

# AA-54 Air Amplifier

## INSTALLATION, OPERATION & MAINTENANCE MANUAL



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[www.interfacedevices.com](http://www.interfacedevices.com)

**IMPORTANT! FILE THIS MANUAL IN A SAFE PLACE FOR FUTURE SERVICE & PARTS NEEDS  
ALWAYS REFERENCE THE SERIAL NUMBER FOR SERVICE & PARTS REQUESTS**

**Pump Serial Number:** \_\_\_\_\_

### STATEMENT OF WARRANTY

INTERFACE DEVICES, INC. (hereafter, the factory) warrants it's products to be free from defects in material and workmanship under normal use and service for a period of one (1) year from date of shipment from the factory. Any defect discovered after the warranty period has expired will be deemed to be outside the above coverage. No goods claimed to be under warranty shall be accepted for return unless authorized by the factory beforehand.

Upon discovery of a defect (other than freight damage) or a shortage of an item received in the original factory container, the purchaser shall, within (10) calendar days, deliver notice of the defect or shortage. Damaged freight claims must be placed with the freight carrier and will not be honored by the factory. If after due investigation of a claim of defect or shortage is found valid, the factory, at it's sole discretion, may discharge it's entire obligations to the purchaser by either repair or replacement of the defective product or component and for shortages by furnishing a replacement of the missing quantity (FOB, factory).

This express warrantee supersedes and is in lieu of all other remedies and warranties, including the implied warranties of merchantability and fitness for a particular purpose, and liability for negligence. **IN NO EVENT SHALL THE FACTORY BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL LOSSES, EXPENSES OR DAMAGES INCLUDING DAMAGES FOR PERSONAL INJURY OR COMMERCIAL LOSS.**

## AA-54 2:1 AIR AMPLIFIER

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## 1.0 INSTALLATION

### 1.1 MOUNTING:

The amplifier comes standard with a foot mounting bracket (four 1/4 inch fasteners required).

The unit may be mounted vertically (wall mount) or horizontally (floor mount).

### 1.2 CONNECTIONS:

Connect a dry and filtered air supply to the 3/8 NPT "AIR IN" port on the pump. NO Lubricator Is required).

Connect your high pressure circuit to the 3/8 NPT "AIR OUT" port on the pump.

### 1.3 STARTUP:

Starting with the pump mounted air regulator backed-out all the way, slowly increase the pressure by turning the regulator knob clockwise. The pump will start to cycle while regulated pressure flows directly through the pump to the circuit.

The pump will stall when circuit pressure reaches 2 times the regulated pressure. The pump will maintain this pressure even if there is some circuit leakage. At this time check for and fix any circuit leaks since this only causes unnecessary air consumption and wear and tear on the pump.

