GETZ EQUIPMENT INNOVATORS

HALON 1211 RECOVERY / RECHARGE SYSTEM

MODEL HR-1L

PART NUMBER: 59304

OPERATIONS MANUAL

(Revised 5/29/18)
Limited Warranty

Products manufactured by Getz Equipment Innovators (with exception of electrical products or components) will be free from defects for a period of one year from shipment date. Electrical products and/or components used in manufactured products will have a (6) month warranty from shipment date. During the warranty period, customers who experience any manufacture-related service issues with our products, the product may be returned for repair or replacement. Customer must contact Getz Equipment for approval prior to any product return. Notwithstanding the foregoing, the limited warranty set forth shall be immediately void of customer uses any replacement parts other than those provided by Getz Equipment Innovators. The warranty does not cover normal wear and tear items, defects resulting from modification, alteration, misuse, exposure to corrosive conditions, extremely high temperatures, improper installation or maintenance. Warranties on component items not manufactured by Getz Equipment Innovators are provided by others whose warranty, evaluation and judgment will be final.

All implied warranties, including, but not limited to, warranties of fitness for purpose and merchantability, are limited to the time periods as stated above. In no event shall Getz Equipment Innovators be liable to incidental or consequential damages. Some states do not allow limitations on how long an implied warranty lasts or the exclusions or limitation of incidental or consequential damages, so that the above limitations or exclusions may not apply to you. Getz Equipment Innovators neither assumes nor authorizes any representative or other person to assume for it any obligation or liability other than as expressly set forth herein.

Mobile Service Vehicles:
The warranty does not cover:

- Defects in the chassis and or power unit
- Defects in separately manufactured products not produced by Getz Equipment Innovators
- Deterioration due to normal wear, tear, and exposure
- Repairs made necessary by negligent use, misuse, abuse, loading the service vehicle beyond its gross vehicle weight limitations, accident, acts of God, or other contingencies beyond the control of Getz Equipment Innovators.
- Repairs deemed necessary by reason of the failure to follow ordinary maintenance procedures.
- Repairs deemed necessary by reason of alterations done without Getz Equipment Innovators’ written approval.

Warranty Service: All warranty repairs will be performed by Getz Equipment Innovators in Pekin, IL, unless otherwise authorized by Getz Equipment Innovators.

Freight: Getz Equipment Innovators will not be liable for shipping or transportation charges to or from customer’s location.

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state. To obtain performance to the obligation of the warranty, write to Getz Equipment Innovators, 2320 Lakecrest Drive, Pekin IL 61554, USA for instructions.
# MODEL HR-1L HALON 1211 RECOVERY/RECHARGE SYSTEM

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MODEL HR-1L HALON 1211 RECOVERY/RECHARGE SYSTEM

BASIC SYSTEM BILL OF MATERIALS:

RECEIVER TANK WITH DUAL PORT VALVE
RECEIVER TANK GAUGE ASSEMBLY
AIR POWERED HALON 1211 PUMP
CONTROL CONSOLE AND STAND
REQUIRED HOSES AND ADAPTERS

OPTIONAL EQUIPMENT:

PART #52402     AIR COMPRESSOR 5 HORSEPOWER
PART #52456     AIR COMPRESSOR 10 HORSEPOWER
PART #53147     DIGITAL SCALE (0 TO 150 LBS. CAPACITY)
PART #51775     BENCH DIAL SCALE (0 TO 100 LBS. CAPACITY)
PART #51472     HALON LEAK DETECTOR
MODEL HR-1L HALON 1211 RECOVERY/RECHARGE SYSTEM

SYSTEM OPERATION REQUIREMENTS:

1. AIR COMPRESSOR DELIVERING 65 - 80 PSI AT 13 CFM MINIMUM.
   
   NOTE: CUSTOMER SUPPLIED AIR COMPRESSOR MUST HAVE AN ADJUSTABLE PRESSURE REGULATOR AND AN AIR LINE FROM COMPRESSOR TO THE HR-1 SYSTEM.

2. WEIGHING SCALE - DIGITAL OR MECHANICAL CAPACITY - 0 TO 200 LB. OR LARGER

3. HALON 1211 LIQUID BULK SUPPLY
   (CUSTOMER MUST SUPPLY 40 LBS. OF LIQUID HALON 1211 TO SYSTEM RECEIVER TANK FOR INITIAL SET-UP)

4. NITROGEN CYLINDER WITH VALVE AND REGULATOR
   (CUSTOMER MUST SUPPLY A NITROGEN SOURCE FOR INITIAL SET-UP)
   
   NOTE: NITROGEN MUST BE A MINIMUM OF -70 DEGREES FAHRENHEIT DEW POINT

5. SCALE STAND OR BENCH TOP

AREA REQUIRED:

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<thead>
<tr>
<th>DEPTH</th>
<th>WIDTH</th>
<th>HEIGHT</th>
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<tr>
<td>3 FT.</td>
<td>7 FT.</td>
<td>5 FT.</td>
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<tr>
<th>WEIGHT</th>
<th>DIMENSIONS</th>
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<tr>
<td>100 LBS.</td>
<td>24&quot; D x 35&quot; W x 40&quot; H</td>
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<tr>
<td>220 LBS.</td>
<td>24&quot; D x 35&quot; W x 40&quot; H</td>
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<tr>
<td>64 LBS.</td>
<td>14&quot; D x 14&quot; W x 41&quot; H</td>
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<tr>
<td>20 LBS.</td>
<td>18&quot; D x 18&quot; W x 19&quot; H</td>
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<tr>
<td>120 LBS.</td>
<td>19&quot; D x 23&quot; W x 14&quot; H</td>
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MODEL HR-1L HALON 1211 RECOVERY/RECHARGE SYSTEM

