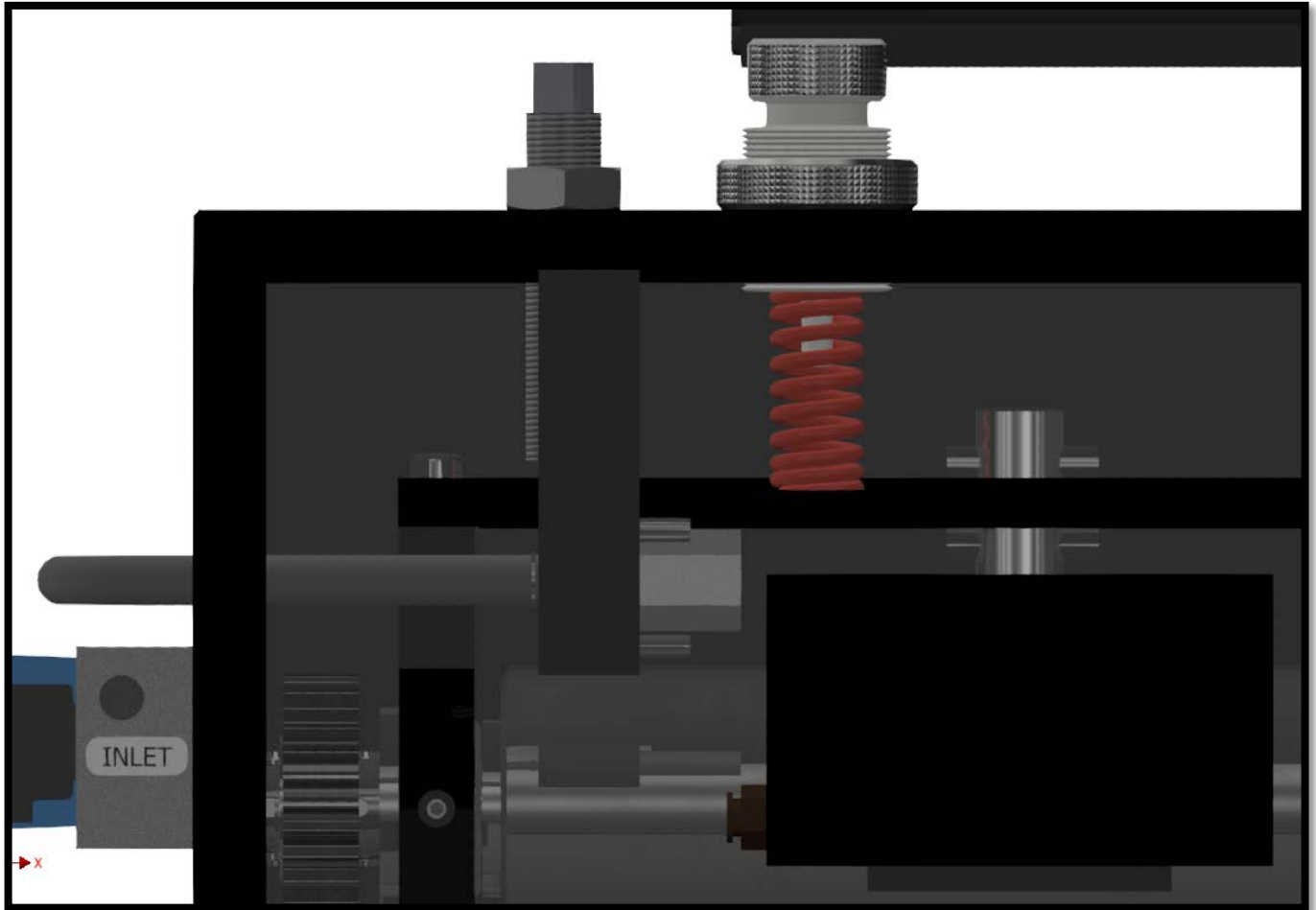


Roll Release Handle

The roll release handle is located on the side of the servo feed. If the PILOT RELEASE STOP has not been set then the handle can travel 'full stroke' and lock in the fully open position. This is the max feed roll opening of 0.180". If the pilot release stop has been set then the handle will only travel enough to open the rolls to the amount set by the pilot release stop. The handle will not lock in this position, **do not force beyond this point!!**

Roll Pressure

The roll pressure knob is located on the top of the servo feed and is a knurled knob with a knurled locking nut. It is positioned perpendicular to the inlet face and uses a compression die spring for adjusting roll pressure. Adjust so there is only enough pressure applied to properly feed the stock. Exerting too much pressure can result in 'fluting' of the edges or cause camber. Maximum roll pressure possible from die spring compressed to 37% of free length is 1,469 lbs. It is not recommended to use this much pressure.



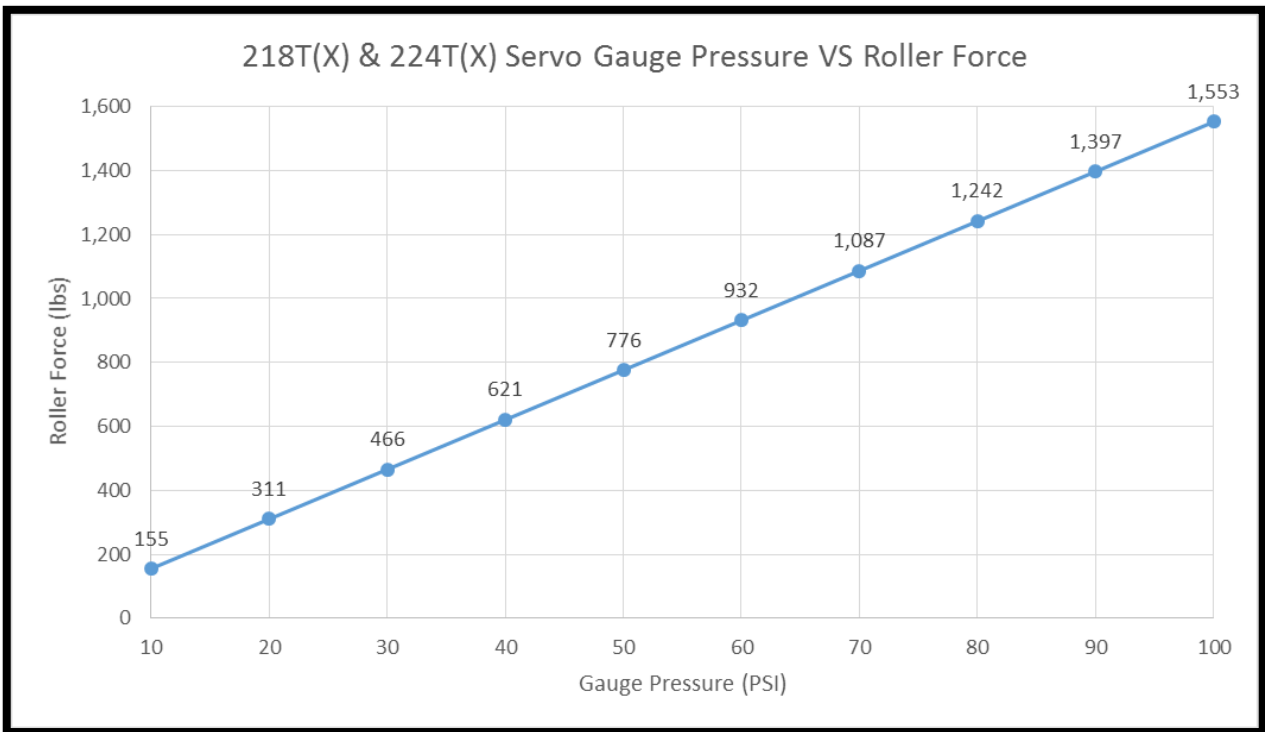
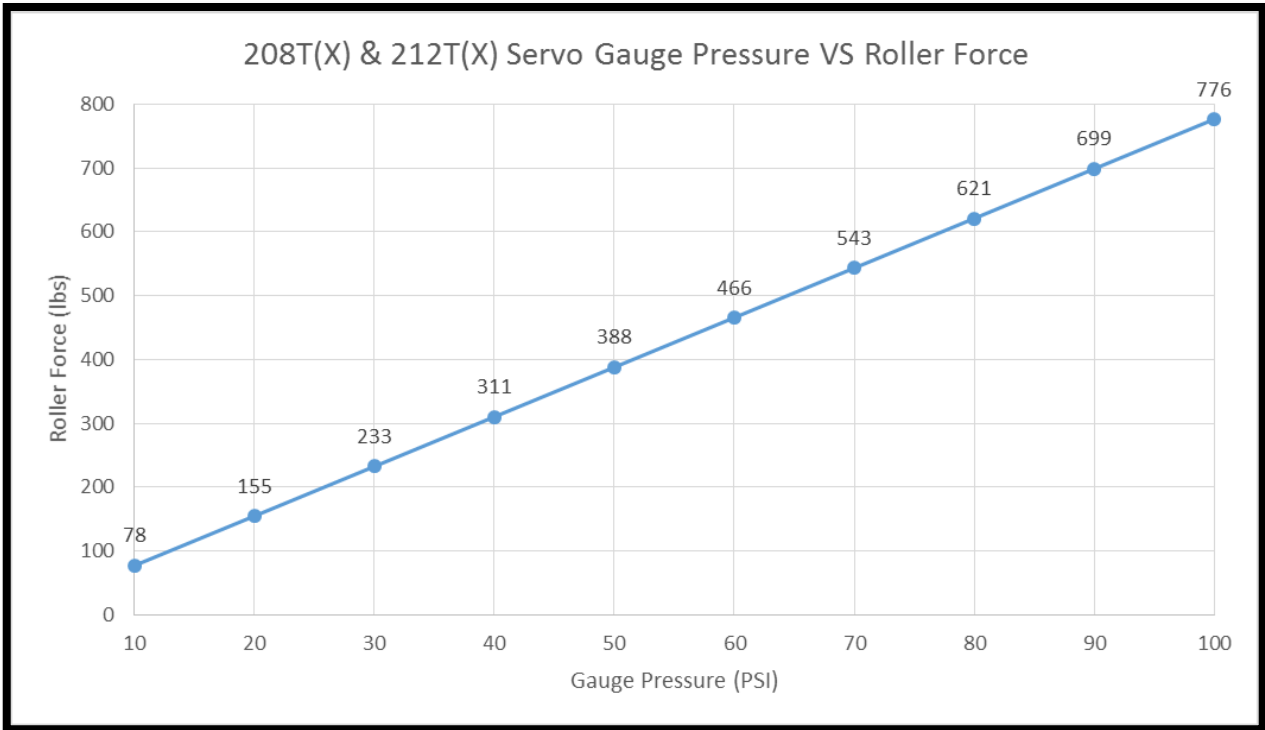
When equipped with the optional ***AIR REGULATED UPPER FEED ROLL***:

When using air pressure to grip the material, the spring regulated grip should be backed out or removed. **DO NOT** use both grip regulating methods together.

When adjusting the roll pressure with the air regulated option, increase the pressure in approximately 5 PSI increments until the proper feed is established. Take care not to induce camber in the material by applying excessive force. Record gauge pressure when proper feed is achieved.

Gauge Pressure versus Roll Pressure (reference chart for values)

	<u>208T(X) & 212T(X)</u>	<u>218T(X) & 224T(X) 2 pistons per servo</u>
10 PSI Gauge	78 lbs.	156 lbs.
20 PSI Gauge	155 lbs.	310 lbs.
30 PSI Gauge	233 lbs.	466 lbs.



Entrance Guide

The entrance guide's adjustable rollers should be adjusted to maintain the incoming stock centered on the feed rolls. Similar guides are available as an option for the exit side of the feed rolls. By having a set of guides on each side of the servo feed the setup time for aligning the material in the feed is decreased considerably as you will know that the material is straight through the feed before entering the die.



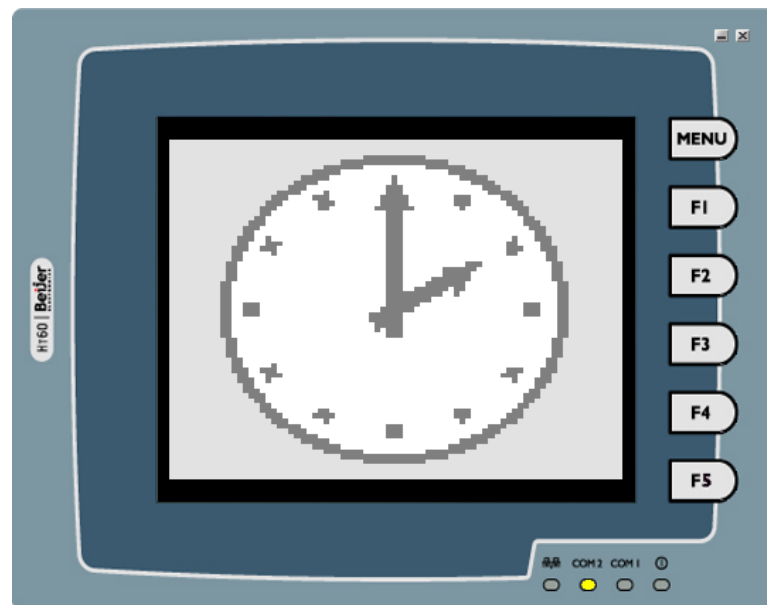
SERVO FEED OPERATION

When the control is turned on some of the components must boot-up, much like a computer. During this period the display will show a 'clock' so you can recognize the control is in the process of getting ready. If the control is turned on immediately after the incoming service is restored, you will notice a longer boot up time is required.

The display is a touch screen. Touch the screen in the general area of an object when it is necessary to enter numbers, 'push' pushbuttons or reset values. The screen has a built in screen saver function whereby it blanks after a predetermined time of inactivity. Touch the screen anywhere to bring back it to life.

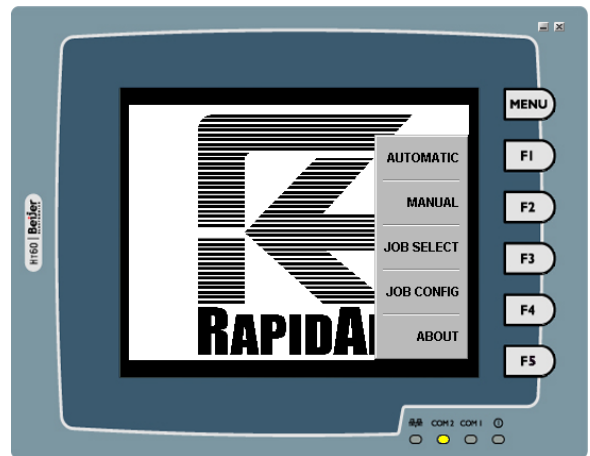
On the right hand side of the display there are 5 programmable function keys. These keys have different functions depending on the active screen. The 'F5' key is typically the EXIT or CANCEL key. The keys are always active. If you forget a key's function you can press the MENU button and the function key menu for the active screen will 'slide out'. The slide out menu is also a touch key so you can either touch the appropriate menu choice or press the 'F' key itself. Once a choice is made the slide out menu will close. You can also close the slide out menu by pressing the MENU button a second time. As you become accustomed to the operation of the CTL you will probably find yourself calling for the slide out menu less and less.

The CTL will power up with the last job used as the active job. This means there is no need to load the same job number day after day.



SERVO FEED OPERATION cont'd

SPLASH SCREEN:



Once the control is booted up and ready to go the Rapid-Air logo will be displayed. This is called the SPLASH screen. The SPLASH screen is the main menu.

- | | |
|-----------------|---|
| F1 – JOB SELECT | Go to this screen to set up the desired job. |
| F2 – AUTOMATIC | Go to this screen to start making parts. |
| F3 – MANUAL | Go to this screen to manually control individual functions. |
| F4 – JOB REVIEW | Go to this screen to quickly see what the active job is and its parameters. |
| F5 – ABOUT | Go to this screen for information about the CTL. |

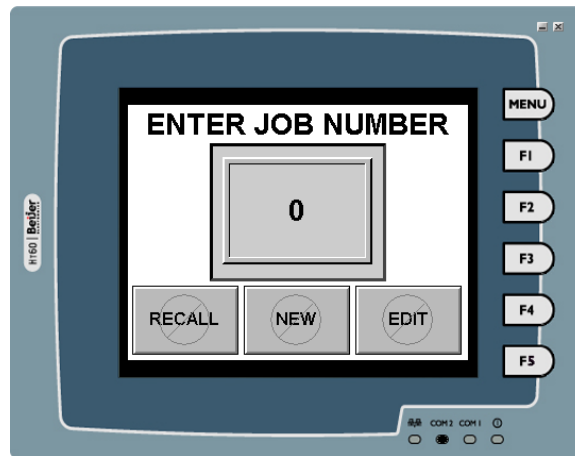
You can change to any screen listed, no particular order is required. For purposes of explaining the controls we will describe how to enter a new job number and the job parameters.

A typical sequence would be:

- **JOB SELECT** – Enter a job number
 - **SELECT NEW, EDIT, OR RECALL**
 - **NEW & EDIT** lead to a series of screens that allow you to configure the job recipe.
- **JOB CONFIG** – After selecting a job number you are automatically sent to the **JOB CONFIG** screen to either confirm the job choice or to enter the new job parameters. You could also choose to go to the **JOB CONFIG** screen to edit an existing job's values.
- **MANUAL** – Allows you to test settings and position the material for production. You are automatically sent to this screen after the **JOB CONFIG** screen.
- **AUTOMATIC** – Ready for production, waiting for the feed initiate signal.

SERVO FEED OPERATION cont'd

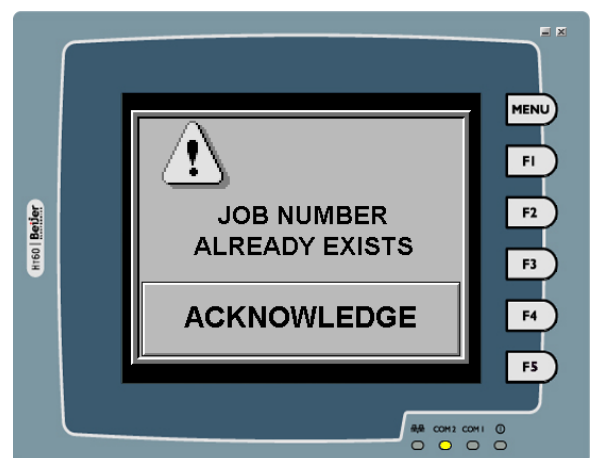
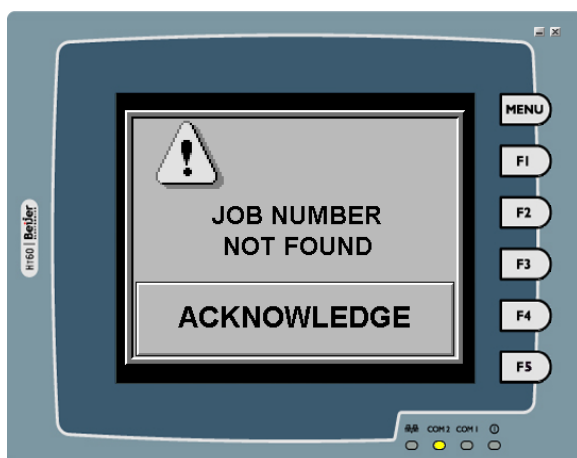
JOB SELECT:



This screen is used to define a new job, edit an existing job or recall an existing job. Up to 99 jobs can be created and stored. Until a valid job number is entered the 'RECALL', 'NEW' and 'EDIT' pushbuttons are not enabled. 'F5' is the only function key used on this screen. Use the 'F5' key to return to the SPLASH screen without changing any job information.

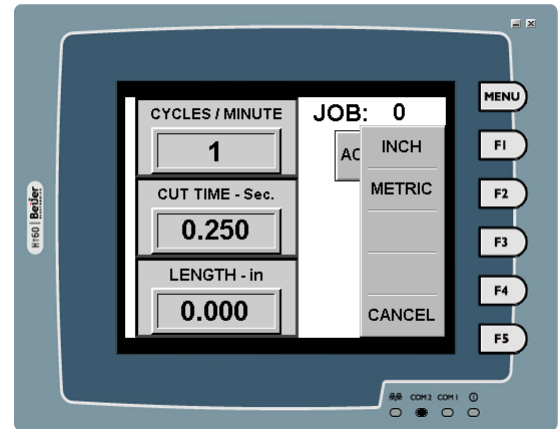
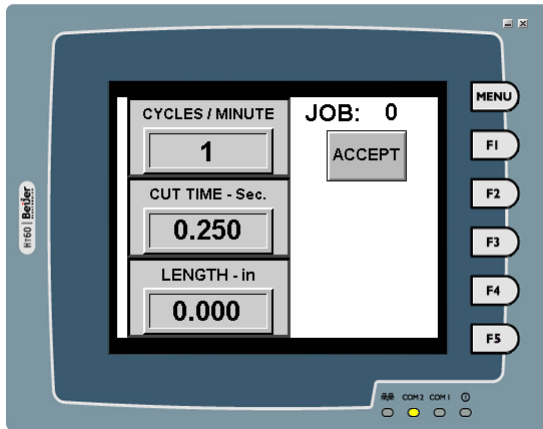
RECALL: This pushbutton recalls a previously set up job and makes it the CTL active job. If any invalid job number is entered you will get a fault message. Simply acknowledge the message and try again. When the recall is successful you will be returned to the SPLASH screen.

NEW & EDIT: Both of these pushbuttons will cause a new screen to appear allowing you to enter the job's parameters. If you've forgotten what job numbers have been set up and you enter a used number and then push 'NEW' you will get a fault message. This action is intended to keep the operator from accidentally changing a stored job. Similarly, if you enter a job number that does not exist and try to 'EDIT' it you will get a fault message. Simply acknowledge the message and try again.



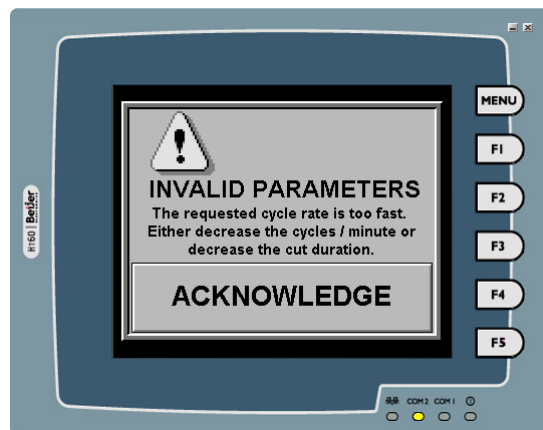
SERVO FEED OPERATION cont'd

NEW / EDIT:



On the 'NEW' job parameter screen, the feed length defaults to inches. Use the 'F1' & 'F2' to toggle between entering the length in inches or millimeters. On the 'EDIT' screen the feed length units will be whatever the job was originally defined as, but it may be changed the same way. **Note**, when changing between inches and millimeters on an existing job the previous length is **not** converted to the new units. For example, if the previously length was 1.25 inches and the units are changed to millimeters the length does not become 31.75 mm, it is now 1.25 mm.

Enter the approximate number of cycles, the amount of time the cut off solenoid is energized and the required feed length. The controller will then compute the move parameters based on a standard trapezoidal move. If the move cannot be made with the given parameters a warning message will be displayed. Acknowledge the message and re-enter the parameters.



If the move parameters are accepted but when the move is tested with material and it is apparent the move is too 'hard' so the rolls slip or other problems are caused, then edit the job and reduce the number of CYCLES per MINUTE. It will be trial and error to find the rate that works best for your particular application. The number of cycles per minute entered will only be an approximation of what is actually produced. Once a job is entered with valid parameters the operator will be returned to the SPLASH screen.

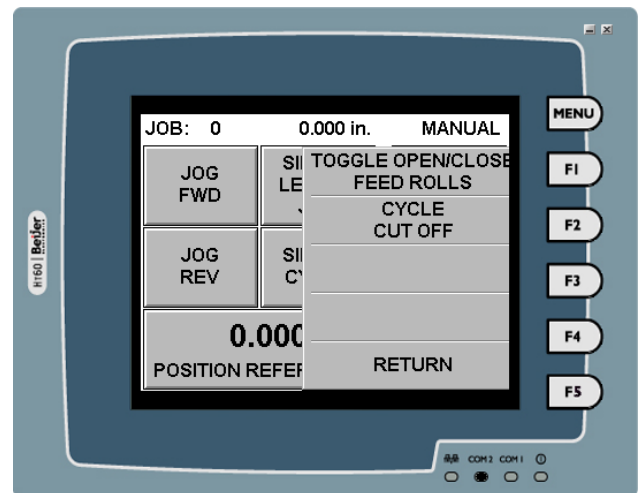
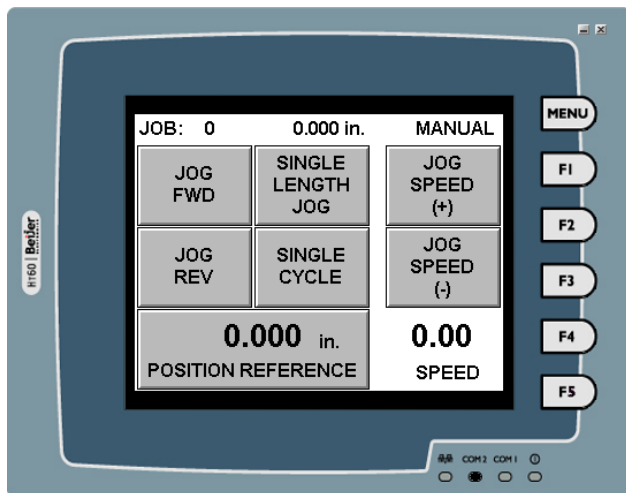
SERVO FEED OPERATION cont'd

MANUAL:

The manual mode is to aid in job setup and for maintenance. You can jog forward (JOG FWD) and you can jog reverse (JOG REV). The jog speed can be changed via the JOG SPEED (+) and JOG SPEED (-) pushbuttons. The speed can vary from 1 to 20. These numbers do not relate to anything like inches/sec, they are just a reference so you can return to a particular speed during future setups. When either jog speed change button is pushed the speed changes a small amount initially. The longer the button is held the more rapid the change becomes.

The SINGLE CYCLE pushbutton will cause 1 feed length to be fed at the normal production speed and accel/decel rates. The JOG LENGTH pushbutton will jog forward just like the JOG FWD button except it will only feed up to the programmed feed length and then the POSITION REFERENCE indicator needs to be reset to 0.000 before it will jog again. Touch the POSITION REFERENCE 'box' to reset it.

'F1' will toggle the rollers open and closed if the servo feed is equipped with air operated rollers. 'F2' will cycle the cut off mechanism.

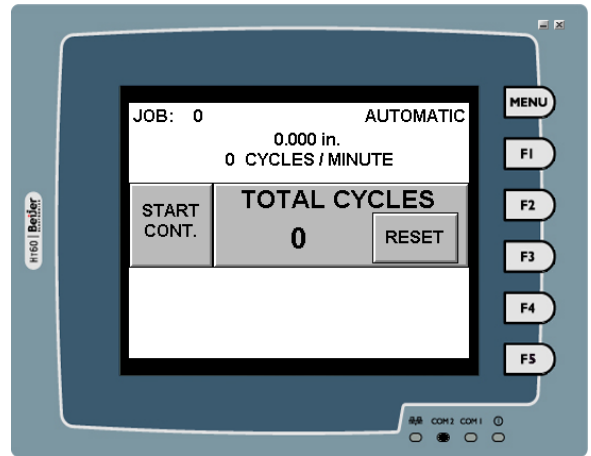
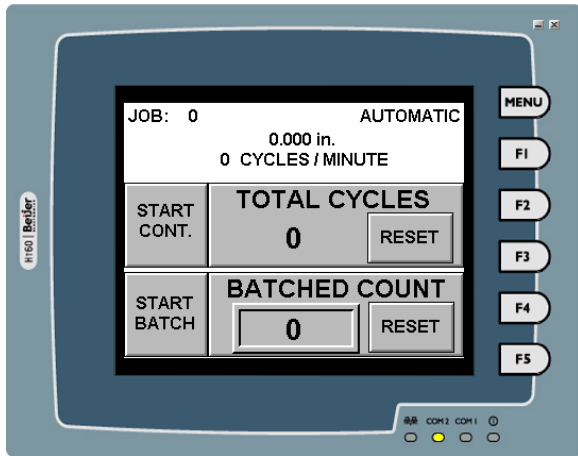


It is possible to jog the servo feed via hardwired pushbuttons. If the CTL was not ordered with a remote jog pendant it is possible to field install JOG FWD and JOG REV pushbuttons. See page 2 of 2 of the included electrical schematic. Like the HMI jog buttons, the hardwired pushbuttons will only be active when the display is on the manual function screen.

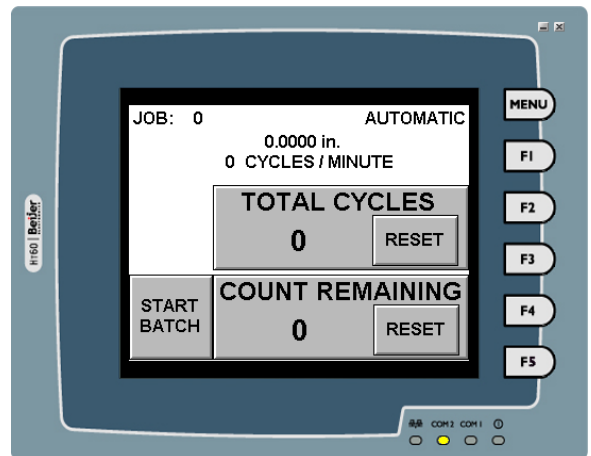
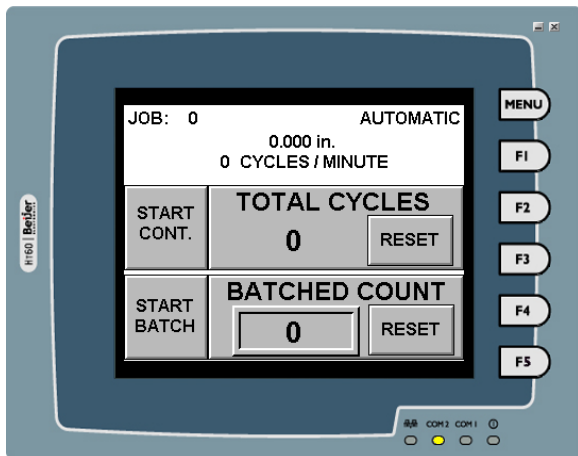
SERVO FEED OPERATION cont'd

AUTOMATIC:

Two modes of operation are available in the automatic mode. One mode is continuous. In this mode the CTL will run until the operator stops the cycle. There is a TOTAL COUNT indicator that will indicate how many cycles have been run. This counter may be RESET at any time. When run in the continuous mode the screen changes and the BATCH start and count display will not be visible.



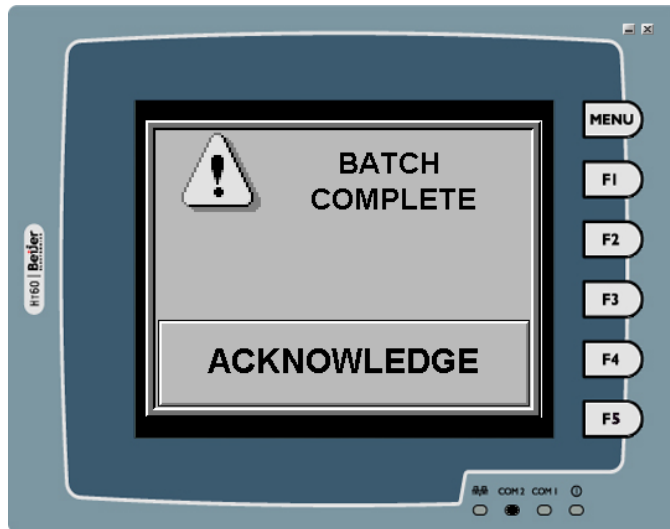
The other mode of operation is in a batch mode. You can enter on the BATCH COUNT the number of pieces you want to make, start the machine and it will automatically stop after the count is complete. Once started in the batch mode the screen changes and the continuous mode start/stop pushbutton is not visible. The TOTAL count display remains visible allowing the operator to see how many cycles have happened and at the same time the BATCH counter will display the number of cycles remaining. The BATCH counter will reset automatically between batches but the TOTAL counter has to be manually reset.



SERVO FEED OPERATION cont'd

AUTOMATIC cont'd:

When operated in the BATCH mode and the batch count is complete the CTL will stop cycling and the following screen will appear.

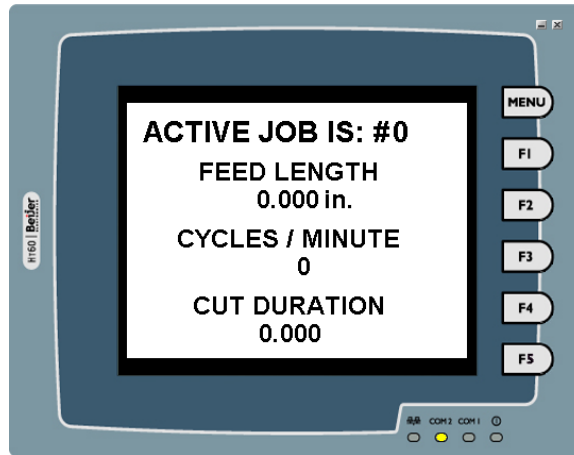


When this screen is acknowledged you are returned to the start of the automatic function. At this point you can start another batch, change batch quantity and start another batch or operate in a continuous mode.

The CTL control has an input dedicated for a TAUT stock sensor. A user supplied sensor wired to this input will cause the CTL to stop cycling if the input is triggered. The feed will continue to feed the length in progress when the input is triggered so it must be adjusted to allow enough stock in the loop to allow the completion of that feed length

JOB REVIEW

When the CTL is powered up the last job used, edited or recalled is the active job by default. If you do not remember what that job is you can review it by pressing 'F4- JOB REVIEW' on the SPLASH screen.



ABOUT

If you contact Rapid-Air Corp. to request parts or seek other assistance with your CTL you may be requested to provide the Rapid-Air serial number or other programming information. You can find this information on the 'ABOUT' screen. Because the display or other parts may not be working when you need to contact us please record the information in the space provided below.



Servo Feed Model Number _____

Serial Number (S/N) _____

Shop Order Number (S.O.) _____

Controller Prog. Number _____

TROUBLESHOOTING

If the servo drive faults out it is reported back to the controller as a general fault condition and the controller is not able to announce the specific cause. The operator interface will display the following message.



There is a 2 character LED display on the front panel of the drive. The left character will be 'F' as in fault, and the right side displays the 3 digit fault number as follows: 1-9-1-[break] (for example).

FLAT STOCK CUTTER OPERATION

The cutter operates by air pressure down, spring return. Different material types and thicknesses will require different amounts of time for the cutter valve to be energized. For example; 0.010" foil will require less time for the blades to cut through the material then when compared to 0.030" cold rolled steel. Each job recipe allows for a different 'CUT TIME'. If maximizing the cycle rate is not important you may find one CUT TIME works well for all of your setups. A suggested starting value is 0.250 second.

Each blade has four cutting edges. When a blade dulls rotate it 90° for a sharp edge. When all four edges have been used, flat grind the large faces on both sides of the blade. After reinstalling the blades it may be necessary to adjust the clearance between the blades.

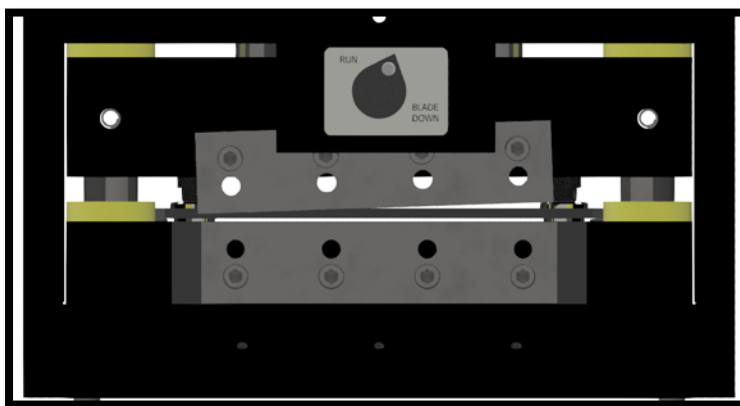
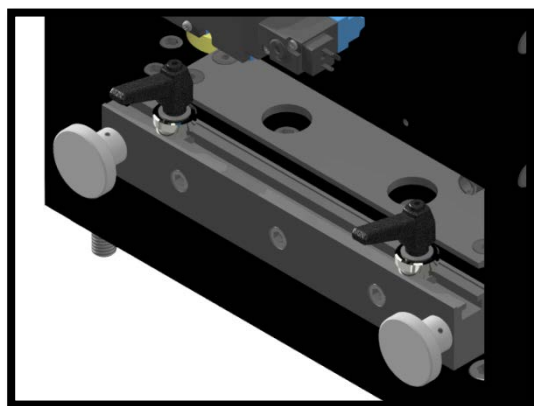
Blade Adjustment - The upper blade may be lowered manually with the eccentric cam located at the top center of the cutter. The purpose for this manual operation is for horizontal blade clearance adjustment. Blade clearance affects the quality of the cut. The CTL is shipped with the cutter's blades clearance set at the factory. To adjust the blade clearance:

- Cam the upper blade down.
- Loosen lower blade holder lock screws. *
- Move lower blade in or out with knurled knobs. **
- When desired clearance is achieved, lock lower blade holder screws.
- Check adjustment by manually cutting bond paper.

The upper blade is mounted with a 2° shear angle.

FSC6 Item #71*
FSC12 Item #51*
FSC18 Item #85*
FSC24 Item#85*

FSC6 Item #26**
FSC12 Item #29**
FSC18 Item #31**
FSC24 Item #31**



WARRANTY

Warranty Terms & Conditions

ALL SALES BY THE COMPANY ARE MADE SUBJECT TO THE FOLLOWING TERMS AND CONDITIONS. PLEASE READ.

Warranty – The Company warrants for a period of one year from the date of shipment by the Company that the product shipped is free from defects in material and workmanship. THIS WARRANTY IS EXCLUSIVE AND IN LIEU OF ALL IMPLIED WARRANTIES IN LAW, INCLUDING MERCHANTABILITY. The Company obligation under this warranty is limited to repairing or replacing, F.O.B. Rockford, IL, any part or parts proved to have been defective when shipped. In no event shall the Company be liable for special or consequential damages. Provisions set forth in specifications are descriptive and subject to change and are not intended as warranties.

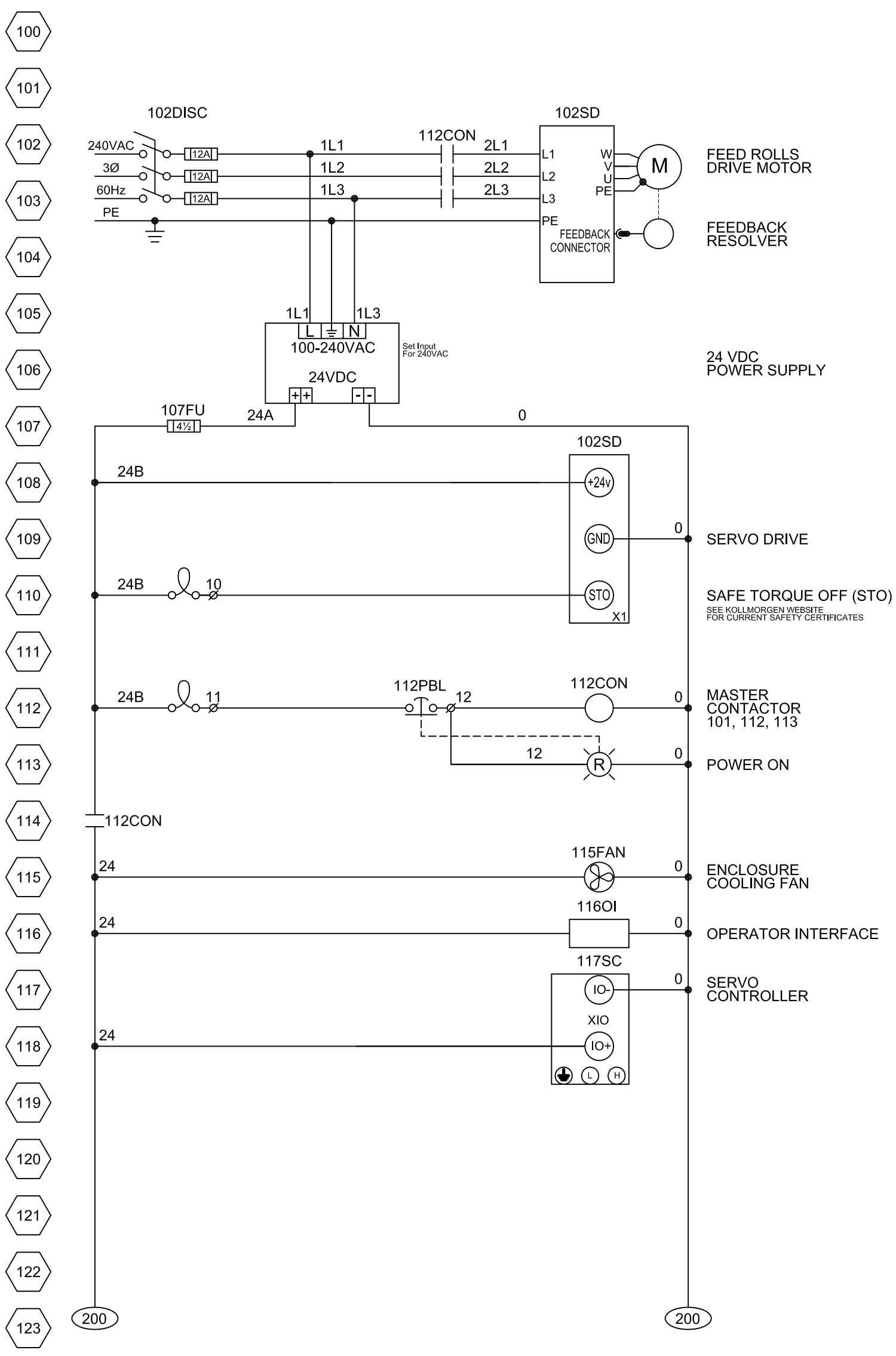
Customer License Agreement

Rapid-Air reserves the rights in its software. The software program is licensed by Rapid-Air to the original purchaser of the equipment which contains the software for use only on the terms set forth in this license.

You may use the program only on the programmable servo controller furnished with the system and only in conjunction with the servo feed supplied with the system.

You may not without expressed permission from Rapid-Air:

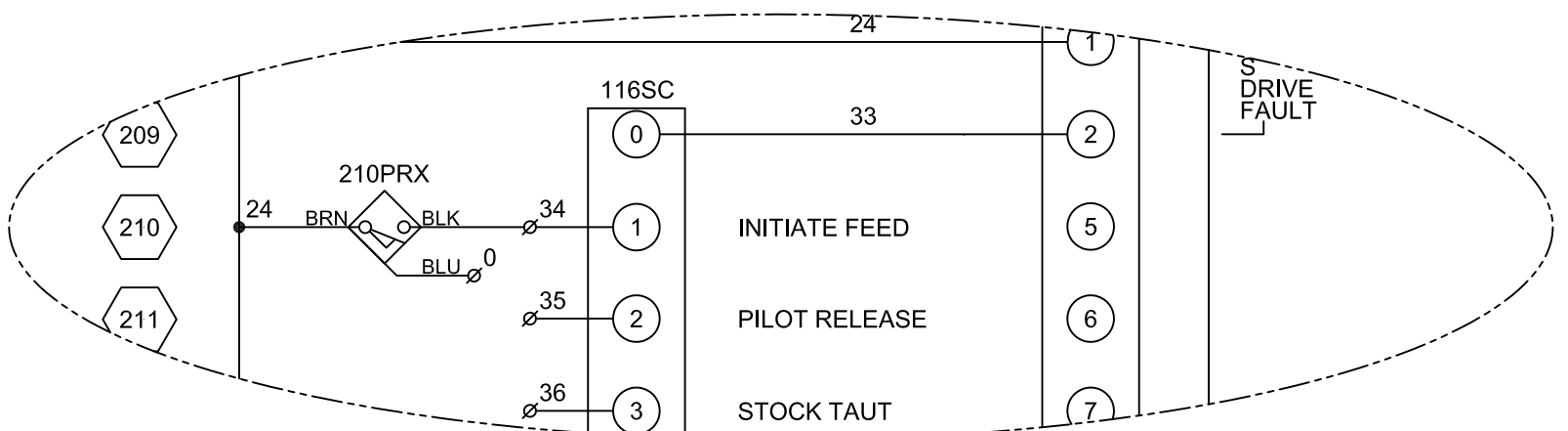
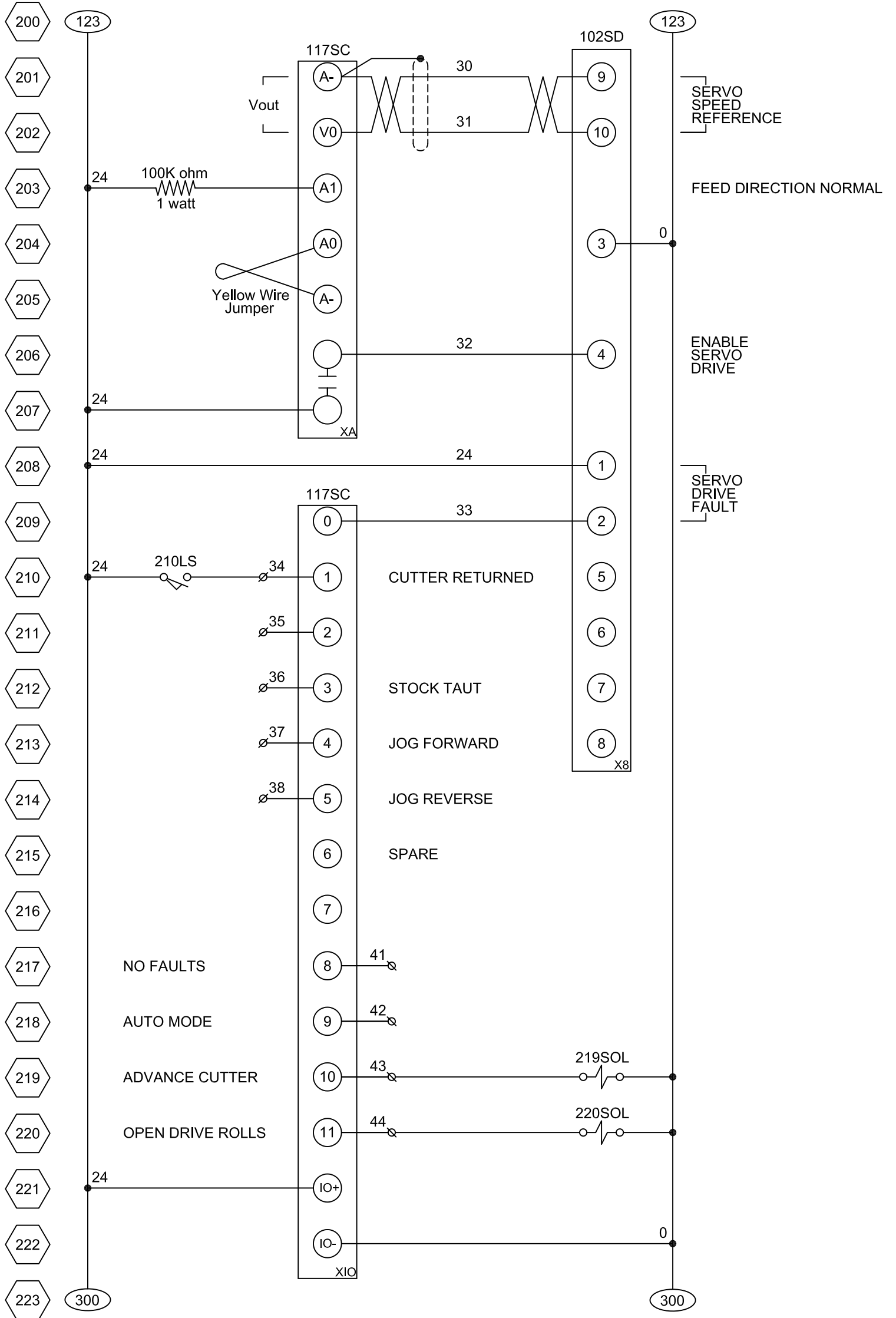
- A. Copy, distribute, or document the program for others.
- B. Modify or merge any portion of the program for use on non-compatible hardware.
- C. Make alterations to the program.



