

# Rapid-Air

## Operating Instructions

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C-T-L w/ 100D Series Servo Feed  
Control Ver. 'C'

s/n 133095 & Later



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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# SPECIFICATIONS

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## Mechanical

### Max Material Width:

106D / FSC6	6" (152mm)
112D / FSC12	12" (304mm)
118D / FSC18	18" (457mm)

### Max Thickness Capacity at Full Width:

106D / FSC6	0.046" (1.17mm)*
112D / FSC12	0.060" (1.52mm)*
118D / FSC18	0.045" (1.14mm)*

\* based on low carbon steel, commercial grade

### Max Feed Roll / Cutter Blade Opening:

106D / FSC6	0.150" (3.81mm)
112D / FSC12	0.100" (2.54mm)
118D / FSC18	0.150" (3.81mm)

Roll Position Repeatability:  $\pm 0.0025''$

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

# SPECIFICATIONS cont'd

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## Electrical

Line Voltage:	120 VAC, 1Ø, 50/60 Hz
Rated Input Current:	9.9 Amps
Max Inrush Current:	10.0 Amps
Max Operating Temperature:	30° C Ambient
Controller:	Trio Motion Coordinator MC302X
AC Servo Drive:	Kollmorgen AKD –B00606
Display:	Beijer H-T60b-S
Enclosure	
Rating:	IP65
Dimensions:	24" x 18" x 10" (610mm x 457mm x 254mm)
Inputs:	Use PNP sensor or isolated contact Min 3.5 VDC / Max 30 VDC Min 2 mA / Max 15 mA
Outputs:	Sourcing: 24VDC @ 250 mA max.
Options:	460 VAC, 3Ø, 50/60 Hz AC Cooled Enclosure Adjustable Mounting Stand

## Pneumatic

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

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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. It is a non-lubricated gear train so it is essentially maintenance free.

## Pilot Release Stop

Our 100D 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 0.060". 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 entrance side of the servo feed and is a knurled knob with a locking nut located right behind it. It is positioned parallel to the inlet face and uses a compression 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.

## 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

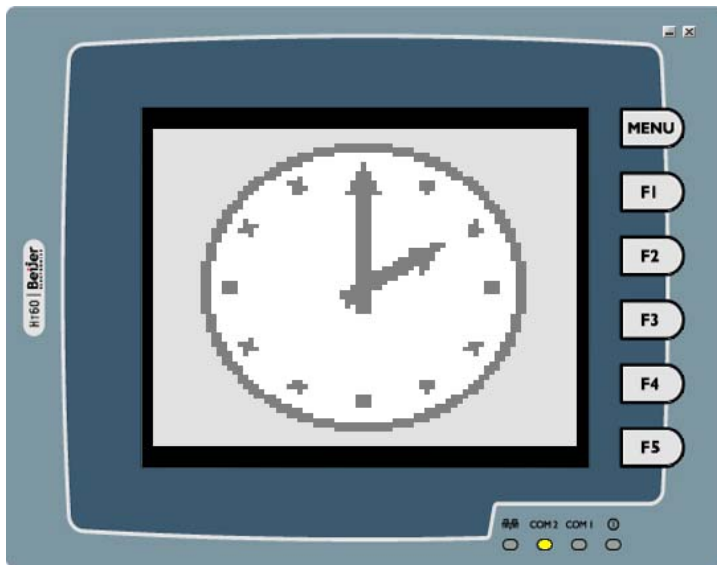
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When the control is turned on some of the components must boot-up, much like a computer. During this period the display will show a 'clock' so you can recognize the control is in the process of getting ready. If the control is turned on immediately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

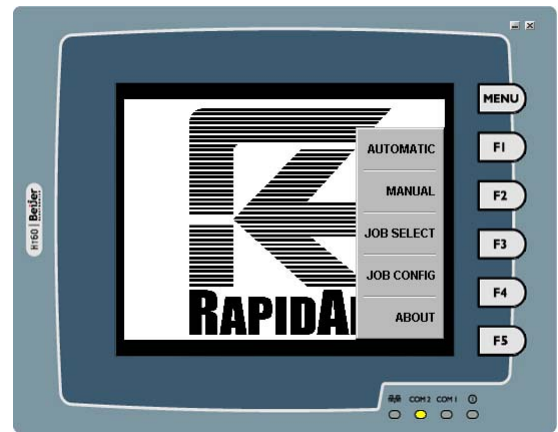
On the right hand side of the display there are 5 programmable function keys. These keys have different functions depending on the active screen. The 'F5' key is typically the EXIT or CANCEL key. The keys are always active. If you forget a key's function you can press the MENU button and the function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

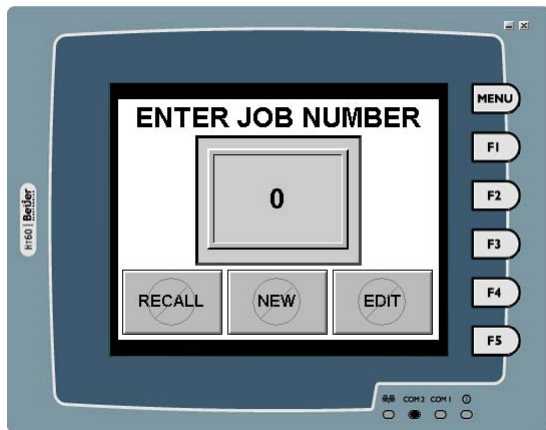
You can change to any screen listed, no particular order is required. For purposes of explaining the controls we will describe how to enter a new job number and the job parameters.

A typical sequence would be:

- **JOB SELECT** – Enter a job number
- **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

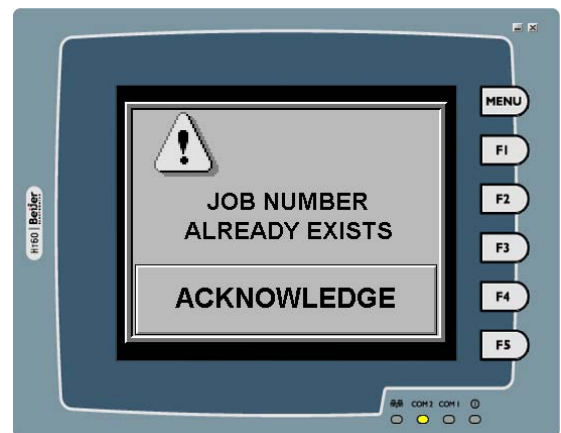
## JOB SELECT:



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.

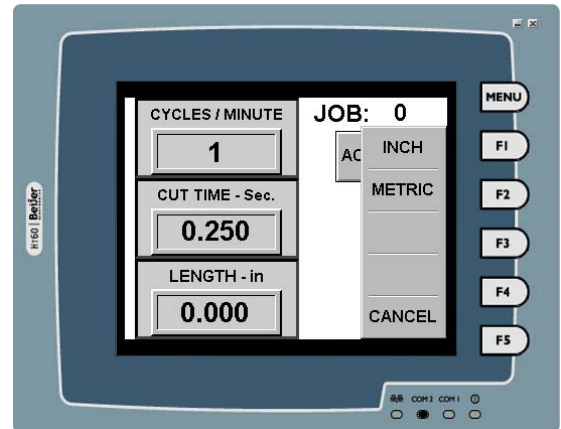
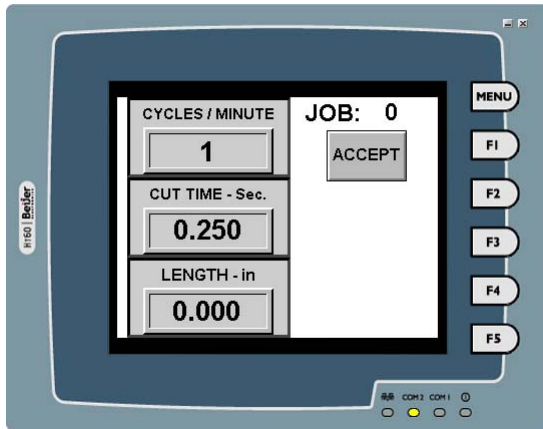
**RECALL:** This pushbutton recalls a previously set up job and makes it the CTL active job. If any invalid job number is entered you will get a fault message. Simply acknowledge the message and try again. When the recall is successful you will be returned to the SPLASH screen.

**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.

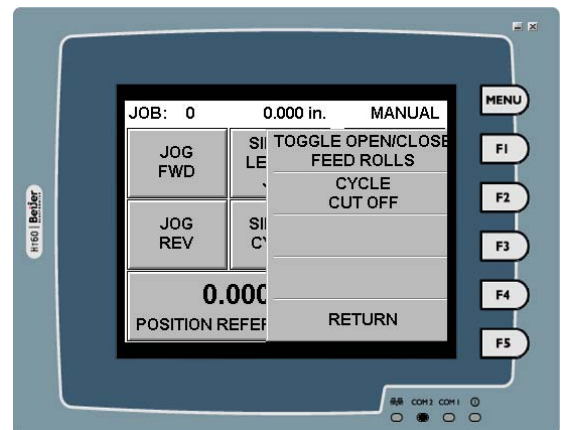
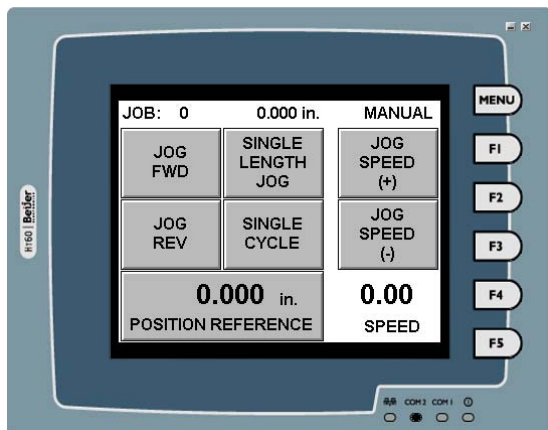
# SERVO FEED OPERATION cont'd

## 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.

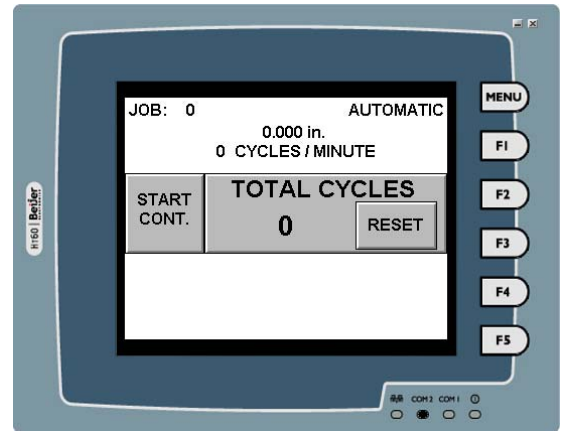
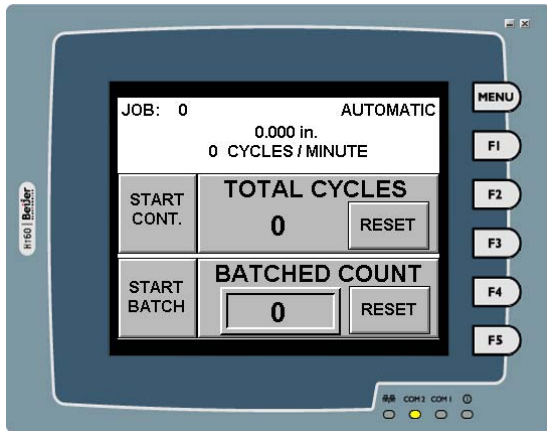


It is possible to jog the servo feed via hardwired pushbuttons. If the CTL was not ordered with a remote jog pendant it is possible to field install JOG FWD and JOG REV pushbuttons. See page 2 of 2 of the included electrical schematic. Like the HMI jog buttons, the hardwired pushbuttons will only be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

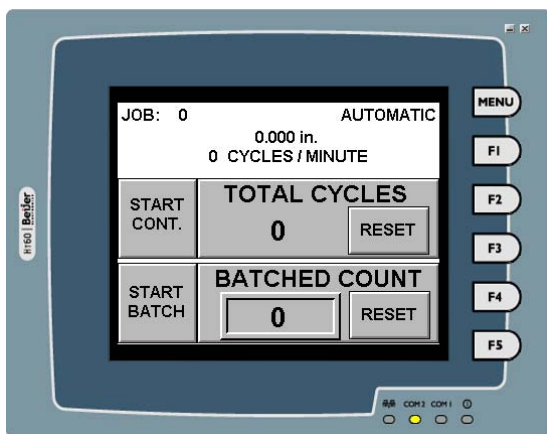
# SERVO FEED OPERATION cont'd

## 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.



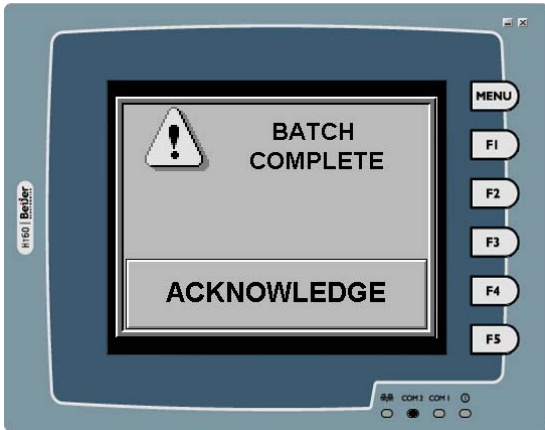


# SERVO FEED OPERATION cont'd

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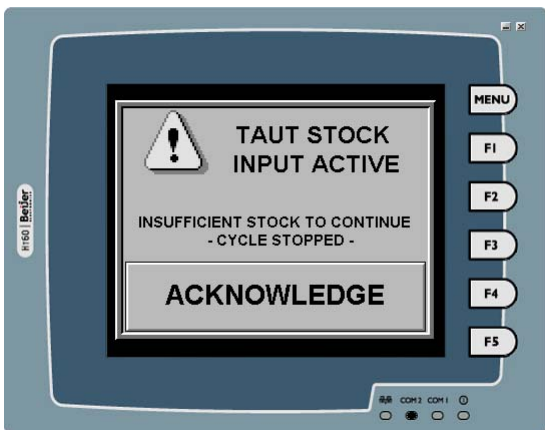
## AUTOMATIC cont'd:

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.

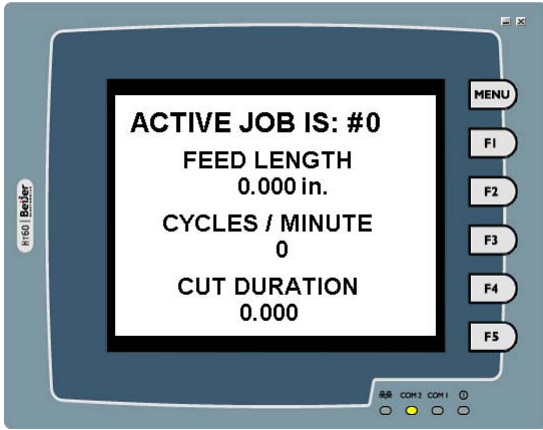




# JOB REVIEW

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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

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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

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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 annunciate 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

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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

\*\* FSC6, item #26  
FSC12, item #29  
FSC18, 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

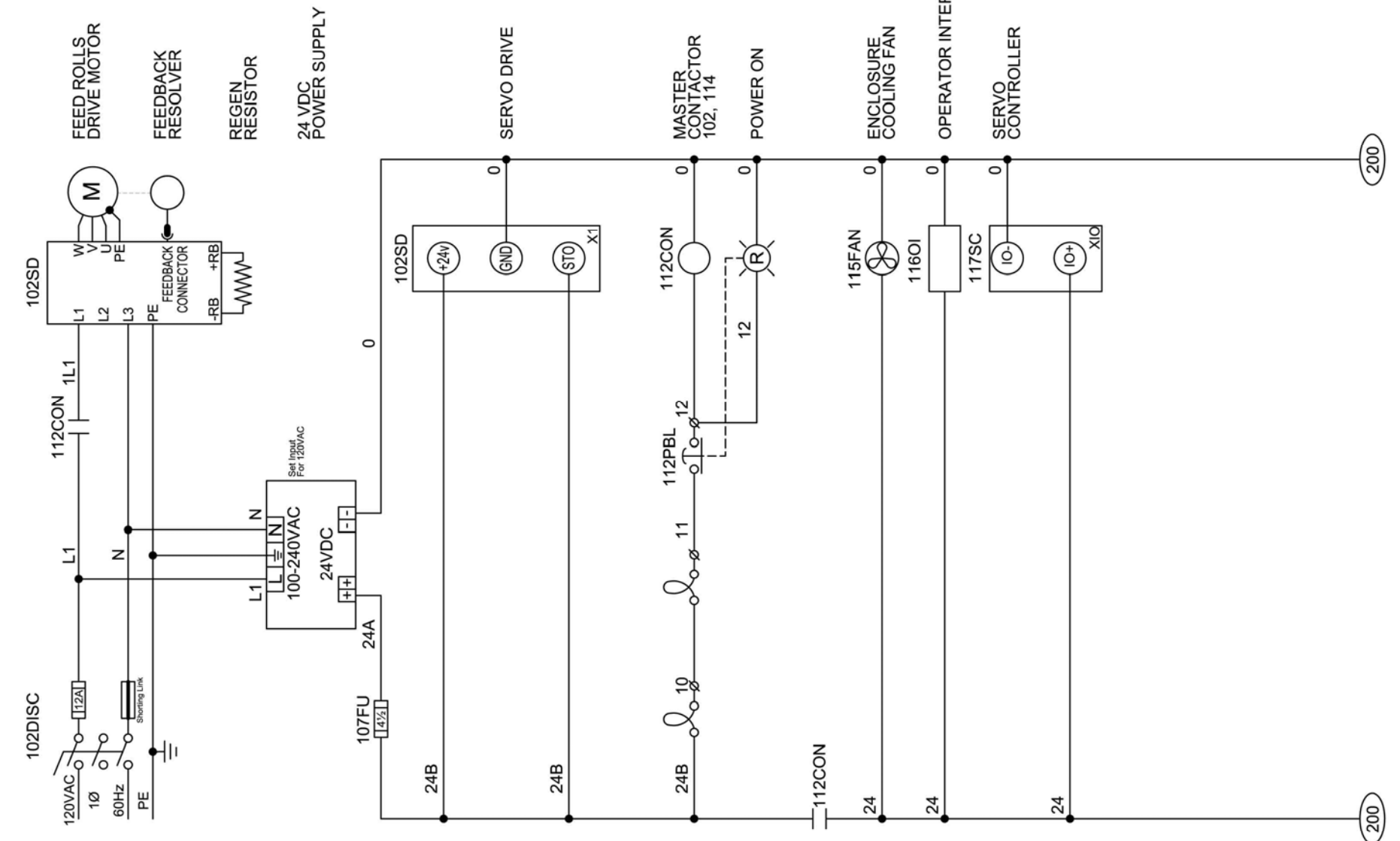
Rapid-Air reserves the rights in its software. The software program is licensed by Rapid-Air to the original purchaser of the equipment which contains the software for use only on the terms set forth in this license.