SYSTEM SPECIFICATIONS:

VACUUM - 28 INCHES MAXIMUM
SYSTEM PRESSURE - 250 PSI MAXIMUM
HALON LIQUID PER MINUTE - 16.5 LBS. MAXIMUM
MOISTURE EYE - 20 PPM (GREEN = DRY) 65 PPM (YELLOW = WET)
FILTERS - 15 MICRONS PARTICULATE MATTER 5 PPM MOISTURE
RECEIVER TANK - MAXIMUM PRESSURE NOT TO EXCEED 240 PSI

SYSTEM CAPABILITIES:

RECOVER HALON 1211 LIQUID AND VAPOR FROM EXTINGUISHERS
RECOVER NITROGEN FROM EXTINGUISHERS
RECHARGE LIQUID HALON 1211, VAPOR AND NITROGEN TO EXTINGUISHERS
TRANSFER LIQUID HALON 1211 FROM BULK STORAGE CYLINDERS TO EXTINGUISHERS
RECOVER AT A MINIMUM 99% EFFICIENCY RATE
DETECT MOISTURE IN HALON 1211
FILTER MOISTURE DOWN TO 5 PPM
FILTER PARTICULATE MATTER DOWN TO 15 MICRONS
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<td>30. (RESERVED)</td>
</tr>
<tr>
<td>4. SELECTOR VALVE – 1G51922</td>
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<td>34. 1/4&quot; GREEN BALL VALVE (NITROGEN) – 1G51898</td>
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<td>8. DUAL PORT VALVE – 1G51918</td>
<td>35. FEMALE SWIVEL ASSEMBLY – 1G51006</td>
</tr>
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<td>9. ADAPTER ASSEMBLY – 3G59076</td>
<td>36. MALE NIPPLE – 1G51227</td>
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<td>38. EXTINGUISHER ADAPTER (AMEREX, BADGER, GENERAL OLD KIDDE, MAP, PEM ALL),</td>
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<tr>
<td>12. RECEIVER TANK PRESSURE GAUGE – 1G0453</td>
<td>39. EXTINGUISHER ADAPTER (ALL ANSUL SENTRY EXCEPT 2 ½ LB.),</td>
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<tr>
<td>13. ADAPTER ASSEMBLY – 1G0452</td>
<td>40. EXTINGUISHER ADAPTER (AMEREX, BADGER, GENERAL, MAP, PEM ALL, POWER PAK, R.C., STRIKE, STOP-FIRE, OLD BUCKEYE)</td>
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<tr>
<td>14. 1/4&quot; RED BALL VALVE (VAPOR) – 1G51898</td>
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<td>21. 1/4&quot; BLUE BALL VALVE (LIQUID) – 1G51898</td>
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<td>22. FILTER SHELL – 1G0416</td>
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<td>23. BOLTS – 1G0416</td>
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<td>24. FILTER HOUSING – 1G0416</td>
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<td>26. LIQUID SUPPLY HOSE ASSEMBLY – 3G59198</td>
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MODEL HR-1L HALON 1211 RECOVERY/RECHARGE SYSTEM

SET-UP PROCEDURE:

1. AFTER ALL CARTONS AND BOXES HAVE BEEN OPENED AND ALL PARTS AND COMPONENTS UNWRAPPED, LAY OUT ALL ITEMS FOR EASE OF ASSEMBLY. CAREFULLY CHECK ALL PARTS FOR EVIDENCE OF CONCEALED DAMAGE. NOTIFY THE DELIVERING CARRIER IMMEDIATELY IF ANYTHING APPEARS TO HAVE SHIPPING DAMAGE.


3. INSTALL ADAPTER ASSEMBLY (ITEM 9) TURNING CLOCKWISE, TO THREADED VALVE PORT ACROSS FROM BLUE HANDWHEEL MARKED "LIQUID". TIGHTEN SECURELY.

4. INSTALL ADAPTER ASSEMBLY (ITEM 13) TURNING CLOCKWISE, TO THREADED VALVE PORT ACROSS FROM RED HANDWHEEL MARKED "VAPOR". TIGHTEN SECURELY.

5. INSTALL FEMALE SWIVEL ASSEMBLY (ITEM 35) TO THE MALE NIPPLE (ITEM 36) ON ADAPTER ASSEMBLY (ITEM 13). TIGHTEN SECURELY.

6. CONNECT FEMALE QUICK COUPLER (ITEM 17) TO MALE QUICK CONNECT (ITEM 33) AND CONNECT FEMALE QUICK COUPLER (ITEM 7) TO MALE QUICK CONNECT ON ADAPTER ASSEMBLY (ITEM 9).

7. LOCATE THE NITROGEN SUPPLY HOSE ASSEMBLY (ITEM 29) AND CONNECT THE FEMALE QUICK COUPLER (ITEM 15) TO THE MALE QUICK CONNECT (ITEM 16). ATTACH THE 1/4" NPT MALE HOSE COUPLING ON THE NITROGEN SUPPLY HOSE ASSEMBLY (ITEM 29) TO THE REGULATOR ON YOUR NITROGEN SUPPLY CYLINDER. THE NITROGEN REGULATOR MUST BE SET TO ZERO (0) PSI OUTPUT PRESSURE DURING ASSEMBLY.

