



# RAPID-AIR

## OPERATING INSTRUCTIONS FOR P1V, P1M, P4V, P4M, P1W, P1WM RAPID-ROLL POWER ROLL

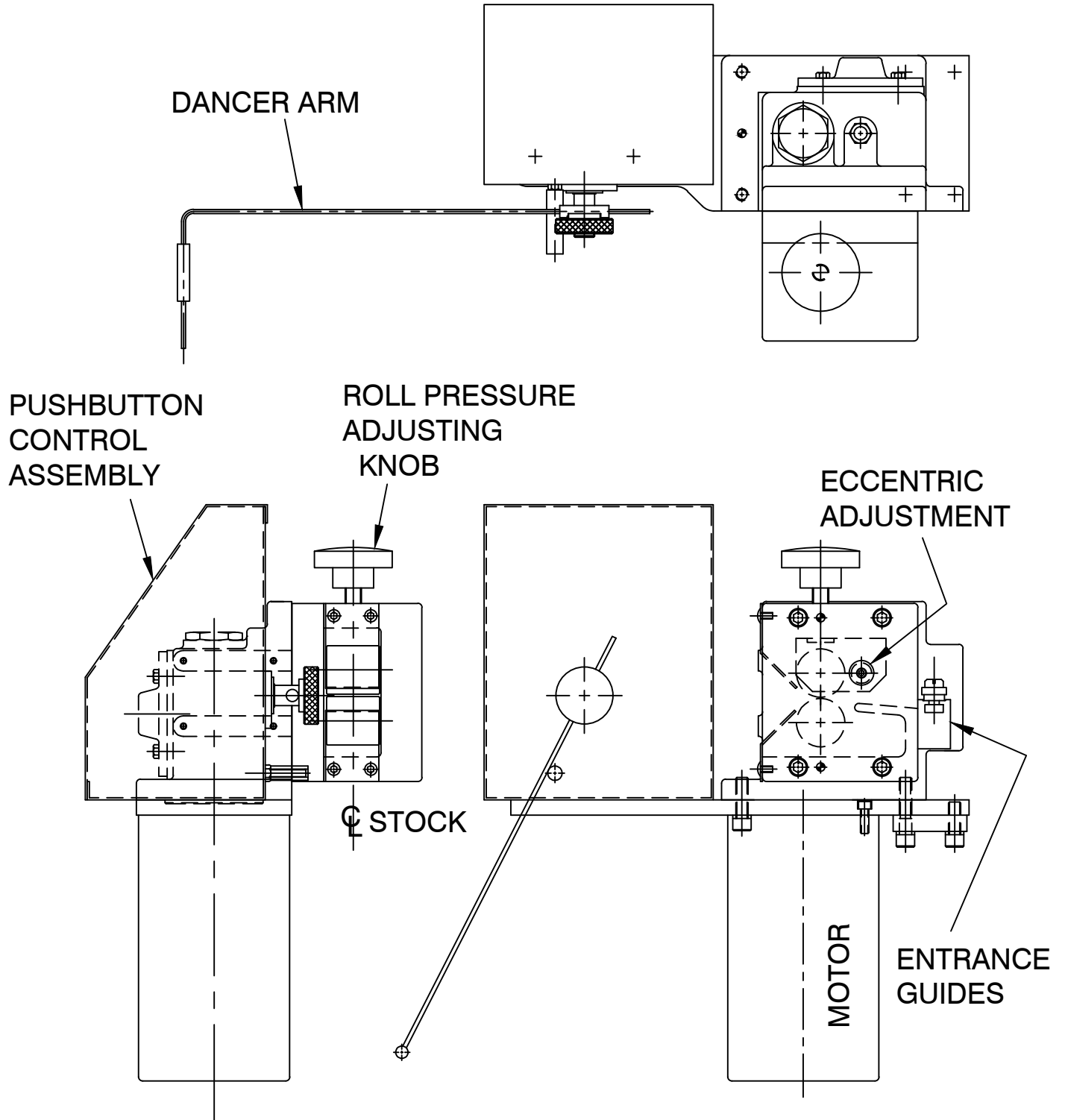
RAPID-AIR  
4601 KISHWAUKEE ST.  
ROCKFORD, IL. 61109-2925  
PHONE: (815) 397-2578  
FAX: (815) 398-3887  
WEB SITE: [www.rapidair.com](http://www.rapidair.com)

# TABLE OF CONTENTS

## PAGE

1. RAPID-ROLL "HEAD ONLY" DRAWING
2. SET UP & CAPACITIES
3. KEYPAD FUNCTIONS
4. KEYPAD FUNCTIONS
5. KEYPAD FUNCTIONS
6. JOG SPEED ADJUSTMENT & DANCER ARM CALIBRATION
7. JOG SPEED ADJUSTMENT & DANCER ARM CALIBRATION
8. MAINTENANCE
9. TROUBLESHOOTING
10. TROUBLESHOOTING
11. CABINET ASSEMBLY DRAWING
12. P1V ASSEMBLY DRAWING
13. P1M ASSEMBLY DRAWING
14. P4V ASSEMBLY DRAWING (sheet 1 of 2)
15. P4V ASSEMBLY DRAWING (sheet 2 of 2)
16. P4M ASSEMBLY DRAWING (sheet 1 of 2)
17. P4M ASSEMBLY DRAWING (sheet 2 of 2)
18. P1W ASSEMBLY DRAWING
19. P1WM ASSEMBLY DRAWING
20. WIRING DIAGRAM

# RAPID-ROLL "HEAD-ONLY" DRAWING



# SET UP & CAPACITIES

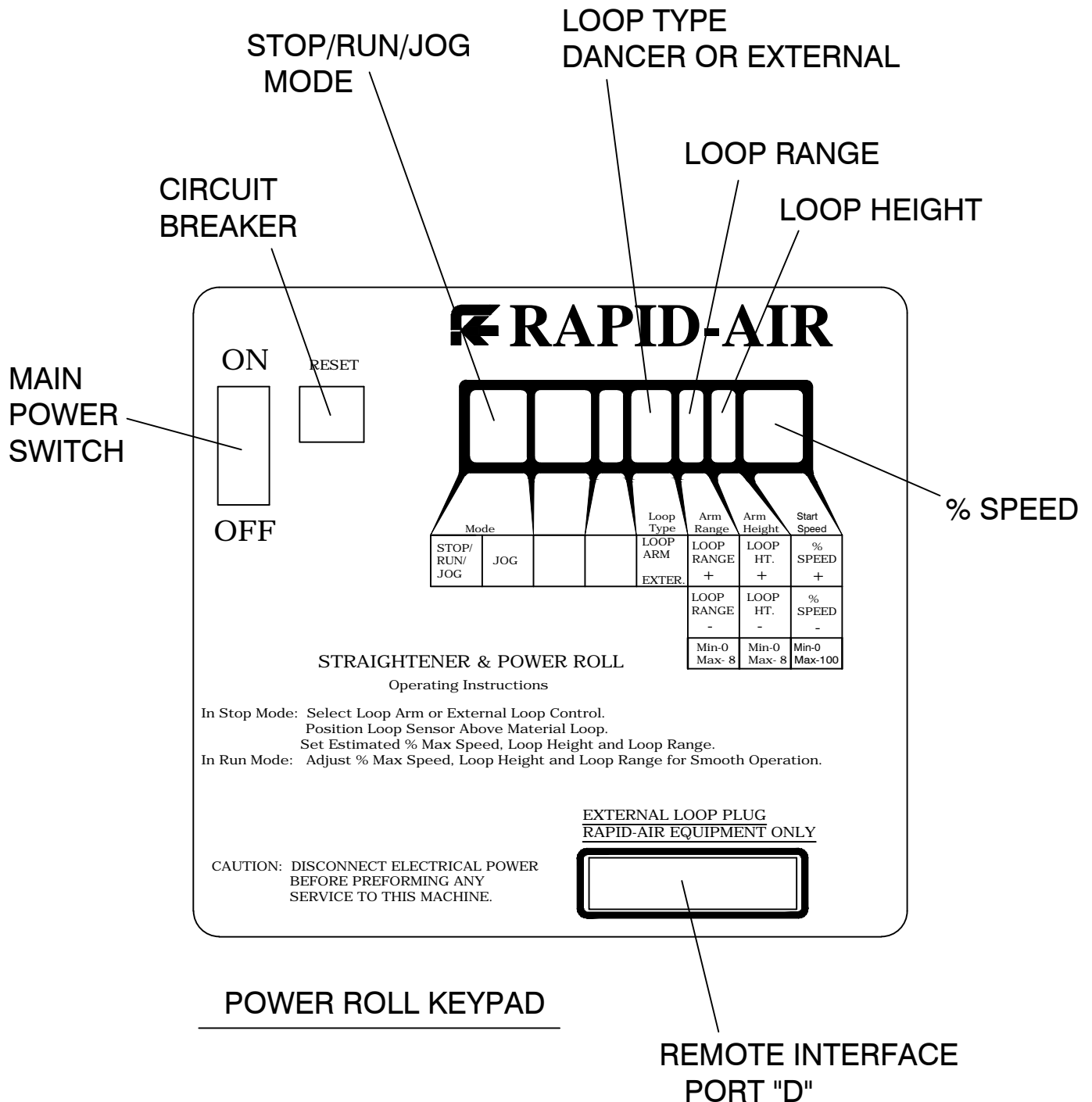
1. Your Rapid-Roll Power Roll is fully assembled and ready to be put into position. Visually inspect unit for damaged or loose parts due to shipment. If there is physical damage contact carrier.
  