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:

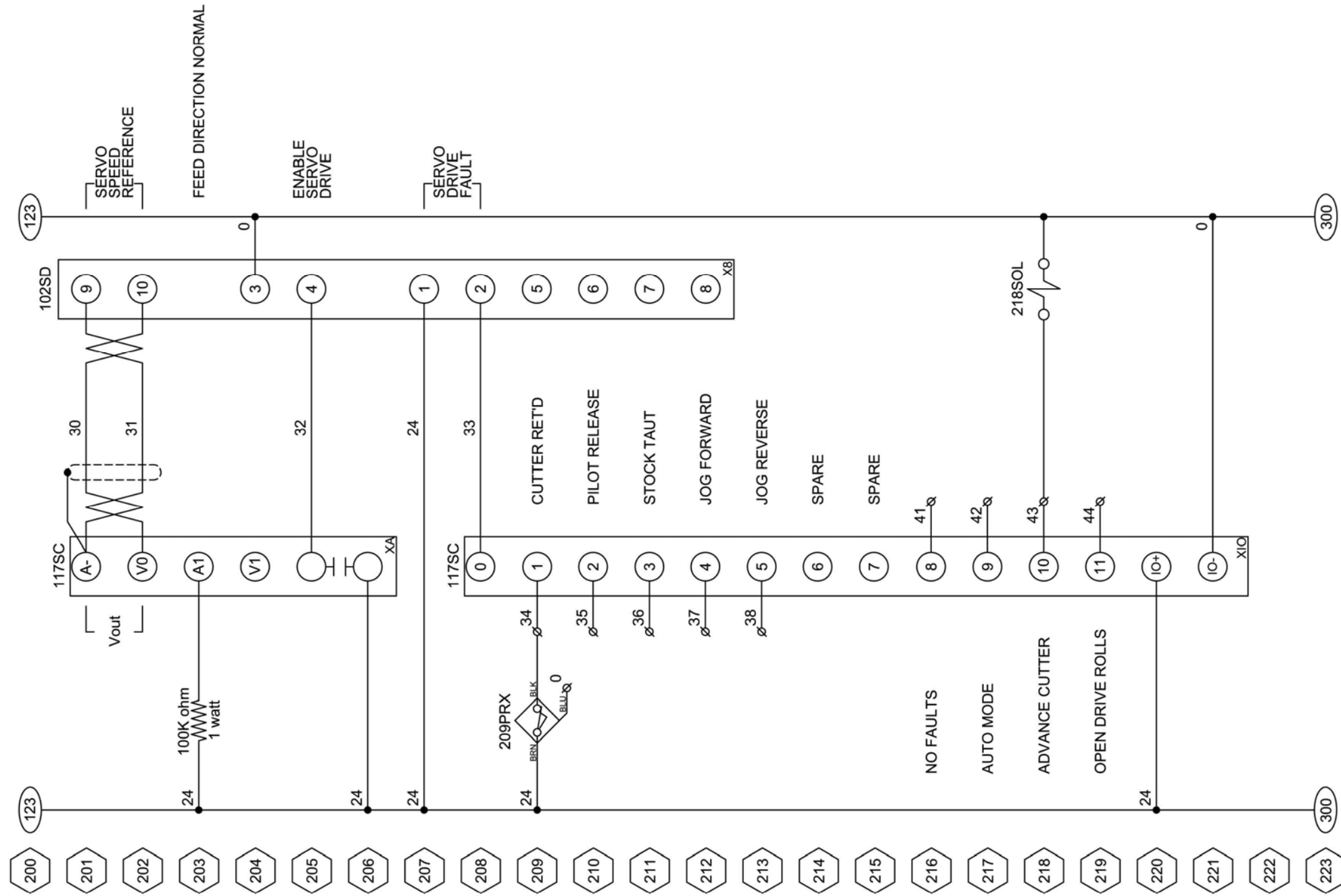
- A. Copy, distribute, or document the program for others.
- B. Modify or merge any portion of the program for use on non-compatible hardware.
- C. Make alterations to the program.

100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123



SHEET 1 OF 2  
POWER CIRCUIT

<b>RAPID-AIR CORPORATION</b> ROCKFORD, IL			
PART NAME 100D CUT-TO-LENGTH WIRING SCHEMATIC			
MATERIAL			WEIGHT
HEAT TREAT			HARDNESS
DRAWN BY TJH	CHECKED BY		FINAL FINISH
DATE MAY 2014	DRAWING NUMBER		
REV.	CHANGE	DATE	SCALE N/A
			85500336-1 D



SHEET 2 OF 2  
I/O CIRCUIT

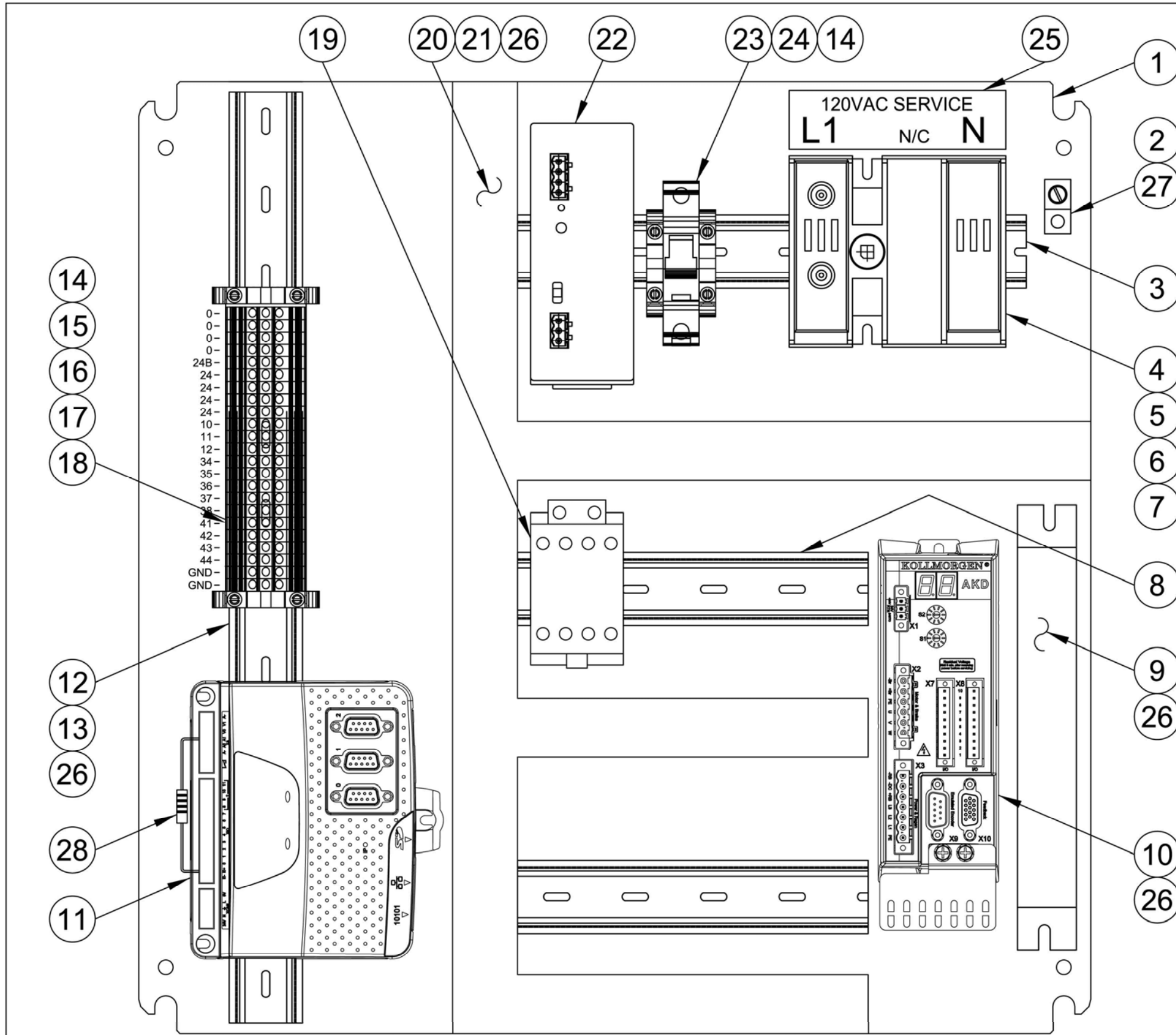
REV.	CHANGE	DATE	SCALE	N/A	DRAWING NUMBER	85500336-2	D
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**RAPID-AIR CORPORATION**  
ROCKFORD, IL

PART NAME: 100D CUT-TO-LENGTH  
WIRING SCHEMATIC

MATERIAL: \_\_\_\_\_ WEIGHT: \_\_\_\_\_  
HEAT TREAT: \_\_\_\_\_ HARDNESS: \_\_\_\_\_

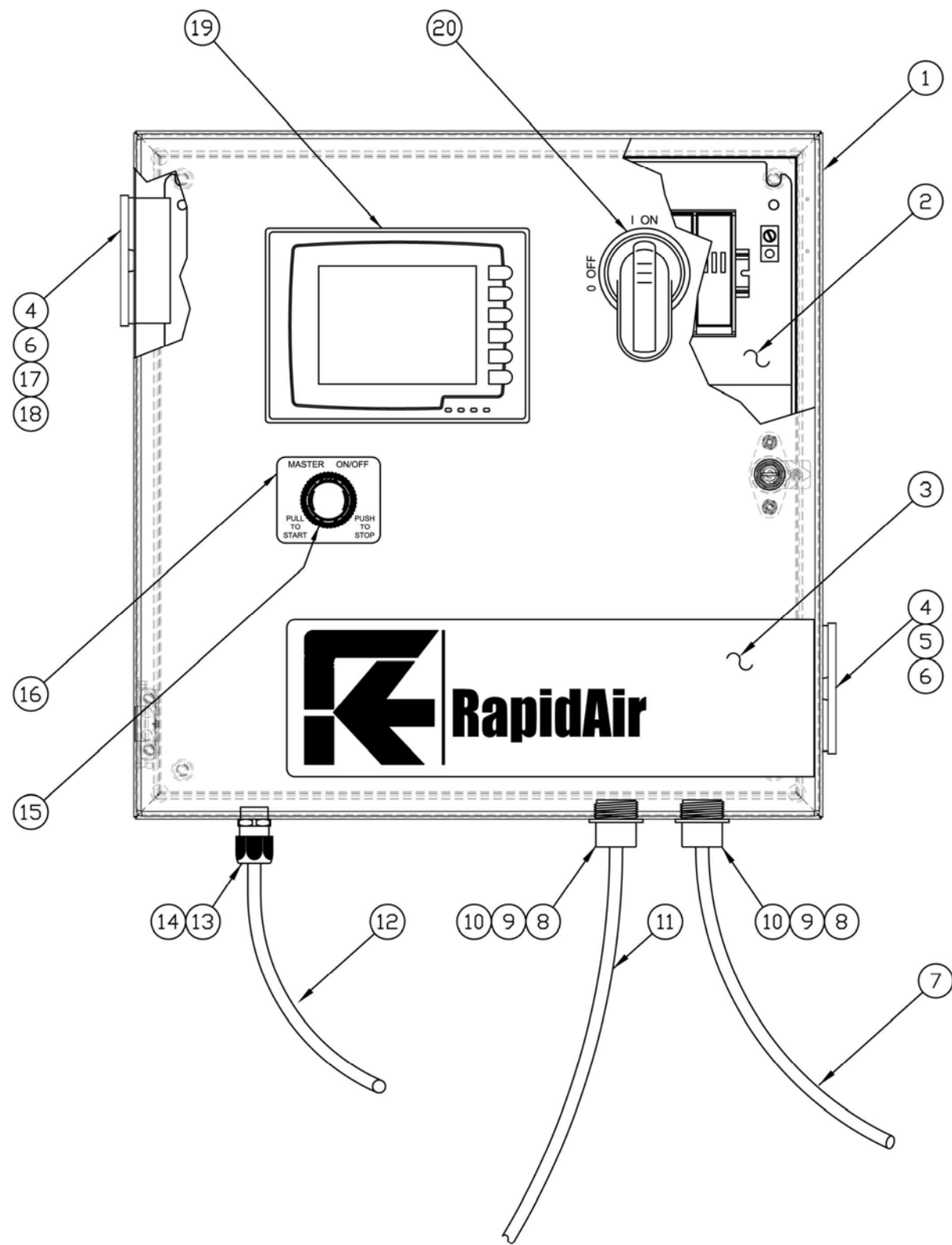
DRAWN BY: TJH CHECKED BY: \_\_\_\_\_  
DATE: MAY 2014



85500333 100D WIRING SCHEMATIC - version 'C' cntrl

ITEM	QTY.	PART NO.	DESCRIPTION
N/S	2	69340036	26 GA. FERRULE
N/S	4	69340037	20 GA. FERRULE
N/S	5	69340039	16 GA. FERRULE
N/S	3	69340040	14 GA. FERRULE
N/S	1	69300048	CNTRLR / DISPLAY CABLE
N/S	1	69300047	CNTRLR / DRIVE CABLE
28	1	69101008	RESISTOR
27	1	66020050	1/4-20 x 1/2" RHMS
26	31	66008037	8-32 x 3/8" RHMS
25	1	39900310	120VAC DISCONNECT WIRING LABEL
24	1	69101002	4 1/8" FUSE - CLASS CC
23	1	69100597	FUSE HOLDER
22	1	69100435	24VDC @ 5A POWERSUPPLY
21	1	69100748	1" WIRE DUCT COVER
20	1	69100749	1" x 2" WIRE DUCT
19	1	69100819	CONTACTOR
18	2	69100775	GROUND TERMINAL
17	.5	69100773	TERMINAL JUMPERS
16	1	69100771	TERMINAL END BARRIER
15	21	69100770	TERMINAL
14	4	69100772	TERMINAL END ANCHORS
13	2	31900659	TERMINAL STANDOFF
12	1	69100769	DIN RAIL - 18"
11	1	69100827	SERVO CONTROLLER
10	1	69100820	SERVO DRIVE
9	1	69101005	REGEN RESISTOR
8	2	69100769	DIN RAIL - 6.38"
7	1	69101006	DISCONNECT SHORTING LINK
6	1	69100584	DISCONNECT SHAFT
5	1	69101007	12A FUSE - CLASS J
4	1	69100582	DISCONNECT - 30A/600VAC
3	1	69100769	DIN RAIL - 9.5"
2	1	69280249	GROUND LUG
1	1	38900199	SUBPANEL

<b>RAPID-AIR CORPORATION</b> ROCKFORD, IL			
PART NAME 100D SERVO CONTROL SUBPANEL ASSEMBLY			
MATERIAL	WEIGHT		
HEAT TREAT	HARDNESS		
DRAWN BY TJH	CHECKED BY	FINAL FINISH	
DATE APRIL 2014	DRAWING NUMBER		
REV.	CHANGE	DATE	SCALE N/A 28900430 D

