

# Rapid-Air

## Operating Instructions

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200TX Servo Feed CTL  
Control Ver. 'C'



4601 Kishwaukee Street, Rockford, IL 61109  
815.397.2578  
[www.rapidair.com](http://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.

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# MECHANICAL SPECIFICATIONS

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## 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

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## 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<br>Min 3.5 VDC / Max 30 VDC<br>Min 2 mA / Max 15 mA |
| Outputs:                   | Sourcing: 24VDC @ 250 mA max.  |
| Options:                   | 460 VAC, 3Ø, 50/60 Hz<br>AC Cooled Enclosure<br>Adjustable Mounting Stand              |

## Pneumatic

|          |  |
|----------|--|
| Shop Air | Filtered and lightly lubricated<br>Working Pressure 80-120 PSI<br>Maximum Pressure 150 PSI |
|----------|--|

# Mechanical Setup

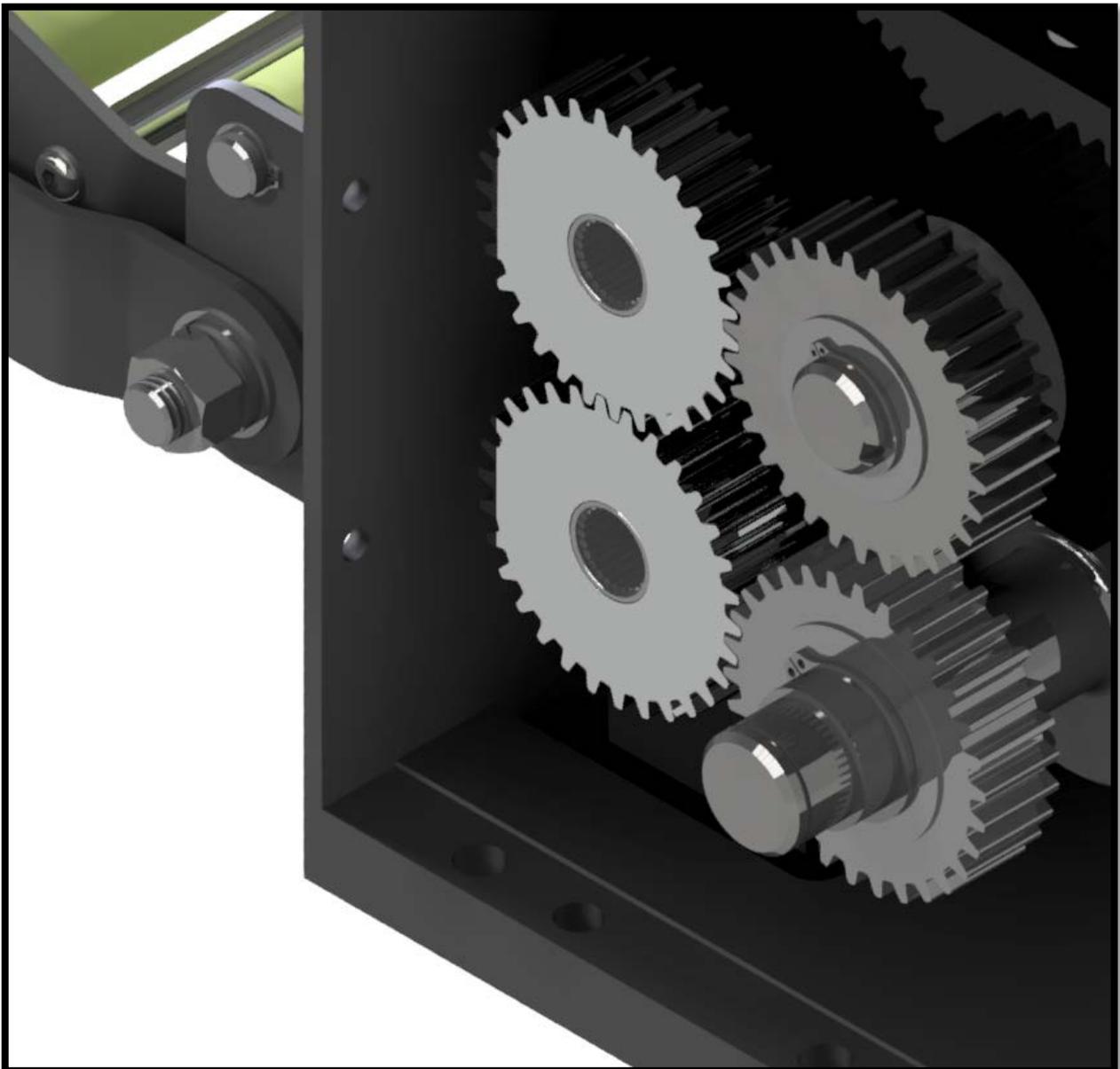
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## Installation

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.

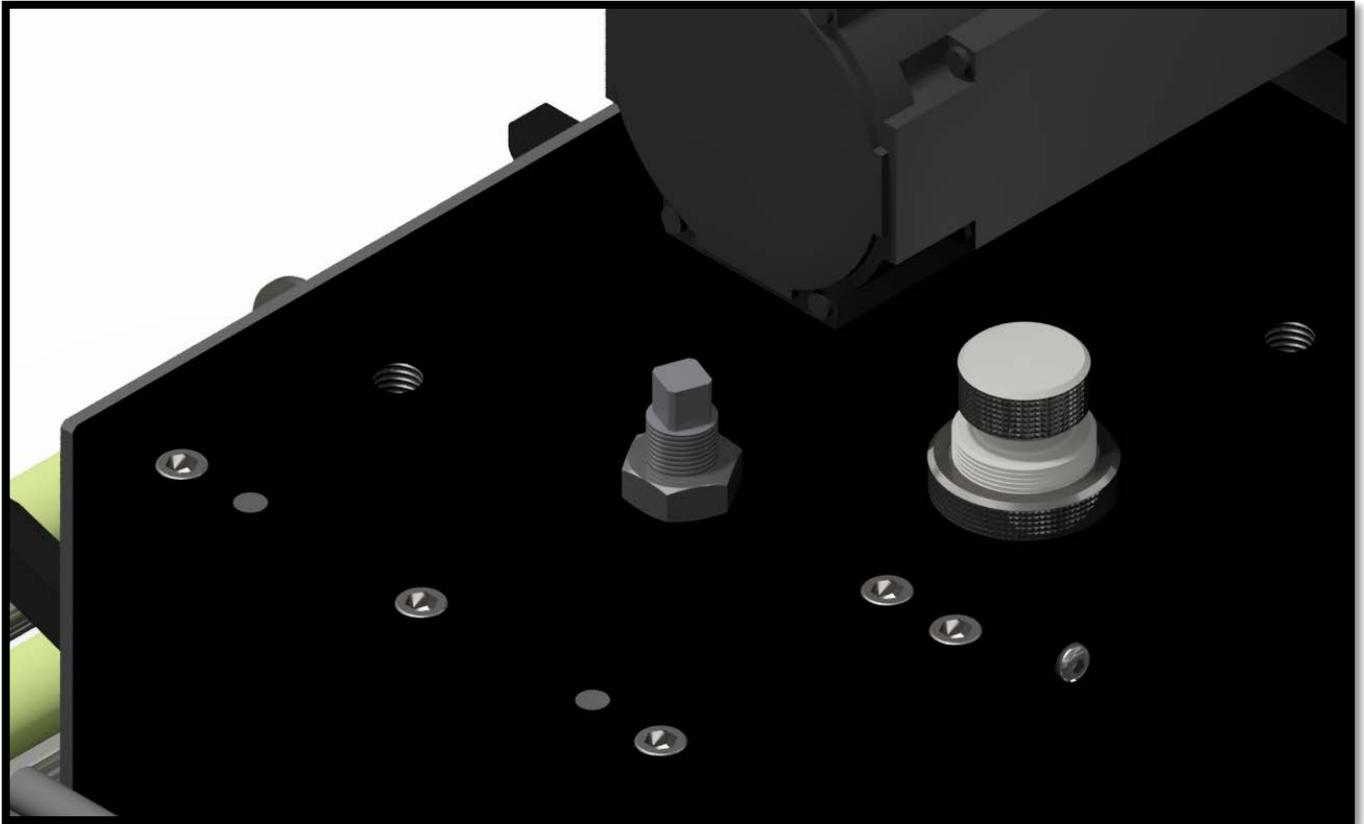
## Gear Train

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.*

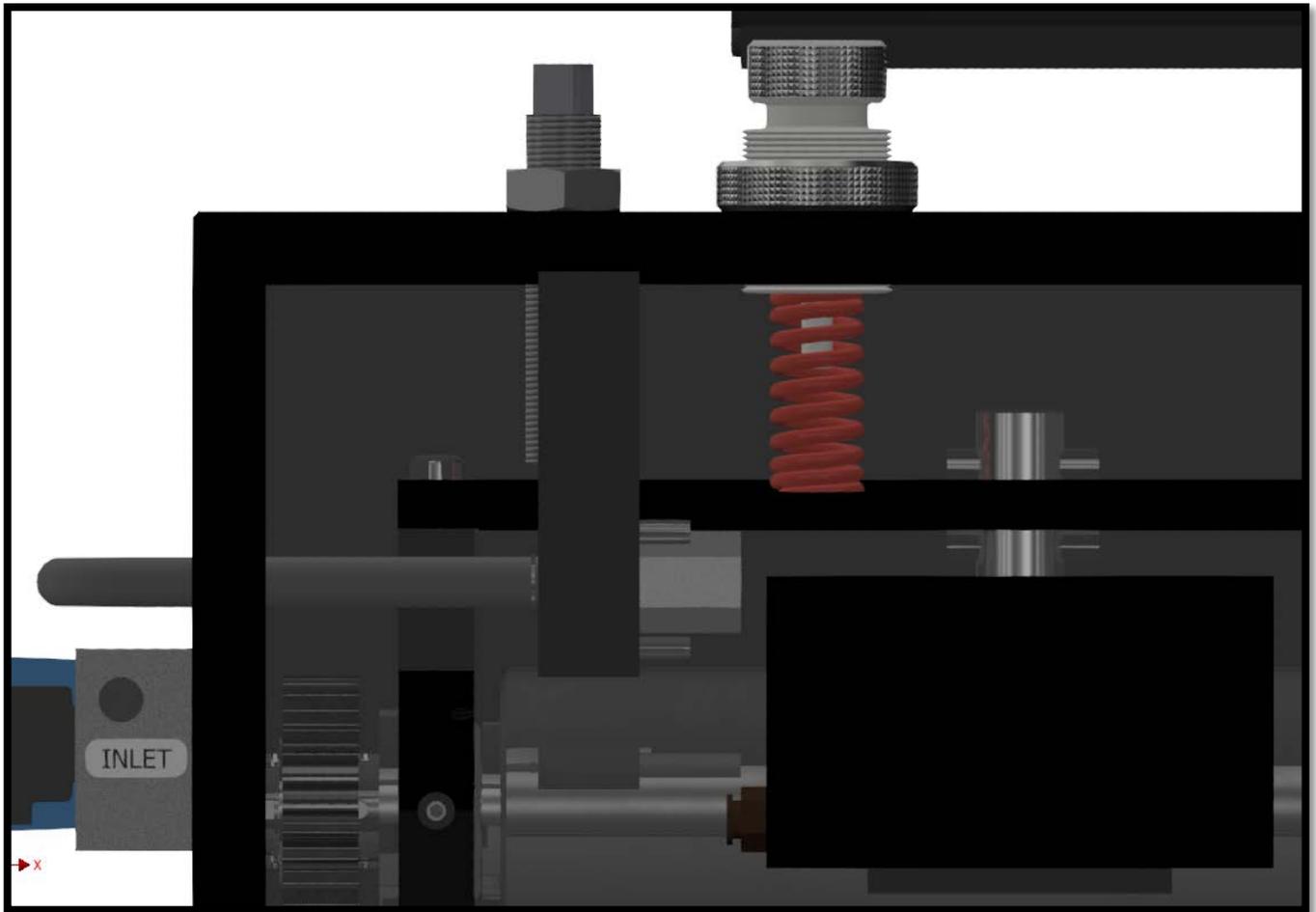


## Roll Release Handle

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.



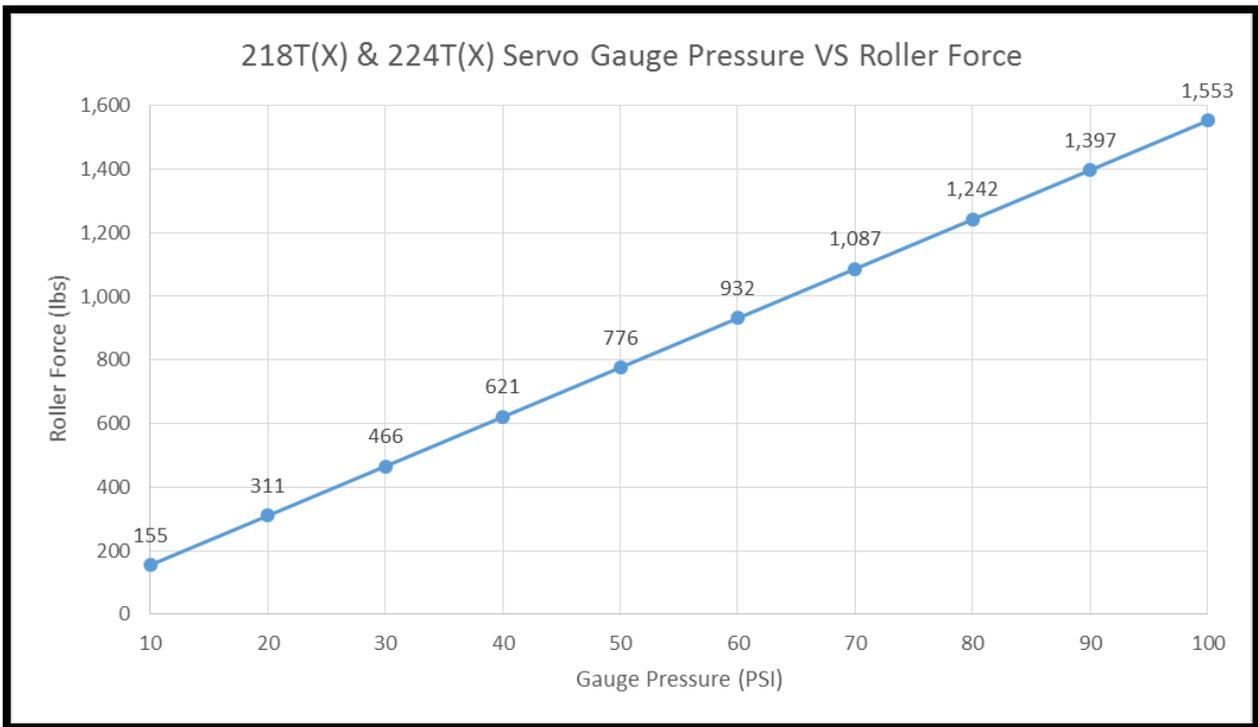
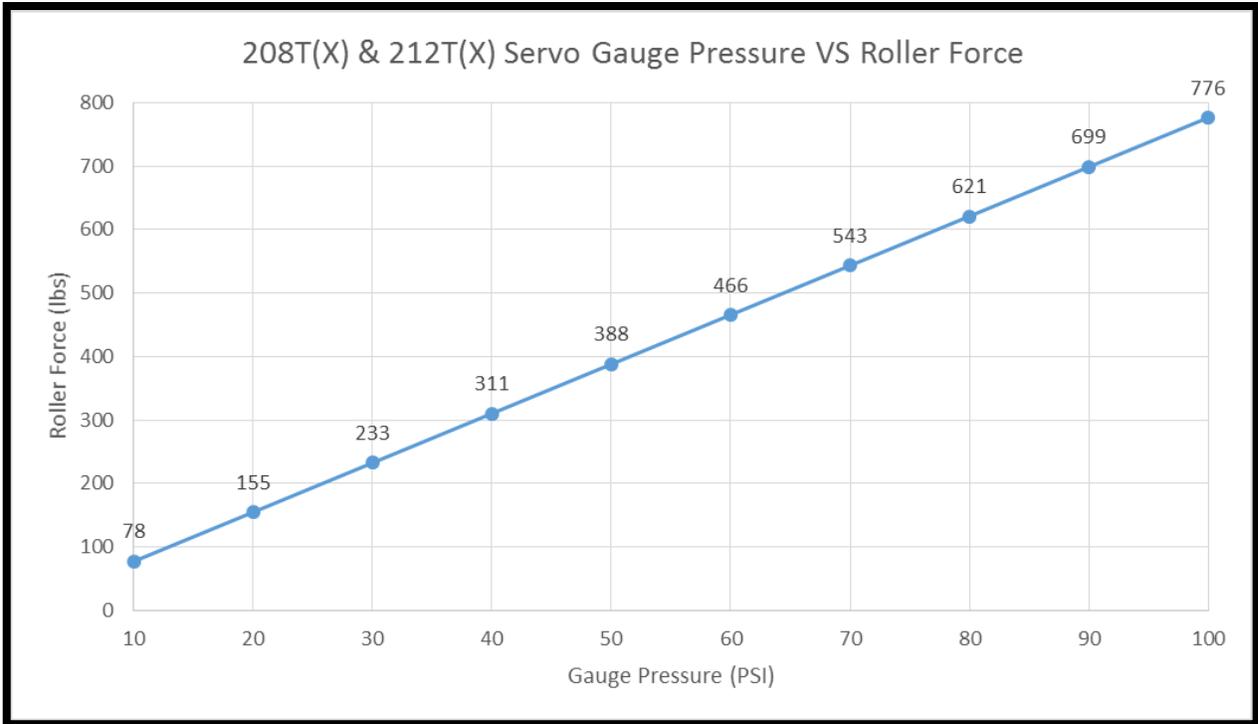
When equipped with the optional **AIR REGULATED UPPER FEED ROLL**:

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) &amp; 212T(X)</u> | <u>218T(X) &amp; 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

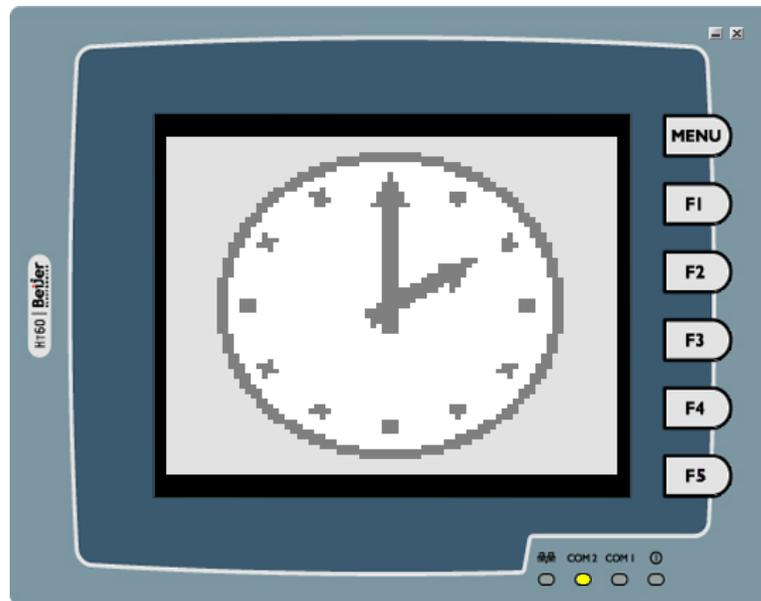
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When the control is turned on some of the components must boot-up, much like a computer. During this period the display will show a 'clock' so you can recognize the control is in the process of getting ready. If the control is turned on immediately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

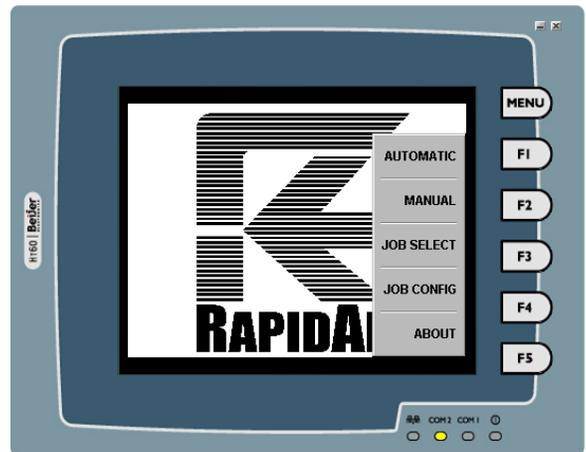
On the right hand side of the display there are 5 programmable function keys. These keys have different functions depending on the active screen. The 'F5' key is typically the EXIT or CANCEL key. The keys are always active. If you forget a key's function you can press the MENU button and the function 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.                            |

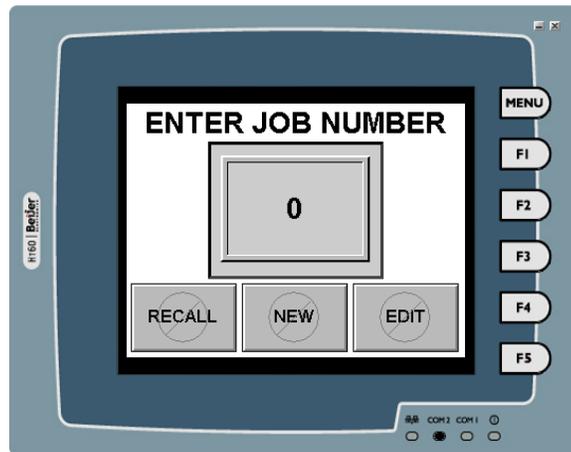
You can change to any screen listed, no particular order is required. For purposes of explaining the controls we will describe how to enter a new job number and the job parameters.

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

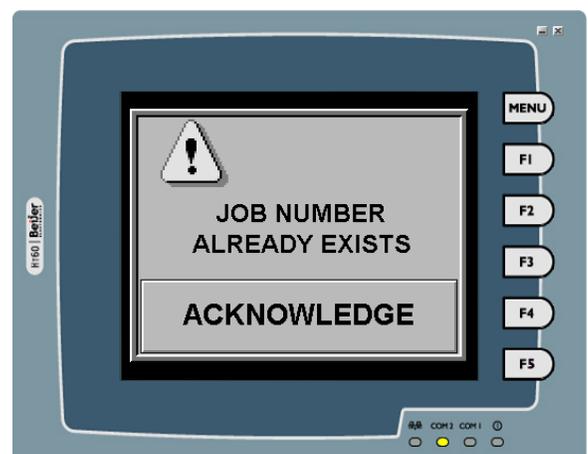
## JOB SELECT:



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.

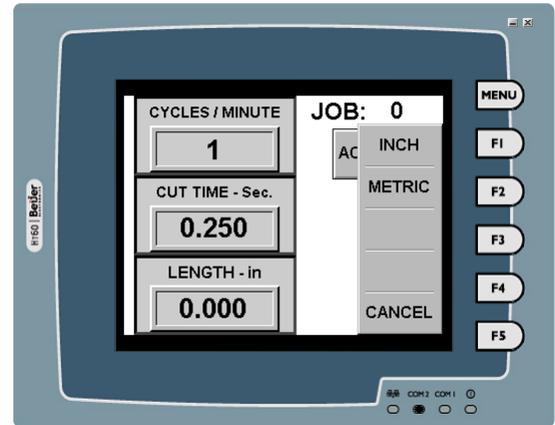
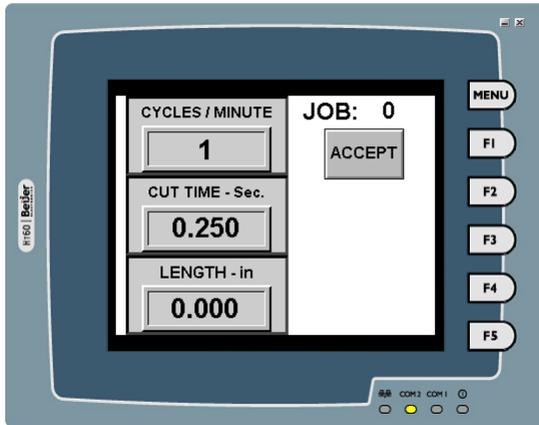
**RECALL:** This pushbutton recalls a previously set up job and makes it the CTL active job. If any invalid job number is entered you will get a fault message. Simply acknowledge the message and try again. When the recall is successful you will be returned to the SPLASH screen.

**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.



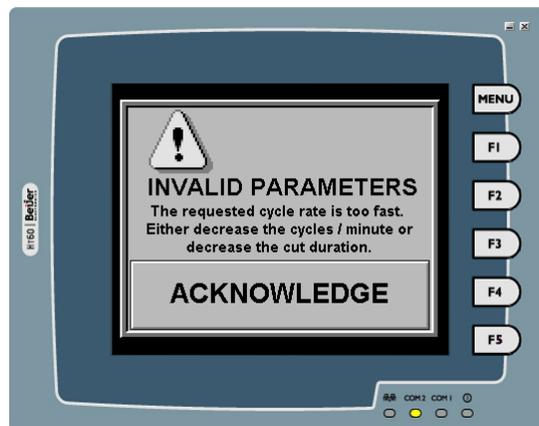
# SERVO FEED OPERATION cont'd

## 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.

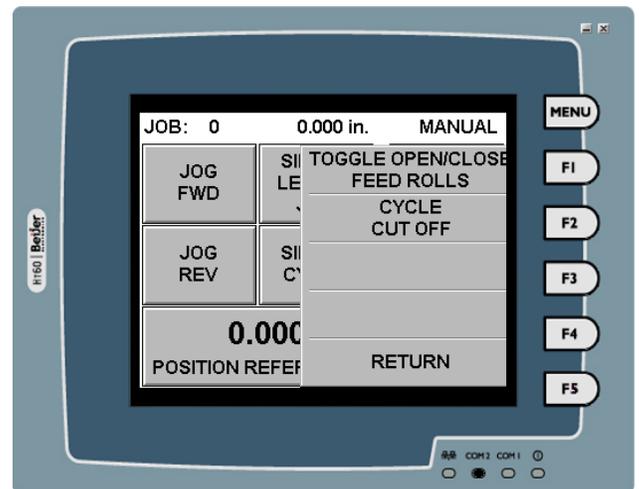
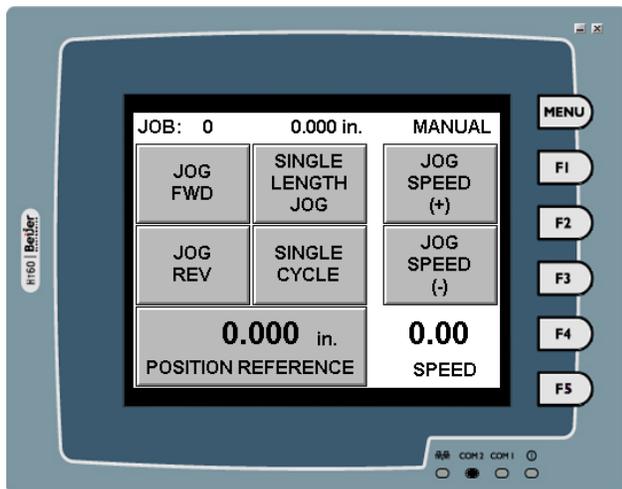
# SERVO FEED OPERATION cont'd

## 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.

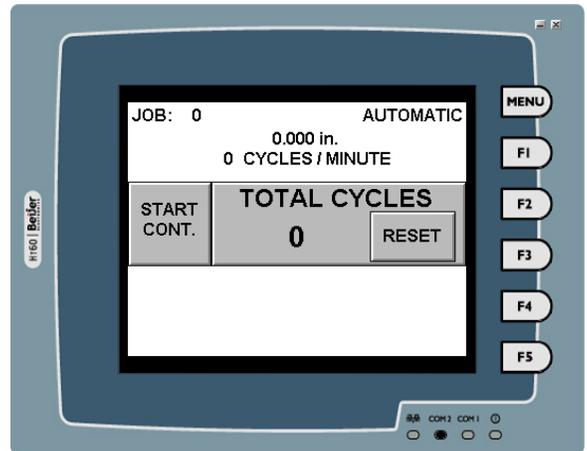
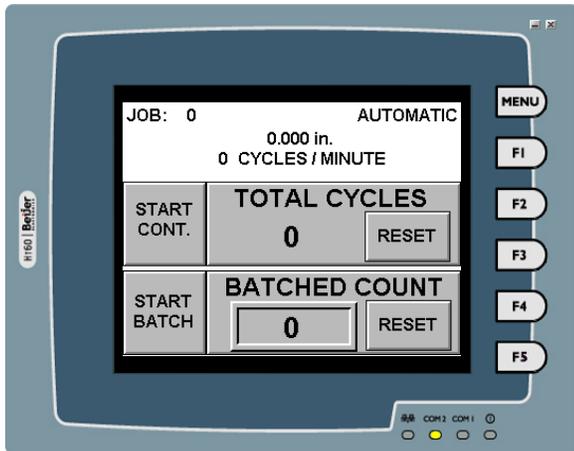


It is possible to jog the servo feed via hardwired pushbuttons. If the CTL was not ordered with a remote jog pendant it is possible to field install JOG FWD and JOG REV pushbuttons. See page 2 of 2 of the included electrical schematic. Like the HMI jog buttons, the hardwired pushbuttons will only be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

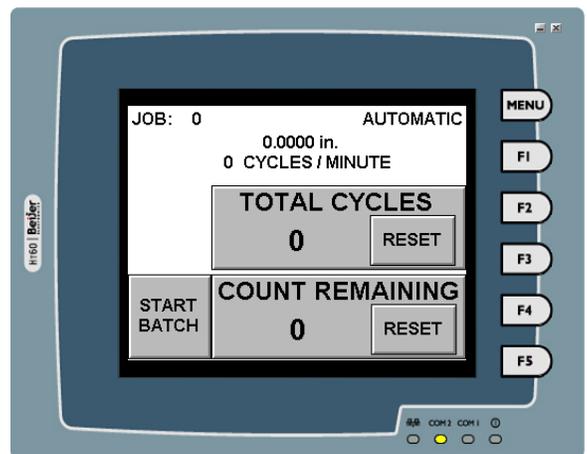
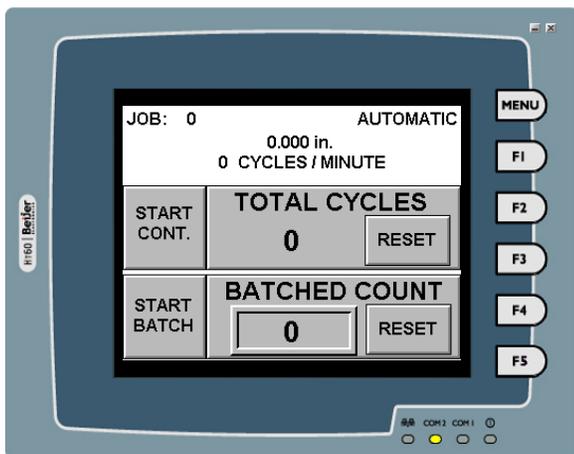
# SERVO FEED OPERATION cont'd

## 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.

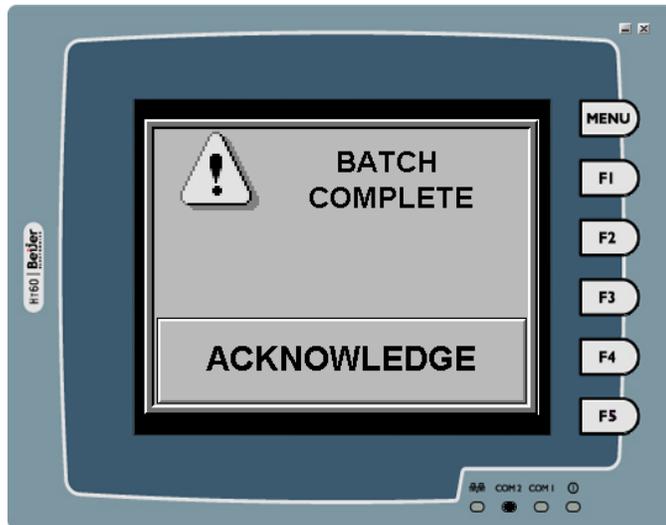


# SERVO FEED OPERATION cont'd

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## **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.

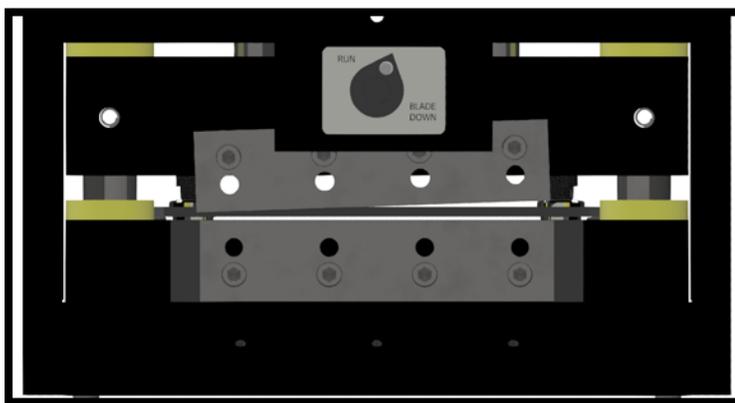
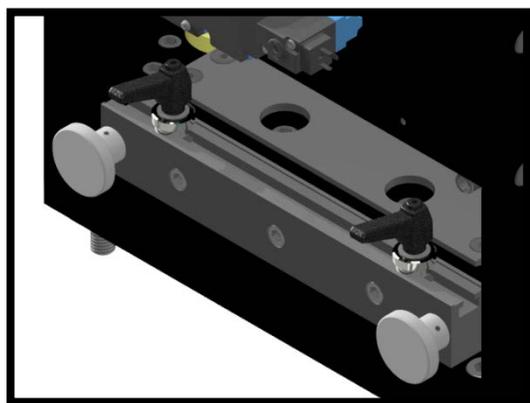
**Blade Adjustment** - The upper blade may be lowered manually with the eccentric cam located at the top center of the cutter. The purpose for this manual operation is for horizontal blade clearance adjustment. Blade clearance affects the quality of the cut. The CTL is shipped with the cutter's blades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

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## 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.

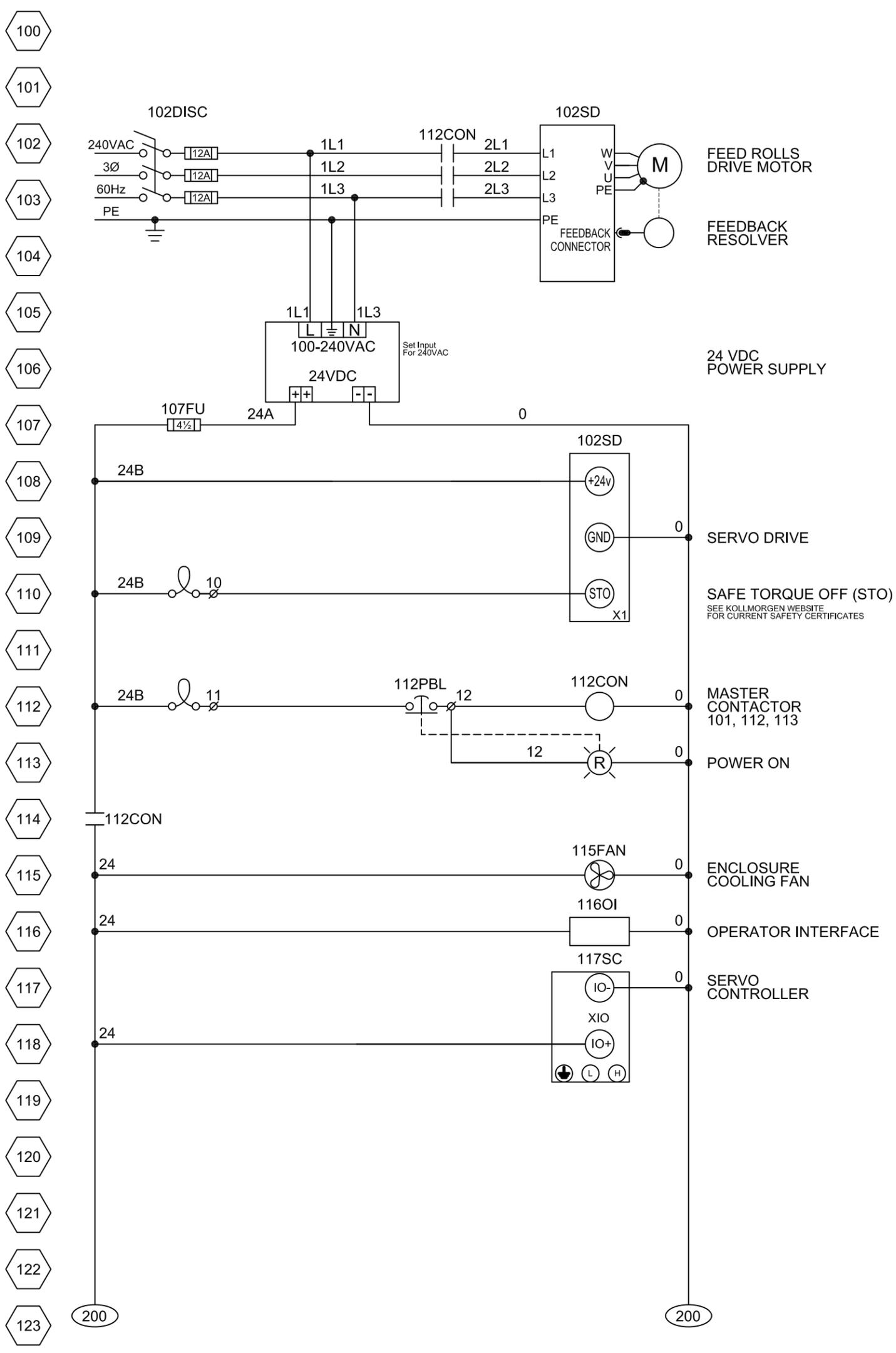
## Customer License Agreement

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.