8. TURN PUMP VALVE (ITEM 5) ON THE CONTROL CONSOLE (ITEM 28) TO THE OFF POSITION. TURN THE LIQUID/VAPOR VALVE (ITEM 6) ON THE CONTROL CONSOLE TO THE LIQUID POSITION. CONNECT THE 1/4" NPT MALE QUICK CONNECT (ITEM 42) TO YOUR AIR COMPRESSOR REGULATOR. SET REGULATOR TO 65 PSI.

   NOTE: IF THE COMPRESSOR WAS PURCHASED FROM GETZ MFG., INSERT AIR COMPRESSOR POWER SUPPLY CORD INTO A FUSED POWER SUPPLY RECEPTACLE OF AT LEAST 25 AMPS. THE COMPRESSOR WILL CYCLE ON AND OFF IN THE INITIAL SET-UP. THIS IS NORMAL.

9. PLACE YOUR SCALE (MINIMUM CAPACITY 200 LBS.) TO THE LEFT HAND SIDE OF THE CONTROL CONSOLE.
SET-UP PROCEDURE: (CONT.)

10. PLACE THE RECEIVER TANK (ITEM 18) ON THE SCALE AND LOCATE YOUR HALON 1211 BULK LIQUID SUPPLY CYLINDER TO THE RIGHT HAND SIDE OF THE CONTROL CONSOLE. YOUR HALON 1211 SUPPLY CYLINDER SHOULD BE PRESSURIZED WITH NITROGEN TO APPROXIMATELY 60 PSI.

11. INSTALL THE BULK HALON 1211 LIQUID FILL ADAPTER ASSEMBLY (ITEM 37) TO THE LIQUID SUPPLY PORT ON YOUR HALON 1211 BULK SUPPLY CYLINDER. TIGHTEN SECURELY.

12. CONNECT THE FEMALE QUICK COUPLER (ITEM 20) ON THE DUAL HOSE ASSEMBLY (ITEM 25) TO THE FILL ADAPTER ASSEMBLY (ITEM 37) ON THE LIQUID SUPPLY PORT OF YOUR HALON 1211 BULK SUPPLY CYLINDER.

13. TURN THE SELECTOR VALVE (ITEM 4) ON THE CONTROL CONSOLE TO THE RECEIVER POSITION AND THE LIQUID/VAPOR VALVE (ITEM 6) ON THE CONTROL CONSOLE TO THE LIQUID POSITION.


15. IF YOU ARE USING A DIGITAL SCALE, "TARE" CYLINDER WEIGHT OF THE RECEIVER TANK (ITEM 18). FOR A MECHANICAL SCALE, NOTE THE EMPTY WEIGHT.

16. OPEN THE 1/4" BLUE BALL VALVE (ITEM 21) ON THE DUAL HOSE ASSEMBLY (ITEM 25). THE 1/4" RED BALL VALVE (ITEM 19) ON THE DUAL HOSE ASSEMBLY SHOULD BE CLOSED. OPEN LIQUID SUPPLY VALVE ON YOUR HALON 1211 BULK SUPPLY CYLINDER.

17. TURN PUMP VALVE (ITEM 5) ON THE CONTROL CONSOLE TO THE ON POSITION AND TRANSFER APPROXIMATELY 39 LBS. OF HALON 1211 TO THE RECEIVER TANK (ITEM 18).

18. TURN HALON 1211 BULK LIQUID SUPPLY CYLINDER VALVE OFF.

19. ALLOW HALON PUMP TO CYCLE UNTIL THE PRESSURE/VACUUM GAUGE (ITEM 2) READS 20 INCHES OF VACUUM, TURN 1/4" BLUE BALL VALVE (ITEM 21) AND PUMP VALVE (ITEM 5) TO THE OFF POSITION.

20. DISCONNECT THE FEMALE QUICK CONNECT (ITEM 20) FROM THE HALON 1211 BULK LIQUID FILL ADAPTER ASSEMBLY (ITEM 37).

21. REMOVE RECEIVER TANK (ITEM 18) FROM SCALE AND PLACE SCALE ON YOUR WORKBENCH OR SCALE STAND.

22. REFER TO "PROCEDURE FOR ADDING NITROGEN TO RECEIVER TANK" (PAGE 10).

23. PROCEED TO THE NEXT OPERATING PROCEDURE OR CLOSE ALL VALVES.
MODEL HR-1L HALON 1211 RECOVERY/RECHARGE SYSTEM

RECOVERY PROCEDURE:

1. REMOVE NOZZLE OR HOSE ASSEMBLY FROM EXTINGUISHER VALVE AND INSTALL PROPER RECHARGE ADAPTER, TIGHTENING SECURELY. CONNECT THE FEMALE QUICK COUPLER (ITEM 20) TO THE EXTINGUISHER RECHARGE ADAPTER AND PLACE EXTINGUISHER (ITEM 32) ON THE SCALE PLATFORM.

2. LOCATE DUAL PORT VALVE (ITEM 8) ON THE RECEIVER TANK, FULLY OPEN THE BLUE HANDWHEEL (ITEM 10). TURN THE SELECTOR VALVE (ITEM 4) ON THE CONTROL CONSOLE TO THE RECEIVER POSITION.

3. LOCATE THE TWO (2) 1/4" BALL VALVES (ITEMS 19 & 21) ON THE DUAL HOSE ASSEMBLY (ITEM 25). BLUE BALL VALVE (ITEM 21) MUST BE IN OPEN POSITION AND RED BALL VALVE (ITEM 19) MUST BE IN CLOSED POSITION. THE 1/4" RED BALL VALVE (ITEM 14) MUST BE IN THE CLOSED POSITION.

