



GETZ EQUIPMENT INNOVATORS

HALON 1211 RECOVERY / RECHARGE SYSTEM

MODEL HR-1L

PART NUMBER: 59304

OPERATIONS MANUAL

(Revised 5/29/18)

**U/L LISTING NO. 58X5
MEETS OR EXCEEDS REQUIREMENTS
OF U/L STD. 2006 AND
NFPA 1990 PAMPHLET # 10**

**GETZ EQUIPMENT INNOVATORS
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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:

DEPTH - 3 FT.

WIDTH - 7 FT.

HEIGHT - 5 FT.

	WEIGHT	DIMENSIONS
CONSOLE & STAND	100 LBS.	24" D x 35" W x 40" H
CONSOLE, STAND & COMPRESSOR	220 LBS.	24" D x 35" W x 40" H
RECEIVER TANK	64 LBS.	14" D x 14" W x 41" H
SCALE STAND (OPTIONAL)	20 LBS.	18" D x 18" W x 19" H
COMPRESSOR (OPTIONAL)	120 LBS.	19" D x 23" W x 14" H

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

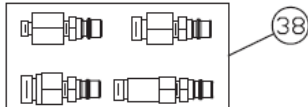
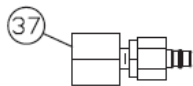
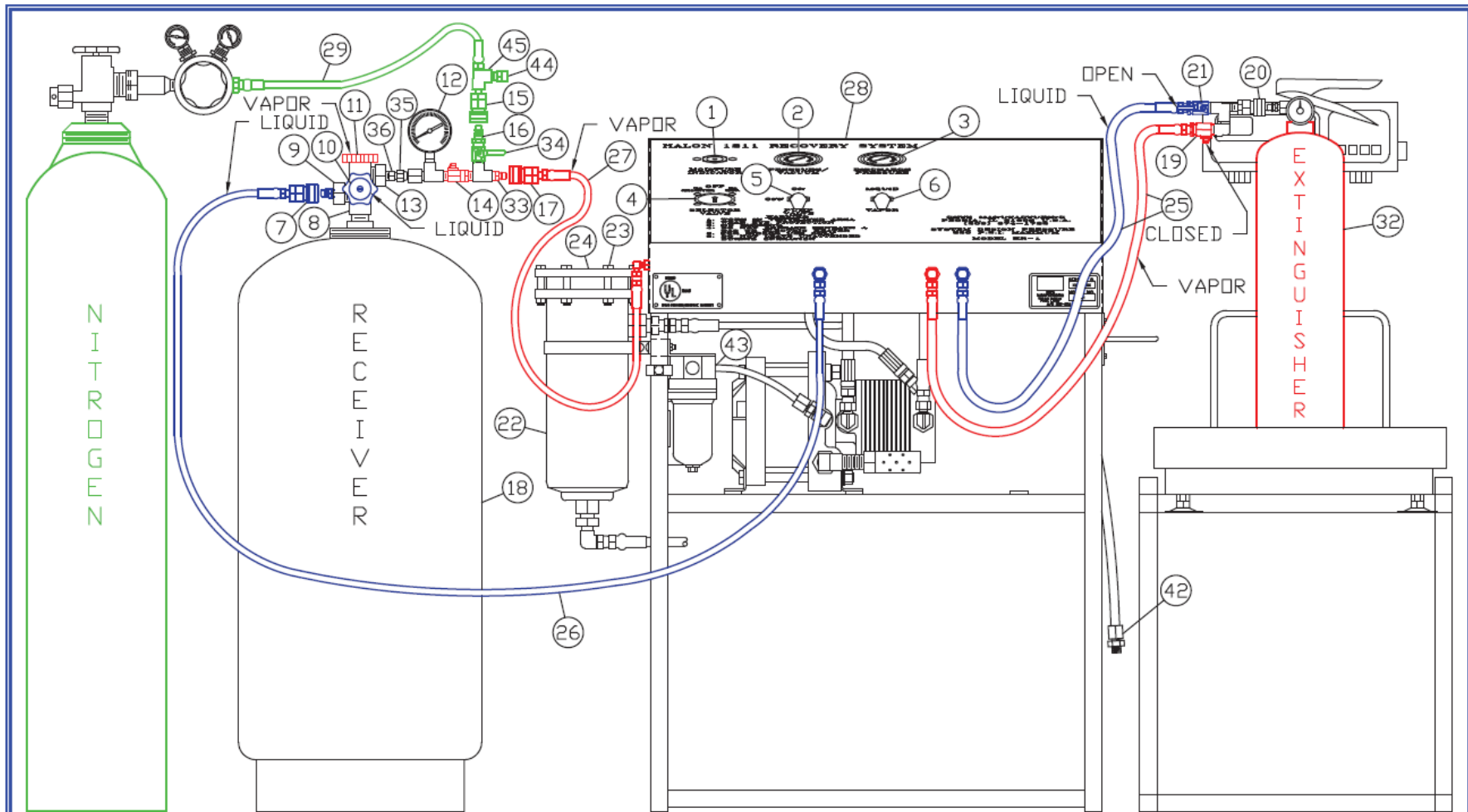
RECOVER AT A MINIMUM 99% EFFICIENCY RATE