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SHEET 1 OF 2
POWER CIRCUIT

RAPID-AIR CORPORATION	
ROCKFORD, IL	
PART NAME	200(X) CUT-TO-LENGTH
WIRING SCHEMATIC	
HEAT TREAT	
DRAWN BY	TJH
CHECKED BY	
DATE	SEPT. 2016
SCALE	N/A
BRAVING NUMBER	85500338-1
FINAL FINISH	
HARDNESS	
WEIGHT	
REV.	CHANGE
DATE	
SCALE	
BRAVING NUMBER	85500338-1
FINAL FINISH	
HARDNESS	
WEIGHT	
REV.	D

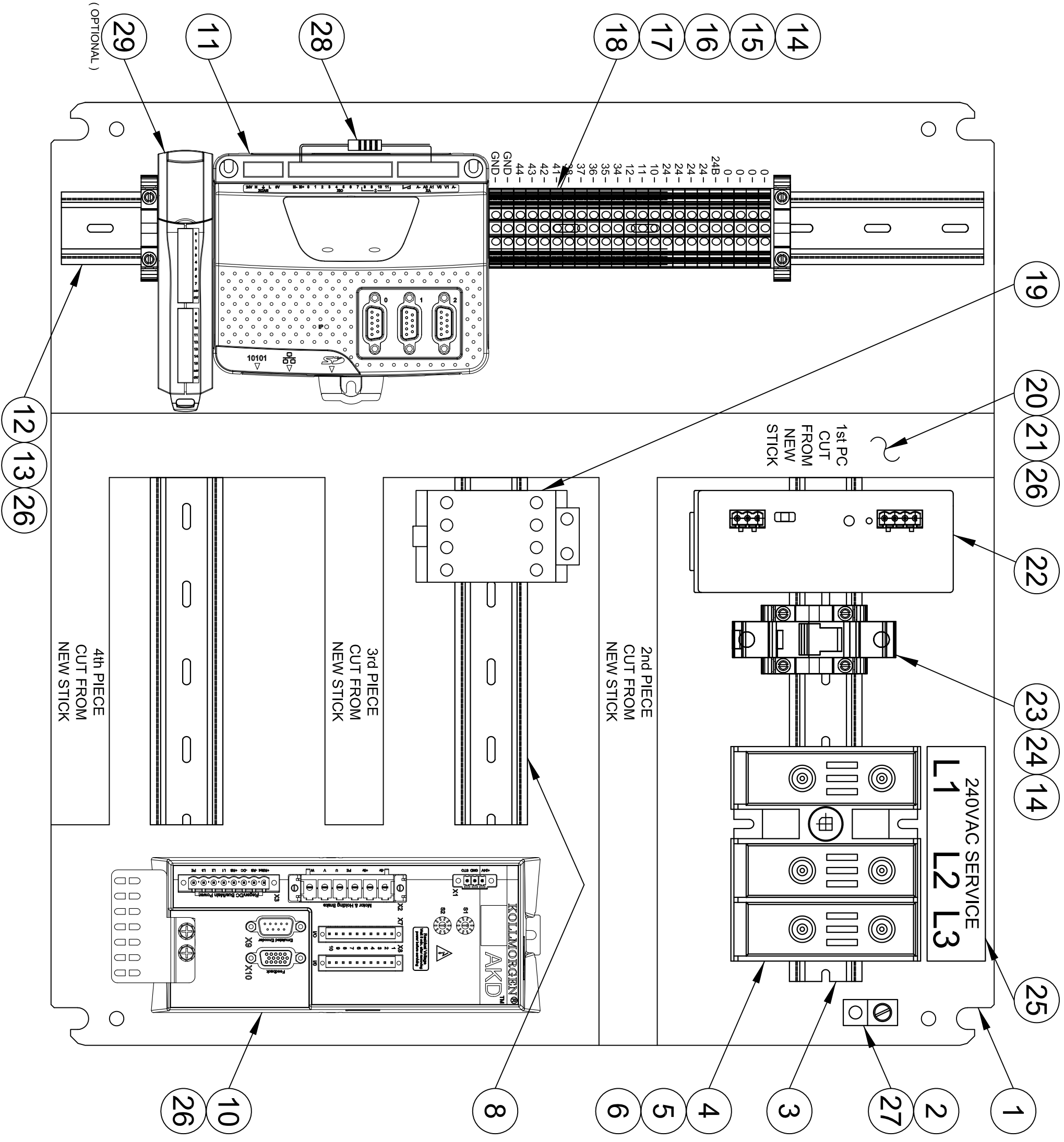


TYPICAL PNP PROX SWITCH WIRING EXAMPLE

SHEET 2 OF 2
I/O CIRCUIT

REV.	CHANGE	DATE	SCALE	HEAT TREAT	HARDNESS
		SEPT. 2016	N/A	TJH	FINAL FINISH
				CHECKED BY	BRANING NUMBER
					85500338-2
					D

RAPID-AIR CORPORATION
ROCKFORD, IL
PART NAME: 200(X) CUT-TO-LENGTH
WIRING SCHEMATIC



- REMOVE SUBPANEL PAINT BENEATH THIS ITEM
 - PANEL GROUND CONNECTION SHALL BE MADE VIA RING TERMINAL LOCATED UNDER MOUNTING SCREW HEAD

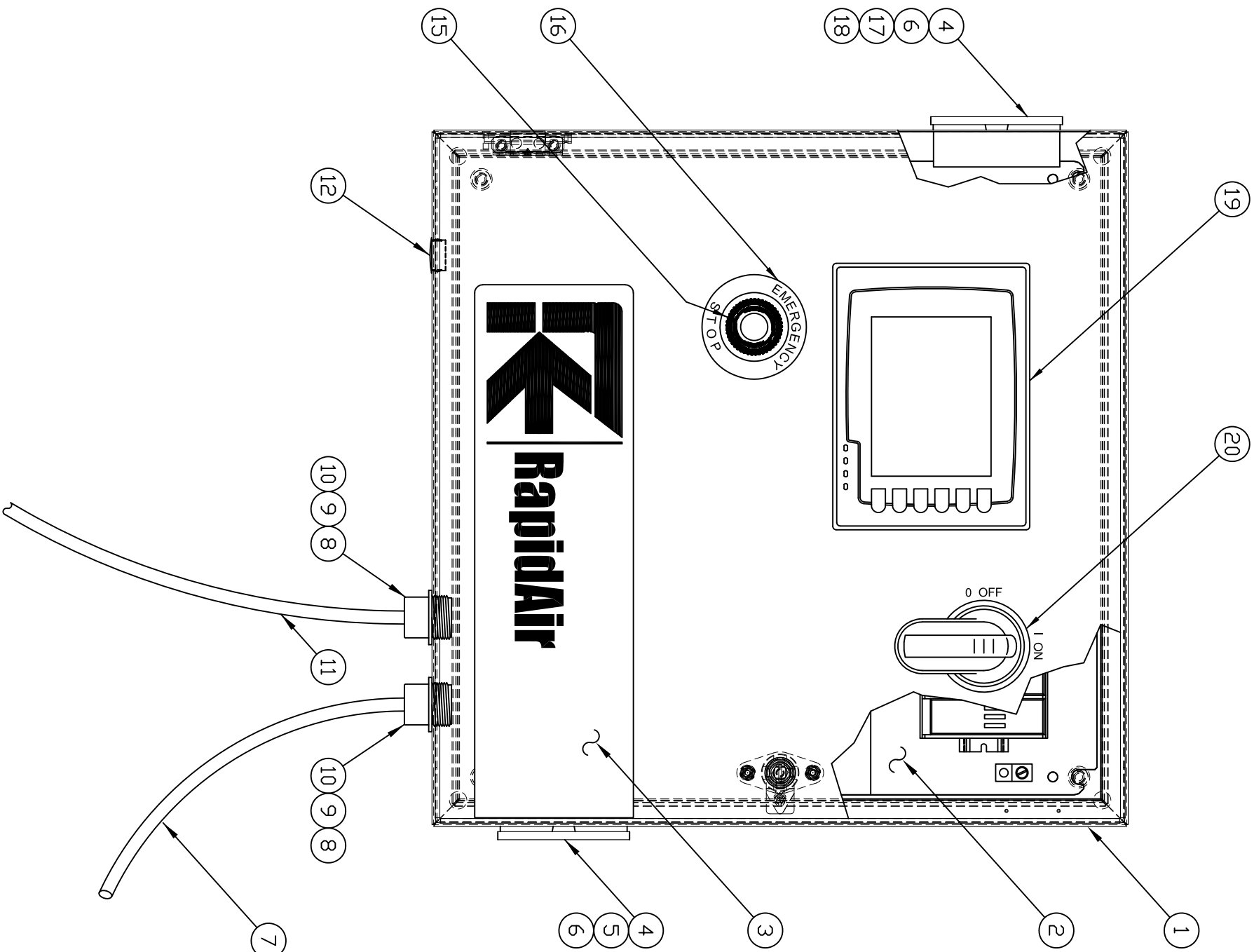
USE WITH:
 85500338 200(x) C-T-L WIRING SCHEMATIC -version 'C' cntl
 85500335 200(x) WIRING SCHEMATIC - version 'C' cntl

(OPTIONAL)

N/S	2	69340036	26 GA. FERRULE
N/S	4	69340037	20 GA. FERRULE
N/S	5	69340039	16 GA. FERRULE
N/S	3	69340040	14 GA. FERRULE
N/S	1	69300048	CNTRLR / DISPLAY CABLE
N/S	1	69300047	CNTRLR / DRIVE CABLE
29	1	69100828	SERVO CONTROLLER EXPANSION I/O
28	1	69101008	RESISTOR
27	1	66020050	1/4-20 x 1/2" RHMS
26	29	66008037	8-32 x 3/8" RHMS
25	1	39900311	240VAC DISCONNECT WIRING LABEL
24	1	69101002	4 1/2A FUSE - CLASS CC
23	1	69100597	FUSE HOLDER
22	1	69100435	24VDC @ 5A POWERSUPPLY
21	1	69100748	1" WIRE DUCT COVER
20	1	69100749	1" x 2" WIRE DUCT
19	1	69100819	CONTACTOR
18	2	69100775	GROUND TERMINAL
17	.5	69100773	TERMINAL JUMPERS
16	1	69100771	TERMINAL END BARRIER
15	21	69100770	TERMINAL
14	4	69100772	TERMINAL END ANCHORS
13	2	31900659	TERMINAL STANDOFF
12	1	69100769	DIN RAIL - 18"
11	1	69100827	SERVO CONTROLLER
10	1	69100830	SERVO DRIVE
9			
8	2	69100769	DIN RAIL - 6.38"
7			
6	1	69100584	DISCONNECT SHAFT
5	3	69101007	12A FUSE - CLASS J
4	1	69100582	DISCONNECT - 30A/600VAC
3	1	69100769	DIN RAIL - 9.5"
2	1	69280249	GROUND LUG
1	1	38900199	SUBPANEL

PART NAME		200(x) SERVO CONTROL Ver. C	
MATERIAL		SUBPANEL ASSEMBLY	
HEAT TREAT		TJH	
DRAWN BY		TJH	
DATE		APRIL 2014	
SCALE		N/A	
REV.		CHANGE	
PART NO.		28900445	
DESCRIPTION		D	

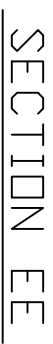
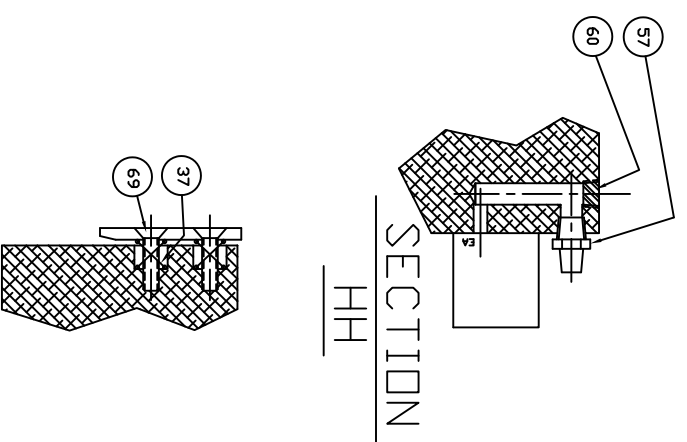
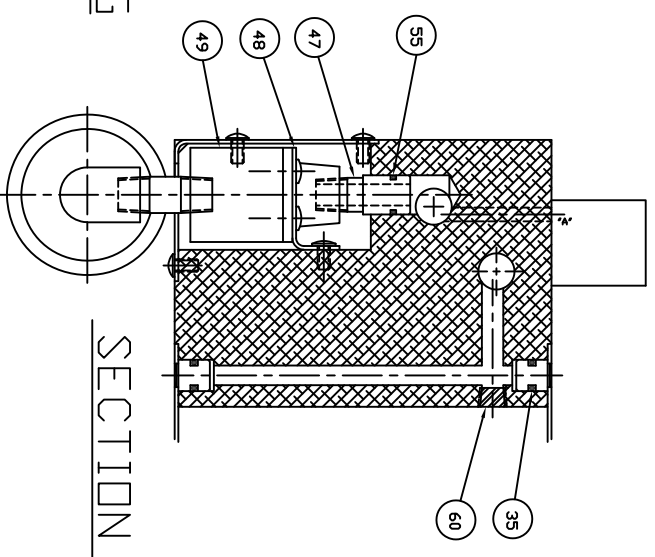
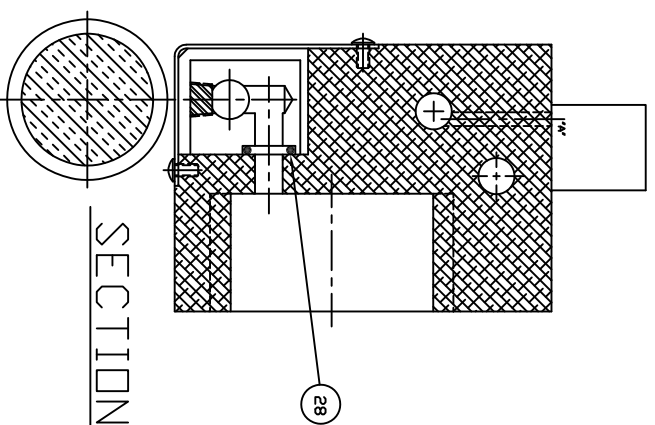
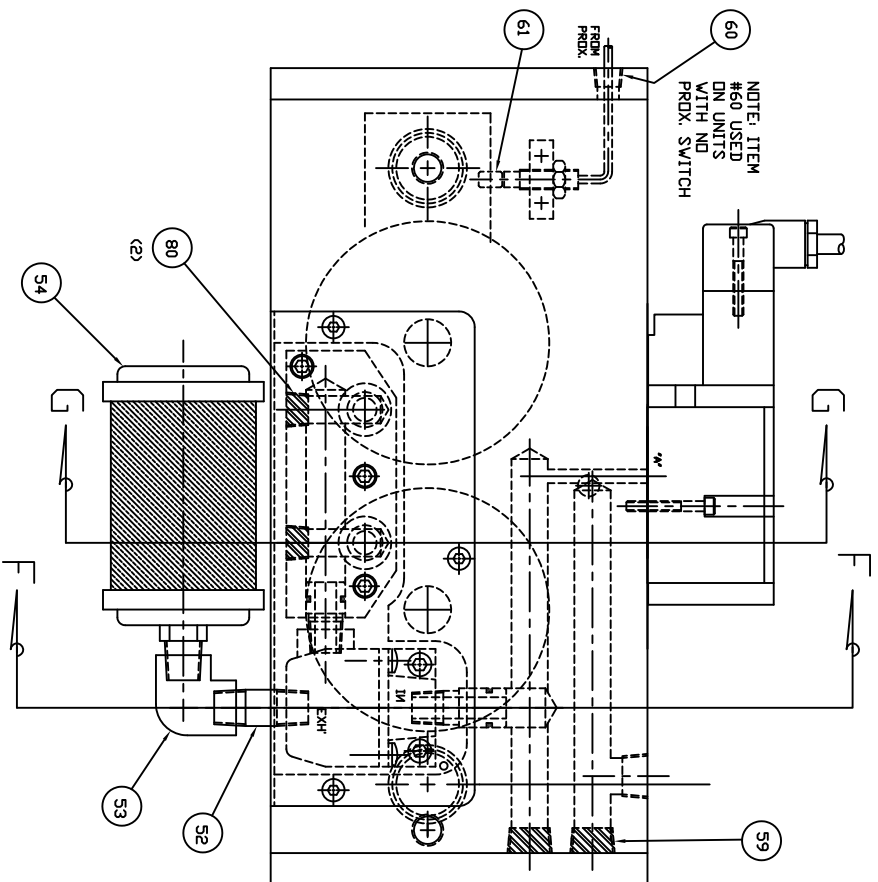
RAPID-AIR CORPORATION
 ROCKFORD, IL



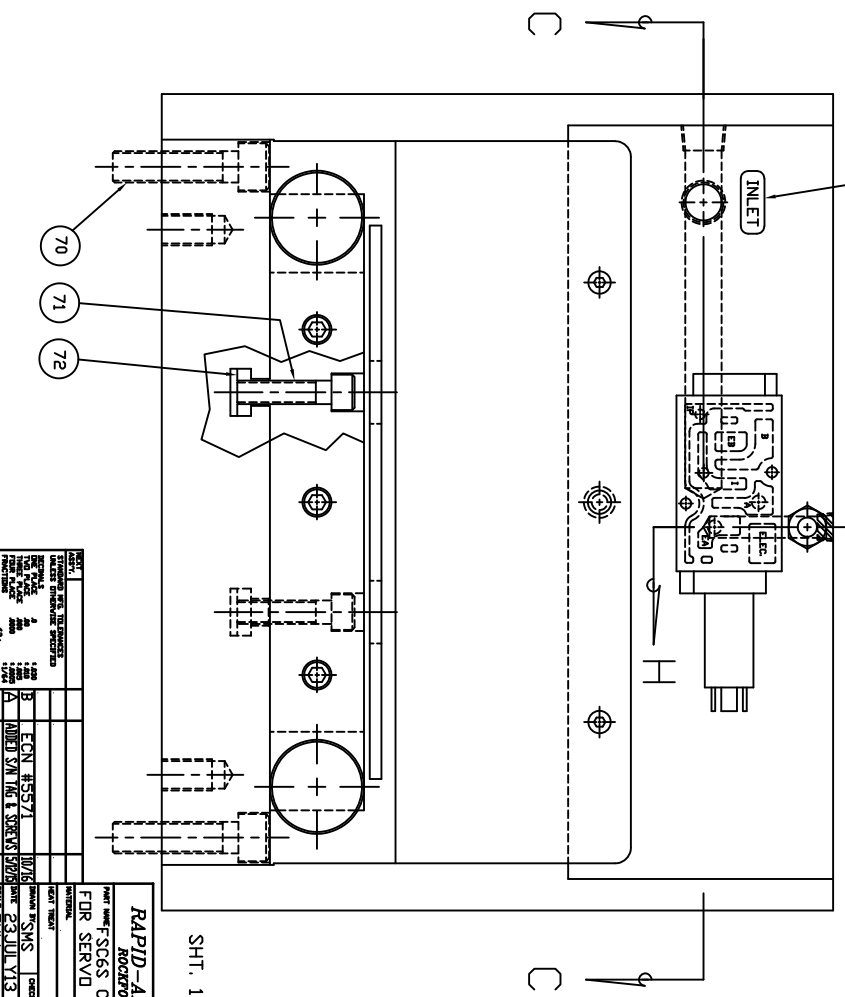
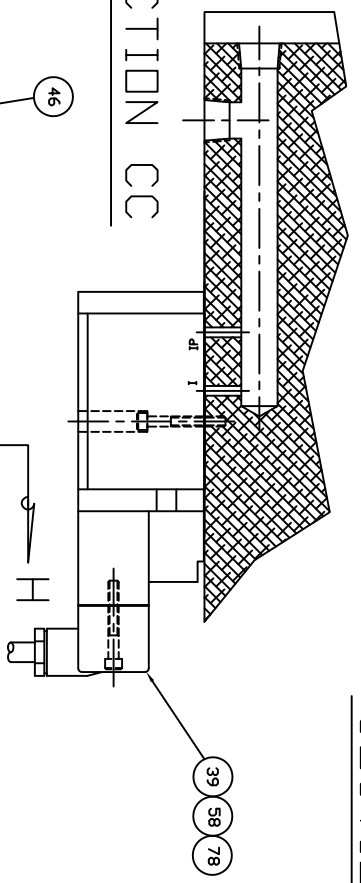
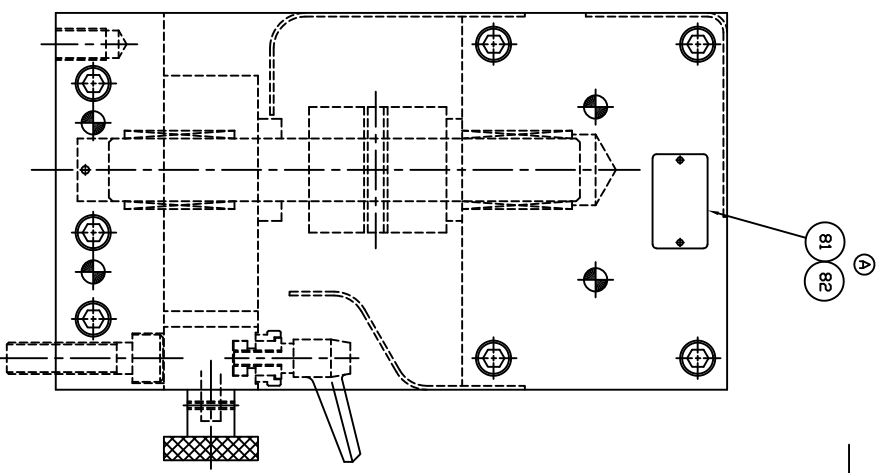
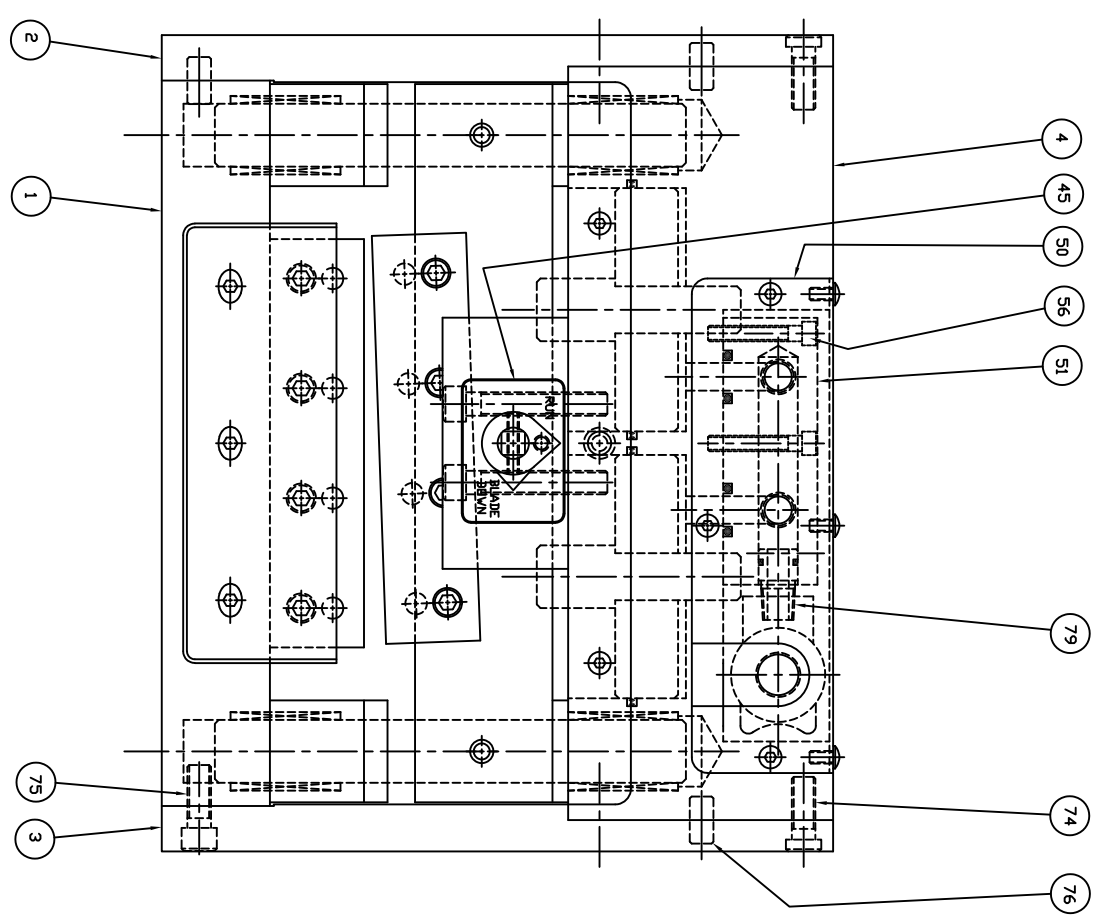
USE WITH:
 85500338 200(x) C-T-L WIRING SCHEMATIC -version 'C' cntrl
 85500335 200(x) WIRING SCHEMATIC - version 'C' cntrl

ITEM	QTY.	PART NO.	DESCRIPTION
1	1	38900200	ENCLOSURE
2	1	28900445	SUBPANEL ASSEMBLY
3	1	39900243	LOGO LABEL
4	2	69100643	VENT COVER & FILTER
5	4	66506062	FHSCS 6-32
6	8	65100632	HEX NUT 6-32
7	1	69300042	MOTOR FEEDBACK CABLE
8	2	69280246	SPLIT CORDGRIP SHELL
9	2	69280247	SPLIT CORDGRIP GROMMET
10	2	69280248	METRIC LOCKNUT - M32
11	1	69300041	MOTOR POWER CABLE
12	1	69320005	HOLE PLUG
13			
14			
15	1	69100902	EXTD HEAD PUSHBUTTON
16	1	69200035	E-STOP NAMEPLATE
17	1	69100657	24VDC ENC. COOLING FAN
18	4	66006175	RHMS 6-32
19	1	69100829	OPERATOR INTERFACE
20	1	69100583	DISCONNECT HANDLE
N/S	1	60940015	RETAINER
N/S	1	69280216	INSULATED SLEEVE CLAMP
N/S	1	10900601	100 & 200 SERVO CNTRL STAND

NEXT ASSY.		STANDARD MFG. TOLERANCES UNLESS OTHERWISE SPECIFIED	
DECIMALS	0	1/16"	1/32"
TEN THOUS	.000	1/32"	1/64"
THIRD PLACE	.000	1/64"	1/128"
FRACTIONS	1/1000	1/128"	1/256"
FINISH	✓		
REV.		CHANGE	DATE
MATERIAL		HARDNESS	
HEAT TREAT		FINAL FINISH	
DRAWN BY T JH	CHECKED BY	BRANDING NUMBER	
DATE APRIL 2014		SCALE N/A	28900446
PART NAME 200(x) SERVO CONTROL Ver. C CONTROL ASSEMBLY		D	
RAPID-AIR CORPORATION ROCKFORD, IL			



NOTE: FSC6S FOR SERVO C-T-L, CONTROL VERSION 'C' - 24 V.D.C. VALVE, PNP SENSOR

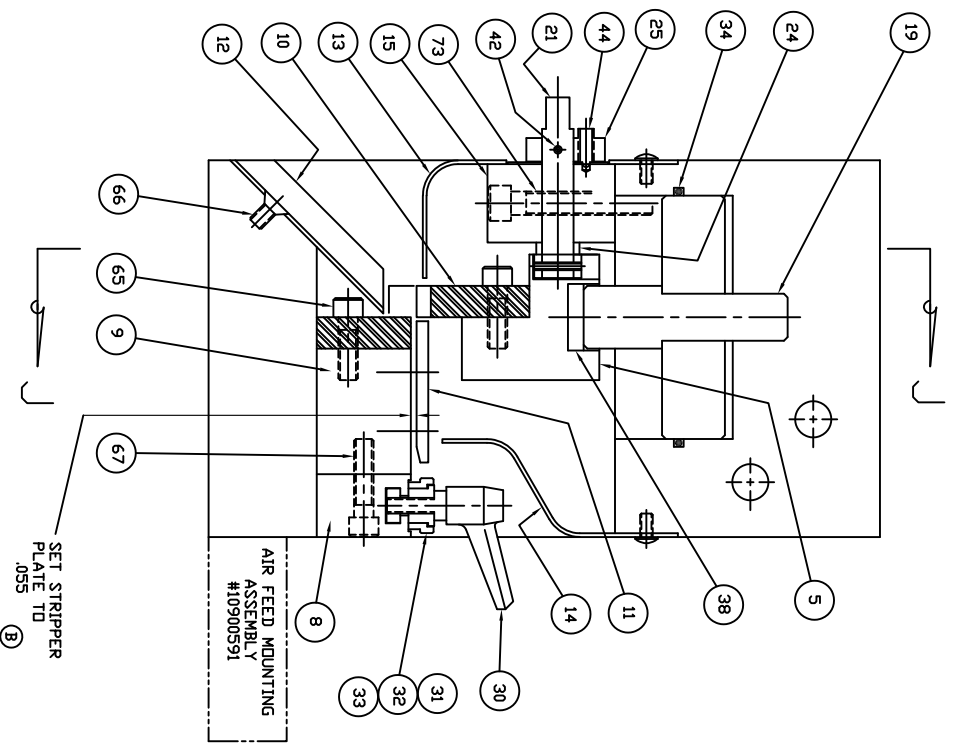
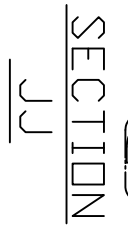
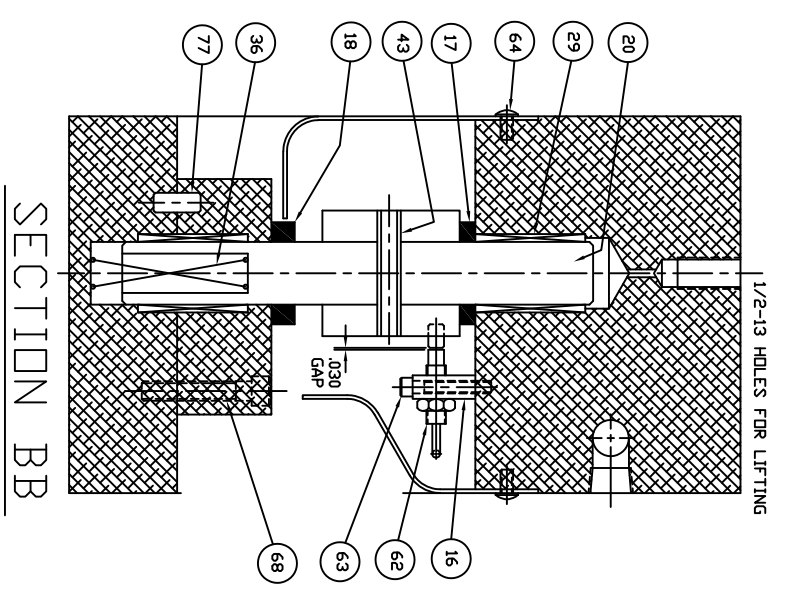
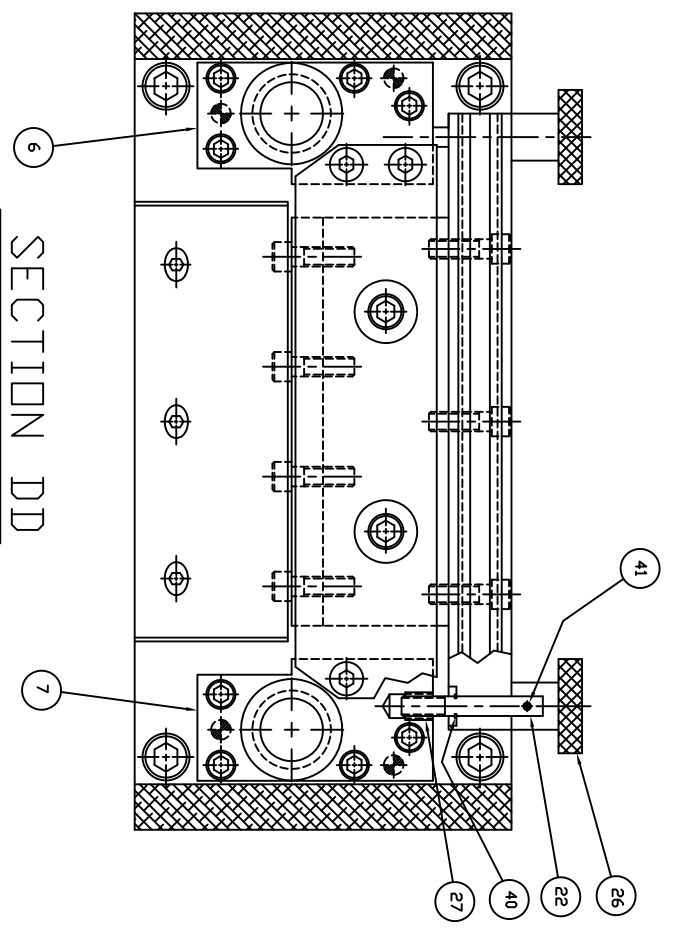


SHT. 1 OF 2

RAPID-AIR CORPORATION ROCKFORD, ILL. 61089 FDR SERVO C-T-L		DATE: 11/30/83 DRAWN: J. J. ... CHECKED: ... APPROVED: ...	
REV.	DESCRIPTION	DATE	BY
A	REVISED	...	...
B	...	...	...
C	...	...	...
D	...	...	...
E	...	...	...

11300361-362

82	2	66300250	DRIVE SCREW
81	1	39900051	S/N TAG
80	2	63130250	PIPE PLUG 1/4"
79	1	36300012	QUICK EXHAUST FITTING
78	2	65900112	SHCS #8-32 X 1 1/8
77	4	62331075	DOVEL PIN 5/16 X 3/4
76	8	62337075	DOVEL PIN 3/8 X 3/4
75	6	65936100	SHCS 3/8-16 X 1
74	8	66700057	LOW HEAD SHCS
73	2	65936225	SHCS 3/8-16 X 2 1/4
72	2	65500005	T-SLOT NUT
71	2	65936150	SHCS 3/8-16 X 1 1/2
70	4	65953200	SHCS 1/2-13 X 2
69	4	66520100	FHSCS 1/4-20 X 1
68	8	65931175	SHCS 5/16-18 X 1 3/4
67	3	65931125	SHCS 5/16-18 X 1 1/4
66	3	66520050	FHSCS 1/4-20 X 1/2
65	8	65931100	SHCS 5/16-18 X 1
64	12	66612037	BHSCS #10-32 X 3/8
63	2	65912125	SHCS #10-32 X 1 1/4
62	1	69100348	PRDX. SWITCH PNP
61	1	62325050	DOVEL PIN 1/4 X 1/2
60	3	63130125	PIPE PLUG 1/8 NPT
59	2	63130375	PIPE PLUG 3/8 NPT
58	1	69200032	MAC VALVE 24 V.D.C.
57	1	67200001	MUFFLER
56	3	65920150	SHCS 1/4-20 X 1 1/2
55	2	60108014	"O" RING
54	1	67200007	MUFFLER
53	1	67100142	90° EL.BOW
52	1	67100141	PIPE NIPPLE
51	1	31702182	QUICK EXHAUST MANIFOLD
50	1	31500445	QUICK EXHAUST COVER
49	1	68000000	QUICK EXHAUST
48	1	31900641	QUICK EXHAUST MTG. BRKT.
47	1	36300009	QUICK EXHAUST FITTING
46	1	39900175	INLET LABEL
45	1	39900248	BLADE ADJUST LABEL
44	1	69400052	SPRING PLUNGER
43	2	62137200	SPIRAL PIN
42	1	62412100	ROLL PIN 1/8 X 1
41	3	62412075	ROLL PIN 1/8 X 3/4
40	2	60910031	RETAINING RING
39	1	69280240	PLUG
38	2	31701441	PISTON WEAR PLATE
37	4	37500013	SPRING
36	2	37500128	SPRING
35	2	60108109	"O" RING
34	2	60108241	"O" RING
33	2	36200028	STOCK GUIDE NUT
32	2	33900243	STOCK GUIDE SLEEVE
31	2	34200240	STOCK GUIDE ROLLER
30	2	36600024	HANDLE
29	4	64100041	BUSHING
28	2	60108207	"O" RING
27	2	65600007	INSERT
26	2	36700040	KNDB
25	1	33900242	POINTER SLEEVE
24	1	34100020	SPACER
23	1	36500037	CAM
22	2	32900600	BLADE ADJ. SHAFT
21	1	32900599	CAM SHAFT
20	2	32900598	GUIDE SHAFT
19	2	23500077	PISTON
18	2	35900045	LOWER BUMPER
17	2	35900044	UPPER BUMPER
16	1	31701617	PRDX. MOUNTING PLATE
15	1	31701616	CAM SHAFT MOUNTING PLATE
14	1	21900279	REAR GUARD ASSEMBLY
13	1	21900278	FRONT GUARD ASSEMBLY
12	1	31500442	SCRAP CHUTE
11	1	31702210	STRIPPER PLATE
10	2	32000014	BLADE
9	1	31702209	BLADE SUPPORT PLATE
8	1	31702208	T-SLOT PLATE
7	1	31701612	RH. BEARING PLATE
6	1	31701611	LH. BEARING PLATE
5	1	30100303	BLADE HOUSING
4	1	30100302	PISTON HOUSING
3	1	31701610	RH. SIDE PLATE
2	1	31701609	LH. SIDE PLATE
1	1	31702207	BASE PLATE



NOTE: FSC6S FOR SERVO C-T-L, CONTROL
VERSION 'C' - 24 V.D.C. VALVE, PNP SENSOR

SHT. 2 OF 2

RAPID-AIR CORPORATION
ROCKFORD, IL • MADISON, SD

FORM FSC6S CUTTER W/PNP SENSOR FOR SERVO C-T-L

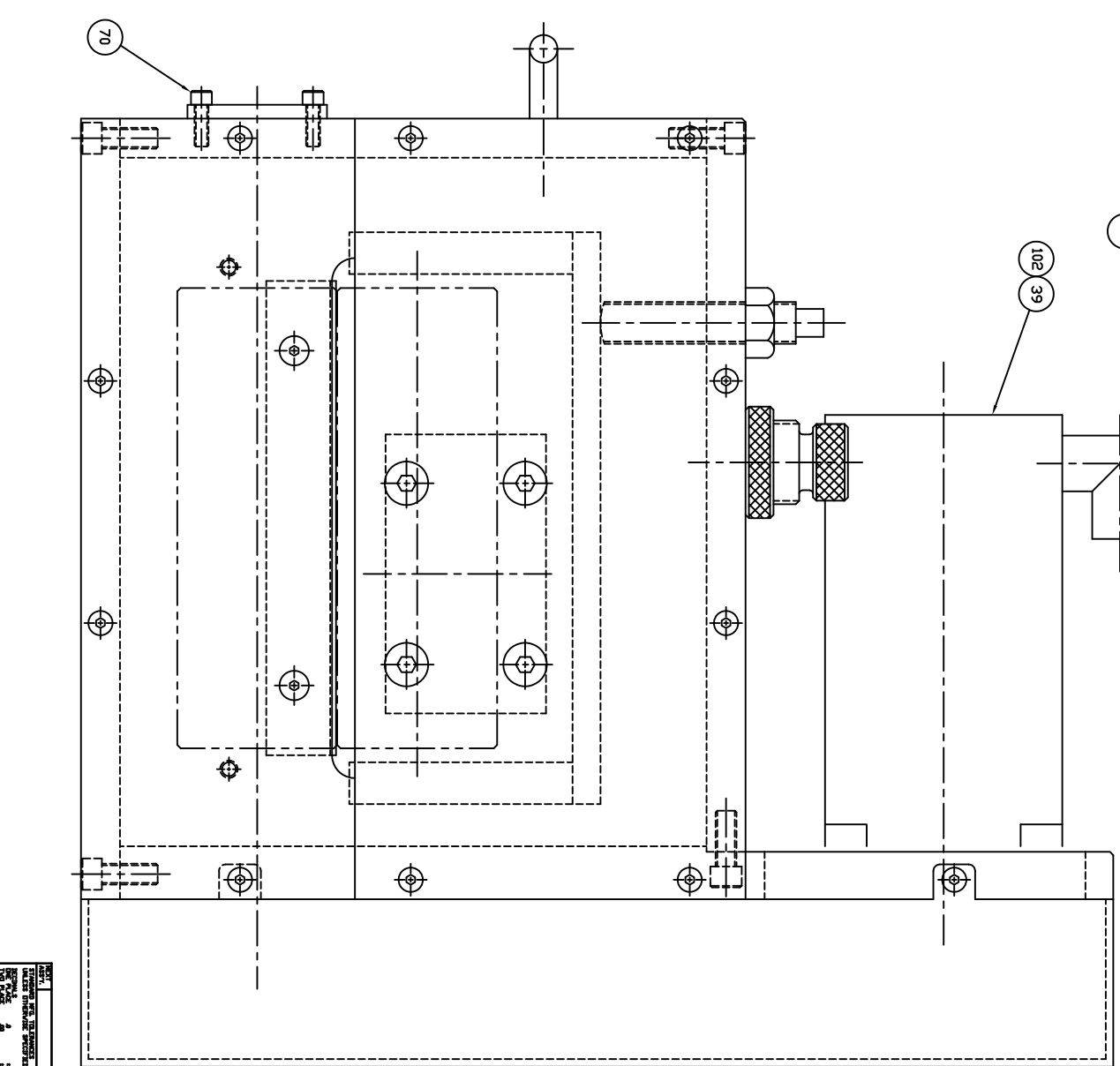
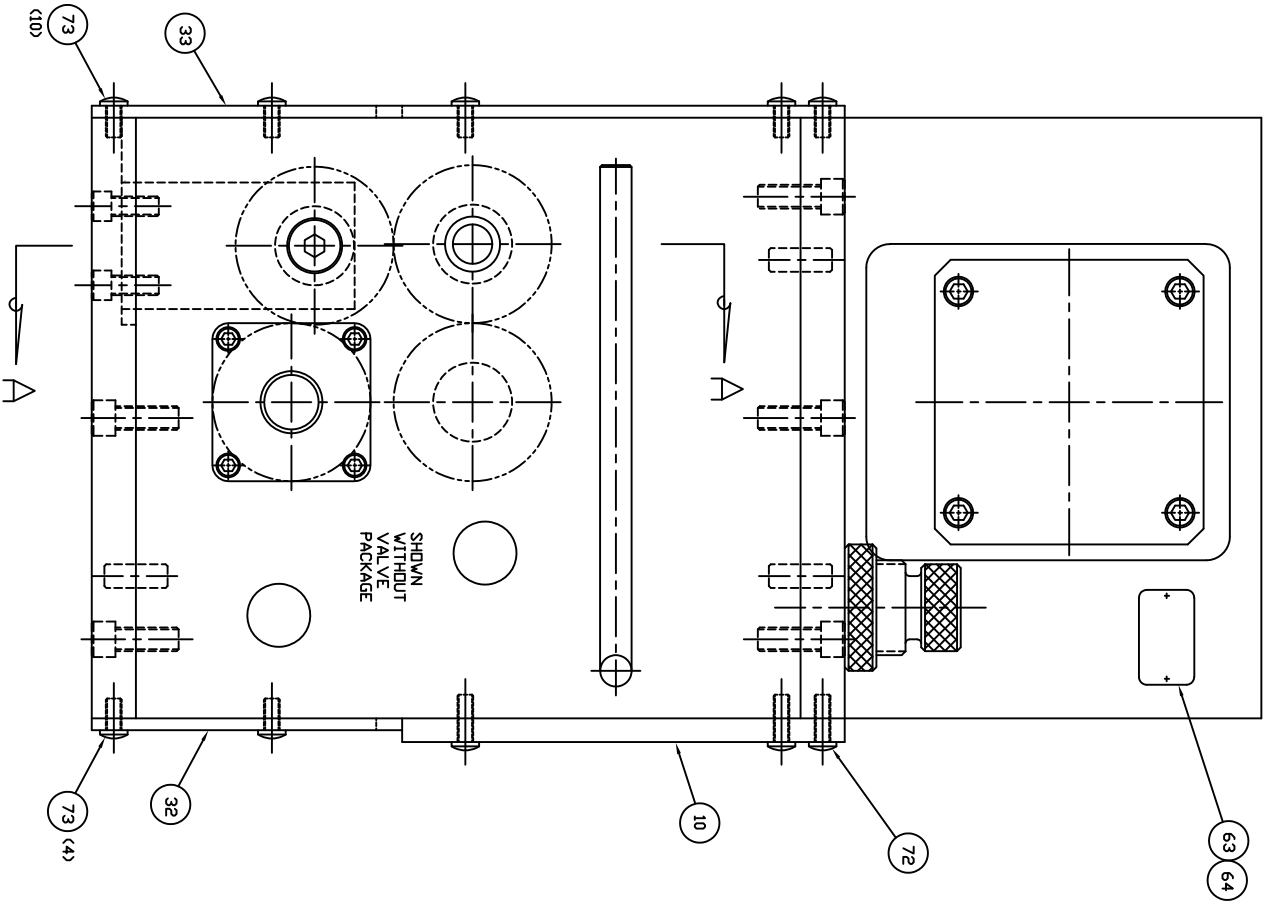
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11300361-362