4. LOCATE THE LIQUID/VAPOR VALVE (ITEM 6) ON THE CONTROL CONSOLE AND TURN THE HANDLE TO THE LIQUID POSITION.

5. WHILE WATCHING THE CLEAR GLASS MOISTURE INDICATOR (ITEM 1), DEPRESS THE VALVE LEVER ON THE EXTINGUISHER (ITEM 32) AND LOCK OPEN WITH A SUITABLE CLAMPING DEVICE. IF THE LIQUID FLOWING THROUGH THE INDICATOR IS ANYTHING OTHER THAN CLEAR, REFER TO THE "RECYCLE PROCEDURE" (PAGE 11).

6. TURN PUMP VALVE (ITEM 5) ON THE CONTROL CONSOLE TO THE ON POSITION AND WATCH THE PRESSURE/VACUUM GAUGE (ITEM 2). WHEN THE PRESSURE/VACUUM GAUGE (ITEM 2) READS 10 PSI, LIFT THE EXTINGUISHER FROM THE SCALE PLATFORM AND SLOWLY ROTATE THE EXTINGUISHER RIGHT SIDE UP TO UPSIDE DOWN. WHEN THE PRESSURE/VACUUM GAUGE (ITEM 2) READS 20 INCHES OF VACUUM OR GREATER WHILE ROTATING THE EXTINGUISHER, RELEASE THE EXTINGUISHER LEVER.

7. TURN PUMP VALVE (ITEM 5) ON THE CONTROL CONSOLE TO THE OFF POSITION. CLOSE 1/4" BLUE BALL VALVE (ITEM 21) AND DISCONNECT THE FEMALE QUICK COUPLER (ITEM 20) FROM THE EXTINGUISHER RECHARGE ADAPTER.

8. OPEN THE RED HANDWHEEL (ITEM 11) ON THE DUAL PORT VALVE (ITEM 8) AND CHECK THE RECEIVER TANK PRESSURE GAUGE (ITEM 12). MAXIMUM RECOMMENDED PRESSURE IN THE RECEIVER TANK IS 100 PSI.

   NOTE: MORE THAN ONE HAND PORTABLE EXTINGUISHER MAY BE RECOVERED. WHEN THE RECEIVER TANK PRESSURE GAUGE (ITEM 12) READS APPROXIMATELY 100 PSI, THE RECEIVER TANK IS FULLY PRESSURIZED AND THE RECOVERY PROCESS IS COMPLETE.

9. YOU MAY CONTINUE THE RECOVERY PROCESS UNTIL THE RECEIVER TANK PRESSURE IS APPROXIMATELY 100 PSI OR YOU HAVE RECOVERED APPROXIMATELY 200 LBS. OF HALON 1211.

   NOTE: WHEN USING THE HALON RECEIVER TANK SUPPLIED WITH THE HR-1 SYSTEM, THE MAXIMUM HALON 1211 CAPACITY IS 250 LBS. AND THE MAXIMUM PRESSURE RATING IS 240 PSI.

10. BEFORE ATTEMPTING TO RECHARGE EXTINGUISHERS WAIT 15 MINUTES. THIS WILL ALLOW THE MOISTURE INDICATOR (ITEM 1) TO REACT IF MOISTURE IS PRESENT IN THE HALON RECEIVER TANK. THE MOISTURE INDICATOR WILL CHANGE FROM GREEN TO YELLOW IF MOISTURE IS PRESENT. IF MOISTURE IS INDICATED, REFER TO THE "RECYCLE PROCEDURE" (PAGE 11).

11. PROCEED TO THE NEXT OPERATING PROCEDURE OR CLOSE ALL VALVES.
MODEL HR-1L HALON RECOVERY/RECHARGE SYSTEM

RECHARGE PROCEDURE:

1. COMPLETE ALL HALON 1211 EXTINGUISHER INTERNAL INSPECTION AND MAINTENANCE PROCEDURES IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. INSTALL PROPER RECHARGE ADAPTER IN THE EXTINGUISHER VALVE. TIGHTEN SECURELY.

2. CONNECT THE DUAL HOSE ASSEMBLY QUICK CONNECT (ITEM 20) TO THE EXTINGUISHER RECHARGE ADAPTER. RECORD EMPTY WEIGHT OF THE EXTINGUISHER TO BE RECHARGED.

3. LOCK THE EXTINGUISHER VALVE LEVER OPEN WITH A CLAMP OR ADJUSTABLE CINCH STRAP. PLACE THE EXTINGUISHER ON THE SCALE PLATFORM. IF YOU ARE USING A DIGITAL SCALE, "TARE" EXTINGUISHER WEIGHT OR FOR A MECHANICAL SCALE, NOTE THE "TARE" WEIGHT.

4. OPEN THE 1/4" BLUE BALL VALVE (ITEM 21) AND TURN SELECTOR VALVE (ITEM 4) ON THE CONTROL CONSOLE TO THE EXTINGUISHER POSITION. OPEN THE RED HANDWHEEL (ITEM 11) AND BLUE HANDWHEEL (ITEM 10) ON THE DUAL PORT VALVE (ITEM 8).

