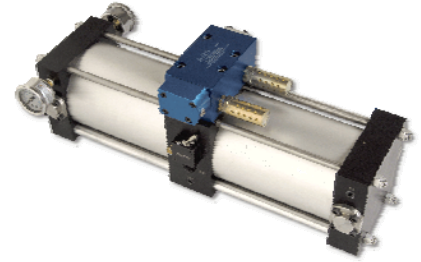


# AA-160 Air Amplifier

## INSTALLATION, OPERATION & MAINTENANCE MANUAL



**INTERFACE DEVICES, INC.** 230 Depot Road, Milford, CT 06460  
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**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 its 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 its sole discretion, may discharge its 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-160 2:1 AIR AMPLIFIER

TABLE OF CONTENTS

1.0 INSTALLATION & OPERATION	PAGE
1.1 Mounting.....	3
1.2 Connections.....	3
1.3 Start-up.....	3
2.0 MAINTAINENCE	
2.1 Routine Maintenance.....	3
2.2 Recommended Spare Parts.....	3
2.3 Troubleshooting.....	4
3.0 DRAWINGS ENCLOSED	
3.1 General Arrangement Drawing.....	5
3.2 Exploded View & Bill of Materials .....	6
3.3 Exploded view: 4-way Cycling Valve.....	7
3.4 Pneumatic Schematic.....	8

## 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 regulated and filtered air supply to the 1/2 NPT "AIR IN" port on the pump (1/2 NPT, or larger size filter/regulator and plumbing. NO Lubricator Is required).

Connect your high pressure circuit to the 1/2 NPT "AIR OUT" port on the pump.

### 1.3 STARTUP:

Starting with the external 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 9), the pilot piston O-ring (item 10) and the T-seals (items 7) every 6 months. Refer to the enclosed 4-way cycling valve assembly drawing.

### 2.2 RECOMMENDED SPARE PARTS\*

QTY	PART NUMBER	DESCRIPTION
1	12894	Kit, 4-Way Air Reciprocation Valve
1	11690	Kit, Seal (All Seals)
3	10017	2-Way Air Valve Assembly

\*Consult your local distributor or IDI for current price and delivery.

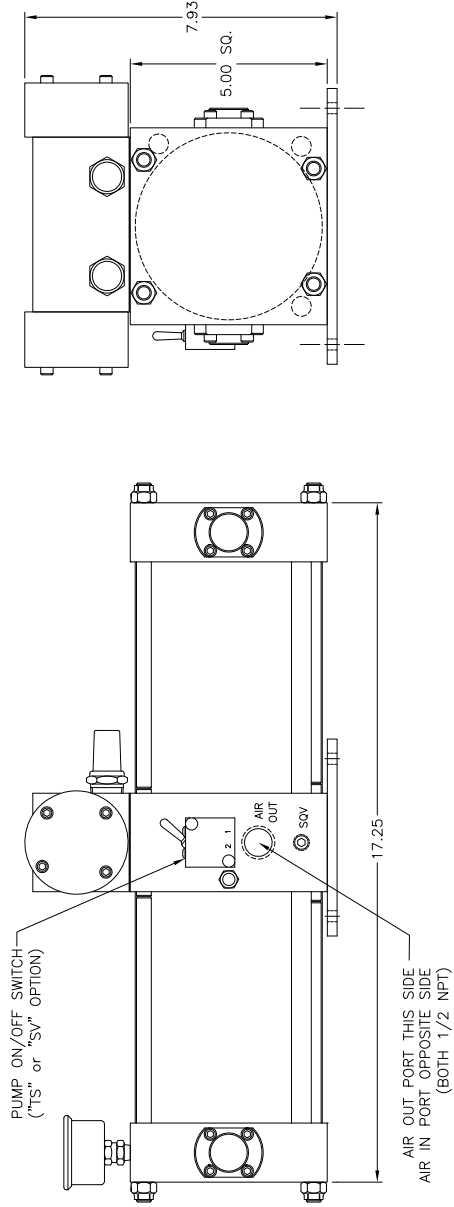
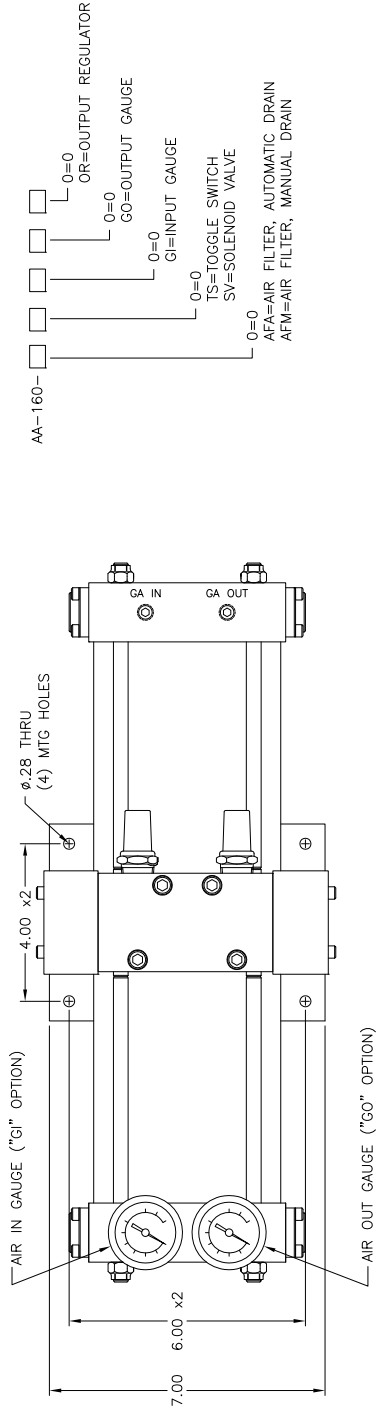
2.3 TROUBLESHOOTING GUIDE:

AA-160, 2:1 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>

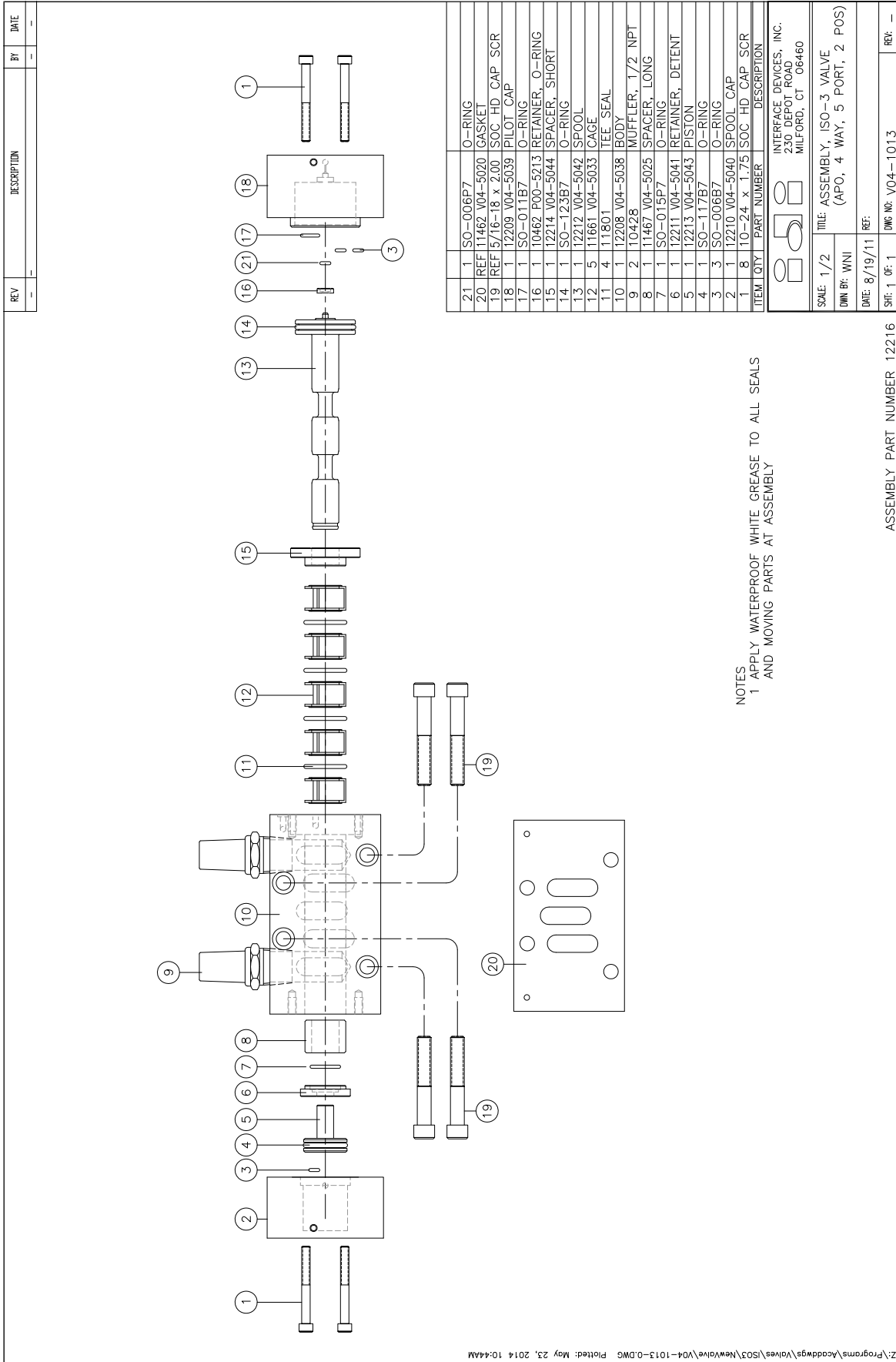
For further assistance call INTERFACE DEVICES, INC. at 203/878-4648.