ITEM QTY.	PART NO.	DESCRIPTION
104 2	65920125	SHCS 1/4-20 X 1 1/4
103 1	61008014	*DR RING
102 1	28900446	CONTRL ASSEMBLY
101 1	32500045	TAPER PIN INSTALLATION DRAWING
100 2	60900185	RETAINING RING
99 2	60910098	RETAINING RING
98 2	60910112	RETAINING RING
97 1	60910087	RETAINING RING
96 1	60910050	RETAINING RING
95 1	61008230	*DR RING
94 1	61008228	*DR RING
93 1	61008212	*DR WASHER 1/2
92 2	61300050	LOCK WASHER 1/2
91 2	61200034	FLAT WASHER 1/2
90 3	62425100	ROLL PIN
89 8	62337100	DDVEL PIN 3/8 X 1
88 2	62137150	SPIRAL PIN
87 1	62500006	TAPER PIN
86 1	36800013	KEY
85 1	36800006	KEY
84 1	36800021	KEY
83 1	37500117	SPRING
82 2	63130250	PIPE PLUG
81 1	66700072	SET SCREW
80 4	66620037	SET SCREW

ITEM QTY.	PART NO.	DESCRIPTION
104 2	65920125	SHCS 1/4-20 X 1 1/4
103 1	61008014	*DR RING
102 1	28900446	CONTRL ASSEMBLY
101 1	32500045	TAPER PIN INSTALLATION DRAWING
100 2	60900185	RETAINING RING
99 2	60910098	RETAINING RING
98 2	60910112	RETAINING RING
97 1	60910087	RETAINING RING
96 1	60910050	RETAINING RING
95 1	61008230	*DR RING
94 1	61008228	*DR RING
93 1	61008212	*DR WASHER 1/2
92 2	61300050	LOCK WASHER 1/2
91 2	61200034	FLAT WASHER 1/2
90 3	62425100	ROLL PIN
89 8	62337100	DDVEL PIN 3/8 X 1
88 2	62137150	SPIRAL PIN
87 1	62500006	TAPER PIN
86 1	36800013	KEY
85 1	36800006	KEY
84 1	36800021	KEY
83 1	37500117	SPRING
82 2	63130250	PIPE PLUG
81 1	66700072	SET SCREW
80 4	66620037	SET SCREW

ITEM QTY.	PART NO.	DESCRIPTION
79 1	66162200	SHOULDER SCREW
78 4	66137075	SHOULDER SCREW
77 1	36300004	GAUGE FITTING
76 2	65931075	SHCS 5/16-18 X 3/4
75 2	65936075	SHCS 3/8-16 X 3/4
74 4	66536100	BHSCS 3/8-16 X 1
73 14	66620050	BHSCS 1/4-20 X 1/2
72 6	66620075	BHSCS 1/4-20 X 3/4
71 1	65920032	VALVE
70 4	65920075	SHCS 1/4-20 X 3/4
69 4	66520062	FHSCS 1/4-20 X 5/8
68 4	65931100	SHCS 5/16-18 X 1
67 2	65853150	HEX BOLT 1/2-13 X 1 1/2
66 12	65936100	SHCS 3/8-16 X 1
65 4	66520050	FHSCS 1/4-20 X 1/2
64 2	66300250	DRIVE SCREW
63 1	39900051	S/N TAG
62 1	39900246	RAPID-AIR LOGO
61 1	68000024	REGULATOR
60 1	31500493	ENTRANCE GUIDE
59 1	31500492	EXIT GUIDE
58 1	68000026	GAUGE
57 1	31702137	REGULATOR RETAINING PLATE
56 1	34100236	GAUGE SPACER
55 1	31702113	GAUGE & REGULATOR PLATE
54 1	10900506	CASCADE ASSEMBLY
53 4	65102520	HEX NUT 1/4-20
52 1	65117516	JAM NUT 3/4-16
51 1	36200031	ADJUSTING SCREW LOCKNUT
50 1	36100078	ADJUSTING SCREW
49 1	36100104	POSITIVE STOP SCREW
48 1	64520022	THRUST WASHER
47 2	64520025	THRUST WASHER
46 8	64520008	THRUST WASHER
45 4	64510002	THRUST BEARING
44 2	64500057	NEEDLE BEARING
43 2	64500066	NEEDLE BEARING
42 2	64600049	BALL BEARING
41 1	64100046	DILITE BUSHING
40 1	64100075	DILITE BUSHING
39 1	69000045	MOTOR
38 1	36500045	CAM
37 1	36600036	CAM HANDLE
36 1	35500231	PISTON
35 1	31702112	MANIFOLD PLATE
34 1	31400550	PISTON COVER
33 1	31500491	ENTRANCE GUARD
32 1	31500490	LOWER EXIT GUARD
31 1	34100325	SPACER
30 1	34100381	SPACER
29 1	34100323	SPACER
28 2	34100322	SPACER
27 2	34100321	ROLLER SPACER
26 2	33900265	BEARING SLEEVE
25 1	32900858	ECCENTRIC SHAFT
24 1	32900859	PIVOT SHAFT
23 1	31500489	BELT COVER
22 1	32500046	TIMING BELT
21 1	32500036	BUSHING (FOR 32500029)
20 1	32500029	PULLEY (LOWER ROLL)
19 1	32500044	MOTOR PULLEY
18 2	32600233	UPPER IDLER SPUR GEAR
17 2	32600232	UPPER IDLER SPUR GEAR
16 1	32600235	UPPER ROLLER SPUR GEAR
15 1	32600235	LOWER ROLLER SPUR GEAR
14 1	34200385	UPPER ROLLER
13 1	34200384	LOWER ROLLER
12 1	30100290	BEARING HOUSING
11 1	30100292	PISTON HOUSING
10 1	31702474	PISTON HOUSING MOUNTING PLATE
9 1	31702115	GEAR SUPPORT PLATE
8 1	31702111	CAM PIVOT PLATE
7 1	31702116	ROLLER TOP PLATE
6 2	31702106	ROLLER SIDE PLATE
5 1	31702473	MOTOR MOUNTING PLATE
4 1	31702472	TOP PLATE
3 1	31702471	L.H. SIDE PLATE
2 1	31702470	R.H. SIDE PLATE
1 1	31702469	BOTTOM PLATE



ITEM QTY.	PART NO.	DESCRIPTION
79 1	66162200	SHOULDER SCREW
78 4	66137075	SHOULDER SCREW
77 1	36300004	GAUGE FITTING
76 2	65931075	SHCS 5/16-18 X 3/4
75 2	65936075	SHCS 3/8-16 X 3/4
74 4	66536100	BHSCS 3/8-16 X 1
73 14	66620050	BHSCS 1/4-20 X 1/2
72 6	66620075	BHSCS 1/4-20 X 3/4
71 1	65920032	VALVE
70 4	65920075	SHCS 1/4-20 X 3/4
69 4	66520062	FHSCS 1/4-20 X 5/8
68 4	65931100	SHCS 5/16-18 X 1
67 2	65853150	HEX BOLT 1/2-13 X 1 1/2
66 12	65936100	SHCS 3/8-16 X 1
65 4	66520050	FHSCS 1/4-20 X 1/2
64 2	66300250	DRIVE SCREW
63 1	39900051	S/N TAG
62 1	39900246	RAPID-AIR LOGO
61 1	68000024	REGULATOR
60 1	31500493	ENTRANCE GUIDE
59 1	31500492	EXIT GUIDE
58 1	68000026	GAUGE
57 1	31702137	REGULATOR RETAINING PLATE
56 1	34100236	GAUGE SPACER
55 1	31702113	GAUGE & REGULATOR PLATE
54 1	10900506	CASCADE ASSEMBLY
53 4	65102520	HEX NUT 1/4-20
52 1	65117516	JAM NUT 3/4-16
51 1	36200031	ADJUSTING SCREW LOCKNUT
50 1	36100078	ADJUSTING SCREW
49 1	36100104	POSITIVE STOP SCREW
48 1	64520022	THRUST WASHER
47 2	64520025	THRUST WASHER
46 8	64520008	THRUST WASHER
45 4	64510002	THRUST BEARING
44 2	64500057	NEEDLE BEARING
43 2	64500066	NEEDLE BEARING
42 2	64600049	BALL BEARING
41 1	64100046	DILITE BUSHING
40 1	64100075	DILITE BUSHING
39 1	69000045	MOTOR
38 1	36500045	CAM
37 1	36600036	CAM HANDLE
36 1	35500231	PISTON
35 1	31702112	MANIFOLD PLATE
34 1	31400550	PISTON COVER
33 1	31500491	ENTRANCE GUARD
32 1	31500490	LOWER EXIT GUARD
31 1	34100325	SPACER
30 1	34100381	SPACER
29 1	34100323	SPACER
28 2	34100322	SPACER
27 2	34100321	ROLLER SPACER
26 2	33900265	BEARING SLEEVE
25 1	32900858	ECCENTRIC SHAFT
24 1	32900859	PIVOT SHAFT
23 1	31500489	BELT COVER
22 1	32500046	TIMING BELT
21 1	32500036	BUSHING (FOR 32500029)
20 1	32500029	PULLEY (LOWER ROLL)
19 1	32500044	MOTOR PULLEY
18 2	32600233	UPPER IDLER SPUR GEAR
17 2	32600232	UPPER IDLER SPUR GEAR
16 1	32600235	UPPER ROLLER SPUR GEAR
15 1	32600235	LOWER ROLLER SPUR GEAR
14 1	34200385	UPPER ROLLER
13 1	34200384	LOWER ROLLER
12 1	30100290	BEARING HOUSING
11 1	30100292	PISTON HOUSING
10 1	31702474	PISTON HOUSING MOUNTING PLATE
9 1	31702115	GEAR SUPPORT PLATE
8 1	31702111	CAM PIVOT PLATE
7 1	31702116	ROLLER TOP PLATE
6 2	31702106	ROLLER SIDE PLATE
5 1	31702473	MOTOR MOUNTING PLATE
4 1	31702472	TOP PLATE
3 1	31702471	L.H. SIDE PLATE
2 1	31702470	R.H. SIDE PLATE
1 1	31702469	BOTTOM PLATE

RAPID-AIR CORPORATION
 ROCKFORD, IL • MADISON, SD

PART NAME: 2081X V/AIR PILOT RELEASE
 & AIR DOWN

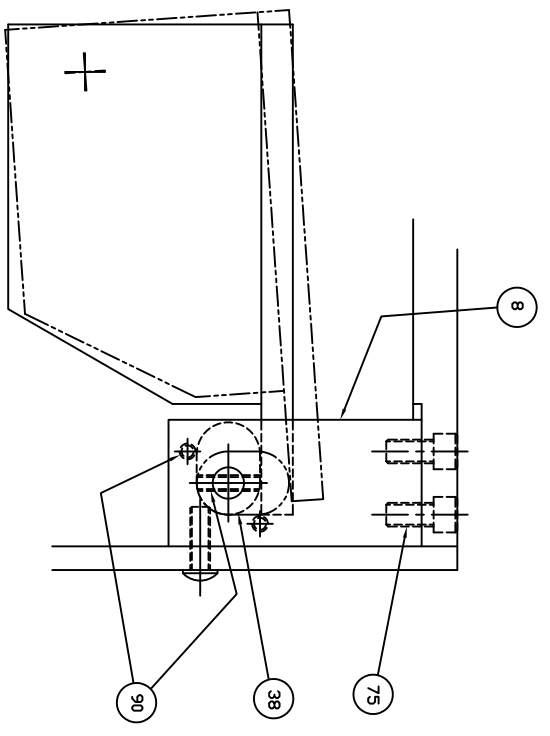
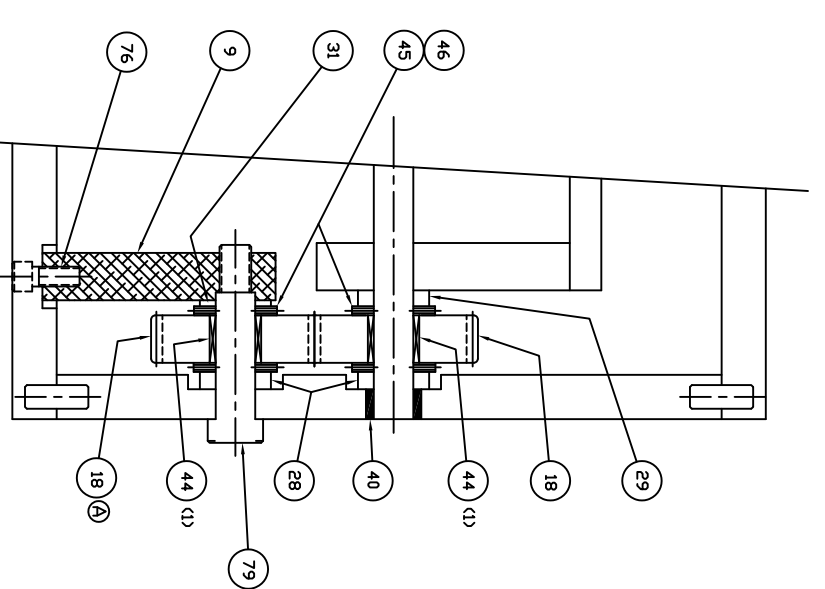
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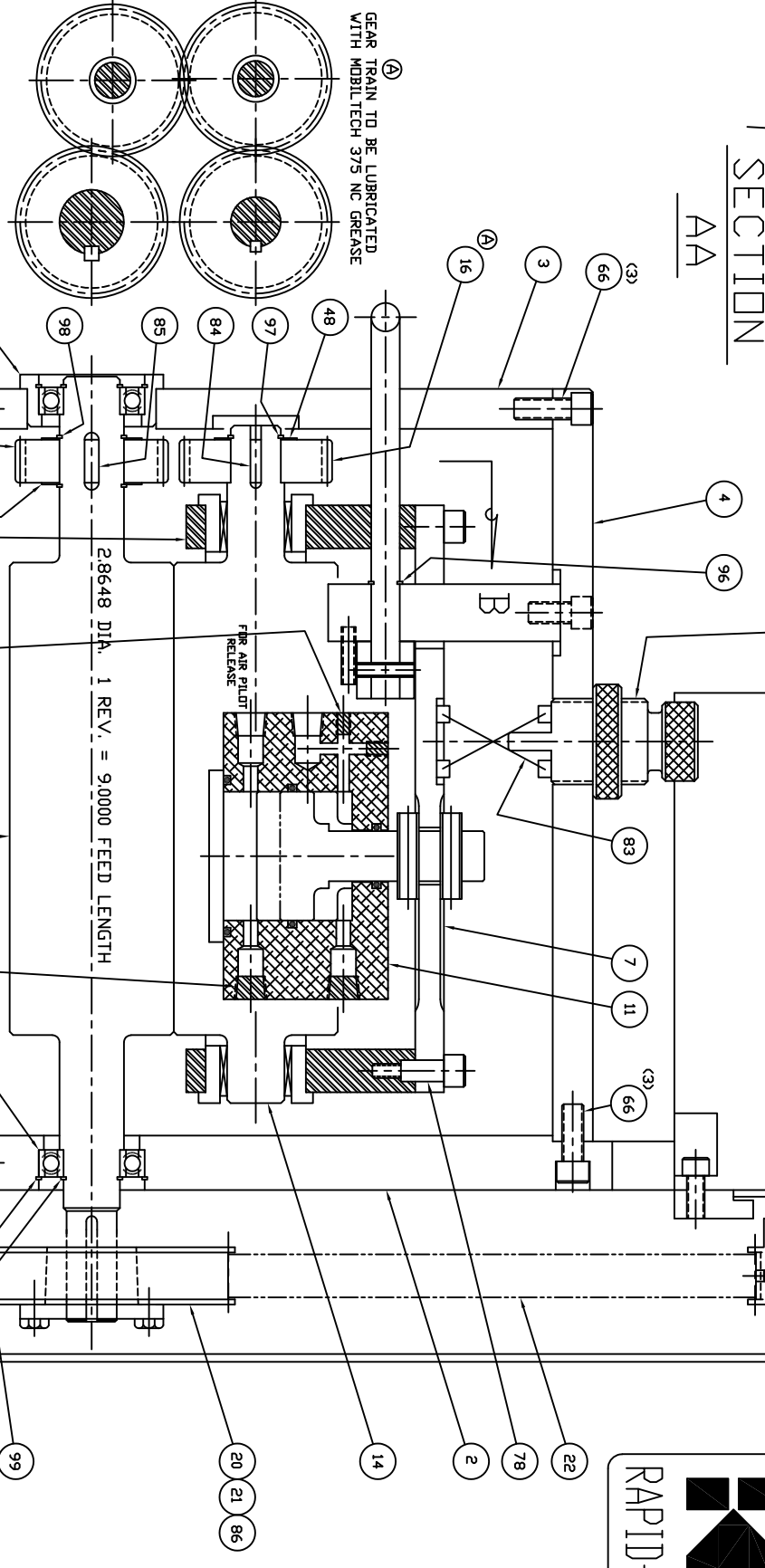
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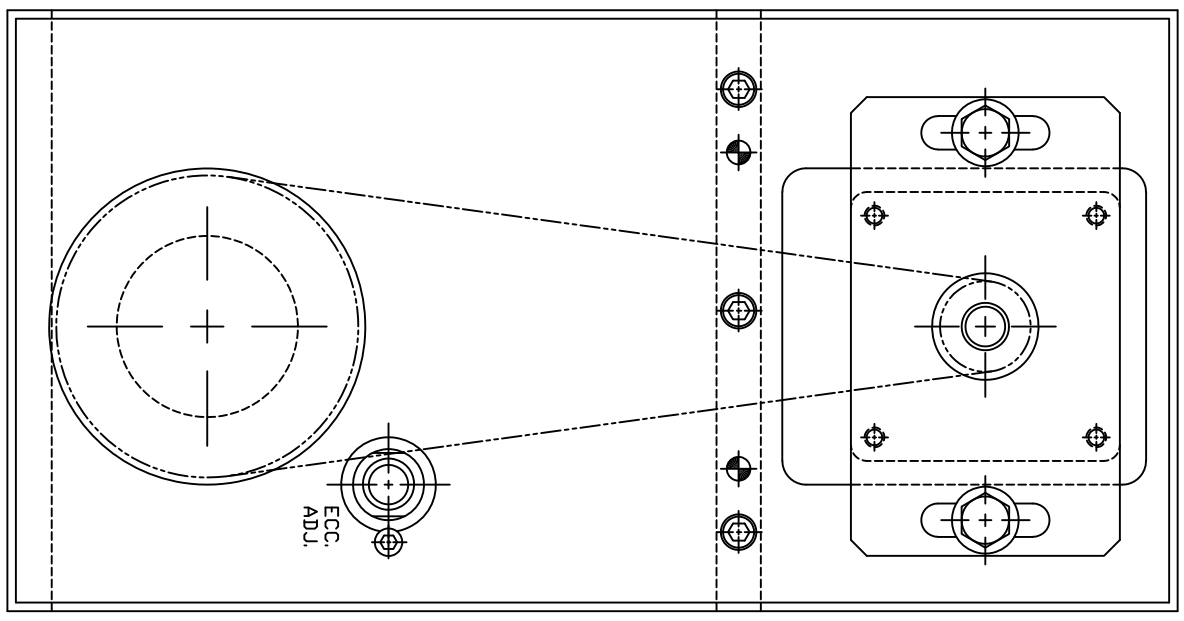
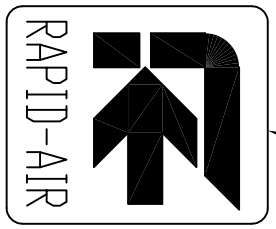
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SECTION AA



SECTION BB

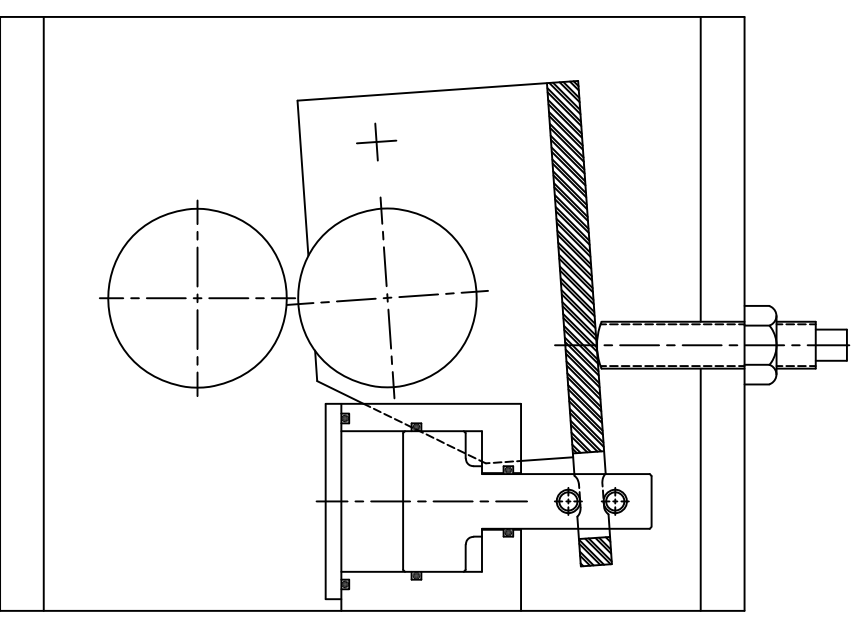
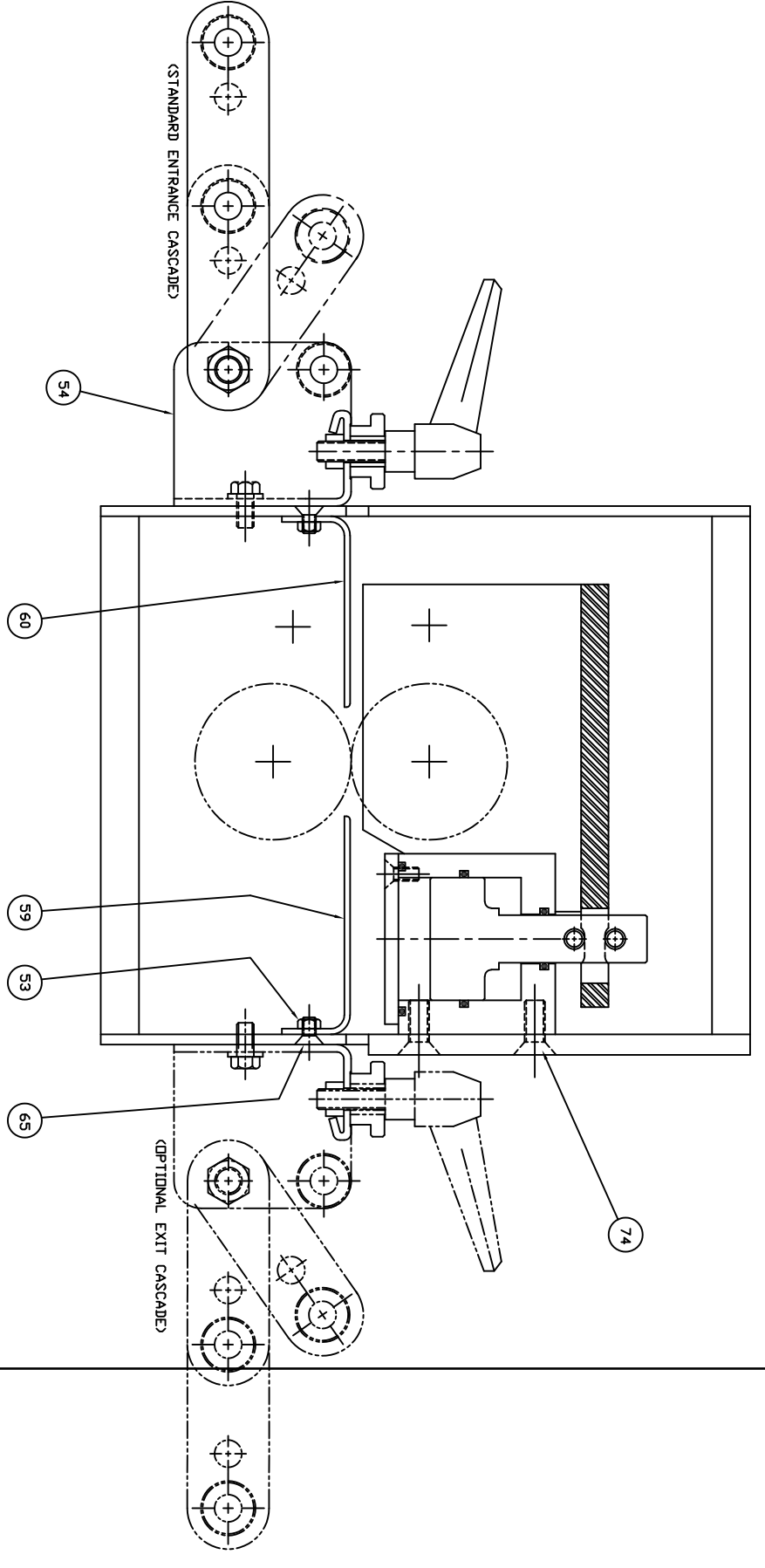
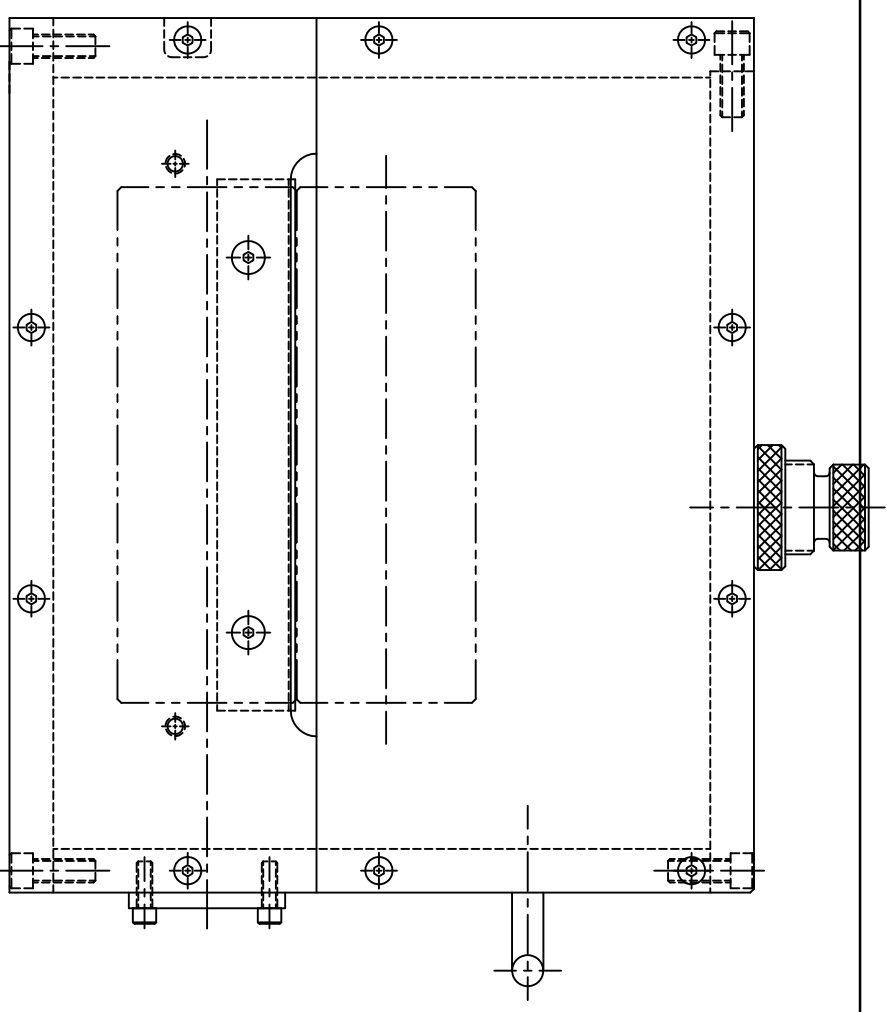


SHEET 2 OF 4

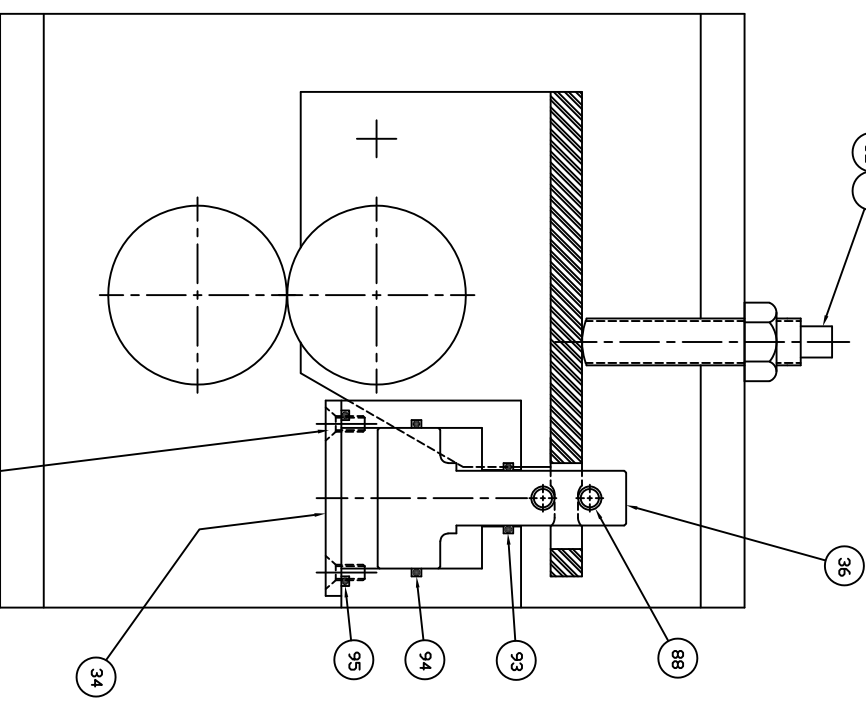
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E

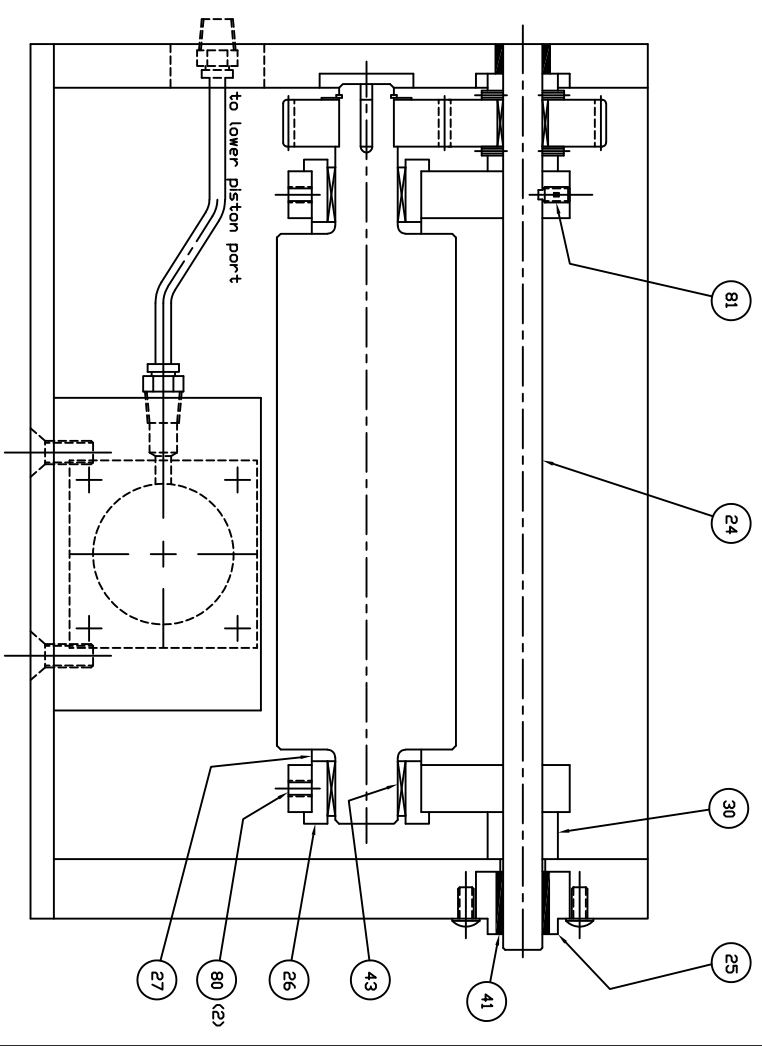
RAPID-AIR CORPORATION
 ROCKFORD, IL • WADSWORTH, SD
 208TX W/AIR PILOT RELEASE
 & AIR DIVN



ROLLERS OPEN



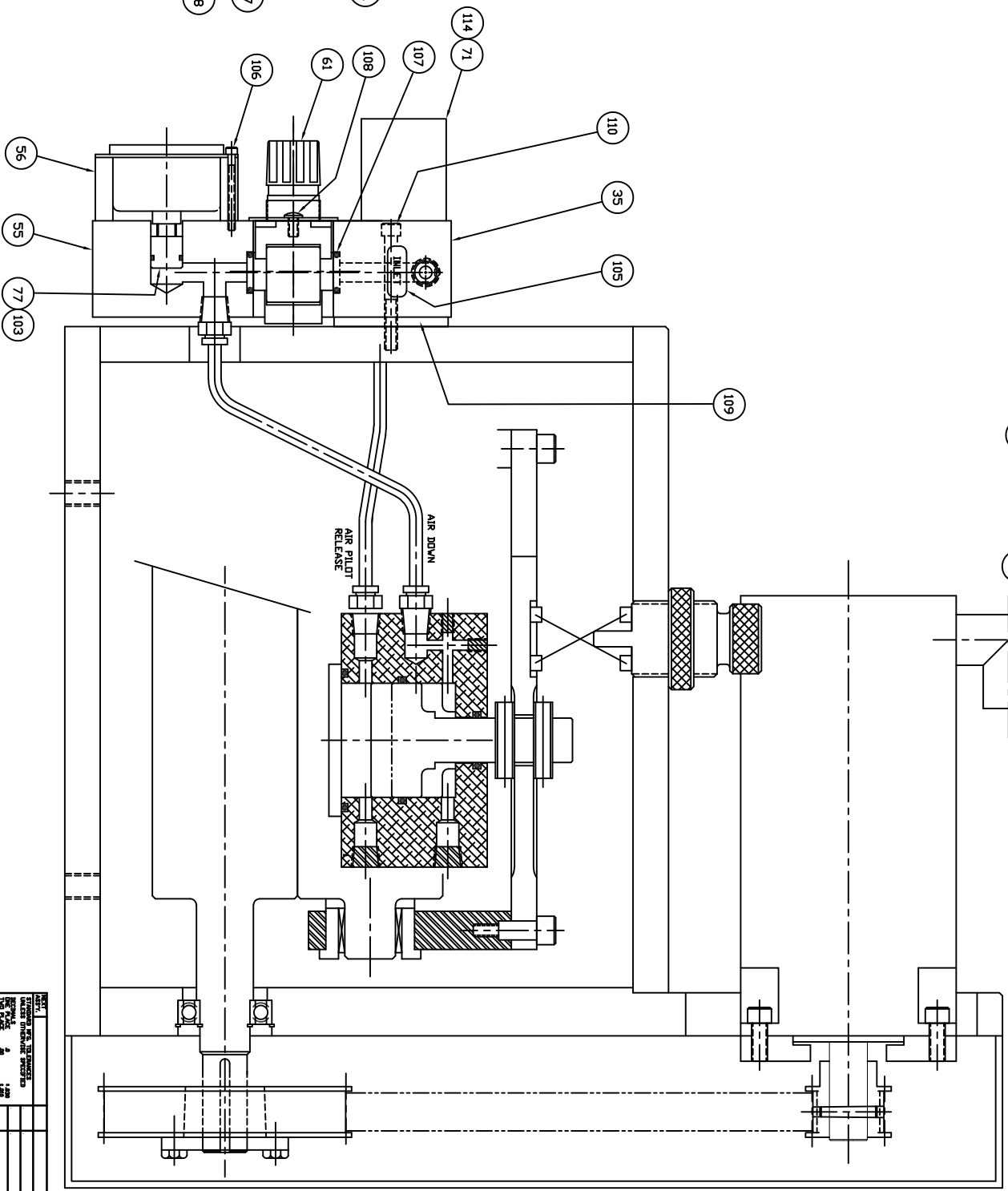
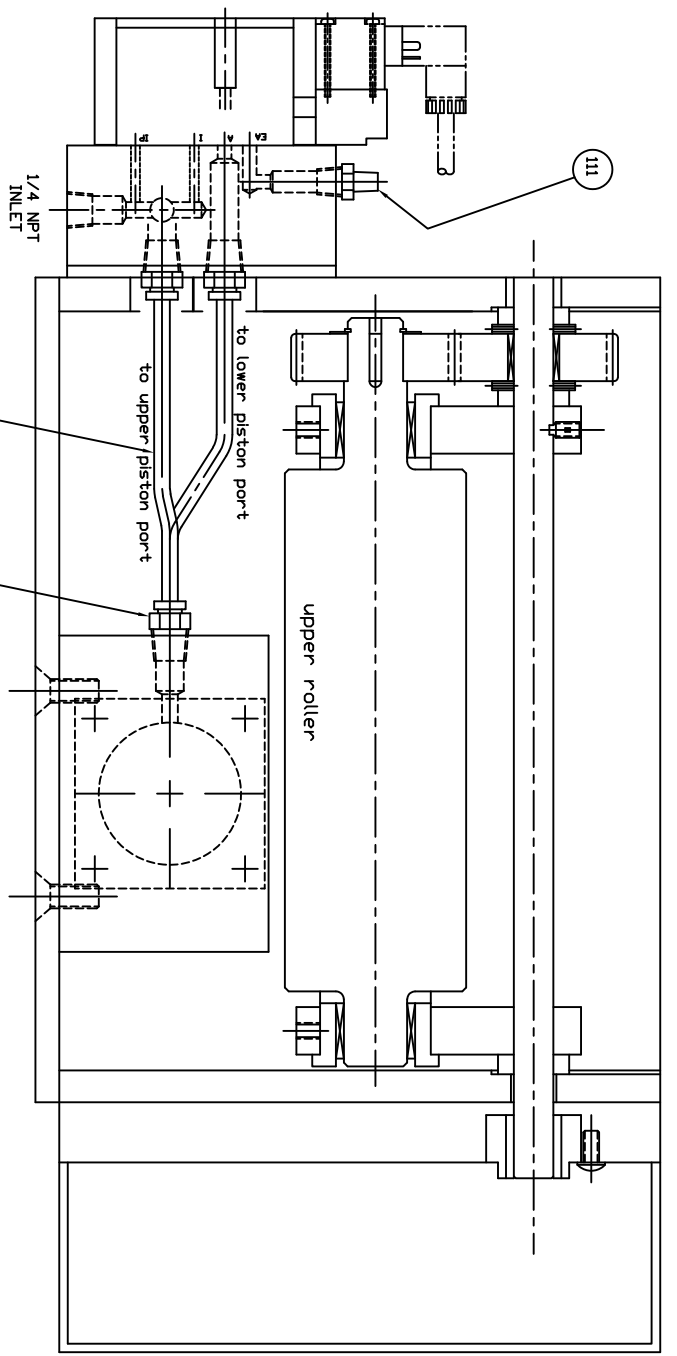
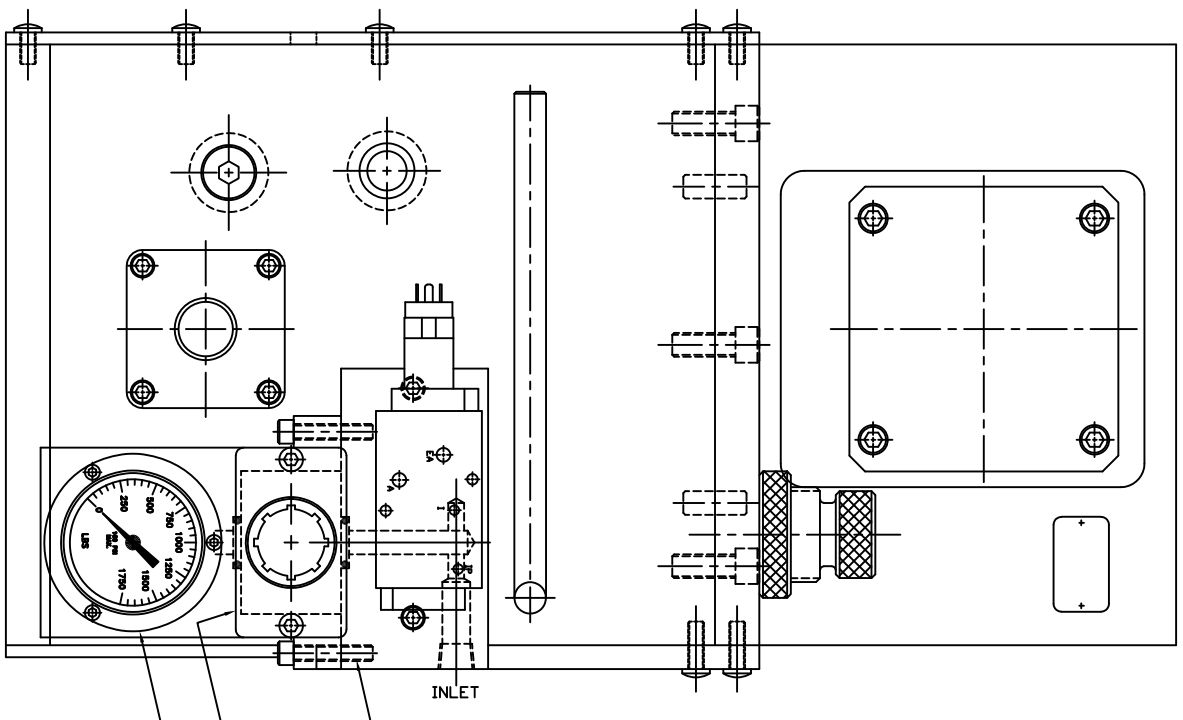
ROLLERS CLOSED



to lower piston port

REV	DATE	BY	CHKD	DESCRIPTION
1	10-10-2014	DLU	DLU	ISSUED FOR PRODUCTION
2	10-10-2014	DLU	DLU	REVISED TO ADD AIR DOWN PORT
3	10-10-2014	DLU	DLU	REVISED TO ADD AIR DOWN PORT
4	10-10-2014	DLU	DLU	REVISED TO ADD AIR DOWN PORT
5	10-10-2014	DLU	DLU	REVISED TO ADD AIR DOWN PORT
6	10-10-2014	DLU	DLU	REVISED TO ADD AIR DOWN PORT
7	10-10-2014	DLU	DLU	REVISED TO ADD AIR DOWN PORT
8	10-10-2014	DLU	DLU	REVISED TO ADD AIR DOWN PORT
9	10-10-2014	DLU	DLU	REVISED TO ADD AIR DOWN PORT
10	10-10-2014	DLU	DLU	REVISED TO ADD AIR DOWN PORT

SHEET 3 OF 4
RAPID-AIR CORPORATION
 ROCKFORD, IL • MADISON, SD
 2081X V/AIR PILOT RELEASE
 & AIR DOWN



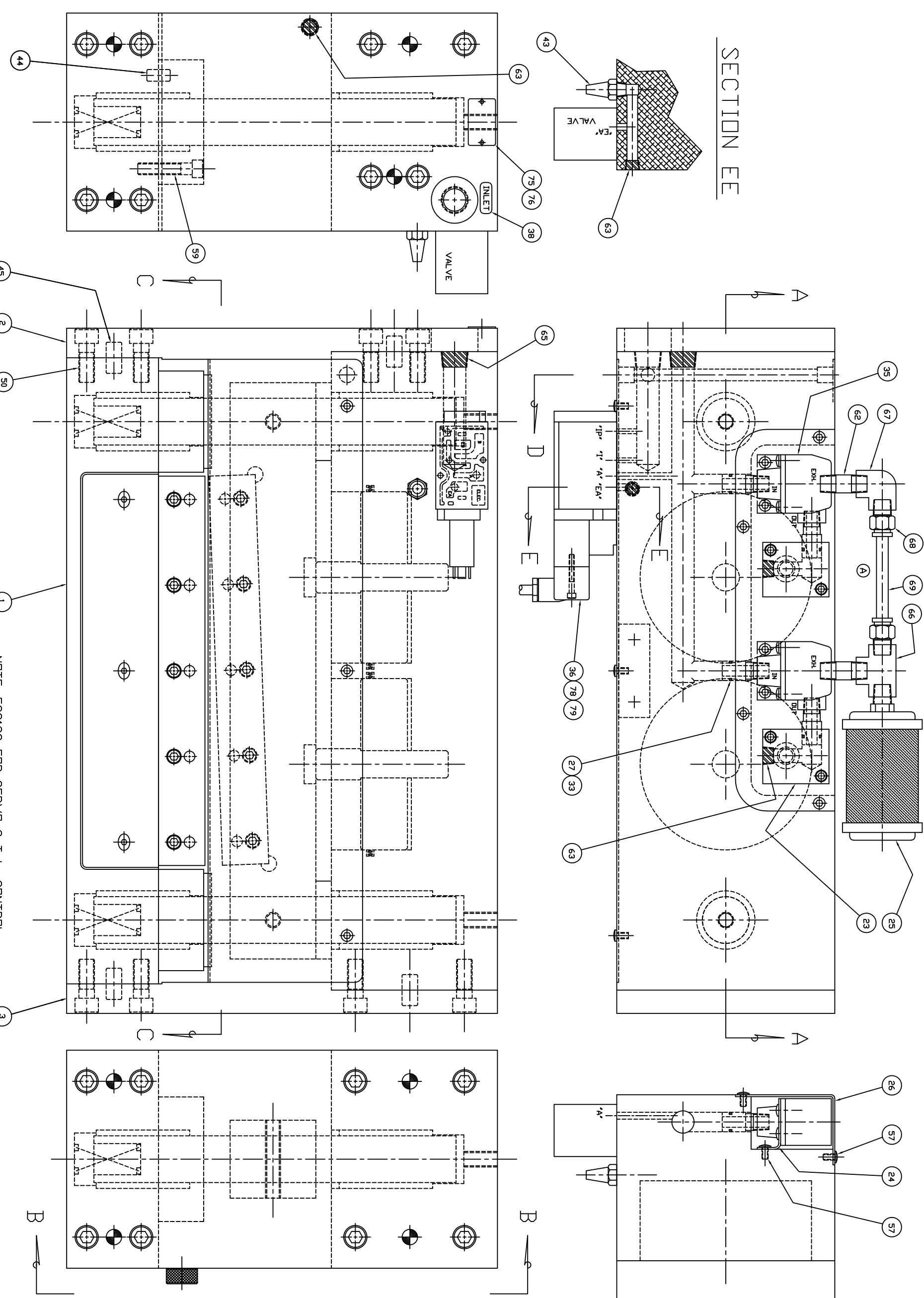
SHEET 4 OF 4

REV	DATE	BY	CHKD	DESCRIPTION
A	10-10-2014	ECN #3724		REVISIONS
				DATE
				BY
				CHKD
				DESCRIPTION

RAPID-AIR CORPORATION
 ROCKFORD, IL • MADISON, SD
 & AIR DOWN

E

SECTION EE



(A) CHANGED ITEM #68 FROM 67100146 TO 67100120
 CHANGED ITEM #69 FROM 67100145 TO 64230011
 PER REQUEST FROM MFG. 5-11-2015