2. Install your Rapid-Roll Power Roll on a level surface with sufficient clearance for loading material and adjusting pinch roll pressure. Align and center your unit to the device that will be supplying the stock. For safe operation, bolt unit to floor. Before bolting your unit to the floor, check for the longest feed length and position your Rapid-Roll so that there will be about two or three feed lengths in the storage loop without re-inducing coil set in the material.
  
3. To set up unit, place short length of stock (approx. 4 ft. long) on the bottom pinch roll making sure the top pinch roll is raised. Set entrance guide rolls to maintain stock position. Apply light pinch roll force (using pinch roll adjusting knob) to the stock to insure adequate assisting pulling force on the stock while operating. Never overload the pinch rolls, this could damage the stock by extrusion causing permanent deformation.

MODEL	MAX. MATERIAL WIDTH	Recommended Operating Range	Speed	Max. Speed in./min.	AC Input Power Required
P1V	1.50" (38mm)	.0005-.075" (.0127-1.91mm)	Standard	0-700" (1778cm)	1/4hp, 115vac, 1ph
P1M	1.50" (38mm)	.0005-.075" (.0127-1.91mm)	Medium	0-1400" (3556cm)	1/2hp, 115vac, 1ph
P4V	4.00" (102mm)	.0005-.060" (.0127-1.52mm)	Standard	0-700" (1778cm)	1/4hp, 115vac, 1ph
P4M	4.00" (102mm)	.0005-.060" (.0127-1.52mm)	Medium	0-1400" (3556cm)	1/2hp, 115vac, 1ph
P1W	wire	.005-.150" (.127-3.81mm)	Standard	0-700" (1778cm)	1/4hp, 115vac, 1ph
P1WM	wire	.005-.150" (.127-3.81mm)	Medium	0-1400" (3556cm)	1/2hp, 115vac, 1ph

**CAUTION - Disconnect electrical power before performing any service to this machine.**

# KEYPAD FUNCTIONS

Prior to applying power to your Rapid-Roll Power Roll the operator should review all controls on this machine. See pages 4-5 in this manual for a summary of these controls.



# KEYPAD FUNCTIONS

---

## On/Off switch

This illuminated switch is the main power switch for the controller. It must be "ON" for the Rapid-Roll to function.

## Reset switch

This is the main circuit breaker for the Rapid-Roll.

## Run/Stop/Jog

In the Run mode, if the dancer arm is moved the pinch rolls will turn.

In the Jog mode, the jog button has to be depressed for the pinch rolls to turn. Jog function is used mainly for setup.

In the Stop mode there is no movement of the pinch rolls.

## Loop arm/external switch

When using a dancer arm, select loop arm button to display "LV" for vertical. This button will also allow you to select "LH" for horizontal. ("LH" is used for Pallet Master decoilers only)

When using an external loop control, select external loop to display "RT" for RTB or "RS" for RS2.

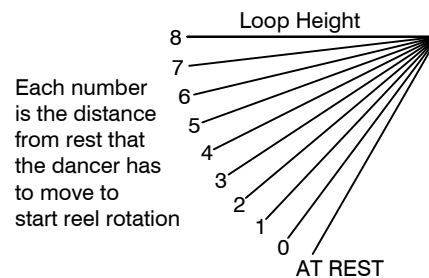
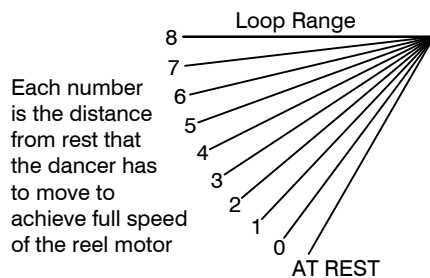
**Note:** Remote interface port "D" connector, if used, communicates with external loop control.

**Warning!** - Never plug any type of computer or non Rapid-Air equipment into this plug or severe damage will result. Consult factory when installing new external controls.

# KEYPAD FUNCTIONS

## Loop range/height

The loop range function selects the degree of arm movement to achieve maximum motor speed. If a loop range of "0" was selected the the arm would only have to travel approximately  $6^\circ$  to have the Rapid-Roll at full speed. If a loop range of "8" was selected the arm would travel approximately  $60^\circ$  to have the Rapid-Roll at full speed. This function is active in the "RUN" mode.



The loop height function selects the degree of arm movement to start pinch roll rotation. If a loop range of "0" was selected the the arm would only have to travel approximately  $6^\circ$  to start pinch roll rotation. If a loop range of "8" was selected the arm would travel approximately  $60^\circ$  before starting pinch roll rotation.

To set the loop height, thread up the material with the dancer arm resting on the material. If the Rapid-Roll is running with the dancer arm in this position adjust the loop height until Rapid-Roll stops. This is your new at rest position. This function is active in the "RUN" mode.

## % Speed setting

The % speed setting allows you to adjust the maximum speed the pinch rolls will rotate. This should be set to maintain a constant feed rate. This function is active in the "RUN" mode.

# JOG SPEED ADJUSTMENT & DANCER ARM CALIBRATION

Your Rapid-Roll was shipped with the dancer arm set up for its correct position so the only thing that has to be reset would be the jog speed if you need your unit to jog faster or slower.

To reset the jog speed, turn off the main power switch. Press and hold the "Run/Stop/Jog" button while turning the main power switch on. The first screen you will see will display the jog speed percentage.

JOG SPEED	23%	+
NEXT		-

To increase the jog speed, press the "Start Speed" pushbutton. If you want to decrease the jog speed press the "Start Speed" pushbutton.

% SPEED +
-----------------

% SPEED -
-----------------

The jog speed is shown in the percent of maximum jog speed. Once you have set the desired jog speed push the "Run/Stop/Jog" button once for next. Your jog speed is now set.

The next screen asks if you want to set up the sensor (commonly referred to as "dancer arm calibration"). Use the percent speed buttons to select "yes" or "no".

Select "no" if all you wanted to do was change the jog speed, select "yes" if you want to calibrate the dancer arm by resetting the sensor.

SETUP SENSOR	YES
NEXT	NO

After making your selection, press "Run/Stop/Jog" for next.

If you selected "yes" the next screen asks you to set the low set point. If the dancer arm is resting on the positive stop then just save this setting by pushing the "Run/Stop/Jog" button.

SENSOR LOW SETPOINT	
SAVE	xxx



# JOG SPEED ADJUSTMENT & DANCER ARM CALIBRATION

The next screen is for setting the high set point. Raise the dancer arm to it's upper stop position and press the "Run/Stop/Jog" button once to save this setting.

SENSOR HIGH SETPOINT SAVE	xxx
------------------------------	-----

The next screen is to set the offset of the program. Potentiometers are hard to get set perfectly so we've built in an offset. After setting the high & low points, with the dancer arm resting on the positive stop, put the unit in the "Run" mode. If the unit starts running with the dancer arm on the positive stop then an offset needs to be put in. If an offset needs to be put in go through the setup procedure again until you get to the low offset screen. Using the percent speed buttons put in an offset value of -3 to -5. Press the "Run/Stop/Jog" button to save this setting.

LOW OFFSET	+0	+
NEXT		-

You now have set the dancer arm limits. The next screen to appear allows you to exit the setup. Use the percent speed button to enter "yes or no".

EXIT SETUP	YES
	NO

If "yes" was selected press "Run/Stop/Jog" button and the next screen appears.

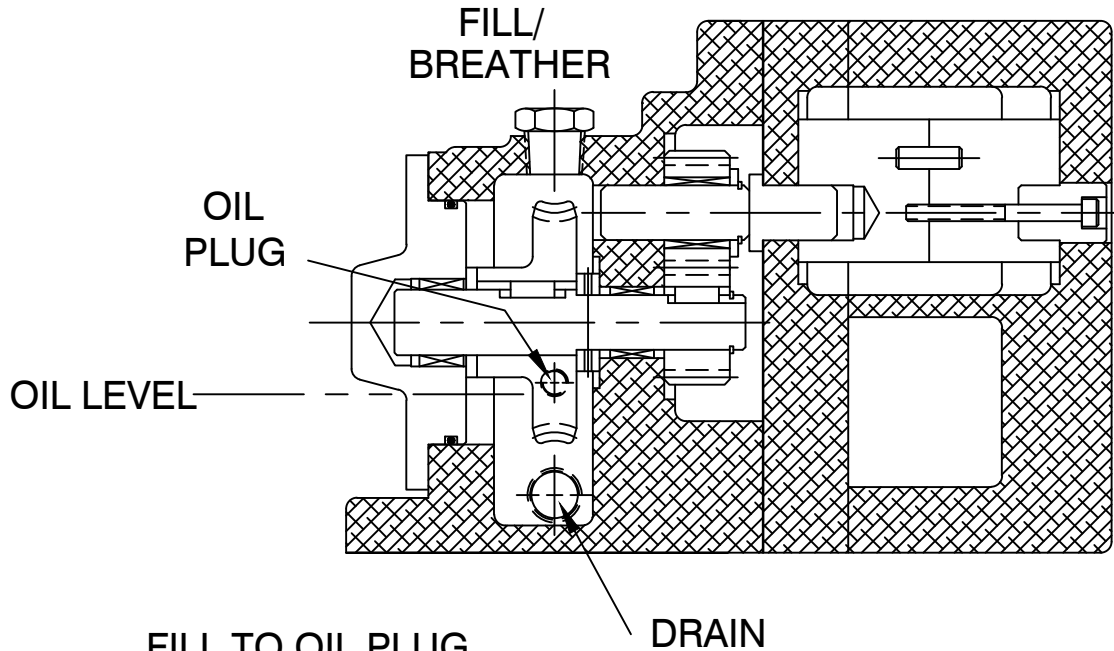
SHUT OFF POWER TO SAVE AND EXIT
------------------------------------

Power off unit, the dancer arm is now ready for production running.