REV	DESCRIPTION	BY	DATE
A	ADDED PUMP MODEL CODE	WNI	7/26/10
B	PICTURE CHANGE: 7.93 WAS 7.38	WNI	8/29/11
C	ADDED MODEL CODES & BOM	WNI	12/19/14



7	1	11998	OUTPUT REGULATOR 10-250 PSI, 1/2 NPT
6	1	10349 M03-1010	GAUGE, 300 PSI LIQ FILLED
5	1	10349 M03-1010	GAUGE, 160 PSI DRY
4	1	11918 V04-1003	SOL AIR VALVE, 220VAC
		11836 V04-1003	SOL AIR VALVE, 110VAC
		11835 V04-1003	SOL AIR VALVE, 24VDC
3	1	10443 V04-1001	MAN TOGGLE SWITCH
2	1	10100 P00-5206	BLOCK ASSY, ADAPTER
1	1	11196 M04-1022	AIR FILTER, MAN DR
		12051 M04-1022	AIR FILTER, AUTO DR

ITEM QTY	PART NUMBER	DESCRIPTION
		INTERFACE DEVICES, INC. 233 DEPOT ROAD MILFORD, CT 06460
SCALE:	1/4	TITLE: GENERAL ARRANGEMENT, AA-160 2:1 AIR AMPLIFIER
DWN BY:	TWH	DATE: 11/15/04 REF:
SHE: 1	OF: 1	DWG NO: P30-0002
		REV: C