## 2.0 MAINTAINENCE:

### 2.1 ROUTINE MAINTAINENCE:

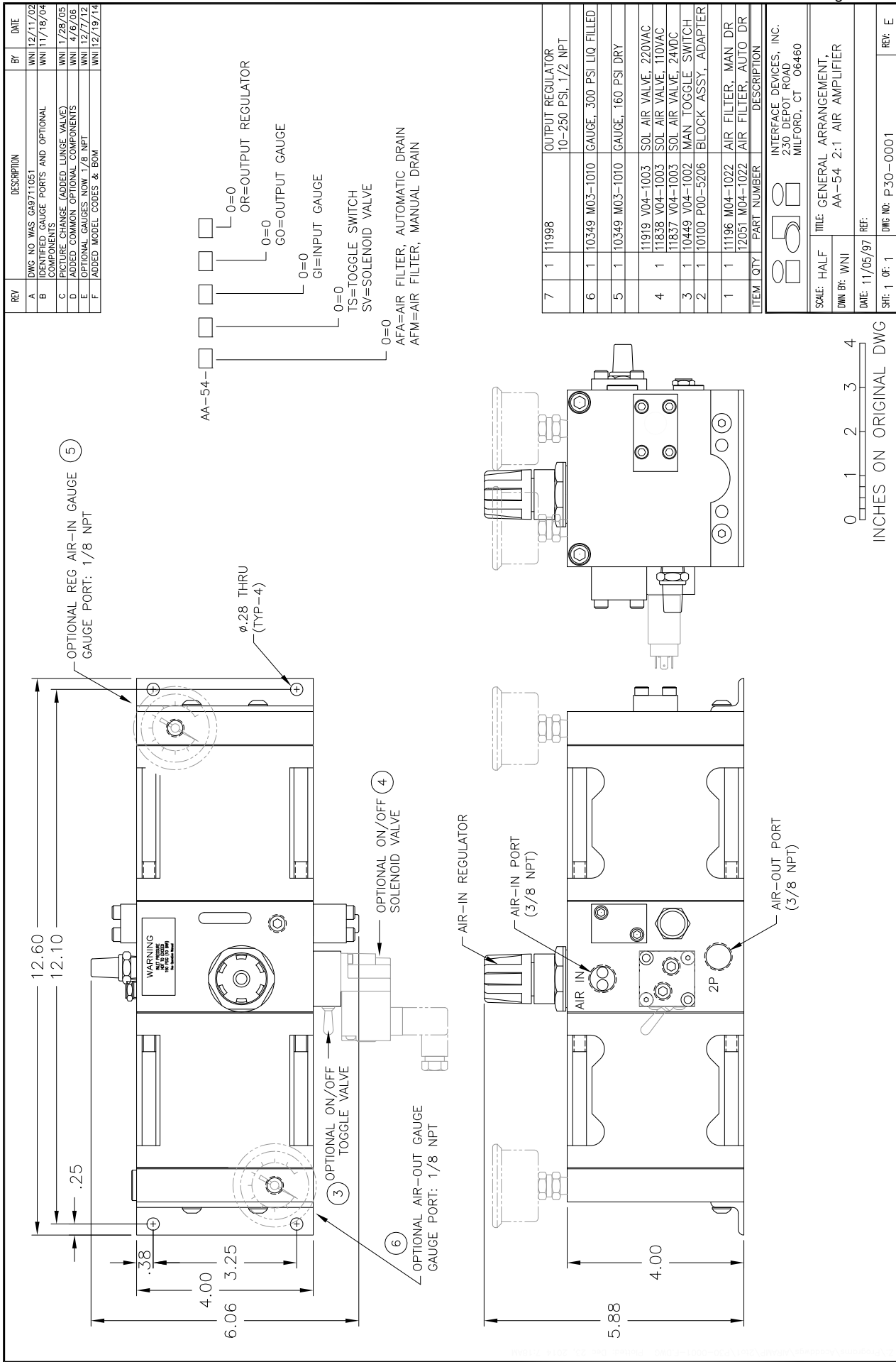
The only routine maintenance required is to re-grease the main air spool (item 6), the pilot piston O-ring (item 7) and the T-seals (item 5) every 6 months. Refer to the enclosed 4-way cycling valve assembly drawing.