5. TURN PUMP VALVE (ITEM 5) ON THE CONTROL CONSOLE TO THE ON POSITION. CHECK SCALE FOR INCREASED WEIGHT READINGS. AS THE EXTINGUISHER WEIGHT READING APPROACHES WITHIN ONE (1) POUND OF CALCULATED CHARGE WEIGHT, SLOWLY TURN SELECTOR VALVE (ITEM 4) TOWARDS THE OFF POSITION, SLOWING THE FLOW OF THE HALON TO THE EXTINGUISHER. WHEN THE EXTINGUISHER REACHES WITHIN EIGHT (8) OUNCES OF THE CALCULATED CHARGE WEIGHT, TURN THE SELECTOR VALVE (ITEM 4) TO THE OFF POSITION, THEN TURN PUMP VALVE (ITEM 5) TO THE OFF POSITION.

6. CLOSE THE 1/4" BLUE BALL VALVE (ITEM 21) AND OPEN THE 1/4" RED BALL VALVE (ITEM 19) ON THE DUAL HOSE ASSEMBLY (ITEM 25). TURN THE LIQUID/VAPOR VALVE (ITEM 6) ON THE CONTROL CONSOLE TO THE VAPOR POSITION.

7. OPEN THE 1/4" RED BALL VALVE (ITEM 14). TURN THE PUMP VALVE (ITEM 5) TO THE ON POSITION AND WATCH THE EXTINGUISHER PRESSURE GAUGE. WHEN THE EXTINGUISHER PRESSURE GAUGE READS ON THE HIGH SIDE OF THE OPERABLE PRESSURE, TURN THE PUMP VALVE (ITEM 5) TO THE OFF POSITION. SHAKE THE EXTINGUISHER TO MIX THE HALON AND NITROGEN. REPEAT STEP 7 IF PRESSURE DROPS BELOW MANUFACTURER'S RECOMMENDED PRESSURE.

8. CLOSE THE 1/4" RED BALL VALVE (ITEM 19) ON THE DUAL HOSE ASSEMBLY (ITEM 25) AND RELEASE EXTINGUISHER VALVE LEVER.

9. CLOSE THE 1/4" RED BALL VALVE (ITEM 14) AND TURN THE LIQUID/VAPOR VALVE (ITEM 6) TO THE LIQUID POSITION. OPEN THE 1/4" BLUE BALL VALVE (ITEM 21).

10. TURN THE SELECTOR VALVE (ITEM 4) TO THE RECEIVER POSITION. TURN THE PUMP VALVE (ITEM 5) TO THE ON POSITION UNTIL THE PRESSURE/VACUUM GAUGE (ITEM 2) READS 5 INCHES OF VACUUM. TURN THE PUMP VALVE (ITEM 5) TO THE OFF POSITION AND CLOSE THE 1/4" BLUE BALL VALVE (ITEM 21).

11. DISCONNECT THE FEMALE QUICK COUPLER (ITEM 20) FROM THE EXTINGUISHER RECHARGE ADAPTER. LEAK DETECT EXTINGUISHER ACCORDING TO MANUFACTURER'S RECOMMENDATIONS. IF LEAK DETECTING FLUID IS USED, BLOW ALL LIQUID RESIDUE OUT OF THE VALVE AND WIPE EXTINGUISHER TO DRY THE EXTERIOR. REINSTALL THE HOSE OR NOZZLE, SAFETY PULL PIN AND LOCKWIRE SEAL.

12. CONTINUE EXTINGUISHER RECHARGE PROCEDURE, PROCEED TO THE NEXT OPERATING PROCEDURE OR CLOSE ALL VALVES.
PROCEDURE FOR ADDING NITROGEN TO RECEIVER TANK:

1. INSTALL A NITROGEN PRESSURE REGULATOR TO THE SUPPLY VALVE OF YOUR NITROGEN SUPPLY CYLINDER.

2. ATTACH THE 1/4" NPT MALE HOSE COUPLING ON THE NITROGEN SUPPLY HOSE (ITEM 29) TO THE REGULATOR ON YOUR NITROGEN SUPPLY CYLINDER.

3. CONNECT THE FEMALE QUICK COUPLER (ITEM 15) TO THE MALE QUICK CONNECT (ITEM 16). CONNECT THE FEMALE QUICK COUPLER (ITEM 17) TO THE MALE QUICK CONNECT (ITEM 33).

4. SET THE NITROGEN PRESSURE REGULATOR TO ZERO (0) OUTPUT PRESSURE, AND OPEN NITROGEN SUPPLY VALVE ON NITROGEN CYLINDER.

5. SET NITROGEN REGULATOR TO 20 PSI ABOVE READING ON PRESSURE GAUGE (ITEM 12) BUT NOT TO EXCEED 100 PSI. OPTIMUM INITIAL OPERATING PRESSURE FOR THE RECEIVER TANK IS 65 PSI.

6. OPEN RED HANDWHEEL (ITEM 11) ON THE DUAL PORT VALVE (ITEM 8) AND THE 1/4" RED BALL VALVE (ITEM 14).

7. TURN THE SELECTOR VALVE (ITEM 4) ON THE CONTROL CONSOLE TO THE OFF POSITION.

8. OPEN 1/4" GREEN BALL VALVE (ITEM 34) UNTIL THE DESIRED PRESSURE IS REACHED ON THE PRESSURE GAUGE (ITEM 12). SHAKE THE RECEIVER TANK (ITEM 18) TO THOROUGHLY MIX THE NITROGEN WITH THE HALON 1211.

9. CLOSE 1/4" GREEN BALL VALVE (ITEM 34) AND RETURN THE NITROGEN PRESSURE REGULATOR TO ZERO (0) OUTPUT PRESSURE. CLOSE VALVE ON NITROGEN SUPPLY CYLINDER.