NOTES  
1 APPLY WATERPROOF WHITE GREASE TO ALL SEALS  
AND MOVING PARTS AT ASSEMBLY

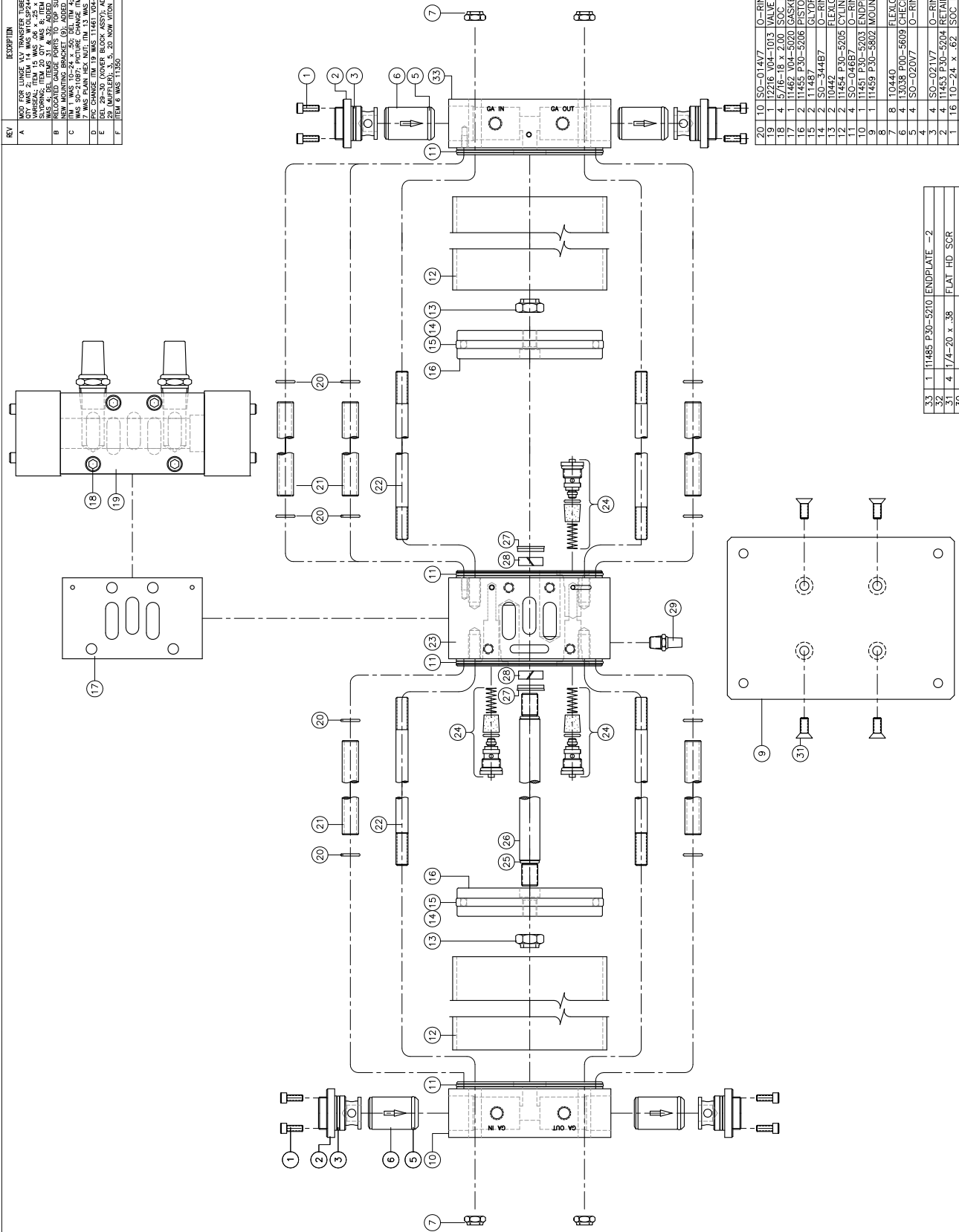
ITEM	QTY	PART NUMBER	DESCRIPTION
21	1	SO-006P7	O-RING
20	REF	11462 V04-5020	GASKET
19	REF	5/16-18 x 2.00	SOC HD CAP SCR
18	1	12209 V04-5039	PILOT CAP
17	1	SO-011B7	O-RING
16	1	10462 P00-5213	RETAINER, O-RING
15	1	12214 V04-5044	SPACER, SHORT
14	1	SO-123B7	O-RING
13	1	12212 V04-5042	SPOOL
12	5	11661 V04-5033	CAGE
11	4	11801	TEE SEAL
10	1	12208 V04-5038	BODY
9	2	10428	MUFFLER, 1/2 NPT
8	1	11467 V04-5025	SPACER, LONG
7	1	SO-015P7	O-RING
6	1	12211 V04-5041	RETAINER, DETENT
5	1	12213 V04-5043	PISTON
4	1	SO-117B7	O-RING
3	3	SO-006B7	O-RING
2	1	12210 V04-5040	SPOOL CAP
1	8	10-24 x 1.75	SOC HD CAP SCR