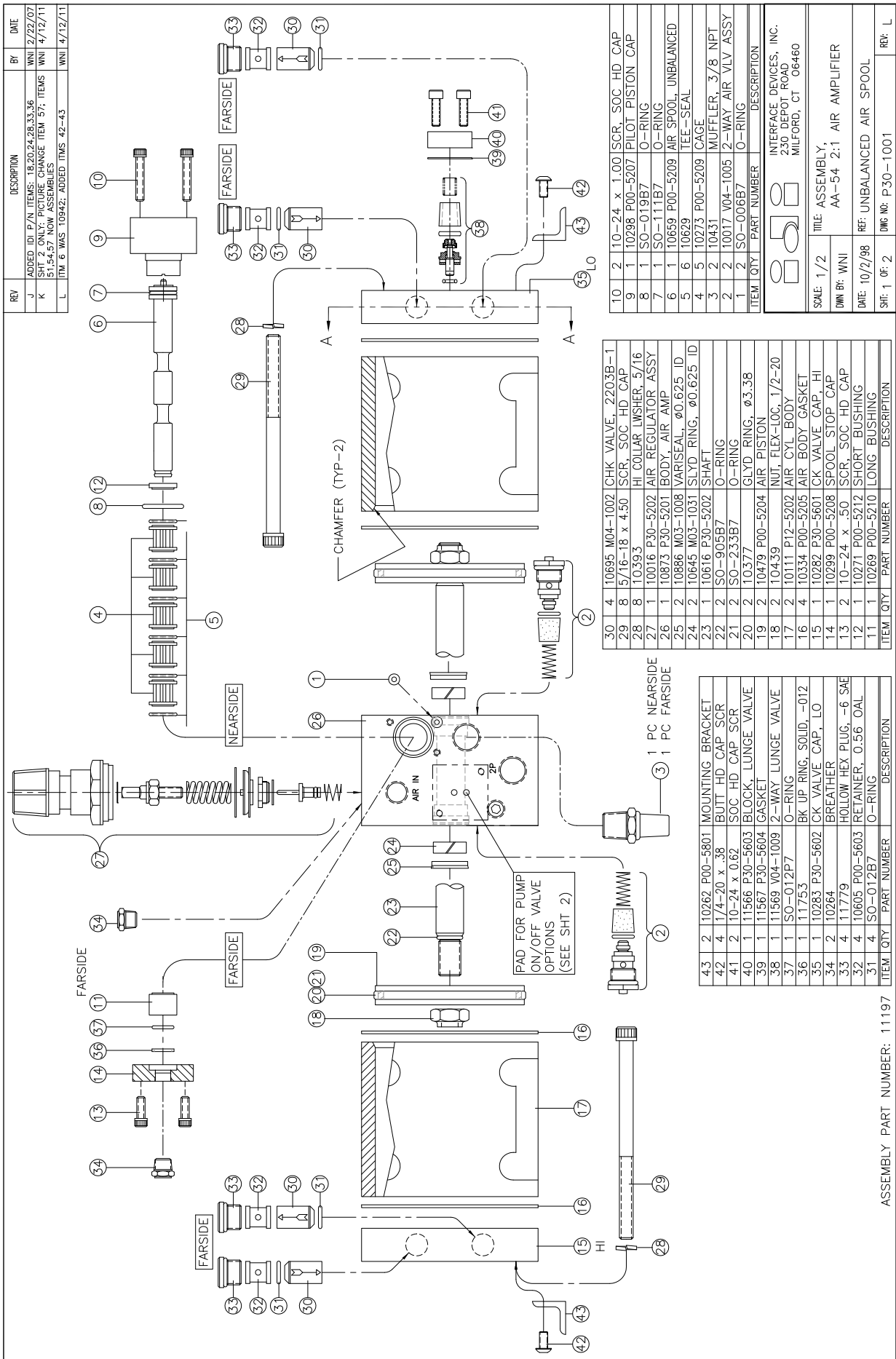
2.2 TROUBLESHOOTING GUIDE: See following table on page 4.

**AIR AMPLIFIER TROUBLESHOOTING GUIDE**  
(Refer to enclosed Exploded View Drawings)

SYMPTOM	PROBABLE CAUSE(S)	REMEDY
<p>Pump will not cycle.  No pressure at output.</p>	<p>No air supply to pump.  Pump air regulator supply set too low.</p>	<p>Look for and fix.  Increase setting.</p>
<p>Pump will not cycle with regulated pressure at output.</p>	<p>Four-way Air reciprocating valve spool stuck at mid-position.    After trying remedy above, spool still sticks:</p>	<p>Disconnect/Reconnect air supply (Re-sets air spool to end position.)    Disassemble air valve assembly  Inspect for contamination or mechanical bind. Repair or replace, lubricate seals with water-proof grease.</p>
<p>Pump makes one cycle, then stops.</p>	<p>Faulty item 24 "2-way air valve"  (Broken, leaks or contaminated).</p>	<p>Repair or replace.</p>
<p>Pump cycles constantly when "dead-headed".</p>	<p>External leak at pump or downstream high pressure circuit.    Stuck open or contaminated item 6 "Check Valve" cartridge (4 places).    Internal leak in pump.</p>	<p>Look for and correct.    Clean or replace. Note valve orientation at assembly.    Check all dynamic and static seals and gaskets. Replace if necessary.</p>

For further assistance call INTERFACE DEVICES, INC. at 203/878-4648.