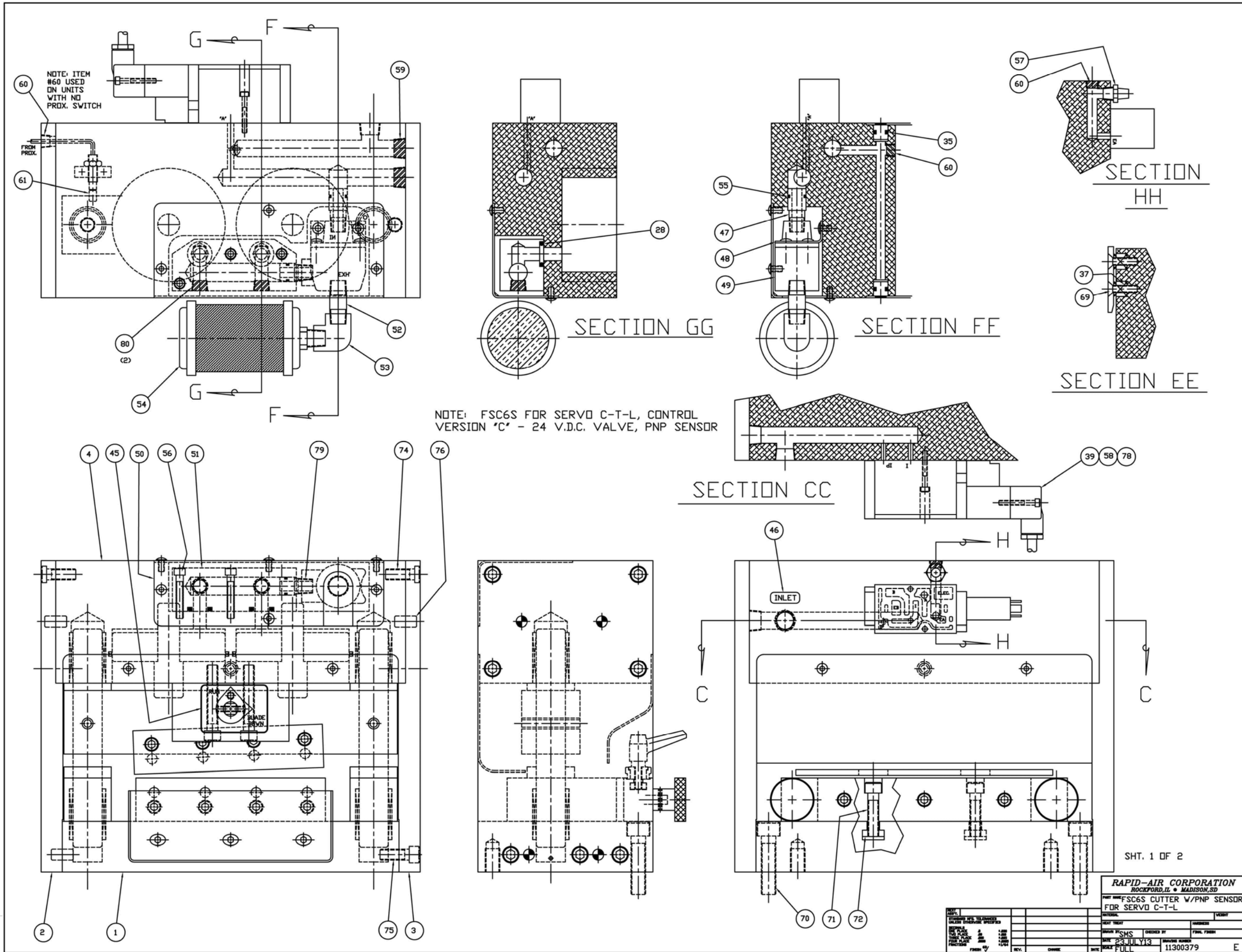


ITEM	QTY.	PART NO.	DESCRIPTION
N/S	1	10900601	100 & 200 SERVO CNTRL STAND
N/S	1	69280216	INSULATED SLEEVE CLAMP
N/S	1	60940015	RETAINER
20	1	69100583	DISCONNECT HANDLE
19	1	69100829	OPERATOR INTERFACE
18	4	66006175	RHMS 6-32
17	1	69100657	24VDC ENC. COOLING FAN
16	1	39900188	PUSHBUTTON NAMEPLATE
15	1	69100902	EXT'D HEAD PUSHBUTTON
14	1	69280201	1/2" N.P.T. LOCKNUT
13	1	69280200	CORDGRIP
12	1	69300002	120VAC LINE CORD 14/3
11	1	69300041	MOTOR POWER CABLE
10	2	69280248	METRIC LOCKNUT - M32
9	2	69280247	SPLIT CORDGRIP GROMMET
8	2	69280246	SPLIT CORDGRIP SHELL
7	1	69300042	MOTOR FEEDBACK CABLE
6	8	65100632	HEX NUT 6-32
5	4	66506062	FHSCS 6-32
4	2	69100643	VENT COVER & FILTER
3	1	39900243	LOGO LABEL
2	1	28900430	SUBPANEL ASSEMBLY
1	1	38900200	ENCLOSURE

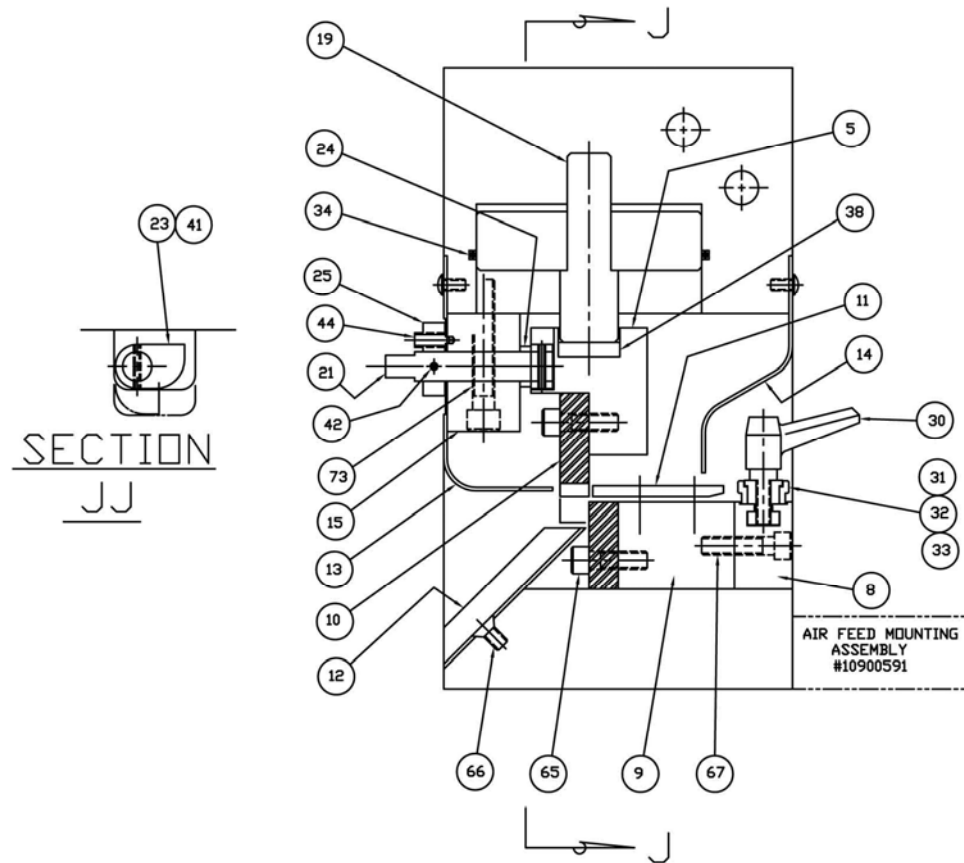
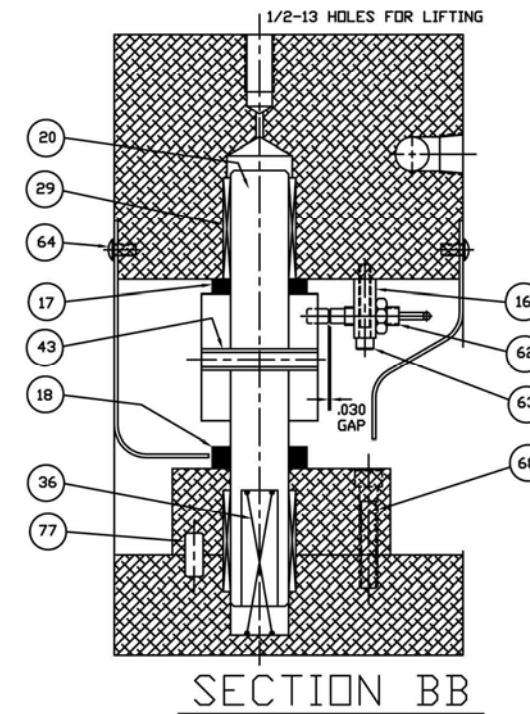
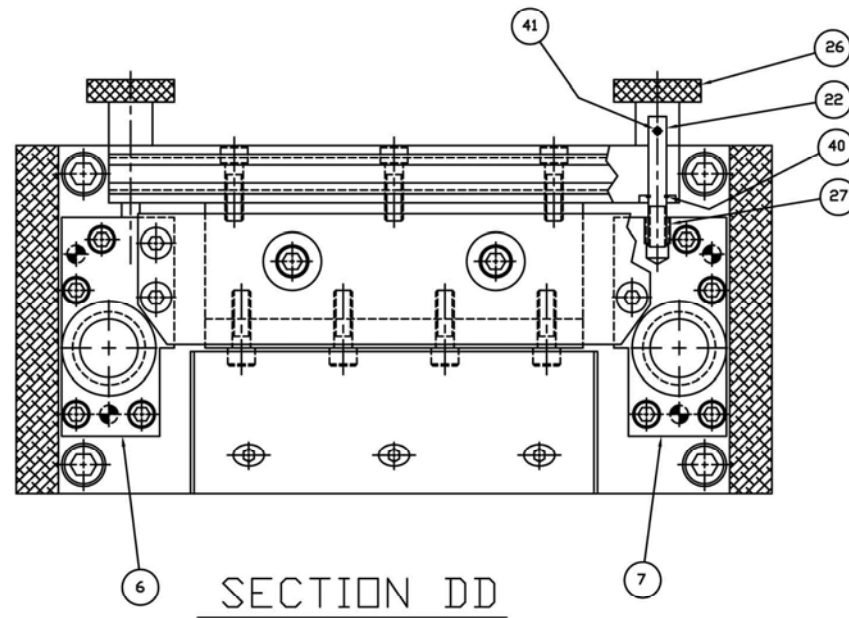
NEXT ASSY.					
STANDARD MFG. TOLERANCES UNLESS OTHERWISE SPECIFIED					
DECIMALS					
ONE PLACE	±.250				
TWO PLACE	±.020				
THREE PLACE	±.005				
FOUR PLACE	±.0005				
FRACTIONS	±1/64				
FRESH 63	✓				
REV.	CHANGE	DATE	SCALE		
			N/A		
MATERIAL		WEIGHT			
HEAT TREAT		HARDNESS			
DRAWN BY	TJH	CHECKED BY		FINAL FINISH	
DATE	APRIL 2014	DRAWING NUMBER	28900431		D

**RAPID-AIR CORPORATION**  
**ROCKFORD, IL**  
 PART NAME  
 100D SERVO  
 CONTROL ASSEMBLY





80	2	63130250	PIPE PLUG 1/4"
79	1	36300012	QUICK EXHAUST FITTING
78	2	65908112	SHCS #8-32 X 1 1/8
77	4	62331075	DDWEL PIN 5/16 X 3/4
76	8	62337075	DDWEL PIN 3/8 X 3/4
75	6	65936100	SHCS 3/8-16 X 1
74	8	66700057	LDW 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	DDWEL 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° ELBDW
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	25500077	PISTON
18	2	35900045	LOWER BUMPER
17	2	35900044	UPPER BUMPER
16	1	31701617	PRDX. MOUNTING PLATE
15	1	31701616	CAM SHAFT MOUNTING PLATE
14	1	21900279	REAR GUARD ASSEMBLY
13	1	21900278	FRONT GUARD ASSEMBLY
12	1	31500442	SCRAP CHUTE
11	1	31702210	STRIPPER PLATE
10	2	32000014	BLADE
9	1	31702209	BLADE SUPPORT PLATE
8	1	31702208	T-SLOT PLATE
7	1	31701612	R.H. BEARING PLATE
6	1	31701611	L.H. BEARING PLATE
5	1	30100303	BLADE HOUSING
4	1	30100302	PISTON HOUSING
3	1	31701610	R.H. SIDE PLATE
2	1	31701609	L.H. SIDE PLATE
1	1	31702207	BASE PLATE
ITEM	QTY.	PART NO.	DESCRIPTION

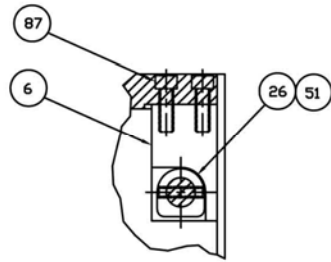


NOTE: FSC6S FOR SERVO C-T-L, CONTROL VERSION 'C' - 24 V.D.C. VALVE, PNP SENSOR

SHT. 2 OF 2

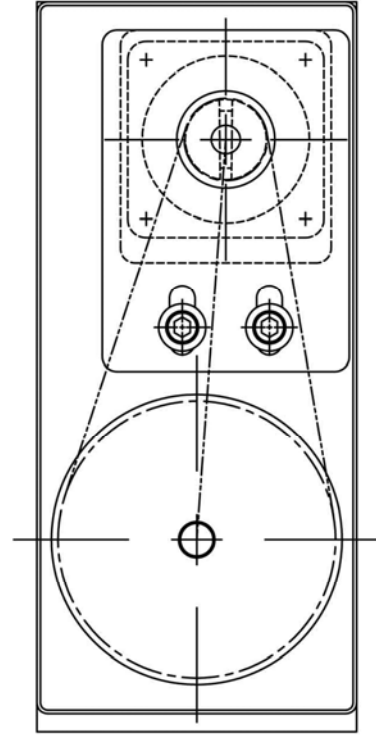
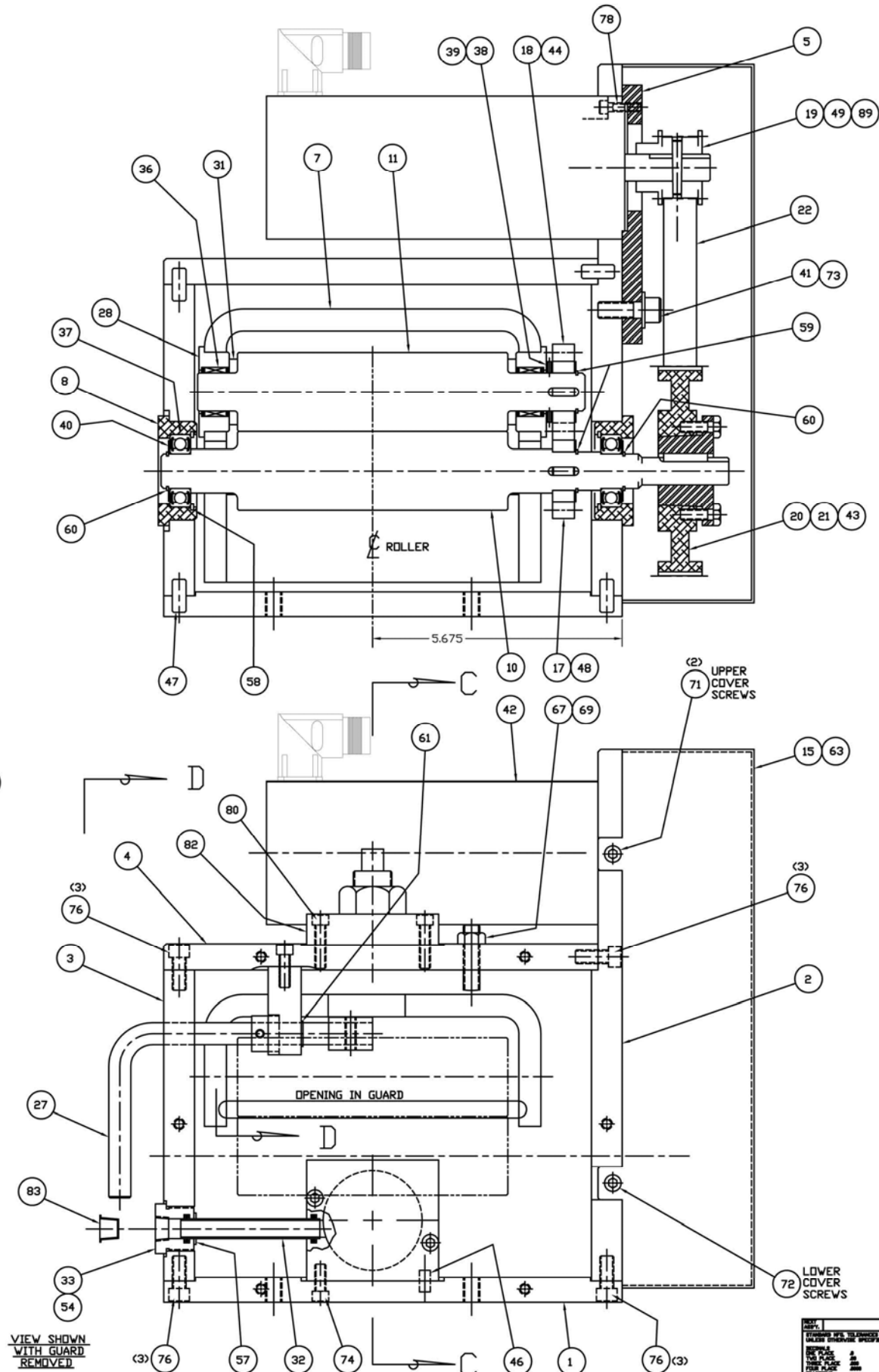
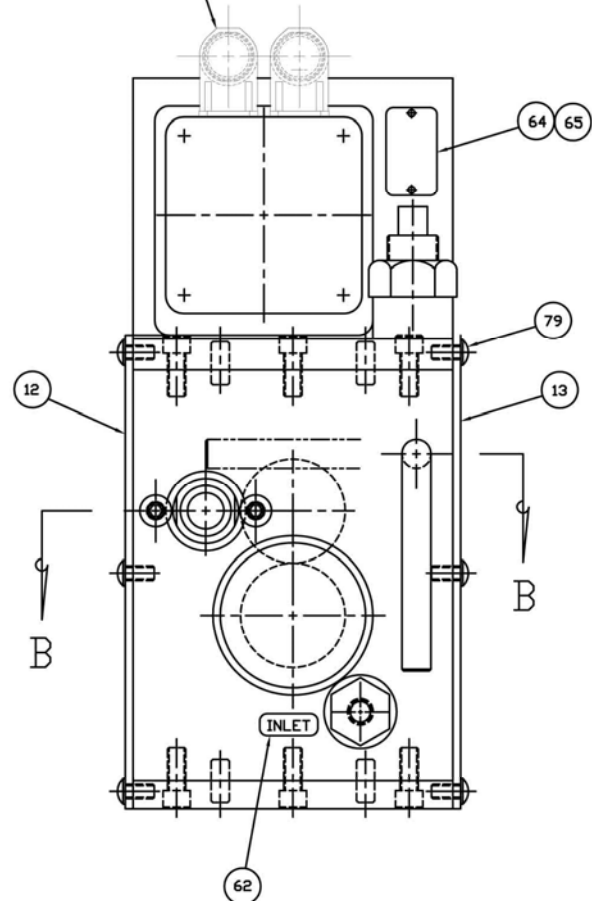
RAPID-AIR CORPORATION  
 ROCKFORD, IL • MADISON, SD  
 PART # FSC6S CUTTER W/PNP SENSOR  
 FOR SERVO C-T-L

DATE	23 JULY 13	REV.	1
DESIGNED BY	SMS	CHECKED BY	FINN FINN
DRAWN BY	SMS	DATE	23 JULY 13
SCALE	FULL	DRAWING NUMBER	11300379
REV.		CHANGE	
DATE		BY	