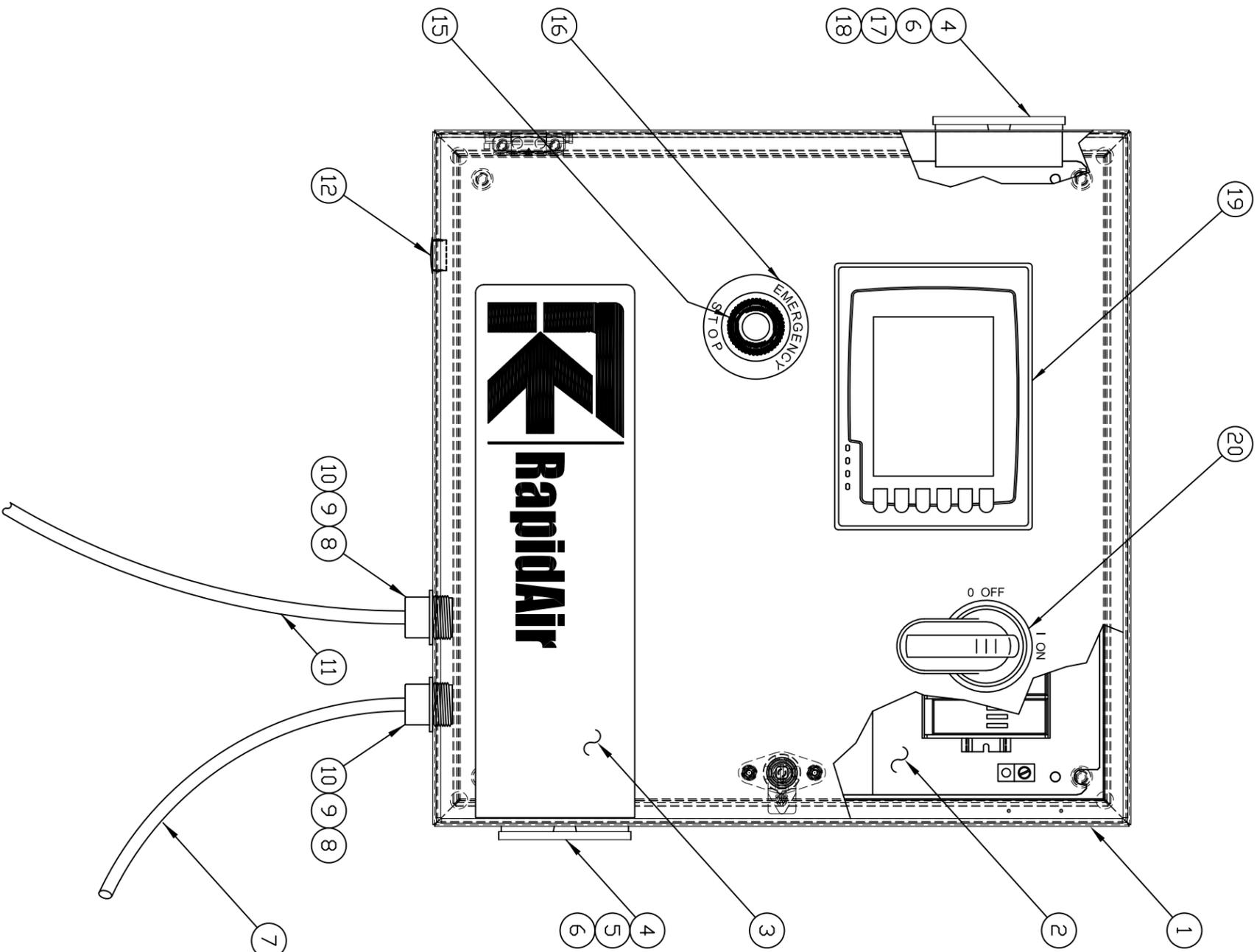
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|                  |  |                      |  |      |  |
|------------------|--|----------------------|--|------|--|
| REV.             |  | CHANGE               |  | DATE |  |
| SHEET 1 OF 2     |  | POWER CIRCUIT        |  | DATE |  |
| PART NAME        |  | 200(X) CUT-TO-LENGTH |  | DATE |  |
| WIRING SCHEMATIC |  | ROCKFORD, IL         |  | DATE |  |
| MATERIAL         |  | HEAT TREAT           |  | DATE |  |
| WEIGHT           |  | HARDNESS             |  | DATE |  |
| DRAWN BY         |  | CHECKED BY           |  | DATE |  |
| TJH              |  | TJH                  |  | DATE |  |
| SEPT. 2016       |  | SEPT. 2016           |  | DATE |  |
| N/A              |  | N/A                  |  | DATE |  |
| SCALE            |  | SCALE                |  | DATE |  |
| N/A              |  | N/A                  |  | DATE |  |
| DRAWING NUMBER   |  | DRAWING NUMBER       |  | DATE |  |
| 85500338-1       |  | 85500338-1           |  | DATE |  |
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**RAPID-AIR CORPORATION**  
 200(X) CUT-TO-LENGTH  
 WIRING SCHEMATIC  
 ROCKFORD, IL





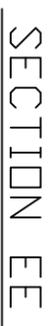
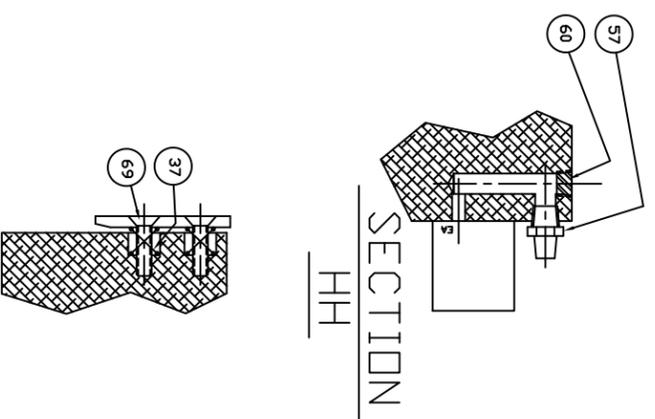
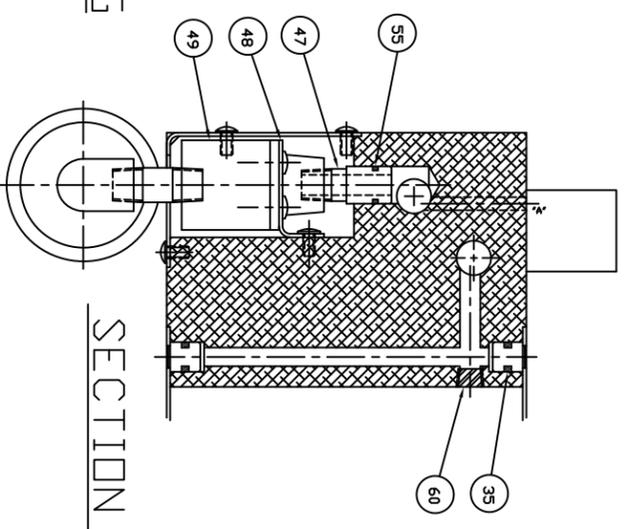
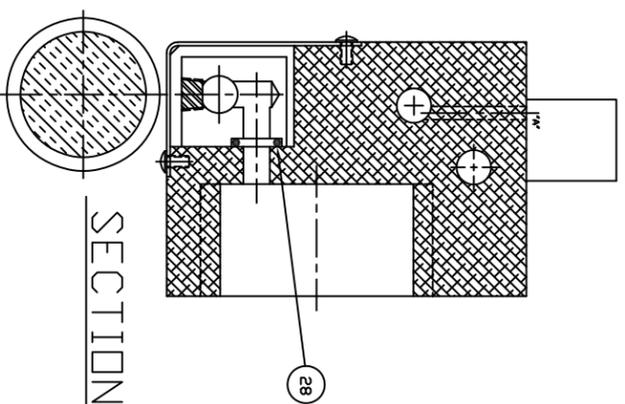
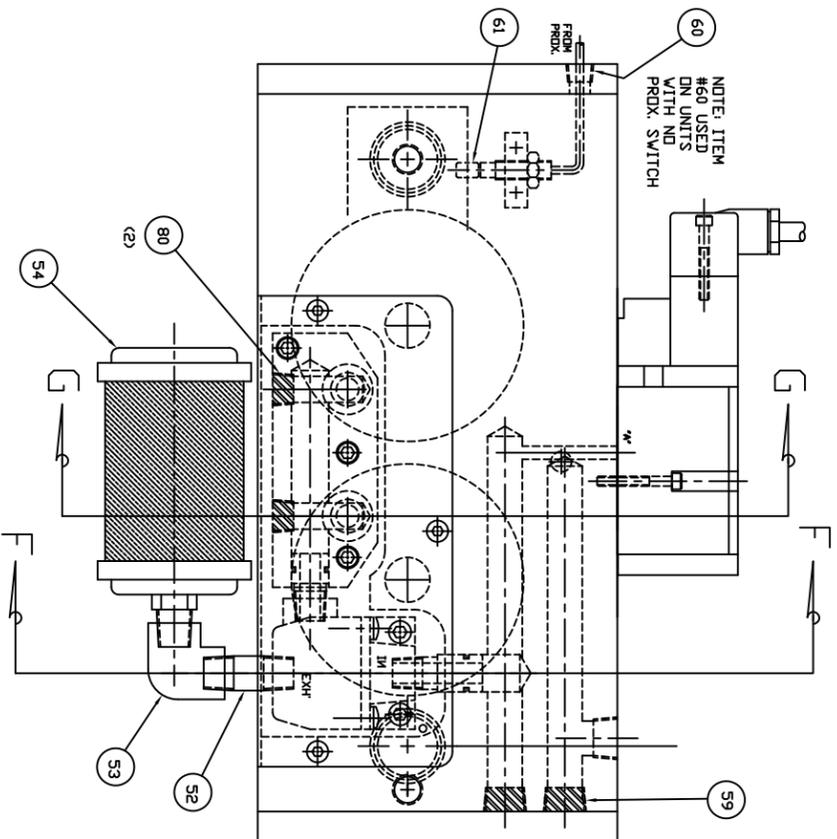


USE WITH:  
 85500338 200(x) C-T-L WIRING SCHEMATIC -version 'C' cntrl  
 85500335 200(x) WIRING SCHEMATIC - version 'C' cntrl

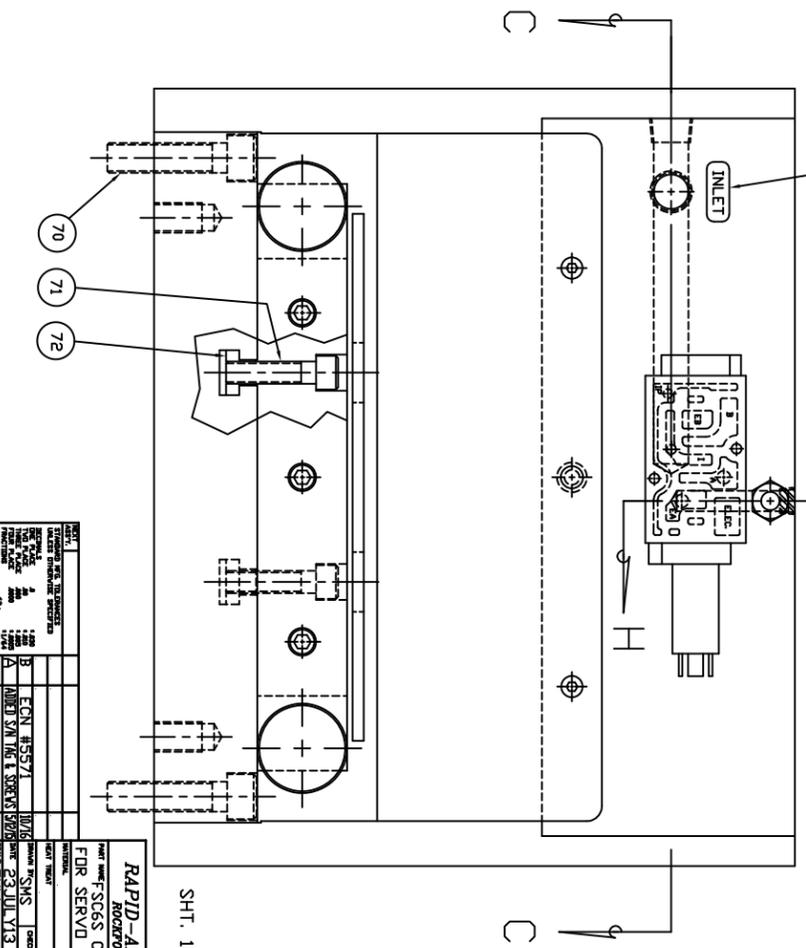
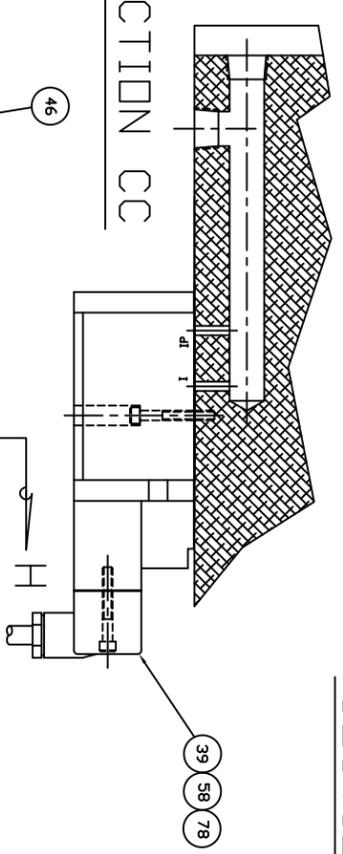
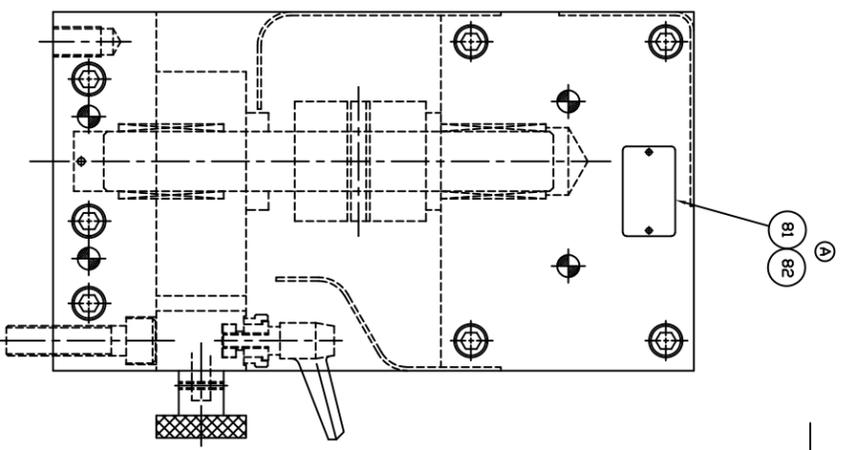
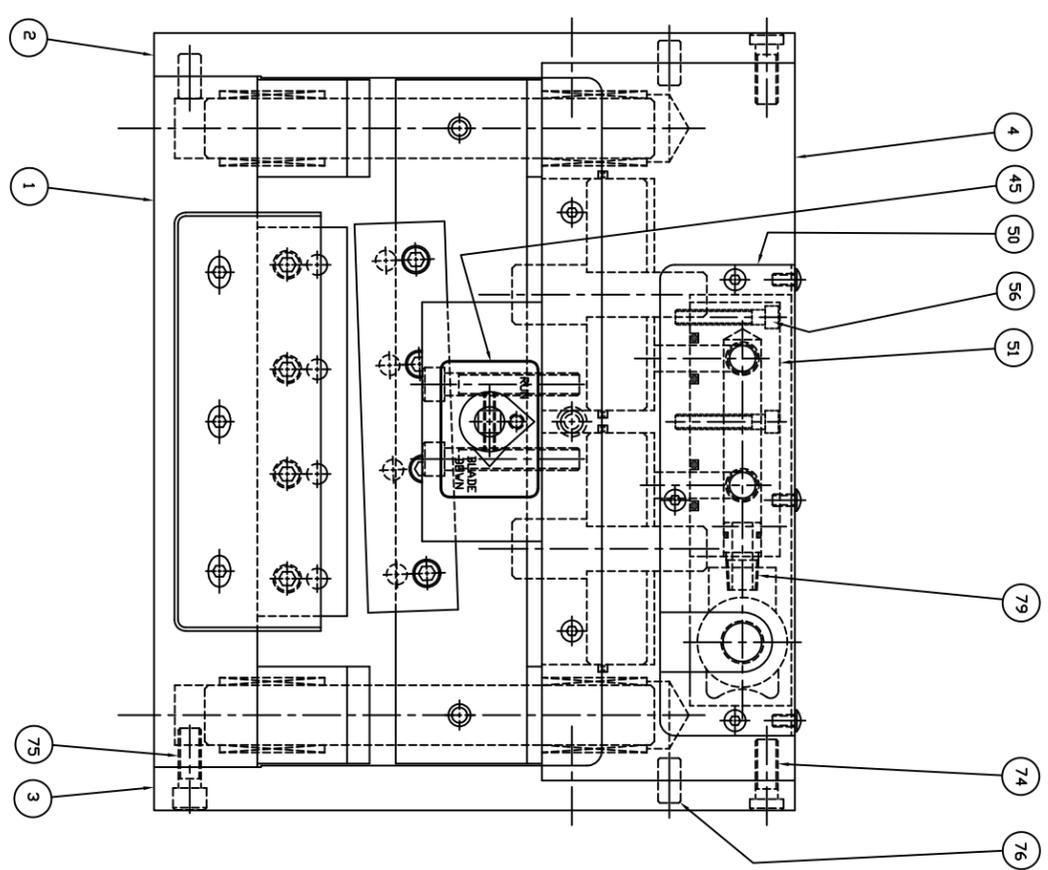
| ITEM | QTY. | PART NO. | DESCRIPTION                 |
|------|------|----------|-----------------------------|
| 1    | 1    | 38900200 | ENCLOSURE                   |
| 2    | 1    | 28900445 | SUBPANEL ASSEMBLY           |
| 3    | 1    | 39900243 | LOGO LABEL                  |
| 4    | 2    | 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      | .0005 | 1/64"   | 1/128" |
| THIRD PLACE    | .0001 |   |        |
| FOURTH PLACE   | .0000 |   |        |
| FRACTIONS      |       |   |        |
| FINISH         | ✓     |   |        |
| REV.           |       | CHANGE  | DATE   |
|                |       |   |        |
| PART NAME      |       | 200(x) SERVO CONTROL Ver. C                         |        |
| MATERIAL       |       | CONTROL ASSEMBLY                                    |        |
| HEAT TREAT     |       |   |        |
| DRAWN BY       |       | T JH  |        |
| CHECKED BY     |       |   |        |
| DATE           |       | APRIL 2014  |        |
| SCALE          |       | N/A   |        |
| DRAWING NUMBER |       | 28900446  |        |
| REV.           |       | D   |        |

**RAPID-AIR CORPORATION**  
 ROCKFORD, IL



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

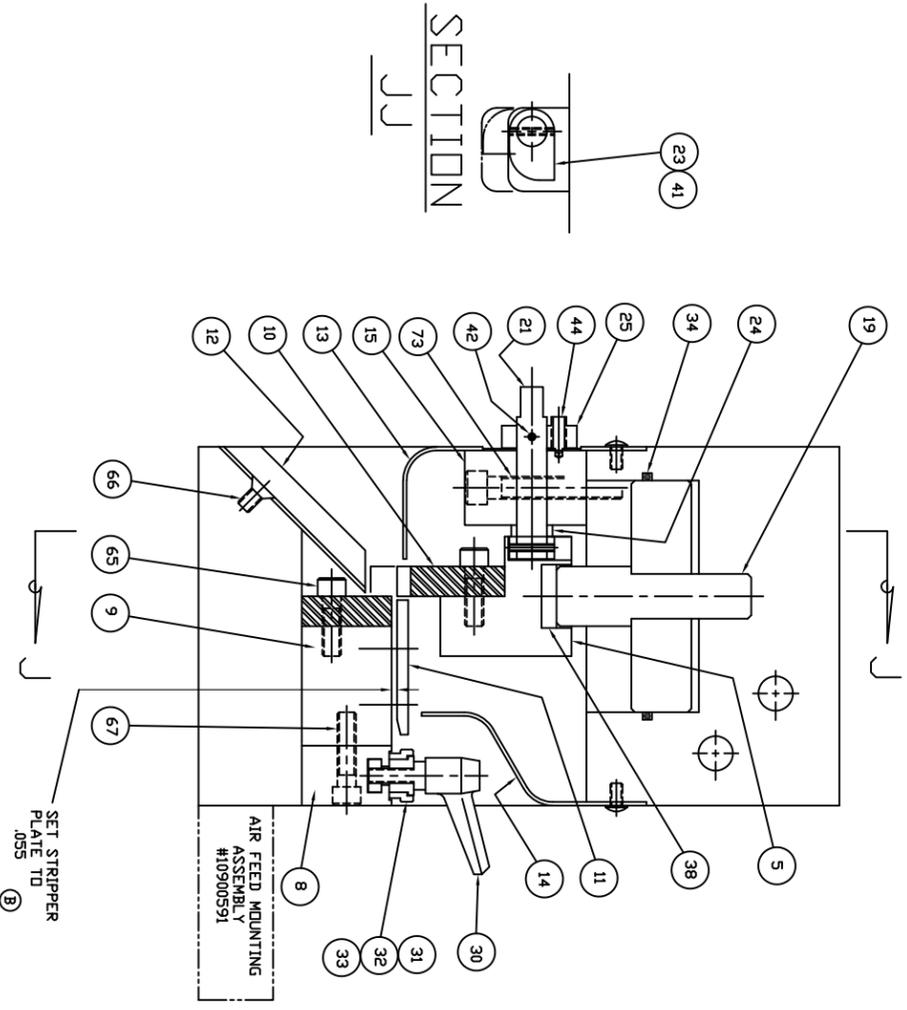
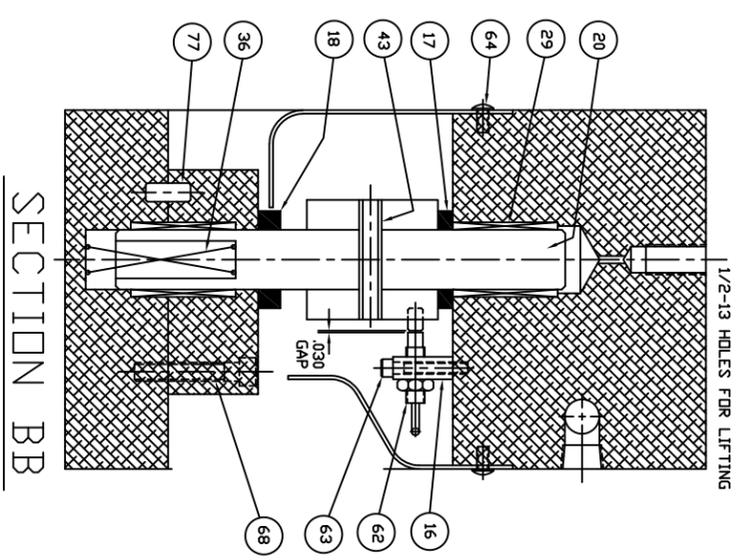
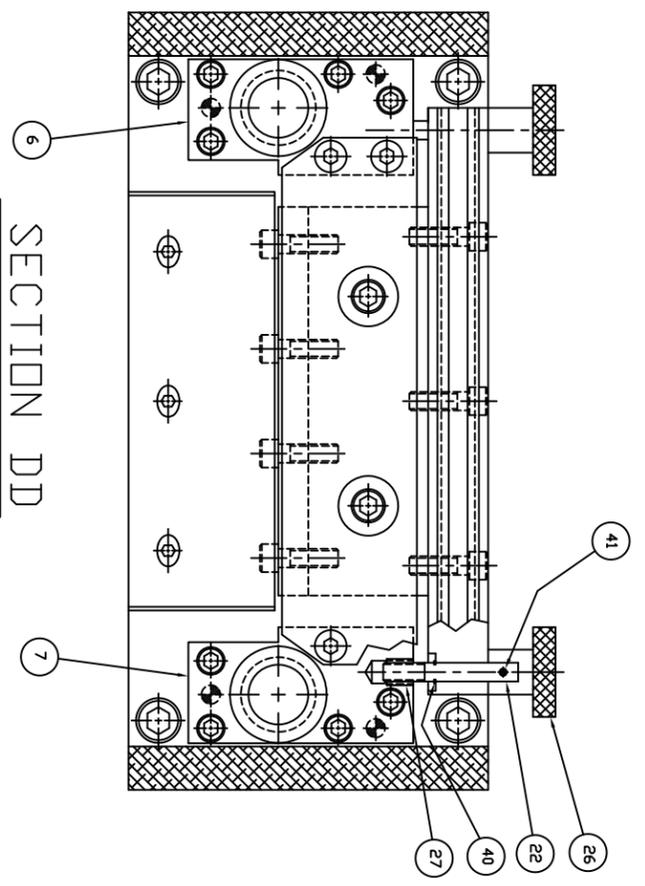


SHT. 1 OF 2

|  |  |
|--|--|
| <b>RAPID-AIR CORPORATION</b><br>ROCKFORD, ILL. & MADISON, SD |  |
| FDR SERVO C-T-L  |  |
| DATE: 11/30/03<br>FILE: 11300379                             | DRAWN BY: SWS<br>CHECKED BY: SWS<br>APPROVED BY: SWS |
| PART NO: 11300379<br>REV: A                                  | QUANTITY: 1<br>UNIT: 1                               |

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  | 32200014 | 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

**RAPID-AIR CORPORATION**  
ROCKFORD, IL • MADISON, SD

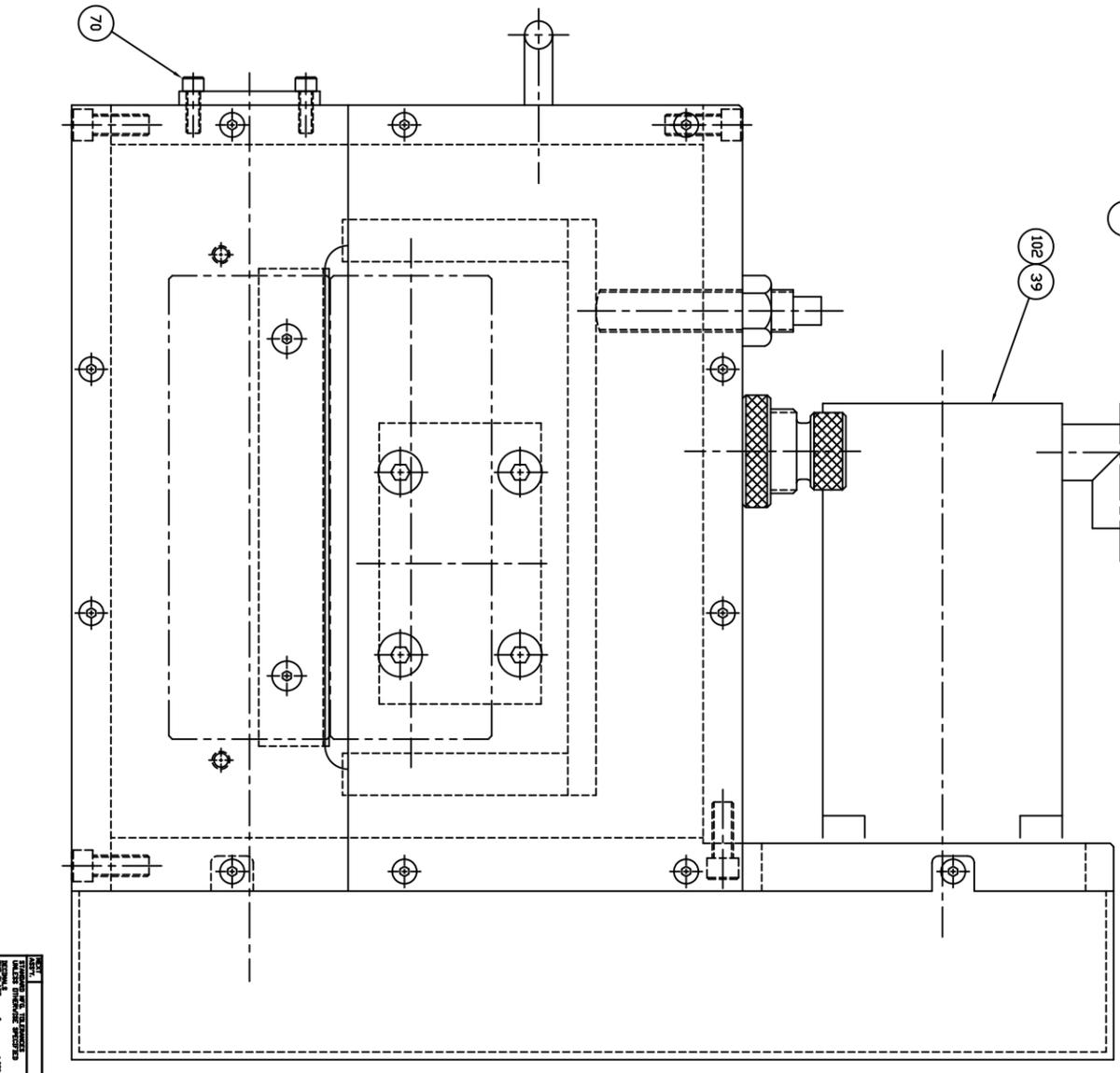
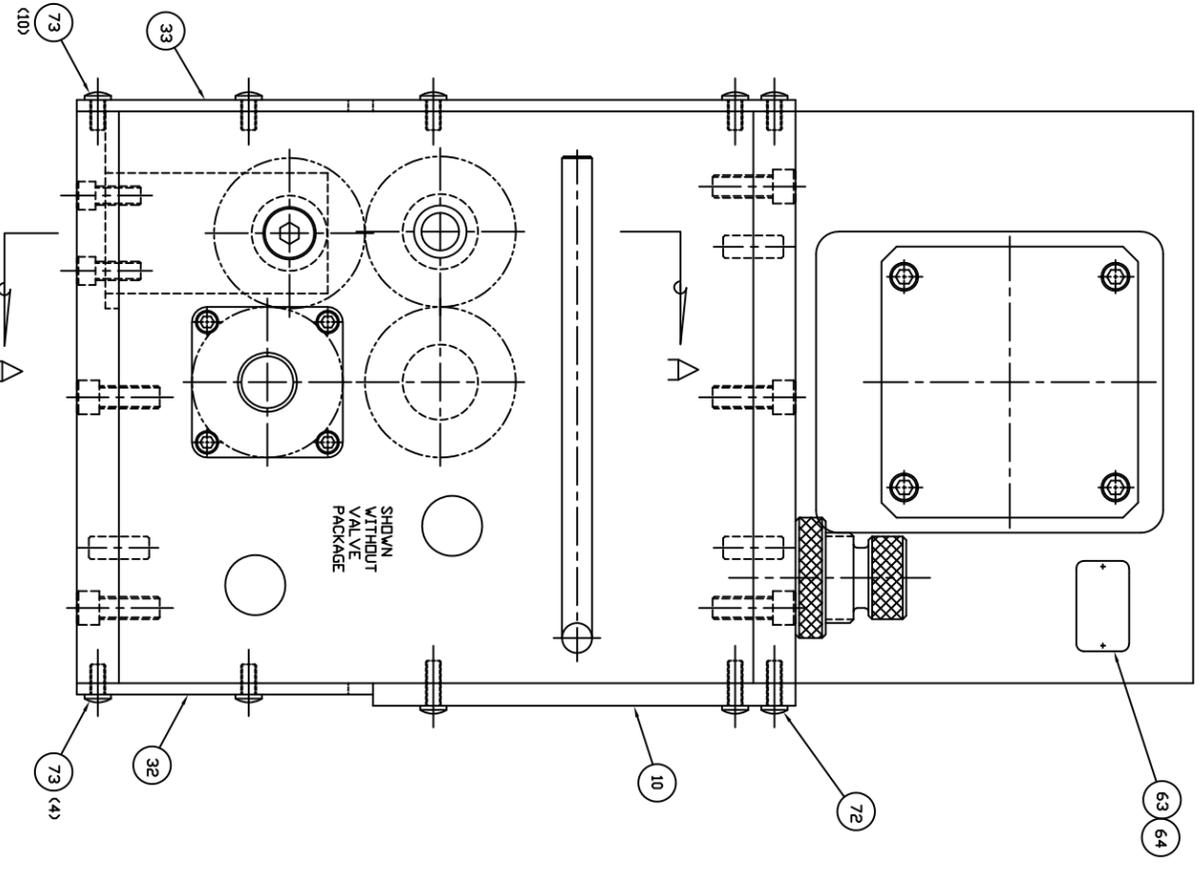
FORM # FSC6S CUTTER W/PNP SENSOR FOR SERVO C-T-L

|        |          |           |       |        |
|--------|----------|-----------|-------|--------|
| REV. 1 | DATE     | BY        | CHKD. | APP'D. |
| 1      | 11/18/88 | EDN HSS71 |       |        |
| 2      | 11/18/88 | EDN HSS71 |       |        |
| 3      | 11/18/88 | EDN HSS71 |       |        |
| 4      | 11/18/88 | EDN HSS71 |       |        |
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| 13     | 11/18/88 | EDN HSS71 |       |        |
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| 15     | 11/18/88 | EDN HSS71 |       |        |
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| 21     | 11/18/88 | EDN HSS71 |       |        |
| 22     | 11/18/88 | EDN HSS71 |       |        |
| 23     | 11/18/88 | EDN HSS71 |       |        |
| 24     | 11/18/88 | EDN HSS71 |       |        |
| 25     | 11/18/88 | EDN HSS71 |       |        |
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| 79     | 11/18/88 | EDN HSS71 |       |        |
| 80     | 11/18/88 | EDN HSS71 |       |        |
| 81     | 11/18/88 | EDN HSS71 |       |        |
| 82     | 11/18/88 | EDN HSS71 |       |        |

| 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 RING                       |
| 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 RING                       |
| 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 | LOWER IDLER SPUR GEAR         |
| 16 1      | 32600235 | UPPER ROLLER SPUR GEAR        |
| 15 1      | 32600234 | 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 | LOWER IDLER SPUR GEAR         |
| 16 1      | 32600235 | UPPER ROLLER SPUR GEAR        |
| 15 1      | 32600234 | 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                  |

SHEET 1 OF 4

DATE: 10-14-14  
 DRAWN BY: DJU  
 CHECKED BY: [ ]  
 APPROVED BY: [ ]  
 PART NO.: 2881X V/AIR PILOT RELEASE  
 REV: 13000622  
 E