NOTE: FSC125 FOR SERVO C-T-L, CONTROL
 VERSION "C" - 24 V.D.C. VALVE, PNP SENSOR

SHEET 1 OF 3

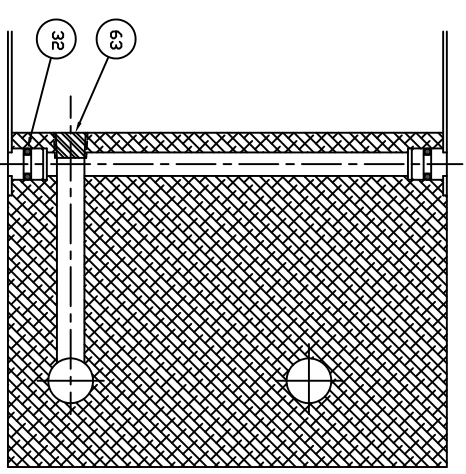
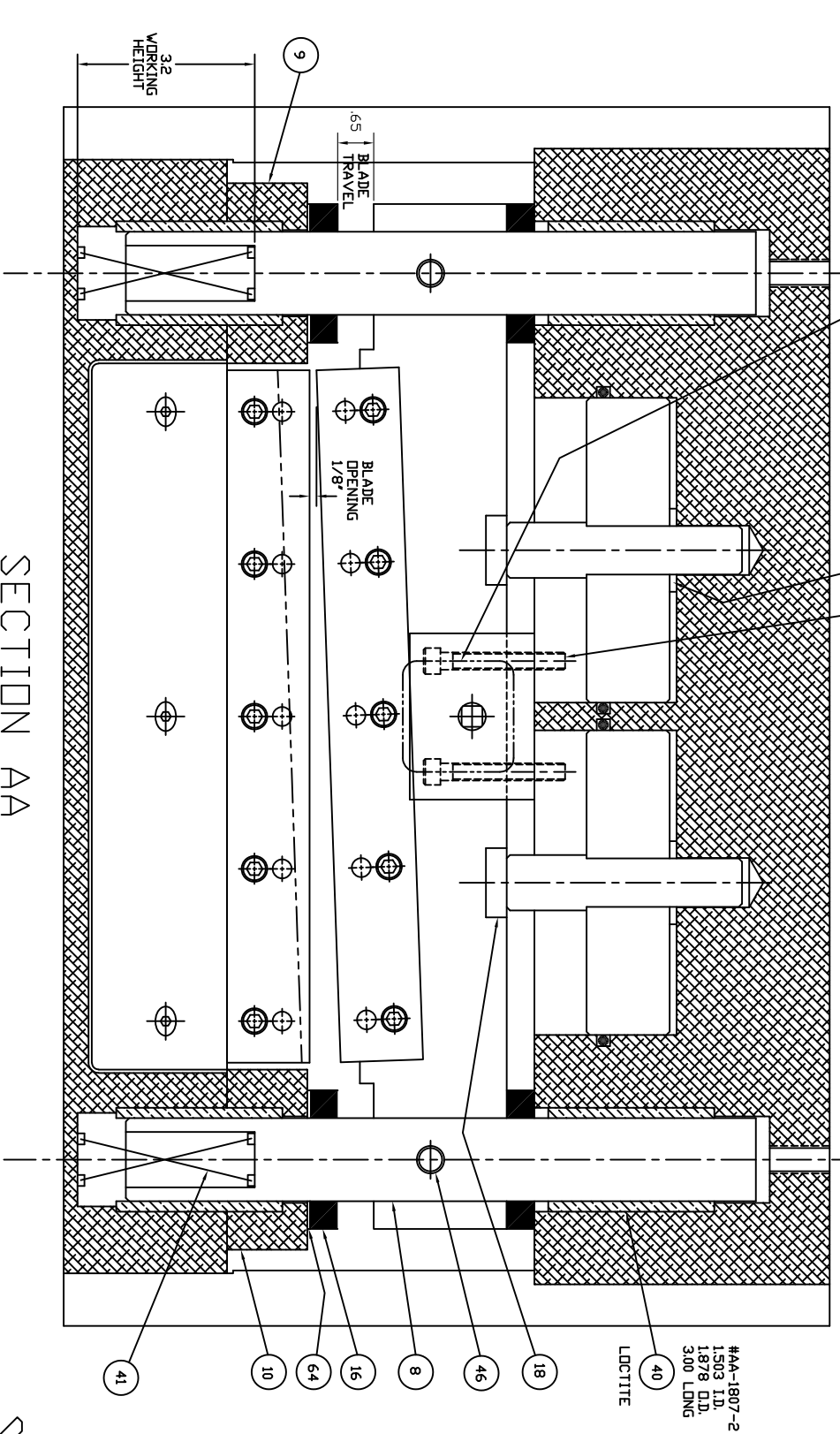
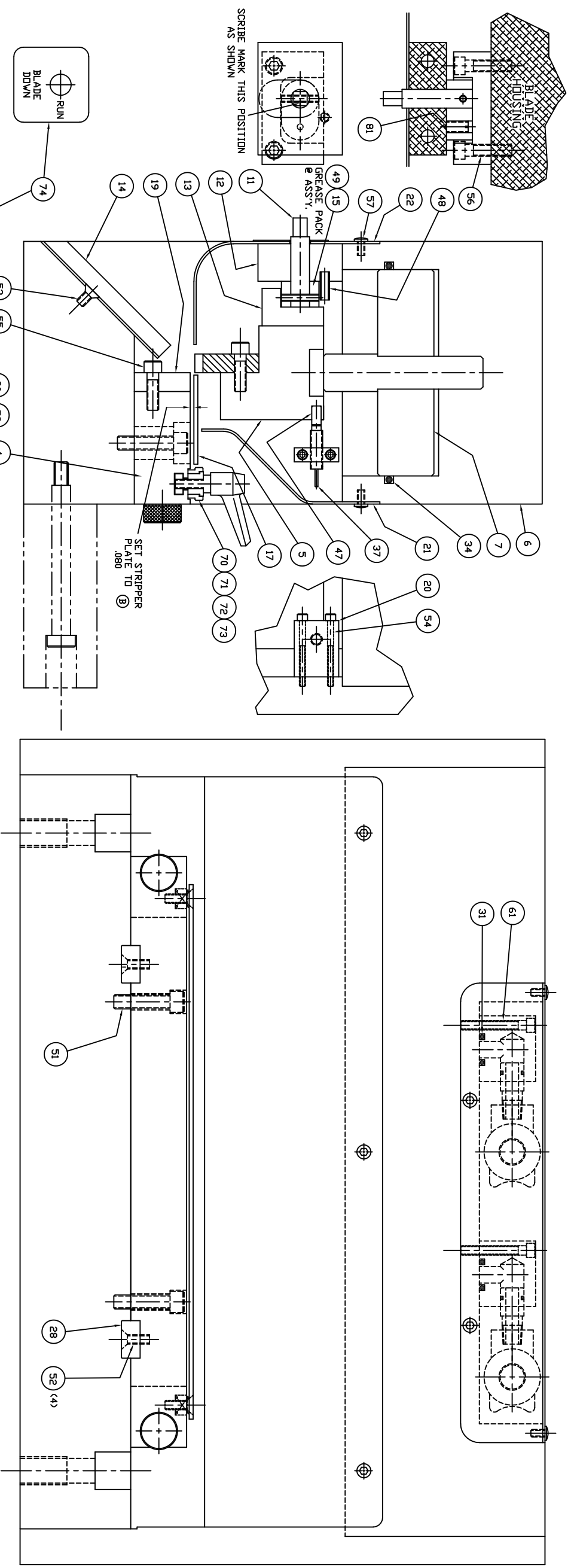
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3	REVISED	11/13/03	11/13/03	SM	SM	SM	SM

ITEM NO.	67100146	67100120
REVISED BY	SM	SM
DATE	11/13/03	11/13/03
CHKD BY	SM	SM
DATE	11/13/03	11/13/03

ITEM NO.	67100145	64230011
REVISED BY	SM	SM
DATE	11/13/03	11/13/03
CHKD BY	SM	SM
DATE	11/13/03	11/13/03

RAPID-AIR CORPORATION
 Rockford, IL • Madison, SD
 FSC125 CUTTER W/PNP
 SENSOR FOR SERVO C-T-L

11300351-352



SECTION AA

VIEW BB

SECTION DD

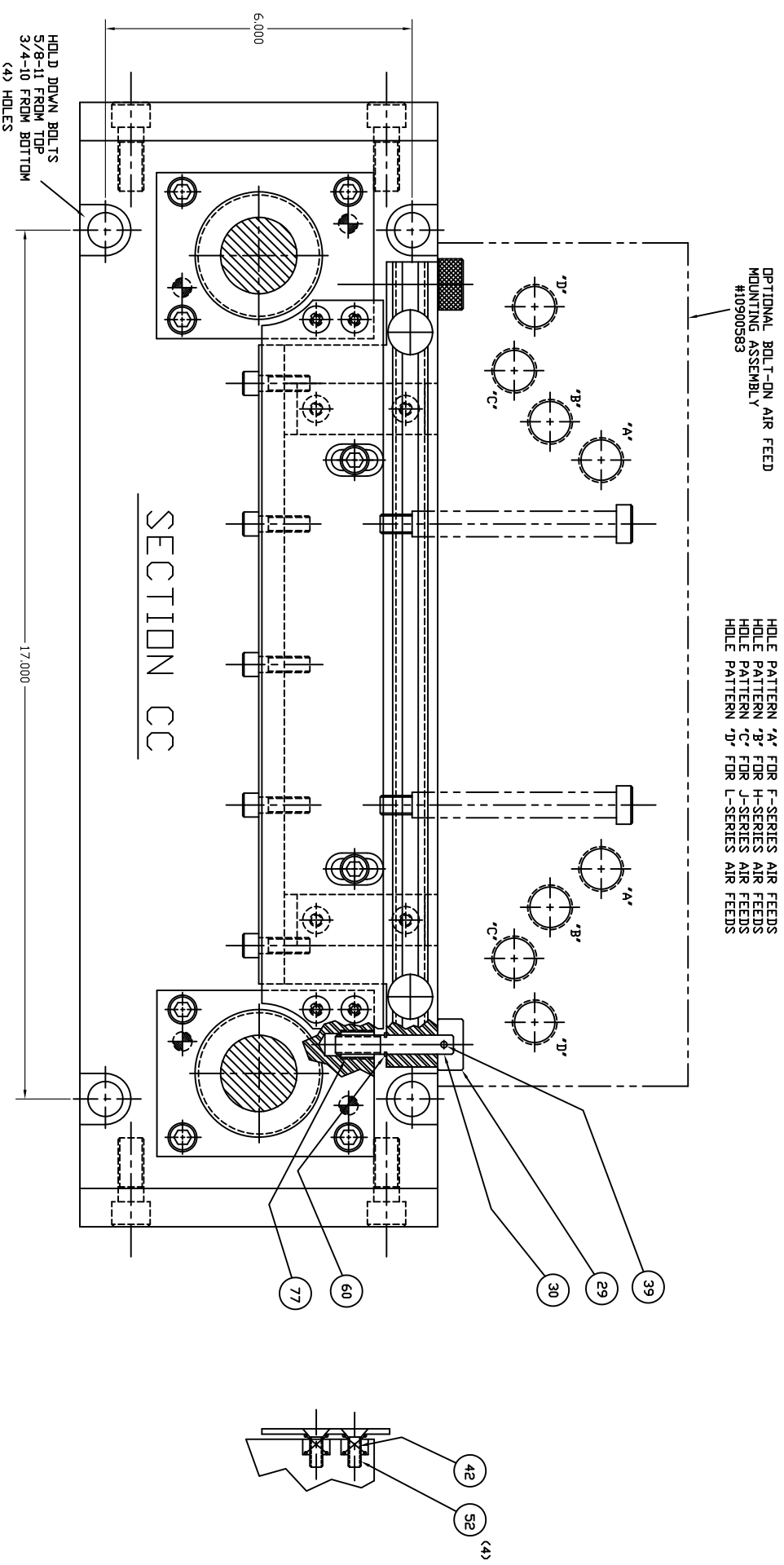
NOTE: FSC12S FOR SERVO C-T-L, CONTROL
VERSION 'C' - 24 V.D.C. VALVE, PNP SENSOR

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1	10/16/80	ECN #5571			
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81	11/16/80	ECN #5571			

RAPID-AIR CORPORATION
ROCKFORD, ILL. • MADISON, SD
FSC12S CUTTER W/PNP
SENSOR FOR SERVO C-T-L

11300351-352

82		
81	69400065	BALL PLUNGER
80	34700066	WASHER
79	69280240	VALVE PLUG
78	65908125	SHCS #8-32 X 1 1/4
77	65600004	THREADED INSERT
76	66300250	DRIVE SCREW
75	39900051	SERIAL # TAG
74	39900302	BLADE POSITION LABEL
73	36200028	STOCK GUIDE NUT
72	33900243	STOCK GUIDE ROLLER SLEEVE
71	34200240	STOCK GUIDE ROLLER
70	36600024	HANDLE
69	64230011	TUBING 1/4
68	67100120	MALE FITTING 3/8 NPT TO 1/4 TUBE
67	67100142	PIPE ELBOW 3/8 NPT FEMALE
66	67100159	PIPE TEE 3/8 NPT FEMALE
65	63130500	PIPE PLUG 1/2 NPT
64	34100348	SPACER
63	6388290 (4)	PIPE PLUG 1/4 NPT
62	67100141	HEX NIPPLE 3/8 NPT
61	65920175	SHCS 1/4-20 X 1 3/4
60	60910037	RETAINING RING 3/8
59	65936175	SHCS 3/8-16 X 1 3/4
58	65931225	SHCS 5/16-18 X 2 1/4
57	66612037	BHSCS #10-32 X 3/8
56	65931125	SHCS 5/16-18 X 1 1/4
55	65931100	SHCS 5/16-18 X 1
54	65908175	SHCS #8-32 X 1 3/4
53	66520050	FHSCS 1/4-20 X 1/2
52	66520075	FHSCS 1/4-20 X 3/4
51	65936150	SHCS 3/8-16 X 1 1/2
50	65953125	SHCS 1/2-13 X 1 1/4
49	62419100	ROLL PIN 3/16 X 1
48	62425075	ROLL PIN 1/4 X 3/4
47	62325050	DOWEL PIN 1/4 X 1/2
46	62150250	SPIRAL PIN 1/2 X 2 1/2
45	62350100	DOWEL PIN 1/2 X 1
44	62337075	DOWEL PIN 3/8 X 3/4
43	67200002	MUFFLER
42	37500085	SPRING
41	37500160	SPRING CENTURY #72486
40	64100080	BRONZE BUSHING #44-1807-2
39	62412100	ROLL PIN 1/8 X 1
38	39900175	INLET LABEL
37	69100348	PRDX. SWITCH PNP
36	69200032	MAC VALVE 24 V.D.C.
35	68000000	QUICK EXHAUST
34	60108357	"D" RING 5.50 I.D. X .210
33	60108014	"D" RING 1/2 I.D. X .070
32	60108109	"D" RING 5/16 I.D. X .103
31	60108207	"D" RING 9/16 I.D. X .139
30	32900874	ADJUSTING SHAFT
29	36700019	KNDB
28	36800039	KEY
27	36300009	QUICK EXHAUST FITTING
26	31500435	QUICK EXHAUST COVER
25	67200007	MUFFLER
24	31900641	QUICK EXHAUST BRACKET
23	31702179	MANIFOLD PLATE
22	21900269	FRONT GUARD
21	21900268	REAR GUARD
20	31702178	PRDX. MTG. PLATE
19	32000013	BLADE
18	31702177	PISTON WEAR PLATE
17	31702176	STRIPPER PLATE
16	35900086	BUMPER
15	36500046	CAM
14	31500434	SCRAP CHUTE
13	31702175	CAM PLATE
12	31702174	CAM SHAFT PLATE
11	32900873	CAM SHAFT
10	31702173	RH. BRG. PLATE
9	31702172	LH. BRG. PLATE
8	32900872	GUIDE SHAFT
7	25500076	PISTON ASSEMBLY
6	30100297	PISTON HOUSING
5	30100296	UPPER BLADE HOUSING
4	30100295	LOWER BLADE HOUSING
3	31702171	RH. SIDE PLATE
2	31702170	LH. SIDE PLATE
1	31702169	BASE PLATE



NOTE: FSCIS FOR SERVO C-T-L, CONTROL
VERSION 'C' - 24 V.D.C. VALVE, PNP SENSOR

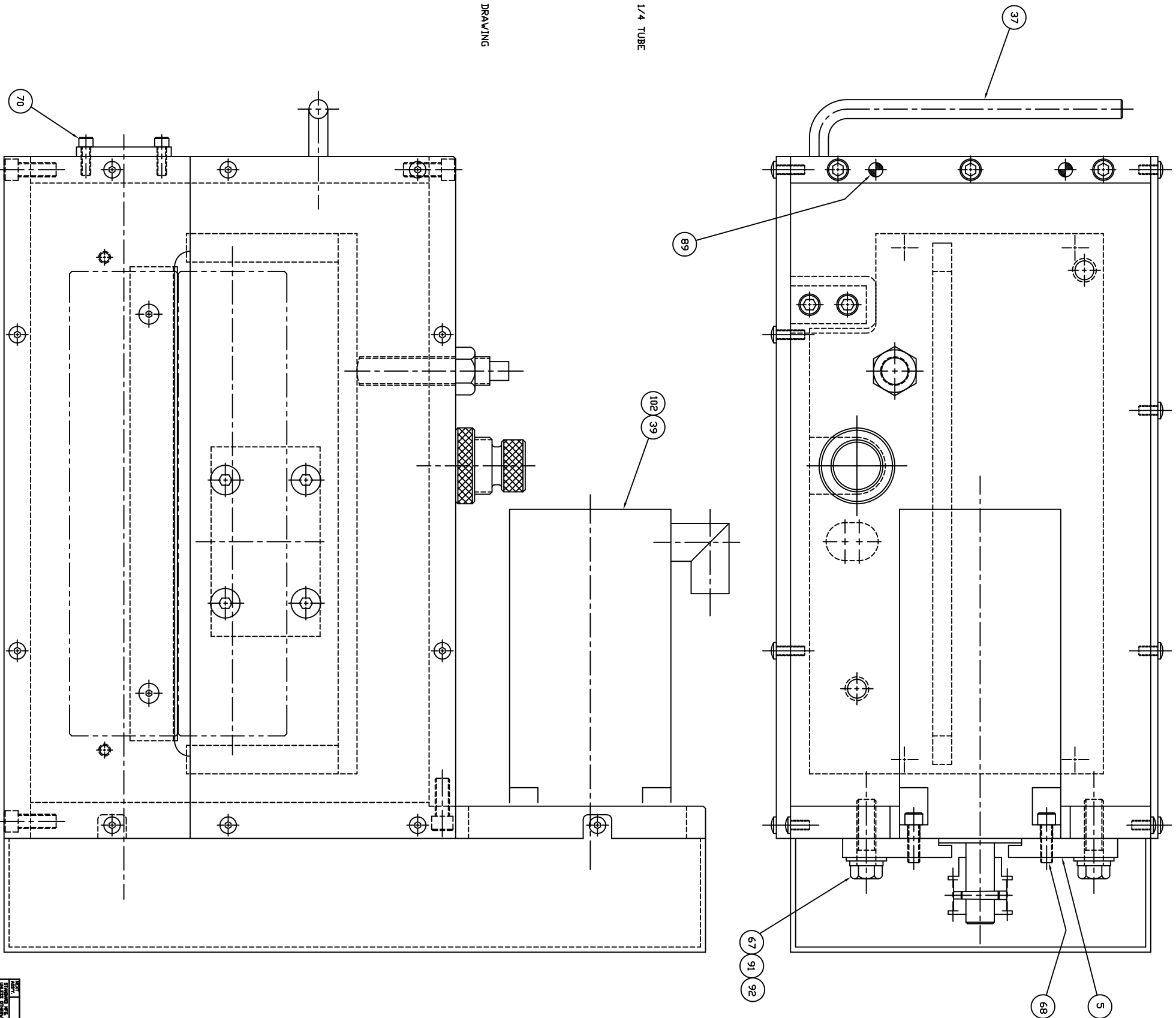
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2	11/13/83	REVISED TO ADD C-T-L OPTION
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81	11/13/83	REVISED TO ADD C-T-L OPTION
82	11/13/83	REVISED TO ADD C-T-L OPTION

RAPID-AIR CORPORATION
Rockford, IL • Madison, SD
FSCIS CUTTER W/PNP
SENSOR FOR SERVO C-T-L

11300351-352

115		
114 2	65908112	SHCS #8-32 X 1 1/8
113 1	64230010	BLACK POLY TUBE
112 4	67100121	MALE CONNECTOR 1/4 NPT 1/4 TUBE
111 1	67200001	MUFFLER
110 2	65920225	SHCS 1/4-20 X 2 1/4
109 1	34100338	SPACER
108 2	66612037	66612037
107 2	60108206	1/2" RING
106 3	65906150	SHCS #6-32 X 1 1/2
105 1	39900175	INLET LABEL
104 2	65920125	SHCS 1/4-20 X 1 1/4
103 1	60108014	1/2" RING
102 1	28900446	CONTROL ASSEMBLY
101 1	32500045	TAPER PIN INSTALLATION
100 2	60900185	RETAINING RING
99 2	60910098	RETAINING RING
98 2	60910112	RETAINING RING
97 1	60910087	RETAINING RING
96 1	60910050	RETAINING RING
95 1	60108230	1/2" RING
94 1	60108228	1/2" RING
93 1	60108212	1/2" RING
92 2	61300050	LOCK WASHER 1/2
91 2	61200034	FLAT WASHER 1/2
90 3	62425100	ROLL PIN
89 8	62337100	DOWEL PIN 3/8 X 1
88 2	62137150	SPIRAL PIN
87 1	62500006	TAPER PIN
86 1	36800013	KEY
85 1	36800006	KEY
84 1	36800021	KEY
83 1	37500117	SPRING
82 2	63130250	PIPE PLUG
81 1	66700072	SET SCREW
80 4	66220037	SET SCREW

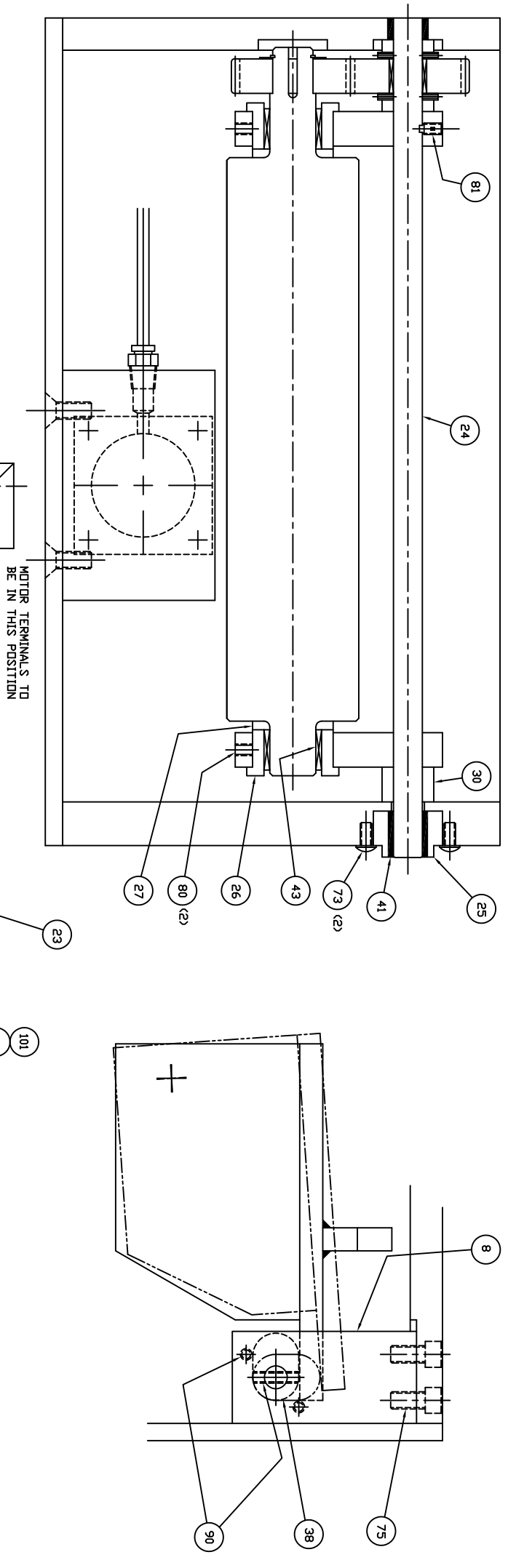
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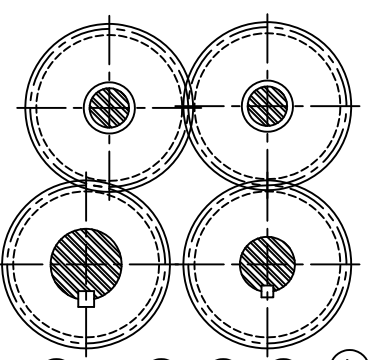
79 1	66162200	SHOULDER SCREW
78 4	66137075	SHOULDER SCREW
77 1	36300004	GAUGE FITTING
76 2	65931075	SHCS 5/16-18 X 3/4
75 2	65936075	SHCS 3/8-16 X 3/4
74 4	66536100	BHSCS 3/8-16 X 1
73 16	66620050	BHSCS 1/4-20 X 1/2
72 6	66620075	BHSCS 1/4-20 X 3/4
71 1	69200032	VALVE
70 4	65920075	SHCS 1/4-20 X 3/4
69 4	66520062	FHSCS 1/4-20 X 5/8
68 4	65931100	SHCS 5/16-18 X 1
67 2	65853150	HEX BOLT 1/2-13 X 1 1/2
66 12	65936100	SHCS 3/8-16 X 1
65 4	66520050	FHSCS 1/4-20 X 1/2
64 2	66300250	DRIVE SCREW
63 1	39900051	S/N TAG
62 1	39900246	RAPID-AIR LOGG
61 1	68000024	REGULATOR
60 1	31500497	ENTRANCE GUIDE
59 1	31500496	EXIT GUIDE
58 1	68000026	GAUGE
57 1	31702137	REGULATOR RETAINING PLATE
56 1	34100236	GAUGE SPACER
55 1	31702113	GAUGE & REGULATOR PLATE
54 1	10900507	CASCADE ASSEMBLY
53 4	65102520	HEX NUT 1/4-20
52 1	65117516	JAM NUT 3/4-16
51 1	36200031	ADJUSTING SCREW LOCKNUT
50 1	36100104	POSITIVE STOP SCREW
49 1	64520022	THRUST WASHER
48 1	64520025	THRUST WASHER
47 2	64520025	THRUST WASHER
46 8	64520008	THRUST WASHER
45 4	64510002	THRUST BEARING
44 2	64500057	NEEDLE BEARING
43 2	64500066	NEEDLE BEARING
42 2	64600049	BALL BEARING
41 1	64100046	DILITE BUSHING
40 1	64100075	DILITE BUSHING
39 1	69000045	MOTOR
38 1	36500045	CAM
37 1	36600036	CAM HANDLE
36 1	35500231	PISTON
35 1	31702112	MANIFOLD PLATE
34 1	31400550	PISTON COVER
33 1	31500495	ENTRANCE GUARD
32 1	31500494	LOWER EXIT GUARD
31 1	34100325	SPACER
30 1	34100381	SPACER
29 1	34100323	SPACER
28 2	34100322	SPACER
27 2	34100321	ROLLER SPACER
26 2	3390265	BEARING SLEEVE
25 1	32900858	ECCENTRIC SHAFT
24 1	32900857	PIVOT SHAFT
23 1	31500489	BELT COVER
22 1	32500046	TIMING BELT
21 1	32500036	BUSHING (FOR 32500029)
20 1	32500029	PULLEY (LOWER ROLL)
19 1	32500044	MOTOR PULLEY
18 2	32600233	UPPER IDLER SPUR GEAR
17 2	32600232	UPPER IDLER SPUR GEAR
16 1	32600231	UPPER ROLLER SPUR GEAR
15 1	32600235	LOWER ROLLER SPUR GEAR
14 1	34200383	UPPER ROLLER
13 1	34200382	LOWER ROLLER
12 1	30100290	BEARING HOUSING
11 1	30100292	PISTON HOUSING
10 1	31702489	PISTON HOUSING MOUNTING PLATE
9 1	31702115	GEAR SUPPORT PLATE
8 1	31702111	CAM PIVOT PLATE
7 1	21900254	ROLLER TOP PLATE ASSEMBLY
6 2	31702106	ROLLER SIDE PLATE
5 1	31702473	MOTOR MOUNTING PLATE
4 1	31702488	TOP PLATE
3 1	31702471	L.H. SIDE PLATE
2 1	31702470	R.H. SIDE PLATE
1 1	31702487	BOTTOM PLATE

REV	DATE	BY	CHKD	APP'D
A	03-20-2014			
ECON #3724				
REV. CHANGE				
SHEET 1 OF 5				
DRAWN BY: DJL				
CHECKED BY:				
APPROVED BY:				
DATE: 03-20-2014				
TIME: 13000623				
E				

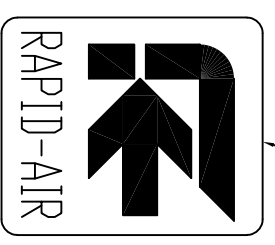
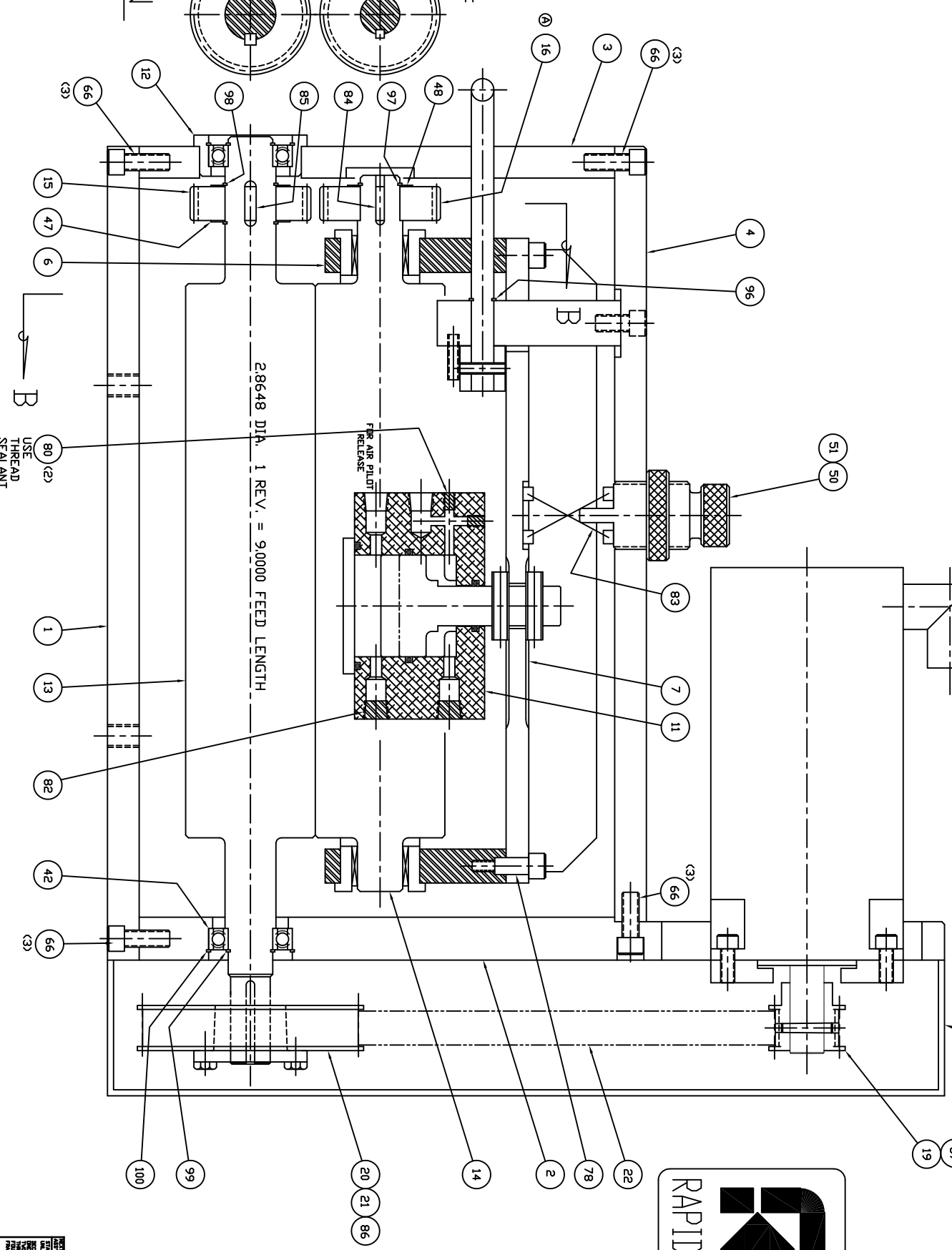
RAPID-AIR CORPORATION
ROCKFORD, IL 61081-3000
212TX V/AIR PILOT RELEASE
& AIR DOWN



④
 GEAR TRAIN TO BE LUBRICATED
 WITH MOBILTECH 375 NC GREASE



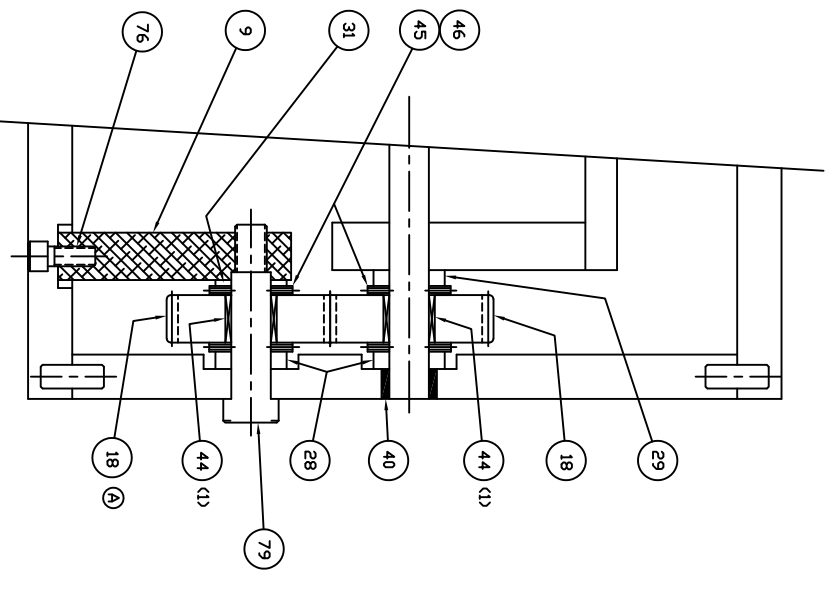
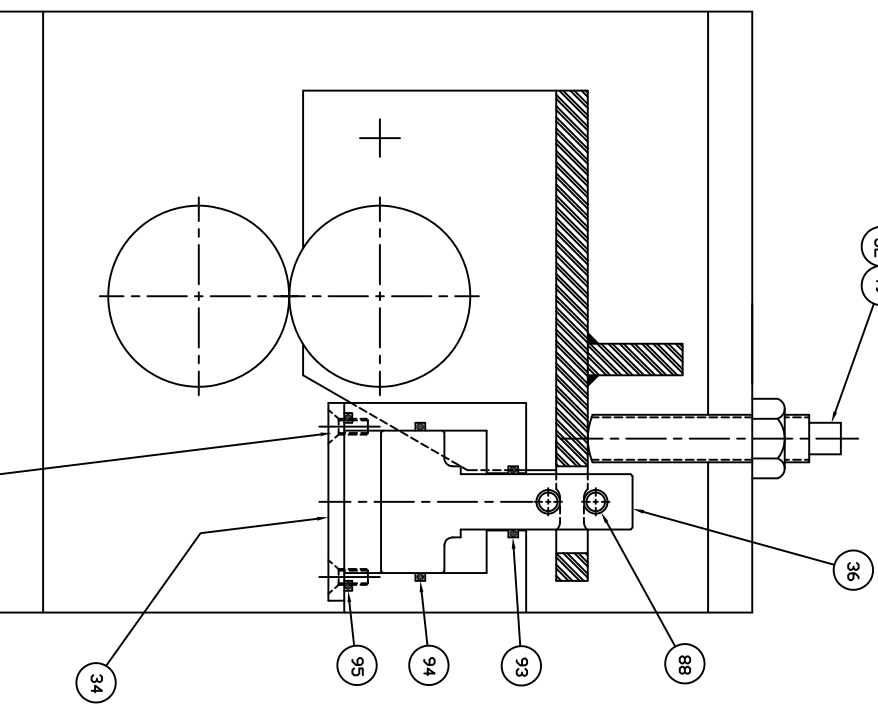
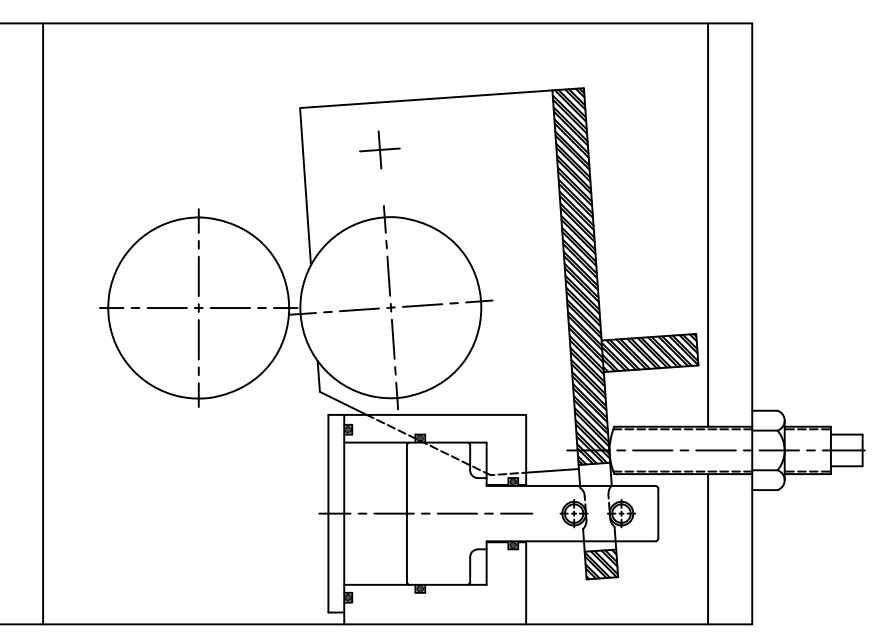
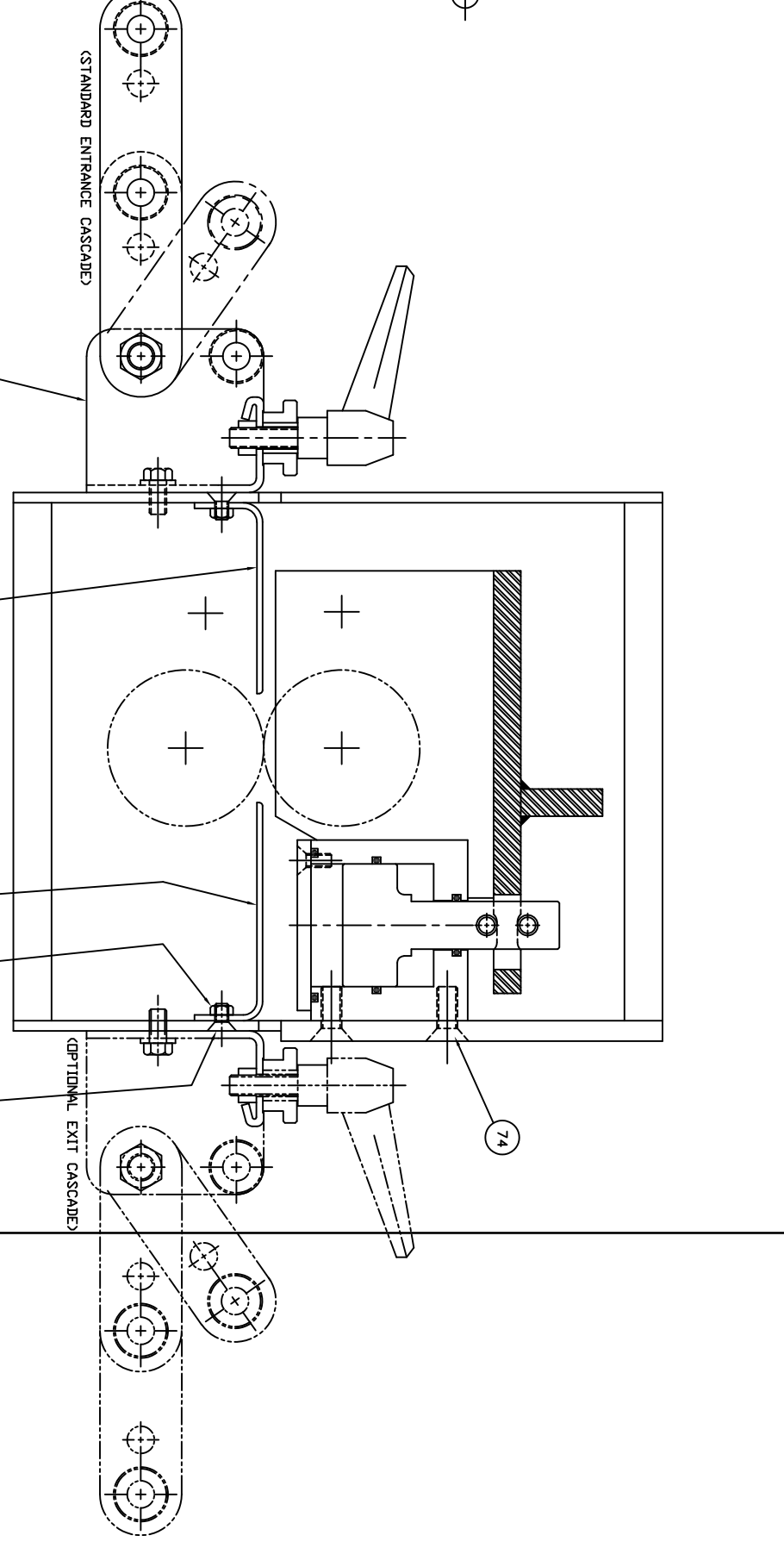
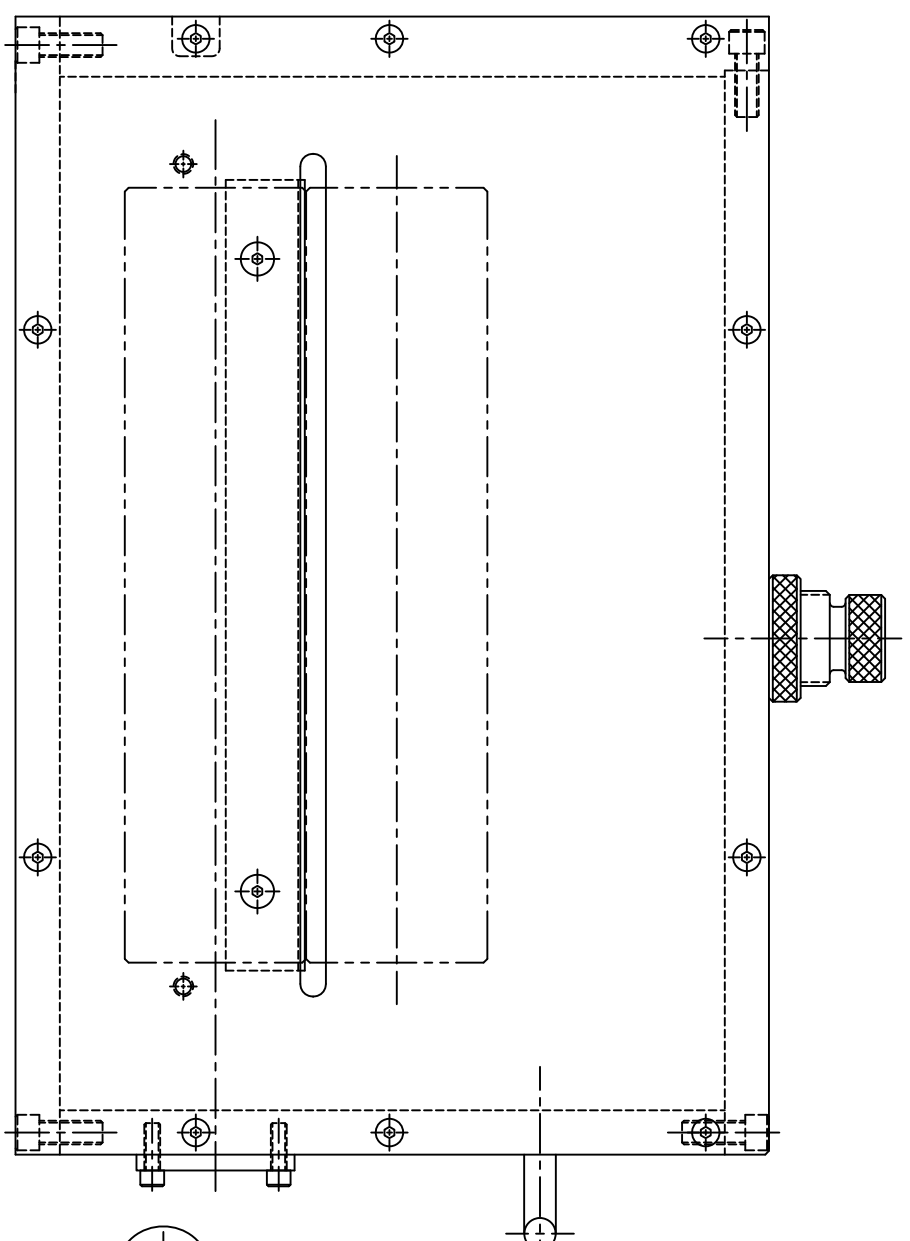
SECTION
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SHEET 2 OF 5