SECTION DD

IMPORTANT! MOTOR  
TERMINALS POSITION  
UNLESS OTHERWISE  
SPECIFIED



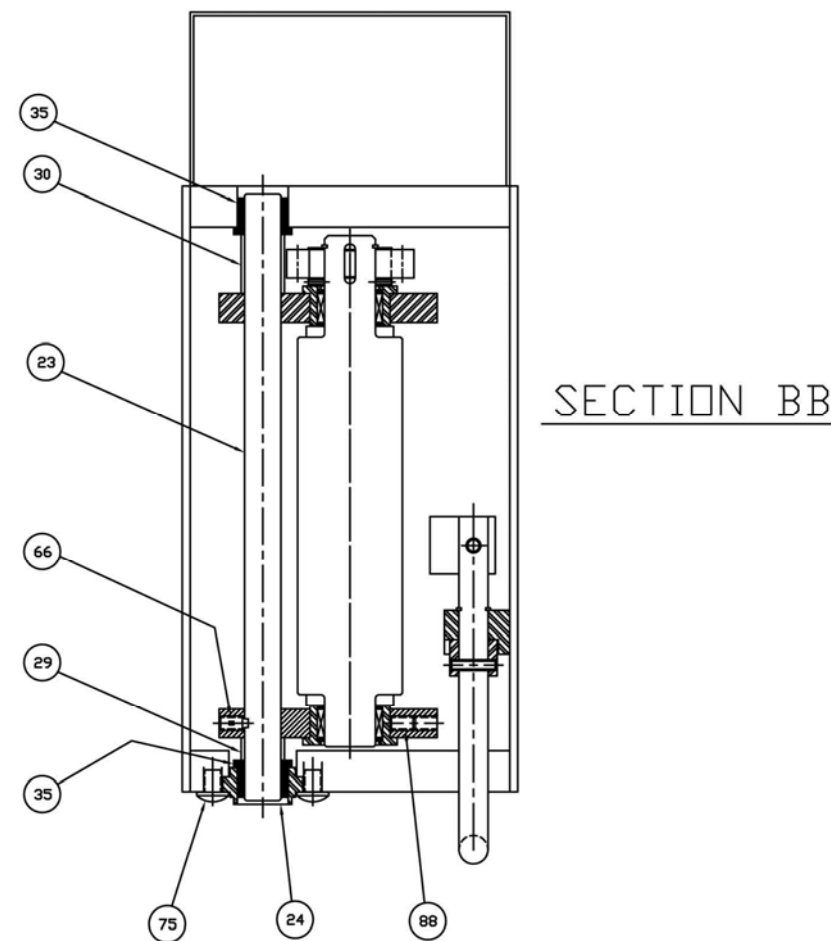
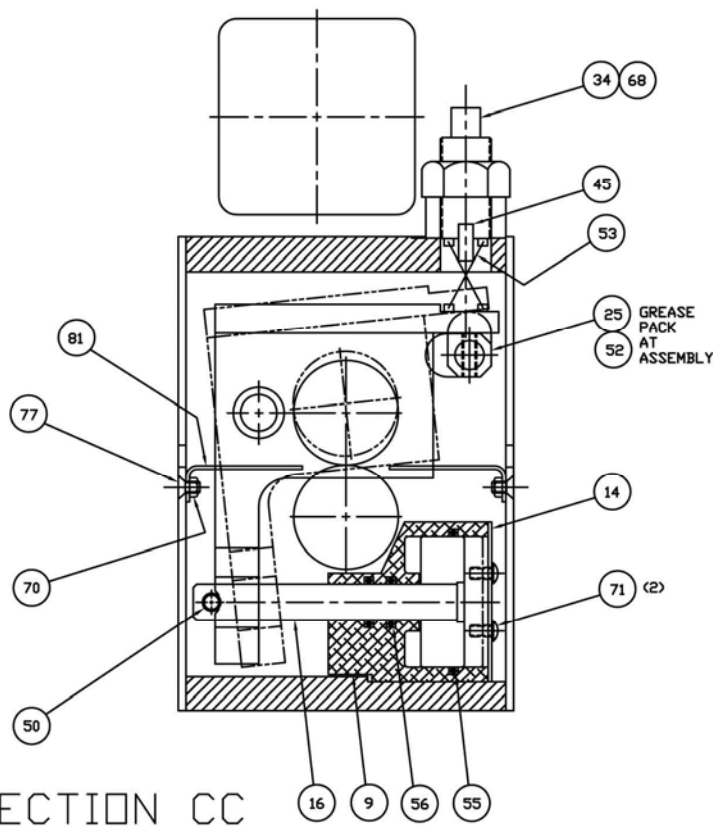
VIEW SHOWN  
WITH GUARD  
REMOVED

SHEET 1 OF 2

<b>RAPID-AIR CORPORATION</b> ROCKFORD, IL • MADISON, SD	
PART NAME 106D SERVO V/VERSION 'C' CONTROL (4-PIECE HOUSING CONSTRUCTION)	
DRAWN BY DLU	CHECKED BY FPM, FPMH
DATE 12/16/13	DRAWING NUMBER 13000592
SCALE FULL	REV.

83	1	62900004	PLUG
82	1	31702417	ADJ. SCREW PLATE
81	2	31500471	STOCK GUIDE
80	4	65920100	SHCS 1/4-20 X 1
79	12	66620050	BHSCS 1/4-20 X 1/2
78	4	65912075	SHCS #10-32 X 3/4
77	4	66512037	FHSCS #10-32 X 3/8
76	12	65931075	SHCS 5/16-18 X 3/4
75	2	66631037	BHSCS 5/16-18 X 3/8
74	4	65920062	SHCS 1/4-20 X 5/8
73	2	65936100	SHCS 3/8-16 X 1
72	2	66612050	BHSCS #10-32 X 1/2
71	4	66612037	BHSCS #10-32 X 3/8
70	4	65101032	HEX NUT #10-32
69	1	65113716	JAM NUT 3/8-16
68	1	65118814	JAM NUT 7/8-14
67	1	66700056	OVAL POINT SET SCREW
66	1	66700072	SET SCREW
65	2	66300250	DRIVE SCREW
64	1	39900051	S/N TAG
63	1	39900245	RAPIDAIR LOGO
62	1	39900175	INLET LABEL
61	1	60910050	RETAINING RING
60	2	60910078	RETAINING RING
59	2	60910087	RETAINING RING
58	2	60900165	RETAINING RING
57	1	60930043	GRIP RING
56	2	60108208	"O" RING
55	1	60108228	"O" RING
54	2	60108111	"O" RING
53	1	37500107	SPRING
52	1	62425075	ROLL PIN 1/4 X 3/4
51	1	62419075	ROLL PIN 3/16 X 3/4
50	1	62131150	SPIRAL PIN
49	1	62500002	TAPER PIN
48	1	62318050	DOWEL PIN 3/16 X 1/2
47	8	62331075	DOWEL PIN 5/16 X 3/4
46	2	62225050	DOWEL PIN 1/4 X 1/2
45	1	62325062	DOWEL PIN 1/4 X 5/8
44	1	36800005	KEY
43	1	36800013	KEY
42	1	69000047	MOTOR
41	2	34700082	WASHER
40	2	64520028	THRUST WASHER
39	4	34700117	THRUST WASHER
38	1	64510001	THRUST BEARING
37	2	64600054	BALL BEARING
36	2	64500061	NEEDLE BEARING
35	2	64100073	BUSHING
34	1	36100099	ADJUSTING SCREW
33	1	36300008	AIR INLET FITTING
32	1	34400533	AIR TUBE
31	2	34100320	UPPER ROLLER SPACER
30	1	34100372	SPACER
29	1	34100318	SPACER
28	2	33900264	BEARING SLEEVE
27	1	36600035	CAM HANDLE
26	1	36500044	HANDLE CAM
25	1	36500043	CAM
24	1	32900854	ECCENTRIC SHAFT
23	1	32900945	PIVOT SHAFT
22	1	32500003	TIMING BELT
21	1	32500030	BUSHING FOR 32500029
20	1	32500029	ALUMINUM PULLEY
19	1	32500005	MOTOR PULLEY
18	1	32600231	UHMW GEAR
17	1	32602600	STEEL GEAR
16	1	25500071	PISTON ASSEMBLY
15	1	31500426	BELT COVER
14	1	31500425	PISTON COVER
13	1	21900325	EXIT GUARD ASSEMBLY
12	1	21900324	ENTRANCE GUARD ASSEMBLY
11	1	34200365	UPPER ROLLER
10	1	34200364	LOWER ROLLER
9	1	30100284	PISTON HOUSING
8	2	30100283	BEARING HOUSING
7	1	31900636	UPPER ROLLER BRACKET
6	1	31702088	CAM MOUNTING SUPPORT PLATE
5	1	31702086	MOTOR MOUNTING PLATE
4	1	31702416	TOP PLATE
3	1	31702415	L.H. SIDE PLATE
2	1	31702414	R.H. SIDE PLATE
1	1	31702413	BOTTOM PLATE
ITEM	QTY.	PART NO.	DESCRIPTION

89	1	32500042	TAPER PIN INSTALLATION DRAWING
88	1	66220037	SET SCREW 1/4-20 X 3/8 C.P.
87	2	65920075	SHCS 1/4-20 X 3/4
86	1	39901009	CAUTION LABEL
85	1	39900304	CAUTION LABEL
84	1	39900261	CAUTION LABEL
ITEM	QTY.	PART NO.	DESCRIPTION

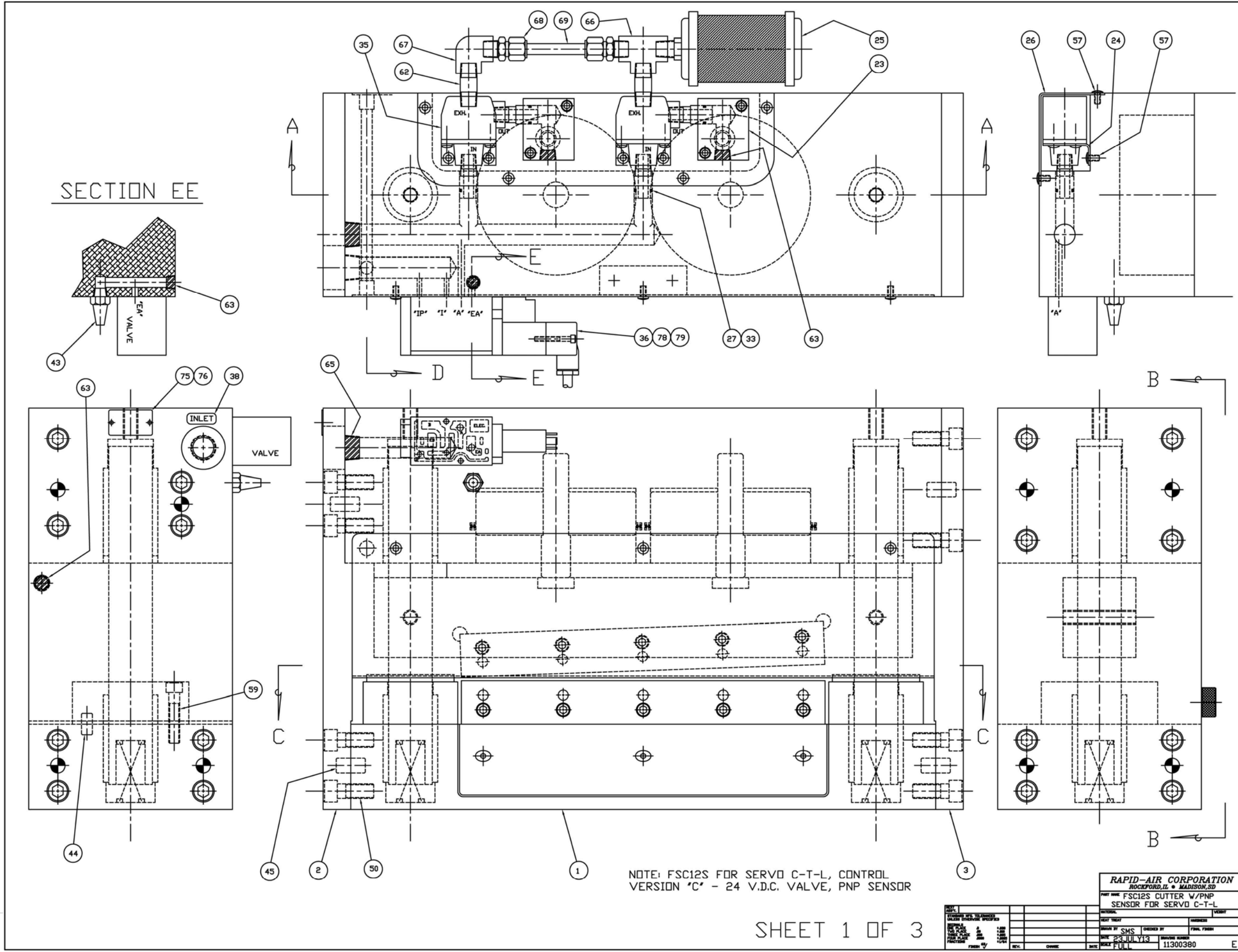


SECTION BB

SECTION CC

SHEET 2 OF 2

<b>RAPID-AIR CORPORATION</b>			
ROCKFORD, IL • MADISON, SD			
PART NAME: 106D SERVO W/VERSION 'C' CONTROL (4-PIECE HOUSING CONSTRUCTION)			
REV. 1	DATE	BY	CHKD.
1	12-16-13	DLL	
SCALE	DATE	REV.	CHKD.
FULL			
13000592			

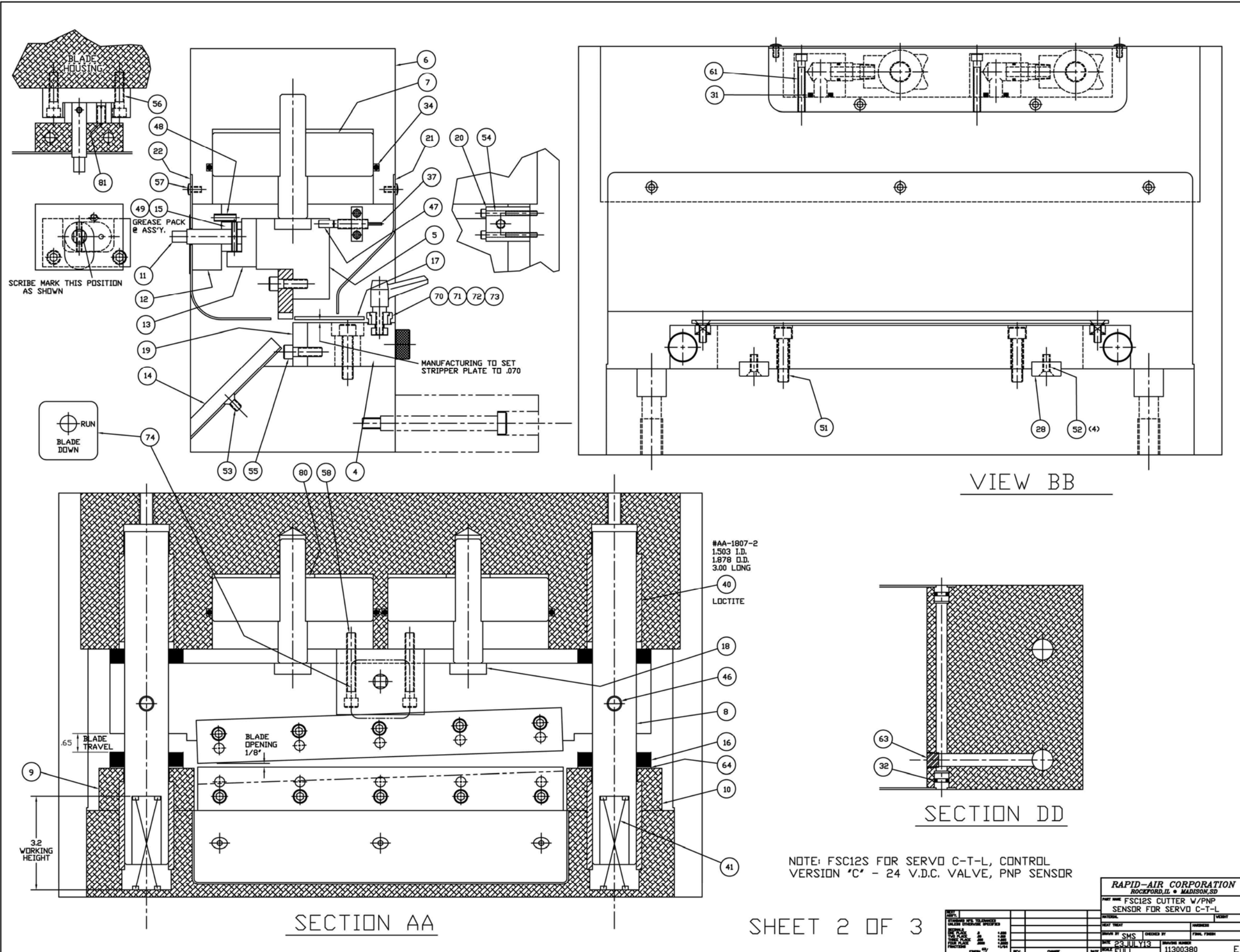


SECTION EE

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

Rapid-Air Corporation	
Rockford, IL • Madison, SD	
PART NAME: FSC12S CUTTER W/PNP SENSOR FOR SERVO C-T-L	
DESIGNED BY	DATE
DRAWN BY: SMS	CHECKED BY:
DATE: 23 JUL 13	SCALE: FULL
REV.:	11300380





SCRIBE MARK THIS POSITION AS SHOWN

RUN  
BLADE  
DOWN

MANUFACTURING TO SET STRIPPER PLATE TO .070

#AA-1807-2  
1.503 I.D.  
1.878 O.D.  
3.00 LONG  
LOCTITE

BLADE TRAVEL  
65

BLADE OPENING  
1/8"