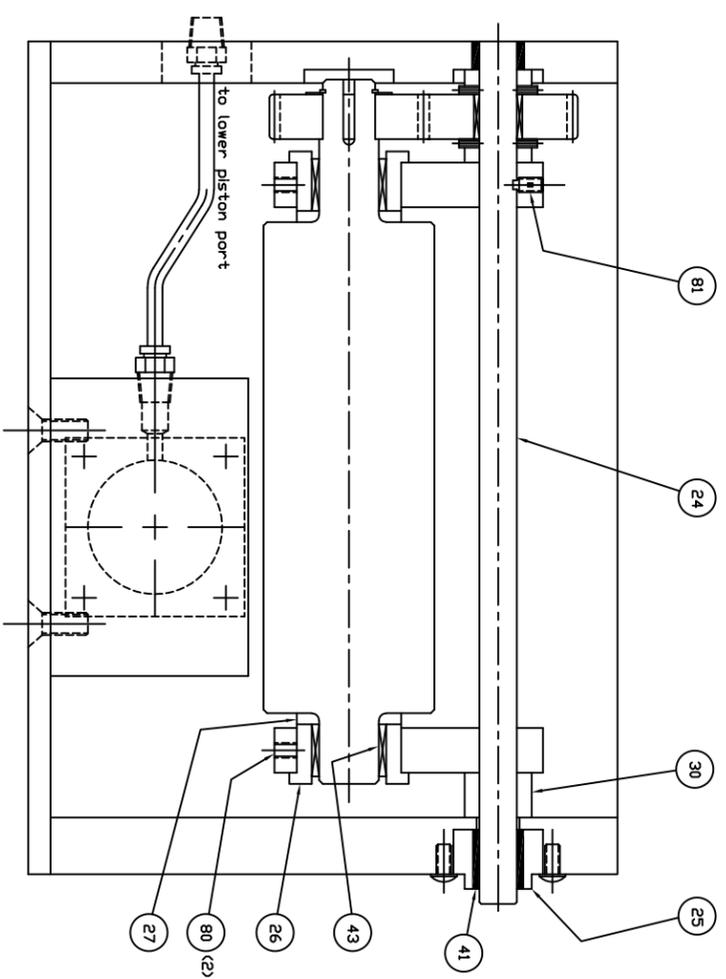
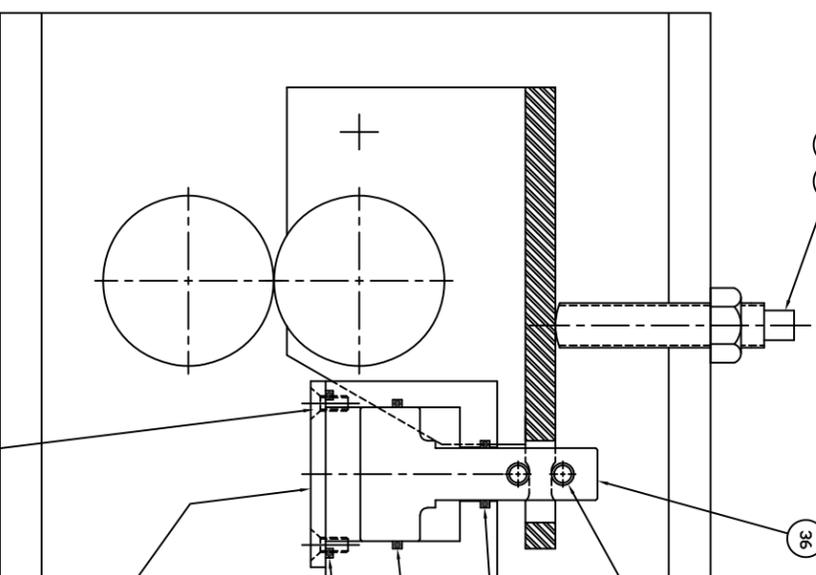
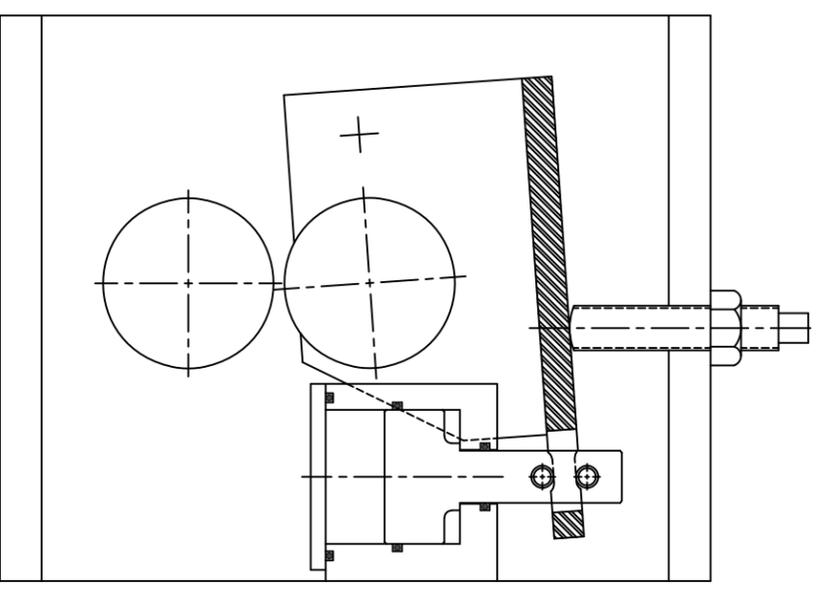
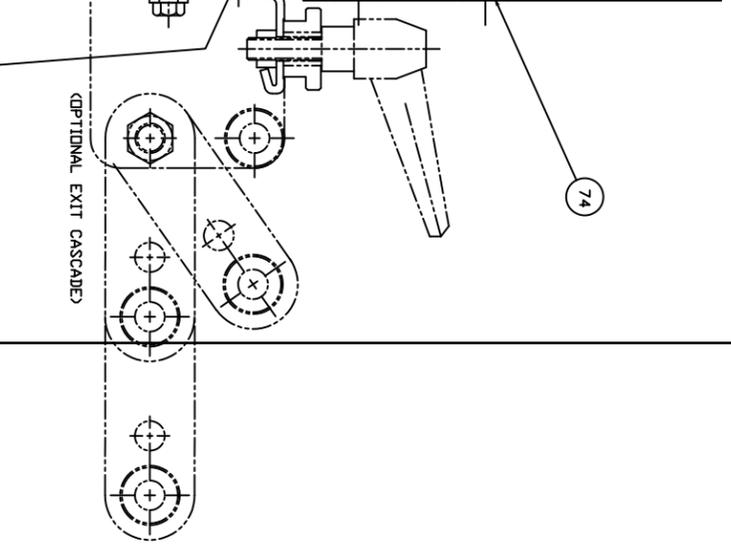
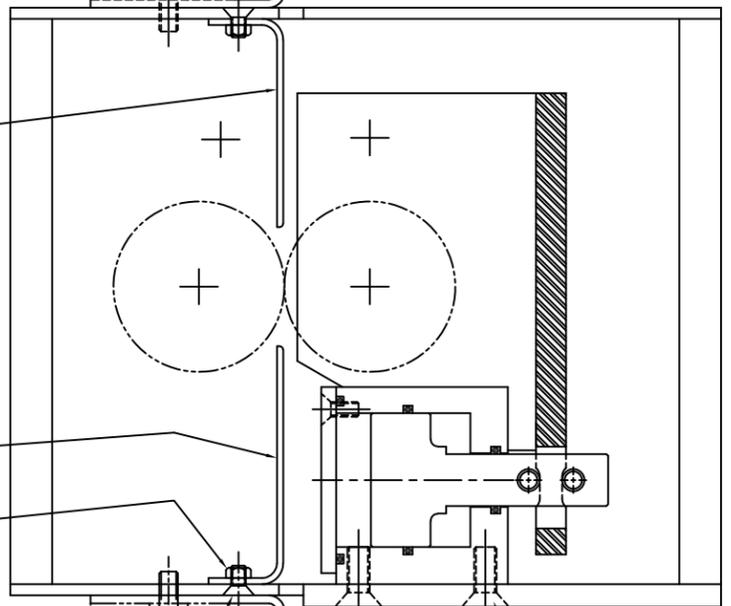
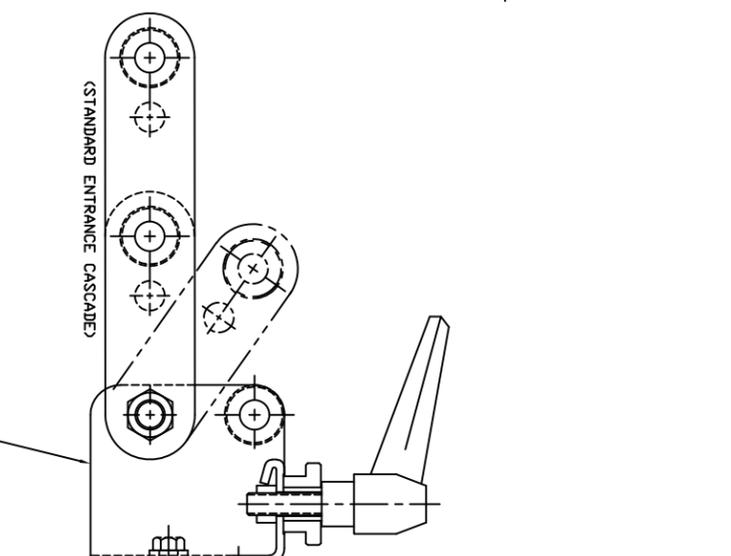
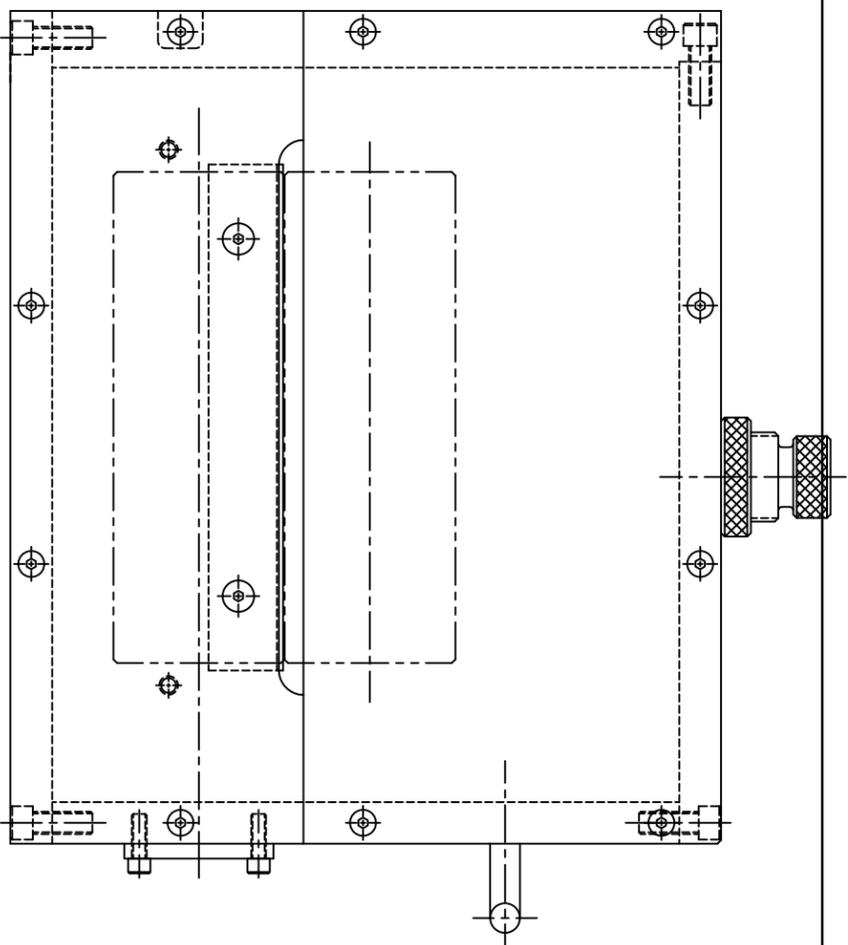
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SHOWN  
 WITHOUT  
 VALVE  
 PACKAGE



| 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 RING                       |
| 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                      |



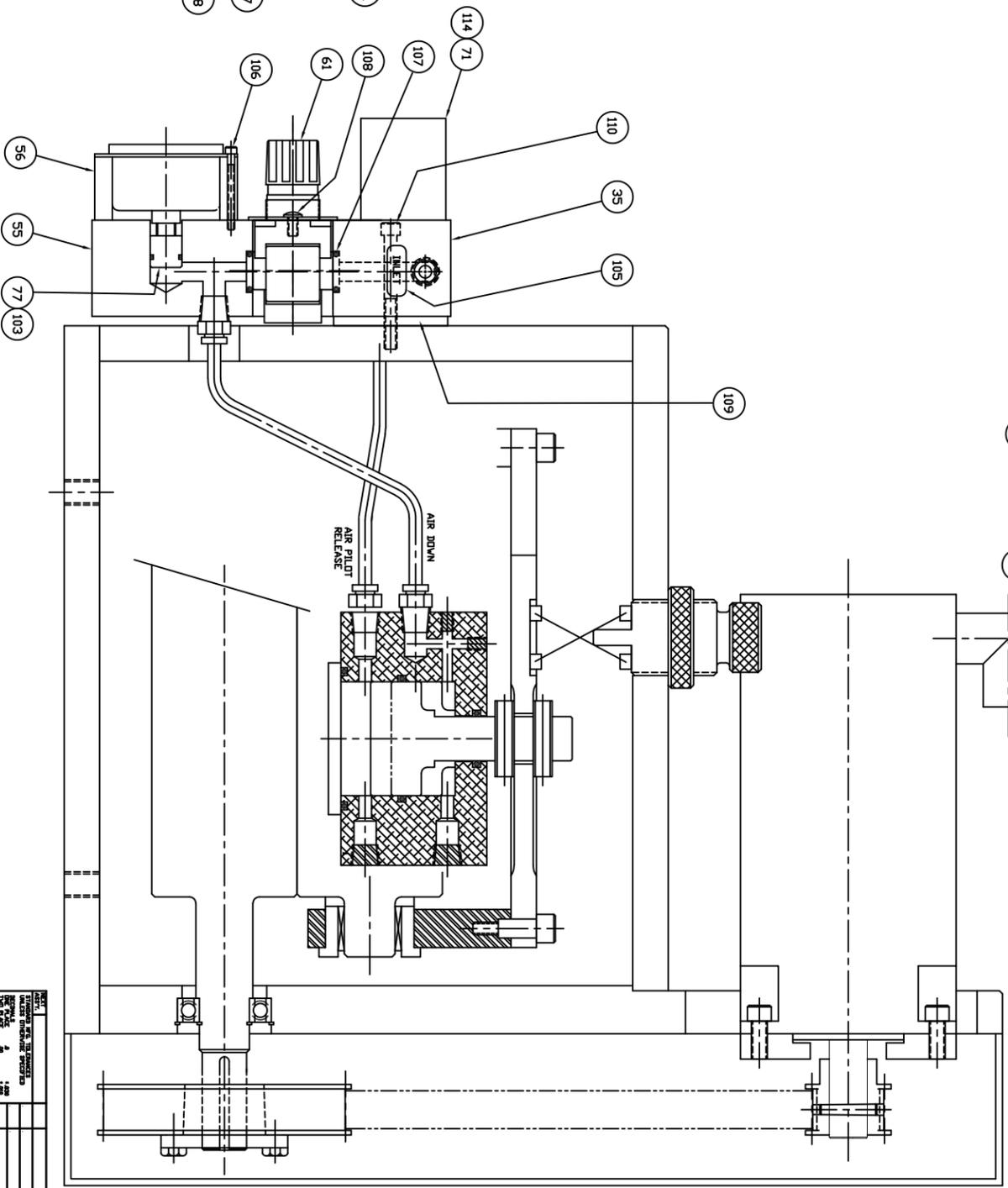
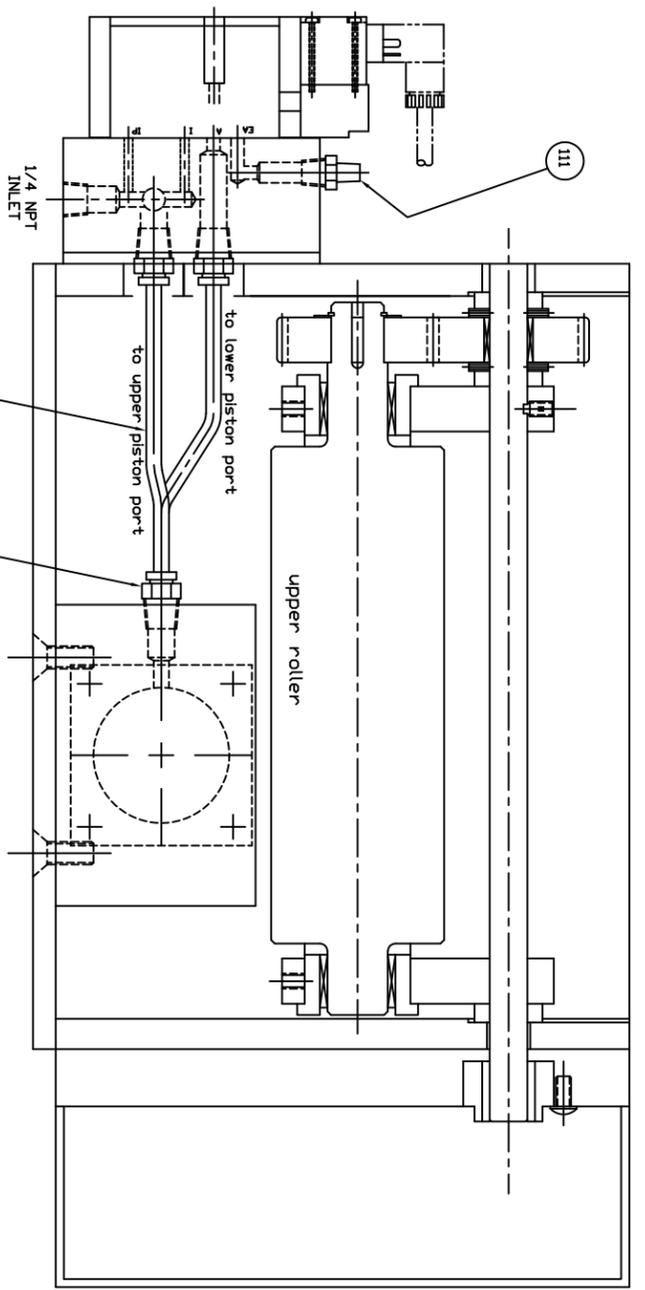
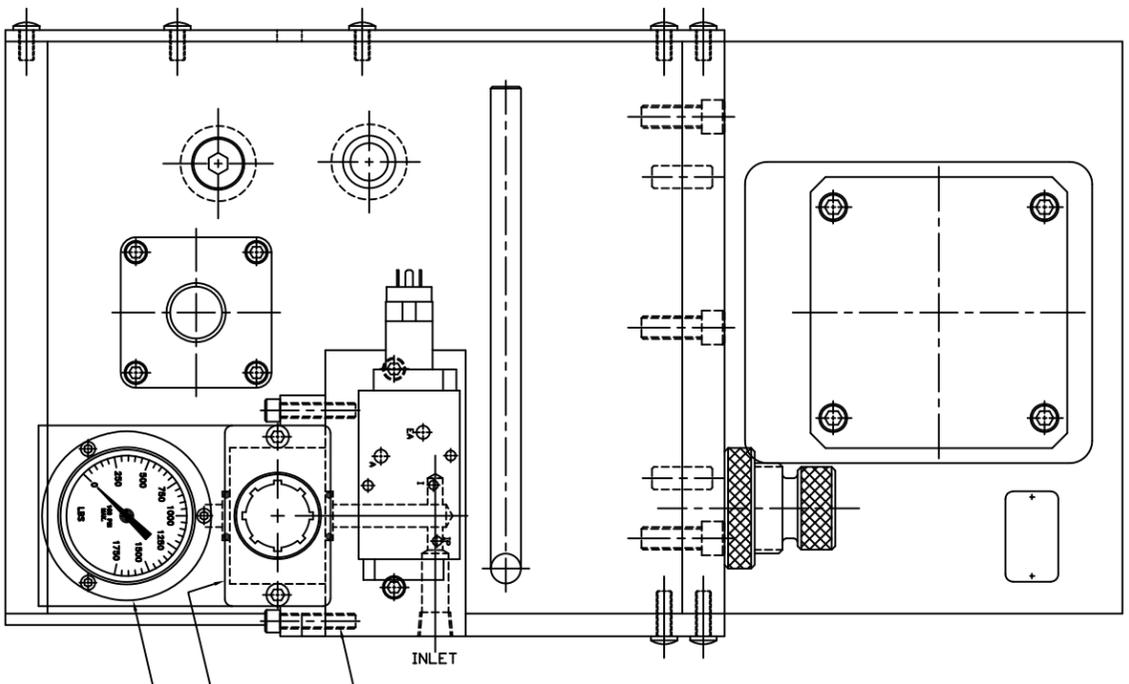


ROLLERS OPEN

ROLLERS CLOSED

SHEET 3 OF 4

|   |   |
|---|---|
| <b>RAPID-AIR CORPORATION</b><br>ROCKFORD, IL • MADISON, SD<br>& AIR DIVN  |   |
| PART NAME: 2081X V/AIR PILOT RELEASE<br>DRAWN BY: DJL<br>CHECKED BY: [blank]<br>DATE: 10-10-2014<br>SCALE: FULL | REV. 1: [blank]<br>REV. 2: [blank]<br>REV. 3: [blank]<br>REV. 4: [blank]<br>REV. 5: [blank] |
| DATE: 10-10-2014<br>TIME: 13000622  | DATE: [blank]<br>TIME: [blank]  |



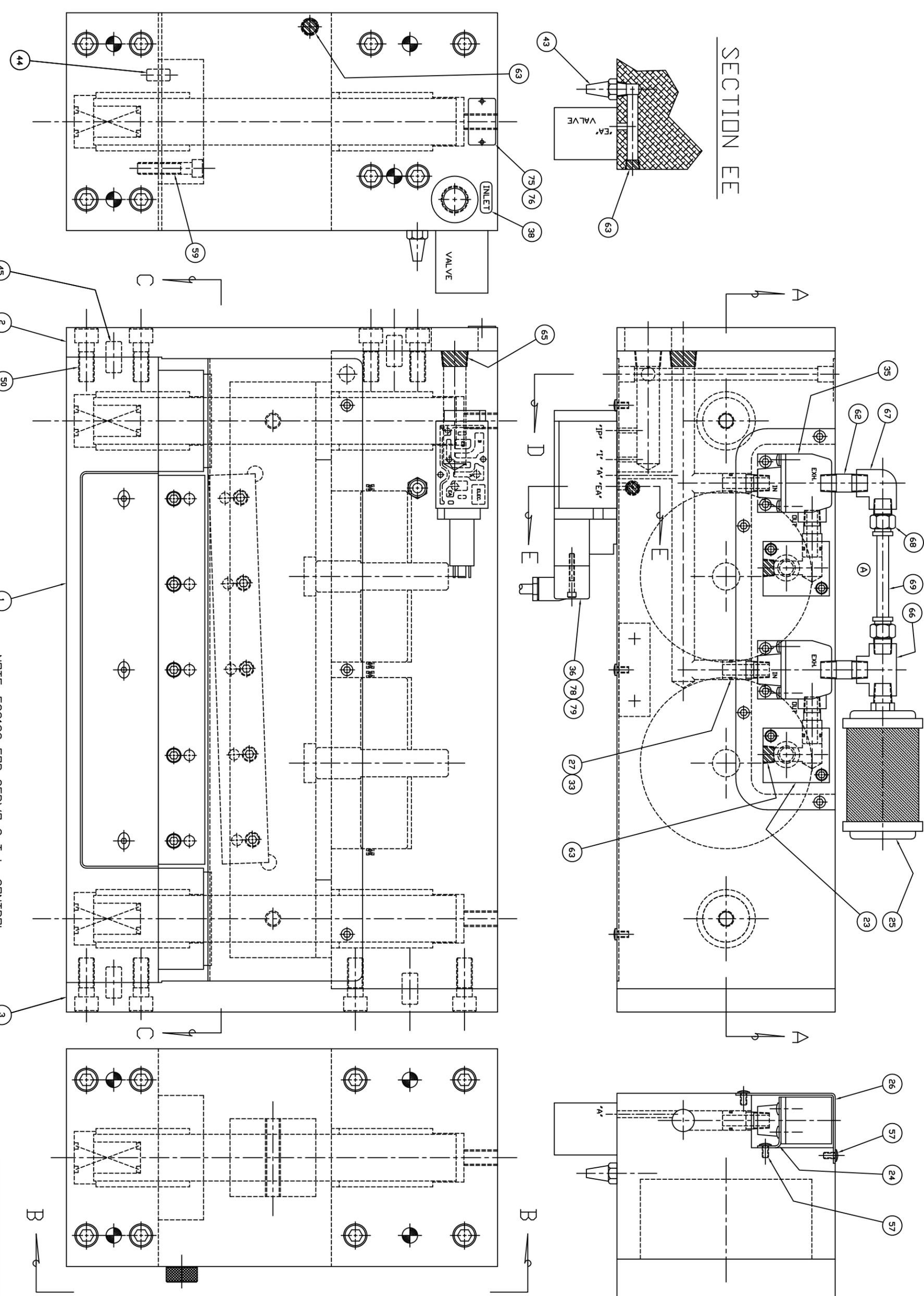
SHEET 4 OF 4

| REV | DATE       | BY        | CHKD | DESCRIPTION                          |
|-----|------------|-----------|------|--------------------------------------|
| A   | 10-10-2014 | ECN #3724 |      | 2081X V/AIR PILOT RELEASE & AIR DOWN |

**RAPID-AIR CORPORATION**  
 ROCKFORD, IL • MADISON, SD

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

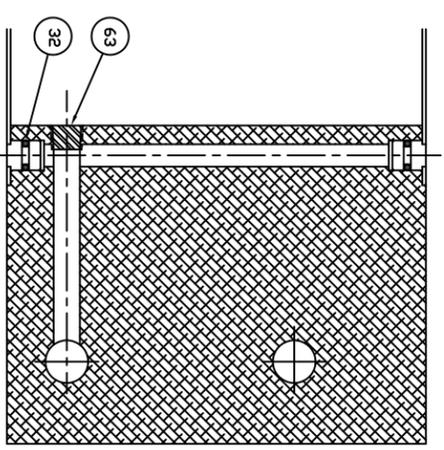
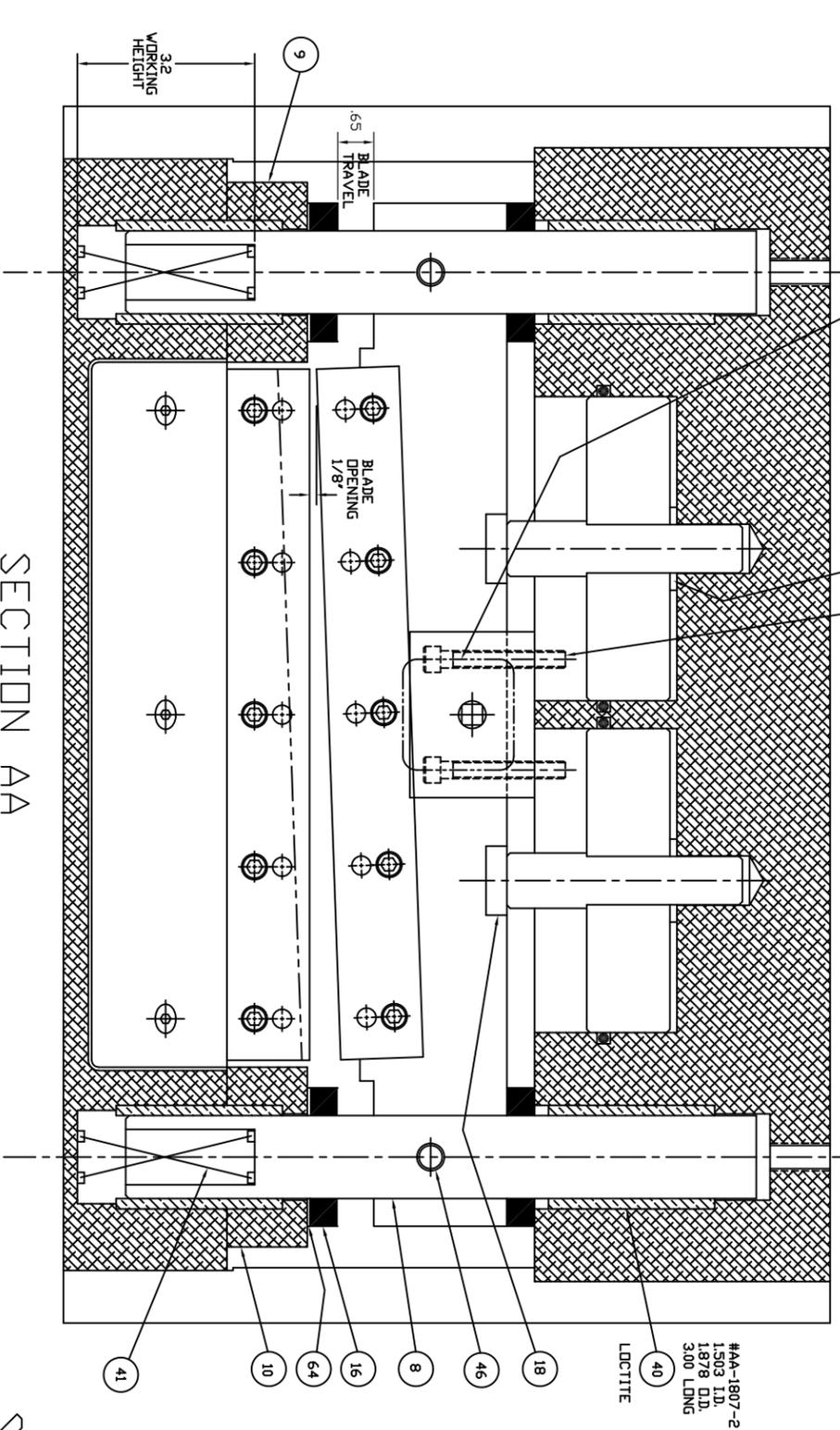
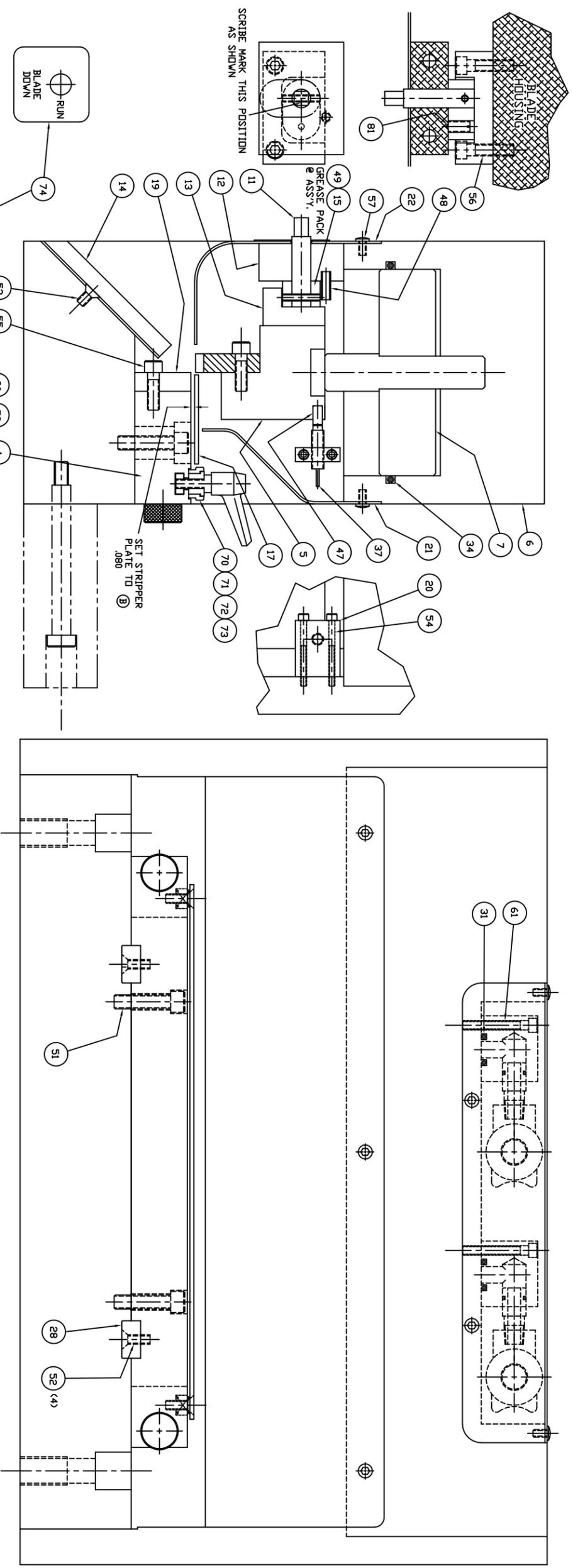
NOTE: FSC125 FOR SERVO C-T-L, CONTROL  
 VERSION "C" - 24 V.D.C. VALVE, PNP SENSOR

SHEET 1 OF 3

|     |      |    |      |                        |
|-----|------|----|------|------------------------|
| REV | DATE | BY | CHKD | DESCRIPTION            |
| 1   |      |    |      | ISSUED FOR MANUFACTURE |
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| 3   |      |    |      | REVISED                |
| 4   |      |    |      | REVISED                |
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| 100 |      |    |      | REVISED                |

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

11300351-352



VIEW BB

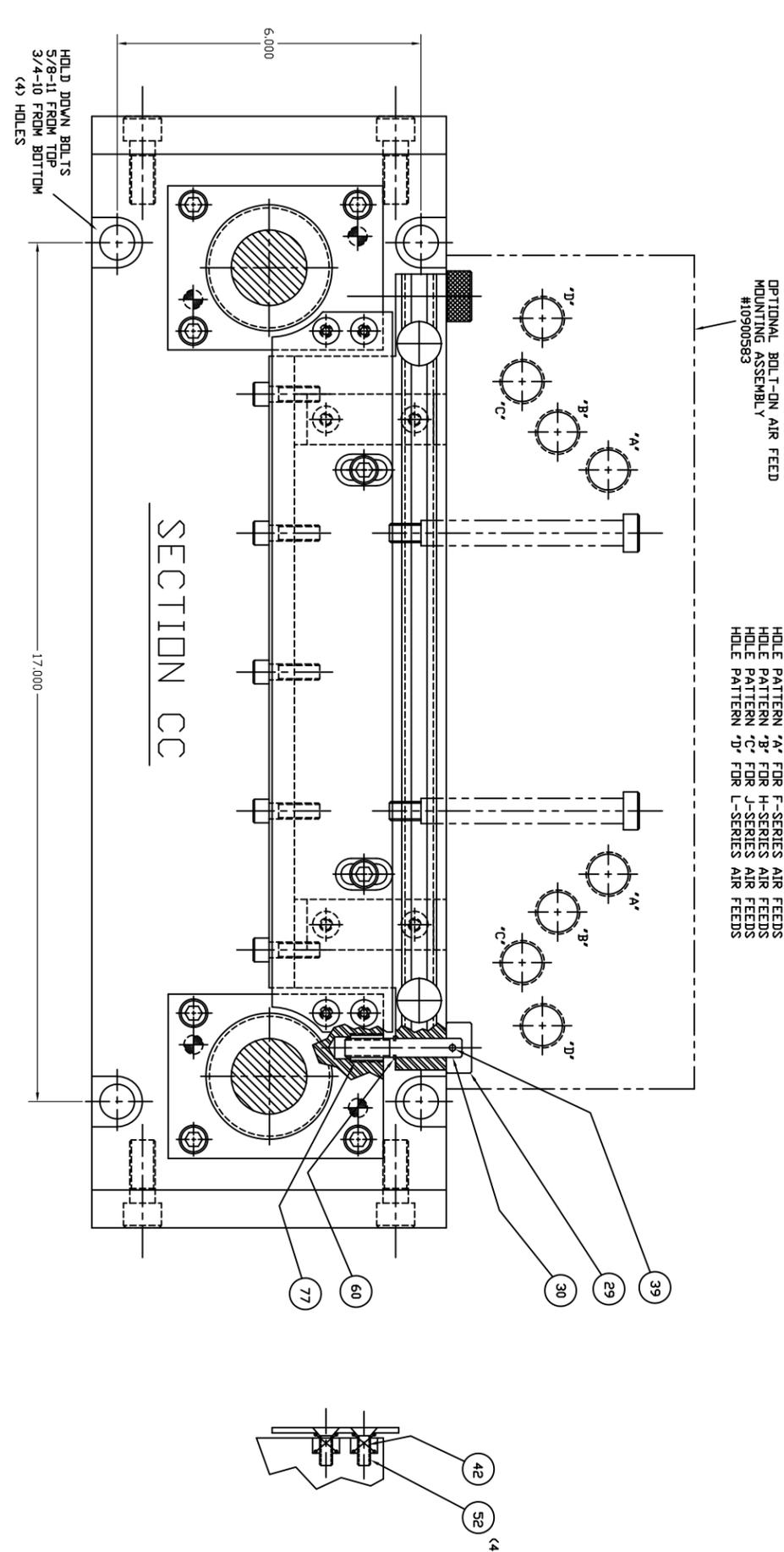
SECTION DD

SECTION AA

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

|   |   |
|---|---|
| <b>RAPID-AIR CORPORATION</b><br>ROCKFORD, IL • MADISON, SD                |   |
| PART NAME:<br>FSC12S CUTTER W/PNP<br>SENSOR FOR SERVO C-T-L               | PART NUMBER:<br>11300380  |
| DATE: 11/13/80<br>DRAWN BY: C/SMS<br>CHECKED BY: C/SMS<br>ENGINEER: C/SMS | DATE: 11/13/80<br>DRAWN BY: C/SMS<br>CHECKED BY: C/SMS<br>ENGINEER: C/SMS |

|    |             |                                  |
|----|-------------|----------------------------------|
| 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                        |
| 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                       |