# MAINTENANCE

Gearbox lubrication - change oil every 1000 hours as follows:

Electrical - all brushes on motors should be checked every 1500-2000 hours.



FILL TO OIL PLUG  
APPROX. 4 OZ.  
MOBIL 600W

Your Rapid-Roll Power Roll was shipped from the factory with the upper & lower pinch rolls parallel to each other. If these pinch rolls should happen to get out of parallel, use eccentric shaft to adjust rolls. See diagram page 1 for location of eccentric shaft. Loosen socket head cap screw in center of shaft. Turn shaft until rolls are parallel with each other. You should be able to grip .001 thick shim stock along entire width of rollers. After adjustment is made, re-tighten socket head cap screw.

# TROUBLESHOOTING

## MAIN SWITCH ON BUT NOT LIT

1. Circuit breaker tripped
  - a. Reset circuit breaker
2. Unit not plugged into main power
  - a. Plug into main power
3. No power in incoming line
  - a. Check outlet
  - b. Check power cord
4. Loose wiring
  - a. Check terminals and connections

## MOTOR CREEPS IN STOP POSITION

1. "Min." speed pot on RAMM board out of adjustment
2. Offset in dancer arm setup out of adjustment (see page 8)

## UNIT ON BUT MOTOR WON'T RUN

(armature voltage present on RAMM board)

1. Check motor wiring
  - a. replace motor cord or correct motor wiring (consult factory)
2. Check motor
  - a. Worn brushes or defective motor (consult factory)
  - b. Check for oil in motor, gear box oil seal may have failed

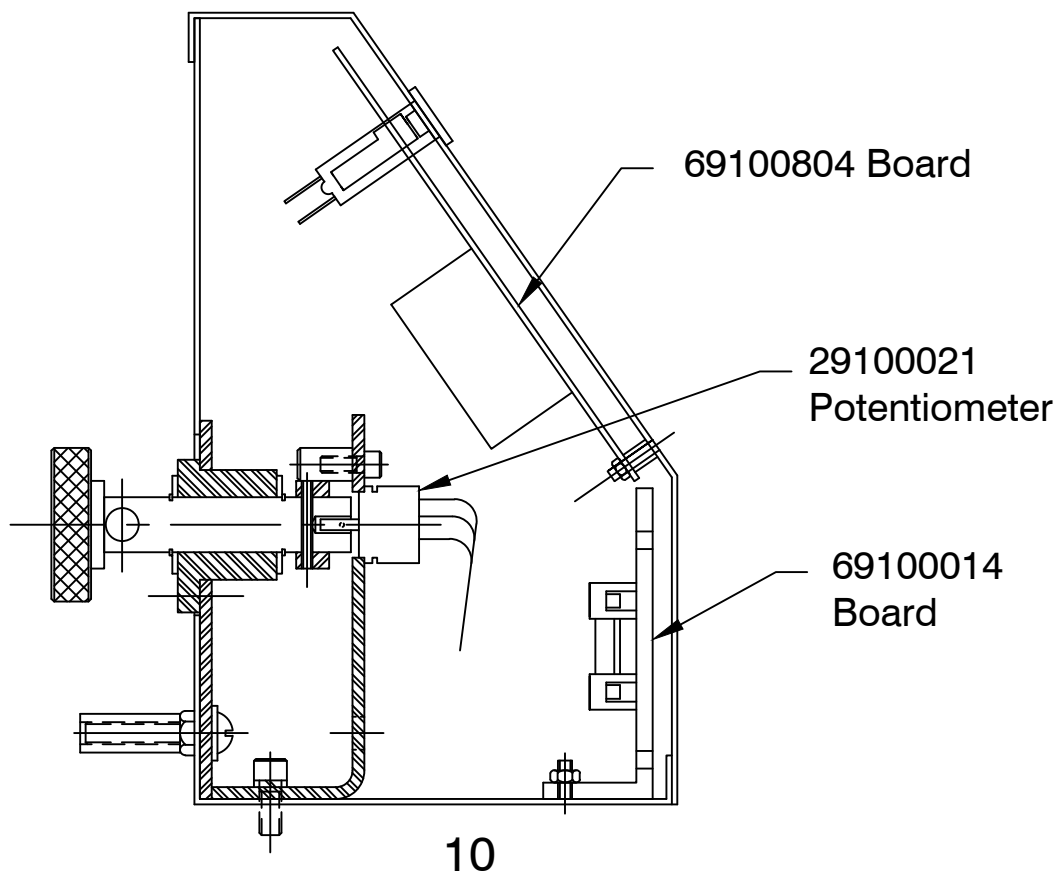
## UNIT ON BUT MOTOR WON'T RUN

(no armature voltage present on RAMM board)

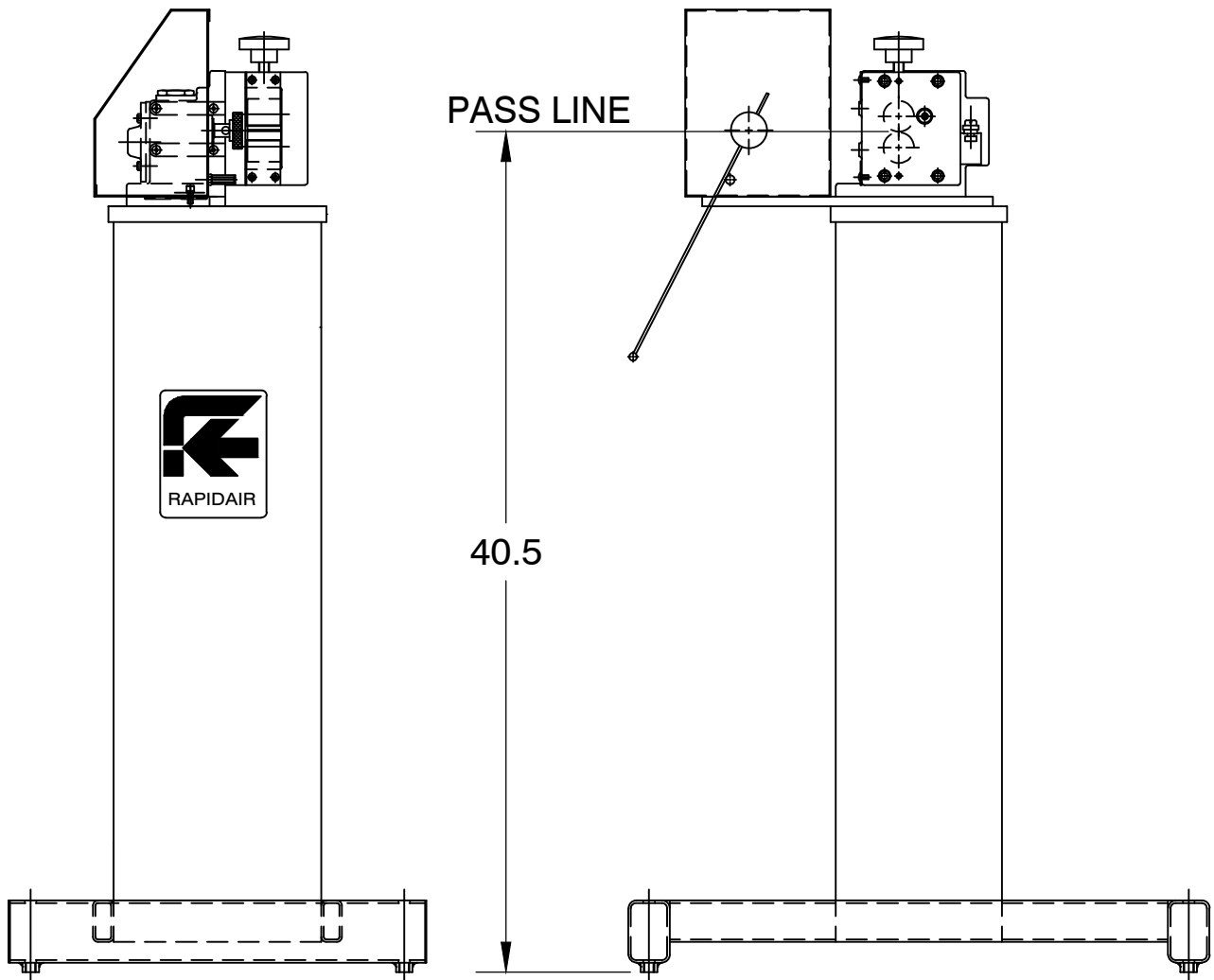
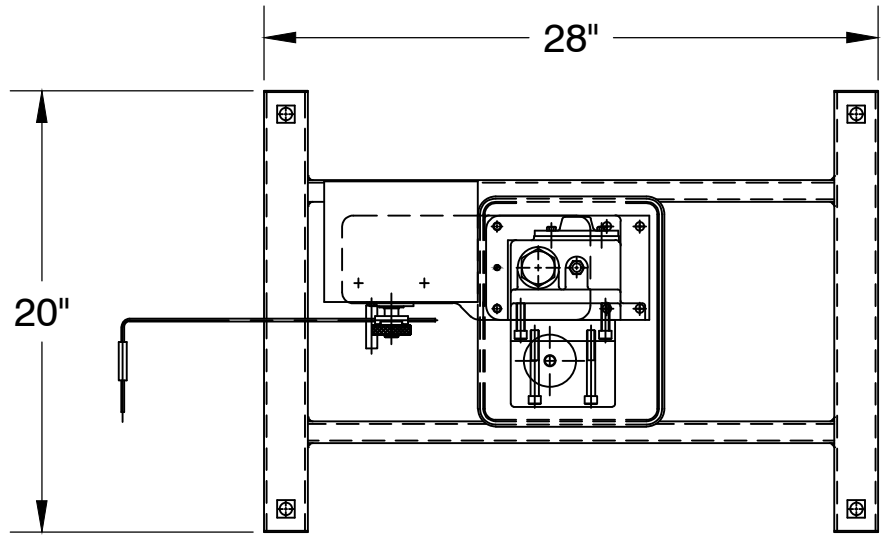
1. Selector switch not in "RUN" position
  - a. Turn selector switch to "RUN" position
2. If running with a dancer arm control
  - a. Check that the external/loop arm function is in the loop arm position
3. If running with external control
  - a. Check that the external/loop arm function is in the external position
4. Loop height switch setting to high
  - a. Set height setting to "0"