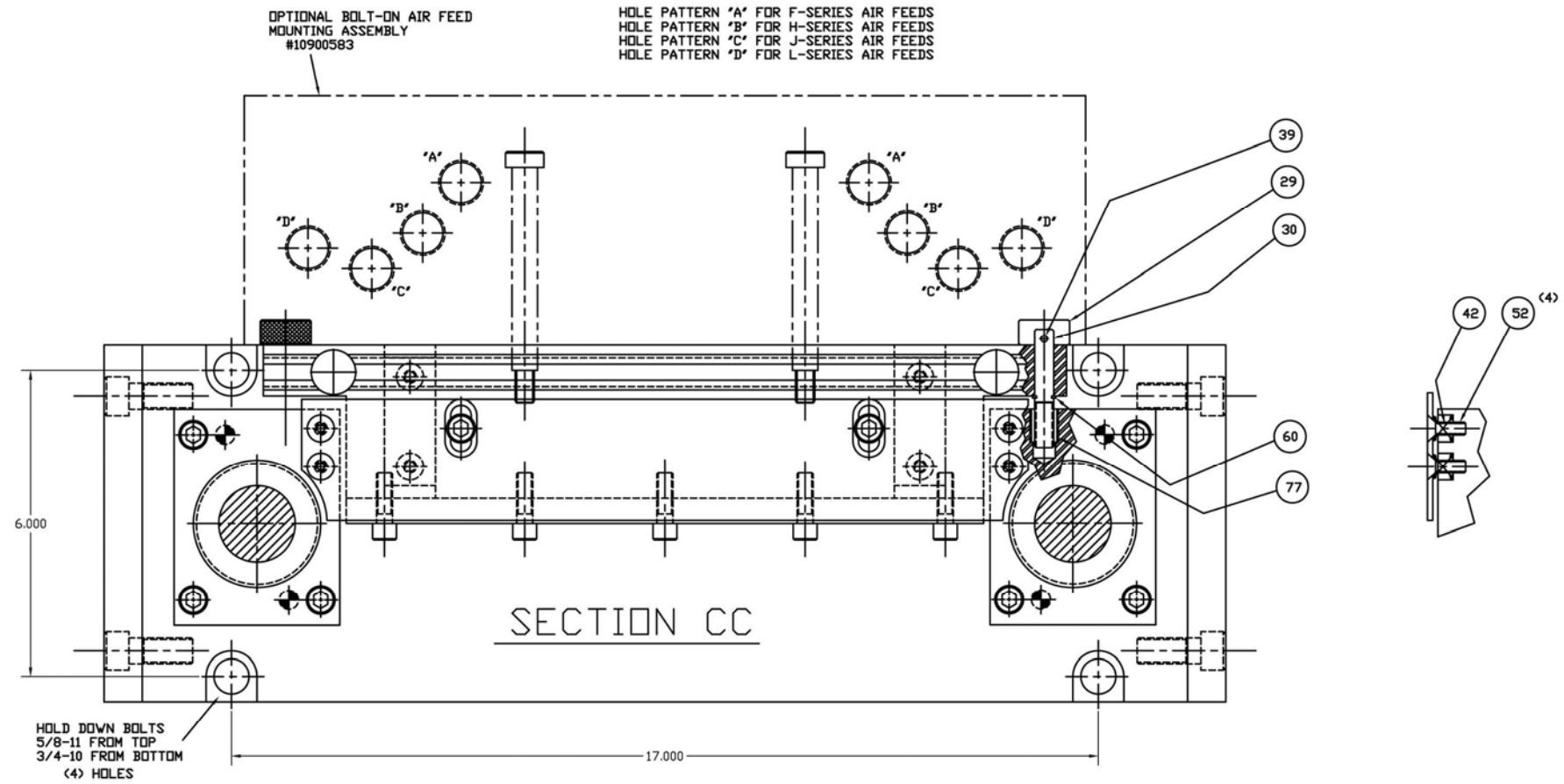
3.2  
WORKING  
HEIGHT

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

Rapid-Air Corporation Rockford, IL • Madison, SD	
PART NAME: FSC12S CUTTER W/PNP SENSOR FOR SERVO C-T-L	
DATE: 23 JUL 13	SCALE: FULL
REV: 1	DATE: 23 JUL 13
REV: 2	DATE: 23 JUL 13
REV: 3	DATE: 23 JUL 13
REV: 4	DATE: 23 JUL 13
REV: 5	DATE: 23 JUL 13
REV: 6	DATE: 23 JUL 13
REV: 7	DATE: 23 JUL 13
REV: 8	DATE: 23 JUL 13
REV: 9	DATE: 23 JUL 13
REV: 10	DATE: 23 JUL 13
REV: 11	DATE: 23 JUL 13
REV: 12	DATE: 23 JUL 13
REV: 13	DATE: 23 JUL 13
REV: 14	DATE: 23 JUL 13
REV: 15	DATE: 23 JUL 13
REV: 16	DATE: 23 JUL 13
REV: 17	DATE: 23 JUL 13
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REV: 19	DATE: 23 JUL 13
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REV: 21	DATE: 23 JUL 13
REV: 22	DATE: 23 JUL 13
REV: 23	DATE: 23 JUL 13
REV: 24	DATE: 23 JUL 13
REV: 25	DATE: 23 JUL 13
REV: 26	DATE: 23 JUL 13
REV: 27	DATE: 23 JUL 13
REV: 28	DATE: 23 JUL 13
REV: 29	DATE: 23 JUL 13
REV: 30	DATE: 23 JUL 13
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REV: 78	DATE: 23 JUL 13
REV: 79	DATE: 23 JUL 13
REV: 80	DATE: 23 JUL 13
REV: 81	DATE: 23 JUL 13

SHEET 2 OF 3

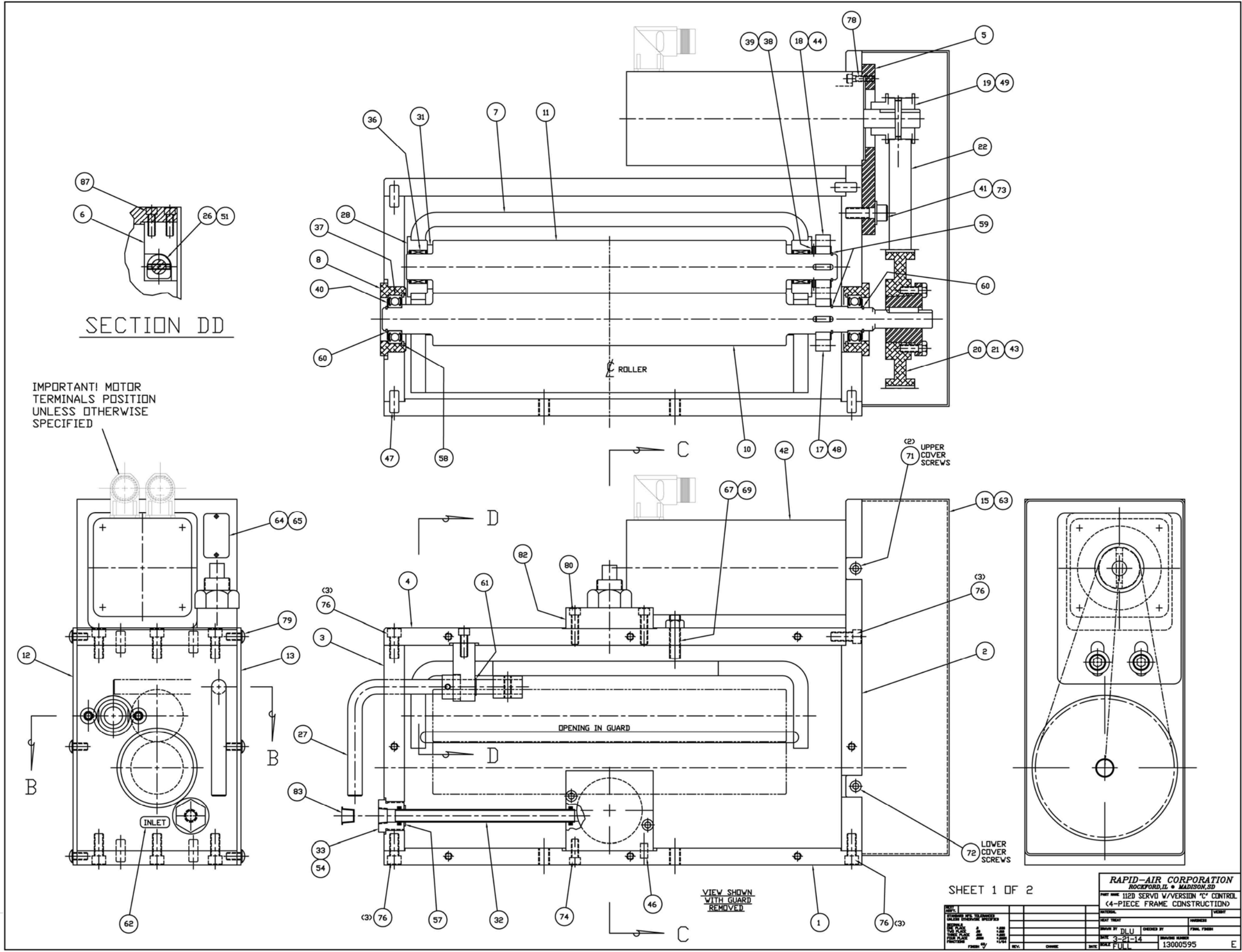
82			
81	1	69400065 BALL PLUNGER	
80	2	34700066 WASHER	
79	1	69280240 VALVE PLUG	
78	2	65908125 SHCS #8-32 X 1 1/4	
77	2	65600004 THREADED INSERT	
76	2	66300250 DRIVE SCREW	
75	1	39900051 SERIAL # TAG	
74	1	39900302 BLADE POSITION LABEL	
73	2	36200028 STOCK GUIDE NUT	
72	2	33900243 STOCK GUIDE ROLLER SLEEVE	
71	2	34200240 STOCK GUIDE ROLLER	
70	2	36600024 HANDLE	
69	1	67100145 TUBING 1/4	
68	2	67100146 MALE FITTING 3/8 NPT TO 1/4 TUBE	
67	1	67100142 PIPE ELBOW 3/8 NPT FEMALE	
66	1	67100159 PIPE TEE 3/8 NPT FEMALE	
65	1	63130500 PIPE PLUG 1/2 NPT	
64	2	34100348 SPACER	
63		6330250 (4) PIPE PLUG 1/4 NPT	
62	2	67100141 HEX NIPPLE 3/8 NPT	
61	4	65920175 SHCS 1/4-20 X 1 3/4	
60	2	60910037 RETAINING RING 3/8	
59	8	65936175 SHCS 3/8-16 X 1 3/4	
58	2	65931225 SHCS 5/16-18 X 2 1/4	
57	16	66612037 BHSCS #10-32 X 3/8	
56	2	65931125 SHCS 5/16-18 X 1 1/4	
55	10	65931100 SHCS 5/16-18 X 1	
54	2	65908175 SHCS #8-32 X 1 3/4	
53	3	66520050 FHSCS 1/4-20 X 1/2	
52	8	66520075 FHSCS 1/4-20 X 3/4	
51	2	65936150 SHCS 3/8-16 X 1 1/2	
50	16	65953125 SHCS 1/2-13 X 1 1/4	
49	1	62419100 ROLL PIN 3/16 X 1	
48	1	62425075 ROLL PIN 1/4 X 3/4	
47	1	62325050 DOWEL PIN 1/4 X 1/2	
46	2	62150250 SPIROL PIN 1/2 X 2 1/2	
45	8	62350100 DOWEL PIN 1/2 X 1	
44	4	62337075 DOWEL PIN 3/8 X 3/4	
43	1	67200002 MUFFLER	
42	4	37500085 SPRING	
41	2	37500160 SPRING CENTURY #72486	
40	4	64100080 BRONZE BUSHING #AA-1807-2	
39	2	62412100 ROLL PIN 1/8 X 1	
38	1	39900175 INLET LABEL	
37	1	69100348 PROX. SWITCH PNP	
36	1	69200032 MAC VALVE 24 V.D.C.	
35	2	68000000 QUICK EXHAUST	
34	2	60108357 "D" RING 5.50 I.D. X .210	
33	4	60108014 "D" RING 1/2 I.D. X .070	
32	2	60108109 "D" RING 5/16 I.D. X .103	
31	2	60108207 "D" RING 9/16 I.D. X .139	
30	2	32900874 ADJUSTING SHAFT	
29	2	36700019 KNOB	
28	2	36800039 KEY	
27	4	36300009 QUICK EXHAUST FITTING	
26	1	31500435 QUICK EXHAUST COVER	
25	1	67200007 MUFFLER	
24	2	31900641 QUICK EXHAUST BRACKET	
23	2	31702179 MANIFOLD PLATE	
22	1	21900269 FRONT GUARD	
21	1	21900268 REAR GUARD	
20	1	31702178 PROX. MTG. PLATE	
19	2	32000013 BLADE	
18	2	31702177 PISTON WEAR PLATE	
17	1	31702176 STRIPPER PLATE	
16	4	35900086 BUMPER	
15	1	36500046 CAM	
14	1	31500434 SCRAP CHUTE	
13	1	31702175 CAM PLATE	
12	1	31702174 CAM SHAFT PLATE	
11	1	32900873 CAM SHAFT	
10	1	31702173 R.H. BRG. PLATE	
9	1	31702172 L.H. BRG. PLATE	
8	2	32900872 GUIDE SHAFT	
7	2	25500076 PISTON ASSEMBLY	
6	1	30100297 PISTON HOUSING	
5	1	30100296 UPPER BLADE HOUSING	
4	1	30100295 LOWER BLADE HOUSING	
3	1	31702171 R.H. SIDE PLATE	
2	1	31702170 L.H. SIDE PLATE	
1	1	31702169 BASE PLATE	
ITEM	QTY.	PART NO.	DESCRIPTION



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

SHEET 3 OF 3

<b>RAPID-AIR CORPORATION</b> ROCKFORD, IL • MADISON, SD			
PART NAME: FSC12S CUTTER W/PNP SENSOR FOR SERVO C-T-L			
DRAWN BY: SMS DATE: 23 JUL Y13 SCALE: FULL	CHECKED BY: FMM DATE: 23 JUL Y13 SCALE: FULL	PART NUMBER: 11300380 REV: E	INTERNAL DATE: 23 JUL Y13 SCALE: FULL



SECTION DD

IMPORTANT! MOTOR TERMINALS POSITION UNLESS OTHERWISE SPECIFIED

VIEW SHOWN WITH GUARD REMOVED

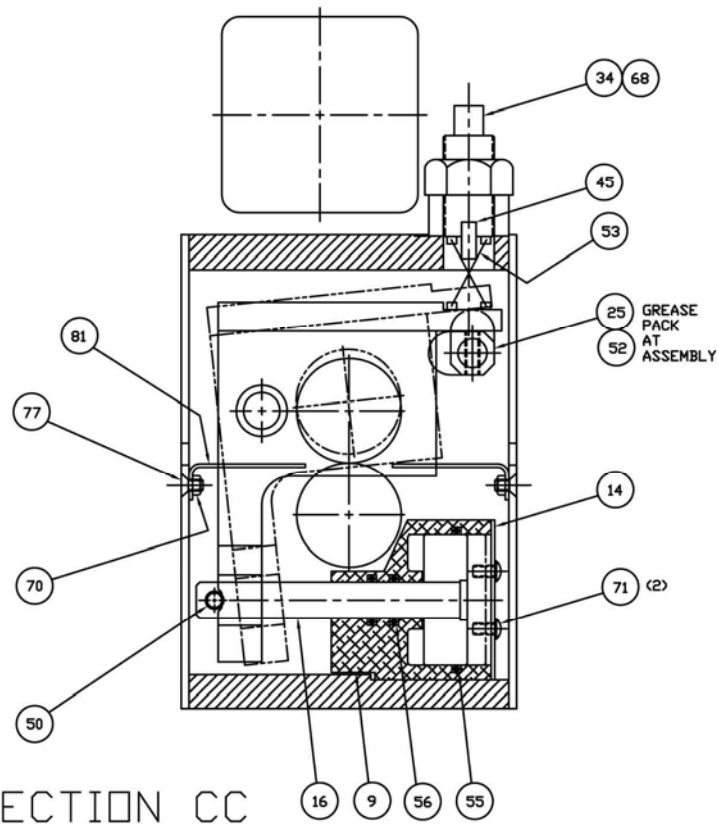
SHEET 1 OF 2

<b>RAPID-AIR CORPORATION</b> ROCKFORD, IL • MADISON, SD	
PART NAME 112D SERVO W/VERSION 'C' CONTROL (4-PIECE FRAME CONSTRUCTION)	
DRAWN BY DATE SCALE	CHECKED BY DATE SCALE
PART NO. REV.	PART NO. REV.
3-21-14 FULL	13000595 E