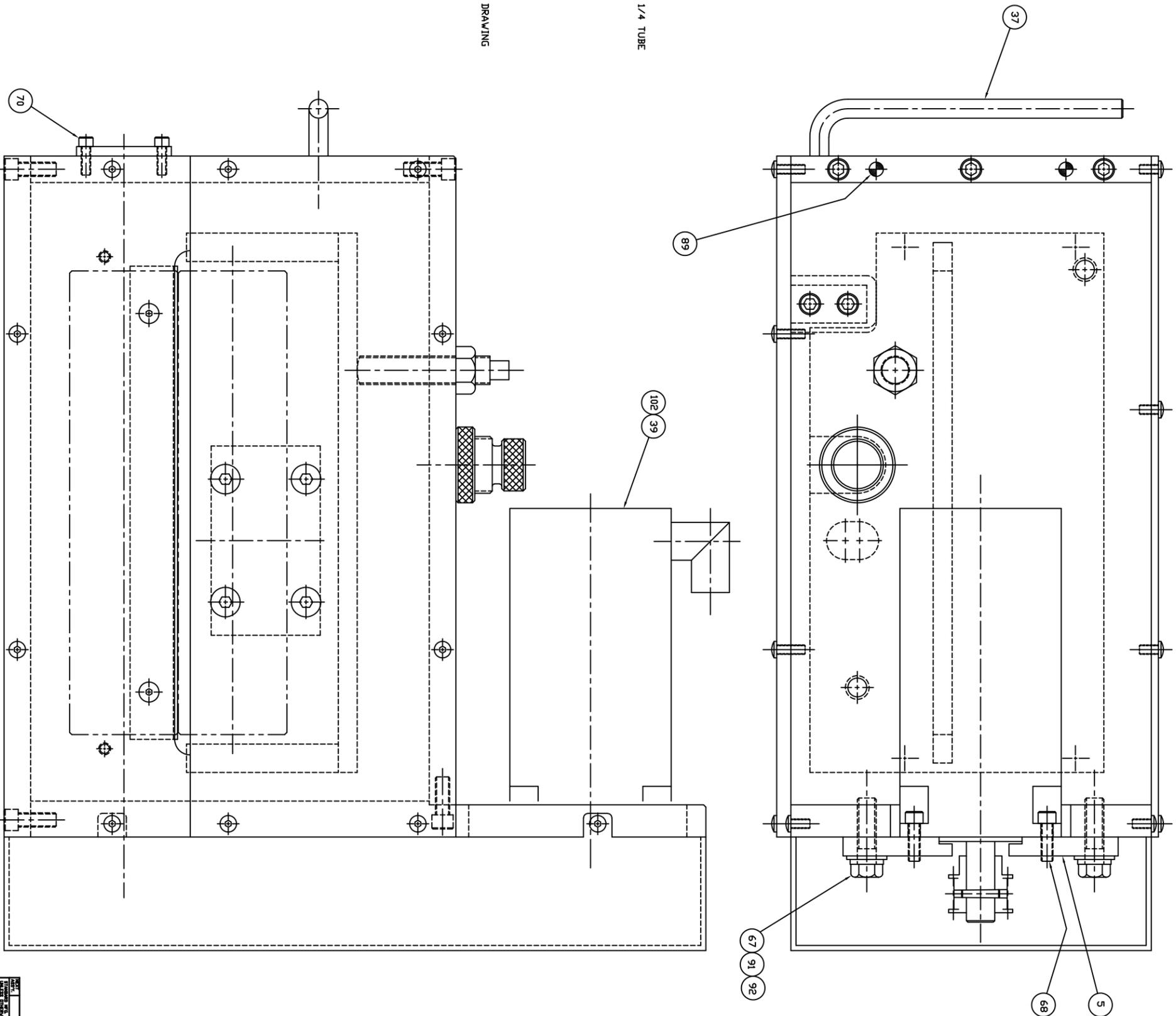


NOTE: FSCIS FOR SERVO C-T-L, CONTROL  
VERSION 'C' - 24 V.D.C. VALVE, PNP SENSOR

|     |          |                                  |
|-----|----------|----------------------------------|
| REV | DATE     | DESCRIPTION                      |
| 1   | 10/16/00 | ISSUED FOR PRODUCTION            |
| 2   | 01/13/01 | REVISED TO ADD PNP SENSOR OPTION |
| 3   | 03/13/01 | REVISED TO ADD C-T-L OPTION      |
| 4   | 03/13/01 | REVISED TO ADD C-T-L OPTION      |
| 5   | 03/13/01 | REVISED TO ADD C-T-L OPTION      |
| 6   | 03/13/01 | REVISED TO ADD C-T-L OPTION      |
| 7   | 03/13/01 | REVISED TO ADD C-T-L OPTION      |
| 8   | 03/13/01 | REVISED TO ADD C-T-L OPTION      |
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| 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                       |

DRAWING

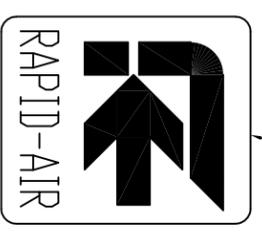
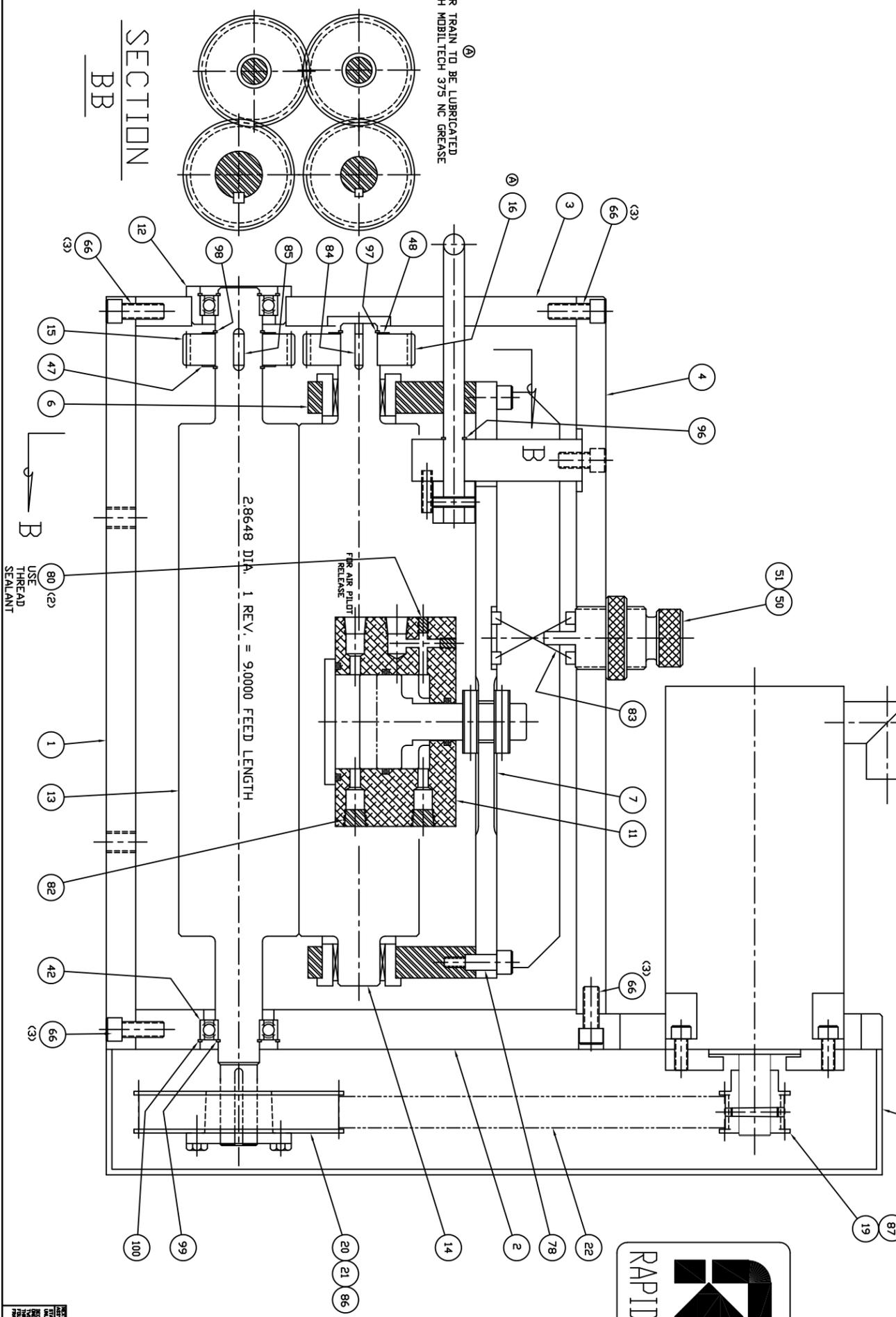
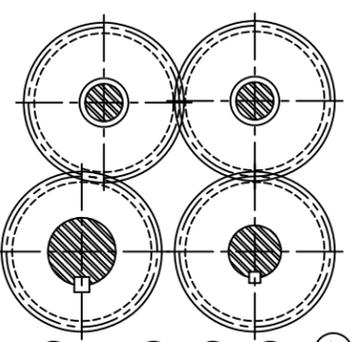
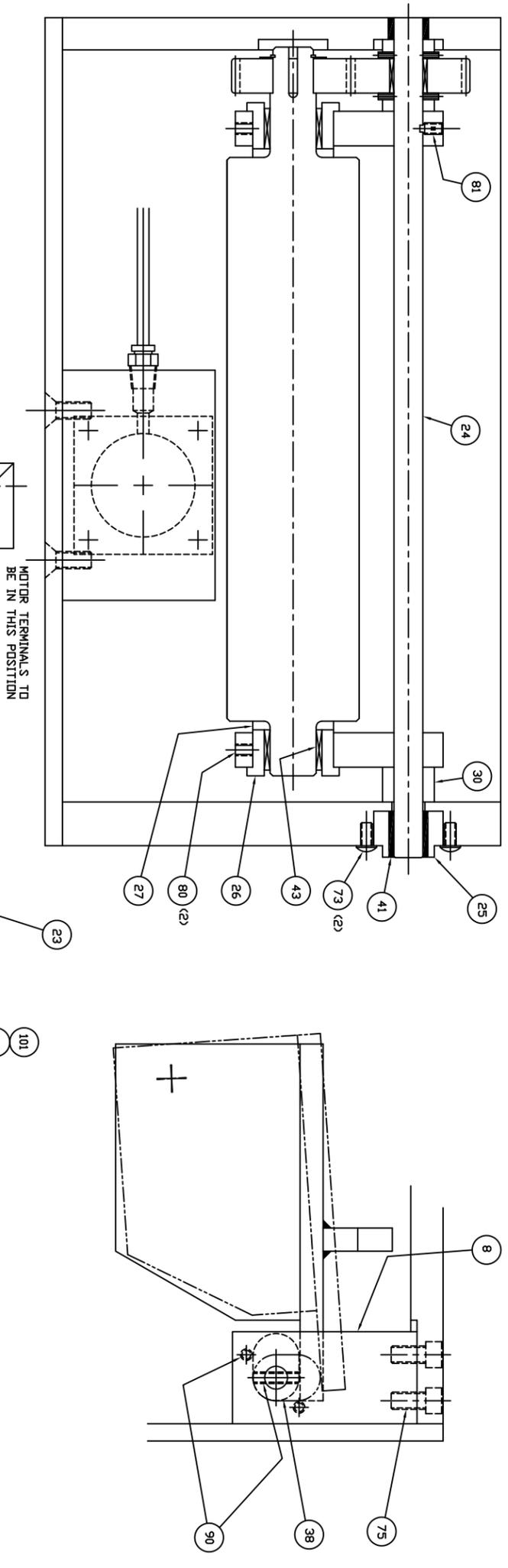


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| 79 1  | 66162200 | SHOULDER SCREW                |
| 78 4  | 66137075 | SHOULDER SCREW                |
| 77 1  | 36300004 | GAUGE FITTING                 |
| 76 2  | 65931075 | SHCS 5/16-18 X 3/4            |
| 75 2  | 65936075 | SHCS 3/8-16 X 3/4             |
| 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  | 33902655 | 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                  |

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| REV | DATE       | BY        | CHKD | APP'D |
| A   | 03-20-2014 | ECN #3724 |      |       |
| REV | DATE       | BY        | CHKD | APP'D |
|     |            |           |      |       |

SHEET 1 OF 5

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

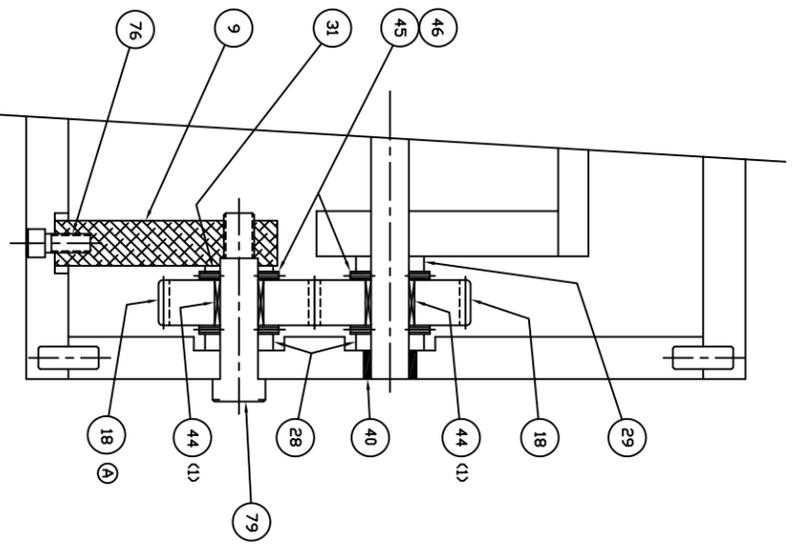
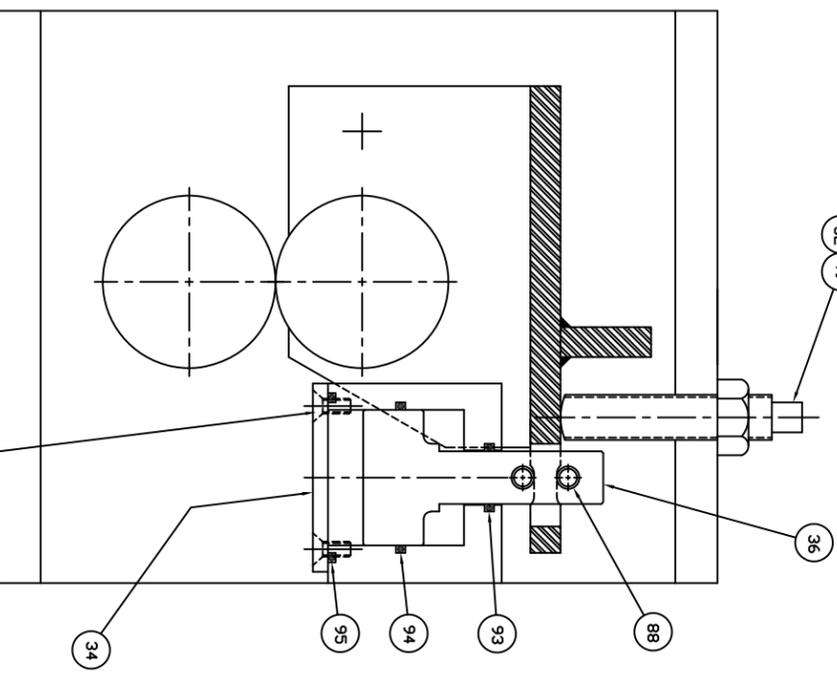
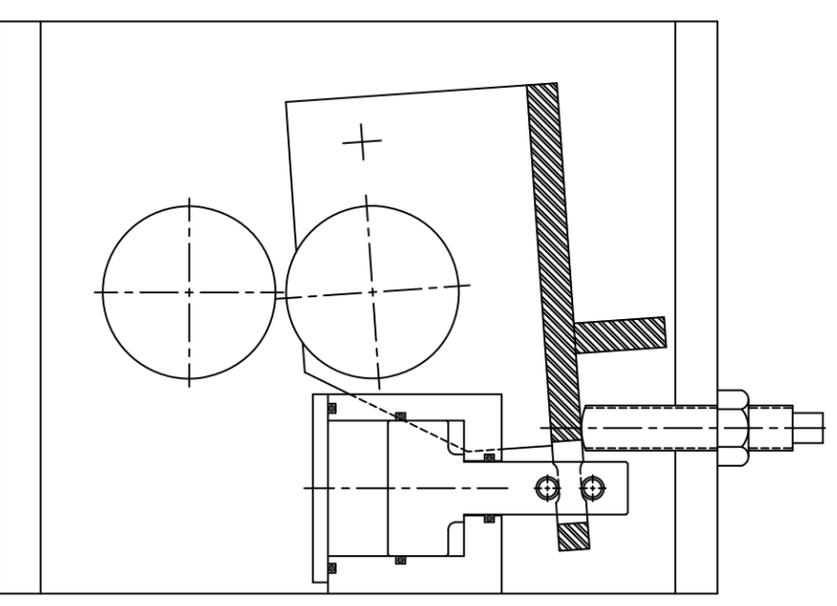
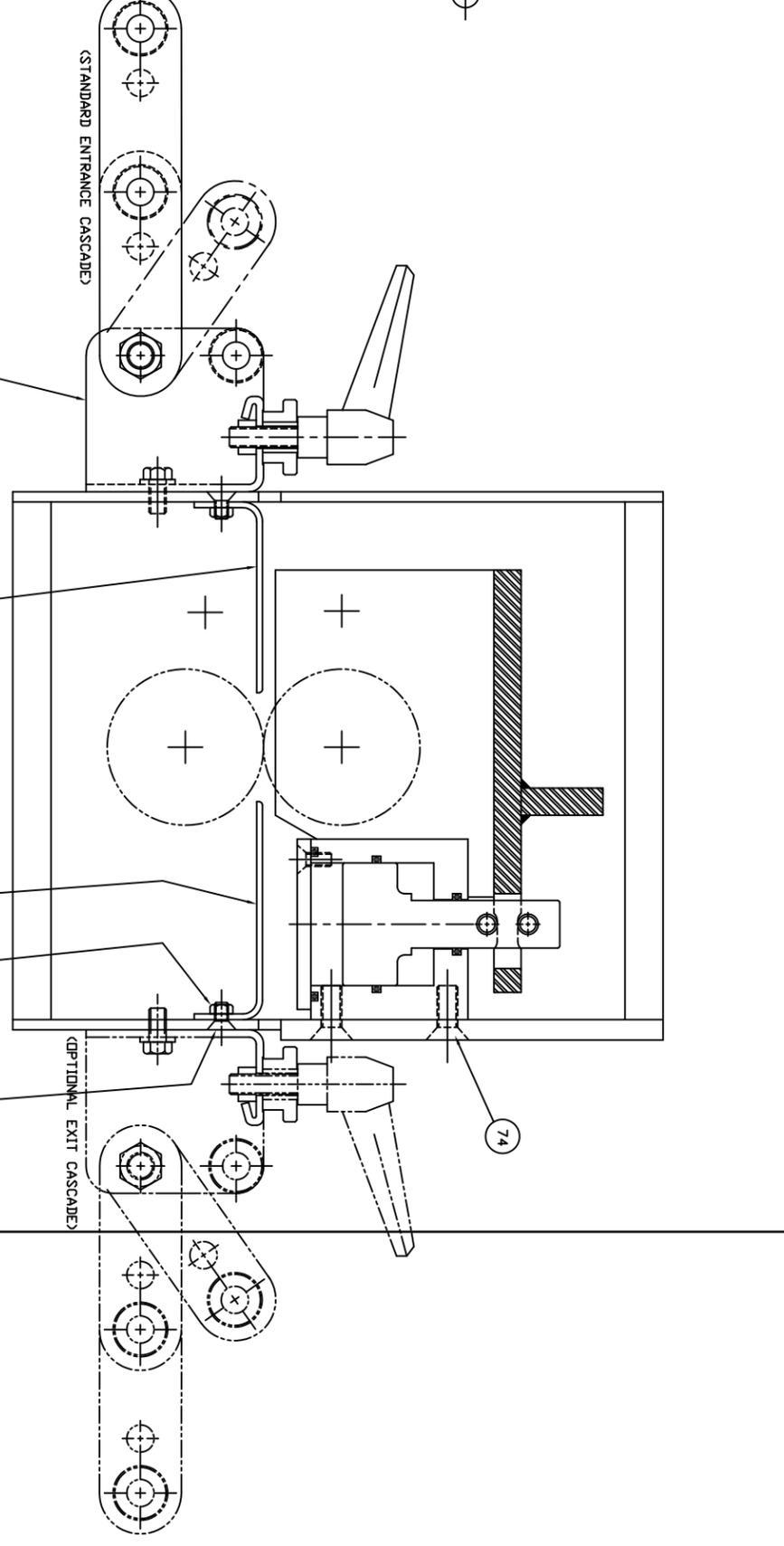
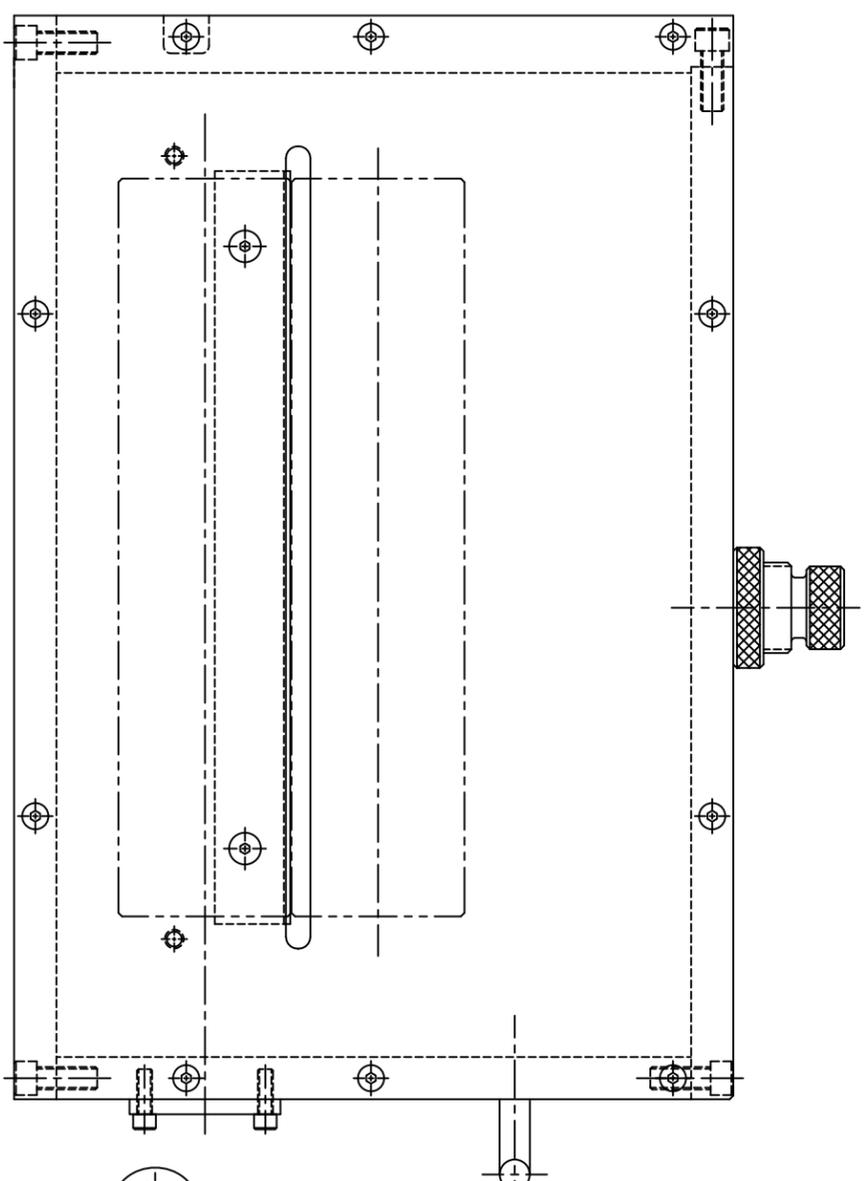


SHEET 2 OF 5

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| A   | 10-13-2014 | DU |      | ECN #3724   |

RAPID-AIR CORPORATION  
 ROCKFORD, IL & MADISON, SD  
 & AIR DIVN

PART NAME: 212TX V/AIR PILOT RELEASE  
 DRAWN BY: DU  
 CHECKED BY:  
 DATE: 10-13-2014  
 FILE: FULL  
 13000623



ROLLERS OPEN

ROLLERS CLOSED

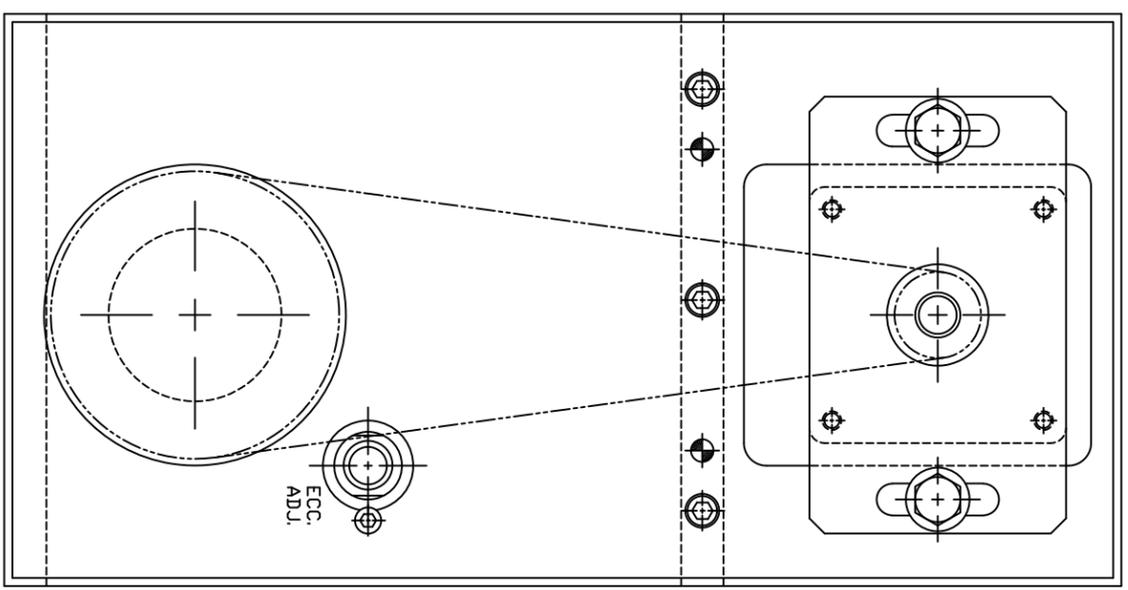
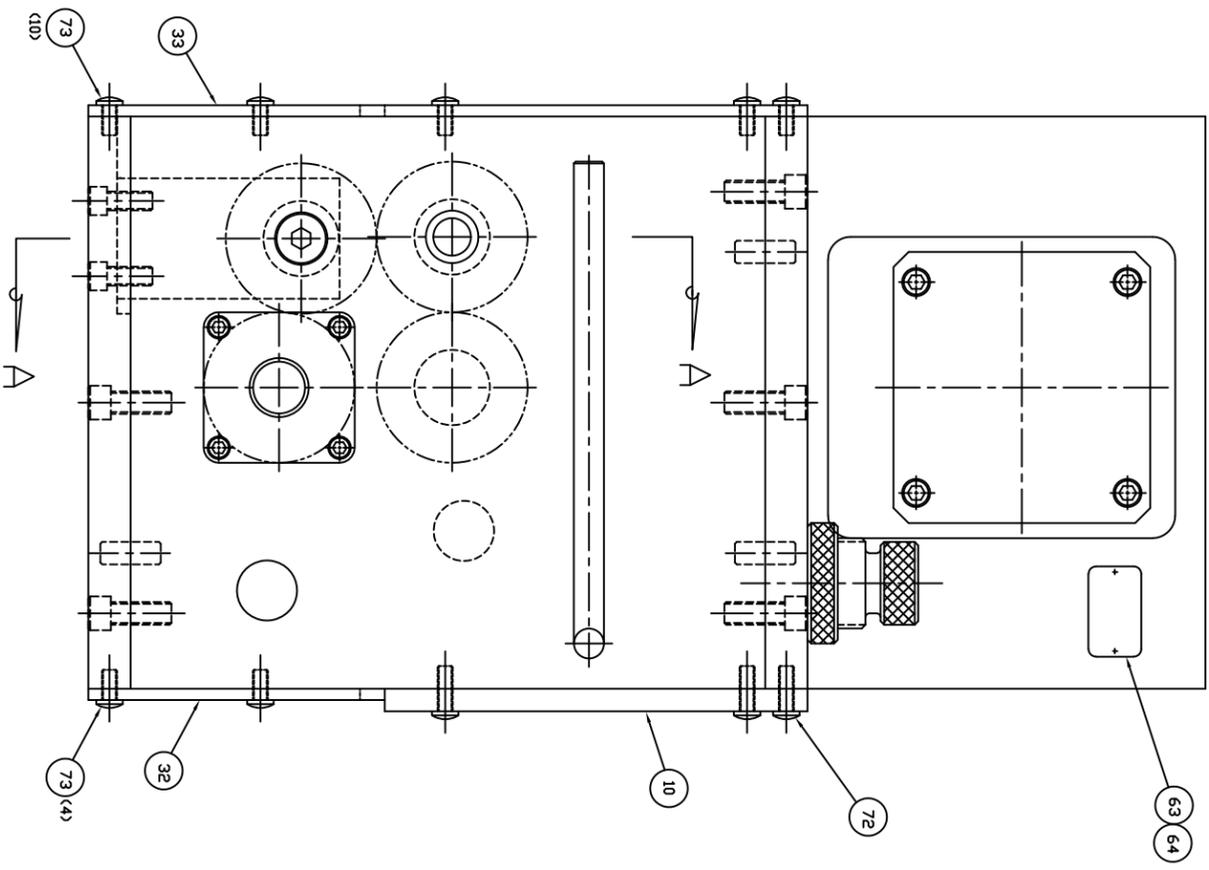
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| 2   | 01-13-2014 | JAN |      | REVISION    |
| 3   | 01-13-2014 | JAN |      | REVISION    |
| 4   | 01-13-2014 | JAN |      | REVISION    |
| 5   | 01-13-2014 | JAN |      | REVISION    |