DETECT MOISTURE IN HALON 1211

FILTER MOISTURE DOWN TO 5 PPM

FILTER PARTICULATE MATTER DOWN TO 15 MICRONS

MODEL HR-1L HALON 1211 RECOVERY/RECHARGE SYSTEM



PAGE 4 OF HR-1 OPERATIONS MANUAL

B	COMBINED ITEMS 38, 39, 40, & 41			R	M	6/15	MATERIAL		FINISH		GETZ EQUIPMENT INNOVATORS PEKIN, ILLINOIS			BIN NO.		
REV	DRAWING CHANGE			BY	ECN NO.	DATE	DWN BY J.A.L.		CK'D K.L.R.							
TOLERANCES UNLESS OTHERWISE SPECIFIED							SCALE 1/4"=1"		DATE 2-8-95		TITLE HALON 1211 RECOVERY SYSTEM			DWG. NO. 9G58614-M		REV. B
FRAC. ±.020		2 PL DEC ±.010		3 PL DEC ± .003												

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MODEL HR-1L HALON 1211 RECOVERY/RECHARGE SYSTEM

ITEM NUMBERS / DESCRIPTION:

1. MOISTURE INDICATOR – 3G59055
2. PRESSURE / VACUUM GAUGE – 1G0440
3. DISCHARGE PRESSURE GAUGE – 1G0439
4. SELECTOR VALVE – 1G51922
5. PUMP VALVE – 1G51908
6. LIQUID / VAPOR VALVE – 1G51902
7. FEMALE QUICK COUPLER (LIQUID) – 1G0189
8. DUAL PORT VALVE – 1G51918
9. ADAPTER ASSEMBLY – 3G59076
10. BLUE HANDWHEEL (LIQUID) – 1G53736
11. RED HANDWHEEL (VAPOR) – 1G53735
12. RECEIVER TANK PRESSURE GAUGE – 1G0453
13. ADAPTER ASSEMBLY – 1G0452
14. 1/4" RED BALL VALVE (VAPOR) – 1G51898
15. FEMALE QUICK COUPLER (NITROGEN) – 1G0189
16. MALE QUICK CONNECT (NITROGEN) – 1G51658
17. FEMALE QUICK COUPLER (VAPOR) – 1G0189
18. RECEIVER TANK – 2G58624
19. 1/4" RED BALL VALVE (VAPOR) – 1G51898
20. FEMALE QUICK COUPLER (DUAL HOSE ASSEMBLY)
21. 1/4" BLUE BALL VALVE (LIQUID) – 1G51898
22. FILTER SHELL – 1G0416
23. BOLTS – 1G0416
24. FILTER HOUSING – 1G0416
25. DUAL HOSE ASSEMBLY – 3G58939
26. LIQUID SUPPLY HOSE ASSEMBLY – 3G59198
27. VAPOR SUPPLY HOSE ASSEMBLY – 3G59428

ITEM NUMBERS / DESCRIPTION:

28. CONTROL CONSOLE – 1G51245
29. NITROGEN SUPPLY HOSE ASSEMBLY – 3G59676
30. (RESERVED)
31. (RESERVED)
32. HALON 1211 EXTINGUISHER
33. MALE QUICK CONNECT (VAPOR) – 1G51658
34. 1/4" GREEN BALL VALVE (NITROGEN) – 1G51898
35. FEMALE SWIVEL ASSEMBLY – 1G51006
36. MALE NIPPLE – 1G51227
37. BULK HALON 1211 LIQUID FILL ADAPTER ASSEMBLY
38. EXTINGUISHER ADAPTER (AMEREX, BADGER, GENERAL OLD KIDDE, MAP, PEM ALL),
39. EXTINGUISHER ADAPTER (ALL ANSUL SENTRY EXCEPT 2 ½ LB.)
40. EXTINGUISHER ADAPTER (AMEREX, BADGER, GENERAL, MAP, PEM ALL, POWER PAK, R.C., STRIKE, STOP-FIRE, OLD BUCKEYE)
41. EXTINGUISHER ADAPTER (NEW BUCKEYE, PYRONAUTS)
42. MALE QUICK CONNECT (AIR INLET)
43. MOISTURE FILTER – 1G51314
44. PRESSURE RELIEF – 1G51939
45. 1/4" TEE – 1G0428 (3G59676)
46. BRASS STRAINER (LOCATED BEHIND REAR ACCESS COVER) – 3G59106

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.
2. START WITH THE RECEIVER TANK (ITEM 18). REMOVE THE VALVE PROTECTOR CAP AND NOTE THE DUAL PORT VALVE (ITEM 8) ON THE TOP OF THE RECEIVER TANK.
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.

MODEL HR-1L HALON 1211 RECOVERY/RECHARGE SYSTEM

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.
14. CLOSE THE 1/4" BALL VALVES (ITEMS 14 & 34). OPEN THE *BLUE* HANDWHEEL (ITEM 10) AND THE *RED* HANDWHEEL (ITEM 11) ON THE DUAL PORT VALVE (ITEM 8) OF THE RECEIVER TANK.
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*.

MODEL HR-1L HALON 1211 RECOVERY/RECHARGE SYSTEM

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.**

MODEL HR-1L HALON 1211 RECOVERY/RECHARGE SYSTEM

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.
NOTE: THE CONTENTS OF THE EXTINGUISHER/S USED TO RELIEVE THE INTERNAL PRESSURE OF THE HR-1 SYSTEM MAY BE RECLAIMED BY FOLLOWING THE "RECYCLE PROCEDURE" (PAGE 11 & 12).
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.
- B. HALON LEAKS FROM FEMALE QUICK COUPLERS (ITEMS 7 - 17 - 20).
- C. PUMP CYCLE IS SLOW.
- D. PUMP VALVE OR LIQUID/VAPOR VALVE IS LEAKING HALON.
- E. PUMP CYCLES BUT WILL NOT BUILD PRESSURE.
- F. MOISTURE INDICATOR WILL NOT TURN GREEN OR IS WHITE.

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

MODEL HR-1L HALON 1211 RECOVERY/RECHARGE SYSTEM

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:

<u>QUANTITY</u>	<u>ITEM CODE</u>	<u>DESCRIPTION</u>
1 EACH	1G51908	PUMP VALVE (2 WAY - BRASS)
1 EACH	1G51902	LIQUID/VAPOR VALVE (3 WAY - BRASS)
1 EACH	1G51432	MOISTURE EYE
2 EACH	1G0418	FILTER CORE ELEMENTS
4 EACH	1G51898	1/4" BALL VALVE
1 EACH	1G51849	BRASS STRAINER
3 EACH	1G51344	GASKET FOR RECEIVER TANK ADAPTERS
1 EACH	1G51443	SEAL KIT FOR AIR DRIVE ON HALON PUMP
1 EACH	1G51445	KIT REPR CTL VLV HASKEL
1 EACH	1G51459	SEAL KIT FOR FLUID DRIVE ON HALON PUMP
2 EACH	1G0189	FEMALE QUICK COUPLER
2 EACH	1G51658	MALE QUICK CONNECT
4 EACH	1G51606	O-RING SEAL FOR MALE QUICK CONNECT
1 TUBE	1G51515	SEAL LUBRICANT FOR HALON PUMP AIR DRIVE
1 TUBE	1G51516	O-RING LUBRICANT (VISILOX-728)