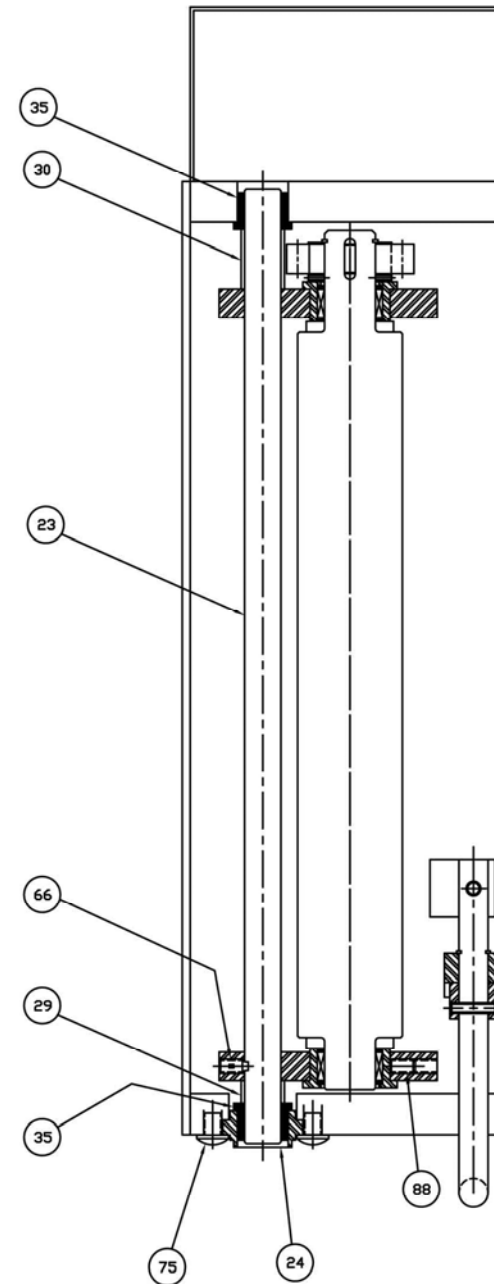


83	1	62900004	PLUG
82	1	31702417	ADJ. SCREW PLATE
81	2	31500479	STOCK GUIDE
80	4	65920100	SHCS 1/4-20 X 1
79	16	66620050	BHSCS 1/4-20 X 1/2
78	4	65912075	SHCS #10-32 X 3/4
77	6	66512037	FHSCS #10-32 X 3/8
76	12	65931075	SHCS 5/16-18 X 3/4
75	2	66631037	BHSCS 5/16-18 X 3/8
74	4	65920062	SHCS 1/4-20 X 5/8
73	2	65936100	SHCS 3/8-16 X 1
72	2	66612050	BHSCS #10-32 X 1/2
71	4	66612037	BHSCS #10-32 X 3/8
70	6	65101032	HEX NUT #10-32
69	1	65113716	JAM NUT 3/8-16
68	1	65118814	JAM NUT 7/8-14
67	1	66700056	OVAL POINT SET SCREW
66	1	66700072	SET SCREW
65	2	66300250	DRIVE SCREW
64	1	39900051	S/N TAG
63	1	39900245	RAPIDAIR LOGO
62	1	39900175	INLET LABEL
61	1	60910050	RETAINING RING
60	2	60910078	RETAINING RING
59	2	60910087	RETAINING RING
58	2	60900165	RETAINING RING
57	1	60930043	GRIP RING
56	2	60108208	"O" RING
55	1	60108228	"O" RING
54	2	60108111	"O" RING
53	1	37500107	SPRING
52	1	62425075	ROLL PIN 1/4 X 3/4
51	1	62419075	ROLL PIN 3/16 X 3/4
50	1	62131150	SPIRAL PIN
49	1	62500002	TAPER PIN
48	1	62318050	DOWEL PIN 3/16 X 1/2
47	8	62331075	DOWEL PIN 5/16 X 3/4
46	2	62225050	DOWEL PIN 1/4 X 1/2
45	1	62325062	DOWEL PIN 1/4 X 5/8
44	1	36800005	KEY
43	1	36800013	KEY
42	1	69000047	MOTOR
41	2	34700082	WASHER
40	2	64520028	THRUST WASHER
39	4	34700117	THRUST WASHER
38	1	64510001	THRUST BEARING
37	2	64600054	BALL BEARING
36	2	64500061	NEEDLE BEARING
35	2	64100073	BUSHING
34	1	36100099	ADJUSTING SCREW
33	1	36300008	AIR INLET FITTING
32	1	34400534	AIR TUBE
31	2	34100320	UPPER ROLLER SPACER
30	1	34100372	SPACER
29	1	34100318	SPACER
28	2	33900264	BEARING SLEEVE
27	1	36600035	CAM HANDLE
26	1	36500044	HANDLE CAM
25	1	36500043	CAM
24	1	32900854	ECCENTRIC SHAFT
23	1	32900960	PIVOT SHAFT
22	1	32500003	TIMING BELT
21	1	32500030	BUSHING FOR 32500029
20	1	32500029	ALUMINUM PULLEY
19	1	32500005	MOTOR PULLEY
18	1	32600231	UHMW GEAR
17	1	32602600	STEEL GEAR
16	1	25500071	PISTON ASSEMBLY
15	1	31500426	BELT COVER
14	1	31500425	PISTON COVER
13	1	21900329	EXIT GUARD ASSEMBLY
12	1	21900328	ENTRANCE GUARD ASSEMBLY
11	1	34200367	UPPER ROLLER
10	1	34200366	LOWER ROLLER
9	1	30100284	PISTON HOUSING
8	2	30100283	BEARING HOUSING
7	1	31900637	UPPER ROLLER BRACKET
6	1	31702088	CAM MOUNTING SUPPORT PLATE
5	1	31702086	MOTOR MOUNTING PLATE
4	1	31702442	TOP PLATE
3	1	31702415	L.H. SIDE PLATE
2	1	31702414	R.H. SIDE PLATE
1	1	31702441	BOTTOM PLATE
ITEM	QTY.	PART NO.	DESCRIPTION

89	1	32500042	TAPER PIN INSTALLATION DRAWING
88	1	66220037	SET SCREW 1/4-20 X 3/8 C.P.
87	2	65920075	SHCS 1/4-20 X 3/4
86	1	39901009	CAUTION LABEL
85	1	39900304	CAUTION LABEL
84	1	39900261	CAUTION LABEL
ITEM	QTY.	PART NO.	DESCRIPTION



SECTION CC



SECTION BB

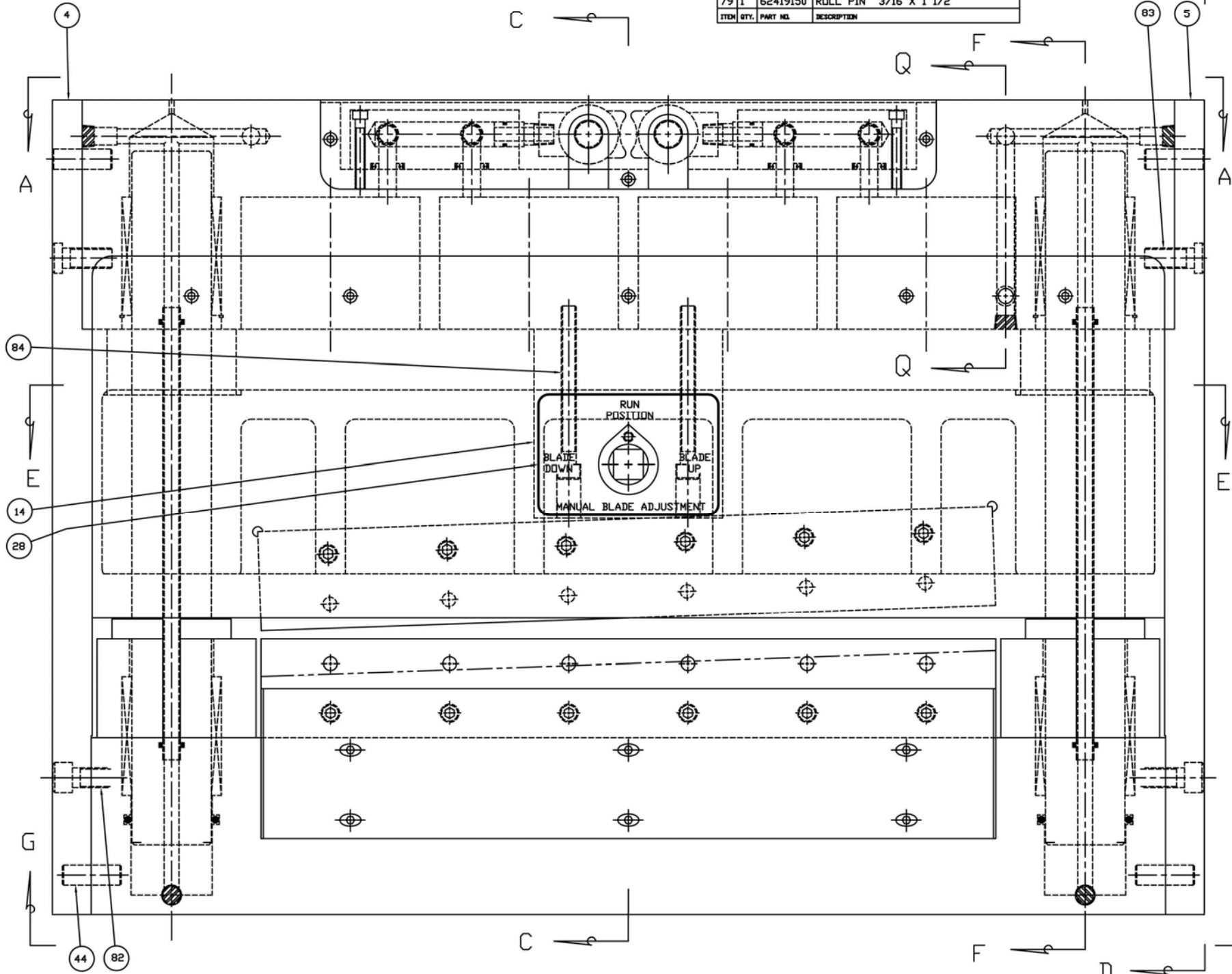
SHEET 2 OF 2

RAPID-AIR CORPORATION  
 ROCKFORD, IL • MADISON, SD  
 PART NAME 112D SERVO  
 (4-PIECE FRAME CONSTRUCTION)

REV.	DATE	BY	CHKD.	APP.	DESCRIPTION
1					ISSUED FOR TOLERANCES
2					ISSUED FOR SPECIFIED
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100					ISSUED FOR

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

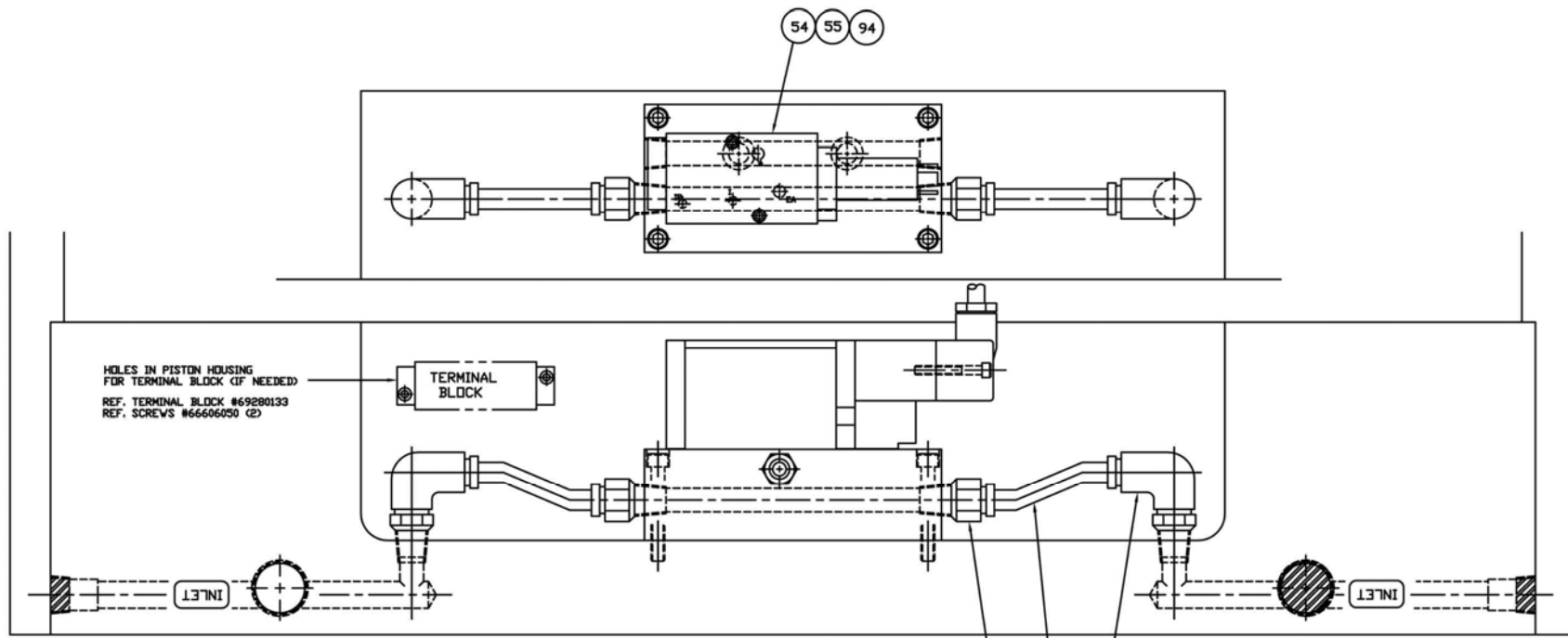
ITEM	QTY.	PART NO.	DESCRIPTION
95	4	65920200	SHCS 1/4-20 X 2"
94	2	65908112	SHCS #8-32 X 1 1/8
93	8	65936275	SHCS 3/8-16 X 2 3/4
92	2	37500124	SPRING
91	2	60108109	"D" RING
90	2	64520017	THRUST WASHER
89	4	60108207	"D" RING
88	4	66520125	FHSCS 1/4-20 X 1 1/4
87	4	65936150	SHCS 3/8-16 X 1 1/2
86	4	65961500	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
80	4	65936100	SHCS 3/8-16 X 1
79	1	62419150	ROLL PIN 3/16 X 1 1/2



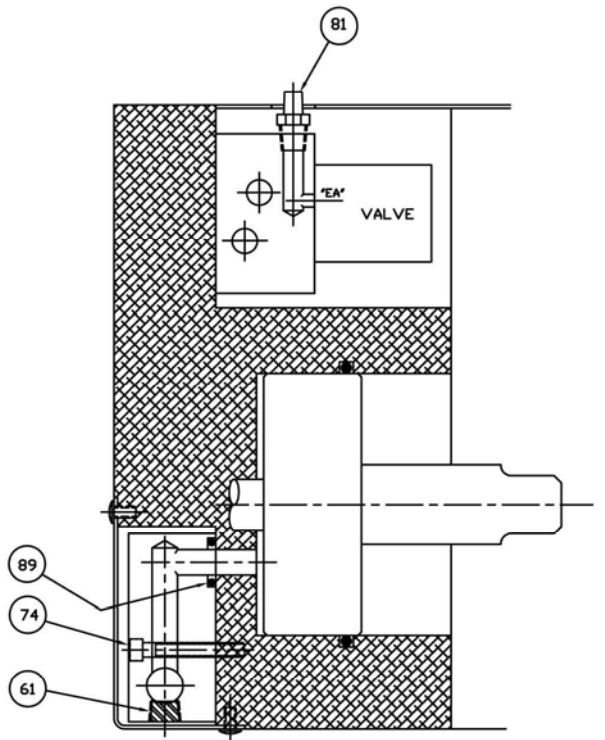
78	12	65931150	SHCS 5/16-18 X 1 1/2
77	6	66520050	FHSCS 1/4-20 X 1/2
76	25	66612037	BHSCS #10-32 X 3/8
75	2	66300250	DRIVE SCREW
74	6	65920175	SHCS 1/4-20 X 1 3/4
73	3	65500006	T-SLOT NUT
72	4	37500013	SPRING
71	2	67200007	MUFFLER
70	2	67100141	PIPE NIPPLE
69	2	67100142	90° ELBOW
68	1	31702186	QUICK EXHAUST MANIFOLD R.H.
67	1	31702185	QUICK EXHAUST MANIFOLD L.H.
66	1	31500440	QUICK EXHAUST COVER
65	4	36300009	QUICK EXHAUST FITTING
64	2	68000000	QUICK EXHAUST
63	2	31900641	QUICK EXHAUST MTG. BRKT.
62	2	63130375	PIPE PLUG 3/8 NPT
61	12	63130250	PIPE PLUG 1/4 NPT
60	1	63130750	PIPE PLUG 3/4 NPT
59	1	64230011	TUBING
58	2	67100122	MALE CONNECTOR
57	2	67100118	90° ELBOW
56	4	60108014	"D" RING
55	1	69200032	MAC VALVE 24 V.D.C.
54	1	69280240	VALVE PLUG
53	1	69100348	PROX SWITCH PNP
52	2	36200023	STOCK GUIDE NUT
51	2	34200159	STOCK GUIDE ROLLER
50	2	33900237	ROLLER SLEEVE
49	1	33900238	POINTER SLEEVE
48	2	65600005	INSERT
47	2	32000010	BLADE
46	2	62418100	ROLL PIN
45	4	62337075	DOWEL PIN
44	12	62250150	PULL DOWEL
43	1	62437150	ROLL PIN
42	4	62150200	SPIRAL PIN
41	2	60108110	"D" RING
40	1	31701623	SWITCH MOUNTING PLATE
39	2	60108329	"D" RING
38	4	60108111	"D" RING
37	4	60108349	"D" 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	39900235	BLADE ADJUST. LABEL
27	1	62325050	DOWEL PIN
26	2	34400315	AIR TUBE
25	1	32900533	CAM SHAFT
24	2	32900532	ADJUSTING SHAFT
23	2	32900531	GUIDE SHAFT
22	1	36500032	CAM
21	4	25500073	PISTON
20	1	21900138	REAR GUARD ASSEMBLY
19	1	21900137	FRONT GUARD ASSEMBLY
18	1	31500361	SCRAP CHUTE
17	2	35900042	LOWER BUMPER
16	2	35900041	UPPER BUMPER
15	1	69400052	SPRING PLUNGER
14	1	31701444	CAM SHAFT MOUNTING PLATE
13	1	31701443	CAM ACTUATING PLATE
12	1	31702184	MANIFOLD PLATE
11	4	31701441	PISTON WEAR PLATE
10	1	31701606	STRIPPER PLATE
9	1	31701605	TEE SLOT PLATE
8	1	31701604	BLADE SUPPORT PLATE
7	1	31701437	RH BEARING PLATE
6	1	31701436	LH BEARING PLATE
5	1	31701435	RH SIDE PLATE
4	1	31701434	LH SIDE PLATE
3	1	30100300	PISTON HOUSING
2	1	30100180	BLADE HOUSING
1	1	30100179	BASE HOUSING