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

SHEET 3 OF 5

DATE: 01-13-2014  
 TIME: 13:00:00  
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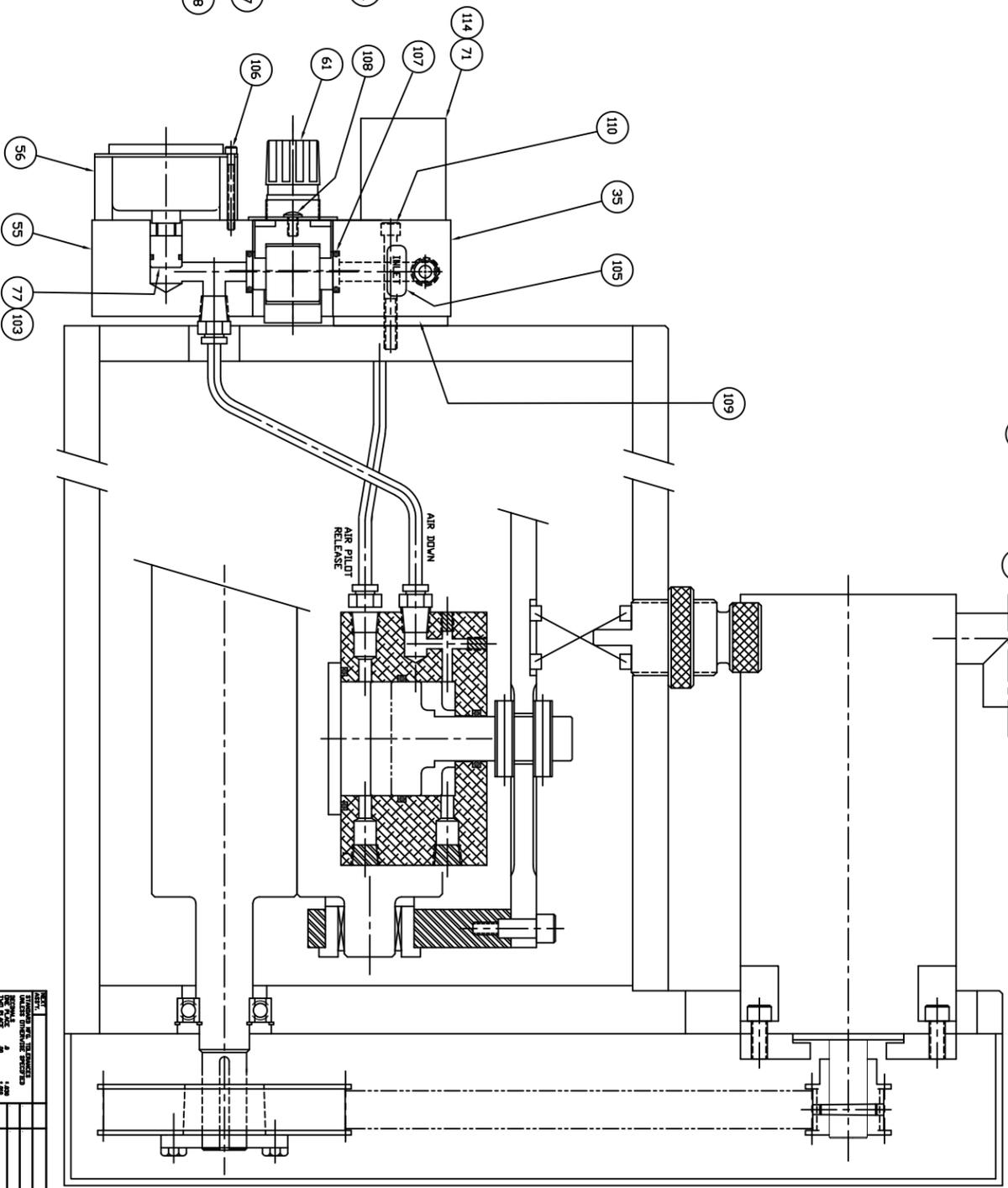
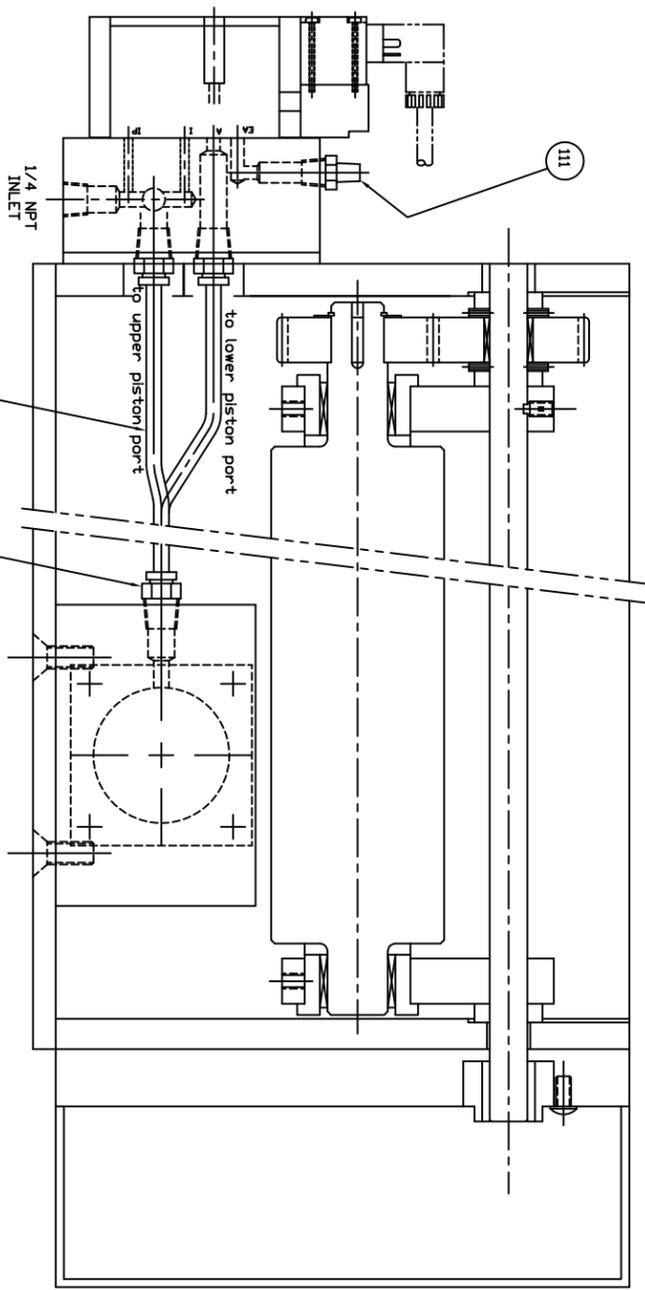
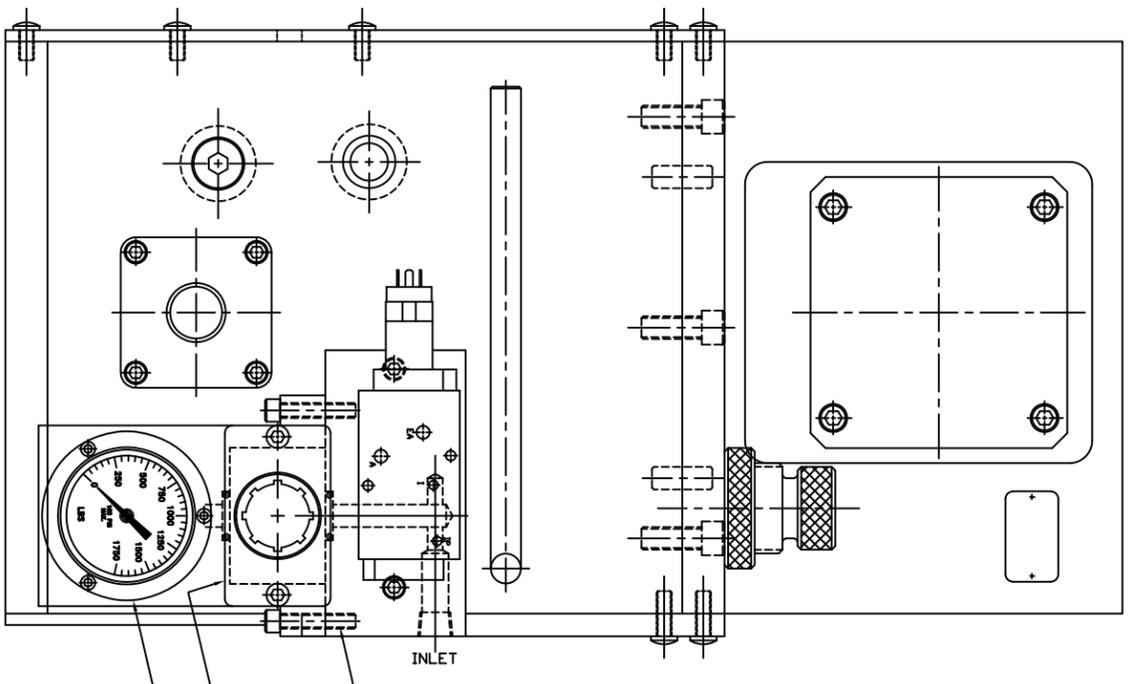


SHEET 4 OF 5

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|     |            |    |      | 212TX V/AIR PILOT RELEASE & AIR DDOWN |

|   |   |
|---|---|
| <b>RAPID-AIR CORPORATION</b><br>ROCKFORD, IL • MADISON, SD<br>& AIR DDOWN |   |
| PART NAME: 212TX V/AIR PILOT RELEASE & AIR DDOWN<br>PART NUMBER: 13000623 | DRAWN BY: DU<br>CHECKED BY:<br>DATE: 10-13-2014<br>TIME: 13000623 |



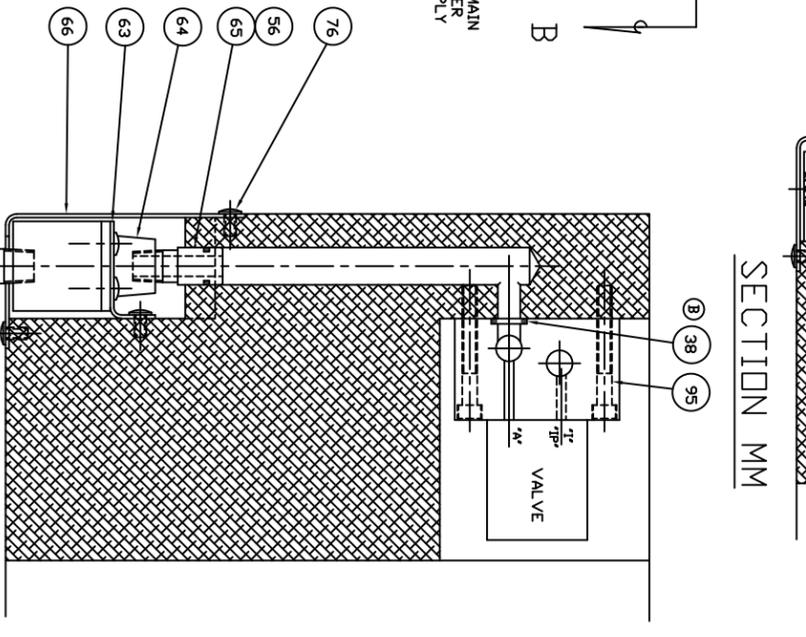
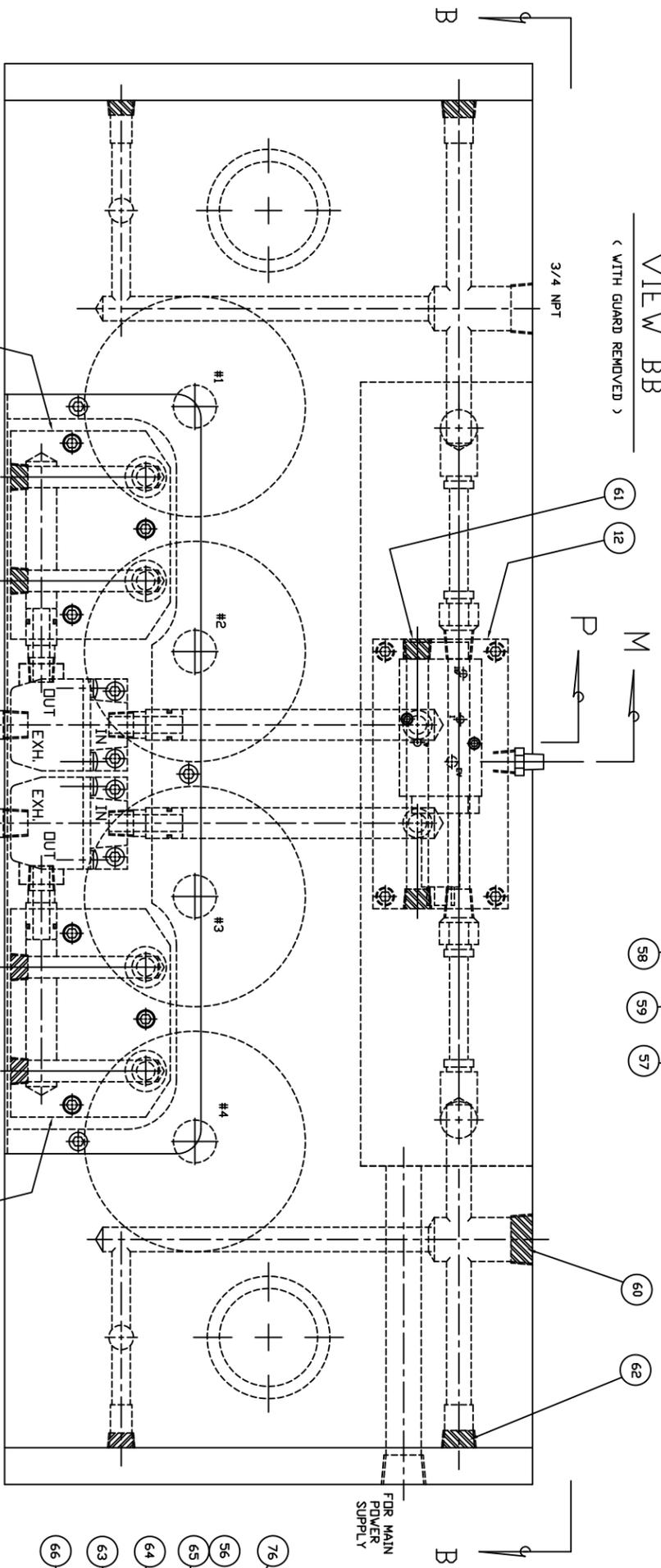
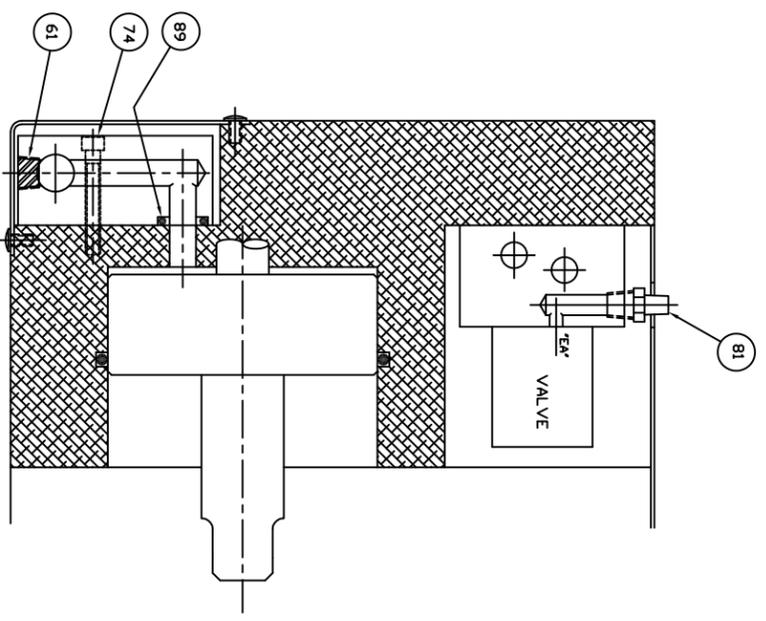
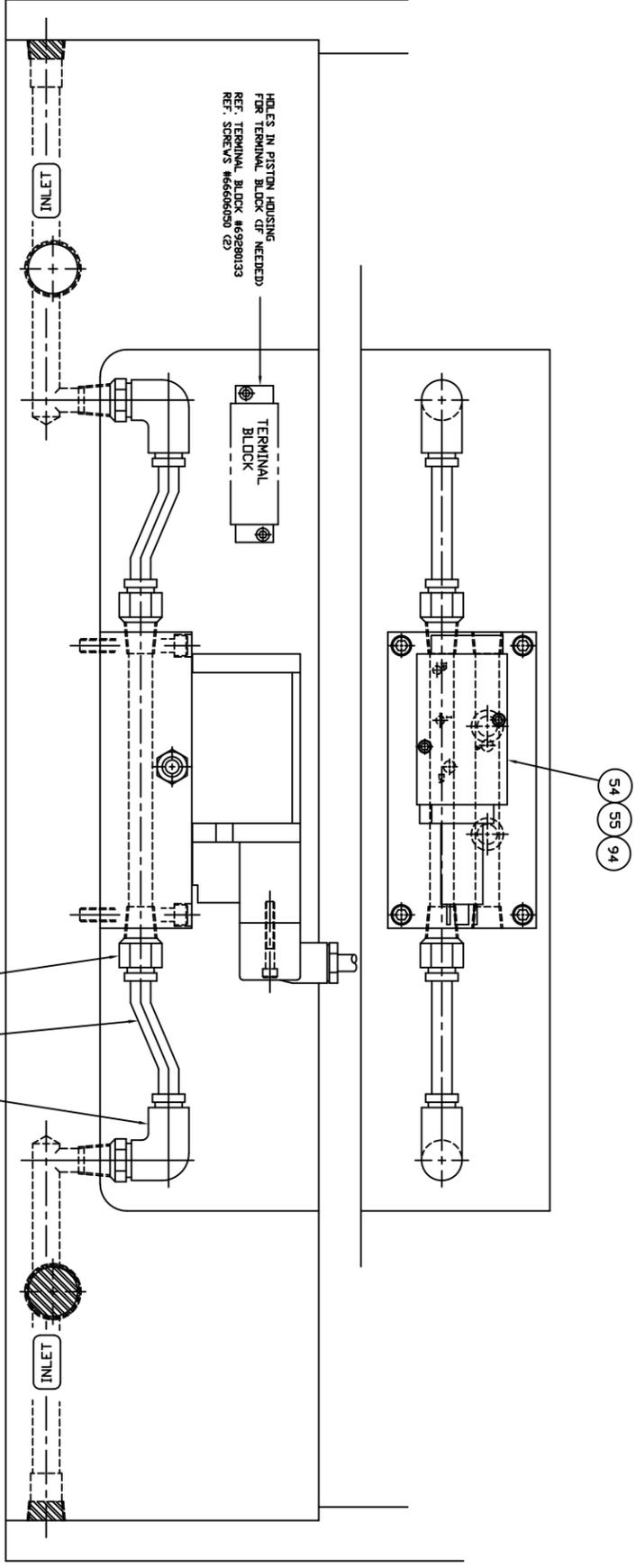
SHEET 4 OF 4

| REV | DATE       | BY | CHKD | DESCRIPTION    |
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| 1   |            |    |      | ISSUE FOR FULL |

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

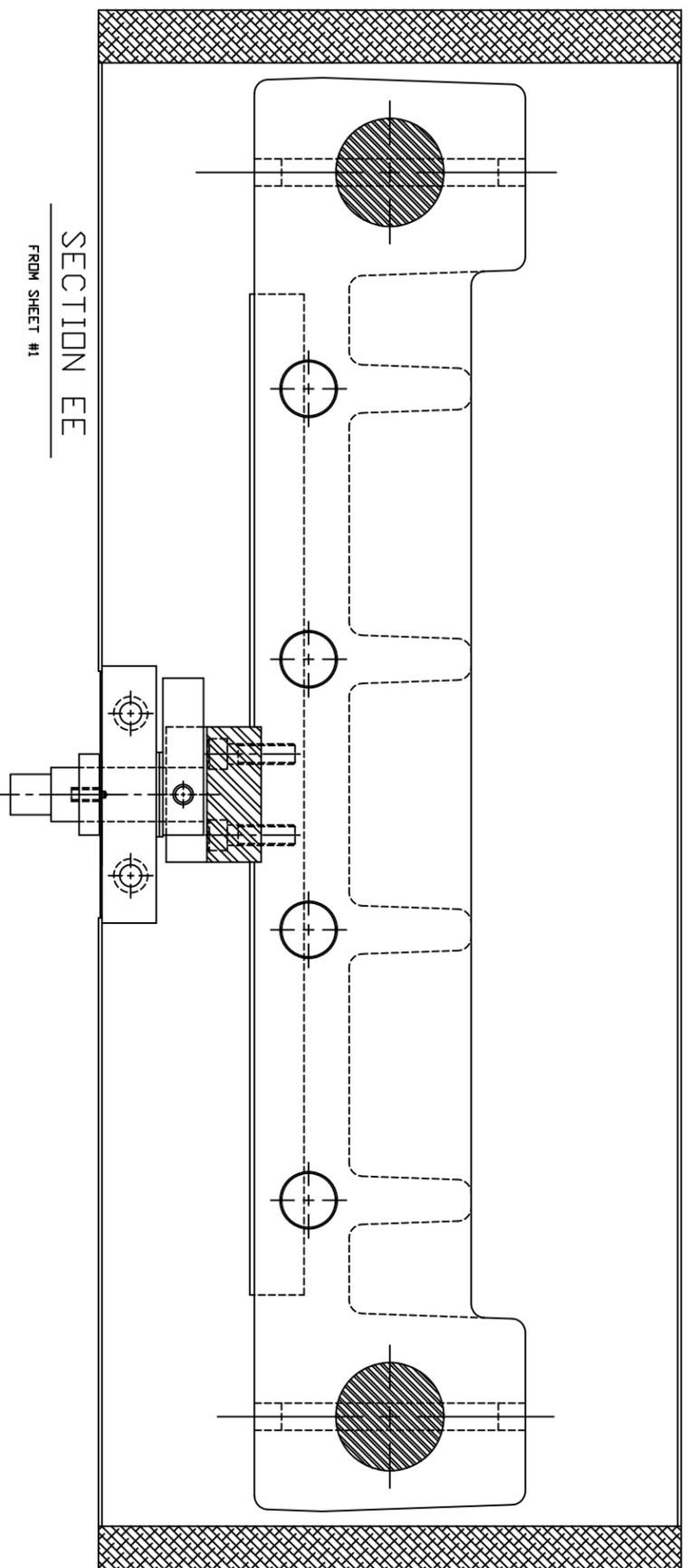
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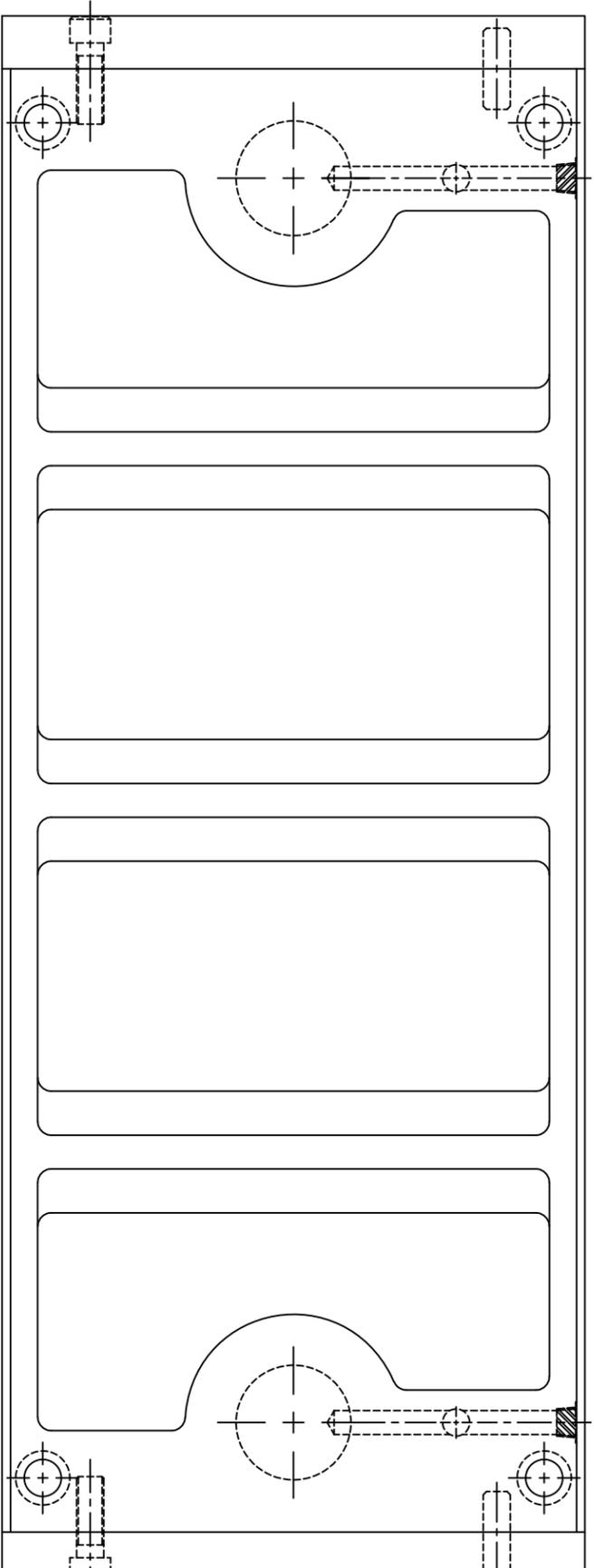


NOTE: FSC18S FOR SERVO C-T-L, CONTROL  
VERSION 'C' - 24 V.D.C. VALVE, PNP SENSOR

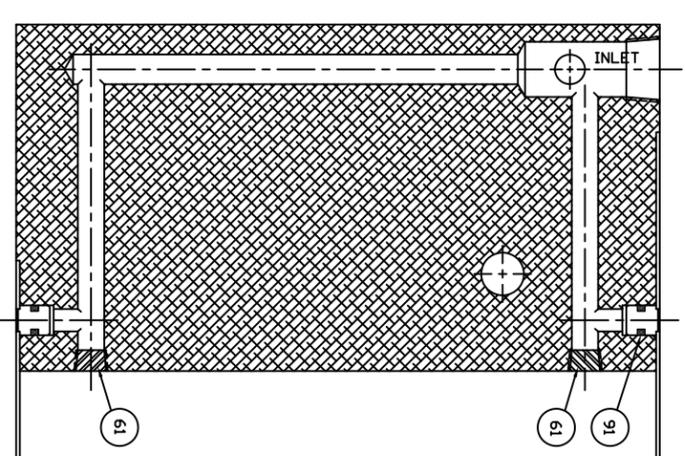
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| 69  |      |    |      | REVISION               |
| 70  |      |    |      | REVISION               |
| 71  |      |    |      | REVISION               |
| 72  |      |    |      | REVISION               |
| 73  |      |    |      | REVISION               |
| 74  |      |    |      | REVISION               |
| 75  |      |    |      | REVISION               |
| 76  |      |    |      | REVISION               |
| 77  |      |    |      | REVISION               |
| 78  |      |    |      | REVISION               |
| 79  |      |    |      | REVISION               |
| 80  |      |    |      | REVISION               |
| 81  |      |    |      | REVISION               |
| 82  |      |    |      | REVISION               |
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| 85  |      |    |      | REVISION               |
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| 88  |      |    |      | REVISION               |
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| 90  |      |    |      | REVISION               |
| 91  |      |    |      | REVISION               |
| 92  |      |    |      | REVISION               |
| 93  |      |    |      | REVISION               |
| 94  |      |    |      | REVISION               |
| 95  |      |    |      | REVISION               |
| 96  |      |    |      | REVISION               |



SECTION EE  
FROM SHEET #1



VIEW GG  
FROM SHEET #1



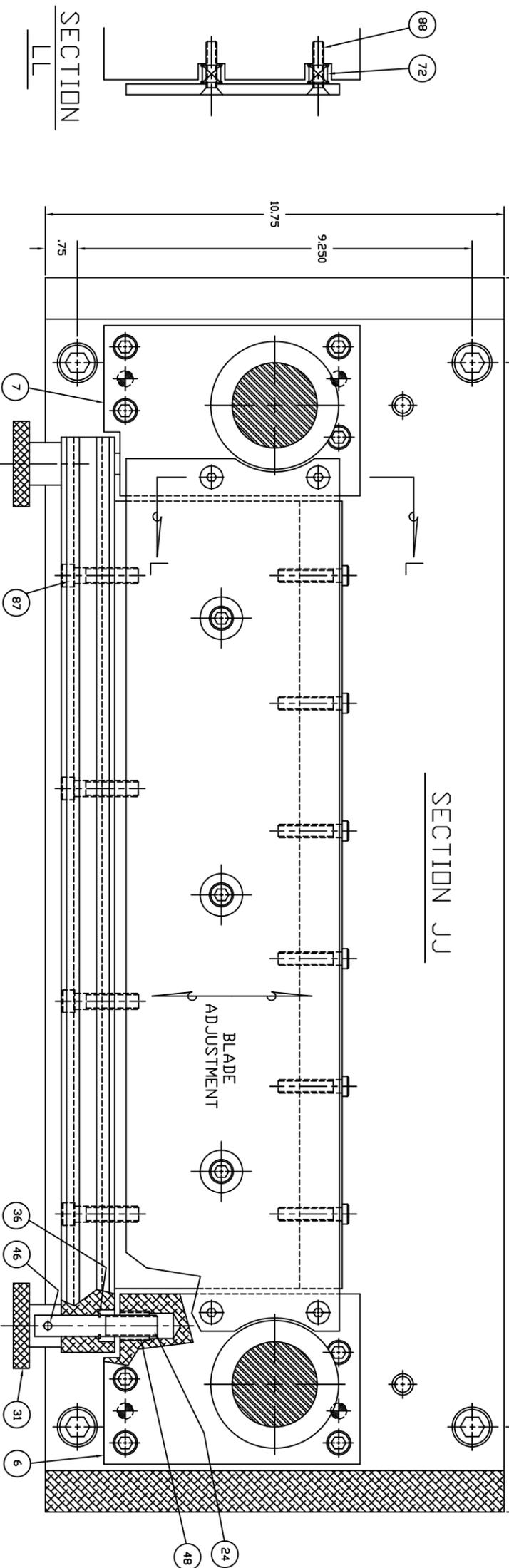
SECTION QQ

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

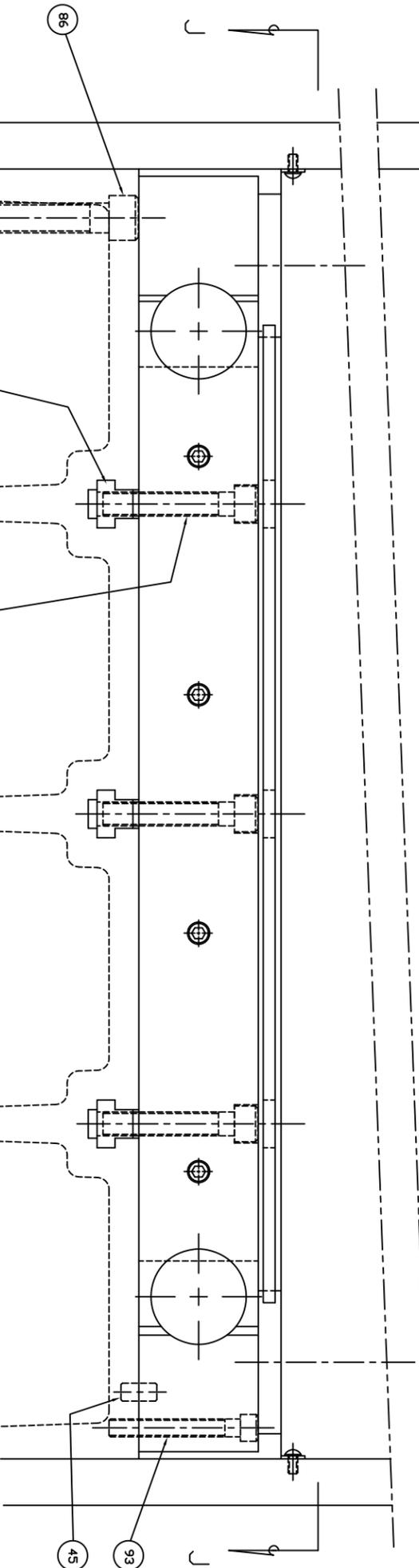
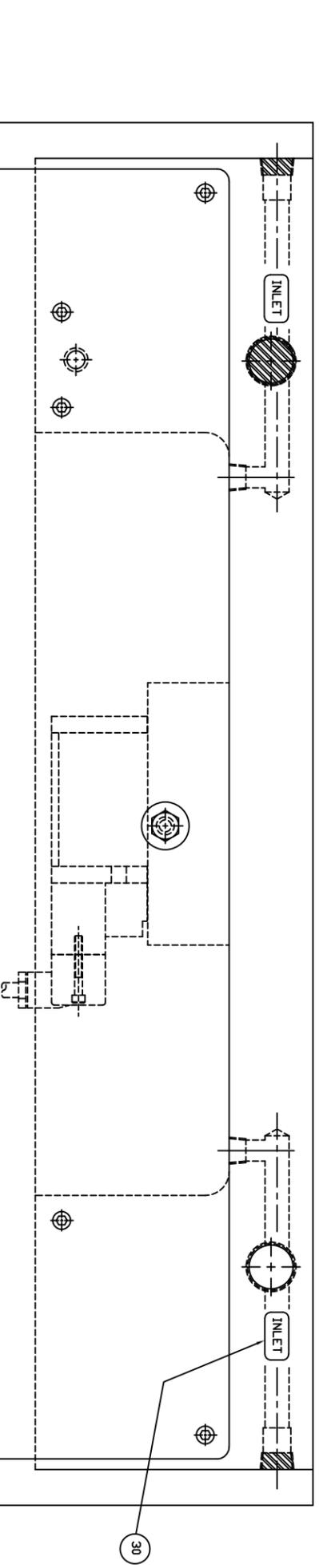
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|--|--------------------|
| <b>RAPID-AIR CORPORATION</b><br>ROCKFORD, IL • MADISON, SD |                    |
| PART NAME: FSC18S CUTTER W/PNP<br>SENSOR FOR SERVO C-T-L   |                    |
| PART NO: 11300381  | REV: 1             |
| DATE: 11/13/03   | DRAWN BY: J. L.    |
| CHECKED BY: J. L.  | APPROVED BY: J. L. |
| PART NO: 11300381  | REV: 1             |
| DATE: 11/13/03   | DRAWN BY: J. L.    |
| CHECKED BY: J. L.  | APPROVED BY: J. L. |