# TROUBLESHOOTING

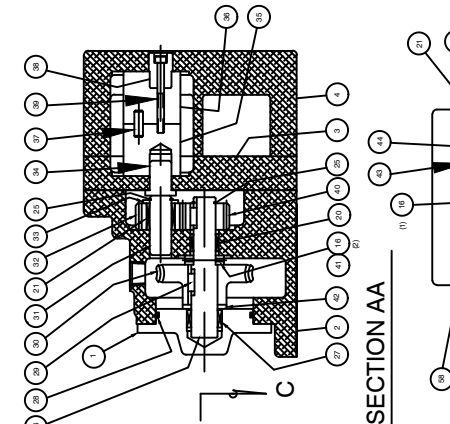
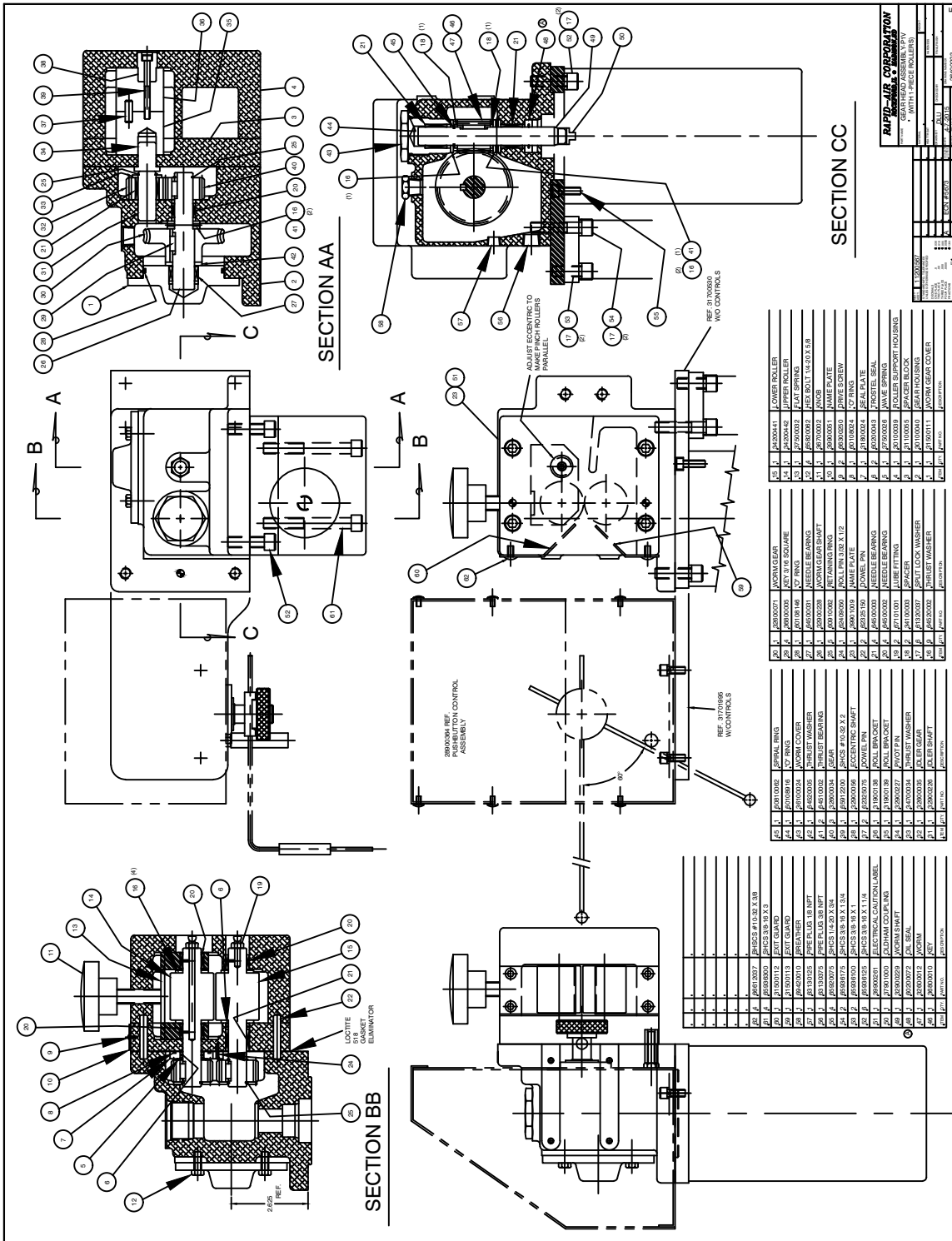
5. Percent speed function set too low
    - a. Adjust percent speed function to 100%
  6. Fuses blown
    - a. Check fuses & circuit breaker
  7. No AC voltage at DC drive board
    - a. Check wiring
  8. Check signal voltage between P2 to P1 on DC drive
    - 0-6 VDC - RAMM
    - 0-9 VDC - Regen drive
    - while moving dancer arm
      - a. If there is a signal, check continuity between I1 & I2
      - If no continuity, replace DC drive or consult factory
9. Check pico fuse on 69100804 board (F1)
  - a. Replace fuse, 1 amp pico fuse-consult factory