10. PROCEED TO THE NEXT OPERATING PROCEDURE OR CLOSE ALL VALVES.
MODEL HR-1L HALON 1211 RECOVERY/RECHARGE SYSTEM

RECYCLE PROCEDURE:

( FOR REMOVAL OF MOISTURE, PARTICULATE AND/OR COLOR )

CAUTION:  IF THE MOISTURE INDICATOR ON THE CONTROL CONSOLE (ITEM 1) IS YELLOW OR THE HALON 1211 IS ANY COLOR EXCEPT CLEAR, THE HALON MUST BE RECYCLED THROUGH THE SYSTEM BEFORE YOU REFILL THE EXTINGUISHER.

1. CLOSE THE 1/4" RED AND BLUE BALL VALVES (ITEMS 19 & 21) ON THE DUAL HOSE ASSEMBLY (ITEM 25).

2. TURN THE SELECTOR VALVE (ITEM 4) ON THE CONTROL CONSOLE TO THE EXTINGUISHER POSITION.

3. TURN THE LIQUID/VAPOR VALVE (ITEM 6) ON THE CONTROL CONSOLE TO THE LIQUID POSITION.

4. LOCATE THE DUAL PORT VALVE (ITEM 8) ON THE RECEIVER TANK (ITEM 18). TURN THE RED AND BLUE HANDWHEELS (ITEMS 10 & 11) TO THE CLOSED POSITION.

5. TURN THE PUMP VALVE (ITEM 5) ON THE CONTROL CONSOLE TO THE ON POSITION AND ALLOW THE SYSTEM TO CYCLE UNTIL THE PRESSURE/VACUUM GAUGE READS 5 INCHES OF VACUUM.

6. WITH THE SYSTEM RECYCLING, REMOVE THE FEMALE QUICK COUPLER (ITEM 17) FROM THE MALE QUICK CONNECT (ITEM 33).

7. CONNECT THE FEMALE QUICK COUPLER (ITEM 20) TO THE MALE QUICK CONNECT (ITEM 33). OPEN THE 1/4" BLUE BALL VALVE (ITEM 21) AND THE 1/4" RED BALL VALVE (ITEM 14).

8. TURN THE RED HANDWHEEL (ITEM 11) AND THE BLUE HANDWHEEL (ITEM 10) ON THE DUAL PORT VALVE (ITEM 8) UNTIL FULLY OPEN.

9. ALLOW THE SYSTEM TO CIRCULATE THE HALON THROUGH THE FILTERS UNTIL THE MOISTURE INDICATOR (ITEM 1) TURNS GREEN OR THE HALON LOOKS CLEAR THROUGH THE MOISTURE INDICATOR GLASS.

   NOTE: REFER TO THE "FILTER REPLACEMENT PROCEDURE" (PAGE 13) IF THE MOISTURE INDICATOR (ITEM 1) DOES NOT CHANGE TO GREEN OR THE COLOR DOES NOT RETURN TO CLEAR WITHIN FOUR HOURS.

10. RECYCLE PROCEDURE IS COMPLETE WHEN MOISTURE EYE (ITEM 1) IS GREEN OR THE HALON IS CLEAR FLOWING THROUGH THE SIGHT GLASS.
RECYCLE PROCEDURE: (CONT.)

11. CLOSE THE BLUE HANDWHEEL (ITEM 10) ON THE DUAL PORT VALVE (ITEM 8) AND ALLOW THE SYSTEM TO CYCLE UNTIL THE PRESSURE/VACUUM GAUGE (ITEM 2) READS 5 INCHES OF VACUUM.

12. CLOSE THE RED HANDWHEEL (ITEM 11) ON THE DUAL PORT VALVE (ITEM 8) AND THE 1/4" RED BALL VALVE (ITEM 14).

13. TURN SELECTOR VALVE (ITEM 4) TO THE RECEIVER POSITION AND ALLOW THE SYSTEM TO CYCLE UNTIL THE PRESSURE/VACUUM GAUGE (ITEM 2) READS 10 INCHES OF VACUUM.

14. CLOSE THE 1/4" BLUE BALL VALVE (ITEM 21) ON THE DUAL HOSE ASSEMBLY (ITEM 25). DISCONNECT THE FEMALE QUICK COUPLER (ITEM 20) FROM THE MALE QUICK CONNECT (ITEM 33) AND CONNECT THE FEMALE QUICK COUPLER (ITEM 17) TO THE MALE QUICK CONNECT (ITEM 33).

15. TURN THE PUMP VALVE (ITEM 5) ON THE CONTROL CONSOLE TO THE OFF POSITION.

16. PROCEED TO THE NEXT OPERATING PROCEDURE OR CLOSE ALL VALVES.
MODEL HR-1L HALON 1211 RECOVERY/RECHARGE SYSTEM

PROCEDURE FOR FILTER REPLACEMENT AND CLEANING BRASS STRAINER:

1. CLOSE THE 1/4" RED AND BLUE BALL VALVES (ITEMS 19 & 21) ON THE DUAL HOSE ASSEMBLY (ITEM 25).
2. TURN THE SELECTOR VALVE (ITEM 4) ON THE CONTROL CONSOLE TO THE RECEIVER POSITION. OPEN THE BLUE AND RED HANDWHEELS (ITEMS 10 & 11) AND THE 1/4" RED BALL VALVE (ITEM 14).
3. TURN THE LIQUID/VAPOR VALVE (ITEM 6) ON THE CONTROL CONSOLE TO THE LIQUID POSITION AND TURN PUMP VALVE (ITEM 5) TO THE ON POSITION.
4. ALLOW THE SYSTEM TO CYCLE FOR 2 MINUTES, THEN CLOSE THE RED HANDWHEEL (ITEM 11) AND THE 1/4" RED BALL VALVE (ITEM 14) UNTIL THE PRESSURE/VACUUM GAUGE (ITEM 2) READS 10 INCHES OF VACUUM.
5. TURN THE PUMP VALVE (ITEM 5) TO THE OFF POSITION AND CLOSE THE BLUE HANDWHEEL (ITEM 10).
   THE RECOVERY SYSTEM MUST BE RELIEVED OF INTERNAL PRESSURE. THIS CAN BE ACCOMPLISHED BY USING TWO OR THREE EMPTY 17 LB. HALON EXTINGUISHERS. CAREFULLY FOLLOW STEPS 6-7-8-9.
6. INSTALL THE PROPER RECHARGE ADAPTER ON ONE EMPTY 17 LB. HALON EXTINGUISHER. CONNECT THE FEMALE QUICK COUPLER (ITEM 20) ON THE DUAL HOSE ASSEMBLY (ITEM 25) TO THE EXTINGUISHER RECHARGE ADAPTER AND LOCK THE EXTINGUISHER VALVE OPEN WITH A CLAMP OR ADJUSTABLE CINCH STRAP.
7. OPEN THE 1/4" BLUE BALL VALVE (ITEM 21) ON THE DUAL HOSE ASSEMBLY (ITEM 25) AND TURN THE SELECTOR VALVE (ITEM 4) TO THE EXTINGUISHER POSITION.
8. LEAVE THE EXTINGUISHER CONNECTED TO THE HR-1 SYSTEM UNTIL THE DISCHARGE PRESSURE GAUGE (ITEM 3) ON THE CONTROL CONSOLE STOPS DECREASING IN PRESSURE.
9. RELEASE THE EXTINGUISHER VALVE LEVER, CLOSE THE 1/4" BLUE BALL VALVE (ITEM 21) ON THE DUAL HOSE ASSEMBLY (ITEM 25). DISCONNECT THE EXTINGUISHER RECHARGE ADAPTER FROM THE FEMALE QUICK COUPLER (ITEM 20). CONNECT ANOTHER EMPTY EXTINGUISHER. REPEAT PROCESS (STEPS 6-7-8-9) UNTIL THE DISCHARGE PRESSURE GAUGE (ITEM 3) READS ZERO (0) PSI.
10. AFTER ALL PRESSURE HAS BEEN RELIEVED, REMOVE THE BOLTS (ITEM 23) FROM THE FILTER SHELL (ITEM 22). LIFT THE FILTER HOUSING (ITEM 24) AWAY FROM THE FILTER SHELL AND REPLACE FILTER ELEMENT FOLLOWING REPLACEMENT PROCEDURES FOUND ON EACH REPLACEMENT FILTER ELEMENT CANISTER.
11. REMOVE NUT FROM BRASS STRAINER (ITEM 46) AND CLEAN AS NECESSARY.
12. PROCEED TO THE NEXT OPERATING PROCEDURE OR CLOSE ALL VALVES.
MODEL HR-1L HALON 1211 RECOVERY/RECHARGE SYSTEM

RECOMMENDED PERIODIC MAINTENANCE:
(MINIMUM RECOMMENDATIONS - PERFORM MORE FREQUENTLY IF REQUIRED)

1. LUBRICATE ALL MALE QUICK CONNECTS (ITEMS 9, 16 & 33) AND RECHARGE ADAPTERS (ITEM 38, 39, 40 & 41) WITH A LIGHT COAT OF HIGH QUALITY O-RING LUBRICANT WHEN FEMALE QUICK COUPLERS (ITEMS 7, 15, 17 & 20) ARE DIFFICULT TO DISCONNECT.

2. EVERY DAY, EMPTY THE MOISTURE FILTER (ITEM 43).

3. EVERY TWO WEEKS OR EVERY 50 EXTINGUISHERS, REMOVE THE NUT ON THE BRASS STRAINER (ITEM 46) AND CLEAN AS NECESSARY. (REFER TO THE "PROCEDURE FOR FILTER REPLACEMENT AND CLEANING BRASS STRAINER").

4. ONCE PER MONTH, CHECK THE COMPLETE SYSTEM FOR LEAKS (WHILE PERFORMING THE "RECHARGE" OR "RECYCLE" PROCEDURE) USING A HALON LEAK DETECTOR OR LEAK DETECTING FLUID.

CAUTION: IF A LEAK DETECTING FLUID IS UTILIZED, PROPER CARE SHOULD BE OBSERVED TO REMOVE ALL EXCESS FLUID AFTER TESTING.

5. ONCE PER MONTH, RETIGHTEN ALL BOLTS AND NUTS SECURING COMPONENT PARTS TO THE SYSTEM.

6. EVERY THREE (3) MONTHS OR IF PUMP SLOWS WHILE OPERATING, LUBRICATE SPOOL VALVE IN THE HALON PUMP (REFER TO THE "HALON 1211 PUMP OPERATION AND MAINTENANCE MANUAL").

7. ONCE PER YEAR, DISMANTLE THE PUMP. CLEAN AND LUBE THE O-RINGS ON THE AIR DRIVE PISTON (REFER TO PUMP MANUAL).

8. ONCE PER YEAR, CHANGE THE FILTER ELEMENTS (IN ITEM 22). (REFER TO THE "PROCEDURE FOR FILTER REPLACEMENT AND CLEANING BRASS STRAINER").