29.00  
25.00

SECTION JJ



SECTION LL



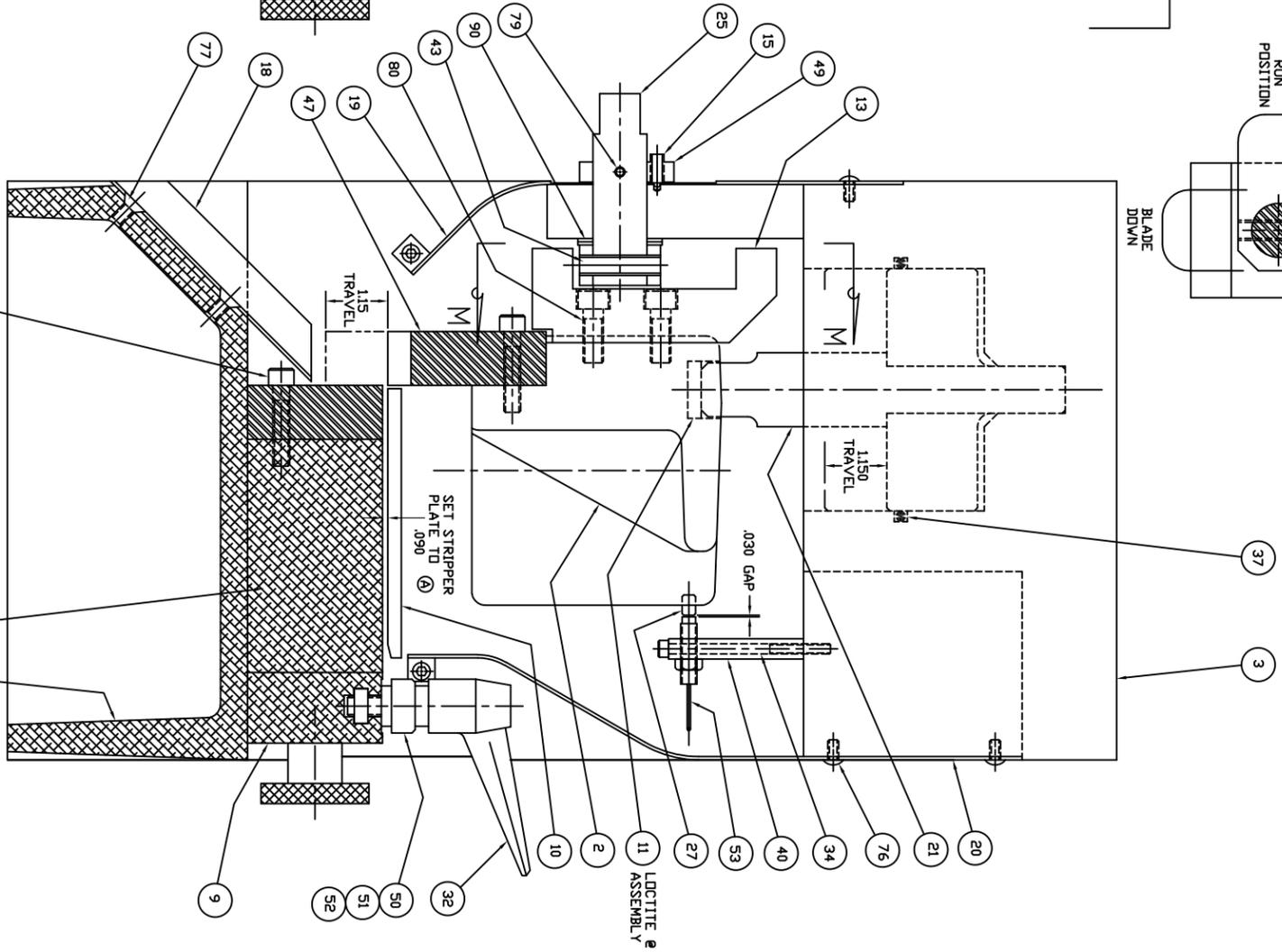
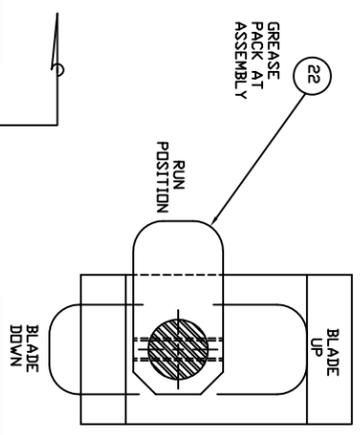
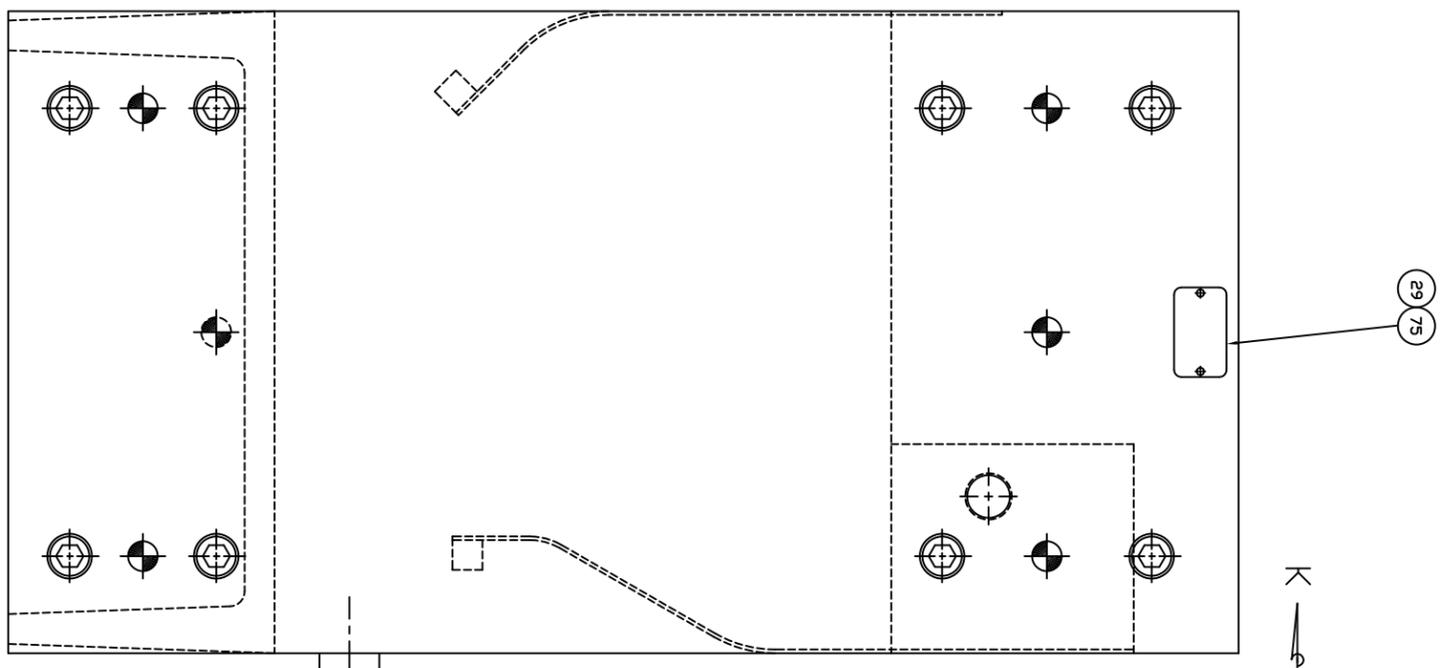
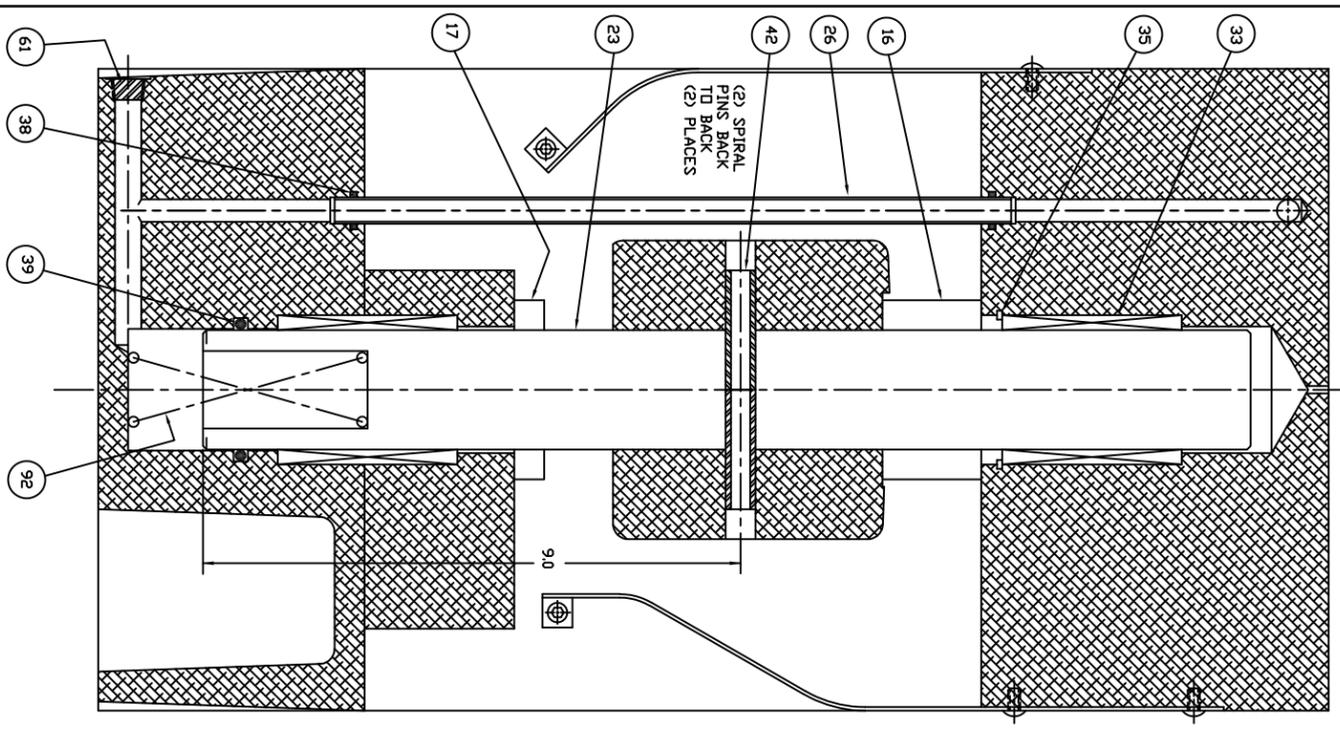
VIEW KK

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

SHEET 4 OF 5

|  |                       |
|--|-----------------------|
| <b>RAPID-AIR CORPORATION</b><br>Rockford, IL • Madison, SD |                       |
| PART NAME: FSC18S CUTTER W/PNP SENSOR FOR SERVD C-T-L      | PART NUMBER: 11300381 |
| DRAWN BY: EGN #3598<br>CHECKED BY: JLN #3571               | DATE: 11/13/03        |
| TITLE: FSC18S CUTTER W/PNP SENSOR FOR SERVD C-T-L          | SHEET: 4 OF 5         |

11300357-358



SECTION FF

FROM SHEET #1

VIEW DD

FROM SHEET #1

SECTION MM

SECTION CC

FROM SHEET #1

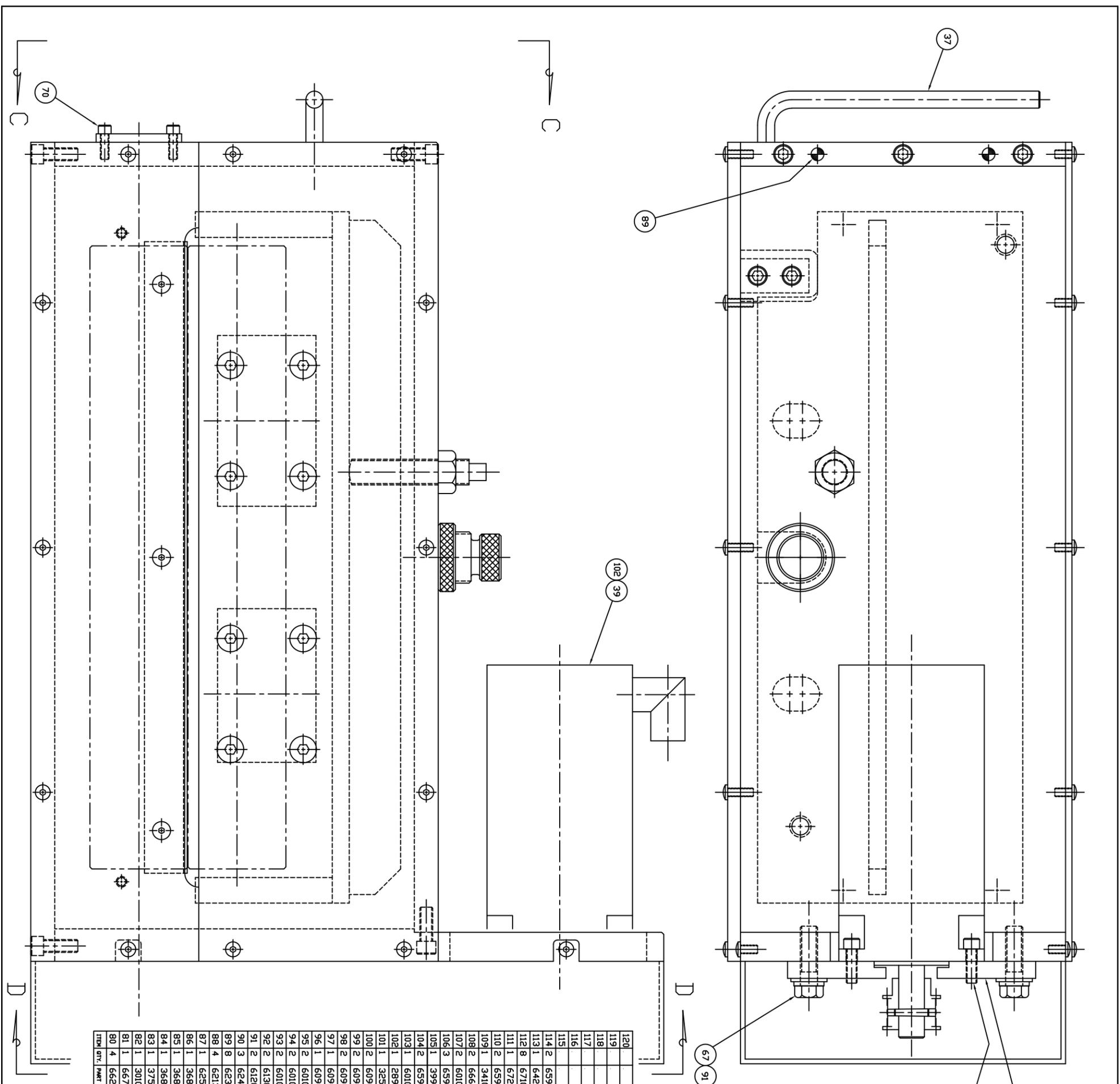
NOTE: FSC18S FOR SERVO C-T-L, CONTROL VERSION 'C' - 24 V.D.C. VALVE, PNP SENSOR

SHEET 5 OF 5

| REVISION |         | DATE |  | BY |  | CHKD |  |
|----------|---------|------|--|----|--|------|--|
| 1        | REVISED |      |  |    |  |      |  |
| 2        | REVISED |      |  |    |  |      |  |
| 3        | REVISED |      |  |    |  |      |  |
| 4        | REVISED |      |  |    |  |      |  |
| 5        | REVISED |      |  |    |  |      |  |
| 6        | REVISED |      |  |    |  |      |  |
| 7        | REVISED |      |  |    |  |      |  |
| 8        | REVISED |      |  |    |  |      |  |
| 9        | REVISED |      |  |    |  |      |  |
| 10       | REVISED |      |  |    |  |      |  |
| 11       | REVISED |      |  |    |  |      |  |
| 12       | REVISED |      |  |    |  |      |  |
| 13       | REVISED |      |  |    |  |      |  |
| 14       | REVISED |      |  |    |  |      |  |
| 15       | REVISED |      |  |    |  |      |  |
| 16       | REVISED |      |  |    |  |      |  |
| 17       | REVISED |      |  |    |  |      |  |
| 18       | REVISED |      |  |    |  |      |  |
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| 53       | REVISED |      |  |    |  |      |  |
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| 57       | REVISED |      |  |    |  |      |  |
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| 60       | REVISED |      |  |    |  |      |  |
| 61       | REVISED |      |  |    |  |      |  |

11300357-358

E



| ITEM QTY | PART NO. | DESCRIPTION                         |
|----------|----------|-------------------------------------|
| 120      |          |                                     |
| 119      |          |                                     |
| 118      |          |                                     |
| 117      |          |                                     |
| 116      |          |                                     |
| 115      |          |                                     |
| 114      | 65908112 | SHCS #8-32 X 1 1/8                  |
| 113      | 64230010 | BLACK POLY TUBE 1/4"                |
| 112      | 67100121 | MALE CONNECTOR 1/4" WT 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 | CONTR'OL 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                  |

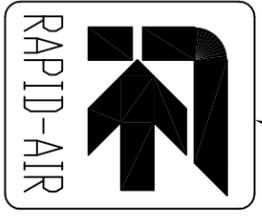
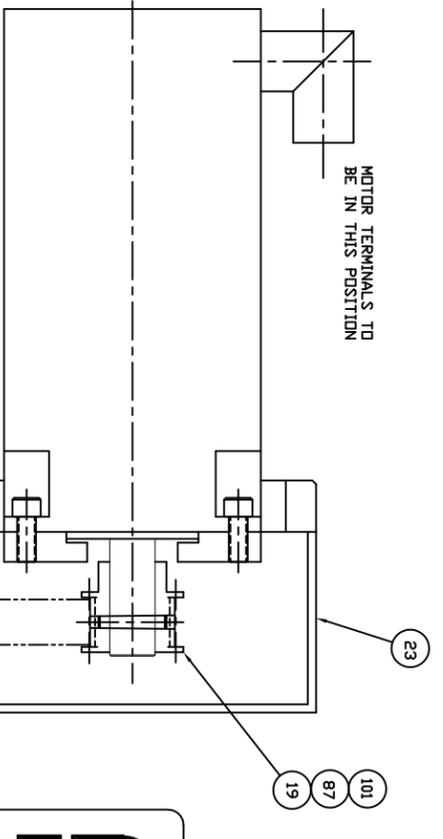
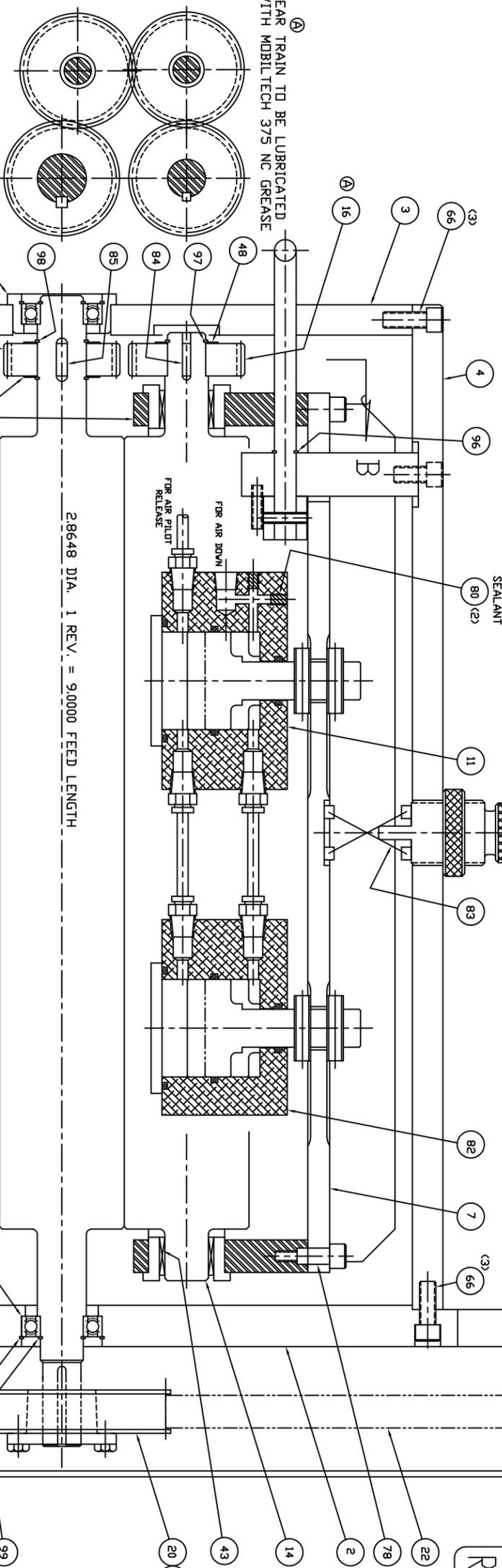
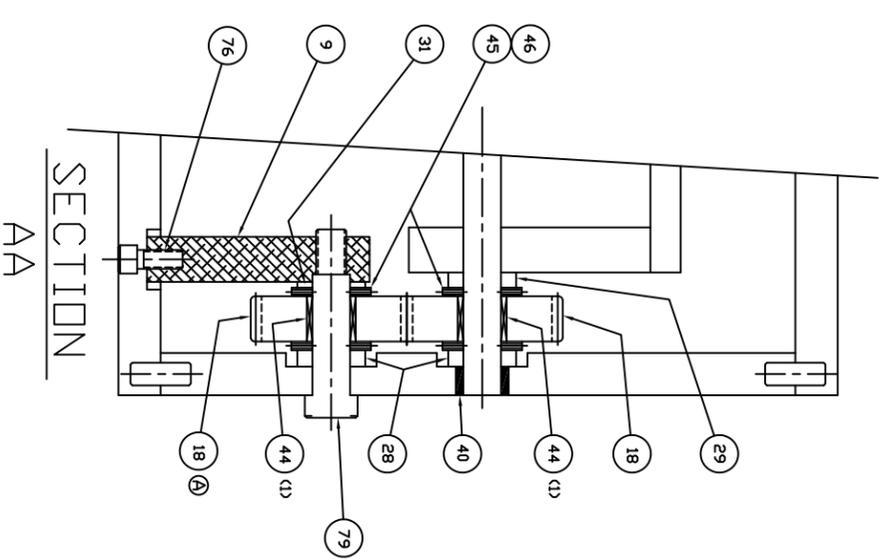
SHEET 1 OF 5

**RAPID-AIR CORPORATION**  
ROCKFORD, IL • MADISON, SD

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

DATE: 10-13-2014

REV: 13000623



SECTION BB

SECTION AA

GEAR TRAIN TO BE LUBRICATED WITH MOBILTECH 375 NC GREASE

USE THREAD SEALANT (80)

FDR AIR DOWN

FDR AIR PILOT RELEASE

MOTOR TERMINALS TO BE IN THIS POSITION

2.8648 DIA. 1 REV. = 9.0000 FEED LENGTH

8.29

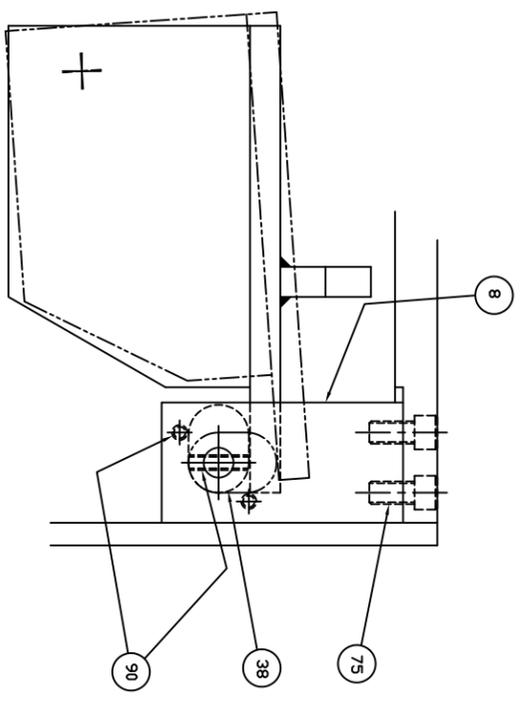
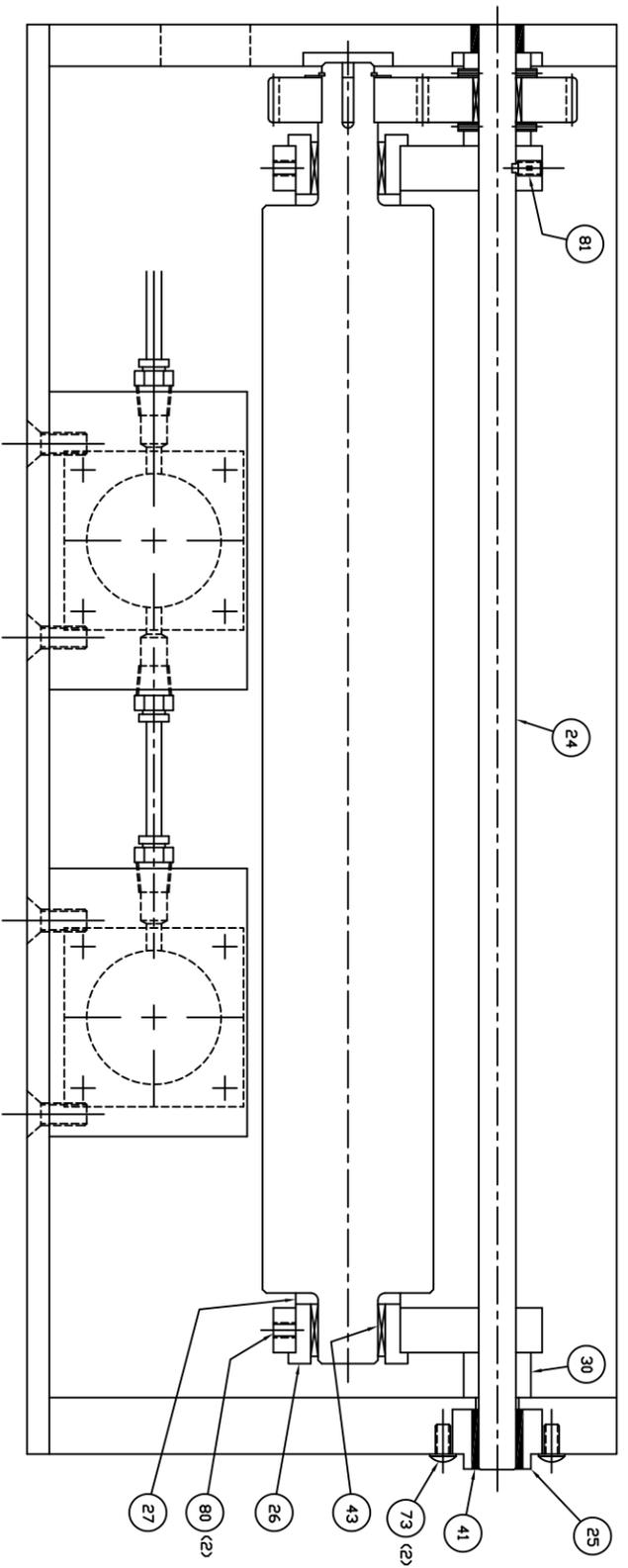
7.75

SHEET 2 OF 5

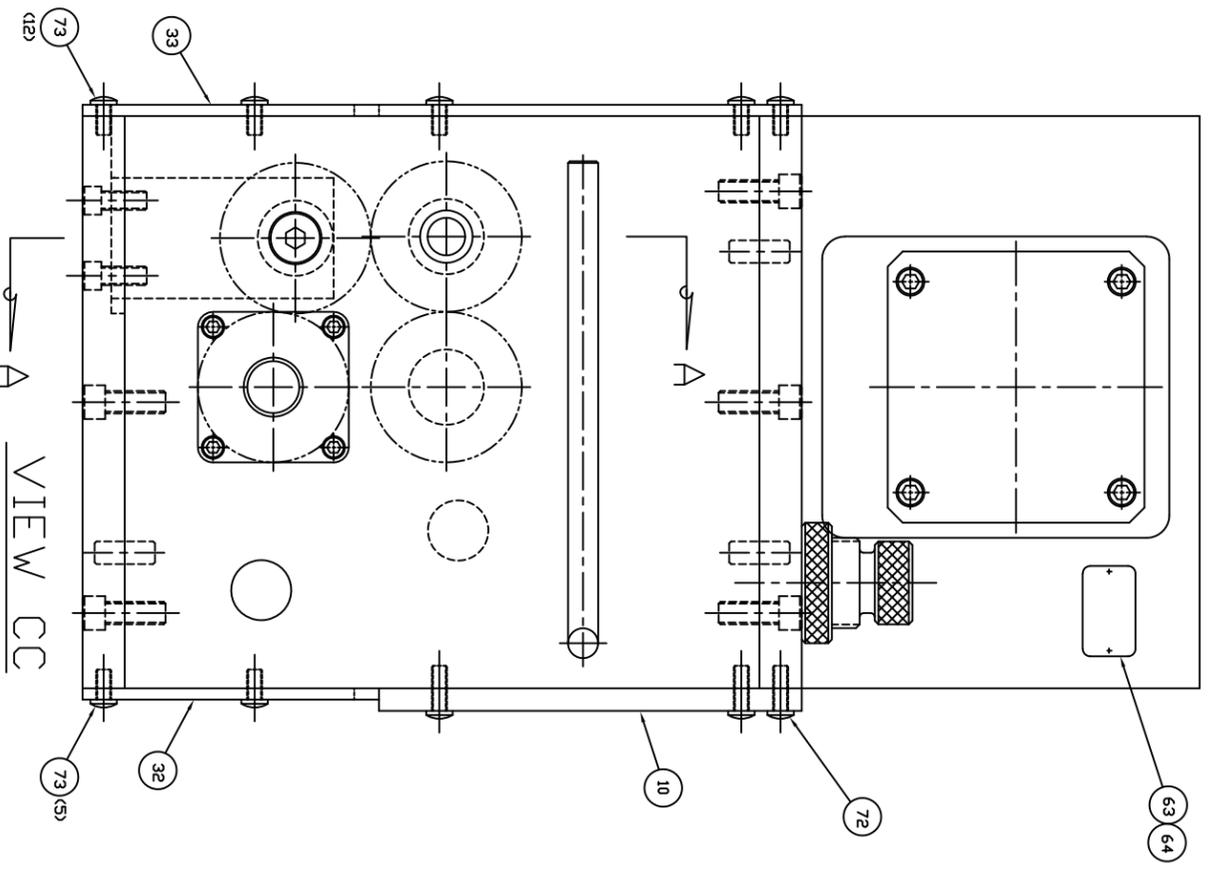
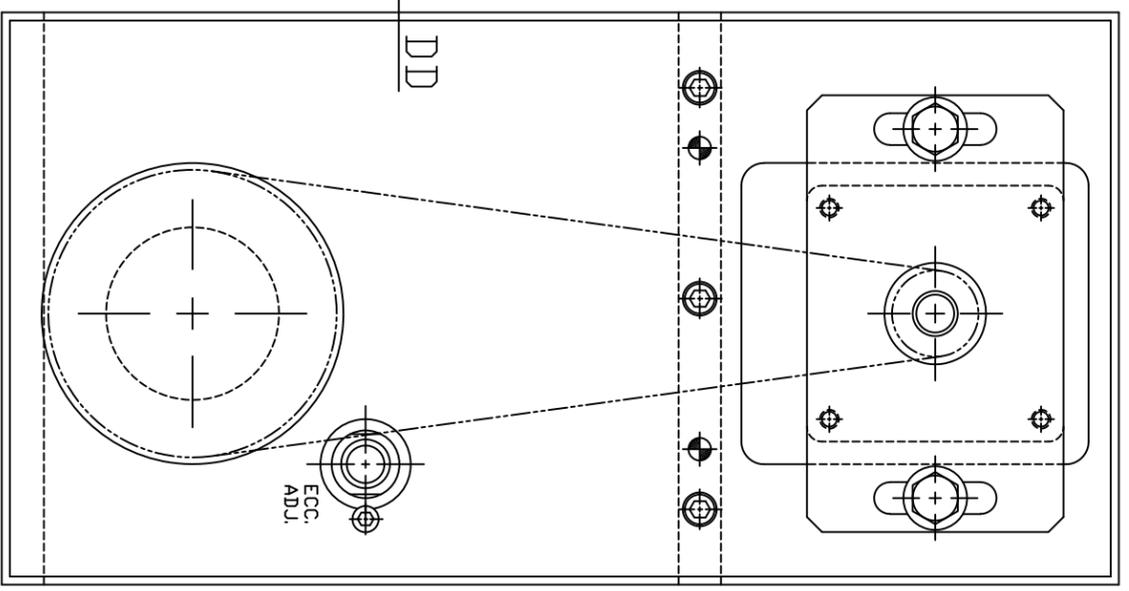
|      |         |     |       |                       |
|------|---------|-----|-------|-----------------------|
| REV. | DATE    | BY  | CHKD. | DESCRIPTION           |
| 1    | 10-3-14 | JLU | SD    | ISSUED FOR PRODUCTION |
| 2    |         |     |       |                       |
| 3    |         |     |       |                       |

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

ENGINEER: JLU  
DESIGNER: SD  
CHECKER: JLU  
DATE: 10-3-14  
PART NUMBER: 13000624



VIEW DD

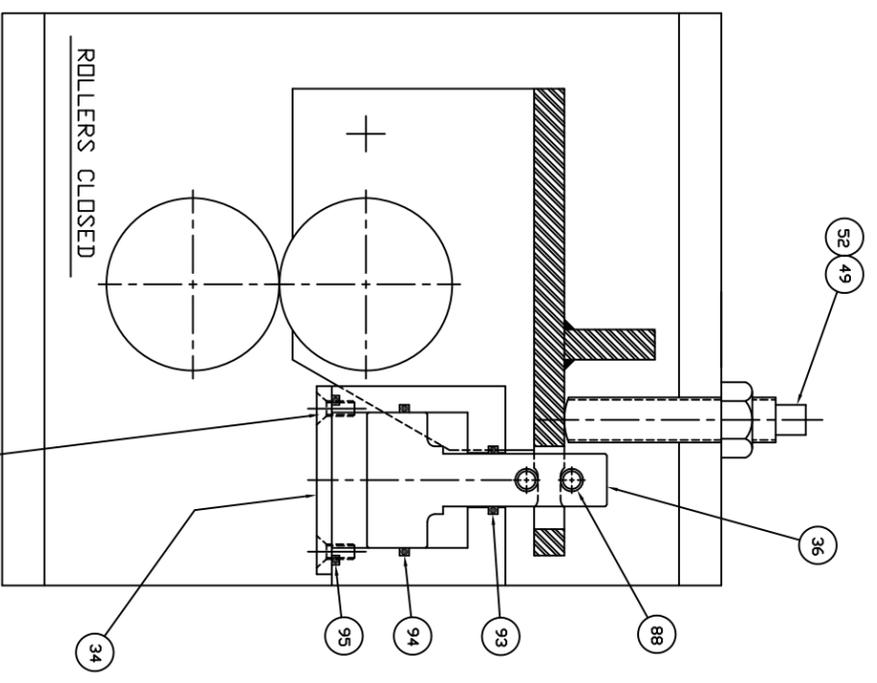
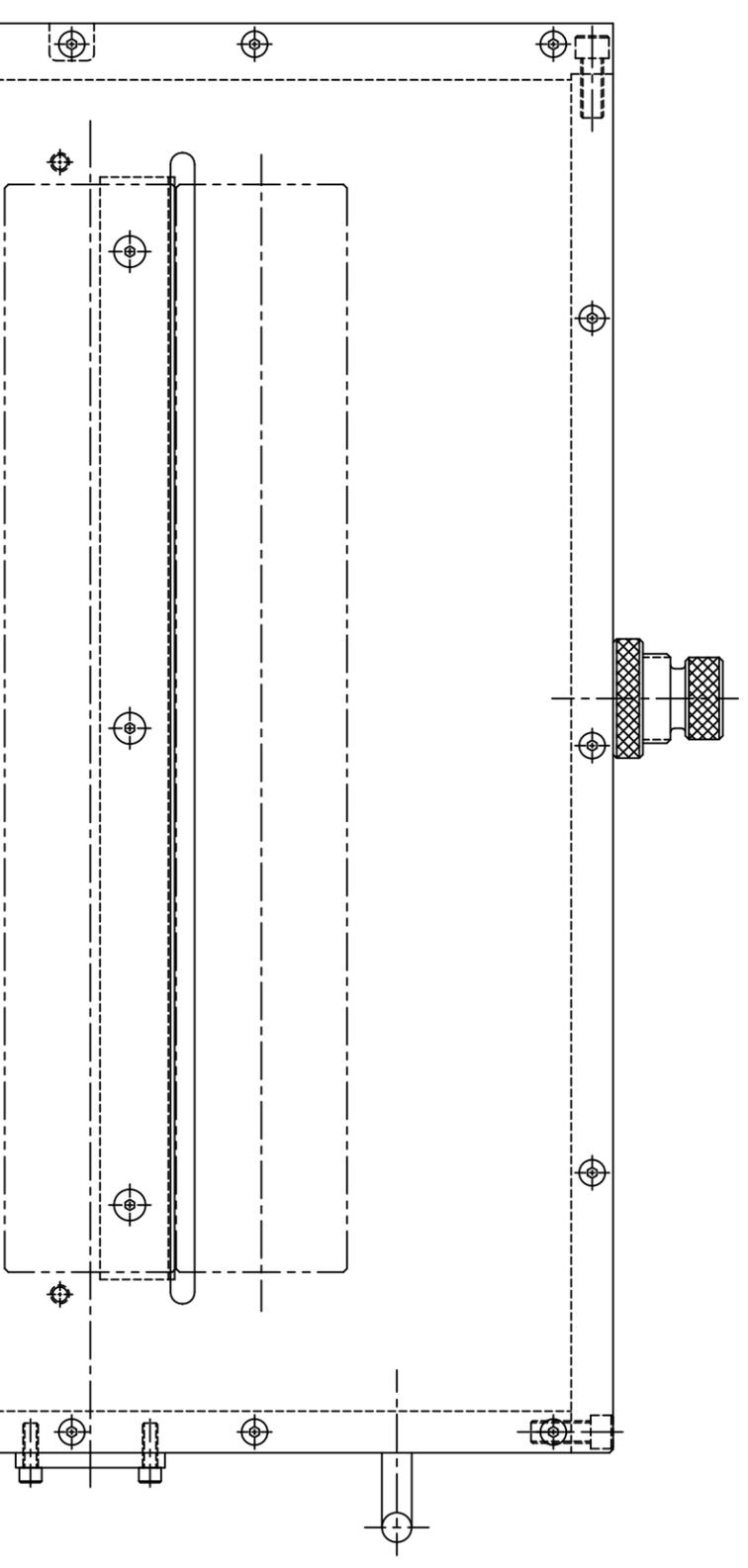
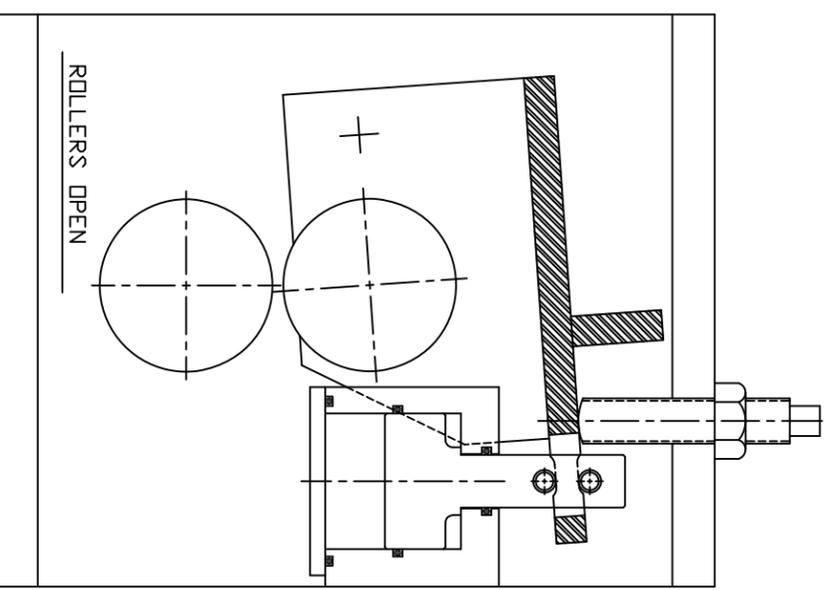
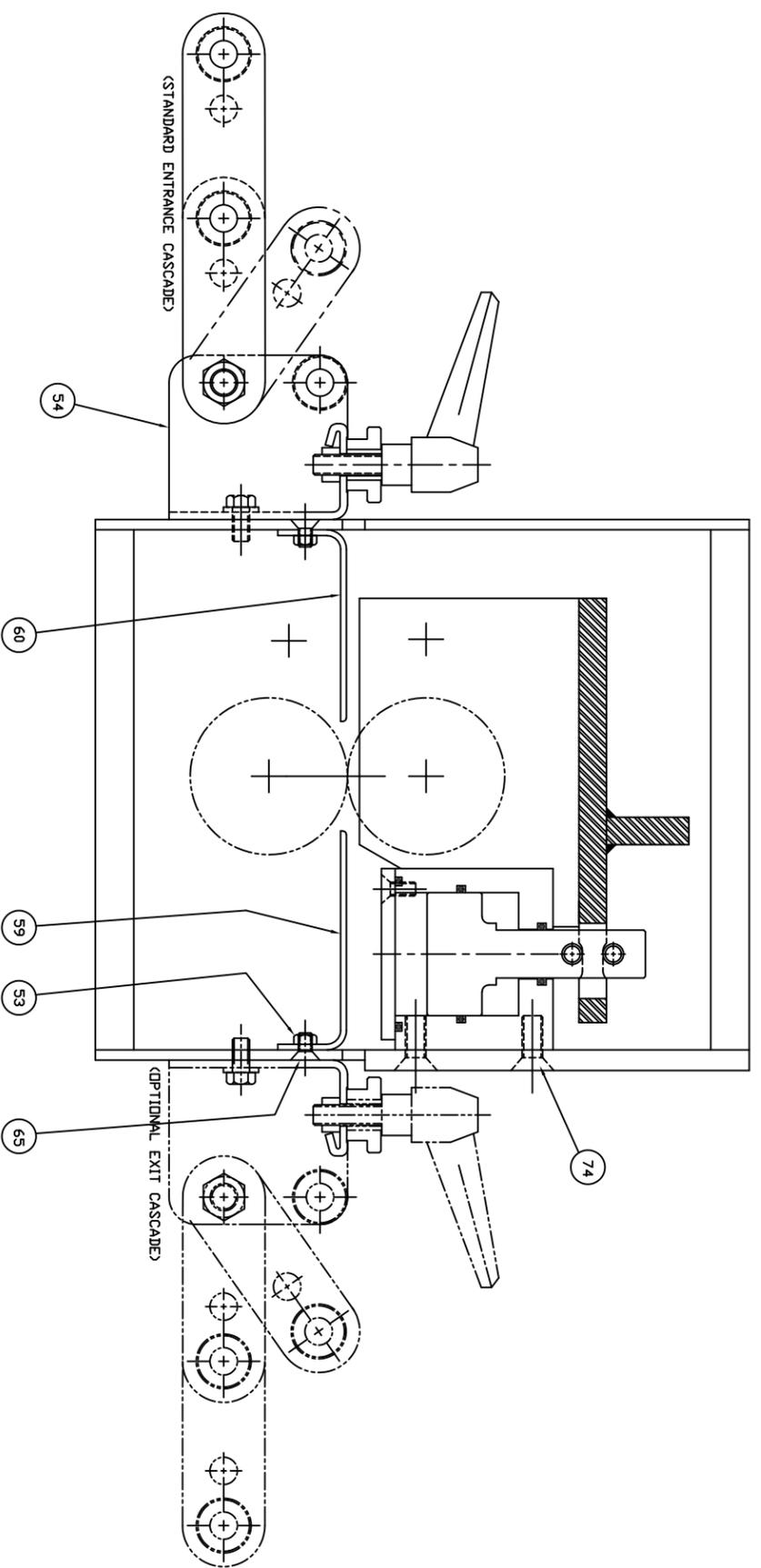