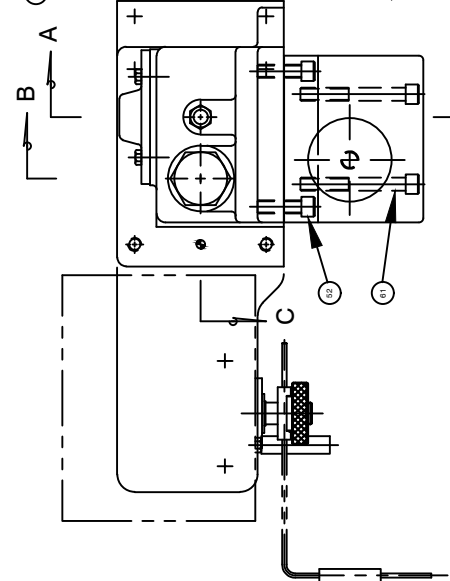
# CABINET ASSEMBLY DRAWING



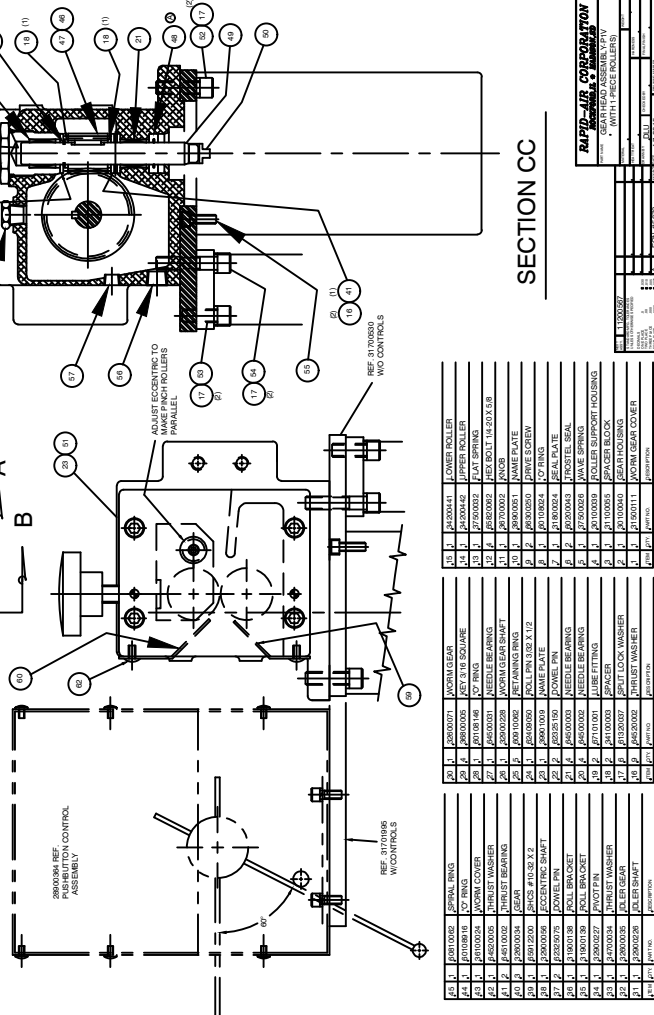
# P1V ASSEMBLY DRAWING



**SECTION AA**



**SECTION BB**



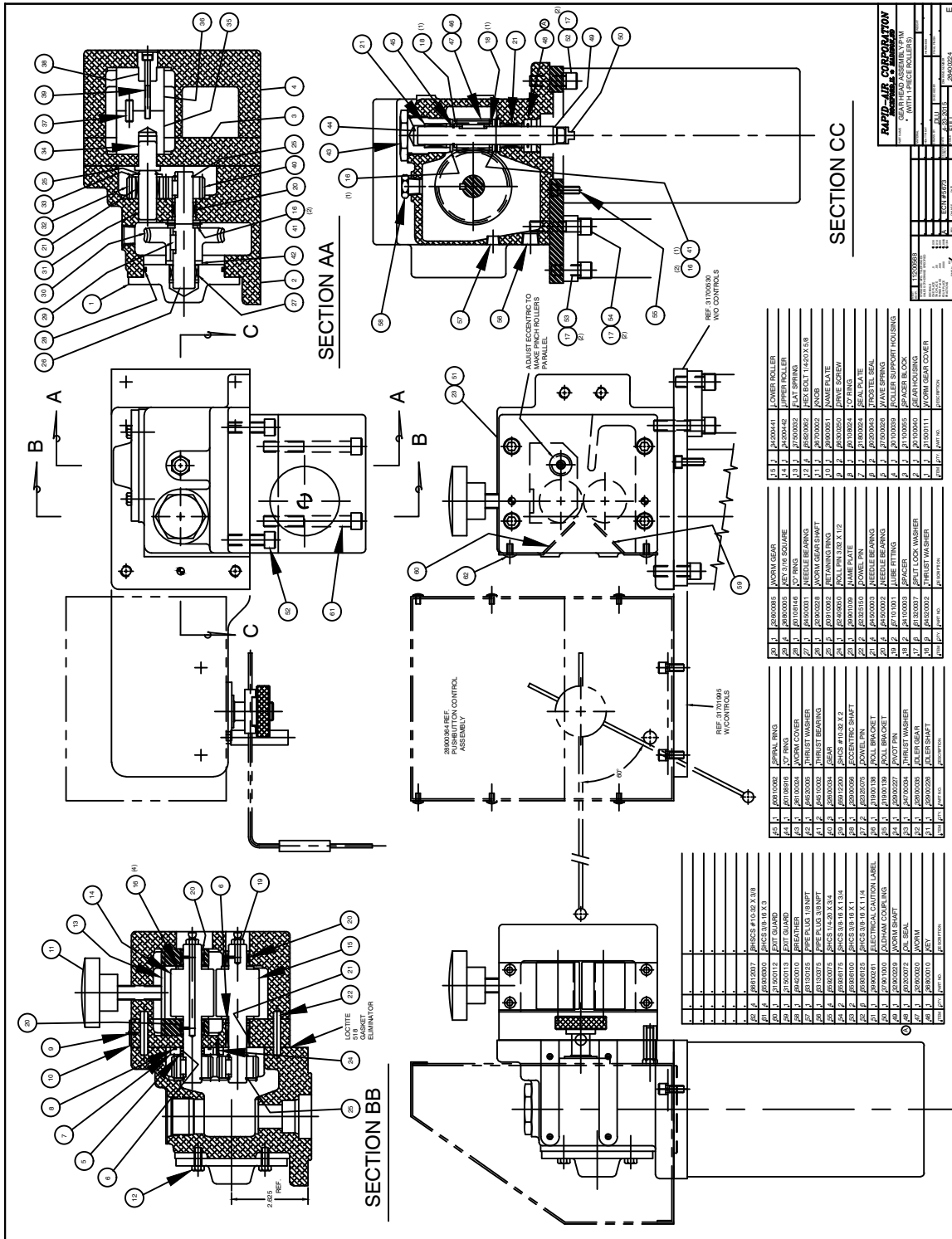
**SECTION CC**

25	1	4700001	LOWER ROLLER
26	1	4700002	UPPER ROLLER
27	2	4700003	SPACER
28	2	4700004	SPACER
29	2	4700005	SPACER
30	2	4700006	SPACER
31	1	4700007	SPACER
32	1	4700008	SPACER
33	1	4700009	SPACER
34	1	4700010	SPACER
35	1	4700011	SPACER
36	1	4700012	SPACER
37	1	4700013	SPACER
38	1	4700014	SPACER

12	1	3200001	SPRING RING
13	1	3200002	SPRING RING
14	1	3200003	SPRING RING
15	1	3200004	SPRING RING
16	1	3200005	SPRING RING
17	1	3200006	SPRING RING
18	1	3200007	SPRING RING
19	1	3200008	SPRING RING
20	1	3200009	SPRING RING
21	1	3200010	SPRING RING
22	1	3200011	SPRING RING
23	1	3200012	SPRING RING
24	1	3200013	SPRING RING
25	1	3200014	SPRING RING
26	1	3200015	SPRING RING
27	1	3200016	SPRING RING
28	1	3200017	SPRING RING
29	1	3200018	SPRING RING
30	1	3200019	SPRING RING
31	1	3200020	SPRING RING
32	1	3200021	SPRING RING
33	1	3200022	SPRING RING
34	1	3200023	SPRING RING
35	1	3200024	SPRING RING
36	1	3200025	SPRING RING
37	1	3200026	SPRING RING
38	1	3200027	SPRING RING

**RAPID-AIR CORPORATION**  
 1111 EAST 10TH STREET  
 LAKE CHARLES, LA 70601  
 (504) 231-6100  
 FAX (504) 231-6101  
 WWW.RAPID-AIR.COM