9. ONCE PER YEAR, HAVE YOUR NITROGEN REGULATOR ON THE NITROGEN SUPPLY CYLINDER CLEANED AND RECALIBRATED.
MODEL HR-1L HALON 1211 RECOVERY/RECHARGE SYSTEM

TROUBLE SHOOTING GUIDE:

PROBLEM: A. HALON FLOWS SLOWLY OR NOT AT ALL THROUGH SYSTEM.

SOLUTION: A. 1. MAKE SURE ALL LIQUID VALVES (BLUE) ARE OPEN AND SELECTOR VALVE IS IN THE PROPER POSITION.

2. CHECK OR CHANGE FILTERS INSIDE OF FILTER HOUSING (ITEM 22) AND CLEAN BRASS STRAINER (ITEM 46). REFER TO PROCEDURE ON PAGE 13.

B. HALON LEAKS FROM FEMALE QUICK COUPLERS (ITEMS 7 - 17 - 20).

B. RELIEVE INTERNAL PRESSURE ON SYSTEM. (REFER TO PROCEDURE ON PAGE 13), REPLACE U-CUP SEAL ON THE INSIDE OF THE QUICK COUPLER OR REPLACE THE FEMALE QUICK COUPLER.

C. PUMP CYCLE IS SLOW.

C. 1. CHECK INCOMING AIR PRESSURE TO SYSTEM - SET AT 65-80 PSI AND 13 CFM MINIMUM.

2. REFER TO SPOOL VALVE LUBRICATING INSTRUCTIONS IN HALON PUMP MAINTENANCE MANUAL. (REFER TO PROCEDURE ON PAGES 18 - 24.

D. PUMP VALVE OR LIQUID/VAPOR VALVE IS LEAKING HALON.

D. INSERT ALLEN WRENCH IN SET SCREW ON THE SIDE OF THE HANDLE AND TURN COUNTER-CLOCKWISE UNTIL HANDLE IS FREE. LIFT HANDLE OFF VALVE AND TIGHTEN SLOTTED PACKING NUT AROUND VALVE STEM SLIGHTLY. REPLACE HANDLE AND RETIGHTEN SET SCREW CLOCKWISE OR REPLACE VALVE.

E. PUMP CYCLES BUT WILL NOT BUILD PRESSURE.

E. REFER TO "OPERATIONS MANUAL" ON THE PROCEDURE YOU ARE PERFORMING AND VERIFY ALL VALVES ARE PROPERLY POSITIONED AND ALL FITTINGS ARE PROPERLY CONNECTED.

F. MOISTURE INDICATOR WILL NOT TURN GREEN OR IS WHITE.

F. 1. REFER TO THE "PROCEDURE FOR FILTER REPLACEMENT AND CLEANING BRASS STRAINER".

2. IF MOISTURE INDICATOR IS WHITE, REPLACE WITH NEW MOISTURE INDICATOR. RELIEVE ALL INTERNAL PRESSURE IN ACCORDANCE WITH PROCEDURE ON PAGE 13.
TROUBLE SHOOTING GUIDE:  (CONT.)

PROBLEMS:  

G.  RED, BLUE OR GREEN BALL VALVES LEAK HALON.  

H.  RELIEF VALVE EXHAUSTS HALON.  

I.  PUMP CYCLES BUT WILL NOT BUILD A VACUUM.  

J.  HALON LEAKS AROUND TANK VALVE ADAPTERS (ITEMS 9 & 13).  

K.  HALON LEAKS OUT OF PUMP.  

L.  EXTINGUISHER BEGINS BUILDING WEIGHT THEN STOPS OR EXTINGUISHER BUILDS PRESSURE BUT LITTLE OR NO WEIGHT.  

M.  EXTINGUISHER IS RECHARGED BUT PRESSURE GAUGE ON EXTINGUISHER DROPS BELOW MANUFACTURER’S RECOMMENDED GAUGE PRESSURE.  

SOLUTIONS:  

G.  REPLACE WITH NEW BALL VALVE/S.  

H.  REFER TO "OPERATIONS MANUAL" ON THE PROCEDURE YOU ARE PERFORMING. VERIFY THAT ALL VALVES ARE IN THE PROPER POSITION AND ALL FITTINGS ARE PROPERLY CONNECTED.  

I.  LEAK TEST THE SYSTEM WITH HALON LEAK DETECTOR, REPAIR LEAKS AS NECESSARY.  

J.  TIGHTEN ADAPTERS OR REPLACE GASKETS IN ADAPTERS.  

K.  REFER TO HALON PUMP MAINTENANCE MANUAL.  

L.  ADD HALON 1211 TO THE RECEIVER TANK AND PRESSURIZE TO APPROXIMATELY 65 PSI. (REFERENCE PROCEDURE ON PAGE 10.)  

M.  ADD NITROGEN TO THE RECEIVER TANK IN ACCORDANCE WITH THE PROCEDURE ON PAGE 10. RECOVER HALON AND RECHARGE THE EXTINGUISHER IN ACCORDANCE WITH APPLICABLE PROCEDURES.
### MODEL HR-1L HALON 1211 RECOVERY/RECHARGE SYSTEM

#### RECOMMENDED SPARE PARTS:

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<td>LIQUID/VAPOR VALVE (3 WAY - BRASS)</td>
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<td>GASKET FOR RECEIVER TANK ADAPTERS</td>
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