SHEET 3 OF 5

|     |            |     |      |                 |
|-----|------------|-----|------|-----------------|
| REV | DATE       | BY  | CHKD | DESCRIPTION     |
| 1   | 10-13-2014 | DUU |      | ISSUED FOR FULL |
| 2   |            |     |      |                 |
| 3   |            |     |      |                 |
| 4   |            |     |      |                 |
| 5   |            |     |      |                 |
| 6   |            |     |      |                 |
| 7   |            |     |      |                 |
| 8   |            |     |      |                 |
| 9   |            |     |      |                 |
| 10  |            |     |      |                 |

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

DESIGNED BY: DUU  
 CHECKED BY: [blank]  
 DRAWN BY: DUU  
 DATE: 10-13-2014  
 PART NUMBER: 13000624



| REV | DATE       | BY  | CHKD | DESCRIPTION   |
|-----|------------|-----|------|---|
| 1   | 10-13-2014 | JLU |      | ISSUED FOR PRODUCTION   |
| 2   | 10-13-2014 | JLU |      | REVISED TO ADD OPTIONAL EXIT CASCADE  |
| 3   | 10-13-2014 | JLU |      | REVISED TO ADD STANDARD ENTRANCE CASCADE  |
| 4   | 10-13-2014 | JLU |      | REVISED TO ADD AIR DOWN OPTION  |
| 5   | 10-13-2014 | JLU |      | REVISED TO ADD AIR UP OPTION  |
| 6   | 10-13-2014 | JLU |      | REVISED TO ADD AIR DOWN & AIR UP OPTION   |
| 7   | 10-13-2014 | JLU |      | REVISED TO ADD AIR DOWN & AIR UP & AIR DOWN OPTION                              |
| 8   | 10-13-2014 | JLU |      | REVISED TO ADD AIR DOWN & AIR UP & AIR DOWN & AIR UP OPTION                     |
| 9   | 10-13-2014 | JLU |      | REVISED TO ADD AIR DOWN & AIR UP & AIR DOWN & AIR UP & AIR DOWN OPTION          |
| 10  | 10-13-2014 | JLU |      | REVISED TO ADD AIR DOWN & AIR UP & AIR DOWN & AIR UP & AIR DOWN & AIR UP OPTION |

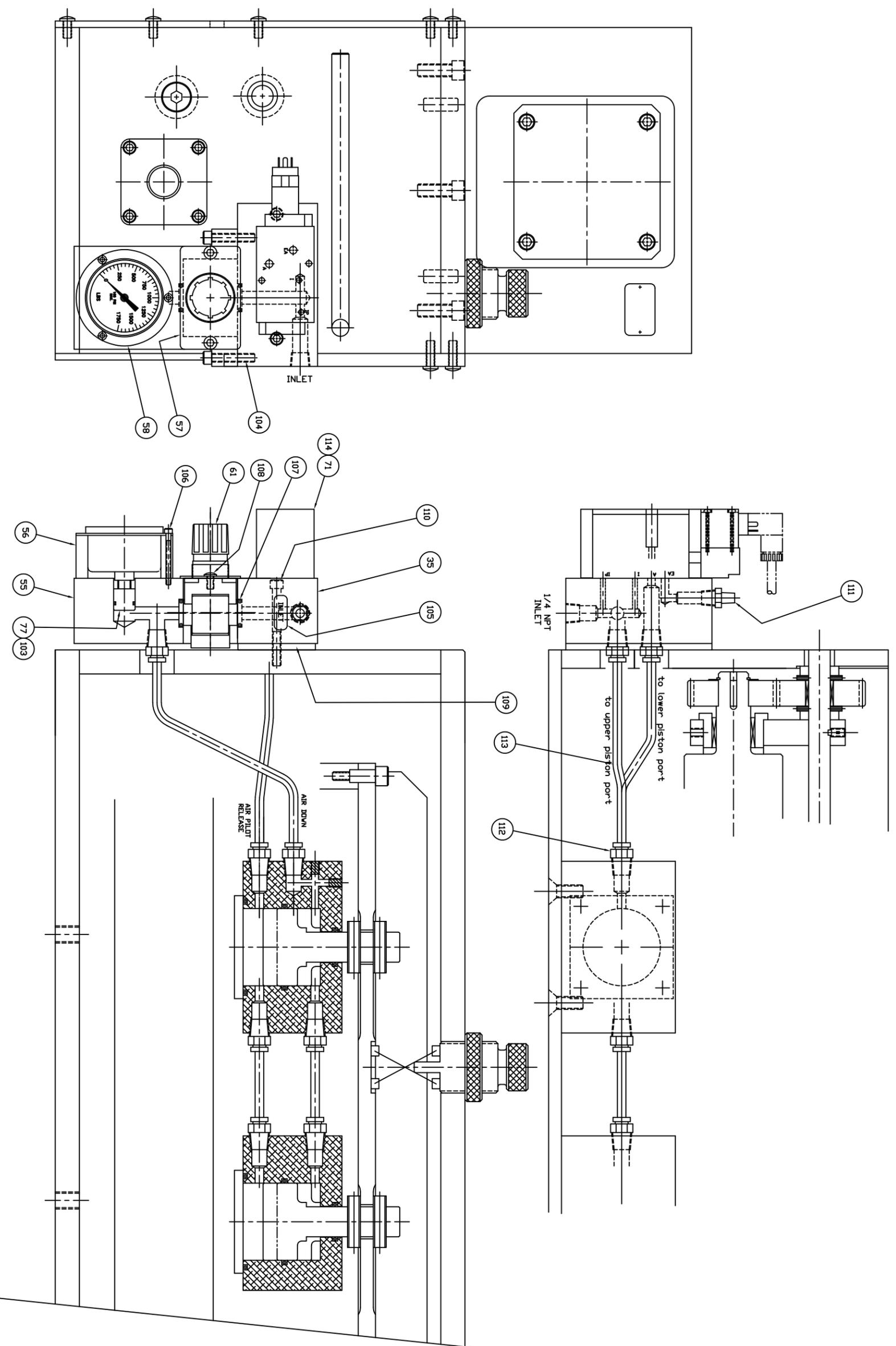
**RAPID-AIR CORPORATION**  
 ROCKFORD, IL • WADSWORTH, SD

PART NAME: 218TX V/AIR PILOT RELEASE & AIR DOWN

DATE: 10-13-2014

REV: 10

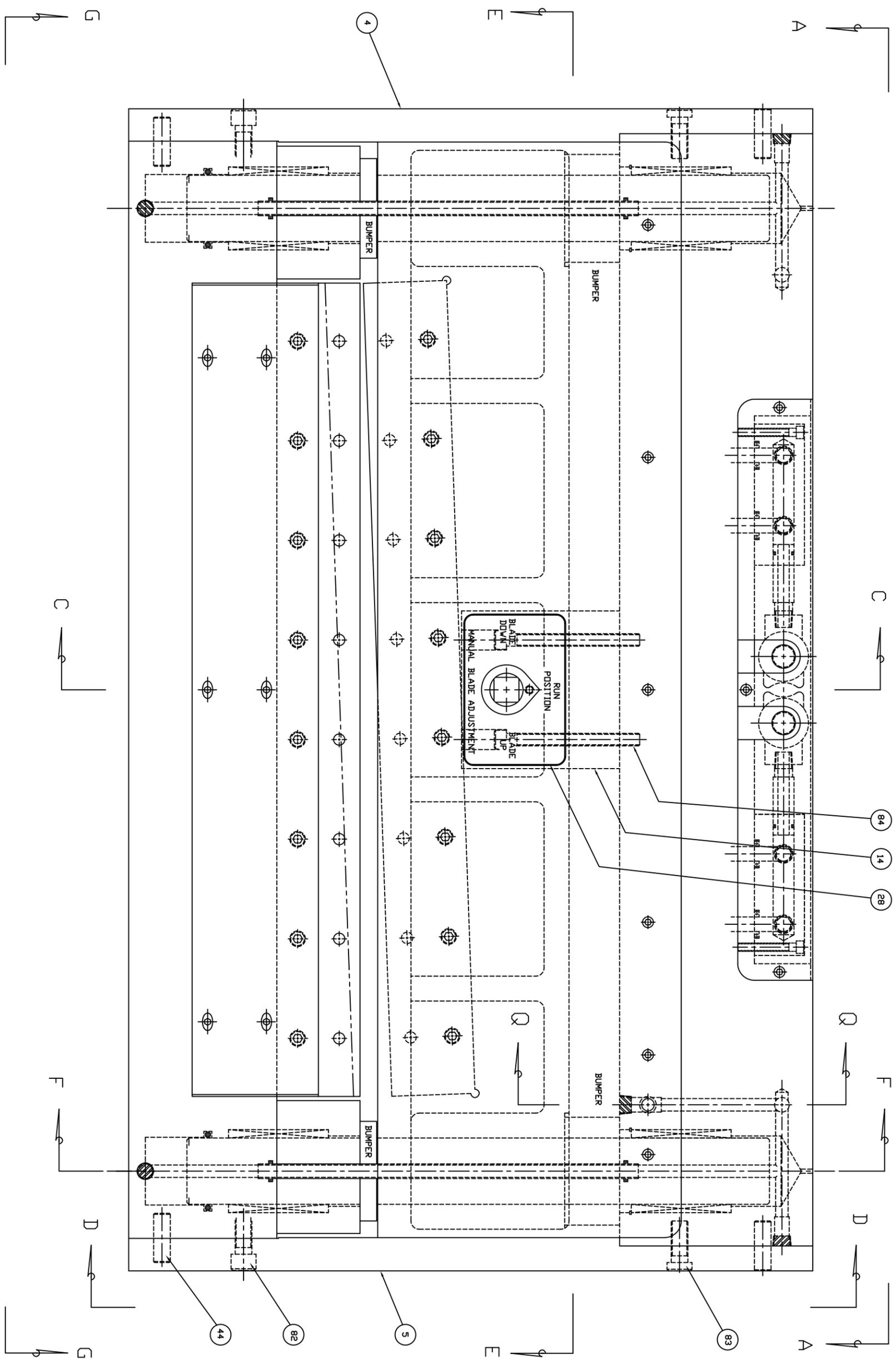
13000624



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

SHEET 5 OF 5

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



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

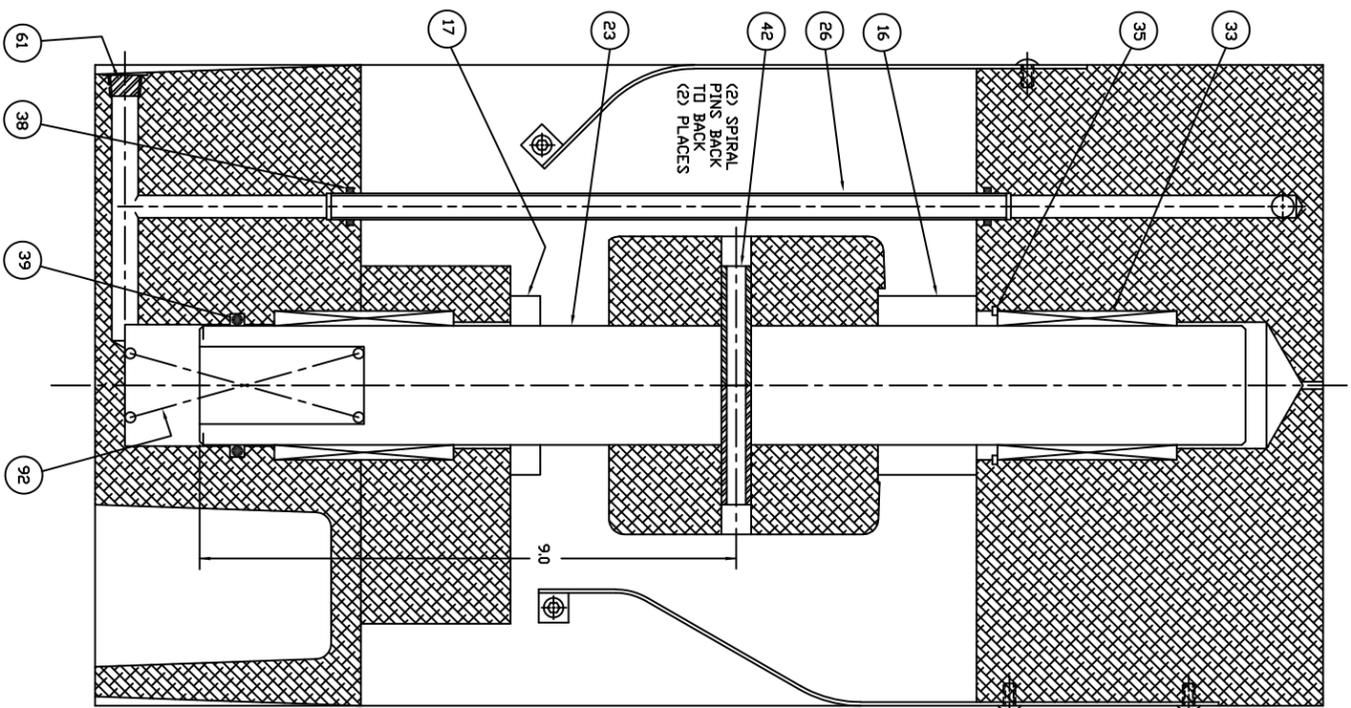
SHEET 1 OF 6

|  |                    |
|--|--------------------|
| <b>RAPID-AIR CORPORATION</b><br>ROCKFORD, IL • MADISON, SD |                    |
| FSC24S CUTTER W/PNP<br>SENSOR FOR SERV0 C-T-L              |                    |
| PART NO. 11300382<br>REV. 01                               | DATE 11/13/03      |
| DRAWN BY S.M.S.<br>CHECKED BY P.M.P.                       | APPROVED BY P.M.P. |
| PART NO. 11300382<br>REV. 01                               | DATE 11/13/03      |

11300359-360

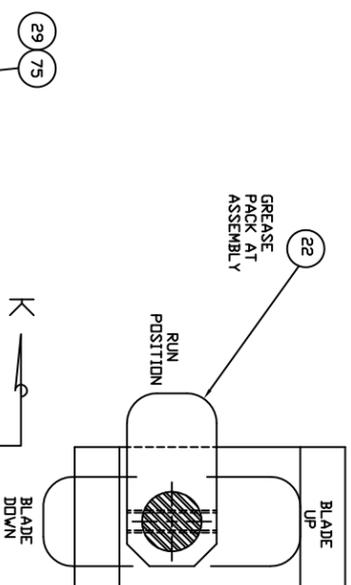


NOTE: FSC24S FOR SERVO C-T-L, CONTROL  
VERSION 'C' - 24 V.D.C. VALVE, PNP SENSOR

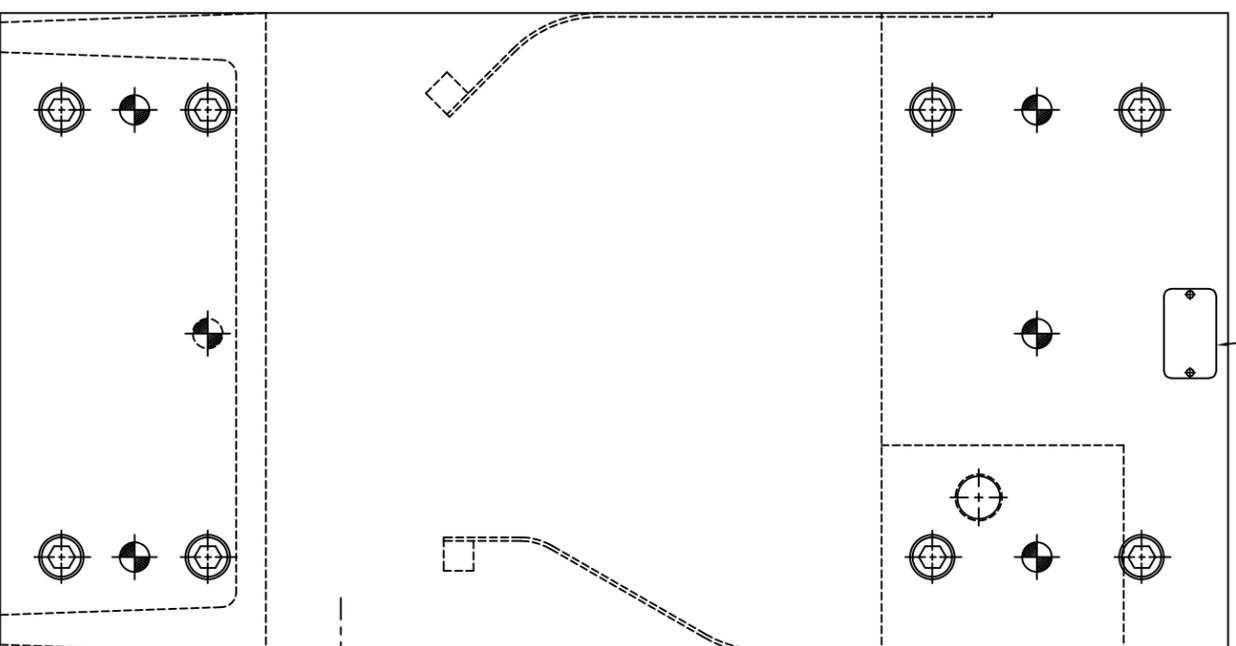


SECTION FF

FROM SHEET #1

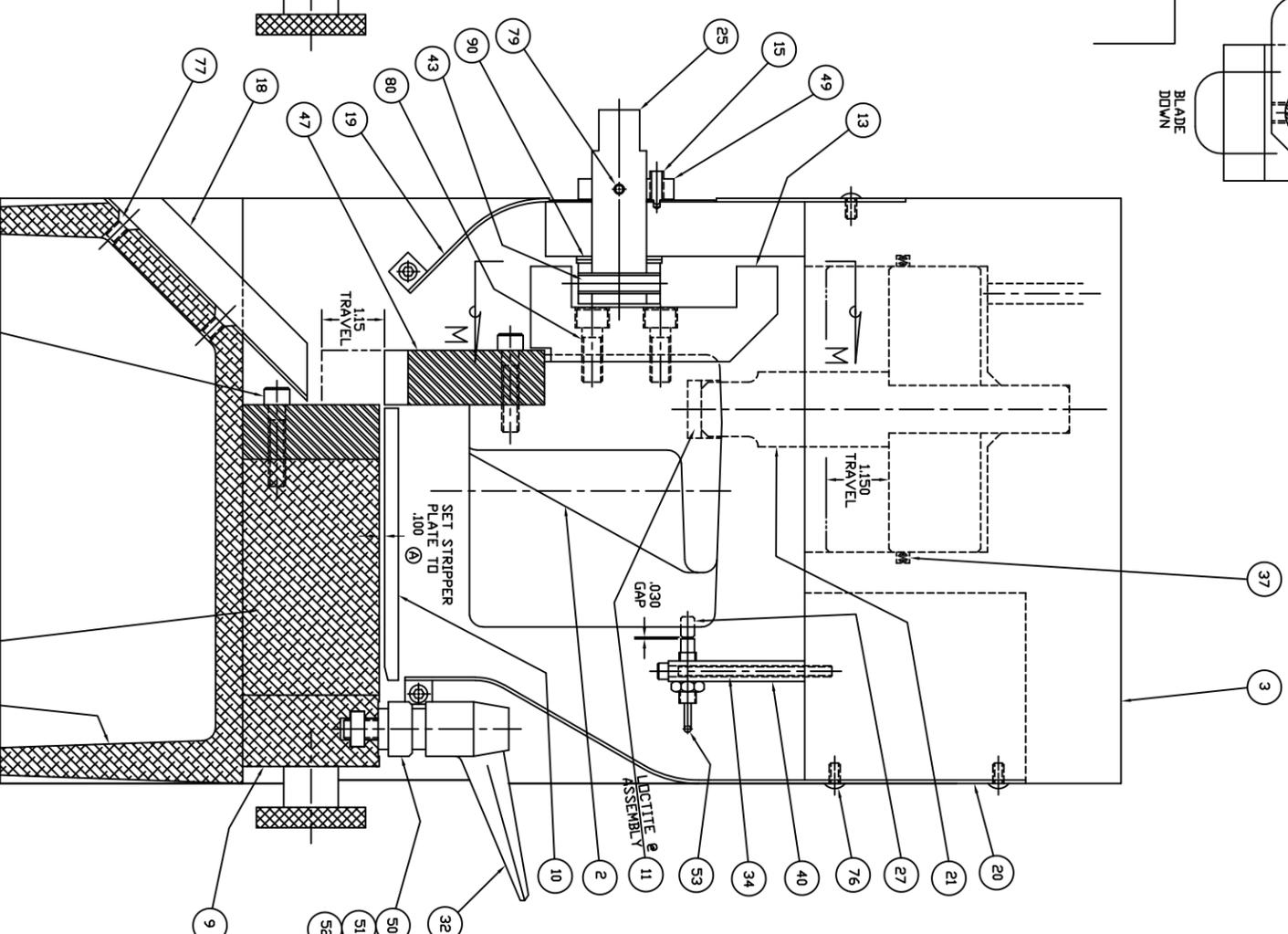


SECTION MM



VIEW DD

FROM SHEET #1



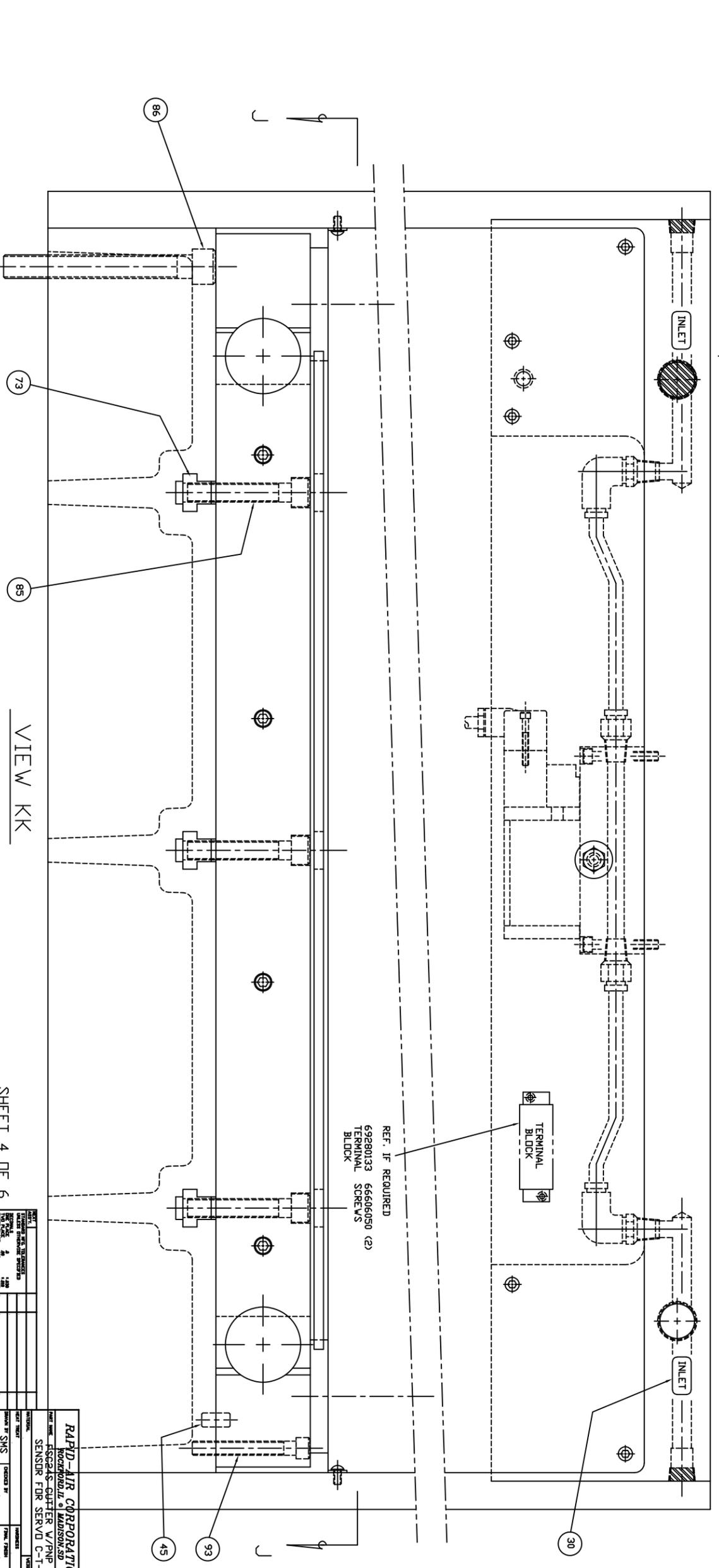
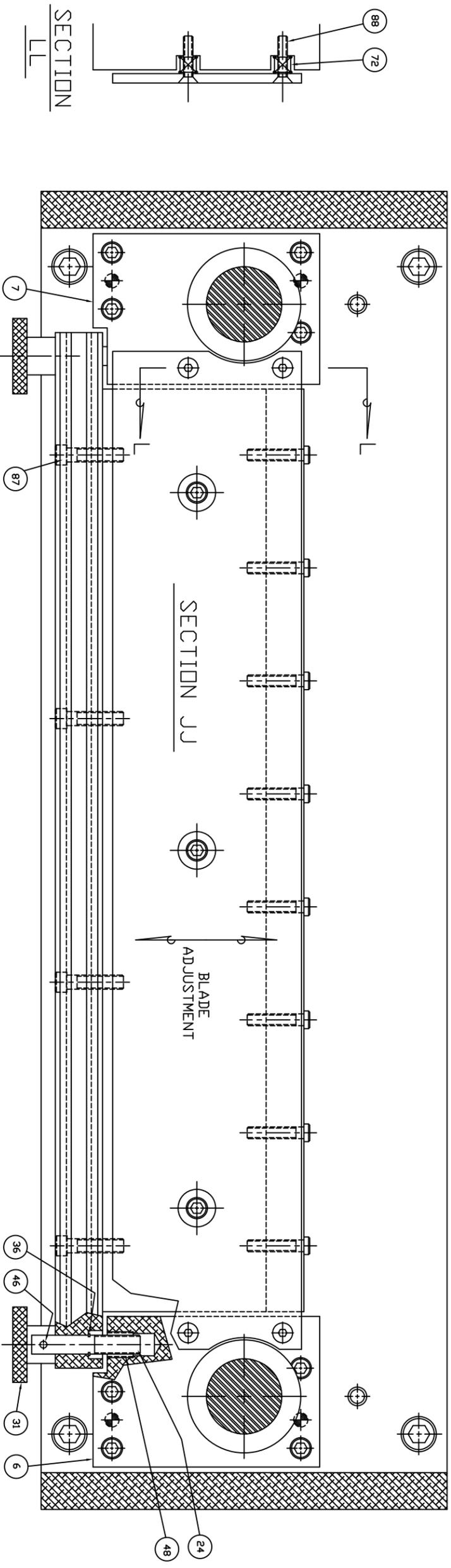
SECTION CC

FROM SHEET #1

SHEET 3 OF 6

|  |                            |
|--|----------------------------|
| <b>RAPID-AIR CORPORATION</b><br>ROCKFORD, ILL. MADISON, IND. |                            |
| FSC24S CUTTER W/PNP<br>SENSOR FOR SERVO C-T-L                |                            |
| PART NAME<br>FSC24S CUTTER W/PNP<br>SENSOR FOR SERVO C-T-L   | CHECKED BY<br>SWS          |
| DRAWN BY<br>SWS  | DATE<br>11/13/82           |
| PART NUMBER<br>EQN 45571                                     | REV.<br>1                  |
| DATE<br>11/13/82   | DRAWING NUMBER<br>11300382 |
| SHEET<br>FULL  | TOTAL SHEETS<br>6          |

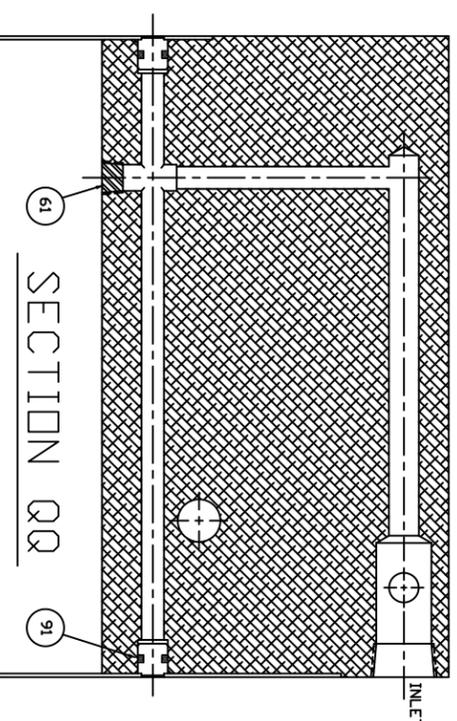
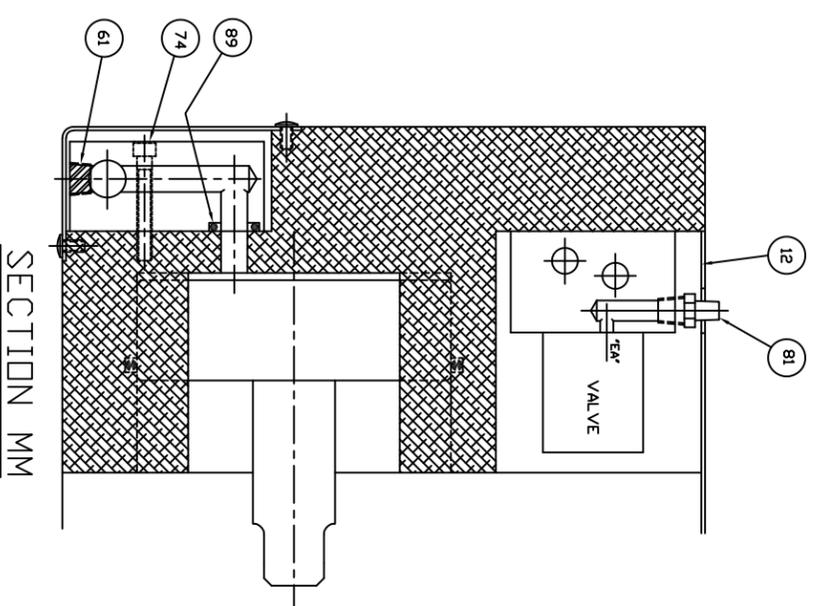
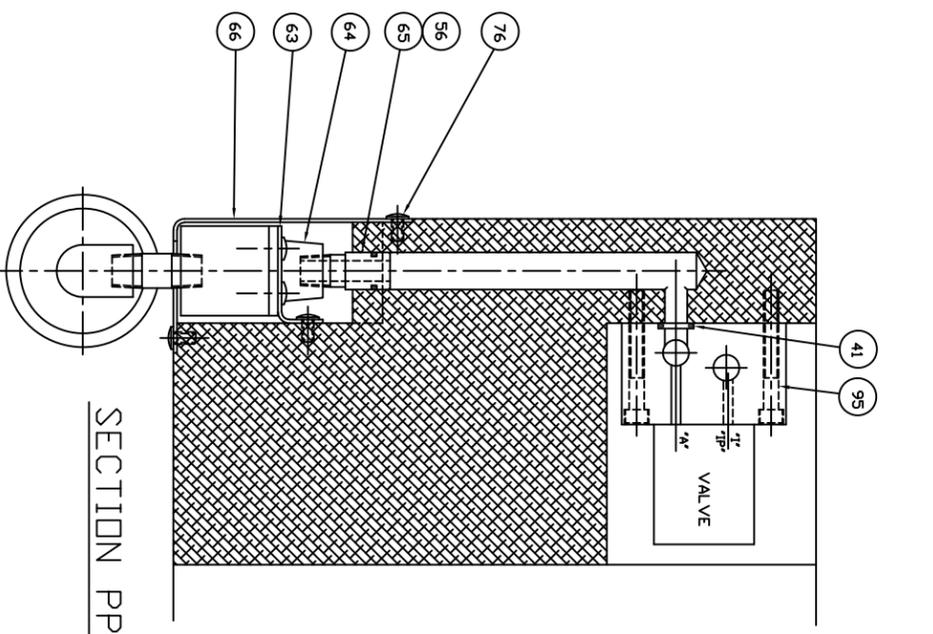
NOTE: FSC24S FOR SERVO C-T-L, CONTROL  
VERSION 'C' - 24 V.D.C. VALVE, PNP SENSOR



|   |   |
|---|---|
| <b>RAPID-AIR CORPORATION</b><br>Rockford, IL • Madison, SD                  |   |
| FSC24S QUATTRO V/PNP<br>SENSOR FOR SERVO C-T-L                              |   |
| DATE: 10/15/82<br>DRAWN BY: SMS<br>CHECKED BY: [blank]<br>ENGINEER: [blank] | PART NO: 11300382<br>REV: 001<br>ECN: 85571<br>DATE: 10/15/82 |
| SHEET 4 OF 6  | 11300359-360  |

|    |    |          |                           |
|----|----|----------|---------------------------|
| 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 | 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 | LDW SHCS 1/2-13 X 1 1/4 |
| 82 | 8 | 65953150 | SHCS 1/2-13 X 1 1/2     |
| 81 | 1 | 67200001 | MUFFLER                 |