REV.	DATE	BY	CHKD.	APP.	DESCRIPTION

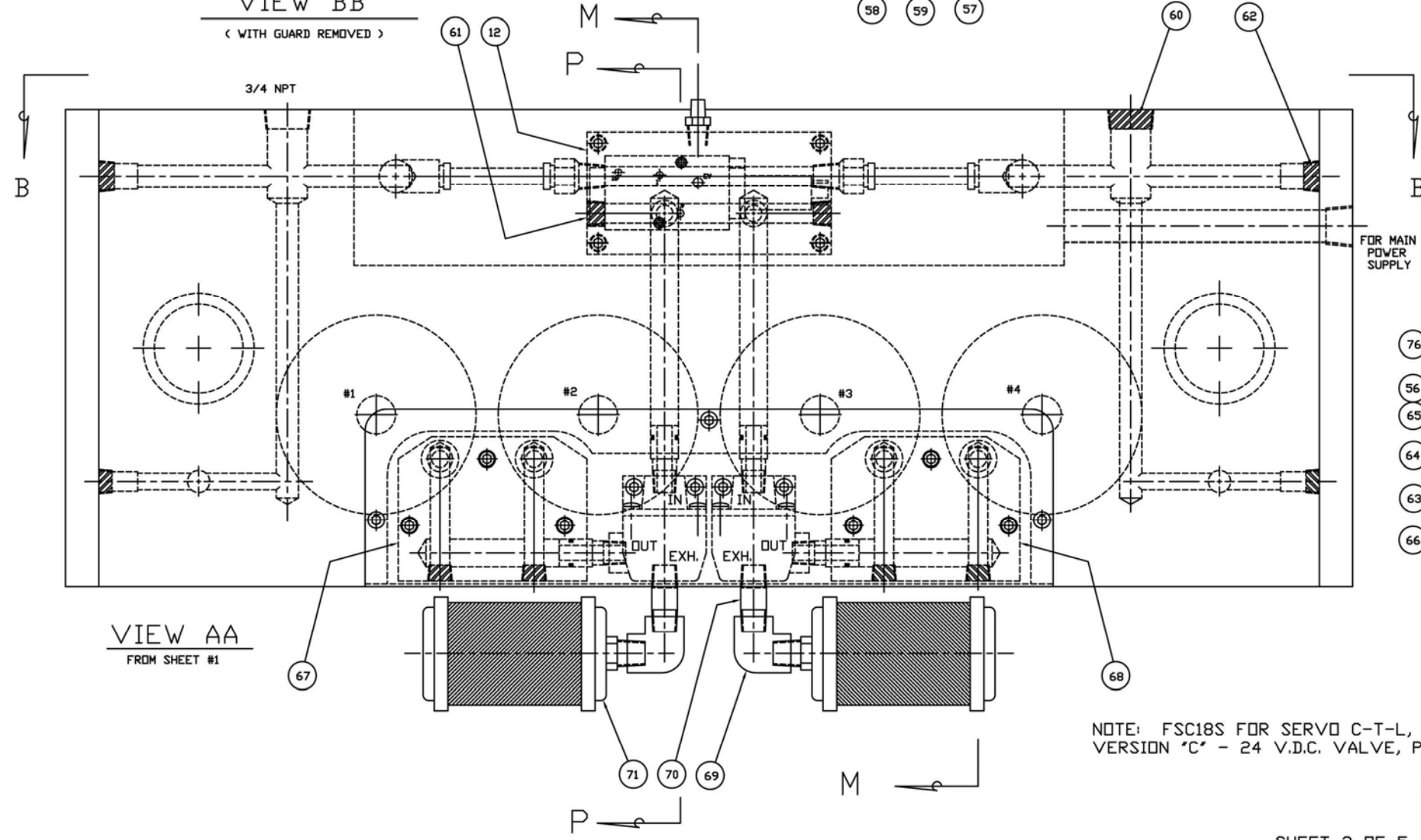
DRAWN BY: SWS  
 DATE: 23 JUL 13  
 SCALE: FULL  
 CHECKED BY: SWS  
 DATE: 23 JUL 13  
 DRAWING NUMBER: 11300381



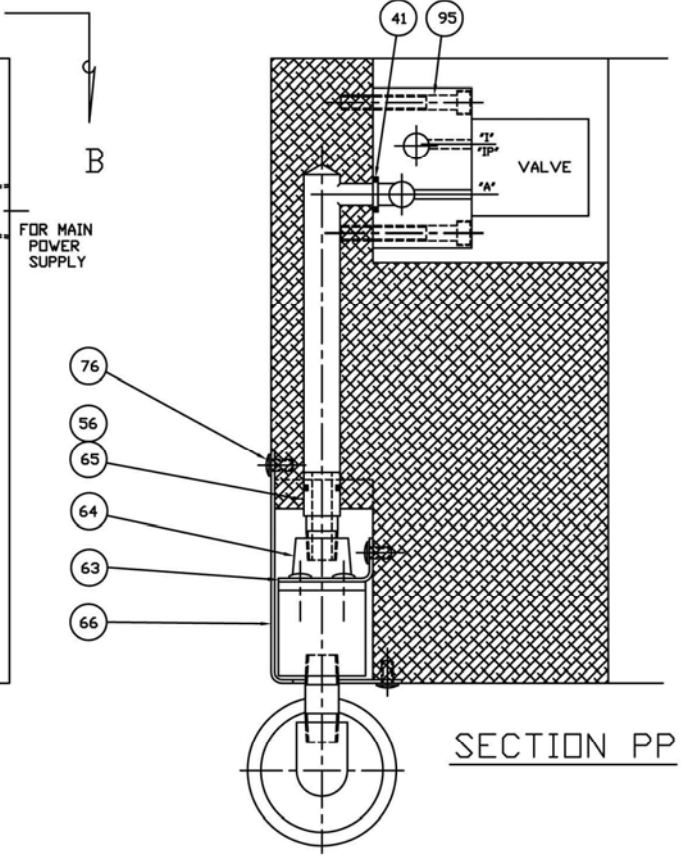
VIEW BB  
( WITH GUARD REMOVED )



SECTION MM



VIEW AA  
FROM SHEET #1

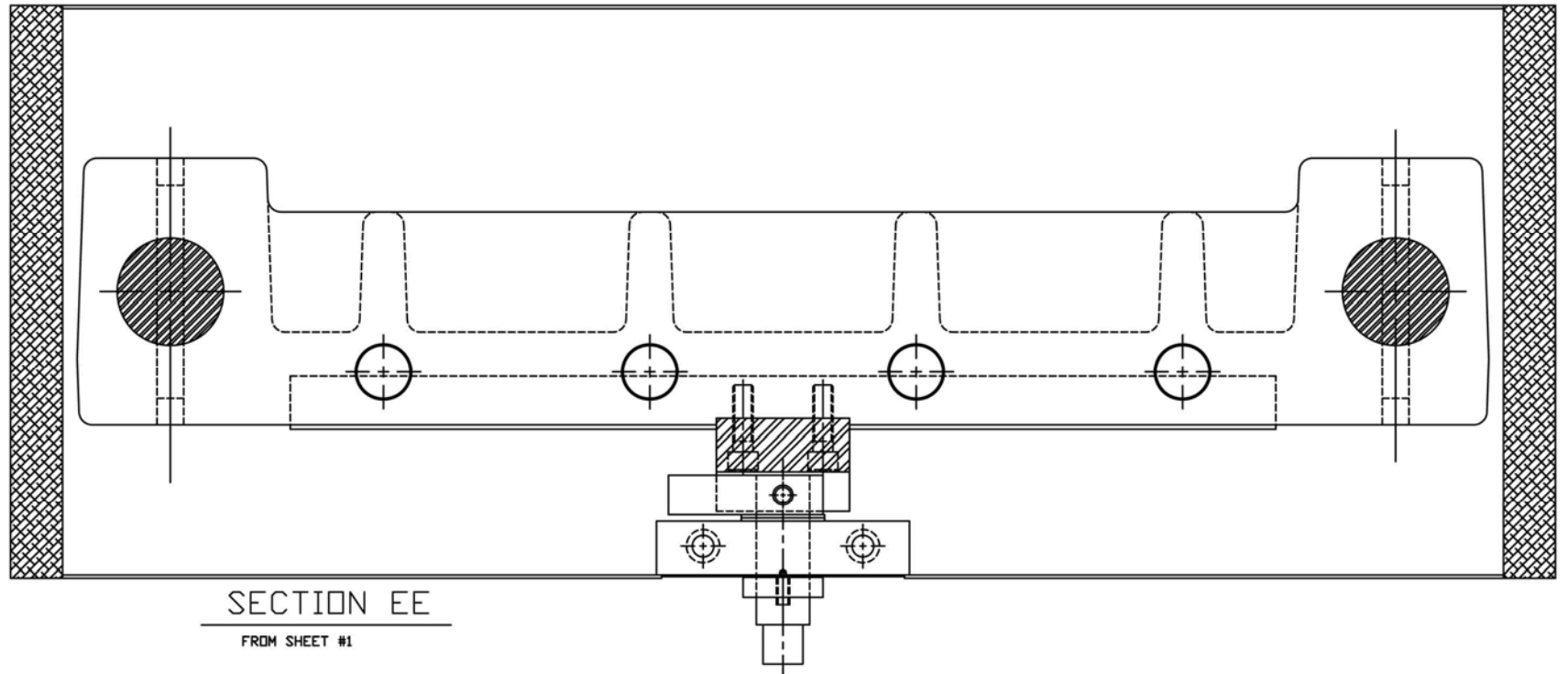


SECTION PP

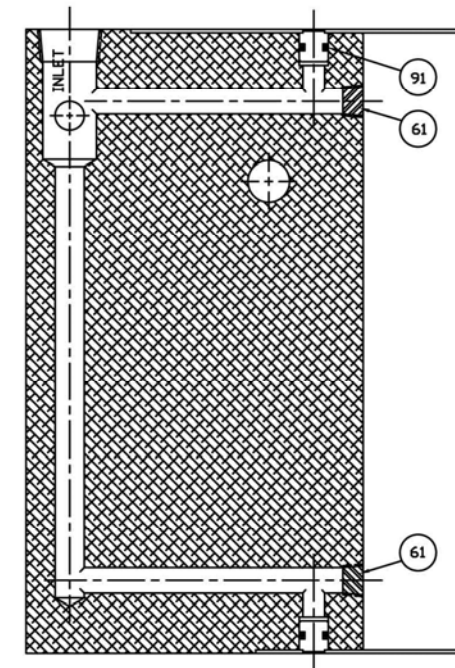
NOTE: FSC18S FOR SERVO C-T-L, CONTROL  
VERSION 'C' - 24 V.D.C. VALVE, PNP SENSOR

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

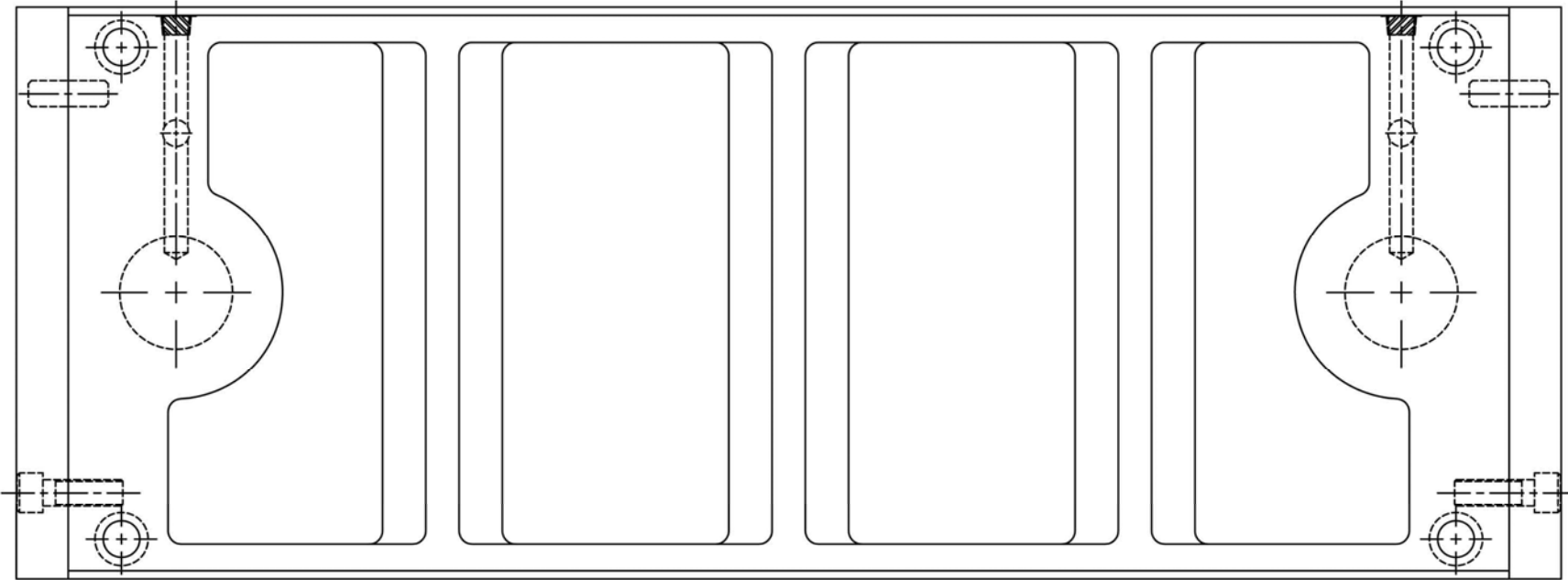
REV.	DATE	BY	CHKD.	APP.