REV	DESCRIPTION	BY	DATE

SCALE: 1/2	TITLE: ASSEMBLY, ISO-3 VALVE
DWG BR: WNI	(APO, 4 WAY, 5 PORT, 2 POS)
DATE: 8/19/11	REF:
SHEET 1 OF 1	DWG NO: V04-1013
ASSEMBLY PART NUMBER: 12216	REV: --

REV	DESCRIPTION	BY	DATE
A	ADD FOUR LINSE VLV TRANSFER TUBE. ITEM 10 QTY WAS 2. ITEM 14 WAS W/CLP244-129 SILVERING. ITEM 20 QTY WAS 8. ITEM 21 QTY WAS 16. ITEM 22 QTY WAS 32. RELOCATED O-RING PARTS TO TOP SURFACE.	WNI	9/13/04
B	NEW MOUNTING BRACKET (9) ADDED. SET 31 WAS 50-2 1/8" PICTURE CHANGE. ITEM 6, 10, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100.	WNI	11/17/04
C	WAS 50-2 1/8" PICTURE CHANGE. ITEM 6, 10, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100.	WNI	12/20/04
D	WAS 50-2 1/8" PICTURE CHANGE. ITEM 6, 10, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100.	WNI	5/29/11
E	DEL 29-30 (COVER BLOCK ASSY). ADD NEW 29 (MUFFLER), 3, 5, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100.	WNI	1/29/12
F	ITEM 6 WAS 11455.	WNI	8/21/16