DATE	REV	DESCRIPTION
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10/13/24	B	REVISED BY: JLU
10/13/24	C	REVISED BY: JLU
10/13/24	D	REVISED BY: JLU
10/13/24	E	REVISED BY: JLU

RAPID-AIR CORPORATION
 ROCKFORD, IL • MADISON, SD
 212TX V/AIR PILOT RELEASE
 & AIR DOWN



ROLLERS OPEN

ROLLERS CLOSED

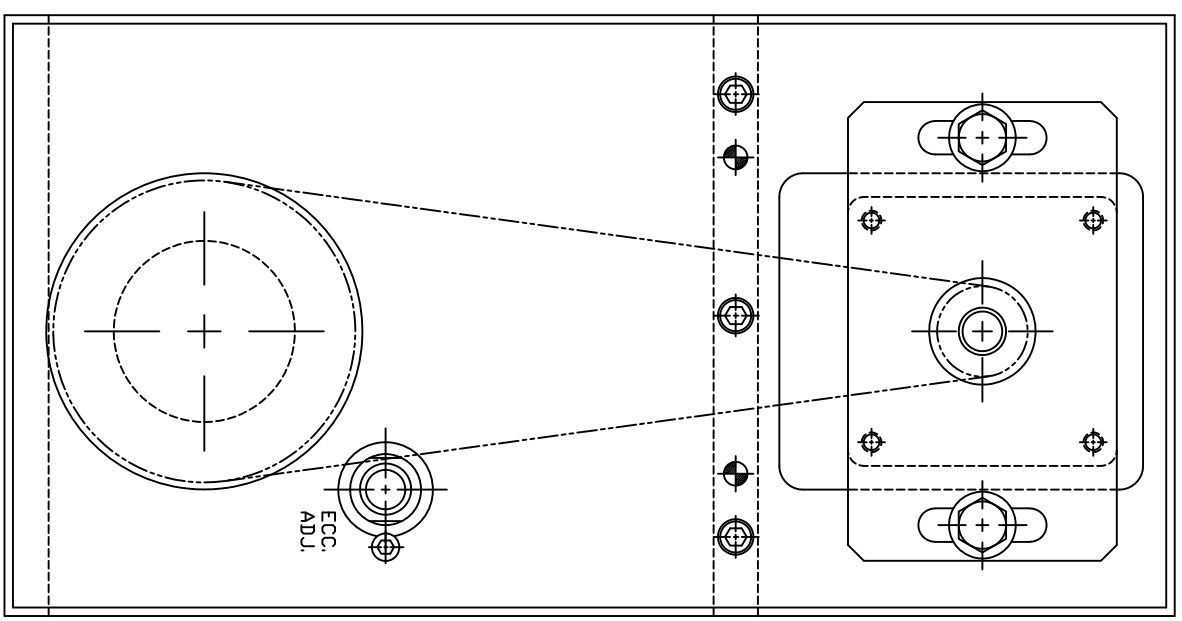
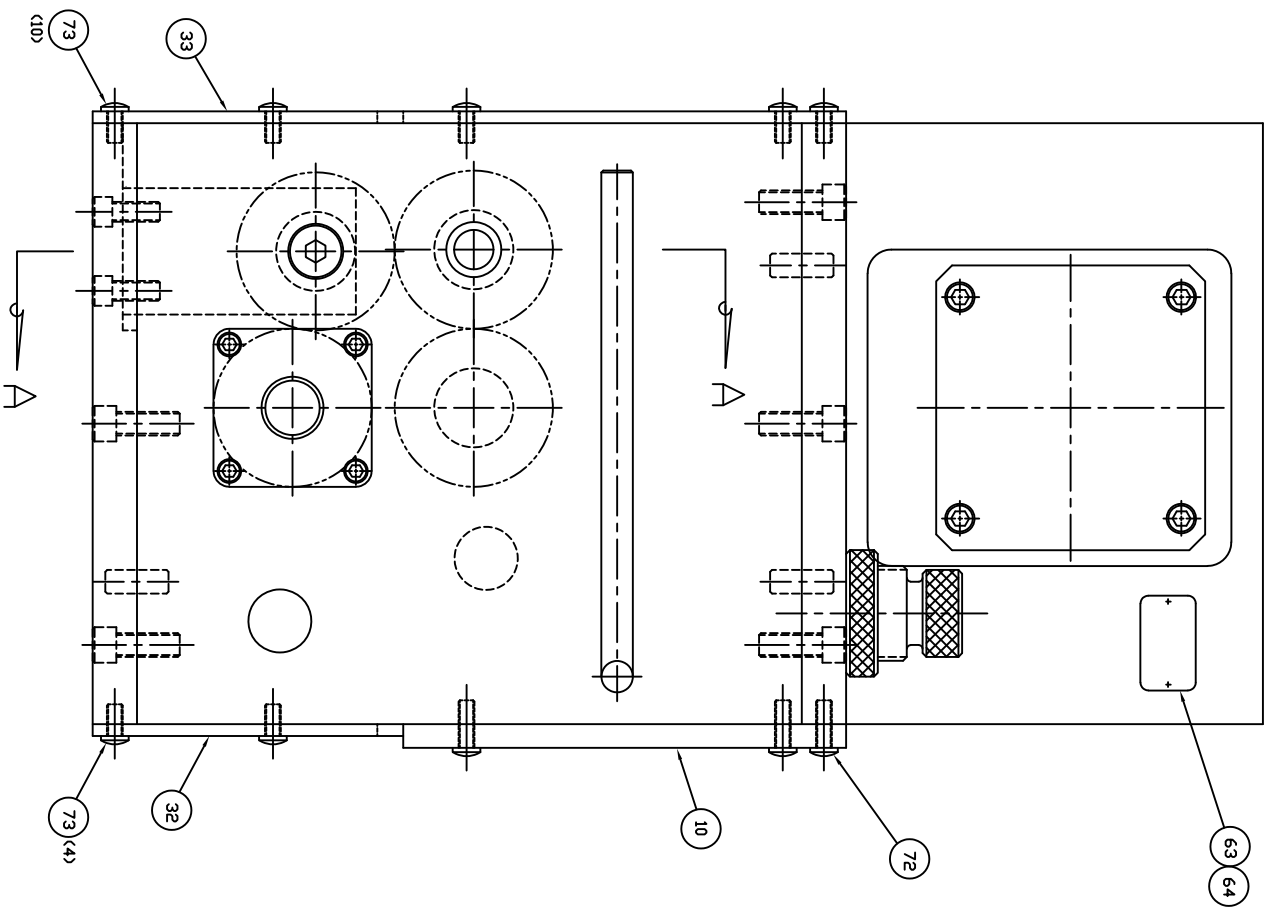
SECTION
AA

REV	DATE	BY	CHKD	DESCRIPTION
1				ISSUED FOR CONSTRUCTION
2				REVISED TO ADD OPTIONAL EXIT CASCADE
3				REVISED TO ADD STANDARD ENTRANCE CASCADE
4				REVISED TO ADD AIR DOWN OPTION
5				REVISED TO ADD AIR UP OPTION

RAPID-AIR CORPORATION
 ROCKFORD, IL • MADISON, SD
 2121X V/AIR PULDT RELEASE
 & AIR DOWN

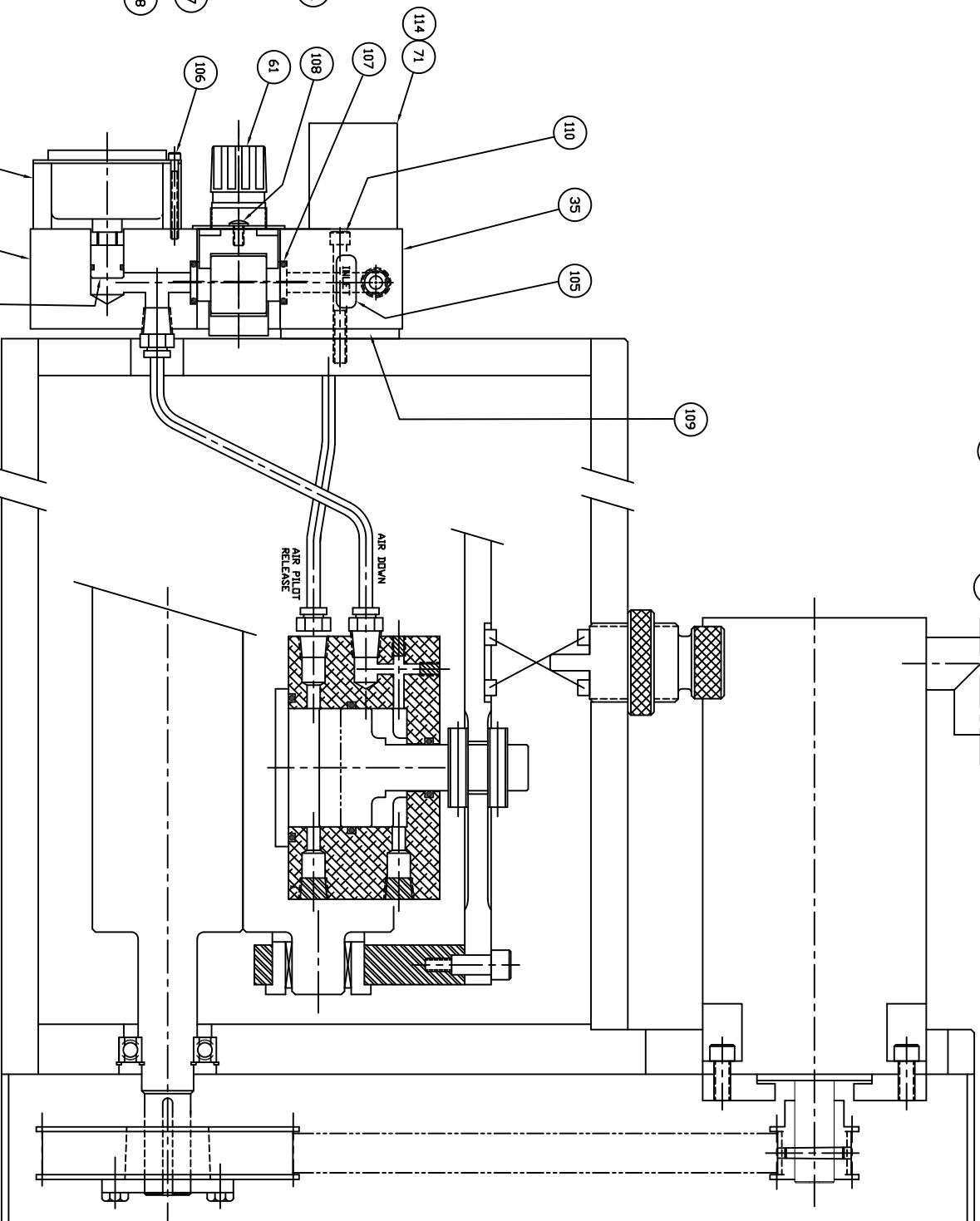
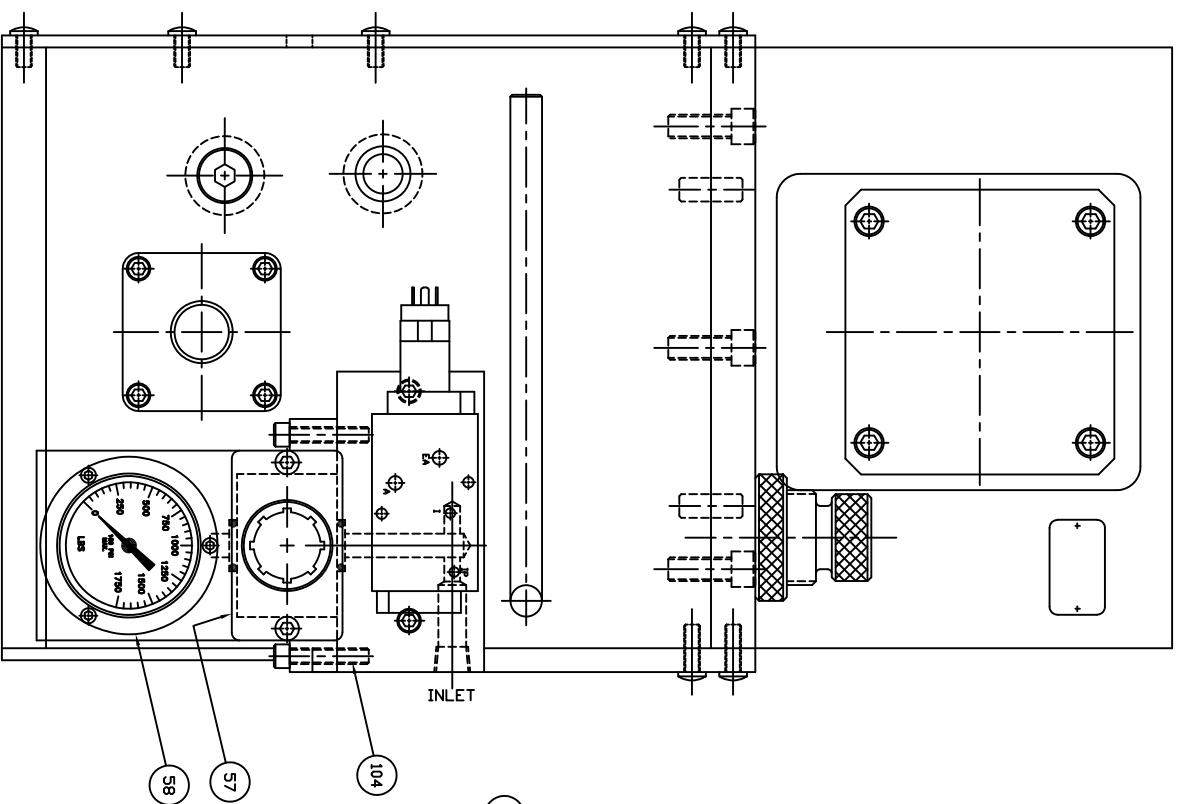
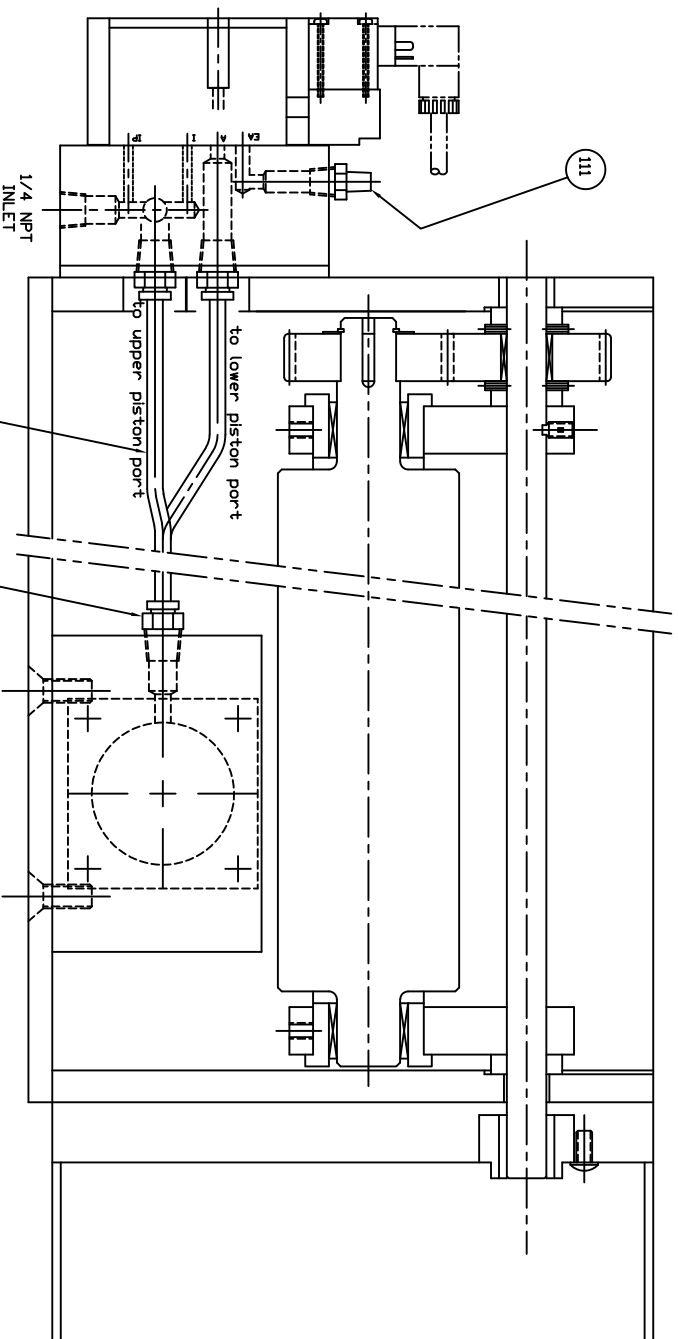
SHEET 3 OF 5

ECN #5724
 DATE 10-13-2014
 PART 13000623



SHEET 4 OF 5

RAPID-AIR CORPORATION ROCKFORD, IL • MADISON, SD & AIR DIVN	
PART NAME: 212TX V/AIR PILOT RELEASE & AIR DIVN	PART NUMBER: 13000623
DRAWN BY: DJU CHECKED BY:	DATE: 10-13-2014
PART NUMBER: CONN #3724 REV: A	DATE: 10-13-2014
PART NUMBER: 13000623 REV: A	DATE: 10-13-2014



SHEET 4 OF 4

REV	DATE	BY	CHKD	DESCRIPTION
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3				
4				
5				

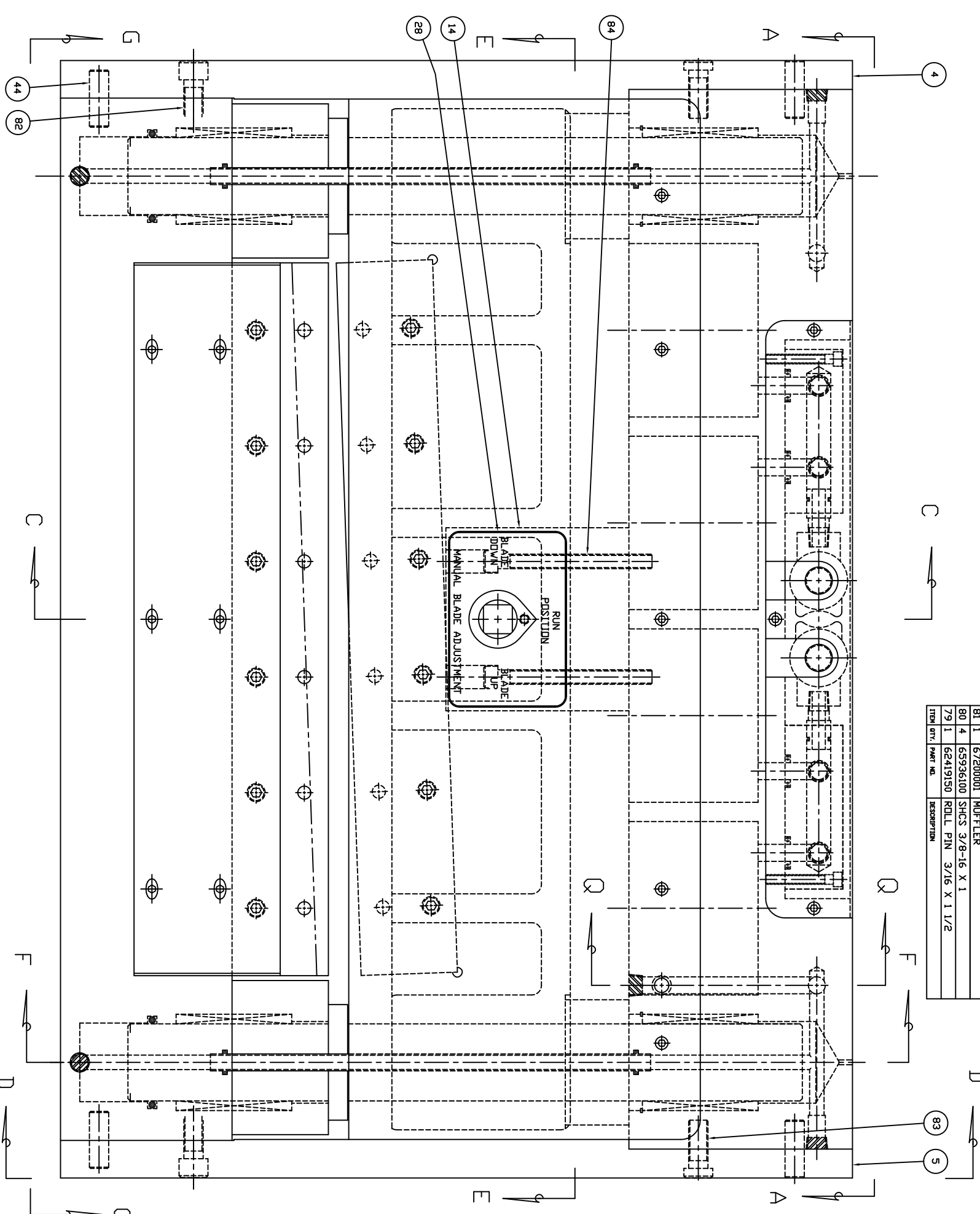
RAPID-AIR CORPORATION
 ROCKFORD, IL • MADISON, SD
 PART NAME: 212TX V/AIR PILOT RELEASE
 & AIR DOWN

E

NOTE: FSC18S FOR SERVO C-T-L, CONTROL
VERSION 'C' - 24 V.D.C. VALVE, PNP SENSOR

95	4	65920200	SHCS 1/4-20 X 2"
94	2	65908112	SHCS #8-32 X 1 1/8
93	8	65936675	SHCS 3/8-16 X 2 3/4
92	2	37500124	SPRING
91	2	60108109	"O" RING
90	2	64520017	THRUST WASHER
89	4	60108207	"O" RING
88	4	66520125	FHSCS 1/4-20 X 1 1/4
87	4	65936150	SHCS 3/8-16 X 1 1/2
86	4	65961500	SHCS 5/8-11 X 5
85	3	65953275	SHCS 1/2-13 X 2 3/4
84	2	65936400	SHCS 3/8-16 X 4
83	8	66700054	L.D.W. SHCS 1/2-13 X 1 1/4
82	8	65953150	SHCS 1/2-13 X 1 1/2
81	1	67200001	MUFFLER
80	4	65936100	SHCS 3/8-16 X 1
79	1	62419150	ROLL PIN 3/16 X 1 1/2
ITEM QTY.	PART NO.	DESCRIPTION	

78	12	65931150	SHCS 5/16-18 X 1 1/2
77	6	66520050	FHSCS 1/4-20 X 1/2
76	25	66642037	BHSCS #10-32 X 3/8
75	2	66300250	DRIVE SCREW
74	6	65920175	SHCS 1/4-20 X 1 3/4
73	3	65500006	T-SLOT NUT
72	4	37500013	SPRING
71	2	67200007	MUFFLER
70	2	67100141	PIPE NIPPLE
69	2	67100142	90° EL.BDV
68	1	31702186	QUICK EXHAUST MANIFOLD RH.
67	1	31702185	QUICK EXHAUST MANIFOLD LH.
66	1	31500440	QUICK EXHAUST COVER
65	4	36300009	QUICK EXHAUST FITTING
64	2	68000000	QUICK EXHAUST
63	2	31900641	QUICK EXHAUST MTG. BRKT.
62	2	63130375	PIPE PLUG 3/8 NPT
61	12	63130250	PIPE PLUG 1/4 NPT
60	1	63130750	PIPE PLUG 3/4 NPT
59	1	64230011	TUBING
58	2	67100122	MALE CONNECTOR
57	2	67100118	90° EL.BDV
56	4	60108014	"O" RING
55	1	69200032	MAC VALVE 24 V.D.C.
54	1	69280240	VALVE PLUG
53	1	69100348	PROX SWITCH PNP
52	2	36200023	STOCK GUIDE NUT
51	2	34200159	STOCK GUIDE ROLLER
50	2	33900237	ROLLER SLEEVE
49	1	33900238	PIINTER SLEEVE
48	2	65600005	INSERT
47	2	32000010	BLADE
46	2	62418100	ROLL PIN
45	4	62337075	DOWEL PIN
44	12	62250150	PULL DOWEL
43	1	62437150	ROLL PIN
42	4	62150200	SPIRAL PIN
41			
40	1	31701623	SWITCH MOUNTING PLATE
39	2	60108329	"O" RING
38	5	60108111	"O" RING
37	4	60108349	"O" RING
36	2	60910050	RETAINING RING
35	2	60900250	RETAINING RING
34	2	65912300	SHCS #10-32 X 3
33	4	64100052	BUSHING
32	2	36600020	HANDLE
31	2	36700038	KNDB
30	2	39900175	INLET LABEL
29	1	39900051	NAMEPLATE
28	1	39900235	BLADE ADJUST. LABEL
27	1	62325050	DOWEL PIN
26	2	34400315	AIR TUBE
25	1	32900533	CAM SHAFT
24	2	32900532	ADJUSTING SHAFT
23	2	32900531	GUIDE SHAFT
22	1	36500032	CAM
21	4	25500073	PISTON
20	1	21900138	REAR GUARD ASSEMBLY
19	1	21900137	FRONT GUARD ASSEMBLY
18	1	31500361	SCRAP CHUTE
17	2	35900042	LOWER BUMPER
16	2	35900041	UPPER BUMPER
15	1	69400052	SPRING PLUNGER
14	1	31701444	CAM SHAFT MOUNTING PLATE
13	1	31701443	CAM ACTUATING PLATE
12	1	31702184	MANIFOLD PLATE
11	4	31701441	PISTON WEAR PLATE
10	1	31701606	STRIPPER PLATE
9	1	31701605	TEE SLOT PLATE
8	1	31701604	BLADE SUPPORT PLATE
7	1	31701437	RH BEARING PLATE
6	1	31701436	LH BEARING PLATE
5	1	31701435	RH SIDE PLATE
4	1	31701434	LH SIDE PLATE
3	1	30100300	PISTON HOUSING
2	1	30100180	BLADE HOUSING
1	1	30100179	BASE HOUSING
ITEM QTY.	PART NO.	DESCRIPTION	



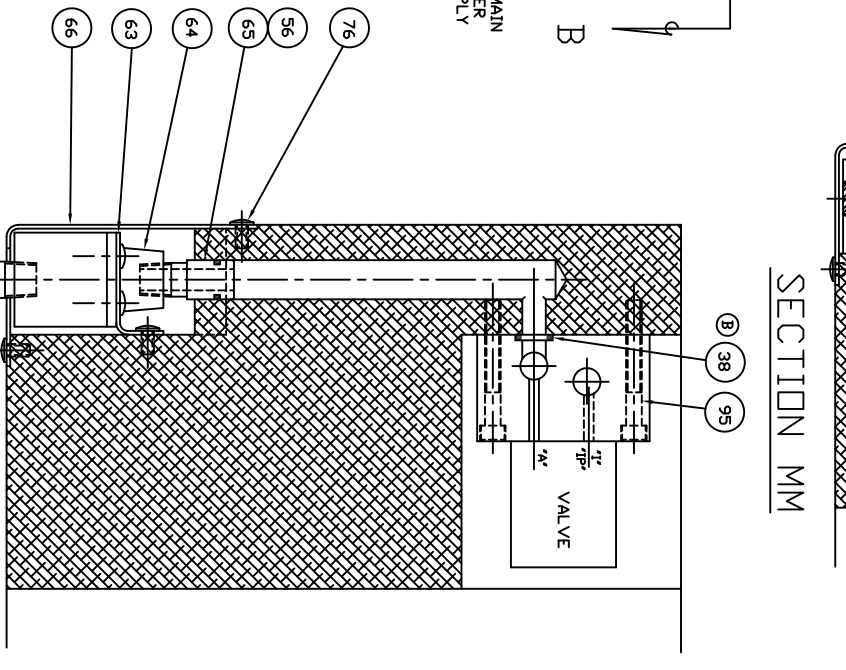
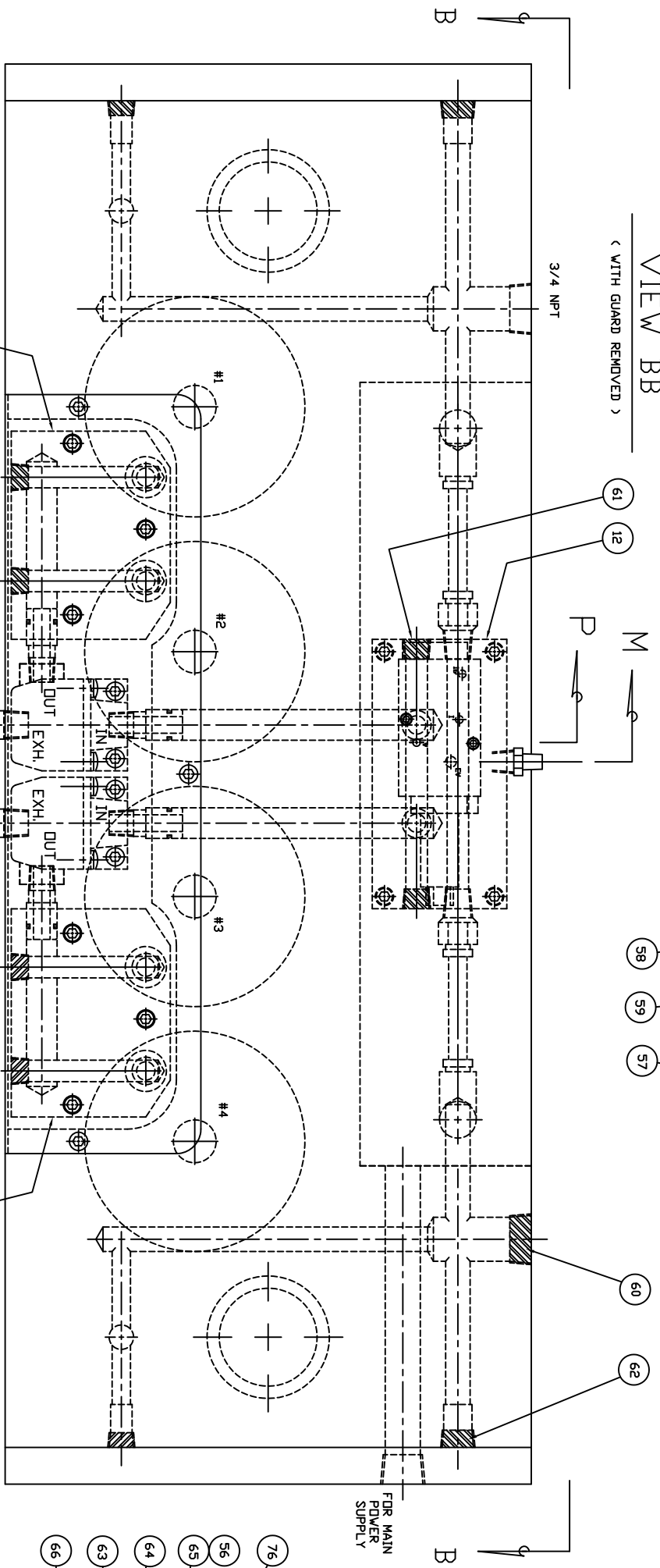
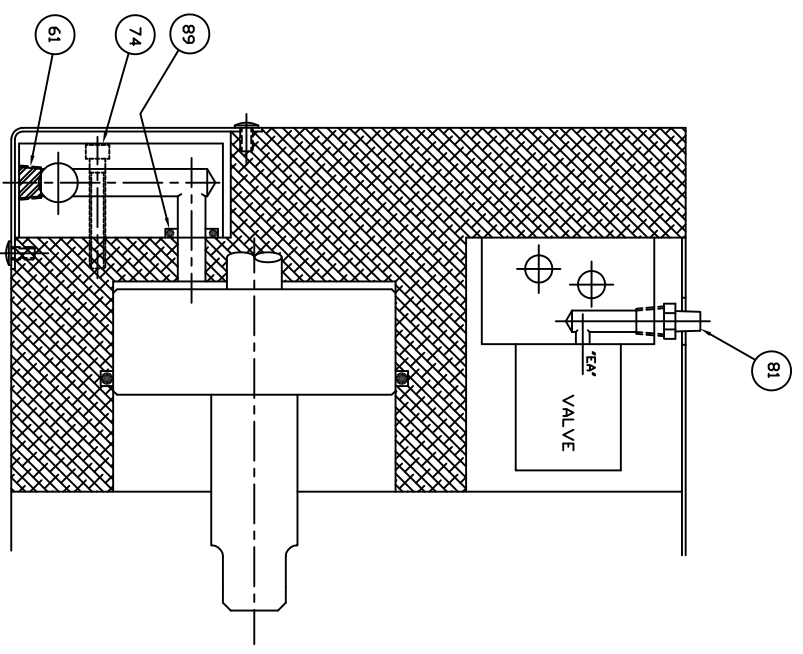
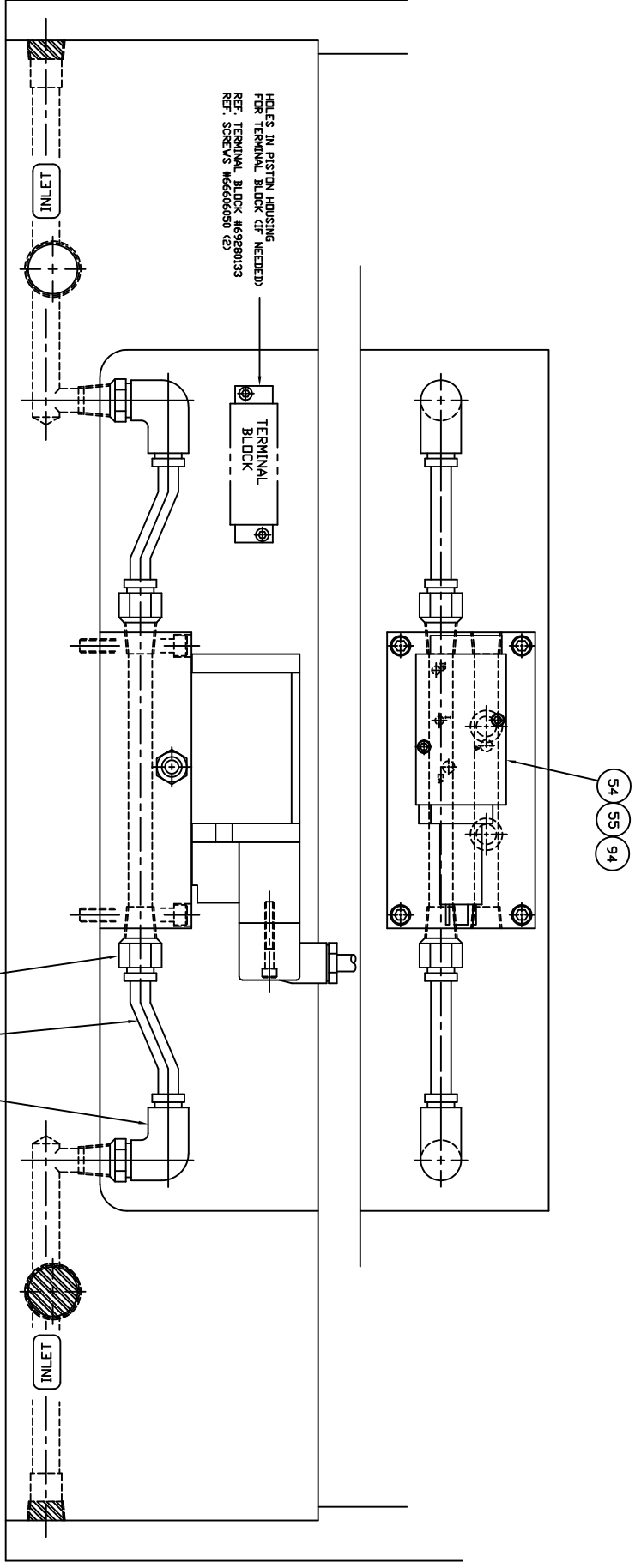
SHEET 1 OF 5

RAPID-AIR CORPORATION
Rockwood, IL • Madison, SD

Part Name: FSC18S CUTTER W/PNP SENSOR FOR SERVO C-T-L

DATE	BY	CHKD	APP'D	REV	DESCRIPTION
11/13/03	WJ	WJ	WJ	1	ISSUE FOR PULL
11/13/03	WJ	WJ	WJ	2	ISSUE FOR PULL
11/13/03	WJ	WJ	WJ	3	ISSUE FOR PULL
11/13/03	WJ	WJ	WJ	4	ISSUE FOR PULL
11/13/03	WJ	WJ	WJ	5	ISSUE FOR PULL

11300357-358

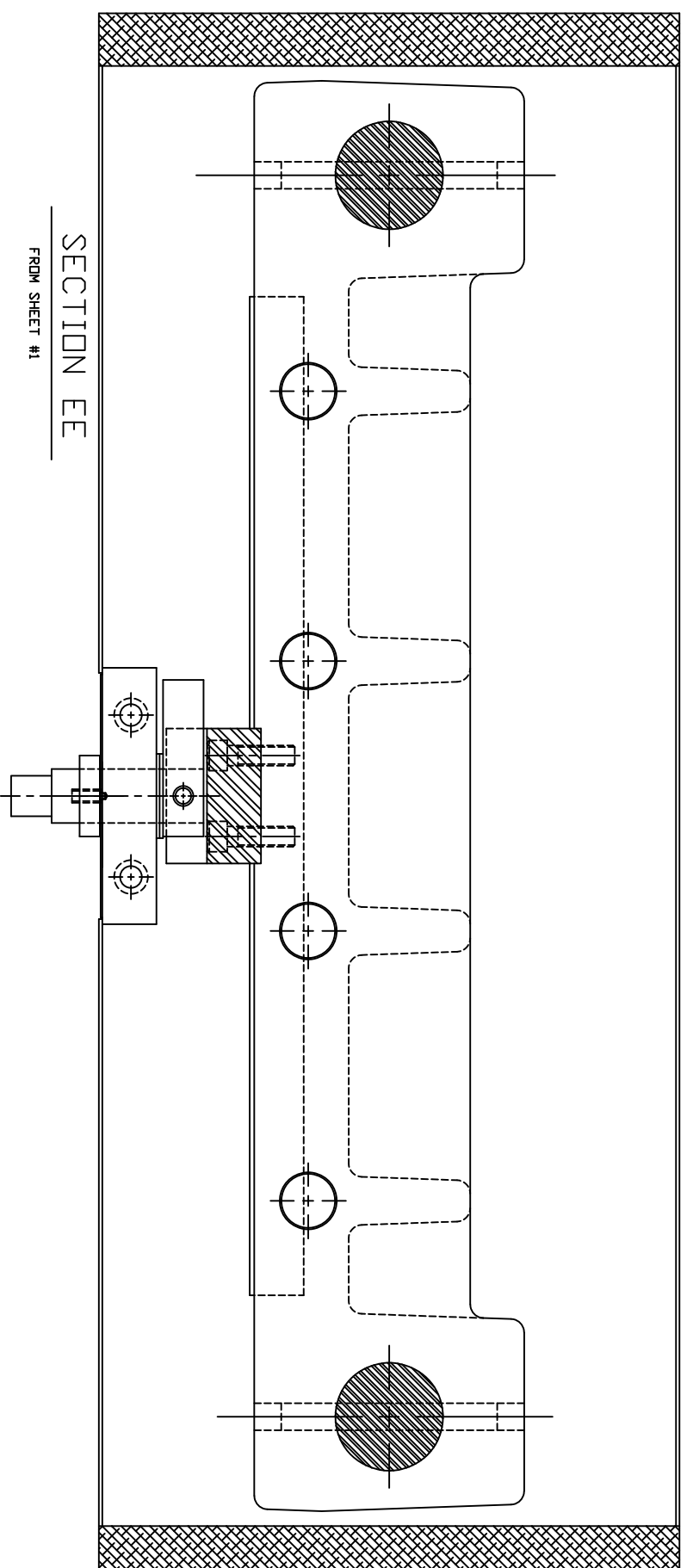


NOTE: FSC18S FOR SERVO C-T-L, CONTROL VERSION 'C' - 24 V.D.C. VALVE, PNP SENSOR

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2				REVISION
3				REVISION
4				REVISION
5				REVISION

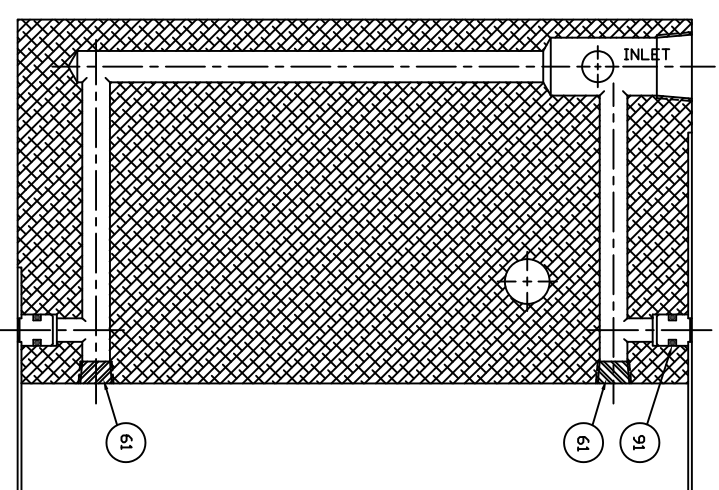
DESIGNED BY	DATE	APPROVED BY	DATE
ENGINEER		MANAGER	
DRAWN BY		CHECKED BY	
DATE		DATE	

PROJECT NAME	PROJECT NO.	DRAWING NO.
DESCRIPTION		
SCALE		
DATE		

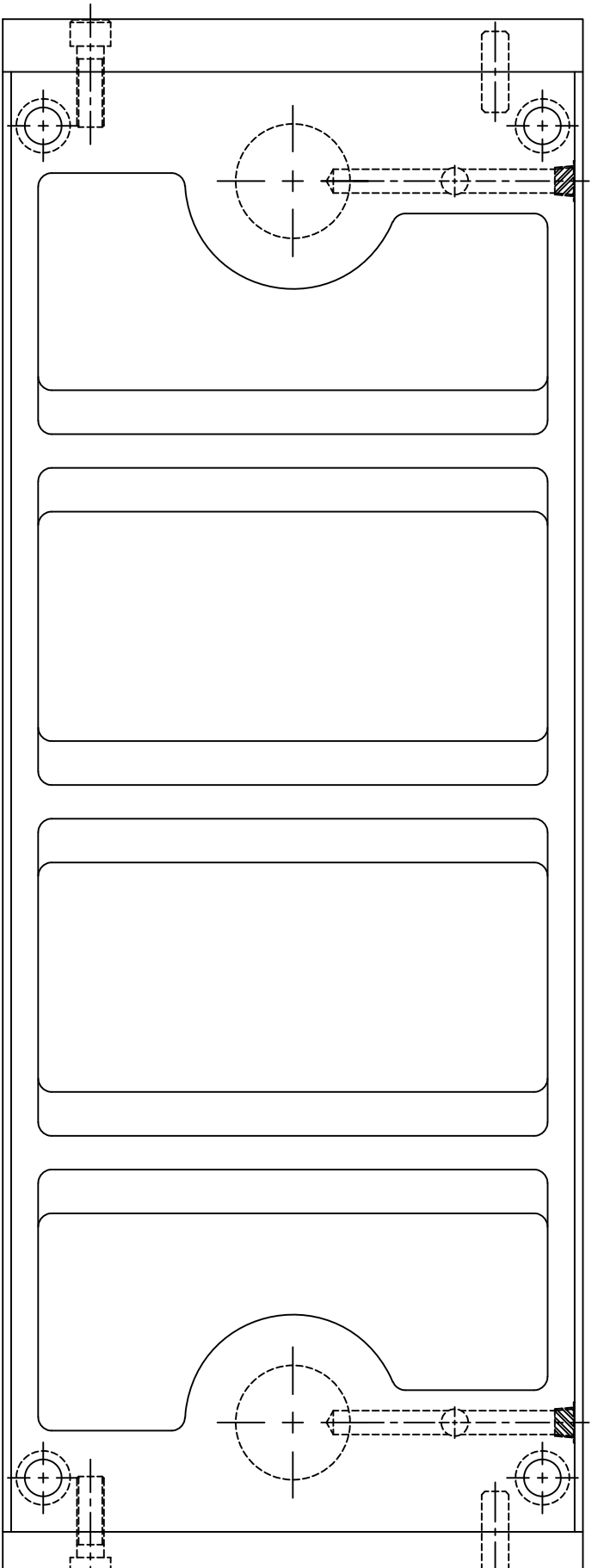


SECTION EE

FROM SHEET #1



SECTION QQ



VIEW GG

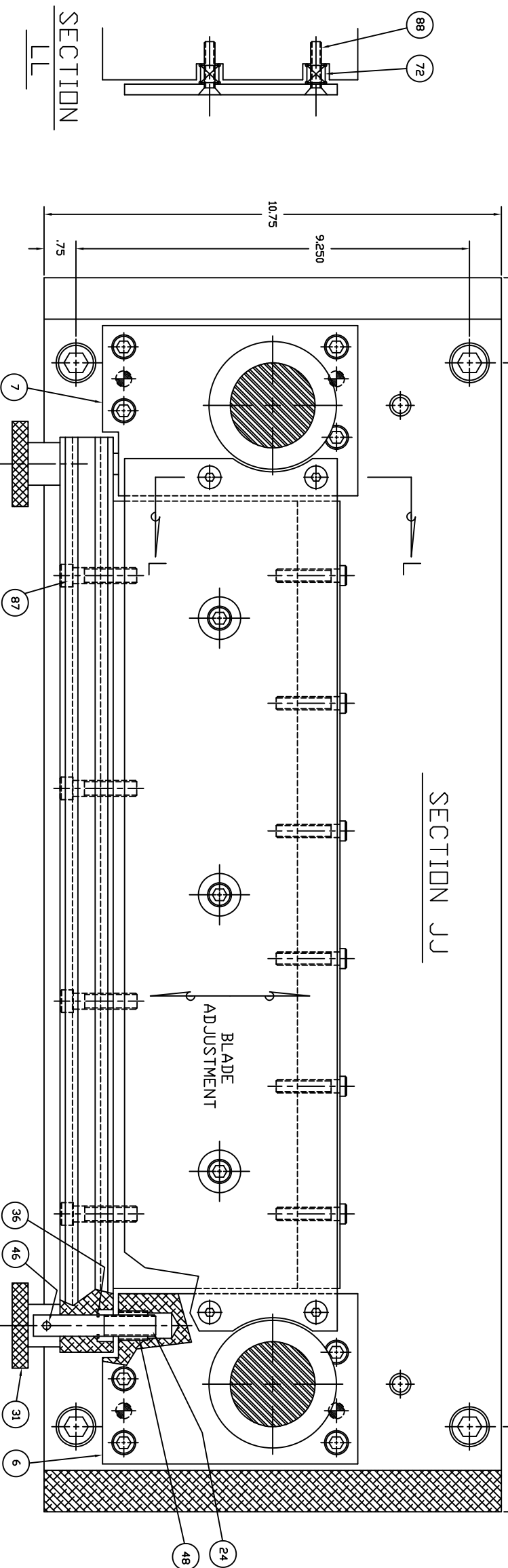
FROM SHEET #1

NOTE: FSC18S FDR SERVO C-T-L, CONTROL VERSION 'C' - 24 V.D.C. VALVE, PNP SENSOR

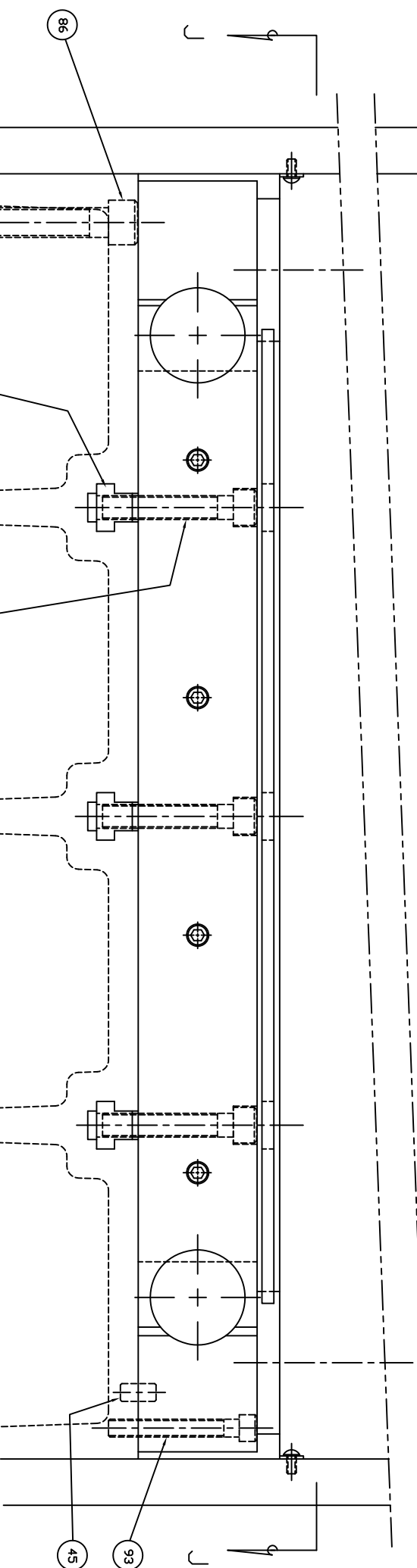
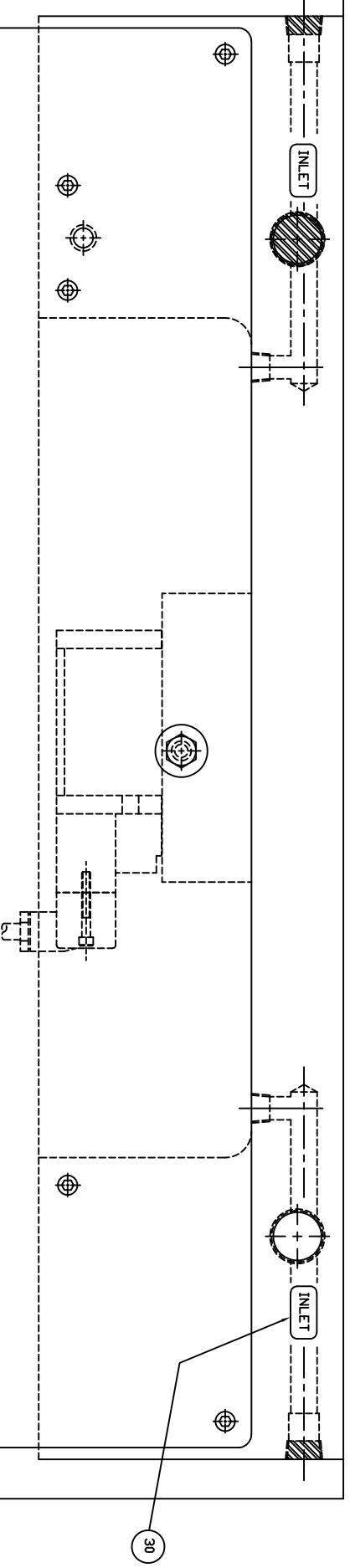
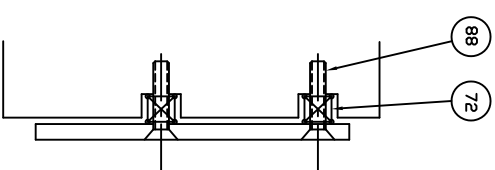
RAPID-AIR CORPORATION		ROCKFORD, IL • MADISON, SD	
PART NAME: FSC18S CUTTER W/PNP SENSOR FOR SERVO C-T-L			
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29.00
25.00