REV	DESCRIPTION	BY	DATE
J	ADDED IDI P/VN ITEMS: 18,20,24,28,33,36	WNI	2/22/07
K	SHT 2 ONLY: PICTURE CHANGE ITEM 57, ITEMS 51,54,57 NOW ASSEMBLIES	WNI	4/12/11
L	ITM 6 WAS: 10942; ADDED ITMS 42-43	WNI	4/12/11

ITEM	QTY	PART NUMBER	DESCRIPTION
10	2	10-24 x 1.00	ISCR, SOC HD CAP
9	1	10298 P00-5207	PILOT PISTON CAP
8	1	SO-019B7	O-RING
7	1	SO-111B7	O-RING
6	1	10659 P00-5209	AIR SPOOL, UNBALANCED
5	6	10629	TEE-SEAL
4	5	10273 P00-5209	CAGE
3	2	10431	MUFFLER, 3/8 NPT
2	2	10017 V04-1005	2-WAY AIR VLV ASSY
1	2	SO-006B7	O-RING

ITEM	QTY	PART NUMBER	DESCRIPTION
30	4	10695 M04-1002	CHK VALVE, 2203B-1
29	8	5/16-18 x 4.50	ISCR, SOC HD CAP
28	8	10393	HI COLLAR W/SHR, 5/16
27	1	10016 P30-5202	AIR REGULATOR ASSY
26	1	10873 P30-5201	BODY, AIR AMP
25	2	10886 M03-1008	VARISEAL, $\phi$ 0.625 ID
24	2	10645 M03-1031	SLYD RING, $\phi$ 0.625 ID
23	1	10616 P30-5202	SHAFT
22	2	SO-905B7	O-RING
21	2	SO-233B7	O-RING
20	2	10377	GLYD RING, $\phi$ 3.38
19	2	10479 P00-5204	AIR PISTON
18	2	10439	NUT, FLEX-LOC, 1/2-20
17	2	10111 P12-5202	AIR CYL BODY
16	4	10334 P00-5205	AIR BODY GASKET
15	1	10282 P30-5601	CK VALVE CAP, HI
14	1	10299 P00-5208	SPOOL STOP CAP
13	2	10-24 x .50	ISCR, SOC HD CAP
12	1	10271 P00-5212	SHORT BUSHING
11	1	10269 P00-5210	LONG BUSHING

ITEM	QTY	PART NUMBER	DESCRIPTION
43	2	10262 P00-5801	MOUNTING BRACKET
42	4	1/4-20 x .38	BUTT HD CAP SCR
41	2	10-24 x 0.62	SOC HD CAP SCR
40	1	11566 P30-5603	BLOCK, LUNGE VALVE
39	1	11567 P30-5604	GASKET
38	1	11569 V04-1009	2-WAY LUNGE VALVE
37	1	SO-012P7	O-RING
36	1	11753	BK UP RING, SOLID, -.012
35	1	10283 P30-5602	CK VALVE CAP, LO
34	2	10264	BREATHER
33	4	11779	HOLLOW HEX PLUG, -6 SAE
32	4	10605 P00-5603	RETAINER, 0.56 OAL
31	4	SO-012B7	O-RING

ITEM	QTY	PART NUMBER	DESCRIPTION
53	1	10298 P00-5207	PILOT PISTON CAP
52	1	SO-019B7	O-RING
51	1	SO-111B7	O-RING
50	1	10659 P00-5209	AIR SPOOL, UNBALANCED
49	1	10629	TEE-SEAL
48	1	10431	MUFFLER, 3/8 NPT
47	1	10017 V04-1005	2-WAY AIR VLV ASSY
46	1	SO-006B7	O-RING

