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.
GA-160 GAS 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 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 source media to be pumped to 1/2 NPT "GAS IN" Ports.

Connect your destination media circuit to the 1/2 NPT "OUT" Port located in the center section of the pump.

1.3 STARTUP:

Note: With the source media supply turned on, it will free-flow through the pump to the destination port, with a slight pressure drop due to the cracking pressure of the internal check valves.

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 building pressure of destination media as it does so.

The pump will stall when circuit pressure reaches the sum of the regulated drive pressure and the inlet media 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*

<table>
<thead>
<tr>
<th>QTY</th>
<th>PART NUMBER</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>12894</td>
<td>Kit, 4-Way Air Reciprocation Valve</td>
</tr>
<tr>
<td>1</td>
<td>11690</td>
<td>Kit, Seal (All Seals)</td>
</tr>
<tr>
<td>3</td>
<td>10017</td>
<td>2-Way Air Valve Assembly</td>
</tr>
</tbody>
</table>

*Consult your local distributor or IDI for current price and delivery.
# 2.3 TROUBLESHOOTING GUIDE:

## GA-160, GAS AMPLIFIER TROUBLESHOOTING GUIDE
(Refer to enclosed Exploded View Drawings)

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

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