SECTION JJ



SECTION LL



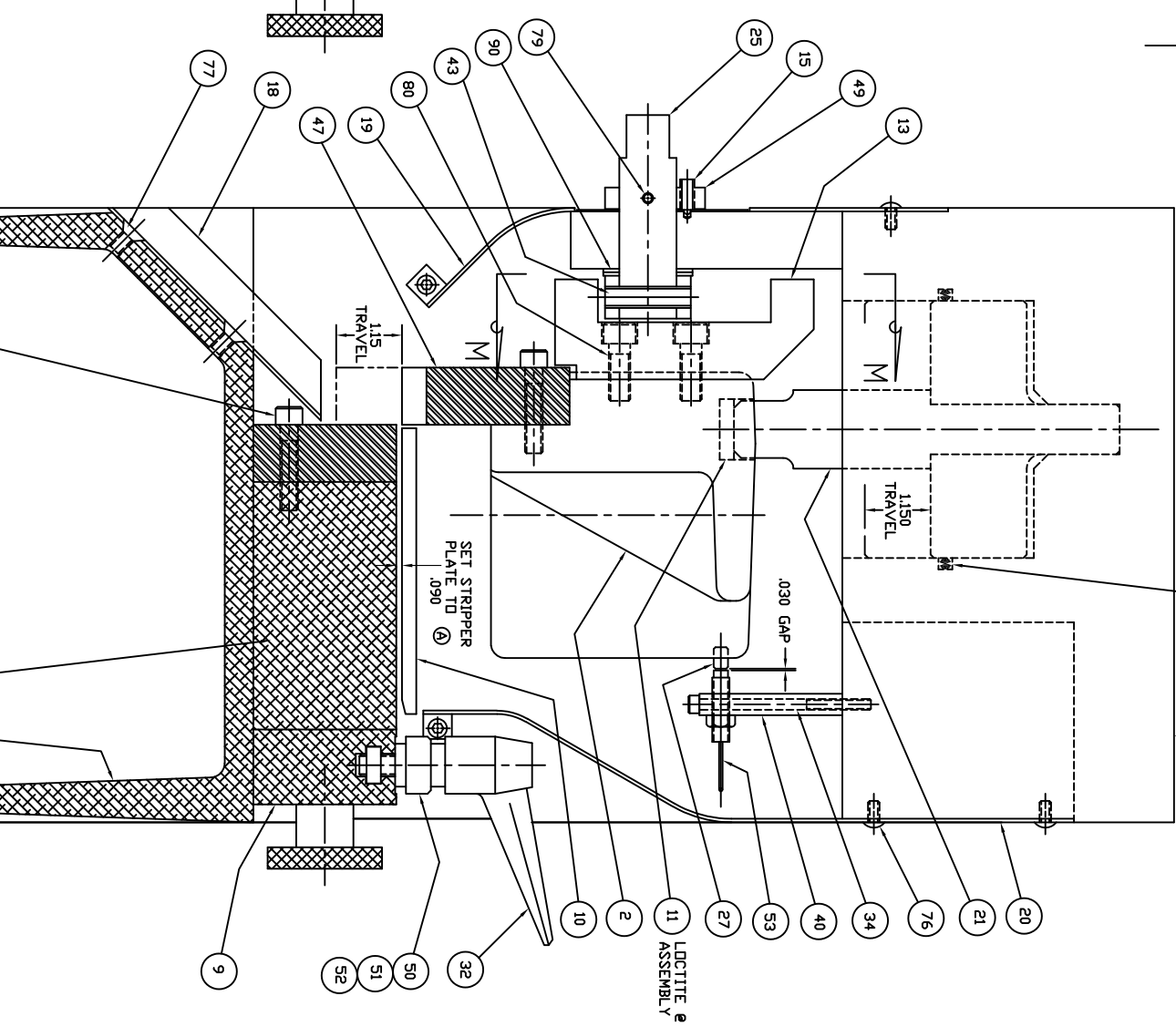
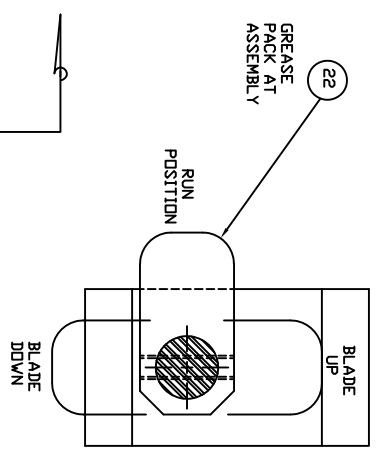
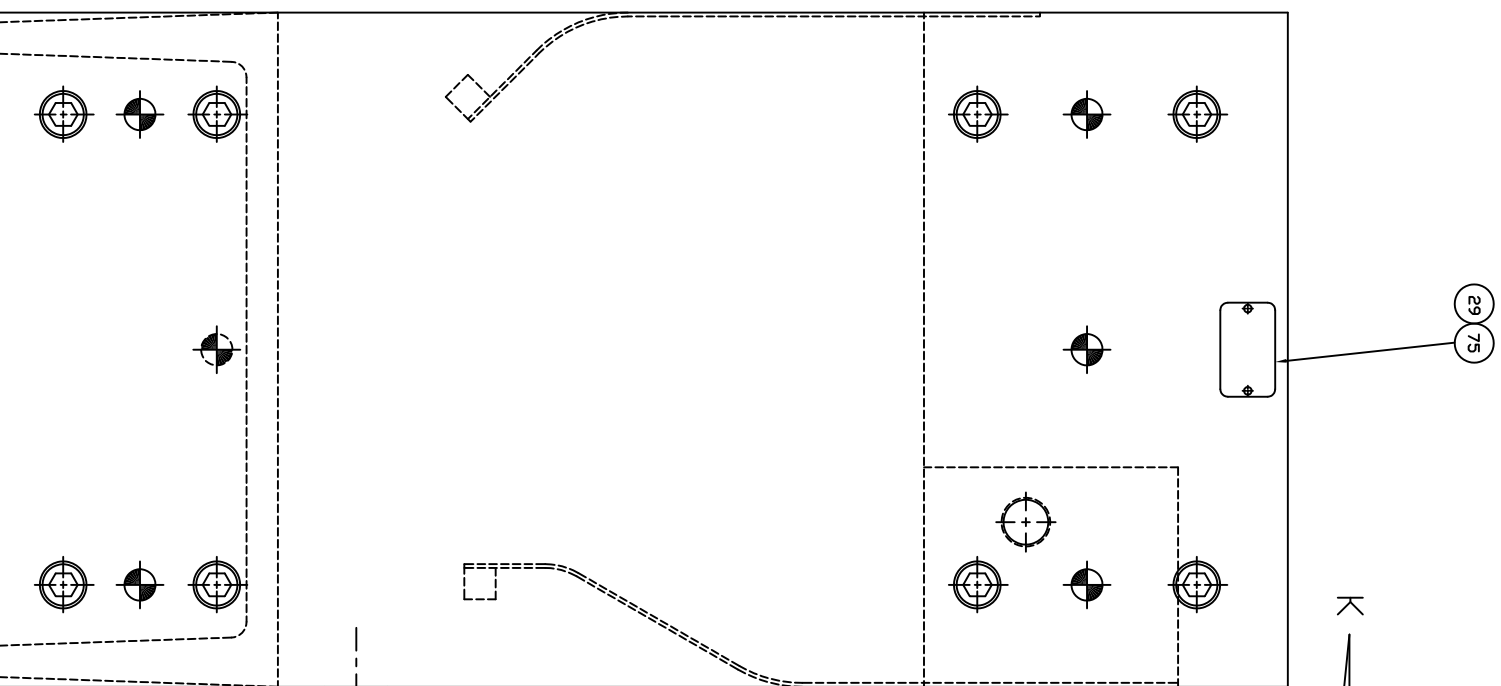
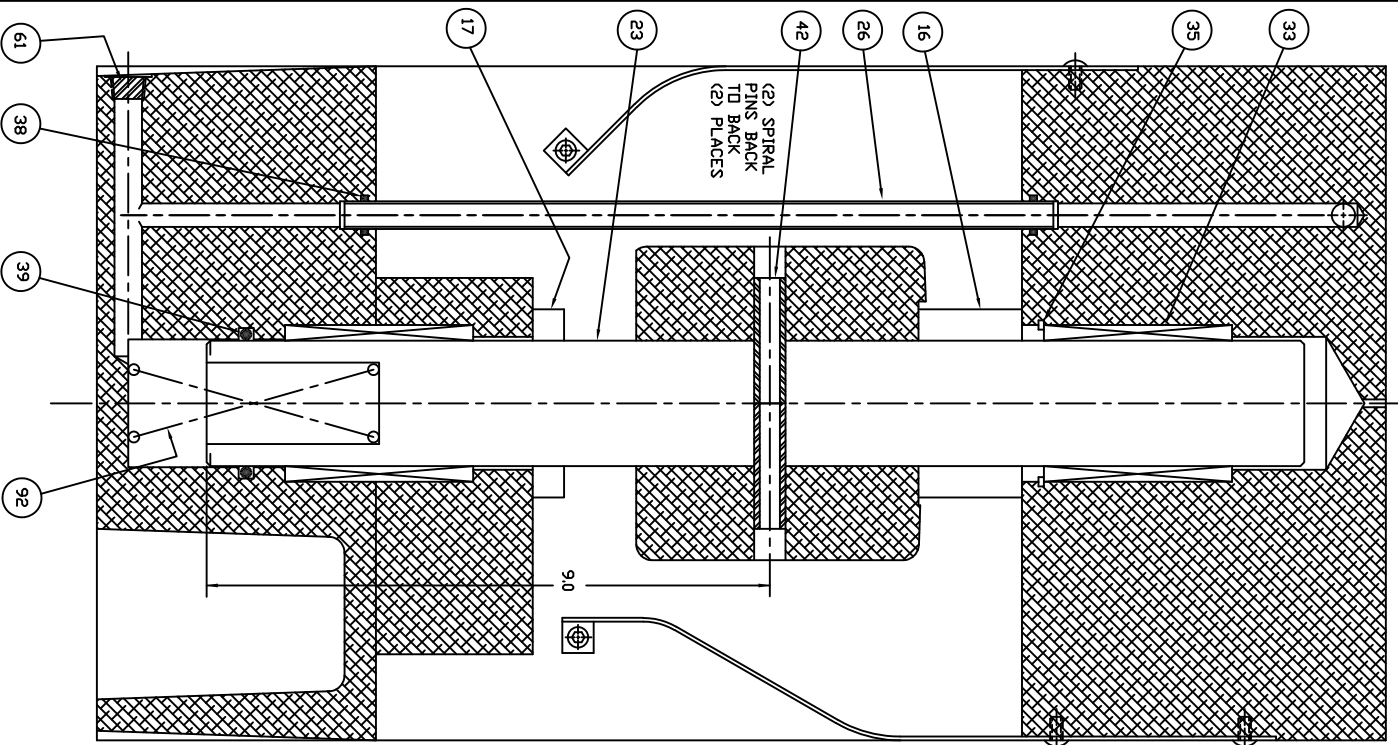
NOTE: FSC18S FDR SERVD C-T-L, CONTROL
VERSION 'C' - 24 V.D.C. VALVE, PNP SENSOR

SHEET 4 OF 5

REV	DATE	BY	CHKD	DESCRIPTION
1				ISSUED FOR FABRICATION
2				REVISED PER COMMENTS
3				REVISED PER COMMENTS
4				REVISED PER COMMENTS
5				REVISED PER COMMENTS

11300357-358

RAPID-AIR CORPORATION
ROCKFORD, IL • MADISON, SD
FSC18S CUTTER W/PNP
SENSOR FOR SERVD C-T-L



VIEW DD
FROM SHEET #1

SECTION CC
FROM SHEET #1

SECTION MM

SECTION FF

FROM SHEET #1

NOTE: FSC18S FOR SERVO C-T-L, CONTROL VERSION 'C' - 24 V.D.C. VALVE, PNP SENSOR

SHEET 5 OF 5

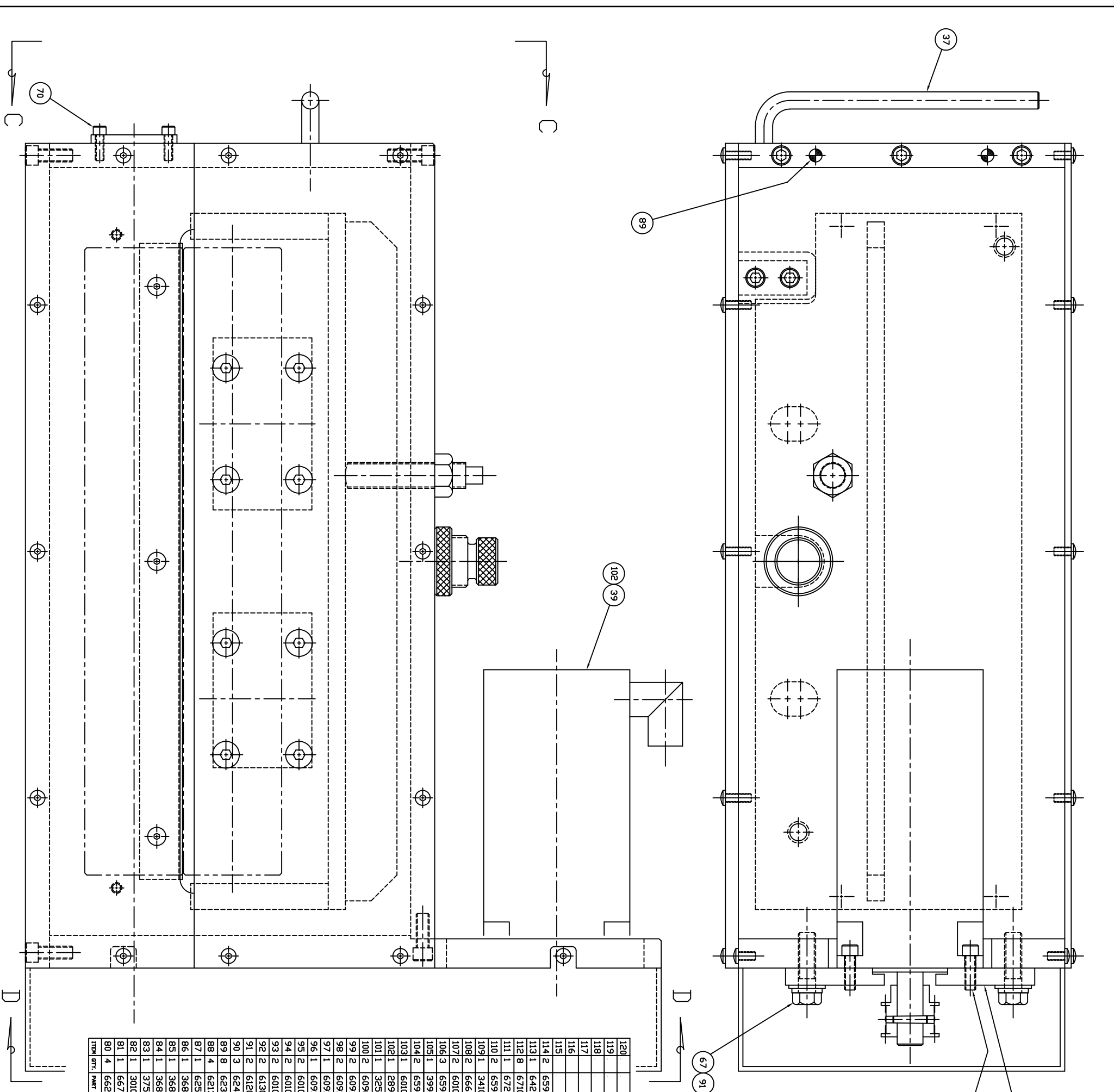
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3	REVISED			
4	REVISED			
5	REVISED			

REVISED	DATE	BY	CHKD
1	11/13/81	WJ	WJ
2	11/13/81	WJ	WJ
3	11/13/81	WJ	WJ
4	11/13/81	WJ	WJ
5	11/13/81	WJ	WJ

REVISED	DATE	BY	CHKD
1	11/13/81	WJ	WJ
2	11/13/81	WJ	WJ
3	11/13/81	WJ	WJ
4	11/13/81	WJ	WJ
5	11/13/81	WJ	WJ

11300357-358

E



ITEM QTY	PART NO.	DESCRIPTION
120		
119		
118		
117		
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115		
114	65908112	SHCS #8-32 X 1 1/8
113	64230010	BLACK POLY TUBE 1/4"
112	67100121	MALE CONNECTOR 1/4" PT TO 1/4" I.D.
111	67200001	MUFFLER
110	65920225	SHCS 1/4-20 X 2 1/4
109	34100338	SPACER
108	66612037	BHSCS #10-32 X 3/8
107	60108206	"O" RING
106	65906150	SHCS #6-32 X 1 1/2
105	39900175	INLET LABEL
104	65920125	SHCS 1/4-20 X 1 1/4
103	60108014	"O" RING
102	28900446	CENTROL ASSEMBLY
101	32500045	TAPER PIN INSTALLATION DRAWING
100	60900185	RETAINING RING
99	60910098	RETAINING RING
98	60910112	RETAINING RING
97	60910087	RETAINING RING
96	60910050	RETAINING RING
95	60108230	"O" RING
94	60108228	"O" RING
93	60108212	"O" RING
92	61300050	LOCK WASHER 1/2
91	61200034	FLAT WASHER 1/2
90	62429100	ROLL PIN
89	66337100	DOWEL PIN 3/8 X 1
88	66317150	SPIRAL PIN
87	62500006	TAPER PIN
86	36800013	KEY
85	36800006	KEY
84	36800021	KEY
83	37500117	SPRING
82	30100289	PISTON HOUSING
81	66700072	SET SCREW
80	66220037	SET SCREW

ITEM QTY	PART NO.	DESCRIPTION
79	66162200	SHOULDER SCREW
78	66137075	SHOULDER SCREW
77	36300004	GAUGE FITTING
76	65931075	SHCS 5/16-18 X 3/4
75	65936075	SHCS 3/8-16 X 3/4
74	66536100	BHSCS 3/8-16 X 1
73	66620050	BHSCS 1/4-20 X 1/2
72	66620075	BHSCS 1/4-20 X 3/4
71	69200027	VALVE
70	65920075	SHCS 1/4-20 X 3/4
69	66520062	FHSCS 1/4-20 X 5/8
68	65931100	SHCS 5/16-18 X 1
67	65853150	HEX BOLT 1/2-13 X 1 1/2
66	65936100	SHCS 3/8-16 X 1
65	66520050	FHSCS 1/4-20 X 1/2
64	66300250	DRIVE SCREW
63	39900051	S/N TAG
62	39900246	RAPID-AIR LOGO
61	68000024	REGULATOR
60	31500501	ENTRANCE GUIDE
59	31500500	EXIT GUIDE
58	68000026	GAUGE
57	31702137	REGULATOR RETAINING PLATE
56	34100236	GAUGE SPACER
55	31702113	GAUGE & REGULATOR PLATE
54	10900508	CASCADE ASSEMBLY
53	65102520	HEX NUT 1/4-20
52	65117516	JAM NUT 3/4-16
51	36100031	ADJUSTING SCREW LOCKNUT
50	36100078	ADJUSTING SCREW
49	36100104	POSITIVE STOP SCREW
48	64520022	THRUST WASHER
47	64520025	THRUST WASHER
46	64520008	THRUST WASHER
45	64510002	THRUST BEARING
44	64500057	NEEDLE BEARING
43	64500066	NEEDLE BEARING
42	64600049	BALL BEARING
41	64100046	DILITE BUSHING
40	64100075	DILITE BUSHING
39	69000045	MOTOR
38	36500045	CAM
37	36600036	CAM HANDLE
36	35500231	PISTON
35	31702112	MANIFOLD PLATE
34	31400550	PISTON COVER
33	31500499	ENTRANCE GUARD
32	31500498	LOWER EXIT GUARD
31	34100325	SPACER
30	34100381	SPACER
29	34100323	SPACER
28	34100322	SPACER
27	34100321	ROLLER SPACER
26	33900265	BEARING SLEEVE
25	32900858	ECCENTRIC SHAFT
24	32900861	PIVOT SHAFT
23	31500489	BELT COVER
22	32500046	TIMING BELT
21	32500036	BUSHING (FOR 32500029)
20	32500029	PULLEY (LOWER ROLL)
19	32500044	MOTOR PULLEY
18	32600233	UPPER IDLER SPUR GEAR
17		
16	32600292	UPPER ROLLER SPUR GEAR
15	32600235	LOWER ROLLER SPUR GEAR
14	34200389	UPPER ROLLER
13	34200388	LOWER ROLLER
12	30100290	BEARING HOUSING
11	30100292	PISTON HOUSING
10	31702500	PISTON HOUSING MOUNTING PLATE
9	31702115	GEAR SUPPORT PLATE
8	31702111	CAM PIVOT PLATE
7	21900262	ROLLER TOP PLATE ASSEMBLY
6	31702106	ROLLER SIDE PLATE
5	31702473	MOTOR MOUNTING PLATE
4	31702499	TOP PLATE
3	31702471	L.H. SIDE PLATE
2	31702470	R.H. SIDE PLATE
1	31702498	BOTTOM PLATE

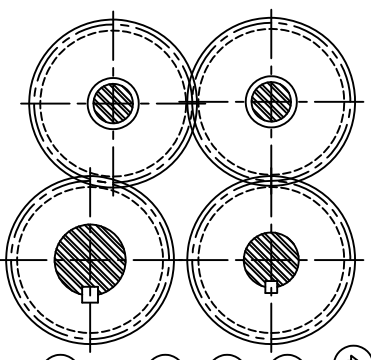
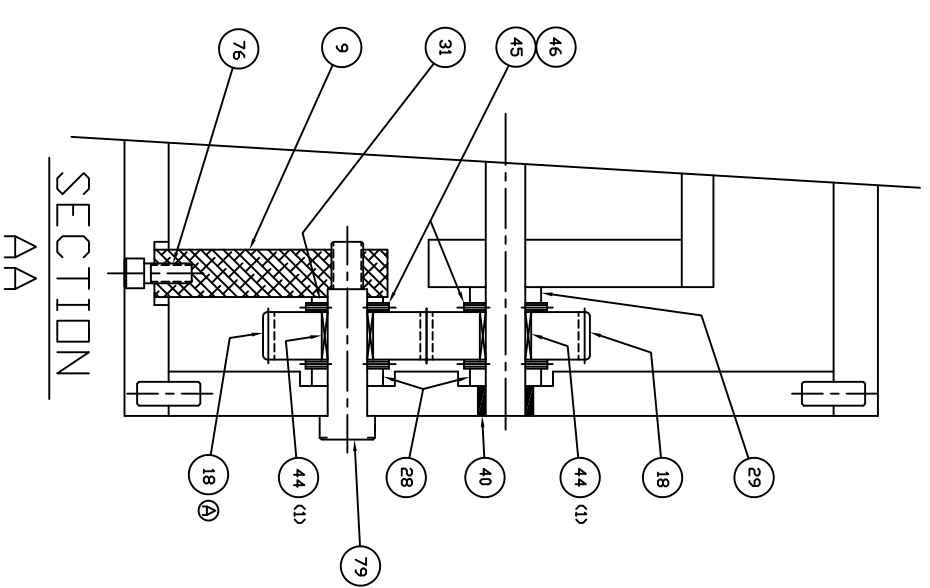
SHEET 1 OF 5

RAPID-AIR CORPORATION
ROCKFORD, IL • MADISON, SD

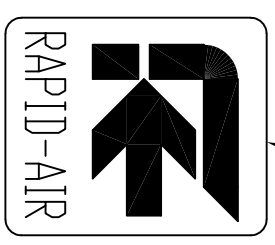
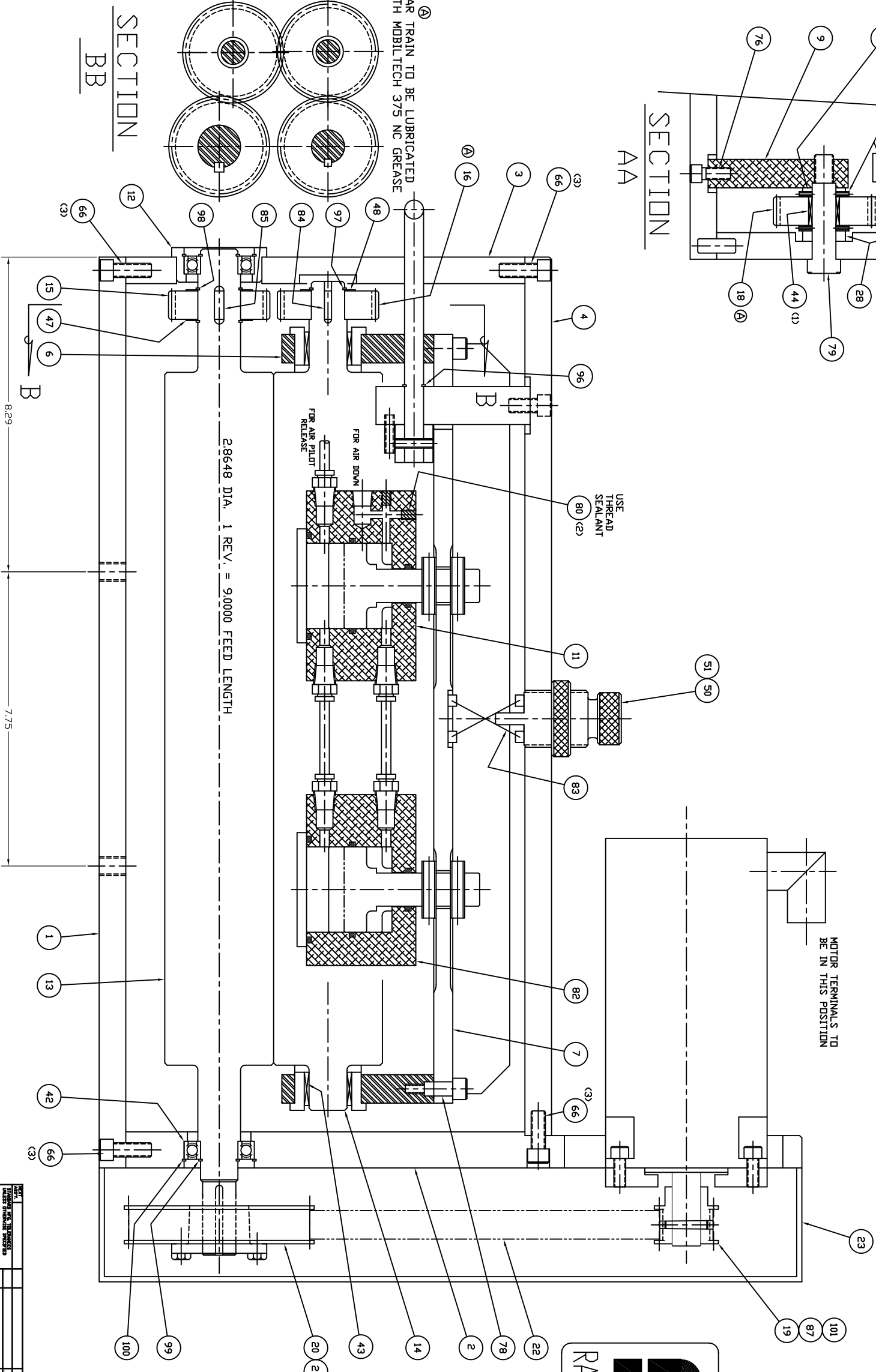
PART NO. 2181X V/AIR PILOT RELEASE & AIR DOWN

DATE: 10-13-2014

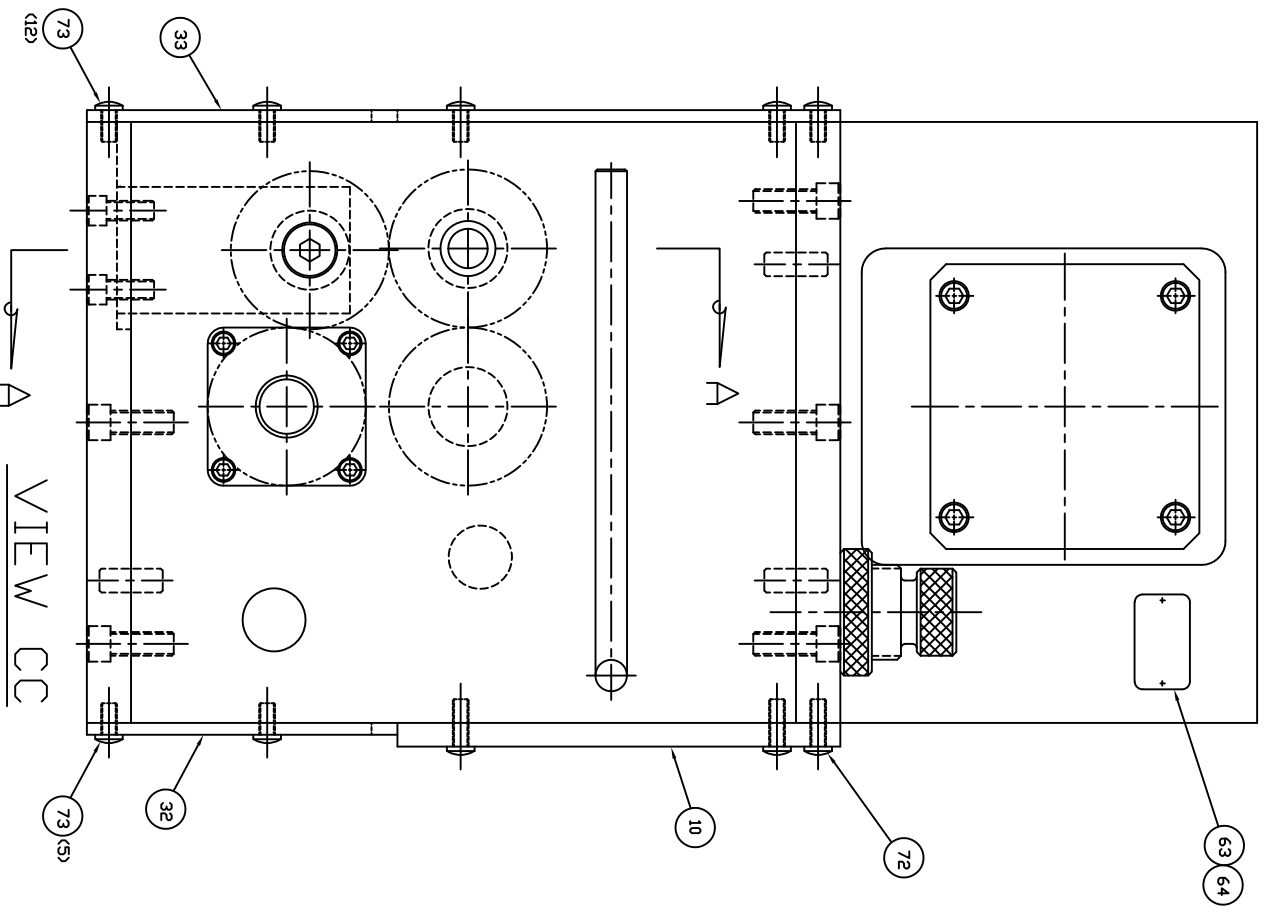
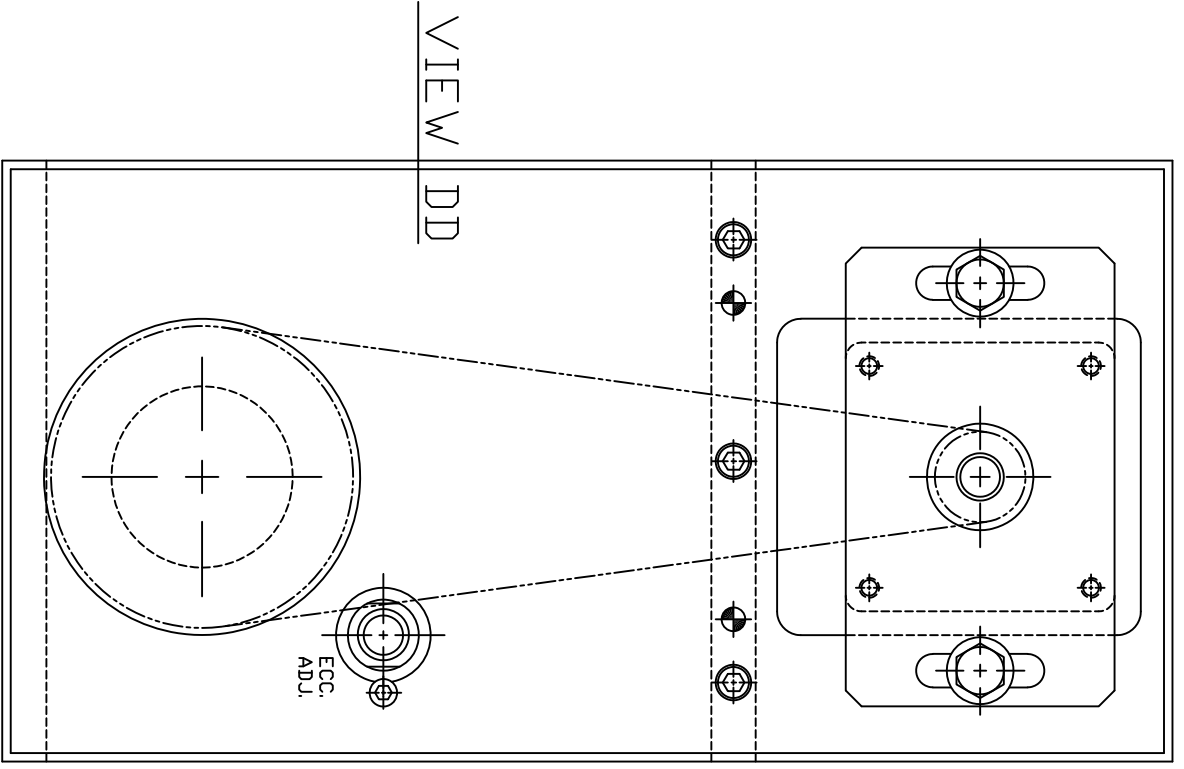
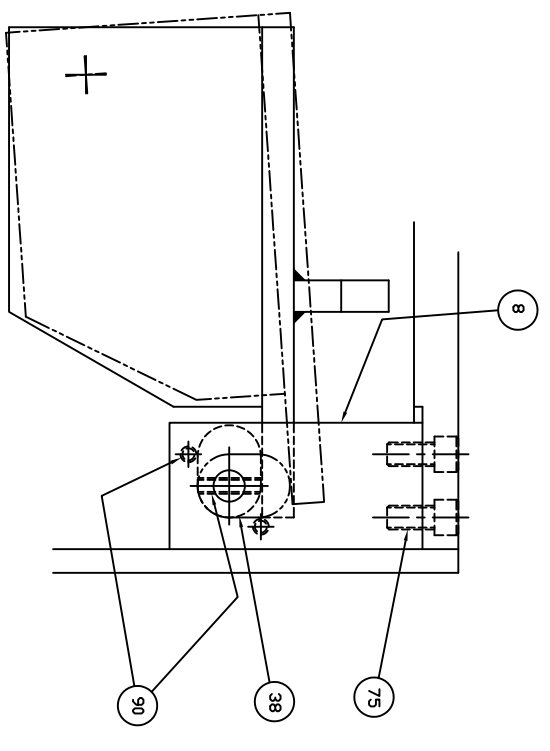
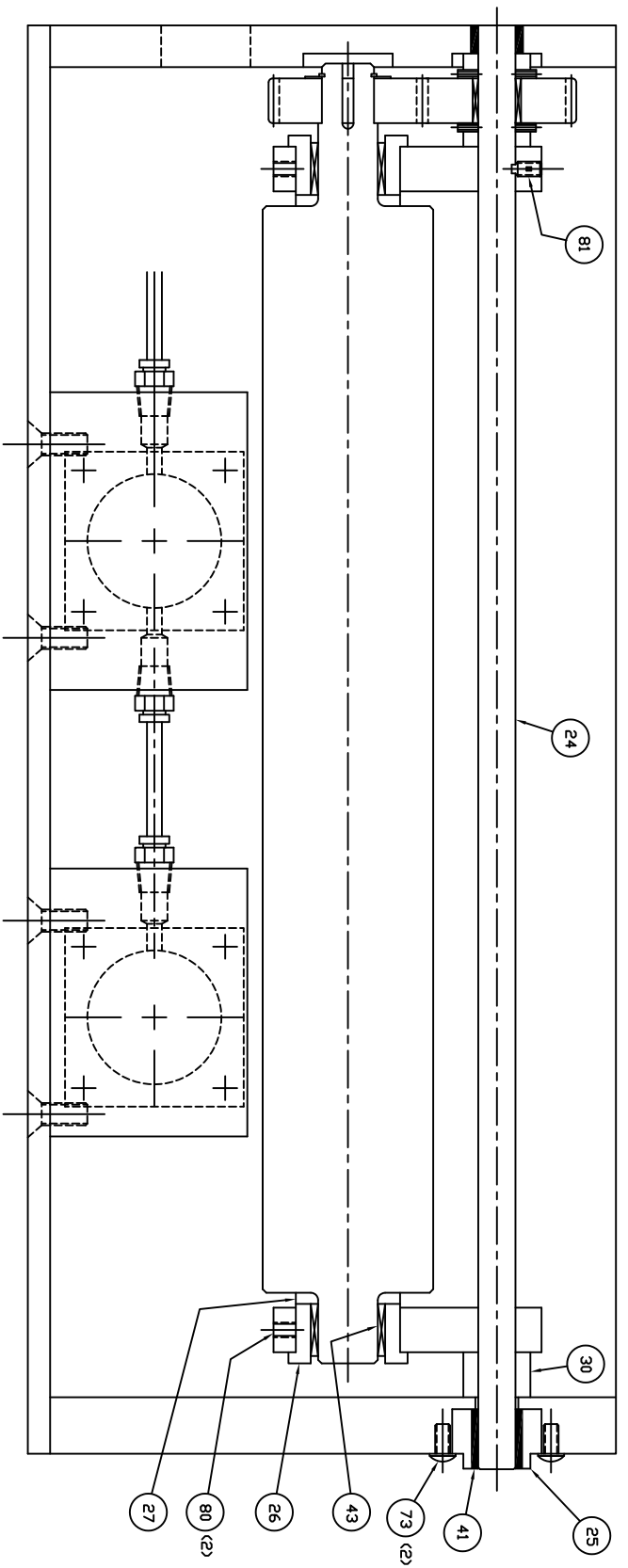
REV: 13000623