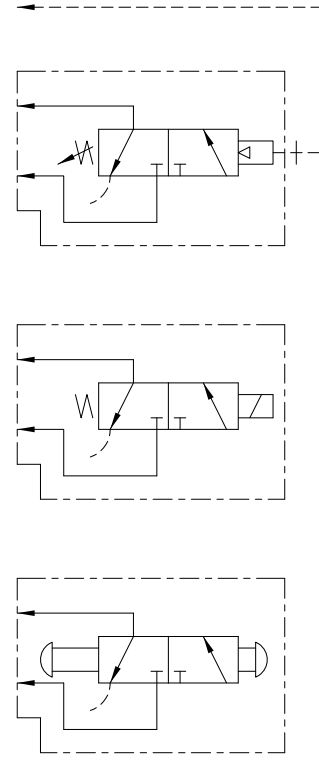
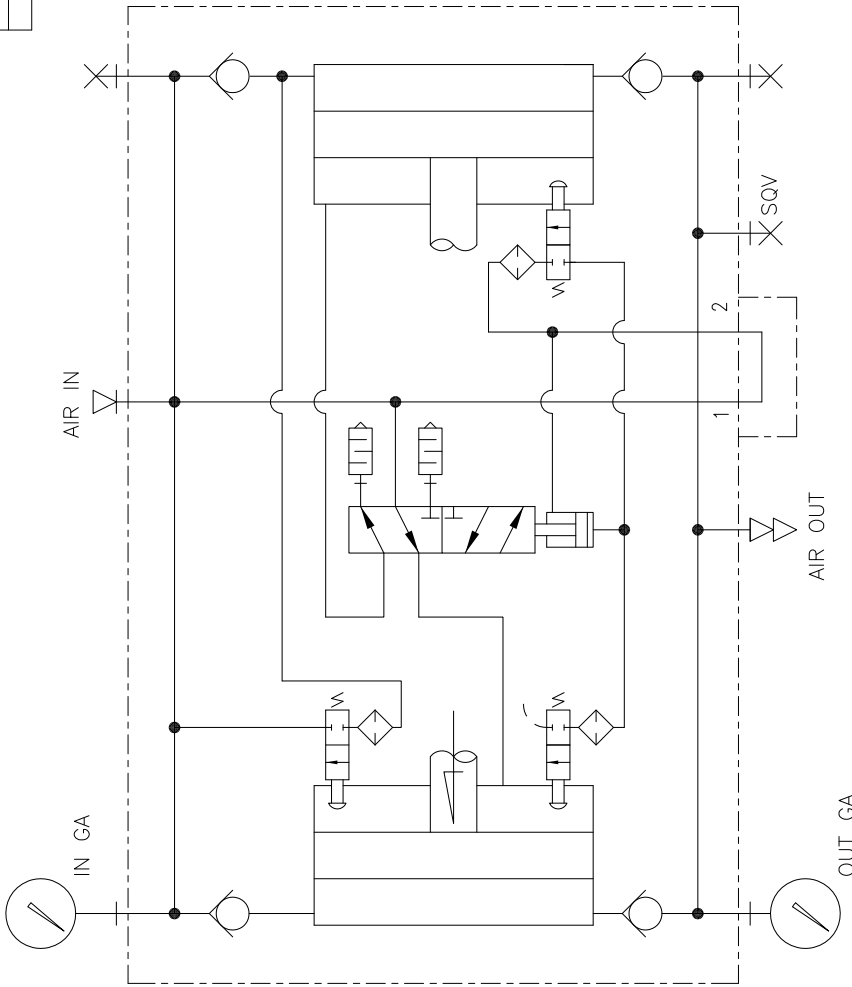
20	10	SO-014V7	O-RING
19	1	1216 V04-1013	VALVE ASSY ISO-3 APO
18	4	5/16-18 x 2.00	SOC HD CAP SCR
17	1	11462 V04-5020	GASKET
16	2	11455 P30-5205	PISTON
15	2	11487	GLYDRING
14	2	SO-0244E7	O-RING
13	2	SO-021V7	O-RING
12	2	11454 P30-5205	CYLINDER TUBE
11	4	SO-046B7	O-RING
10	1	11451 P30-5203	ENDPLATE -1
9	1	11459 P30-5802	MOUNTING BRACKET
8	10440	ELEV OC NUT 3/8-24	
6	4	13038 P00-5609	CHECK VALVE
5	4	SO-020V7	O-RING
4	4	SO-021V7	O-RING
3	4	11453 P30-5204	RETAINER, CHECK VLV
2	16	10-24 x .62	SOC HD CAP SCR
ITEM QTY PART NUMBER DESCRIPTION			
MORSE ENGINE CO. INC.			
230 0901 00A			
MUNOOL CT 06460			
THE ASSEMBLY,			
LARGE AIR AMP			
DWE 11/21/03 REF.			
961 06-1			
DWE NO: P30-1002			
REV: F			

33	1	11485 P30-5210	ENDPLATE -2
32	1	11486 P30-5207	PROD
31	4	1/4-20 x .38	FLAT HD SCR
30	1	10430	MUFFLER, 1/8 NPT
29	2	10645	SLYDRING
28	2	10666 M03-1008	VARISEAL
27	1	11459 P30-5207	PROD
26	2	SO-021V7	O-RING
25	3	10017 V04-1005	VALVE ASSY, 2-WAY
24	3	11450 P30-5401	CENTERPLATE
23	8	11458 P30-5208	STUD
22	5	11457 P30-5208	TRANSFER TUBE
ITEM QTY PART NUMBER DESCRIPTION			

NOTES:  
1 LIGHTLY APPLY WATERPROOF WHITE GREASE TO ALL SEALS AND MATING PARTS

ASSEMBLY PART NUMBER 11452

REV	DESCRIPTION	BY	DATE
-		-	-



		INTERFACE DEVICES, INC. 230 DEPOT ROAD MILFORD, CT 06460
SCALE: N/A	TITLE: PNEUMATIC SCHEMATIC, AA-160 2:1 AIR AMPLIFIER	
DWN BY: TWH		
DATE: 6/17/04	REF: UNBAL AIR SPOOL	
SHT: 1 OF: 1	DWG NO: P30-4002	REV: -