ASSEMBLY PART NUMBER: 11197

REV: L

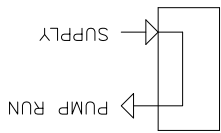
SCALE: 1/2  
 DWN BY: WNI  
 DATE: 10/2/98  
 SH: 1 OF 2

TITLE: ASSEMBLY;  
 AA-54 2:1 AIR AMPLIFIER  
 REF: UNBALANCED AIR SPOOL  
 DWG NO: P.30-1001

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NOTES

- 1 PORT 3 IS COMMON TO PORT 2.  
CONNECT PORT 3 TO REMOTE AIR PILOT OPERATED HYDRAULIC RELEASE VALVE
- 2 MOUNTING SCREWS AND GASKET/O-RINGS ARE FURNISHED FOR EACH OPTION
- 3 ROTATE ADAPTER BLOCK TO MATCH "V" STAMPED ON AIR CAP FOR THE DESIRED FUNCTION

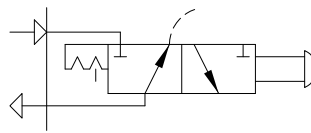


CONTINUOUS  
PUMP RUN

ADAPTER BLOCK  
(STANDARD)

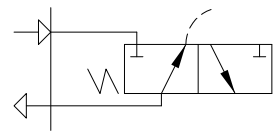
51

PUMP RUN  
REMOTE VALVE  
(1/8 NPT PORTS)



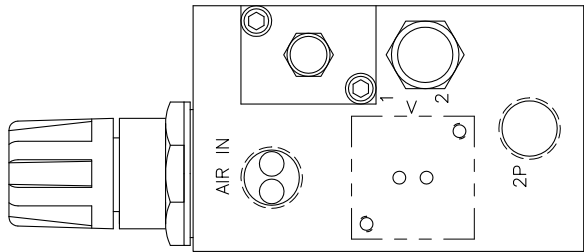
LOCAL MANUAL VALVE  
(OPTION)

54



LOCAL SOLENOID VALVE  
(OPTION)

57



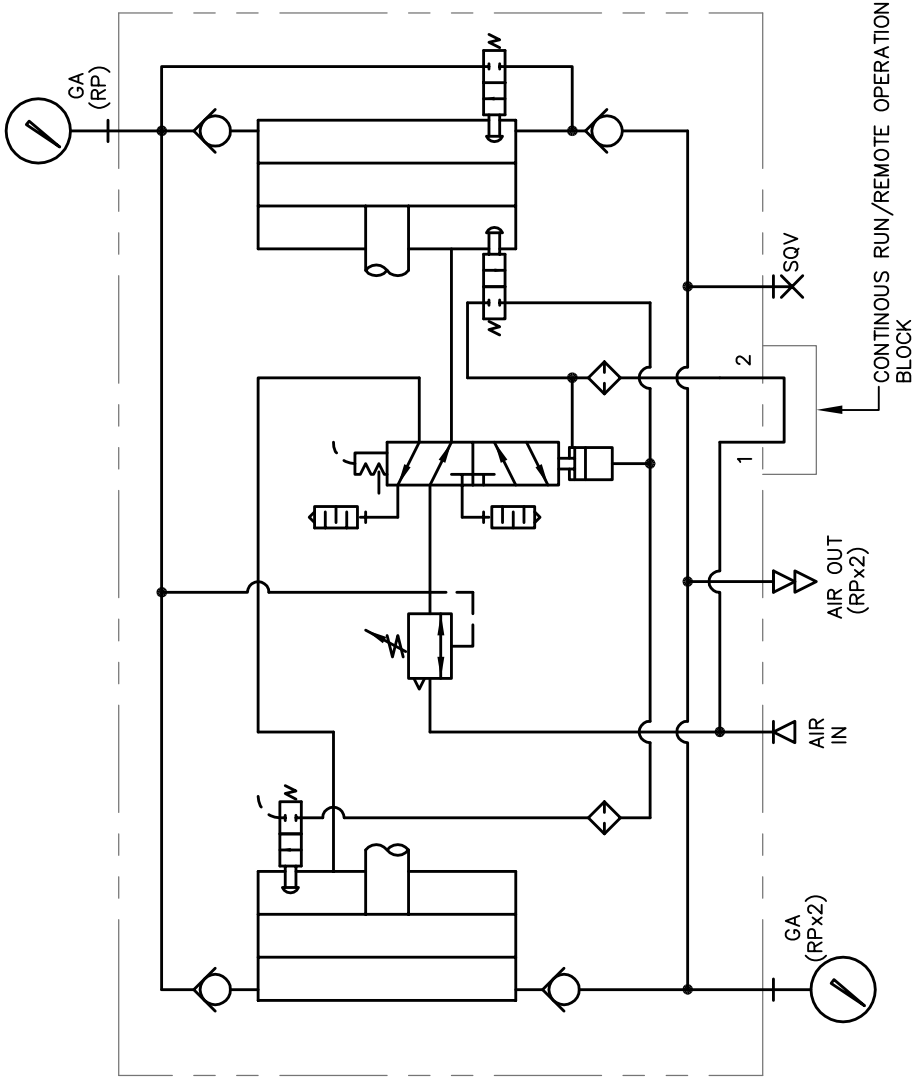
VOLTAGE	ITEM 57 P/N
24 VDC	11837 V04-1003
120 VAC	11838 V04-1003
240 VAC	11919 V04-1003