④ GEAR TRAIN TO BE LUBRICATED WITH MOBILTECH 375 NC GREASE



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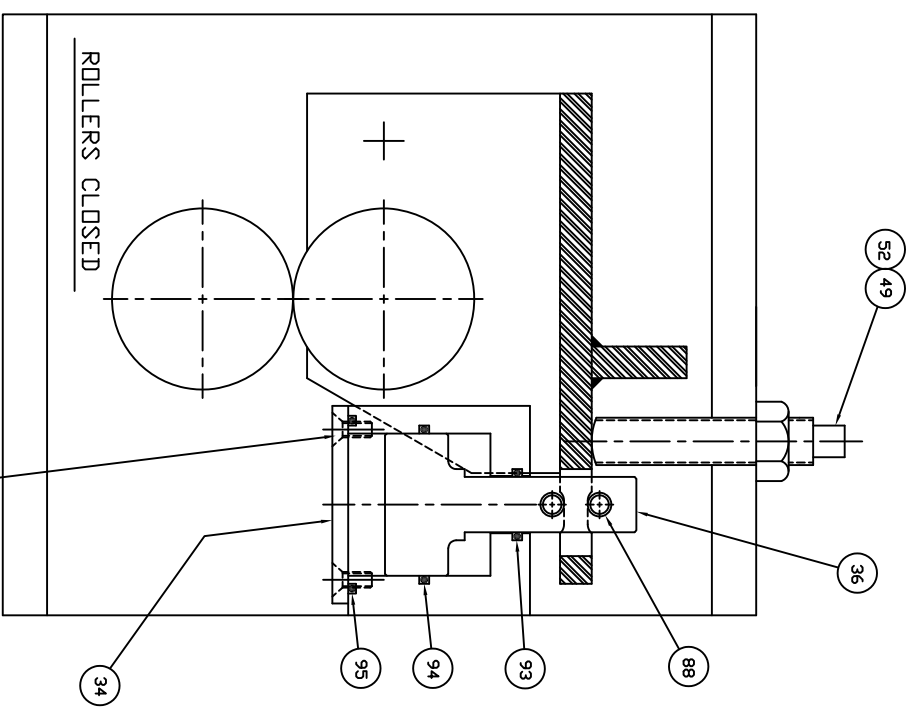
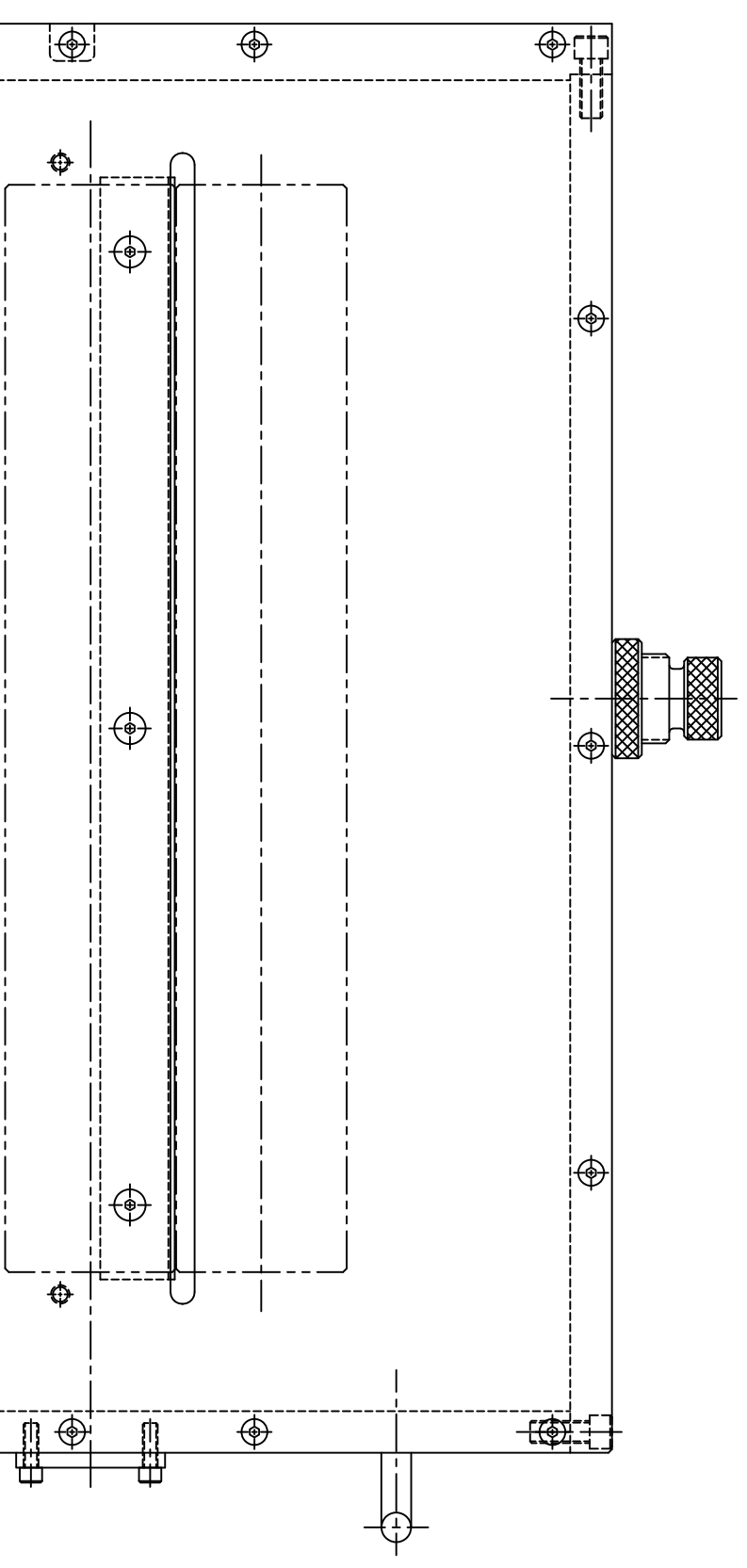
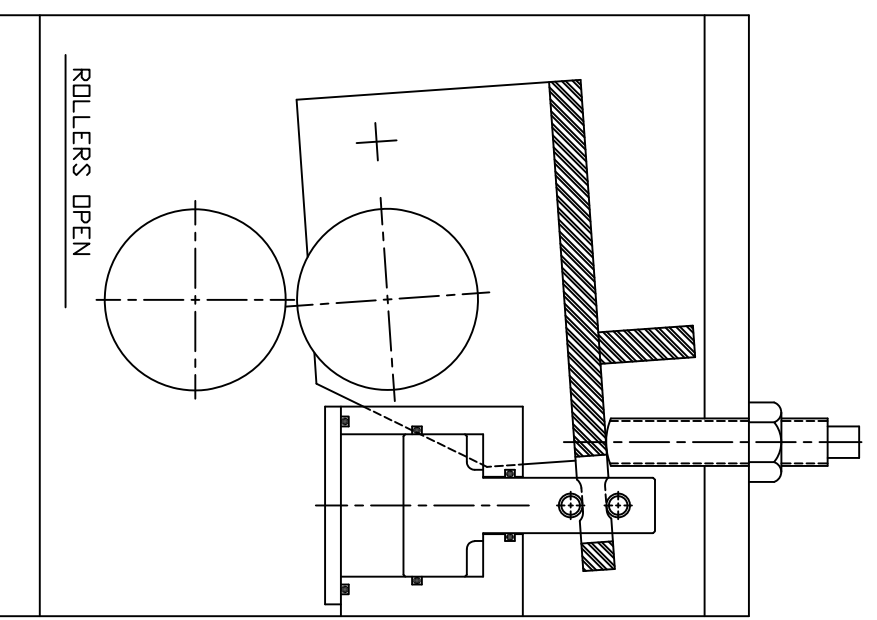
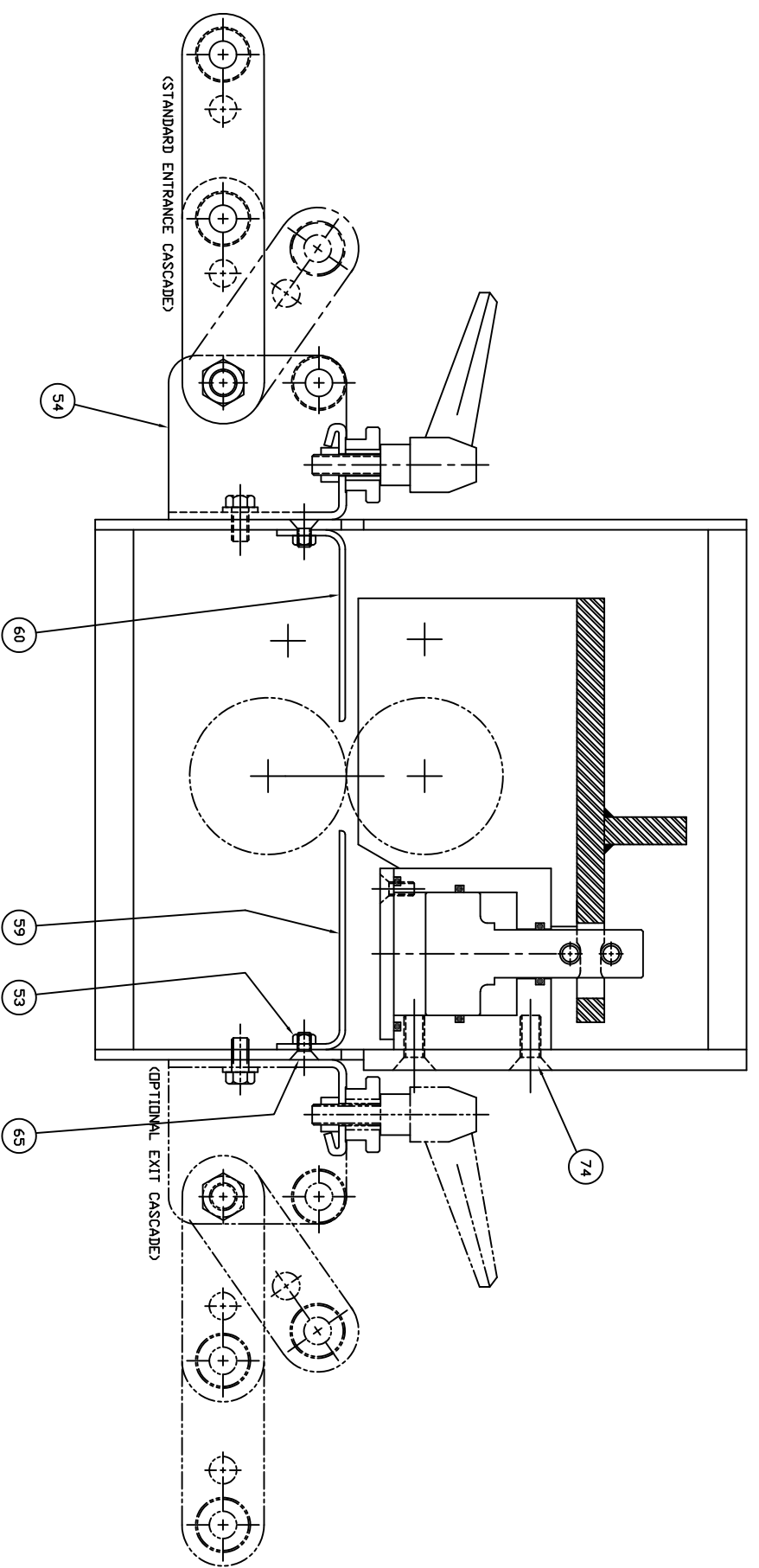
VIEW CC

VIEW DD

SHEET 3 OF 5

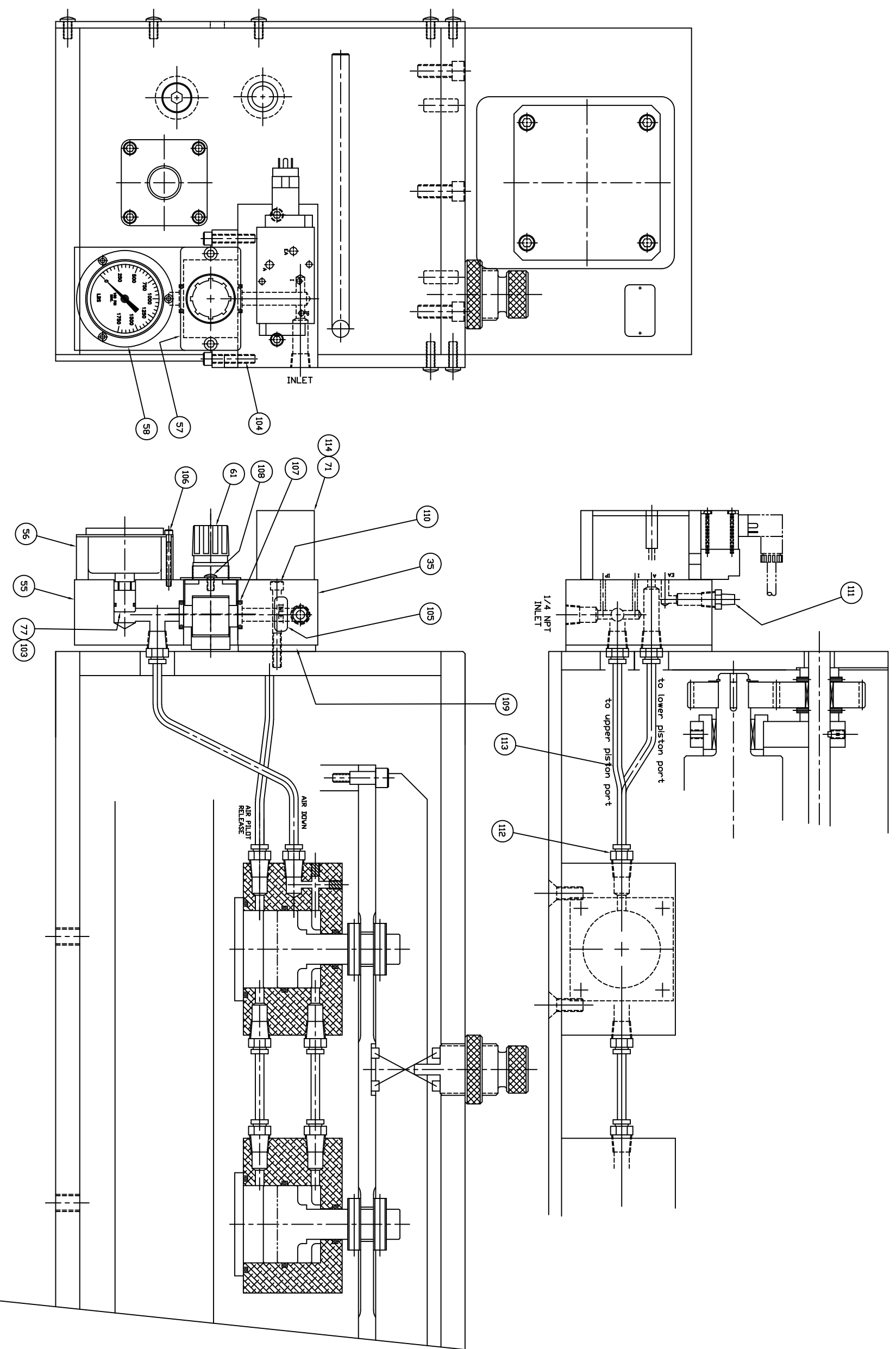
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A	10-13-2014	DU		ECN #3724
B	10-13-2014	DU		REVISED DRAWING
C	10-13-2014	DU		REVISED DRAWING
D	10-13-2014	DU		REVISED DRAWING
E	10-13-2014	DU		REVISED DRAWING

RAPID-AIR CORPORATION
 ROCKFORD, IL • WADSWORTH, SD
 & AIR DOWN



REV	DATE	BY	CHKD	DESCRIPTION
1	10-13-2014	JLU		ISSUED FOR PRODUCTION
2	10-13-2014	JLU		REVISION

RAPID-AIR CORPORATION
 ROCKFORD, IL • WADSWORTH, SD
 218TX V/AIR PILOT RELEASE
 & AIR DOWN

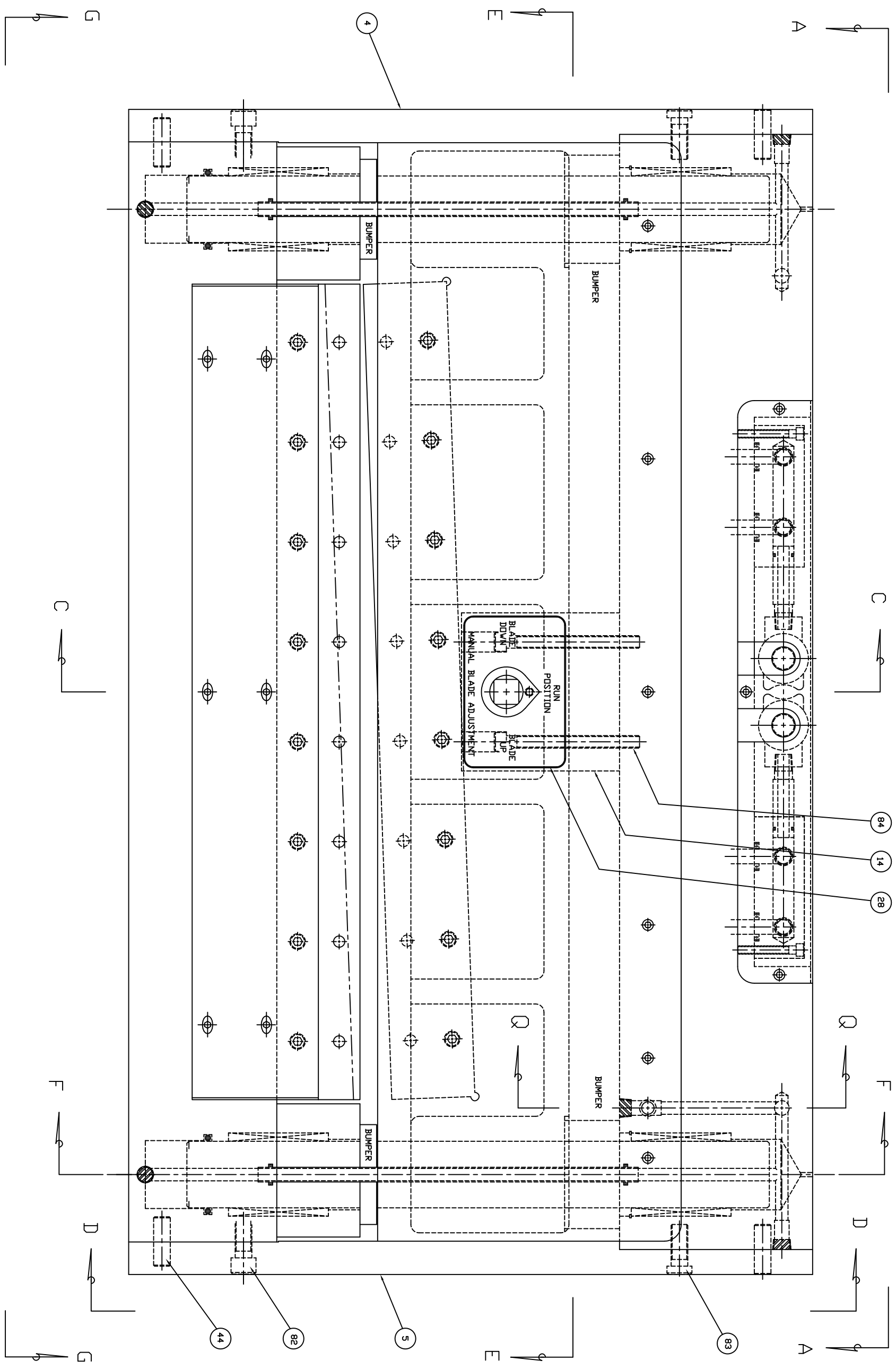


REV	DATE	BY	CHKD	DESCRIPTION
A	10-13-2014	CON #3724		REVISED

SHEET 5 OF 5

RAPID-AIR CORPORATION
 ROCKFORD, IL • WADSWORTH, SD
 2181X V/AIR PILOT RELEASE
 & AIR DOWN

E



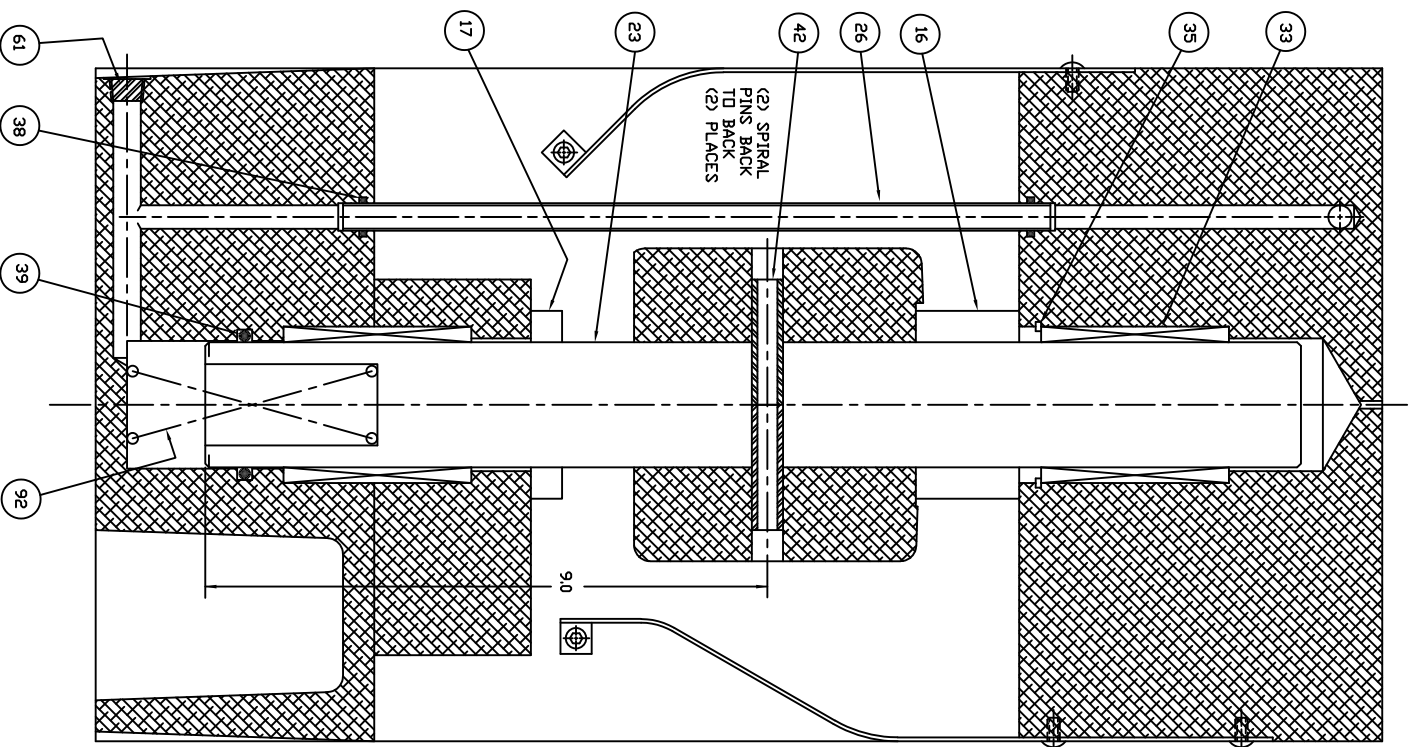
NOTE: FSC24S FOR SERV0 C-T-L, CONTROL
 VERSION 'C' - 24 V.D.C. VALVE, PNP SENSOR

SHEET 1 OF 6

RAPID-AIR CORPORATION ROCKFORD, IL • MADISON, SD FSC24S CUTTER W/PNP SENSOR FOR SERV0 C-T-L		PART NO. 11300382 REV. 001 DATE 01/13/03
DRAWN BY: J. J. BROWN CHECKED BY: J. J. BROWN APPROVED BY: J. J. BROWN	PART NO. 11300382 REV. 001 DATE 01/13/03	PART NO. 11300382 REV. 001 DATE 01/13/03

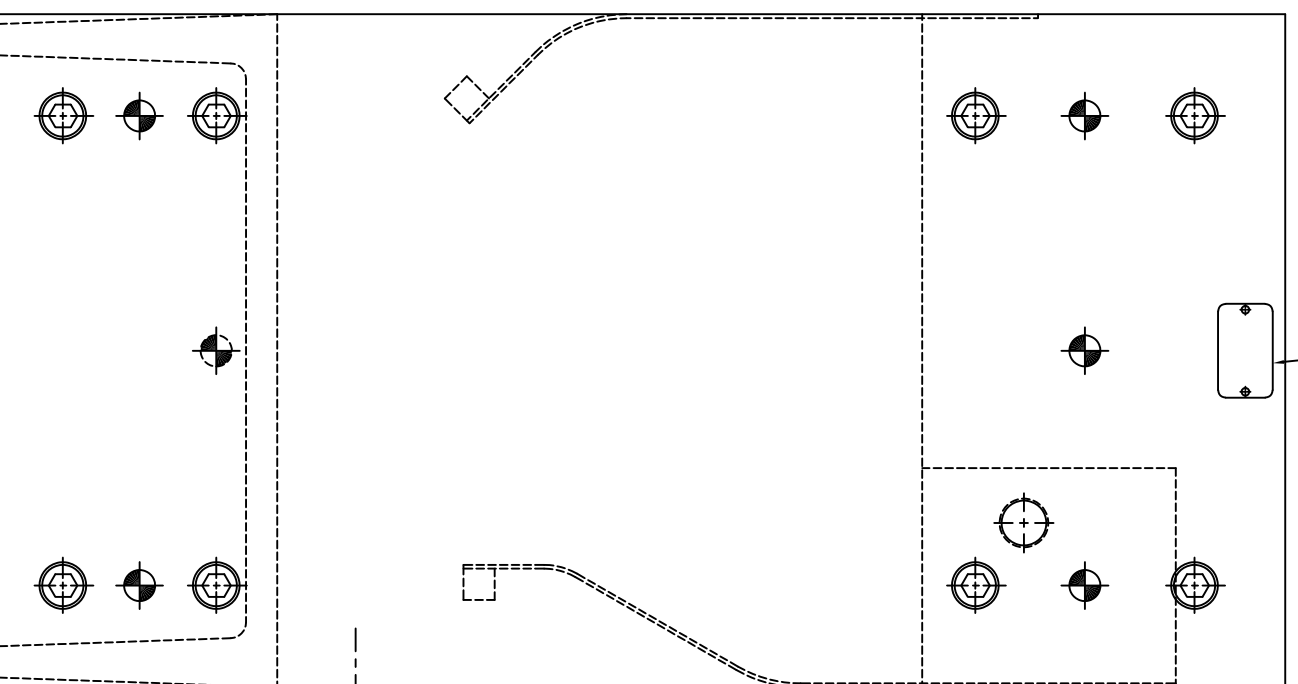
11300359-360

NOTE: FSC24S FOR SERVO C-T-L, CONTROL
VERSION 'C' - 24 V.D.C. VALVE, PNP SENSOR



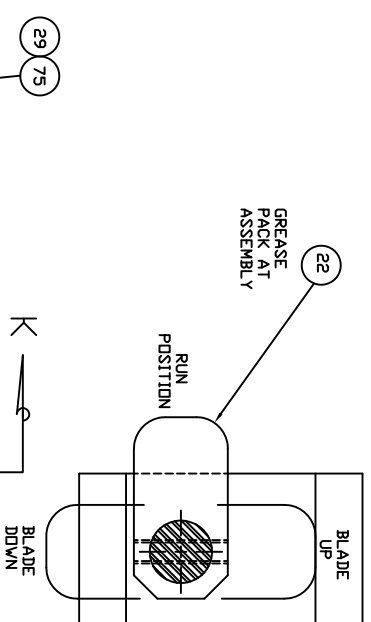
SECTION FF

FROM SHEET #1

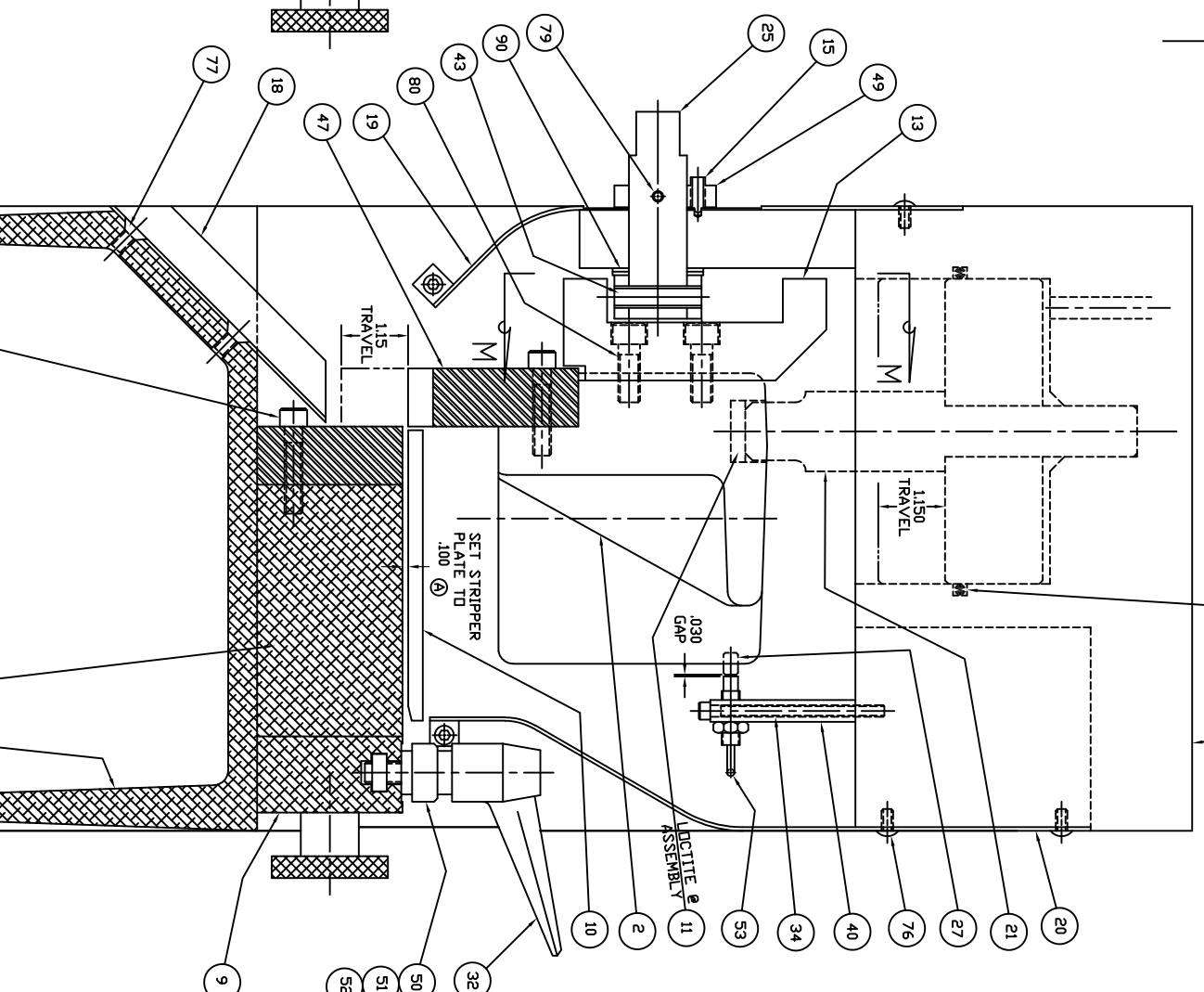


VIEW DD

FROM SHEET #1



SECTION MM



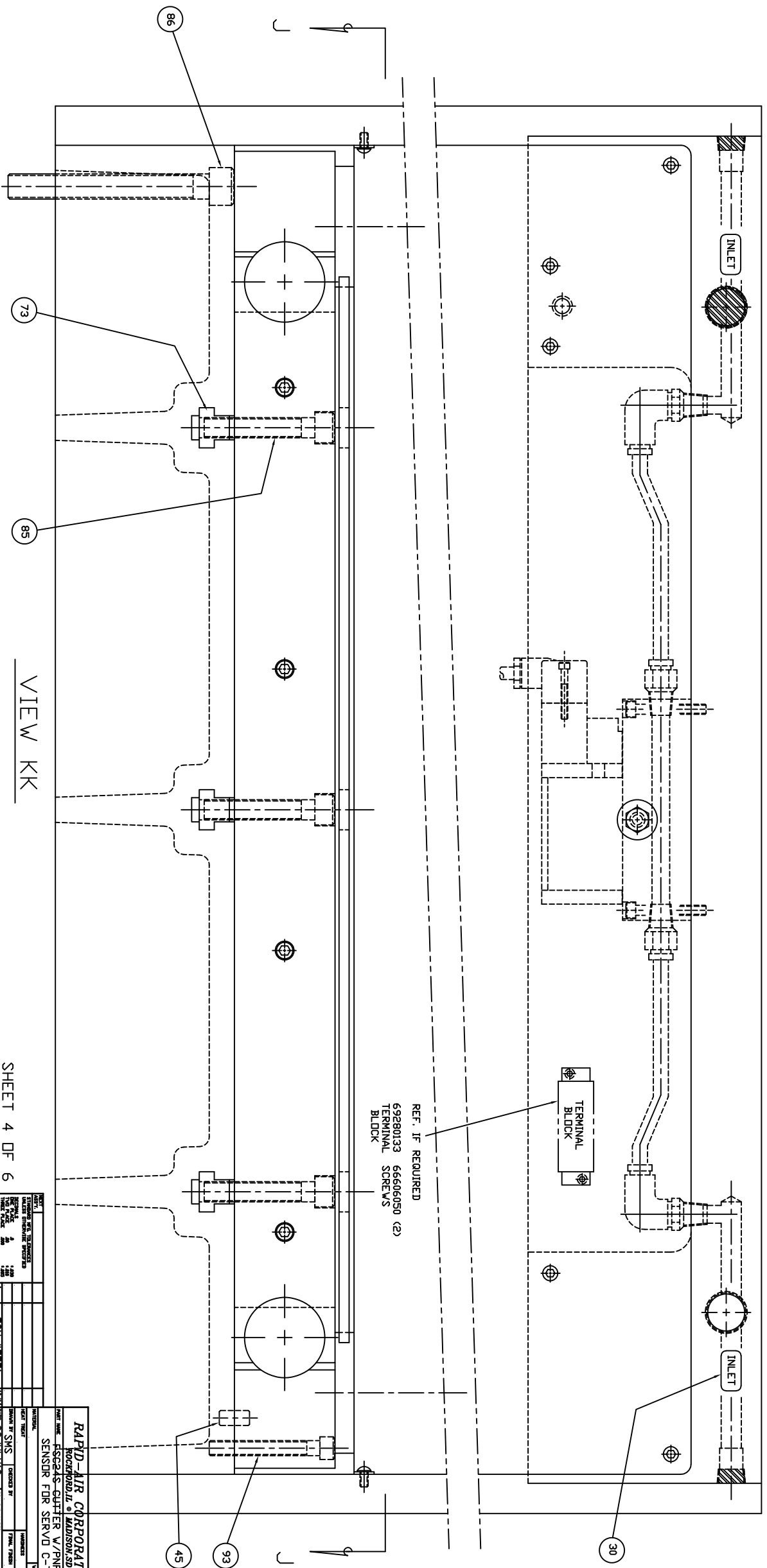
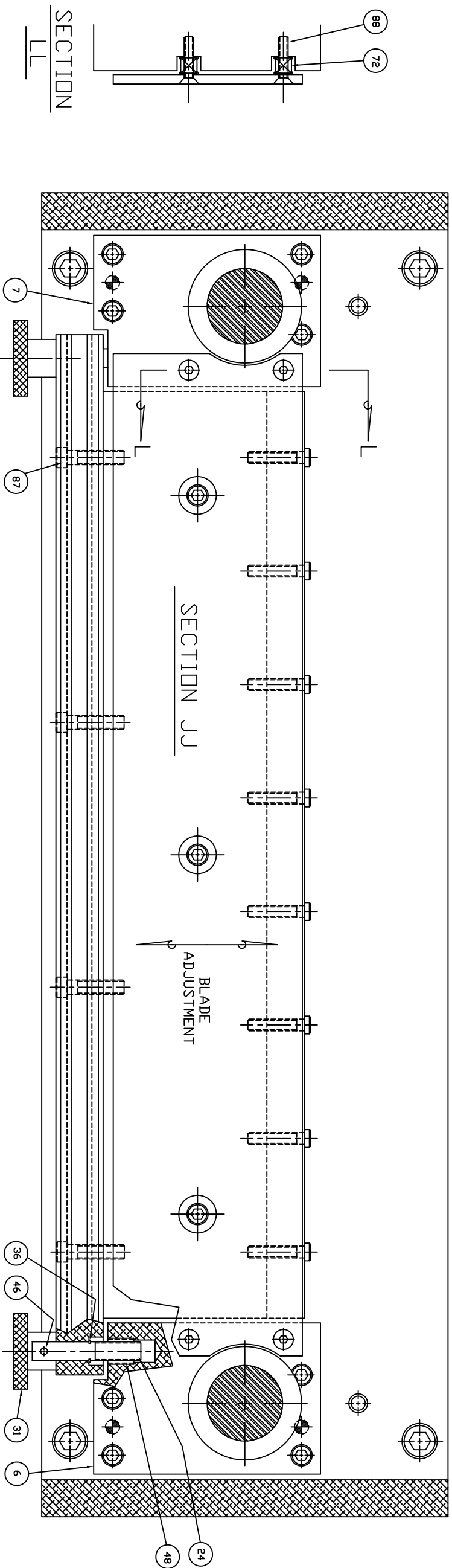
SECTION CC

FROM SHEET #1

SHEET 3 OF 6

RAPID-AIR CORPORATION ROCKFORD, ILL. • MADISON, SD	
PART NAME: FSC24S CUTTER W/PNP SENSOR FOR SERVO C-T-L	
DRAWN BY: SMS CHECKED BY:	DATE: 23 JUL 73 SHEET FULL:
PART NUMBER:	11300382
REV:	E

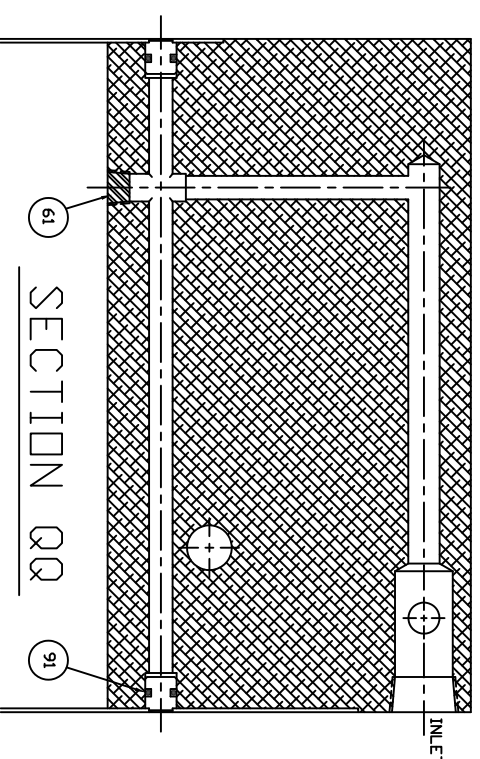
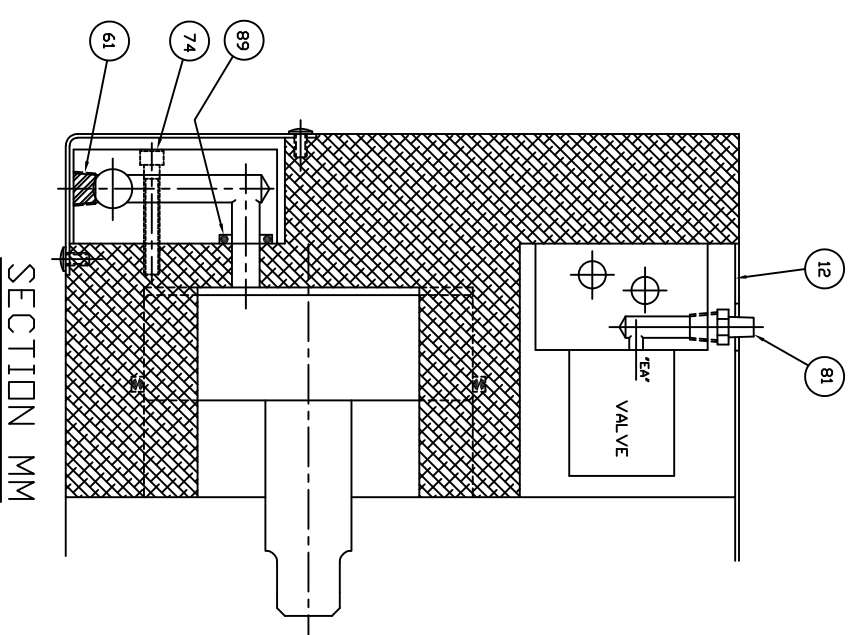
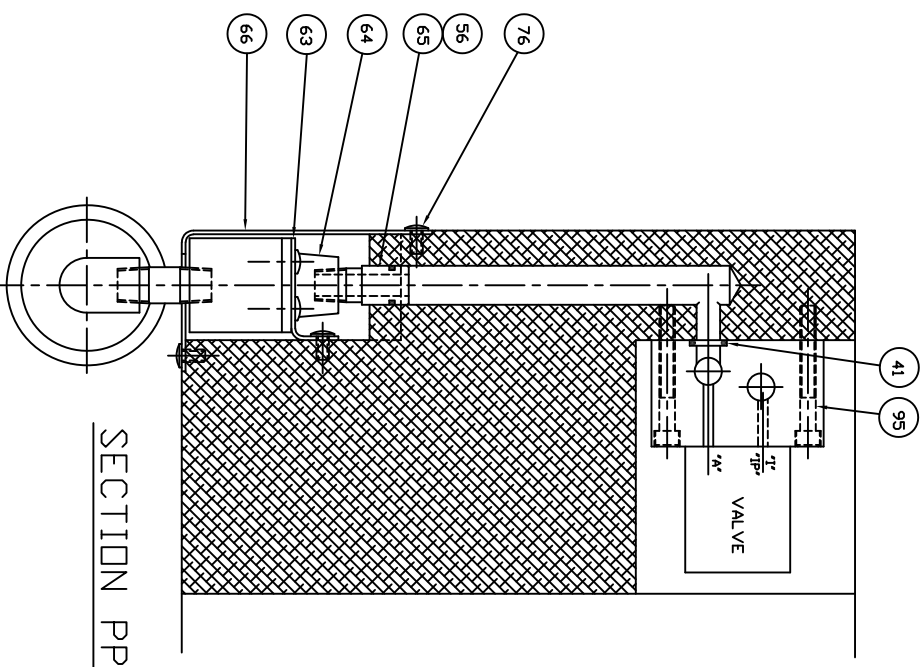
NOTE: FSC24S FOR SERVO C-T-L, CONTROL
VERSION 'C' - 24 V.D.C. VALVE, PNP SENSOR



RAPID-AIR CORPORATION Rockford, IL • Madison, SD	
FSC24S QUATTRO V/PNP SENSOR FOR SERVO C-T-L	
PART NO. 11300359-360 REV. 1	DATE 01/15/82 DRAWN BY SWS CHECKED BY ENGINEER APPROVED BY
ECN #3571 DATE 03/23/83	PART NO. 11300382 REV. 1

80	4	65936100	SHCS 3/8-16 X 1
79	1	62419150	ROLL PIN 3/16 X 1 1/2
78	16	65931150	SHCS 5/16-18 X 1 1/2
77	6	66520050	FHSCS 1/4-20 X 1/2
76	25	66612037	BHSCS #10-32 X 3/8
75	2	66300250	DRIVE SCREW
74	6	65920175	SHCS 1/4-20 X 1 3/4
73	3	65500006	T-SLOT NUT
72	4	37500013	SPRING
71	2	67200007	MUFFLER
70	2	67100141	PIPE NIPPLE
69	2	67100142	90° ELBOW
68	1	31702186	QUICK EXHAUST MANIFOLD RH
67	1	31702185	QUICK EXHAUST MANIFOLD LH
66	1	31500441	QUICK EXHAUST COVER
65	2	36300009	QUICK EXHAUST FITTING
64	2	68000000	QUICK EXHAUST
63	2	31900641	QUICK EXH. MFG. BRACKET
62	2	63130375	PIPE PLUG 3/8 NPT
61	10	63130250	PIPE PLUG 1/4 NPT
60	1	63130750	PIPE PLUG 3/4 NPT
59	1	64230011	TUBING
58	2	67100122	MALE CONNECTOR
57	2	67100118	90° ELBOW
56	4	60108014	*O* RING
55	2	69200032	MAC VALVE 24 V.D.C.
54	2	69280240	VALVE PLUG
53	1	69100348	PROX. SW. PNP
52	2	36200023	STOCK GUIDE NUT
51	2	34200159	STOCK GUIDE ROLLER
50	2	33900237	ROLLER SLEEVE
49	1	33900238	POINTER SLEEVE
48	2	65600005	INSERT
47	2	32000009	BLADE
46	2	62418100	ROLL PIN
45	4	62337075	DDVEL PIN
44	12	62250150	PULL DDVEL
43	1	62437150	ROLL PIN
42	4	62150200	SPIRAL PIN
41	2	60108110	*O* RING
40	1	31701623	SWITCH MOUNTING PLATE
39	2	60108329	*O* RING
38	4	60108111	*O* RING
37	4	60108355	*O* RING
36	2	60910050	RETAINING RING
35	2	60900250	RETAINING RING
34	2	65912300	SHCS #10-32 X 3
33	4	64100052	BUSHING
32	2	36600020	HANDLE
31	2	36700038	KNOB
30	2	39900175	INLET LABEL
29	1	39900051	NAMEPLATE
28	1	39900239	BLADE ADJUST LABEL
27	1	62325050	DDVEL PIN
26	2	34400315	AIR TUBE
25	1	32900533	CAM SHAFT
24	2	32900532	ADJUSTING SHAFT
23	2	32900531	GUIDE SHAFT
22	1	36500032	CAM
21	4	25500074	PISTON
20	1	21900127	REAR GUARD ASSEMBLY
19	1	21900126	FRONT GUARD ASSEMBLY
18	1	31500343	SCRAP CHUTE
17	2	35900042	LOWER BUMPER
16	2	35900041	UPPER BUMPER
15	1	69400052	SPRING PLUNGER
14	1	31701444	CAM SHAFT MOUNTING PLATE
13	1	31701443	CAM ACTUATING PLATE
12	1	31702184	MANIFOLD PLATE
11	4	31701441	PISTON WEAR PLATE
10	1	31701440	STRIPPER PLATE
9	1	31701439	TEE SLOT PLATE
8	1	31701438	BLADE SUPPORT PLATE
7	1	31701437	RH BEARING PLATE
6	1	31701436	LH BEARING PLATE
5	1	31701435	RH SIDE PLATE
4	1	31701434	LH SIDE PLATE
3	1	30100301	PISTON HOUSING
2	1	30100148	BLADE HOUSING
1	1	30100147	BASE HOUSING

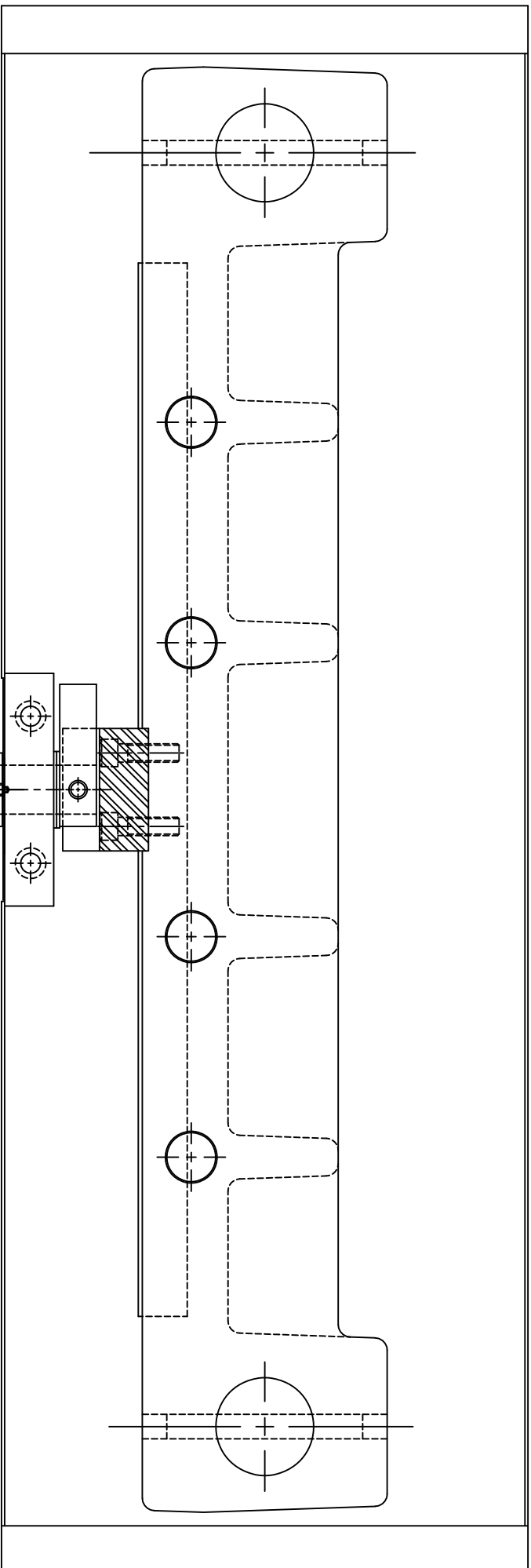
97			
96	2	36300011	QUICK EXHAUST FITTING
95	4	65920200	SHCS 1/4-20 X 2
94	2	65908112	SHCS #8-32 X 1 1/8
93	8	65936275	SHCS 3/8-16 X 2 3/4
92	2	37500124	SPRING
91	2	60108109	*O* RING
90	2	64520017	THRUST WASHER
89	4	60108207	*O* RING
88	4	66520128	FHSCS 1/4-20 X 1 1/4
87	4	65936150	SHCS 3/8-16 X 1 1/2
86	4	65961500	SHCS 5/8-11 X 5
85	3	65953275	SHCS 1/2-13 X 2 3/4
84	2	65936400	SHCS 3/8-16 X 4
83	8	66700054	LDW SHCS 1/2-13 X 1 1/4
82	8	65953150	SHCS 1/2-13 X 1 1/2
81	1	67200001	MUFFLER