# P1M ASSEMBLY DRAWING

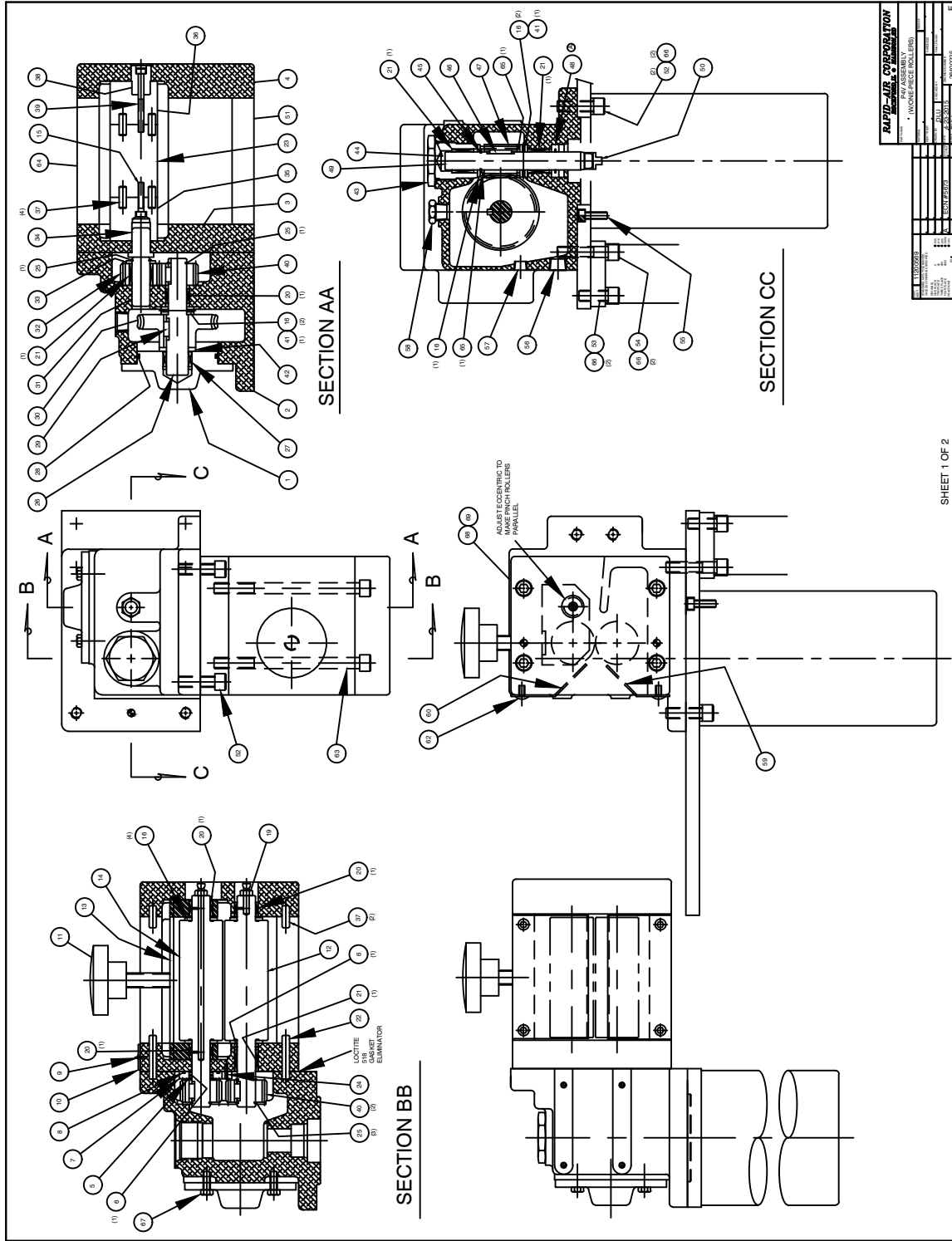


**RAPID-112 CORPORATION**  
 11200 112th Street, Everett, WA 98203  
 (206) 835-1120

QTY	DESCRIPTION	REF. NO.	UNIT	QTY	DESCRIPTION	REF. NO.	UNIT	QTY	DESCRIPTION	REF. NO.	UNIT
1	WORM GEAR	20	J	1	COVER ROLLER	10	J	1	WORM GEAR	20	J
1	WORM GEAR	21	J	1	COVER ROLLER	11	J	1	WORM GEAR	21	J
1	WORM GEAR	22	J	1	COVER ROLLER	12	J	1	WORM GEAR	22	J
1	WORM GEAR	23	J	1	COVER ROLLER	13	J	1	WORM GEAR	23	J
1	WORM GEAR	24	J	1	COVER ROLLER	14	J	1	WORM GEAR	24	J
1	WORM GEAR	25	J	1	COVER ROLLER	15	J	1	WORM GEAR	25	J
1	WORM GEAR	26	J	1	COVER ROLLER	16	J	1	WORM GEAR	26	J
1	WORM GEAR	27	J	1	COVER ROLLER	17	J	1	WORM GEAR	27	J
1	WORM GEAR	28	J	1	COVER ROLLER	18	J	1	WORM GEAR	28	J
1	WORM GEAR	29	J	1	COVER ROLLER	19	J	1	WORM GEAR	29	J
1	WORM GEAR	30	J	1	COVER ROLLER	20	J	1	WORM GEAR	30	J

# P4V ASSEMBLY DRAWING

(SHEET 1 OF 2)



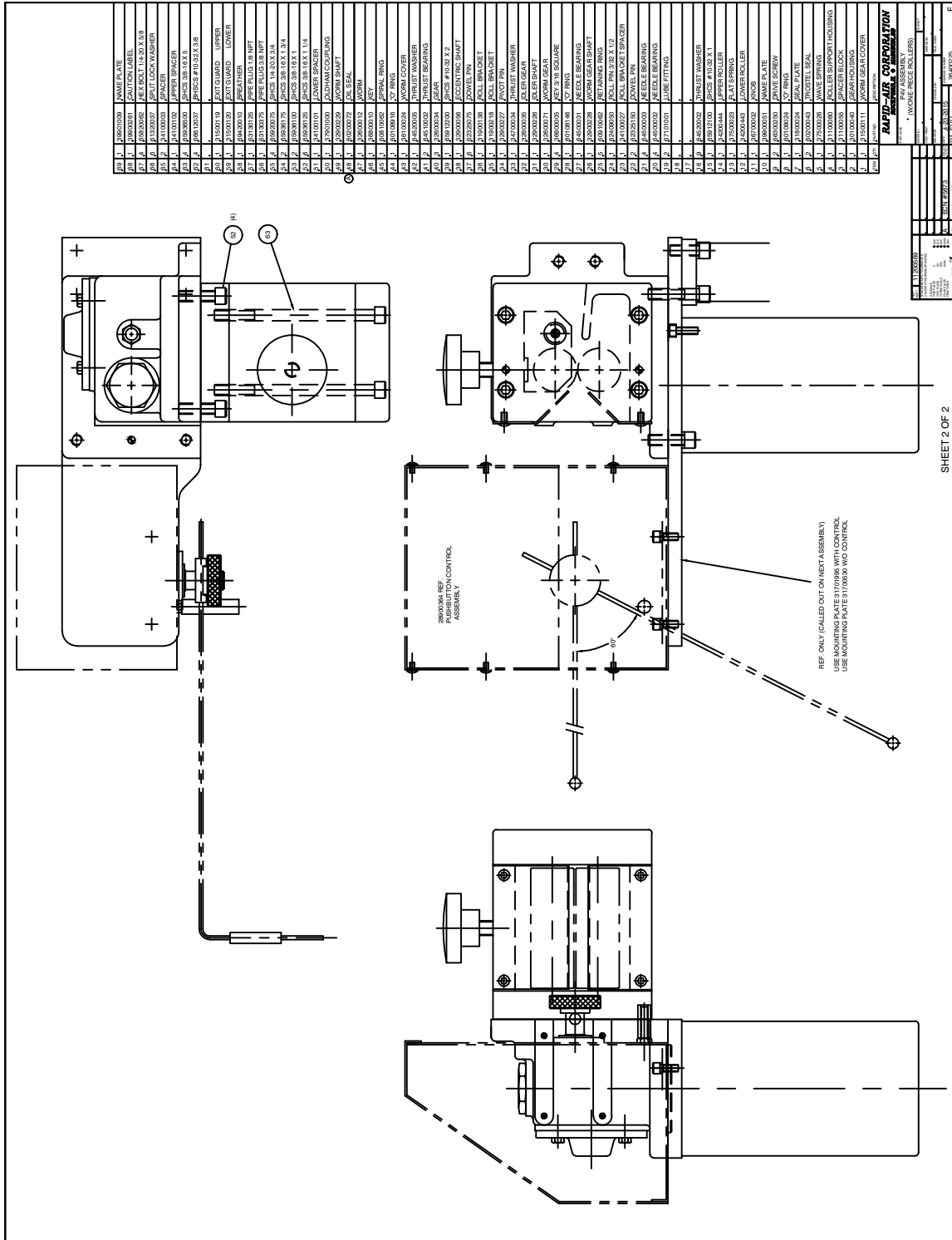
<b>RAVD-AIR CORPORATION</b> (WAGONWHEEL ROLLERS)	
1. DRAWING NO. 2. REV. 3. DATE 4. BY 5. CHECKED 6. APPROVED	7. PART NO. 8. QUANTITY 9. MATERIAL 10. FINISH 11. TOLERANCES 12. DIMENSIONS 13. WEIGHT 14. COMMENTS
15. PART NO. 16. QUANTITY 17. MATERIAL 18. FINISH 19. TOLERANCES 20. DIMENSIONS 21. WEIGHT 22. COMMENTS	23. PART NO. 24. QUANTITY 25. MATERIAL 26. FINISH 27. TOLERANCES 28. DIMENSIONS 29. WEIGHT 30. COMMENTS
31. PART NO. 32. QUANTITY 33. MATERIAL 34. FINISH 35. TOLERANCES 36. DIMENSIONS 37. WEIGHT 38. COMMENTS	39. PART NO. 40. QUANTITY 41. MATERIAL 42. FINISH 43. TOLERANCES 44. DIMENSIONS 45. WEIGHT 46. COMMENTS

SHEET 1 OF 2



# P4V ASSEMBLY DRAWING

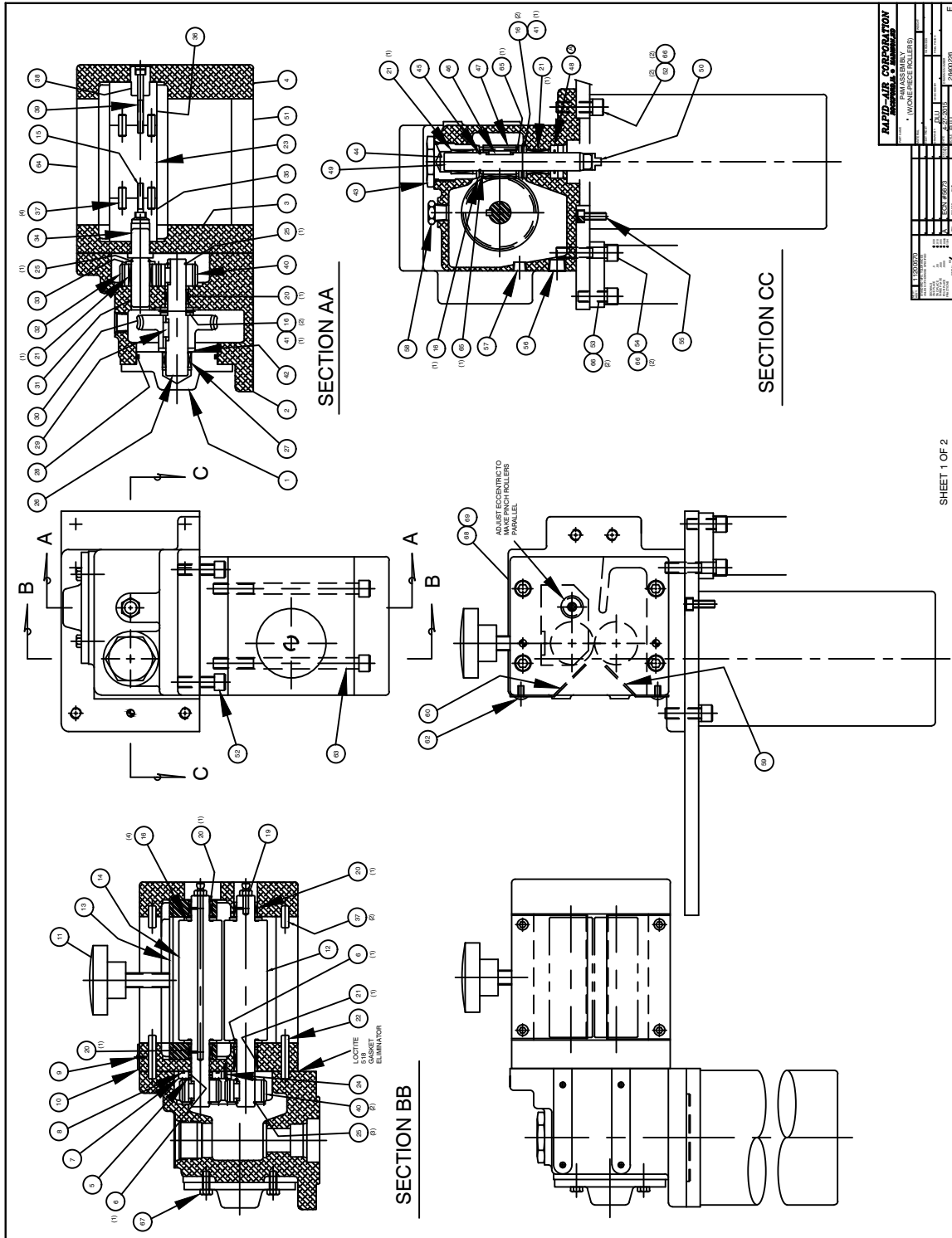
(SHEET 2 OF 2)