SECTION EE  
FROM SHEET #1



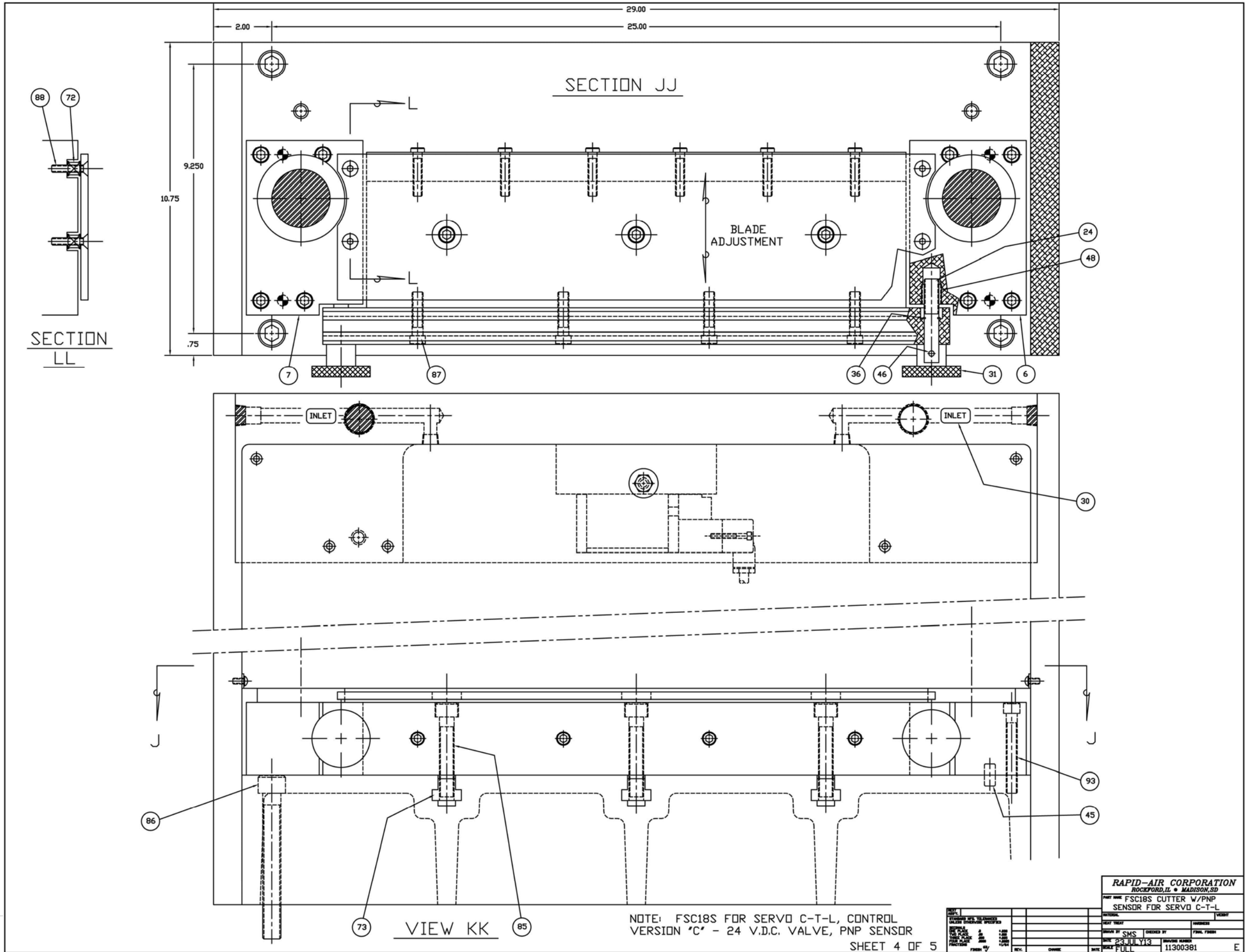
SECTION QQ

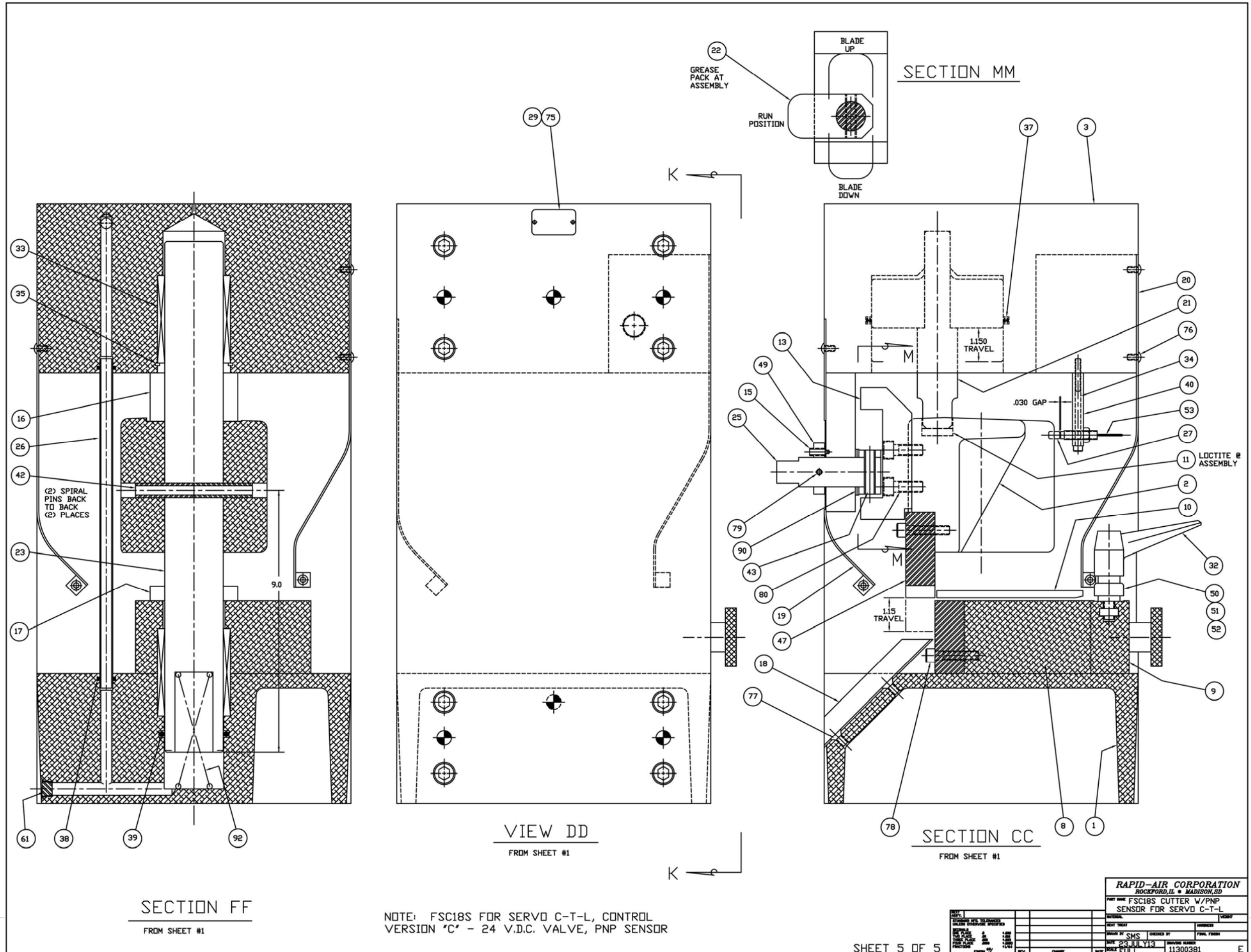


VIEW GG  
FROM SHEET #1

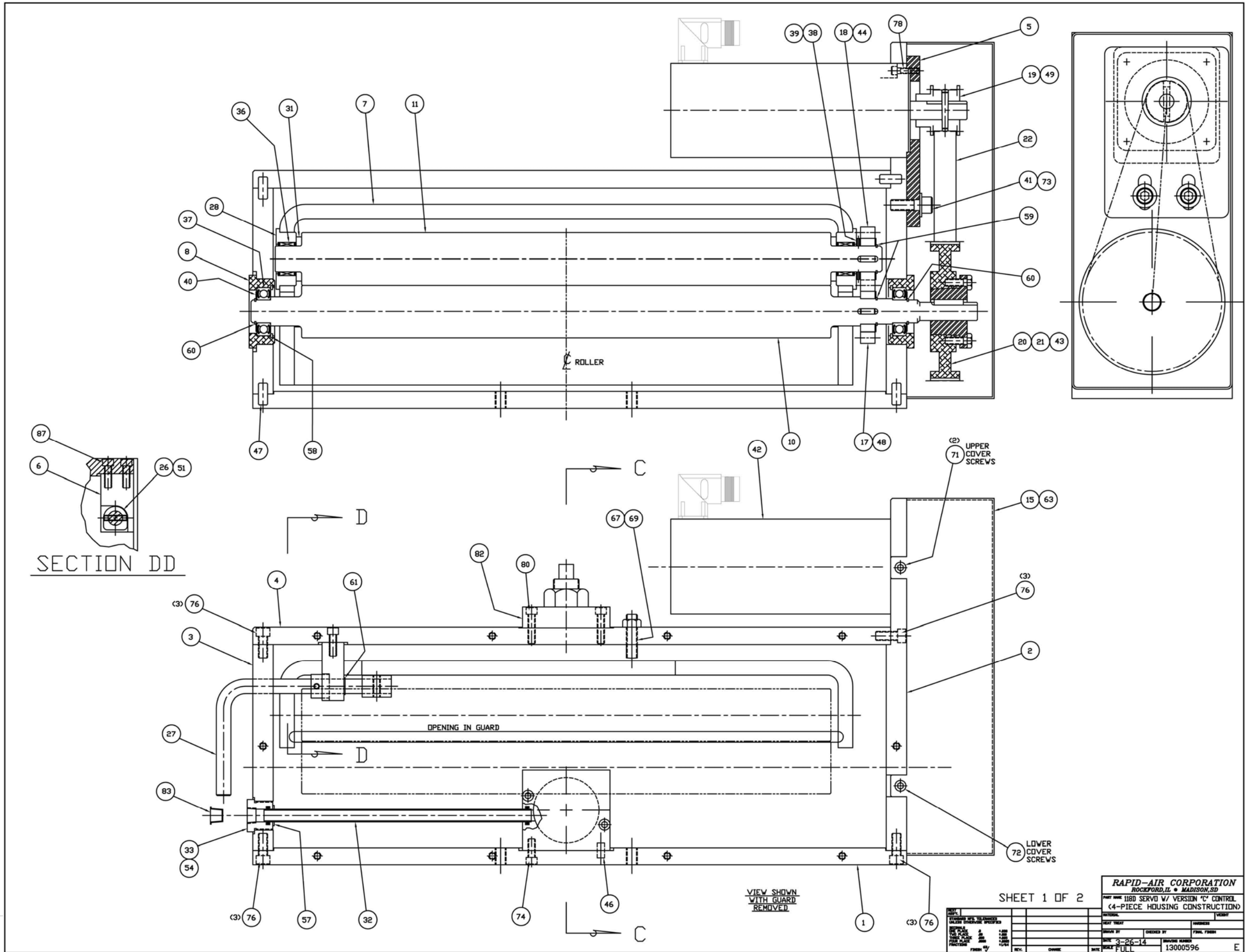
NOTE: FSC18S FOR SERVO C-T-L, CONTROL  
VERSION 'C' - 24 V.D.C. VALVE, PNP SENSOR

<b>RAPID-AIR CORPORATION</b> ROCKFORD, IL • MADISON, SD			
PART NAME: FSC18S CUTTER W/PNP SENSOR FOR SERVO C-T-L			
DATE:	REV:	DATE:	REV:
DESIGNED BY:	CHECKED BY:	DATE:	REV:
DRAWN BY: SMS	CHECKED BY:	DATE: 23 JUL 13	REV:
SCALE: FULL	SCALE: FULL	DRAWING NUMBER: 11300381	REV: E









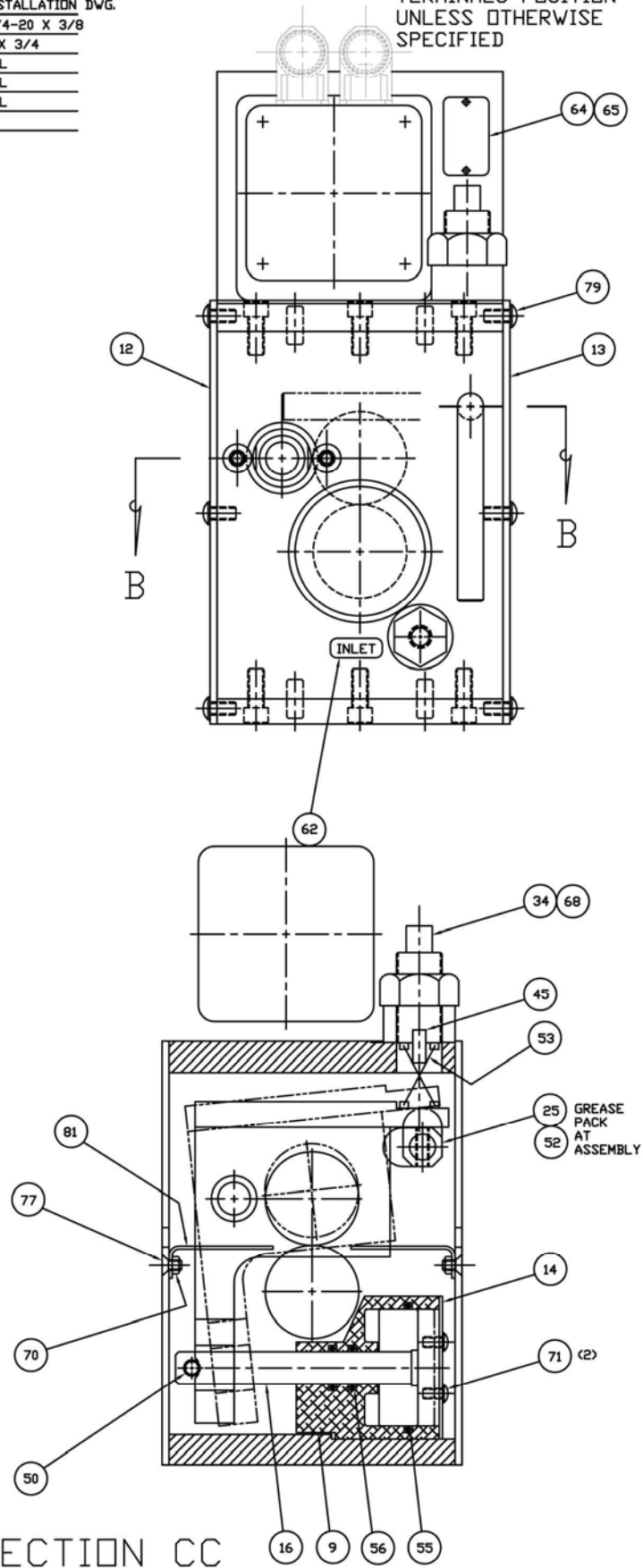
SHEET 1 OF 2

<b>RAPID-AIR CORPORATION</b> ROCKFORD, IL • MADISON, SD	
PART NAME 118D SERVO W/ VERSION 'C' CONTROL (4-PIECE HOUSING CONSTRUCTION)	
DESIGNED BY DRAWN BY CHECKED BY DATE 3-26-14 SCALE FULL	PART NUMBER 13000596

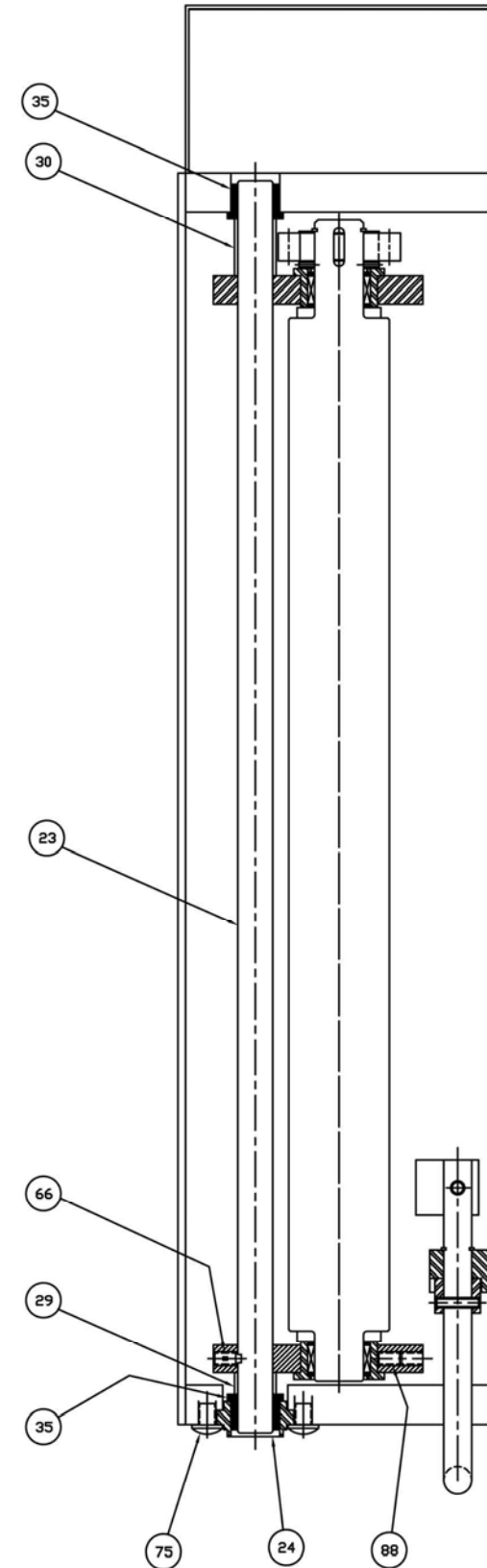
83	1	6290004	PLUG
82	1	31702417	ADJ. SCREW PLATE
81	2	31500482	STOCK GUIDE
80	4	65920100	SHCS 1/4-20 X 1
79	20	66620050	BHSCS 1/4-20 X 1/2
78	4	65912075	SHCS #10-32 X 3/4
77	8	66512037	FHSCS #10-32 X 3/8
76	12	65931075	SHCS 5/16-18 X 3/4
75	2	66631037	BHSCS 5/16-18 X 3/8
74	4	65920062	SHCS 1/4-20 X 5/8
73	2	65936100	SHCS 3/8-16 X 1
72	2	66612050	BHSCS #10-32 X 1/2
71	4	66612037	BHSCS #10-32 X 3/8
70	8	65101032	HEX NUT #10-32
69	1	65113716	JAM NUT 3/8-16
68	1	65118814	JAM NUT 7/8-14
67	1	66700056	OVAL POINT SET SCREW
66	1	66700072	SET SCREW
65	2	66300250	DRIVE SCREW
64	1	39900051	S/N TAG
63	1	39900245	RAPIDAIR LOGO
62	1	39900175	INLET LABEL
61	1	60910050	RETAINING RING
60	2	60910078	RETAINING RING
59	2	60910087	RETAINING RING
58	2	60900165	RETAINING RING
57	1	60930043	GRIP RING
56	2	60108208	"O" RING
55	1	60108228	"O" RING
54	2	60108111	"O" RING
53	1	37500107	SPRING
52	1	62425075	ROLL PIN 1/4 X 3/4
51	1	62419075	ROLL PIN 3/16 X 3/4
50	1	62131150	SPIRAL PIN
49	1	62500002	TAPER PIN
48	1	62318050	DOWEL PIN 3/16 X 1/2
47	8	62331075	DOWEL PIN 5/16 X 3/4
46	2	62225050	DOWEL PIN 1/4 X 1/2
45	1	62325062	DOWEL PIN 1/4 X 5/8
44	1	36800005	KEY
43	1	36800013	KEY
42	1	69000047	MOTOR
41	2	34700082	WASHER
40	2	64520028	THRUST WASHER
39	4	34700117	THRUST WASHER
38	1	64510001	THRUST BEARING
37	2	64600054	BALL BEARING
36	2	64500061	NEEDLE BEARING
35	2	64100073	BUSHING
34	1	36100099	ADJUSTING SCREW
33	1	36300008	AIR INLET FITTING
32	1	34400535	AIR TUBE
31	2	34100320	UPPER ROLLER SPACER
30	1	34100372	SPACER
29	1	34100318	SPACER
28	2	33900264	BEARING SLEEVE
27	1	36600035	CAM HANDLE
26	1	36500044	HANDLE CAM
25	1	36500043	CAM
24	1	32900854	ECCENTRIC SHAFT
23	1	32900962	PIVOT SHAFT
22	1	32500003	TIMING BELT
21	1	32500030	BUSHING FOR 32500029
20	1	32500029	ALUMINUM PULLEY
19	1	32500005	MOTOR PULLEY
18	1	32600231	UHMW GEAR
17	1	32602600	STEEL GEAR
16	1	25500071	PISTON ASSEMBLY
15	1	31500426	BELT COVER
14	1	31500425	PISTON COVER
13	1	21900331	EXIT GUARD ASSEMBLY
12	1	21900330	ENTRANCE GUARD ASSEMBLY
11	1	34200381	UPPER ROLLER
10	1	34200380	LOWER ROLLER
9	1	30100284	PISTON HOUSING
8	2	30100283	BEARING HOUSING
7	1	31900638	UPPER ROLLER BRACKET
6	1	31702088	CAM MOUNTING SUPPORT PLATE
5	1	31702086	MOTOR MOUNTING PLATE
4	1	31702444	TOP PLATE
3	1	31702415	L.H. SIDE PLATE
2	1	31702414	R.H. SIDE PLATE
1	1	31702443	BOTTOM PLATE
ITEM	QTY.	PART NO.	DESCRIPTION

89	1	32500042	TAPER PIN INSTALLATION DWG.
88	1	66220037	SET SCREW 1/4-20 X 3/8
87	2	65920075	SHCS 1/4-20 X 3/4
86	1	39901009	CAUTION LABEL
85	1	39900304	CAUTION LABEL
84	1	39900261	CAUTION LABEL
ITEM	QTY.	PART NO.	DESCRIPTION

IMPORTANT! MOTOR  
TERMINALS POSITION  
UNLESS OTHERWISE  
SPECIFIED



SECTION CC



SECTION BB

SHEET 2 OF 2

RAPID-AIR CORPORATION  
ROCKFORD, IL • MADISON, SD  
PART NO. 118D SERVO W/VERSION 'C' CONTROL  
(4-PIECE HOUSING CONSTRUCTION)

REV.	DATE	BY	CHKD.	APP'D.	DESCRIPTION
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