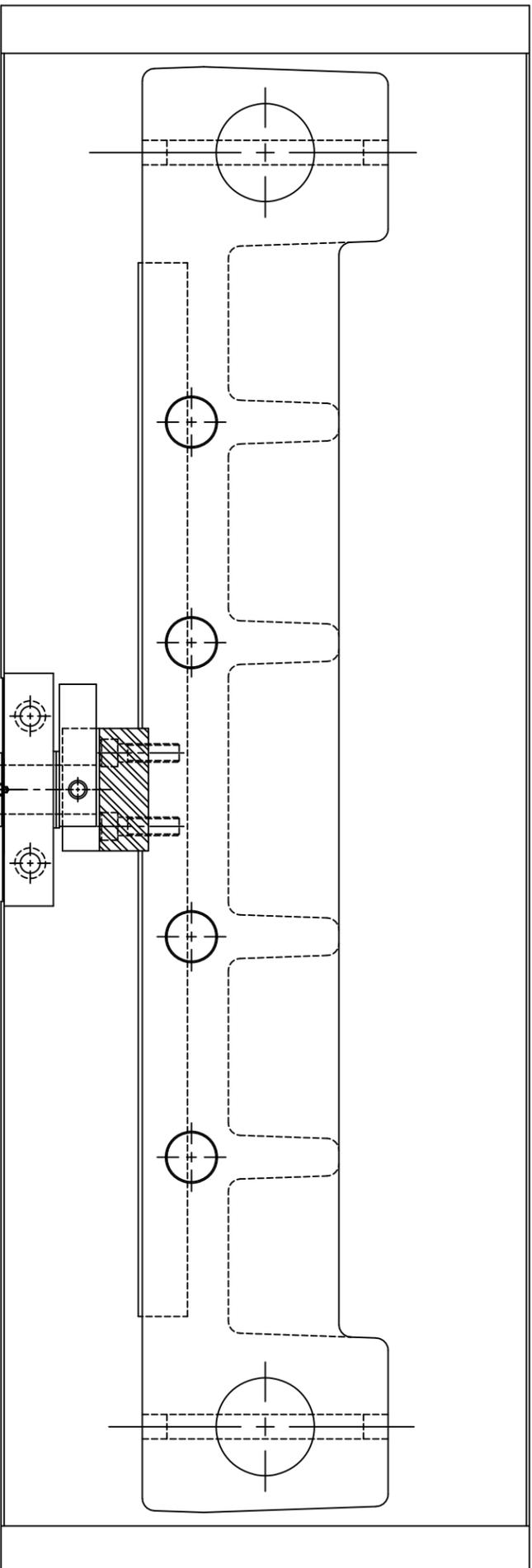
NOTE: FSC24S FOR SERVO C-T-L, CONTROL  
VERSION 'C' - 24 V.D.C. VALVE, PNP SENSOR

|     |      |    |      |  |
|-----|------|----|------|--|
| REV | DATE | BY | CHKD | DESCRIPTION  |
| 1   |      |    |      | ISSUED FOR MANUFACTURE   |
| 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 OPTION  |
| 6   |      |    |      | REVISED TO ADD 12VDC OPTION  |
| 7   |      |    |      | REVISED TO ADD 5VDC OPTION   |
| 8   |      |    |      | REVISED TO ADD 3VDC OPTION   |
| 9   |      |    |      | REVISED TO ADD 1.5VDC OPTION   |
| 10  |      |    |      | REVISED TO ADD 0.75VDC OPTION  |
| 11  |      |    |      | REVISED TO ADD 0.375VDC OPTION   |
| 12  |      |    |      | REVISED TO ADD 0.1875VDC OPTION  |
| 13  |      |    |      | REVISED TO ADD 0.09375VDC OPTION                                       |
| 14  |      |    |      | REVISED TO ADD 0.046875VDC OPTION                                      |
| 15  |      |    |      | REVISED TO ADD 0.0234375VDC OPTION                                     |
| 16  |      |    |      | REVISED TO ADD 0.01171875VDC OPTION                                    |
| 17  |      |    |      | REVISED TO ADD 0.005859375VDC OPTION                                   |
| 18  |      |    |      | REVISED TO ADD 0.0029296875VDC OPTION                                  |
| 19  |      |    |      | REVISED TO ADD 0.00146484375VDC OPTION                                 |
| 20  |      |    |      | REVISED TO ADD 0.000732421875VDC OPTION                                |
| 21  |      |    |      | REVISED TO ADD 0.0003662109375VDC OPTION                               |
| 22  |      |    |      | REVISED TO ADD 0.00018310546875VDC OPTION                              |
| 23  |      |    |      | REVISED TO ADD 0.000091552734375VDC OPTION                             |
| 24  |      |    |      | REVISED TO ADD 0.0000457763671875VDC OPTION                            |
| 25  |      |    |      | REVISED TO ADD 0.00002288818359375VDC OPTION                           |
| 26  |      |    |      | REVISED TO ADD 0.000011444091796875VDC OPTION                          |
| 27  |      |    |      | REVISED TO ADD 0.0000057220458984375VDC OPTION                         |
| 28  |      |    |      | REVISED TO ADD 0.00000286102294921875VDC OPTION                        |
| 29  |      |    |      | REVISED TO ADD 0.000001430511474609375VDC OPTION                       |
| 30  |      |    |      | REVISED TO ADD 0.0000007152557373046875VDC OPTION                      |
| 31  |      |    |      | REVISED TO ADD 0.00000035762786865234375VDC OPTION                     |
| 32  |      |    |      | REVISED TO ADD 0.000000178813934326171875VDC OPTION                    |
| 33  |      |    |      | REVISED TO ADD 0.0000000894069671630859375VDC OPTION                   |
| 34  |      |    |      | REVISED TO ADD 0.00000004470348358154296875VDC OPTION                  |
| 35  |      |    |      | REVISED TO ADD 0.000000022351741790771484375VDC OPTION                 |
| 36  |      |    |      | REVISED TO ADD 0.0000000111758708953857421875VDC OPTION                |
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| 48  |      |    |      | REVISED TO ADD 0.0000000000027284841053160886171875VDC OPTION          |
| 49  |      |    |      | REVISED TO ADD 0.00000000000136424205265404430859375VDC OPTION         |
| 50  |      |    |      | REVISED TO ADD 0.000000000000682121026327022154296875VDC OPTION        |
| 51  |      |    |      | REVISED TO ADD 0.000000000000341060513160886171875VDC OPTION           |
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| 61  |      |    |      | REVISED TO ADD 0.000000000000000332909407381263846435546875VDC OPTION  |
| 62  |      |    |      | REVISED TO ADD 0.0000000000000001664547036906319232177234375VDC OPTION |
| 63  |      |    |      | REVISED TO ADD 0.000000000000000083227351845100553857421875VDC OPTION  |
| 64  |      |    |      | REVISED TO ADD 0.000000000000000041613675722527692871109375VDC OPTION  |
| 65  |      |    |      | REVISED TO ADD 0.0000000000000000208068378613160886171875VDC OPTION    |
| 66  |      |    |      | REVISED TO ADD 0.000000000000000010403418930657804430859375VDC OPTION  |

**RAPID-AIR CORPORATION**  
ROCKFORD, IL • MADISON, WI

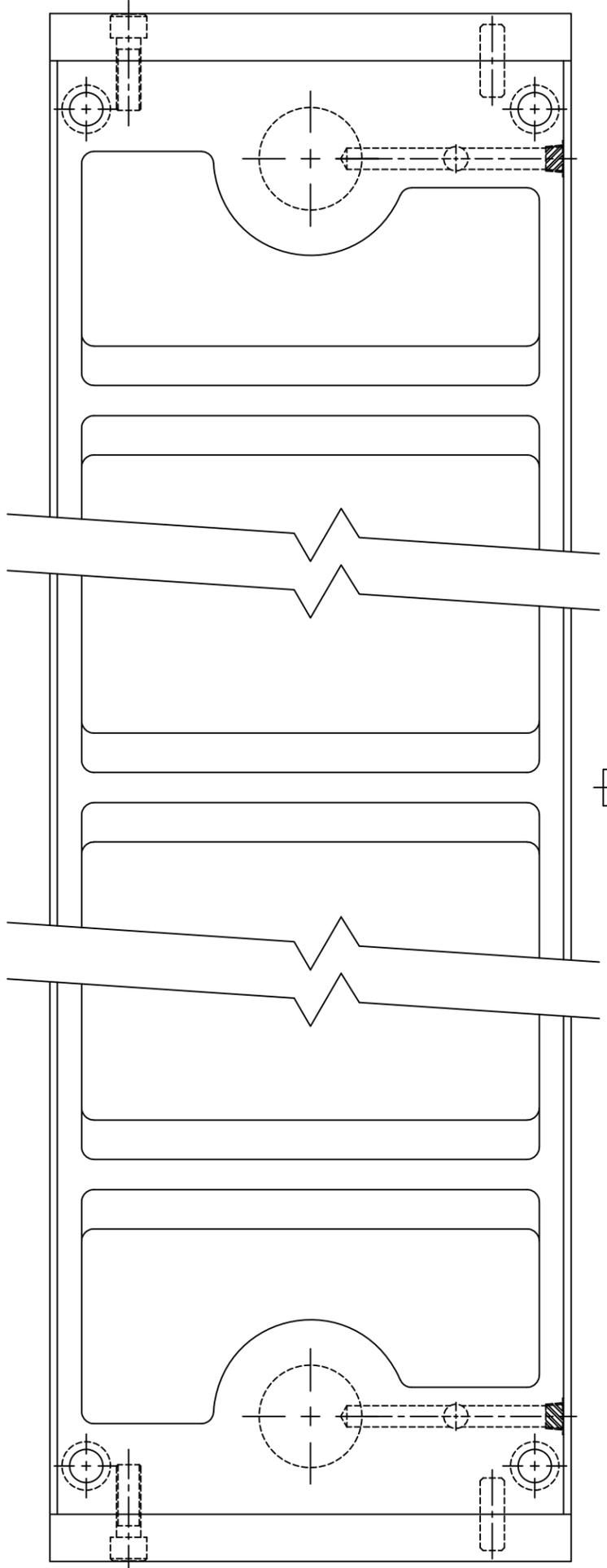
NAME: FSC24S CUTTER V/PNP  
SENSOR FOR SERVO C-T-L

DATE: 10/05/95  
DRAWN BY: S.M.S.  
CHECKED BY: J.M. FISHER  
PART NO.: 11300382



SECTION EE

FROM SHEET #1



VIEW GG

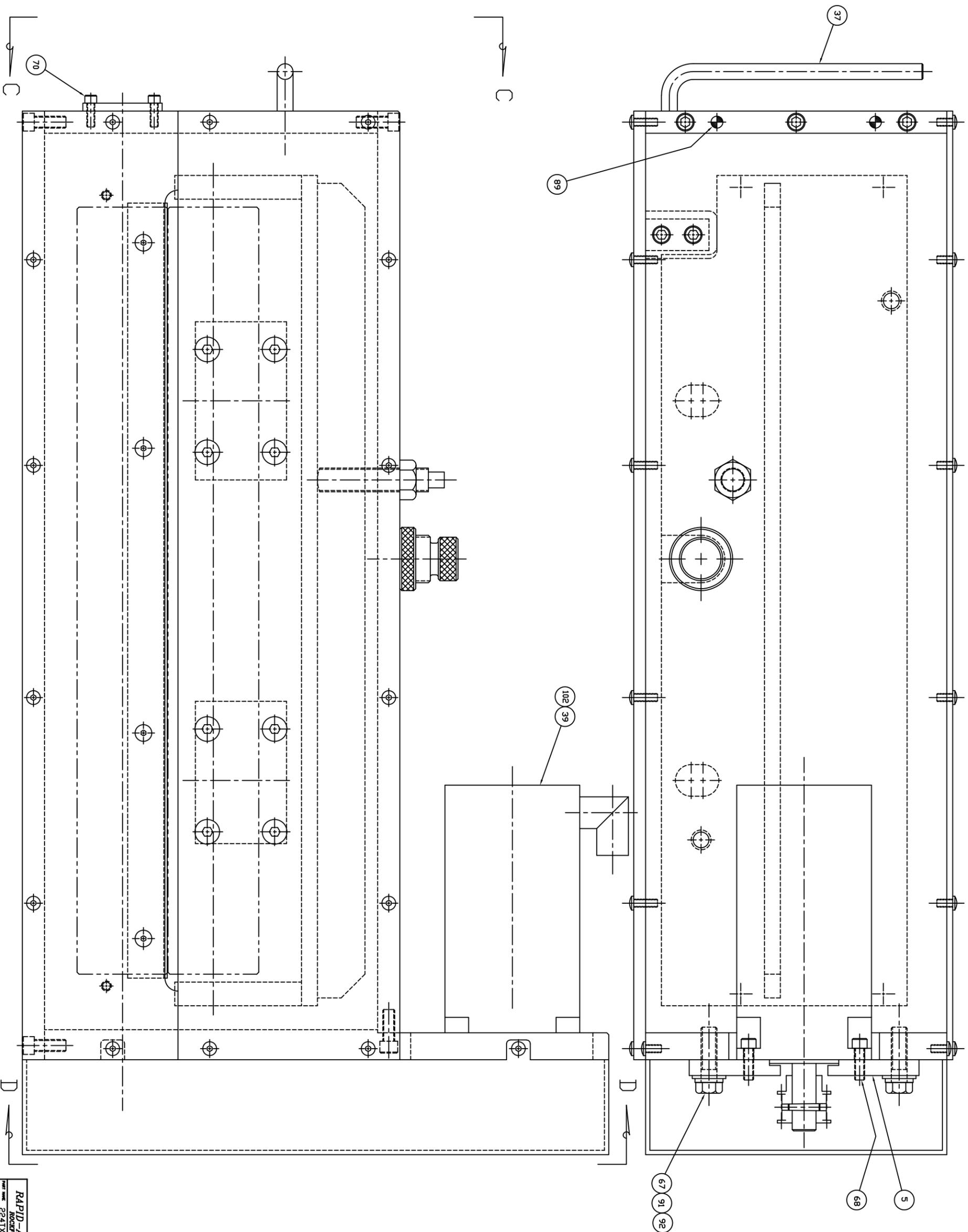
FROM SHEET #1

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: 908-675-1000  
 FAX: 908-675-1001  
 WWW: WWW.RAPID-AIR.COM



SHEET 1 OF 5

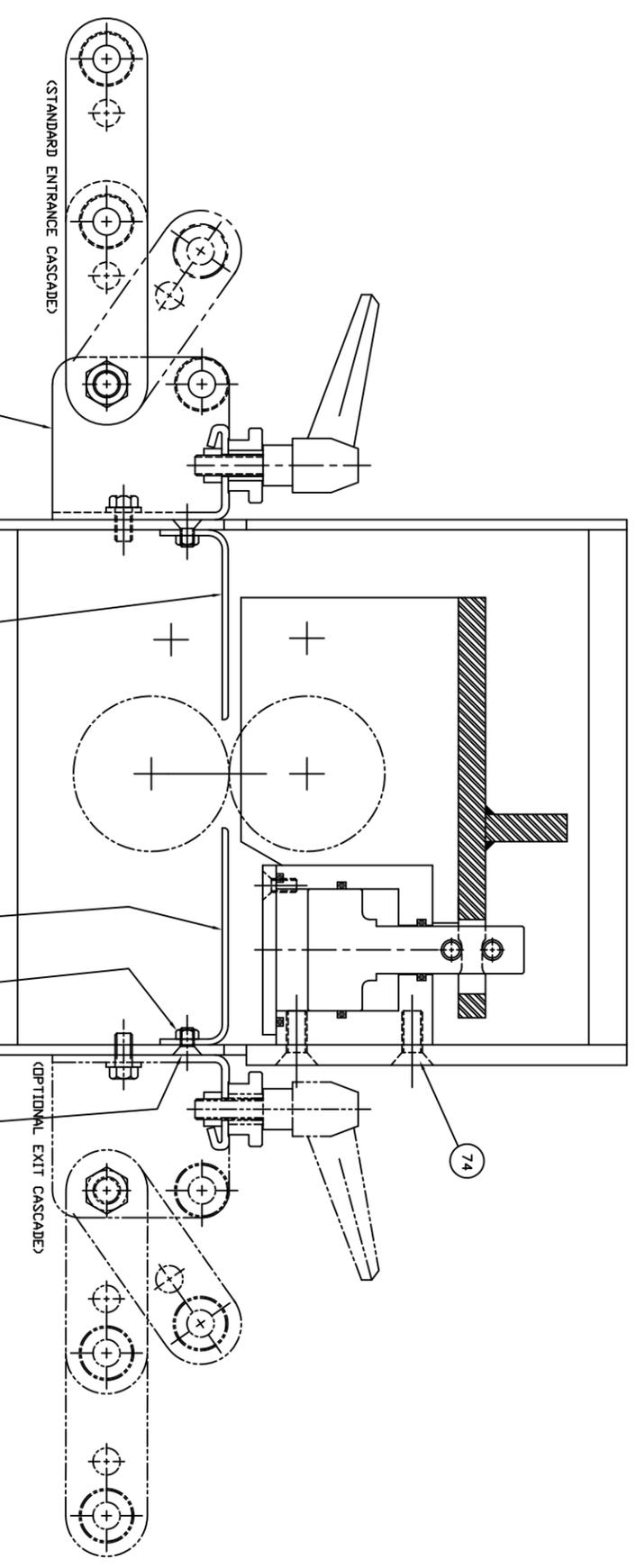
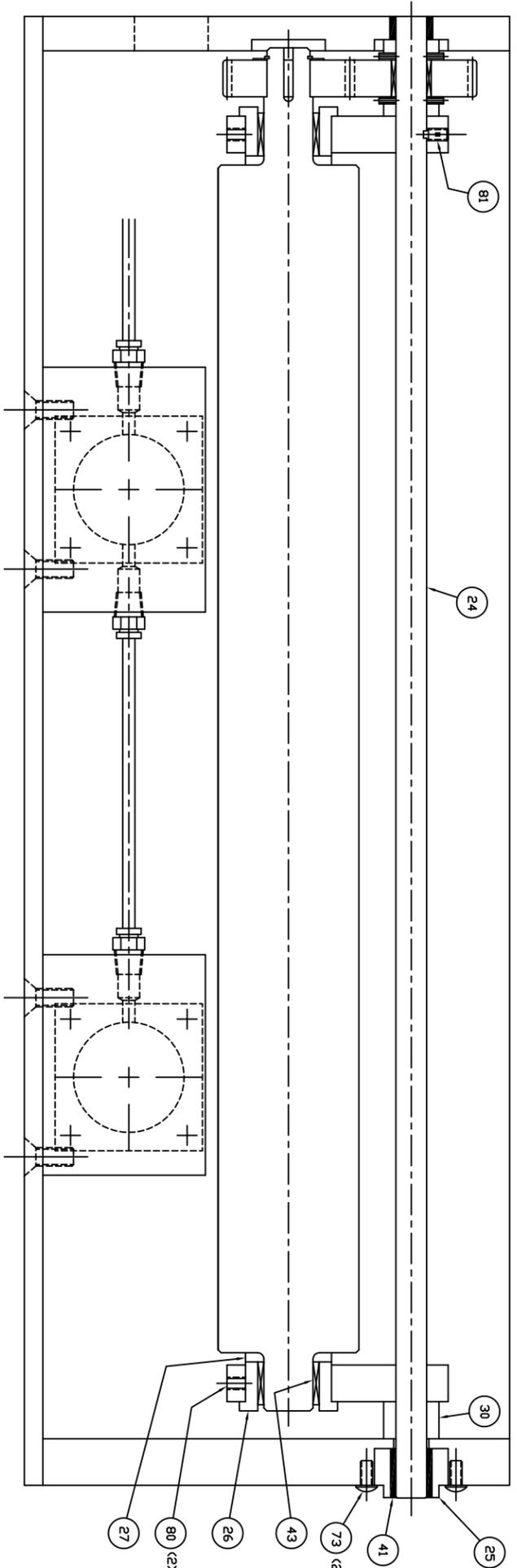
| REV | DATE      | BY | CHKD | DESCRIPTION |
|-----|-----------|----|------|-------------|
| A   | ECN #3724 |    |      |             |

|      |            |
|------|------------|
| DATE | 10-13-2014 |
| TIME | 13000625   |
| REV  | FULL       |

**RAPID-AIR CORPORATION**  
 ROCKFORD, IL • WADSWORTH, SD  
 PART NAME: 224TX V/AIR PILOT RELEASE  
 & AIR DOWN





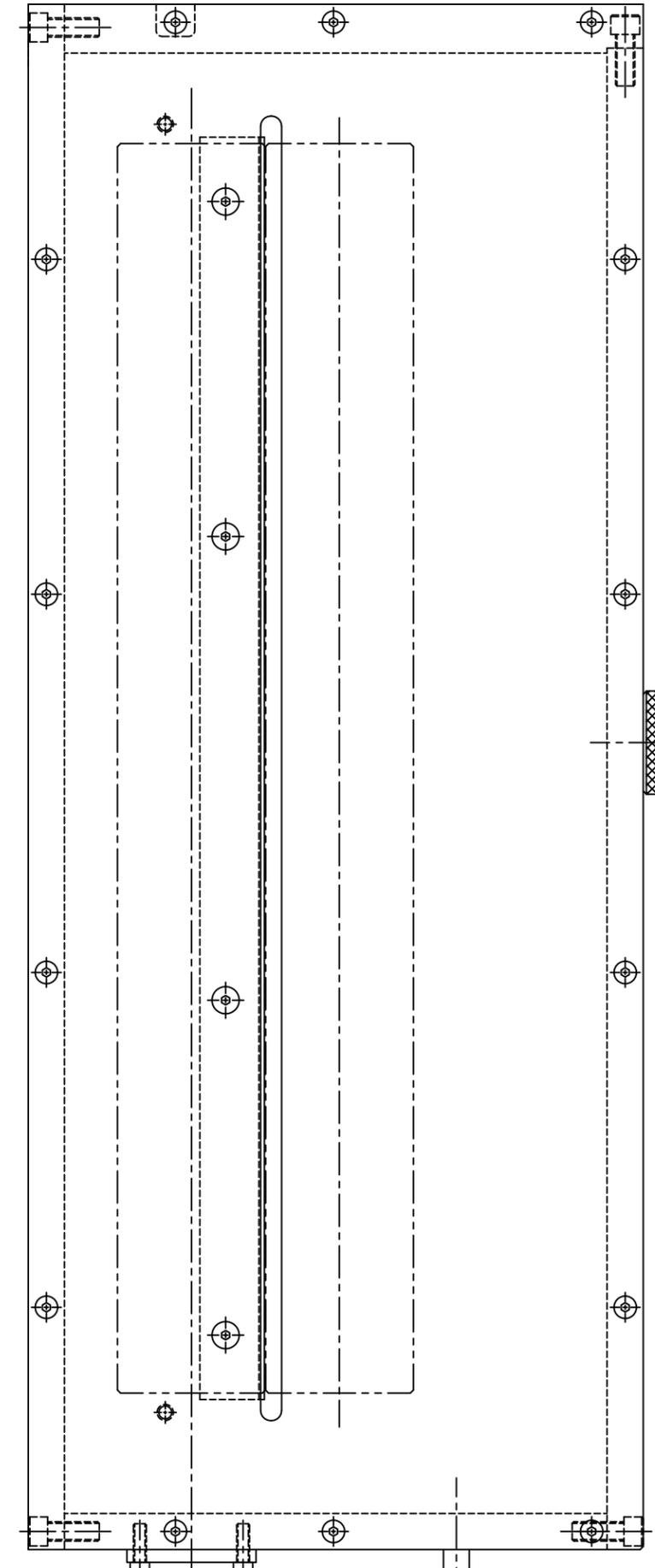
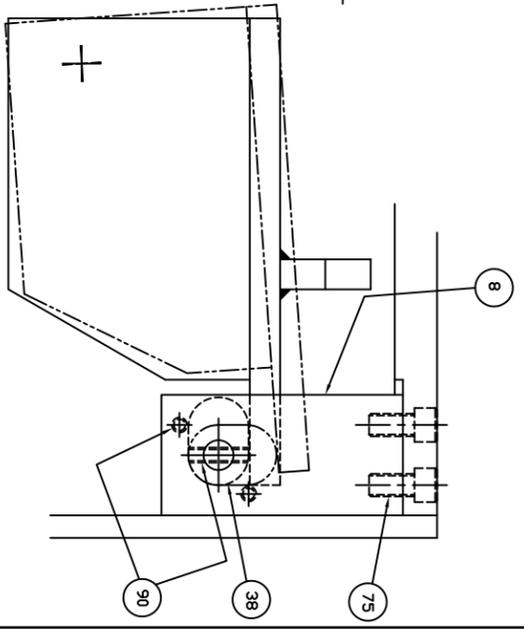
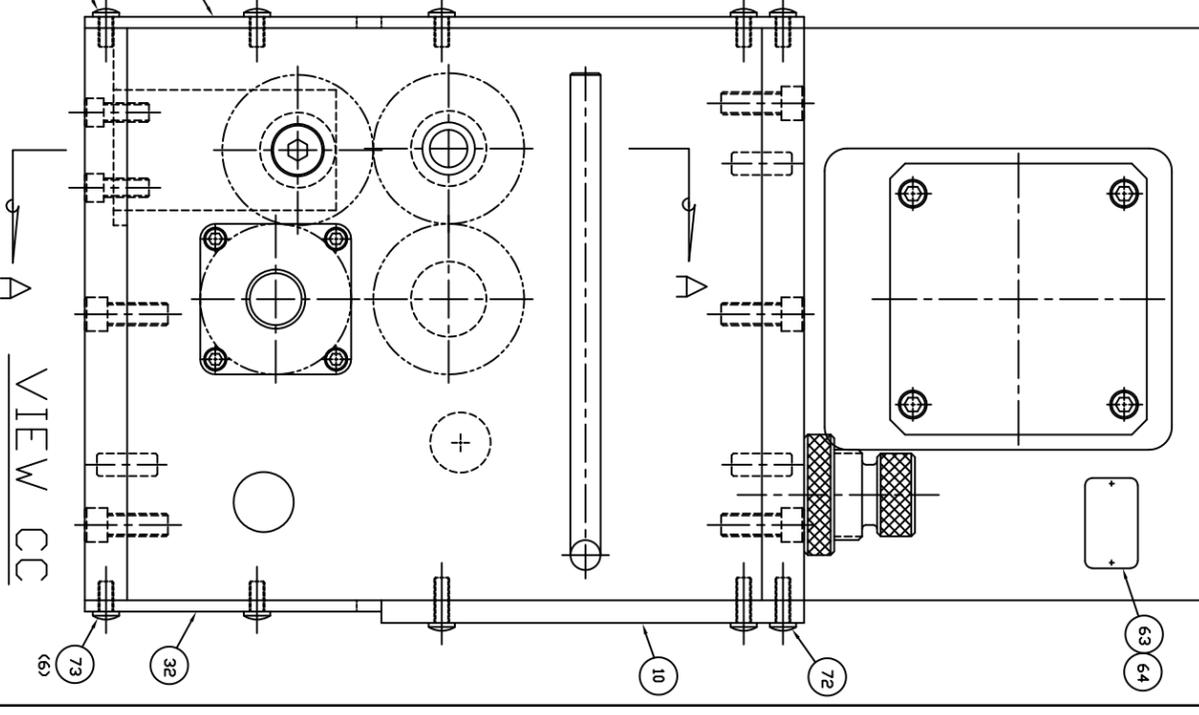
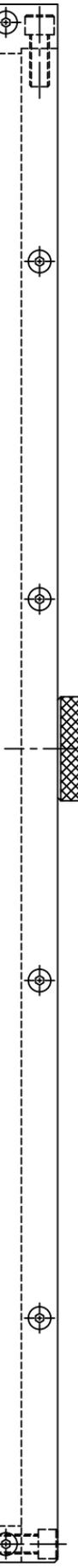
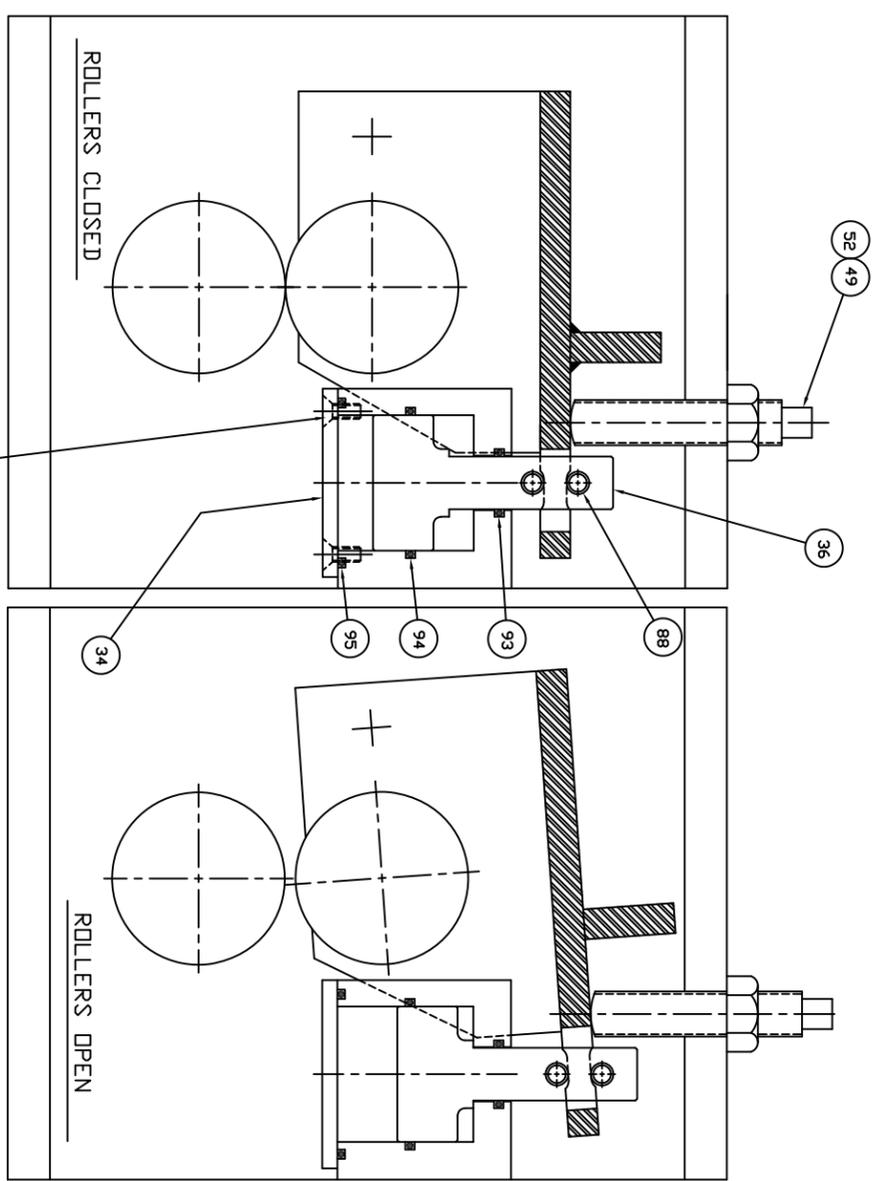
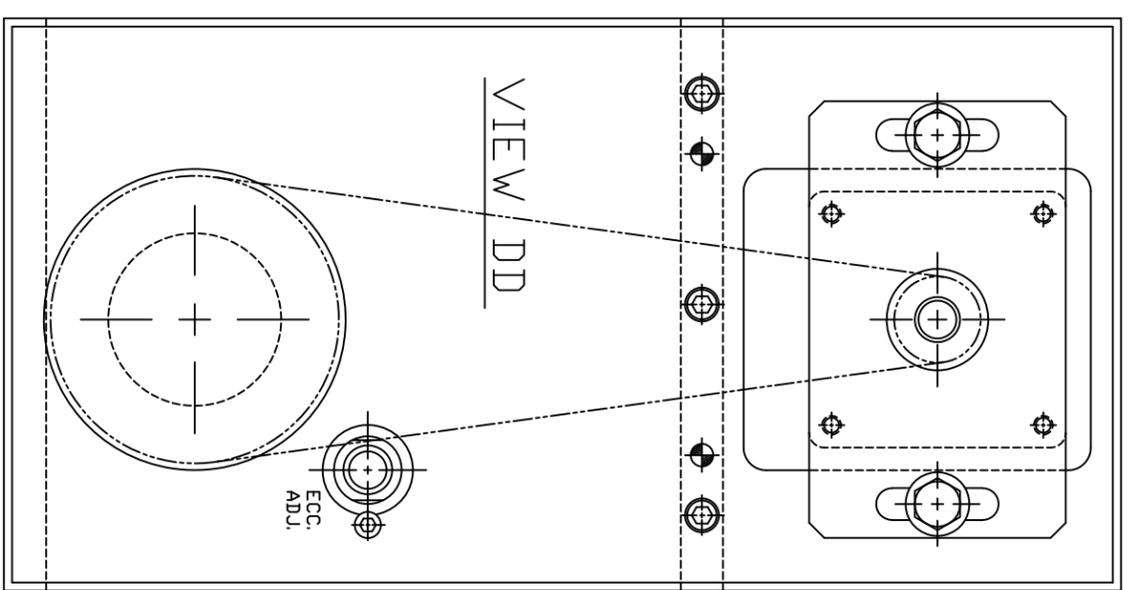
| ITEM | QTY. | PART NO. | DESCRIPTION                       |
|------|------|----------|-----------------------------------|
| 115  |      |          |                                   |
| 114  | 2    | 65908112 | SHCS #8-32 X 1 1/8                |
| 113  | 1    | 64230010 | BLACK POLY TUBE 1/4"              |
| 112  | 8    | 67100121 | WAL CONNECTOR 1/4 WPT TO 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 | BHSCS #10-32 X 3/8                |
| 107  | 2    | 60108206 | "O" 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 | "O" RING                          |
| 102  | 1    | 28900446 | CONTROL 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   | 2    | 60108230 | "O" RING                          |
| 94   | 2    | 60108228 | "O" RING                          |
| 93   | 2    | 60108212 | "O" RING                          |
| 92   | 2    | 61300050 | LOCK WASHER 1/2                   |
| 91   | 2    | 61200034 | FLAT WASHER 1/2                   |
| 90   | 3    | 62425100 | ROLL PIN                          |
| 89   | 8    | 62327100 | DDVEL PIN 3/8 X 1                 |
| 88   | 4    | 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   | 1    | 30100289 | PISTON HOUSING                    |
| 81   | 1    | 66700072 | SET SCREW                         |
| 80   | 4    | 66220037 | SET SCREW                         |

|    |    |          |                               |
|----|----|----------|-------------------------------|
| 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 | 22 | 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  | 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 | 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  | 34100322 | 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 |    |          |                               |
| 16 | 1  | 32600292 | UPPER ROLLER SPUR GEAR        |
| 15 | 1  | 32600235 | LOWER ROLLER SPUR GEAR        |
| 14 | 1  | 34200387 | UPPER 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 | ROLLER SIDE PLATE             |
| 5  | 1  | 31702106 | ROLLER SIDE MOUNTING PLATE    |
| 4  | 1  | 31702502 | L.H. SIDE PLATE               |
| 3  | 1  | 31702471 | R.H. SIDE PLATE               |
| 2  | 1  | 31702470 | R.H. SIDE PLATE               |
| 1  | 1  | 31702501 | BOTTOM PLATE                  |

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

|      |            |             |    |       |
|------|------------|-------------|----|-------|
| REV. | DATE       | DESCRIPTION | BY | CHKD. |
| 1    | 10-13-2014 | REVISION    |    |       |
| 2    |            |             |    |       |
| 3    |            |             |    |       |
| 4    |            |             |    |       |
| 5    |            |             |    |       |

DATE: 10-13-2014 TIME: 13000625  
 DRAWN BY: FUL



SHEET 4 OF 5

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

|            |                           |             |            |      |
|------------|---------------------------|-------------|------------|------|
| DATE       | APPROVED                  | DESIGNED BY | CHECKED BY | DATE |
| 10-13-2014 |                           | DUU         |            |      |
| REV.       | DESCRIPTION               | DATE        | BY         | APP. |
| 1          | CON #3724                 | 3/98        |            |      |
| 2          | 224TX V/AIR PILOT RELEASE | 10-13-2014  |            |      |
| 3          |                           |             |            |      |
| 4          |                           |             |            |      |
| 5          |                           |             |            |      |

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