SHEET 2 OF 2

# P4M ASSEMBLY DRAWING

(SHEET 1 OF 2)

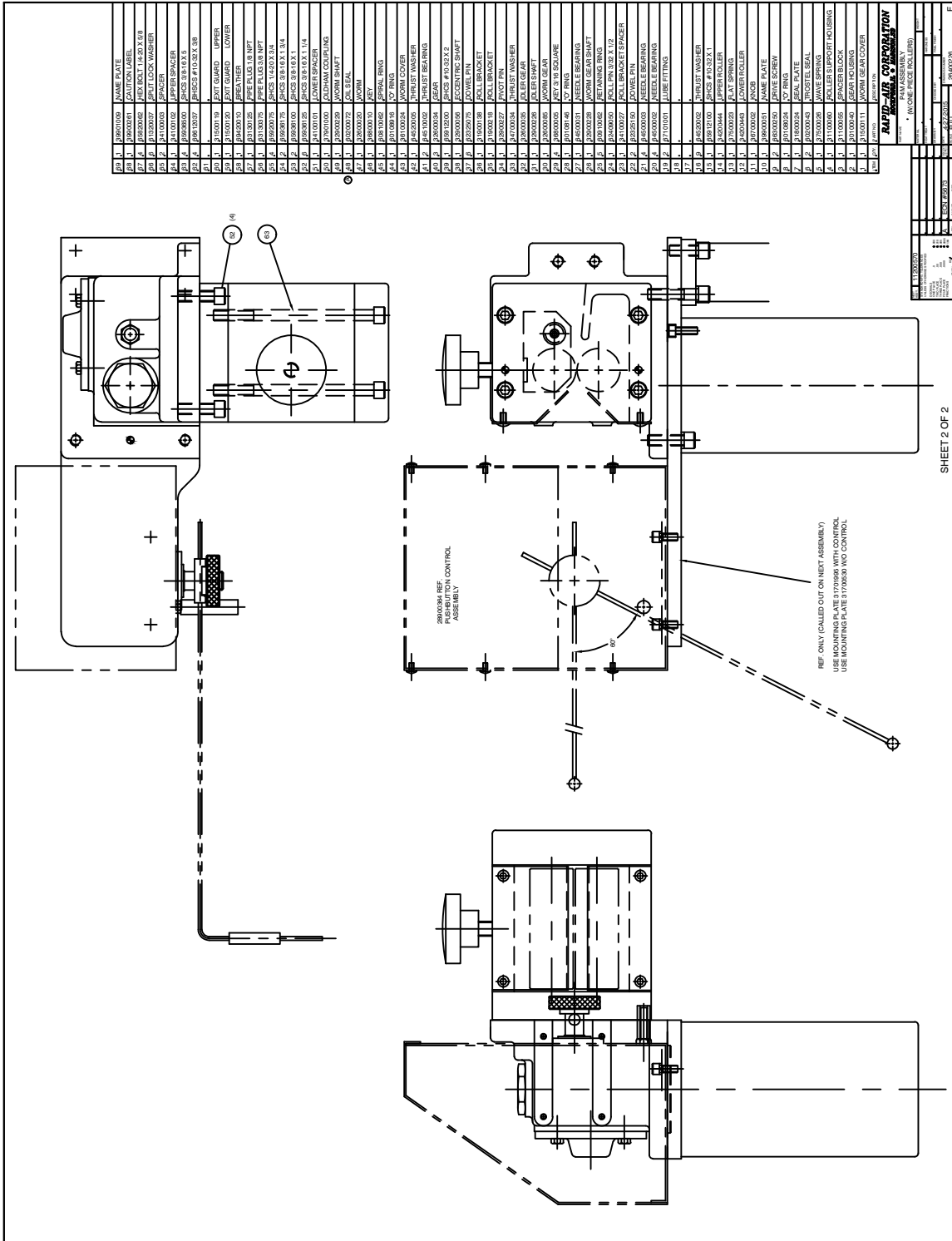


REV	DATE	BY	CHKD	APP'D
1	11/10/2010	J.S.	J.S.	J.S.
2	03/22/2011	J.S.	J.S.	J.S.
3	03/22/2011	J.S.	J.S.	J.S.
4	03/22/2011	J.S.	J.S.	J.S.
5	03/22/2011	J.S.	J.S.	J.S.
6	03/22/2011	J.S.	J.S.	J.S.
7	03/22/2011	J.S.	J.S.	J.S.
8	03/22/2011	J.S.	J.S.	J.S.
9	03/22/2011	J.S.	J.S.	J.S.
10	03/22/2011	J.S.	J.S.	J.S.
11	03/22/2011	J.S.	J.S.	J.S.
12	03/22/2011	J.S.	J.S.	J.S.
13	03/22/2011	J.S.	J.S.	J.S.
14	03/22/2011	J.S.	J.S.	J.S.
15	03/22/2011	J.S.	J.S.	J.S.
16	03/22/2011	J.S.	J.S.	J.S.
17	03/22/2011	J.S.	J.S.	J.S.
18	03/22/2011	J.S.	J.S.	J.S.
19	03/22/2011	J.S.	J.S.	J.S.
20	03/22/2011	J.S.	J.S.	J.S.
21	03/22/2011	J.S.	J.S.	J.S.
22	03/22/2011	J.S.	J.S.	J.S.
23	03/22/2011	J.S.	J.S.	J.S.
24	03/22/2011	J.S.	J.S.	J.S.
25	03/22/2011	J.S.	J.S.	J.S.
26	03/22/2011	J.S.	J.S.	J.S.
27	03/22/2011	J.S.	J.S.	J.S.
28	03/22/2011	J.S.	J.S.	J.S.
29	03/22/2011	J.S.	J.S.	J.S.
30	03/22/2011	J.S.	J.S.	J.S.