NOTE: FSC24S FOR SERVO C-T-L, CONTROL
VERSION 'C' - 24 V.D.C. VALVE, PNP SENSOR

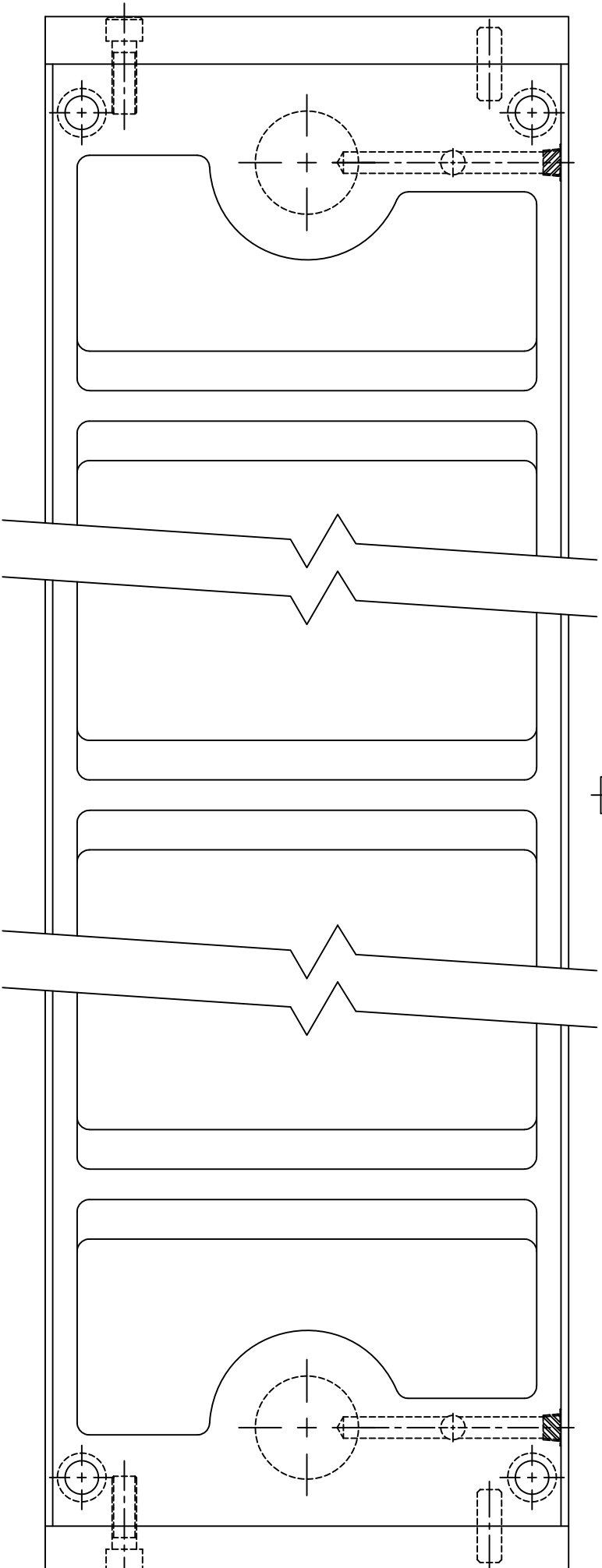
REV	DATE	BY	CHKD	DESCRIPTION
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2				REVISED TO ADD PNP SENSOR OPTION
3				REVISED TO ADD C-T-L OPTION
4				REVISED TO ADD SERVO OPTION
5				REVISED TO ADD 24VDC VALVE OPTION
6				REVISED TO ADD PNP SENSOR OPTION
7				REVISED TO ADD C-T-L OPTION
8				REVISED TO ADD SERVO OPTION
9				REVISED TO ADD 24VDC VALVE OPTION
10				REVISED TO ADD PNP SENSOR OPTION
11				REVISED TO ADD C-T-L OPTION
12				REVISED TO ADD SERVO OPTION
13				REVISED TO ADD 24VDC VALVE OPTION
14				REVISED TO ADD PNP SENSOR OPTION
15				REVISED TO ADD C-T-L OPTION
16				REVISED TO ADD SERVO OPTION
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18				REVISED TO ADD PNP SENSOR OPTION
19				REVISED TO ADD C-T-L OPTION
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25				REVISED TO ADD 24VDC VALVE OPTION
26				REVISED TO ADD PNP SENSOR OPTION
27				REVISED TO ADD C-T-L OPTION
28				REVISED TO ADD SERVO OPTION
29				REVISED TO ADD 24VDC VALVE OPTION
30				REVISED TO ADD PNP SENSOR OPTION
31				REVISED TO ADD C-T-L OPTION
32				REVISED TO ADD SERVO OPTION
33				REVISED TO ADD 24VDC VALVE OPTION
34				REVISED TO ADD PNP SENSOR OPTION
35				REVISED TO ADD C-T-L OPTION
36				REVISED TO ADD SERVO OPTION
37				REVISED TO ADD 24VDC VALVE OPTION
38				REVISED TO ADD PNP SENSOR OPTION
39				REVISED TO ADD C-T-L OPTION
40				REVISED TO ADD SERVO OPTION
41				REVISED TO ADD 24VDC VALVE OPTION
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44				REVISED TO ADD SERVO OPTION
45				REVISED TO ADD 24VDC VALVE OPTION
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49				REVISED TO ADD 24VDC VALVE OPTION
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55				REVISED TO ADD C-T-L OPTION
56				REVISED TO ADD SERVO OPTION
57				REVISED TO ADD 24VDC VALVE OPTION
58				REVISED TO ADD PNP SENSOR OPTION
59				REVISED TO ADD C-T-L OPTION
60				REVISED TO ADD SERVO OPTION
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62				REVISED TO ADD PNP SENSOR OPTION
63				REVISED TO ADD C-T-L OPTION
64				REVISED TO ADD SERVO OPTION
65				REVISED TO ADD 24VDC VALVE OPTION
66				REVISED TO ADD PNP SENSOR OPTION
67				REVISED TO ADD C-T-L OPTION
68				REVISED TO ADD SERVO OPTION
69				REVISED TO ADD 24VDC VALVE OPTION
70				REVISED TO ADD PNP SENSOR OPTION
71				REVISED TO ADD C-T-L OPTION
72				REVISED TO ADD SERVO OPTION
73				REVISED TO ADD 24VDC VALVE OPTION
74				REVISED TO ADD PNP SENSOR OPTION
75				REVISED TO ADD C-T-L OPTION
76				REVISED TO ADD SERVO OPTION
77				REVISED TO ADD 24VDC VALVE OPTION
78				REVISED TO ADD PNP SENSOR OPTION
79				REVISED TO ADD C-T-L OPTION
80				REVISED TO ADD SERVO OPTION
81				REVISED TO ADD 24VDC VALVE OPTION
82				REVISED TO ADD PNP SENSOR OPTION
83				REVISED TO ADD C-T-L OPTION
84				REVISED TO ADD SERVO OPTION
85				REVISED TO ADD 24VDC VALVE OPTION
86				REVISED TO ADD PNP SENSOR OPTION
87				REVISED TO ADD C-T-L OPTION
88				REVISED TO ADD SERVO OPTION
89				REVISED TO ADD 24VDC VALVE OPTION
90				REVISED TO ADD PNP SENSOR OPTION
91				REVISED TO ADD C-T-L OPTION
92				REVISED TO ADD SERVO OPTION
93				REVISED TO ADD 24VDC VALVE OPTION
94				REVISED TO ADD PNP SENSOR OPTION
95				REVISED TO ADD C-T-L OPTION
96				REVISED TO ADD SERVO OPTION
97				REVISED TO ADD 24VDC VALVE OPTION

RAPID-AIR CORPORATION
ROCKFORD, IL • MADISON, WI



SECTION EE

FROM SHEET #1



VIEW GG

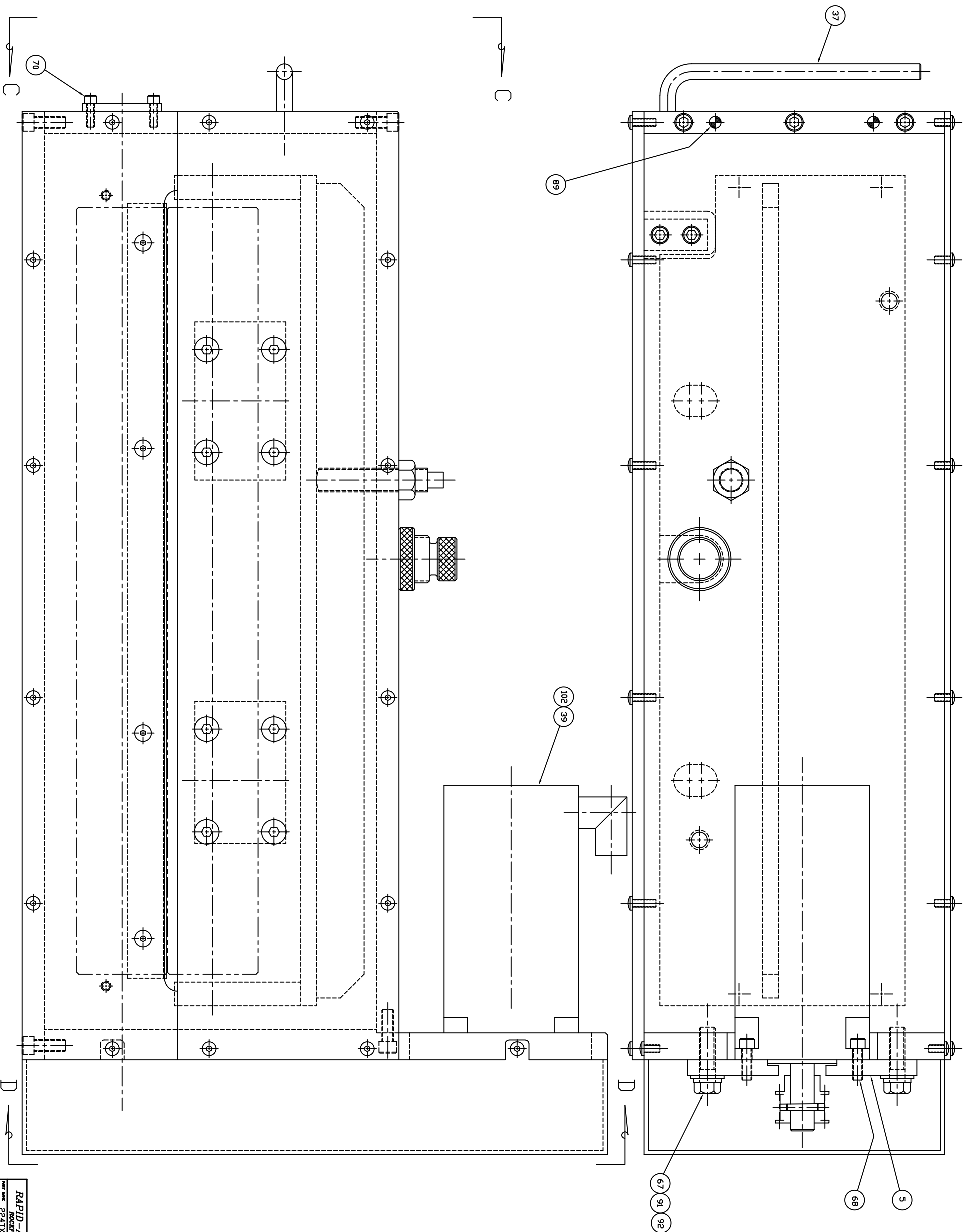
FROM SHEET #1

NOTE: FSC24S FOR SERVVO C-T-L, CONTRDL
VERSION 'C' - 24 V.D.C. VALVE, PNP SENSOR

SHEET 6 OF 6

REV.	DESCRIPTION	DATE	BY	CHKD.
A	ECN #5571	10/18/06	SMS	Y13
B	REV. F011	11/30/08		

RAPID-AIR CORPORATION
 4000 WILSON AVENUE
 WILSON, NJ 07094
 PHONE: 908-686-1000
 FAX: 908-686-1001
 WWW: WWW.RAPID-AIR.COM



SHEET 1 OF 5

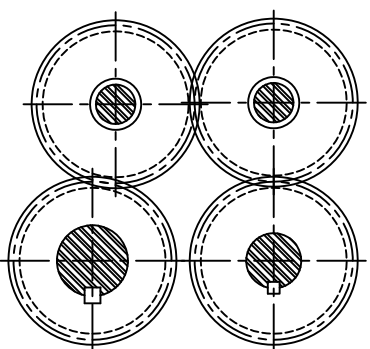
REV	DATE	BY	CHKD	DESCRIPTION
A	ECN #3724			

DATE	APPROVED	DESIGNED BY	CHECKED BY	WORKSHEET	SCALE
10-13-2014		DUU			

PART NAME		QUANTITY	
224TX V/AIR PILOT RELEASE		13000625	

RAPID-AIR CORPORATION
 ROCKFORD, IL • WADSWORTH, SD
 & AIR DOWN

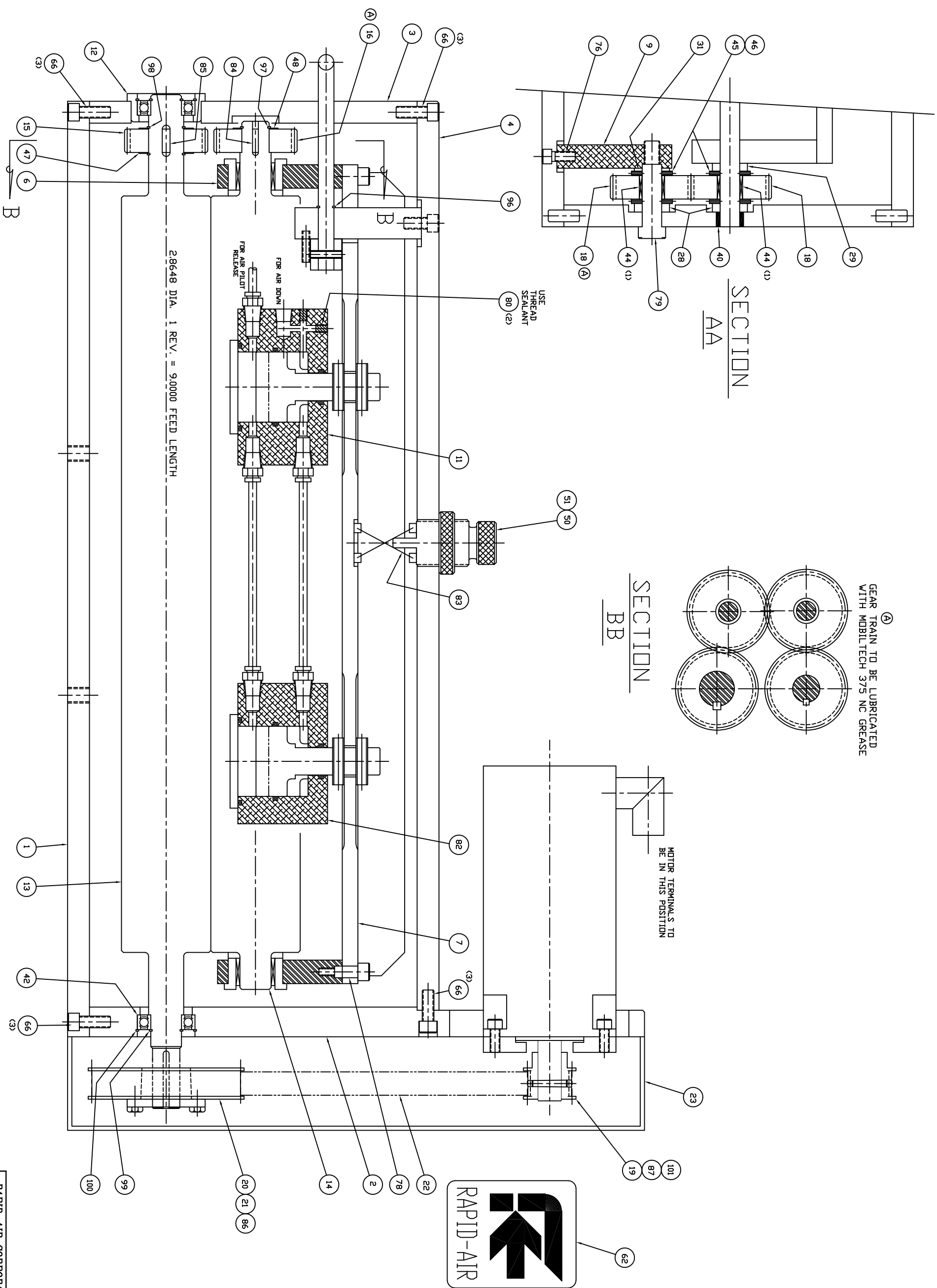
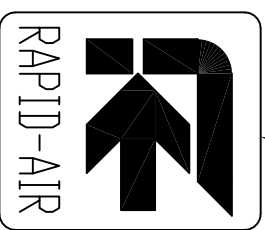
⑦
 GEAR TRAIN TO BE LUBRICATED
 WITH MOBILTECH 375 NC GREASE



SECTION
 AA

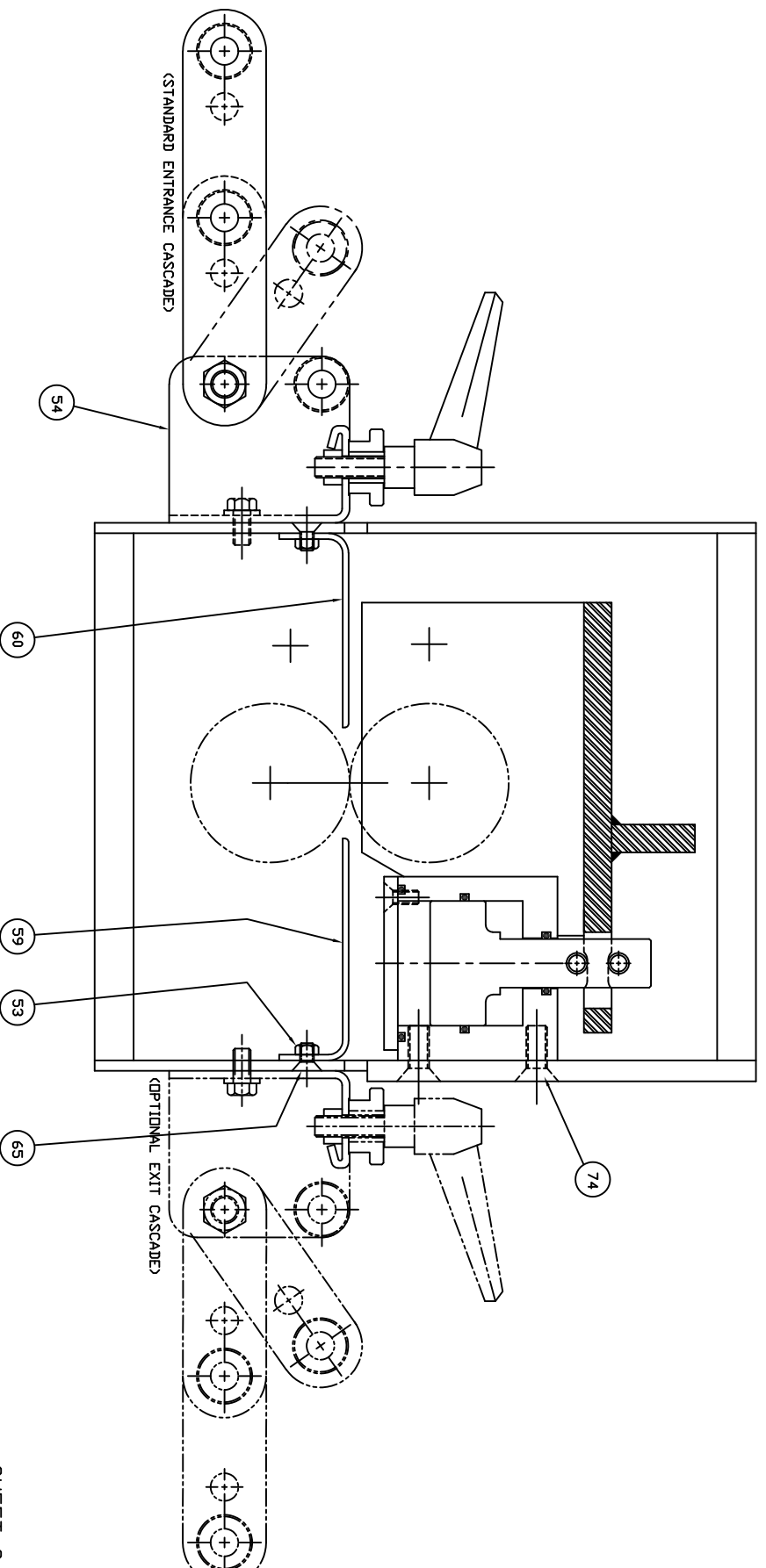
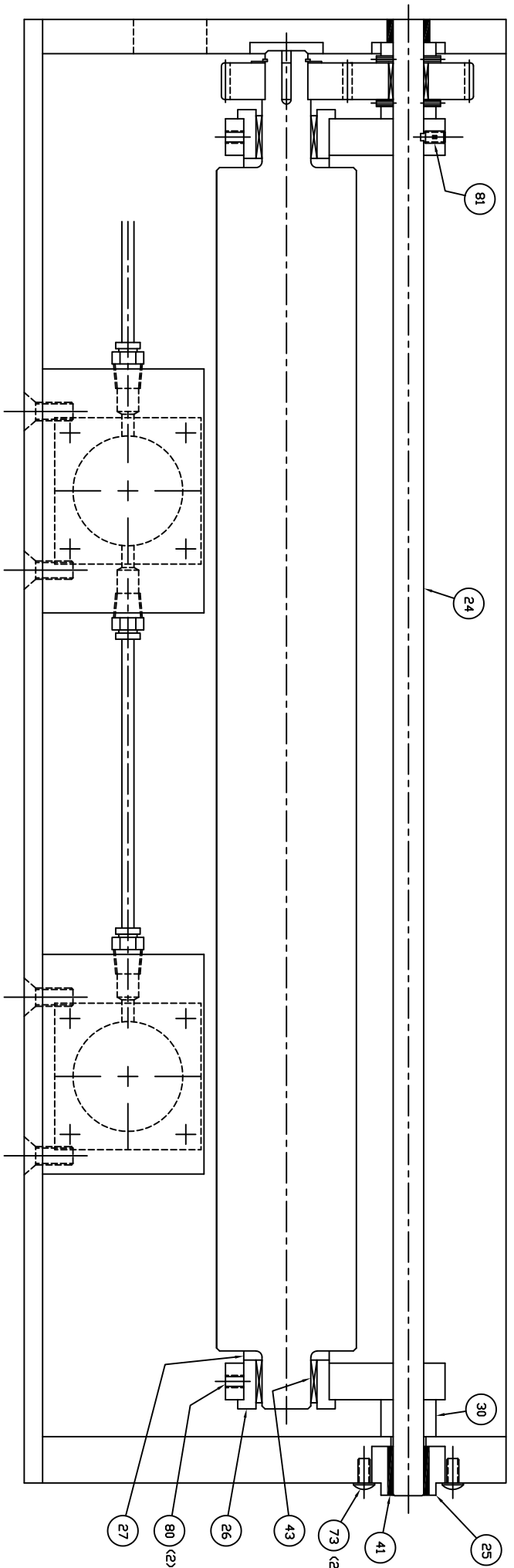
SECTION
 BB

MOTOR TERMINALS TO
 BE IN THIS POSITION



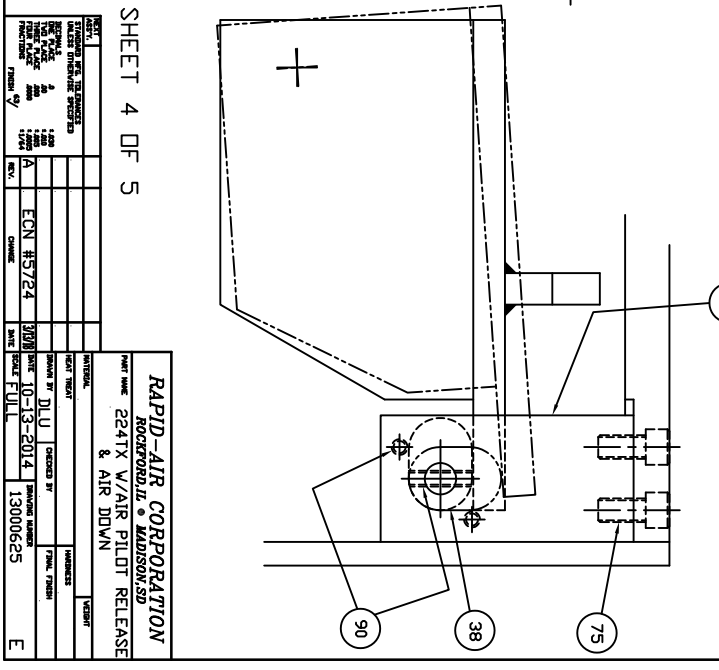
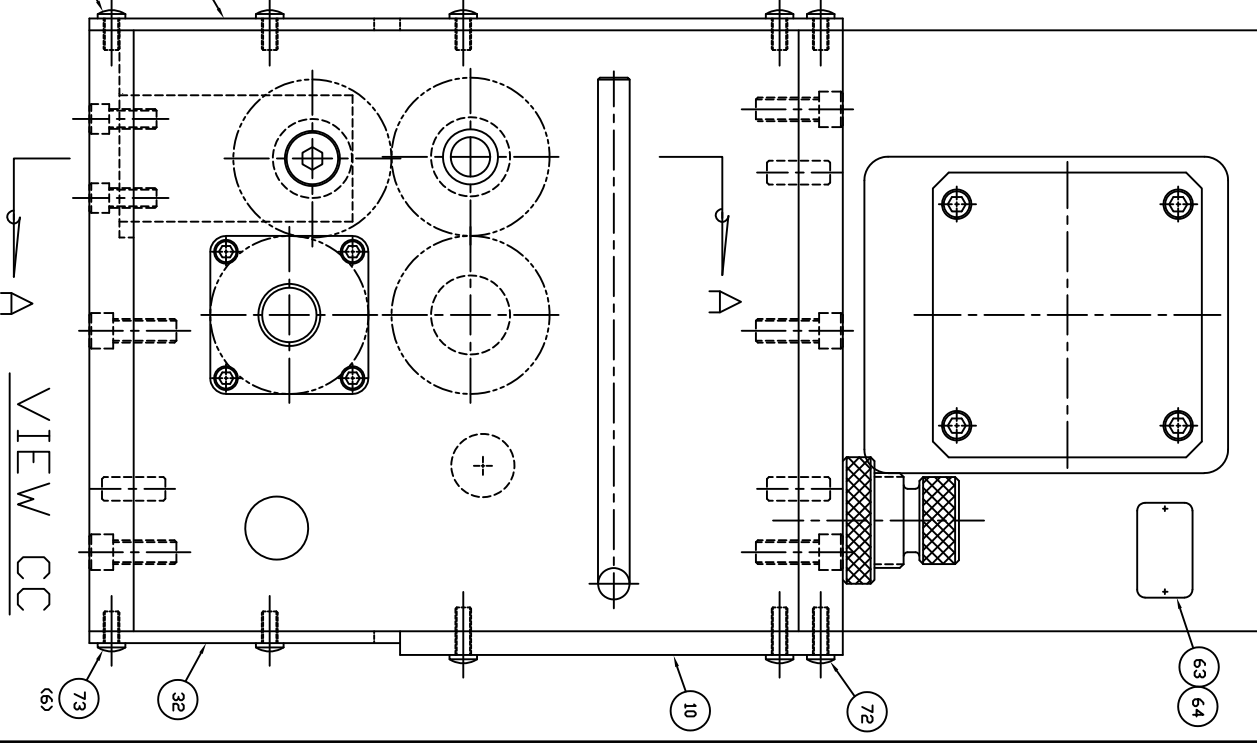
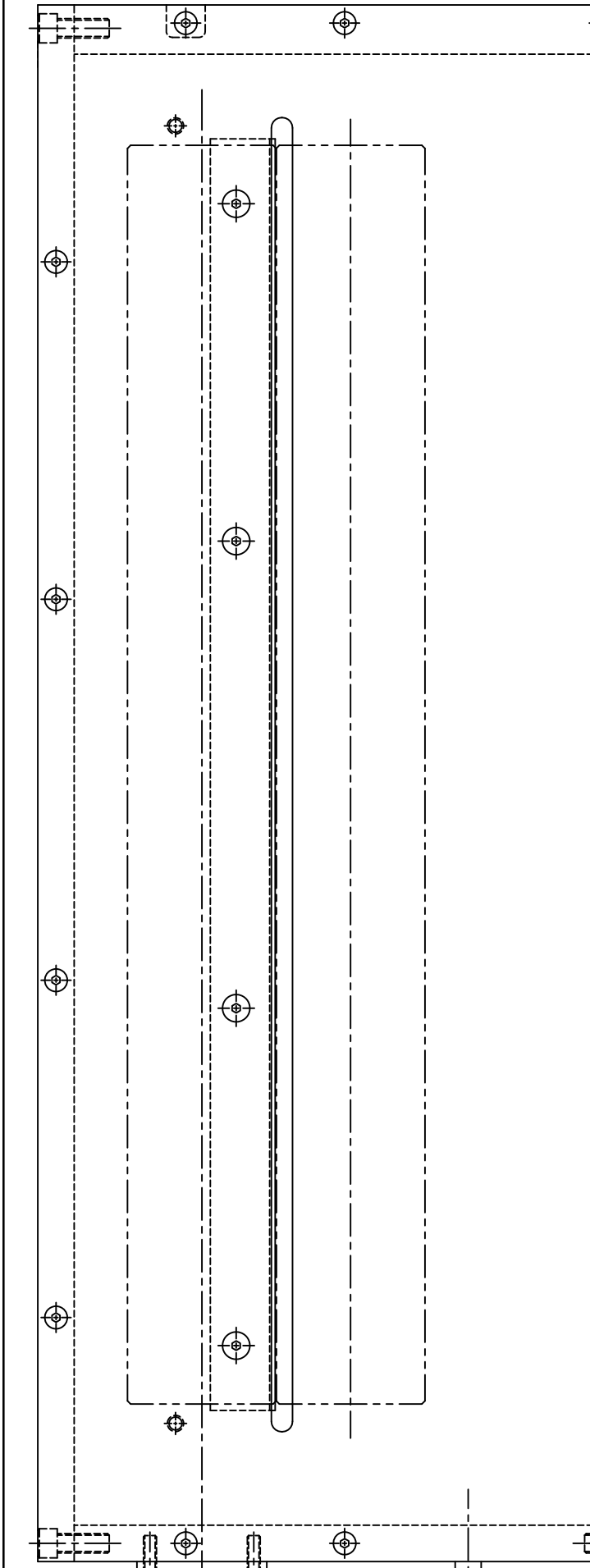
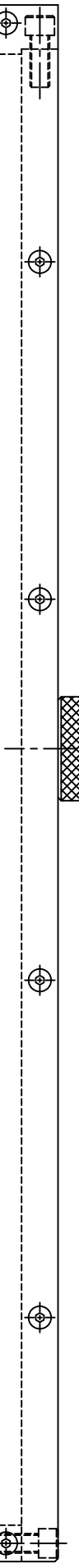
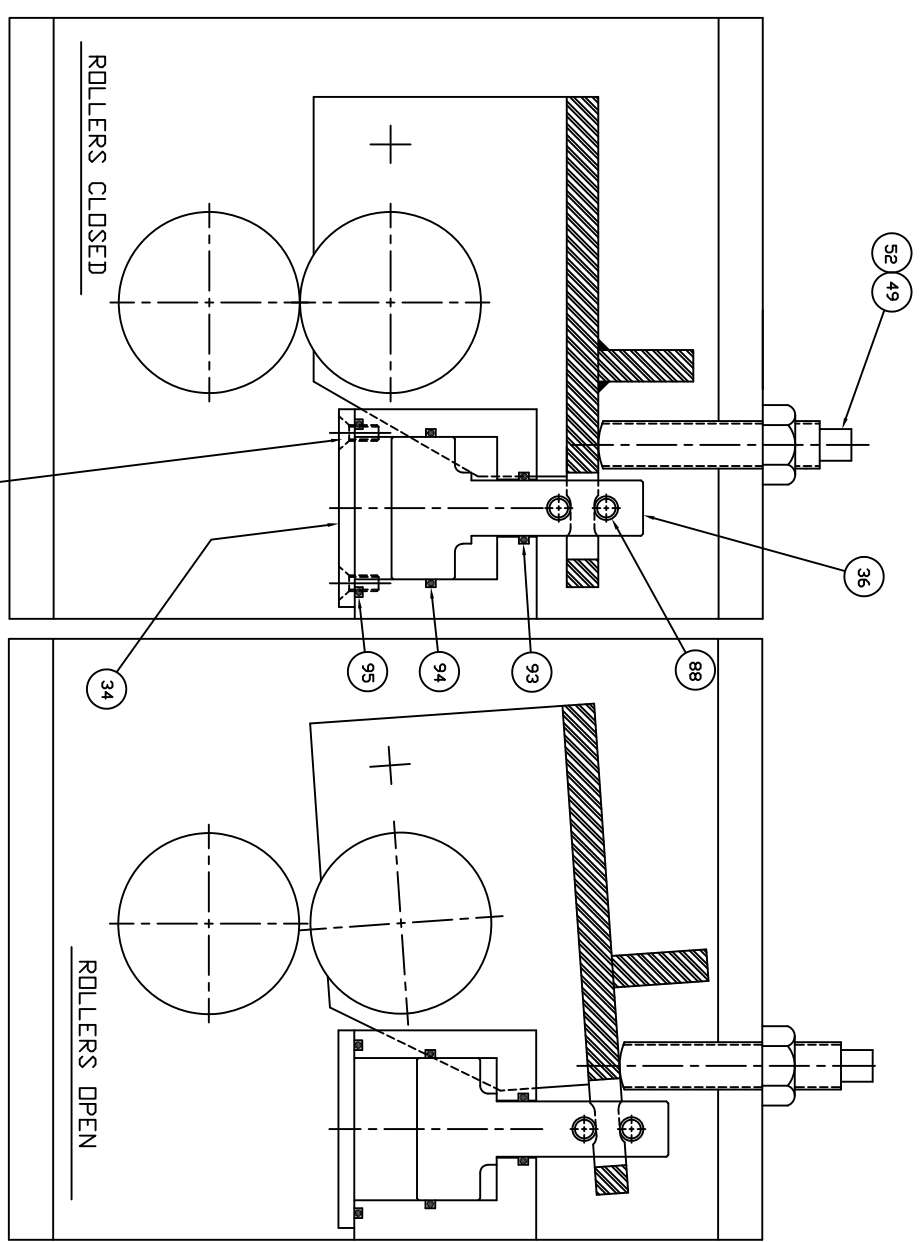
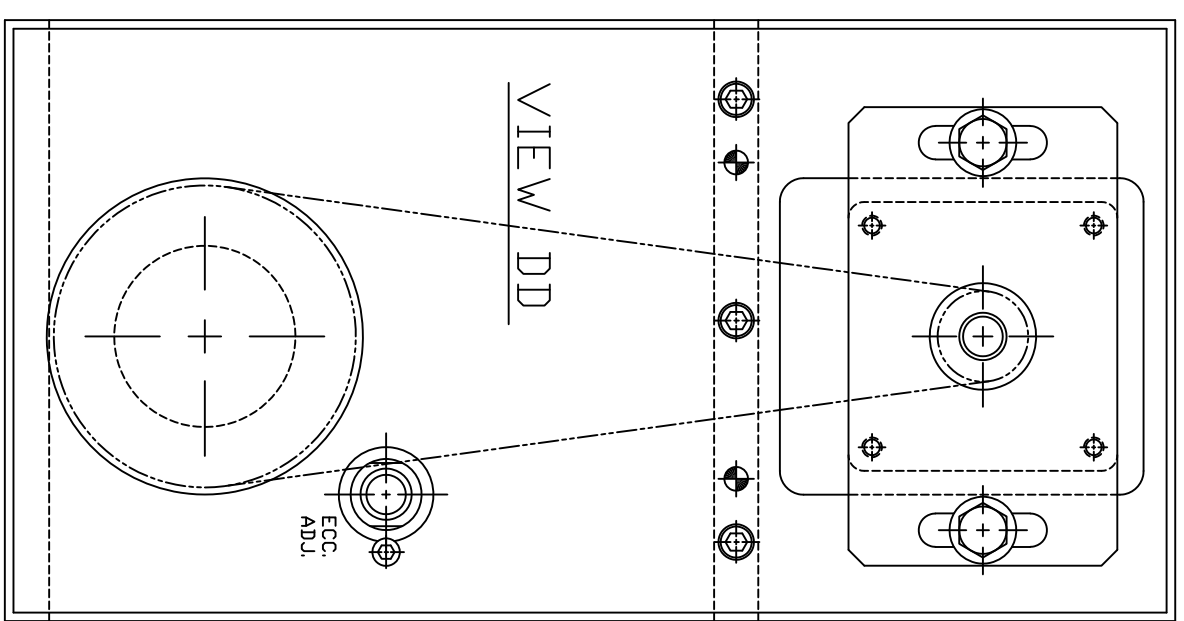
DATE	13000606
DESIGNED BY	W. J. WILSON
CHECKED BY	W. J. WILSON
APPROVED BY	W. J. WILSON
REV.	A
ECN #	3724
DATE	10-3-2014
REV.	13000625

RAPID-AIR CORPORATION
 ROCKFORD, IL • WADSWORTH, SD
 & AIR DOWN



ITEM QTY.	PART NO.	DESCRIPTION
79	1	66162200 SHOULDER SCREW
78	4	66137075 SHOULDER SCREW
77	1	36300004 GAUGE FITTING
76	2	65931075 SHCS 5/16-18 X 3/4
75	2	65936075 SHCS 3/8-16 X 3/4
74	8	66536100 BHSCS 3/8-16 X 1
73	2E	66620050 BHSCS 1/4-20 X 1/2
72	8	66620075 BHSCS 1/4-20 X 3/4
71	1	69200032 VALVE
70	4	65920075 SHCS 1/4-20 X 3/4
69	8	66520062 FHSCS 1/4-20 X 5/8
68	4	65931100 SHCS 5/16-18 X 1
67	2	65853150 HEX BOLT 1/2-13 X 1 1/2
66	12	65936100 SHCS 3/8-16 X 1
65	8	66520050 FHSCS 1/4-20 X 1/2
64	2	66300250 DRIVE SCREW
63	1	39900051 S/N TAG
62	1	39900246 RAPID-AIR LOGO
61	1	68000024 REGULATOR
60	1	31500505 ENTRANCE GUIDE
59	1	31500504 EXIT GUIDE
58	1	68000026 GAUGE
57	1	31702137 REGULATOR RETAINING PLATE
56	1	34100236 GAUGE SPACER
55	1	31702113 GAUGE & REGULATOR PLATE
54	1	10900509 CASCADE ASSEMBLY
53	8	65102520 HEX NUT 1/4-20
52	1	65117516 JAM NUT 3/4-16
51	1	36200031 ADJUSTING SCREW LOCKNUT
50	1	36100078 ADJUSTING SCREW
49	1	36100104 POSITIVE STOP SCREW
48	1	645E0022 THRUST WASHER
47	2	645E0025 THRUST WASHER
46	8	645E0008 THRUST WASHER
45	4	64510002 THRUST BEARING
44	2	64500057 NEEDLE BEARING
43	2	64500066 NEEDLE BEARING
42	2	64600049 BALL BEARING
41	1	64100046 DILITE BUSHING
40	1	64100075 DILITE BUSHING
39	1	69000045 MOTOR
38	1	36500045 CAM
37	1	36600036 CAM HANDLE
36	2	35500231 PISTON
35	1	31702112 MANIFOLD PLATE
34	2	31400550 PISTON COVER
33	1	31500503 ENTRANCE GUARD
32	1	31500502 LOWER EXIT GUARD
31	1	34100325 SPACER
30	1	34100381 SPACER
29	1	34100323 SPACER
28	2	34100382 SPACER
27	2	34100321 ROLLER SPACER
26	2	33900265 BEARING SLEEVE
25	1	32900858 ECCENTRIC SHAFT
24	1	32900860 PIVOT SHAFT
23	1	31500489 BELT COVER
22	1	32500046 TIMING BELT
21	1	32500036 BUSHING (FOR 32500029)
20	1	32500029 PULLEY (LOWER ROLL)
19	1	32500044 MOTOR PULLEY
18	2	32600233 UPPER IDLER SPUR GEAR
17	1	32600292 UPPER ROLLER SPUR GEAR
16	1	32600235 LOWER ROLLER SPUR GEAR
15	1	34200387 UPPER ROLLER
14	1	34200387 LOWER ROLLER
13	1	34200386 LOWER ROLLER
12	1	30100290 BEARING HOUSING
11	1	30100292 PISTON HOUSING
10	1	31702503 PISTON HOUSING MOUNTING PLATE
9	1	31702115 GEAR SUPPORT PLATE
8	1	31702111 CAM PIVOT PLATE
7	1	21900259 ROLLER TIP PLATE ASSEMBLY
6	2	31702473 MOTOR SIDE PLATE
5	1	31702106 ROLLER SIDE PLATE
4	1	31702502 L.H. SIDE PLATE
3	1	31702471 R.H. SIDE PLATE
2	1	31702470 BOTTOM PLATE
1	1	31702501 SET SCREW

RAPID-AIR CORPORATION
ROCKFORD, IL • MADISON, SD
PART NO. 224TX V/AIR PILOT RELEASE
& AIR DOWN

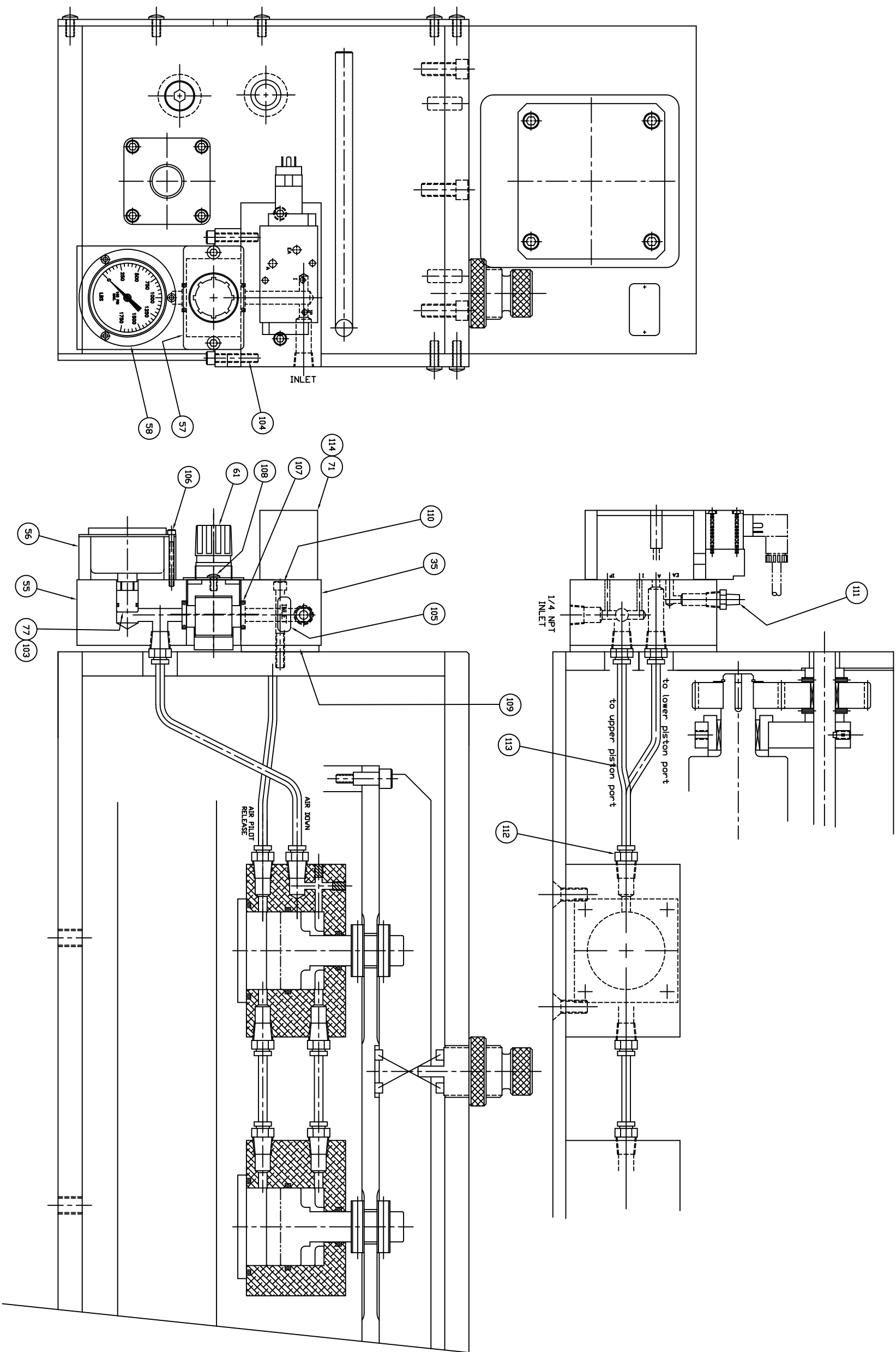


SHEET 4 OF 5

RAPID-AIR CORPORATION
 ROCKFORD, ILL. & MADISON, SD
 & AIR DOWN

PART NAME: 224TX V/AIR PILOT RELEASE
 DRAWN BY: DJU | CHECKED BY: []
 DATE: 10-3-2014 | 13000625

REV.	DESCRIPTION	DATE
1	ISSUED FOR MANUFACTURE	10/3/2014
2	REVISED PER ENGINEERING	10/3/2014
3	REVISED PER ENGINEERING	10/3/2014
4	REVISED PER ENGINEERING	10/3/2014
5	REVISED PER ENGINEERING	10/3/2014



REV	DATE	BY	CHKD	DESCRIPTION
A	03-24-2014	CON		CON #3724

RAPID-AIR CORPORATION
 ROCKFORD, IL • WADSWORTH, SD
 V/AIR PILOT RELEASE & AIR DOWN

PART NAME: 224TX V/AIR PILOT RELEASE
 DRAWN BY: DJU
 CHECKED BY: TML, KTB
 DATE: 03-24-2014
 PART NUMBER: 13000625