ITEM	QTY	PART NUMBER	DESCRIPTION
58			
57			SOL AIR VALVE ASSY
56			
55			
54	REF 10449	V04-1002	MAN TOGGLE SWITCH ASSY
53			
52			
51	REF 10100	P00-5206	BLOCK ASSY, ADAPTER
50			

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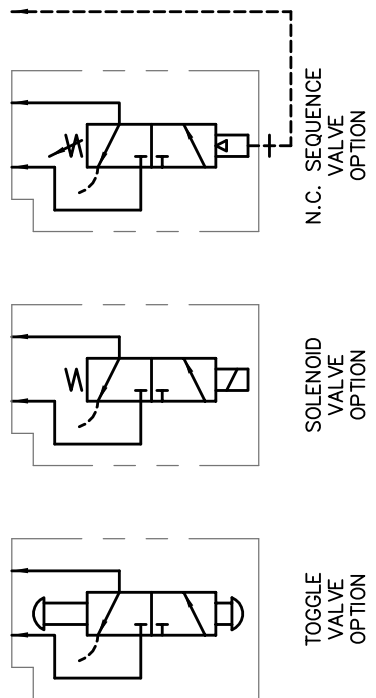
SCALE: HALF	TITLE: ASSEMBLY, AA-54 2:1 AIR AMPLIFIER
DWN BY: WNI	
DATE: 10/2/98	REF: UNBALANCED AIR SPOOL
SHT: 2 OF: 2	DWG NO: P30-1001
	REV: L

REV	DESCRIPTION	BY	DATE
A	DWG NO WAS GA-9711051	WNI	12/11/02
B	ADD LUNGE VALVE	WNI	2/21/04
C	ADD ON/OFF CONTROL OPTIONS	WNI	4/12/06



NOTES  
 1 GAUGES SHOWN ARE OPTIONAL COMPONENTS  
 2 AIR IN AND OUT PORTS: 3/8 NPT  
 GAUGE PORTS: 1/4 NPT  
 SEQUENCE VALVE PILOT PORT: 1/8 NPT

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SCALE: N/A	TITLE: PNEUMATIC SCHEMATIC, AA-54 2:1 AIR AMPLIFIER
DWN BY: TWH	
DATE: 11/14/95	REF:
SHT: 1 OF: 1	DWG NO: P30-4001
	REV: C