SHEET 1 OF 2

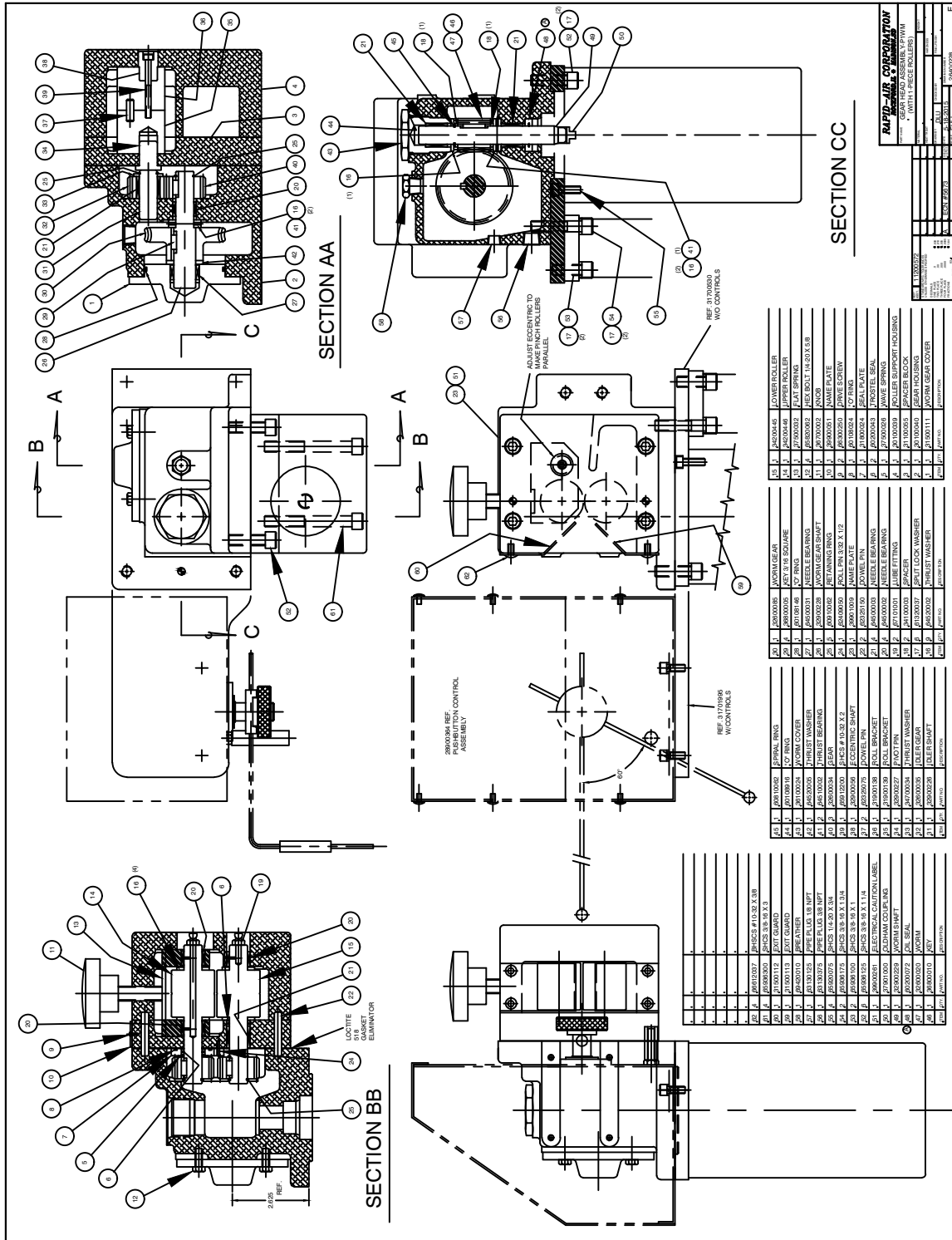
# P4M ASSEMBLY DRAWING

(SHEET 2 OF 2)





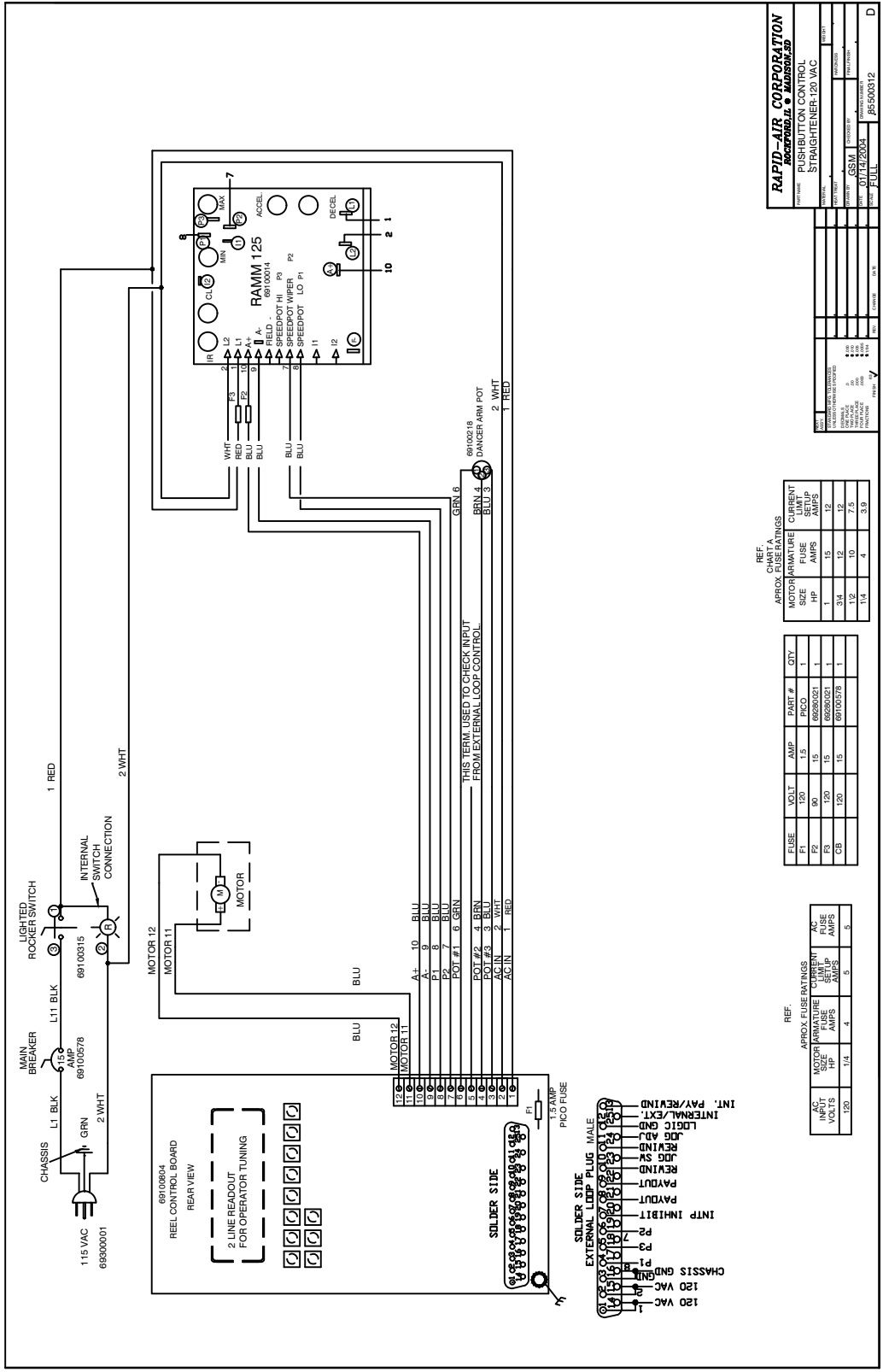
# P1WM ASSEMBLY DRAWING



P1WM-ASSEMBLY		REV. 01	
DATE: 08/11/00		DRAWN BY: J. J. J.	
CHECKED BY: J. J. J.		APPROVED BY: J. J. J.	
PART NO. 1000000		REV. 01	
QTY. 1		MATERIAL: 304 STAINLESS STEEL	
FINISH: POLISHED		TOLERANCES: UNLESS OTHERWISE SPECIFIED	
ASSEMBLY: P1WM		DRAWING NO. 2400000	

13	1	3400045	LOWER ROLLER
14	1	3400046	UPPER ROLLER
15	1	3700002	FLAT SPRINGS
16	1	3800002	HEX BOLT 1/4-20 X 1.5
17	1	3800002	WASHER
18	1	3800002	WASHER
19	1	3800002	WASHER
20	1	3800002	WASHER
21	1	3800002	WASHER
22	1	3800002	WASHER
23	1	3800002	WASHER
24	1	3800002	WASHER
25	1	3800002	WASHER
26	1	3800002	WASHER
27	1	3800002	WASHER
28	1	3800002	WASHER
29	1	3800002	WASHER
30	1	3800002	WASHER
31	1	3800002	WASHER
32	1	3800002	WASHER
33	1	3800002	WASHER
34	1	3800002	WASHER
35	1	3800002	WASHER
36	1	3800002	WASHER
37	1	3800002	WASHER
38	1	3800002	WASHER
39	1	3800002	WASHER
40	1	3800002	WASHER
41	1	3800002	WASHER
42	1	3800002	WASHER
43	1	3800002	WASHER
44	1	3800002	WASHER
45	1	3800002	WASHER
46	1	3800002	WASHER
47	1	3800002	WASHER
48	1	3800002	WASHER
49	1	3800002	WASHER
50	1	3800002	WASHER
51	1	3800002	WASHER
52	1	3800002	WASHER
53	1	3800002	WASHER
54	1	3800002	WASHER
55	1	3800002	WASHER
56	1	3800002	WASHER
57	1	3800002	WASHER
58	1	3800002	WASHER
59	1	3800002	WASHER
60	1	3800002	WASHER
61	1	3800002	WASHER
62	1	3800002	WASHER
63	1	3800002	WASHER
64	1	3800002	WASHER
65	1	3800002	WASHER
66	1	3800002	WASHER
67	1	3800002	WASHER
68	1	3800002	WASHER
69	1	3800002	WASHER
70	1	3800002	WASHER
71	1	3800002	WASHER
72	1	3800002	WASHER
73	1	3800002	WASHER
74	1	3800002	WASHER
75	1	3800002	WASHER
76	1	3800002	WASHER
77	1	3800002	WASHER
78	1	3800002	WASHER
79	1	3800002	WASHER
80	1	3800002	WASHER
81	1	3800002	WASHER
82	1	3800002	WASHER
83	1	3800002	WASHER
84	1	3800002	WASHER
85	1	3800002	WASHER
86	1	3800002	WASHER
87	1	3800002	WASHER
88	1	3800002	WASHER
89	1	3800002	WASHER
90	1	3800002	WASHER
91	1	3800002	WASHER
92	1	3800002	WASHER
93	1	3800002	WASHER
94	1	3800002	WASHER
95	1	3800002	WASHER
96	1	3800002	WASHER
97	1	3800002	WASHER
98	1	3800002	WASHER
99	1	3800002	WASHER
100	1	3800002	WASHER

# WIRING DIAGRAM



**RAPID-AIR CORPORATION**  
662802A & 66100578

**RUSHBUTTON CONTROL**  
STRAIGHTENER-120 VAC

DATE: 01/14/2004  
DRAWN: FULL  
REV: 2