HT-15-C
ELECTRIC HOSE TESTER

START UP SAFETY PROCEDURES

1. **A HOSE TESTER should only be used by competent, trained personnel within the prescribed guidelines, as set forth by the manufacturer and NFPA 1962 Standards. Failure of a HOSE TESTER under pressure may cause serious bodily injury or property damage. For safety reasons, Akron Brass strongly urges that hoses being tested should be tied together by the Bleeder Caps as referred to in Section 7 of the NFPA 1962 Standard for hose testing. This will minimize the chance of bodily injury should a hose burst or an adapter connected to the outlet valve of the HOSE TESTER come loose. Akron disclaims any and all other liability whether for bodily injury or property damage to any and all persons or property that may be caused by the operation of the Akron HOSE TESTER, whether it is a result of misunderstanding of these operating instructions, lack of prudent safety precautions or not following the safety standards of the industry or NFPA.**

2. Locate “The Hose Tester “ at one end of the test area close to a water supply, 110 volt electrical supply and a drain. Make sure you have enough room to lay out desired test lengths which could be up to 300' of hose off each discharge port of "The Hose Tester". Test area should be properly drained because of water required to fill hoses and properly secured so that if a hose fails no one will be hurt.

3. Make sure "The Hose Tester" power switch is turned to the “OFF” position.

4. "The Hose Tester" is shipped with a female garden hose thread or 1-1/2" NH inlet depending on what was ordered. Connect your supply hose to the inlet side of "The Hose Tester" making sure that you have no leaks.

4. Plug the 110 volt GFCI into wall outlet. Keep the cord and plugs out of the water and away from all water sources as you can be shocked or electrocuted. Safety is a must. Practice all common sense rules when dealing with electricity. The GFCI offers some protection but should not be considered as total protection. Any extension cords used should be two wire with ground, 12/3 wire, with the correct plug. All extension cords and electrical connections must be checked each and every time before unit is connected to a power source. Look for damaged cords,

cuts, frayed areas and any sign of the slightest damage. If defects are found, have a licensed electrician repair or purchase a replacement cord.

5. Attach the proper adapters required to test your hose to the typical 2-1/2" NH threaded male adapters or other size adapter that you ordered on each discharge port of "The Hose Tester".

6. Attach up to 300' of hose to any or all of the four discharge ports. Mark each hose coupling at the point where the hose goes into the coupling bowl with a colored caulk so that you can see if the hose has any slippage or pulling away from the coupling bowl during, or after testing. If any slippage is detected the hose should be taken out of service and repaired by trained personnel who have been taught how to repair and re-couple fire hose. After all repairs have been completed, conduct a full service test again on each length of hose.

7. At the other end of each test length of hose, after connection to "The Hose Tester", use a discharge nozzle that is in good repair or properly rated test cap with drain. If nozzles are used they must be brass or aluminum (NO PLASTIC TYPE NOZZLES). Nozzles must be capable of handling the test pressures incurred. If you are using a hose cap make sure that it has a drain petcock. The old standard caps off the discharge side of pumpers are not rated for 500 PSI. Do not attempt to use this type of cap with a hole drilled in it and tapped for a drain petcock. The manufacturer of all test equipment must state that their products can be used at the test pressures you will incur within your department under the worst case scenario.

8. This is a good time to replace old dried out and leaking gaskets. Female swivels should show no water leaks at the coupling when put together with only hand tight pressure. Be sure that each length of hose is marked with Acceptance Test Pressure or Service Test Pressure. Each length of hose should be stenciled on the hose body or stamped on the female coupling with a hose length number and your department's initials or name for record keeping and identification. This might also be a good time to stencil each length of hose that was manufactured Prior to July, 1987 with "Service Test ### PSI" so that data does not have to be looked up each year.

AKRON BRASS COMPANY

APPLICABLE STANDARDS

"NFPA 1962 Standard for the Care, Use, and Service Testing of Fire Hose Including Couplings and Nozzles - 1988 Edition"

Service Test Pressures for Hose Manufactured After July, 1987 to Date
The Service Test ### PSI and date of manufacture is stenciled on each length of hose as per NFPA 1962.

CAUTION

New Hose Rated Acceptance Test Pressure are done by the Manufacturer of the Fire Hose and are higher pressure ratings Than the Service Test Pressures used with the HOSE TESTER. Make sure the Service Test Pressures listed in NFPA 1962 are Used rather than the New Hose Rated Pressure used by the Manufacturer to test fire hoses in service by the Fire Department.

Service Test Pressures for Hose Manufactured BEFORE July, 1987

Trade Size in. (mm)	Jackets	New Hose Rated Acceptance Test Pressure psi (kPa)	Service Test Pressures psi (kPa)

Lined Industrial, Stand pipe, and Fire Department			
1-1/2 (38) thru 2-1/2 (65)*	**Single**	**300 (2070)**	**150 (1030)**
1-1/2 (38) thru 4-1/2 (114)	**Single**	**400 (2760)**	**250 (1720)**
1-1/2 (38) thru 2-1/2 (65)	**Single**	**500 (3450)**	**250 (1720)**
1-1/2 (38) thru 2-1/2 (102)	**Multiple**	**400 (2760)**	**250 (1720)**
1-1/2 (38) thru 2-1/2 (102)	**Multiple**	**600 (4140)**	**250 (1720)**
Unlined Stand pipe			
1-1/2 (38) thru 2-1/2 (65)	**Single**		**150 (1030)**
Lined Forestry			
1 (25) thru 1-1/2 (38)	**Single**	**450 (3100)**	**250 (1720)**
Unlined Forestry			
1 (25) thru 1-1/2 (38)	**Single**	**450 (3100)**	**250 (1720)**
Relay Supply			
3-1/3 (89) thru 4-1/2 (114)	**Single**	**400 (2760)**	**200 (1380)**
5 (127) and 6 (152)	**Single**	**300 (2070)**	**150 (1030)**
Pumper Supply (Soft Suction)			
4 (102) thru 6 (152)	**Multiple**	**400 (2760)**	**200 (1380)**

*** 1-1/2 (38) thru 2-1/2 (65) single jacket hose with a new hose rating acceptance test pressure of 300 psi (2070 kPa) shall not be maintained on fire apparatus for fire fighting purposes.**

7-21-08

OPERATION OF THE HOSE TESTER

1. Each length of hose to be service tested shall be tested by the standards set forth in Chapter 7 entitled “Service Testing” in NFPA® 1962 entitled “Standard for the Inspection, Care, and Use of Fire Hose, Couplings and Nozzles and the Service Testing of Fire Hose” - 2008 Edition, hereafter referred to as NFPA 1962.

2. Make sure that all the valves on the HOSE TESTER are closed. The motor must be turned “OFF”. Open the 1/2" bypass valve which is located at the bottom of the relief valve about 10% (just a slight whisper of water) so that air will be bled from the system. Turn on the water at its source and open the 1-1/2" back flow check valve which is directly in front of the water inlet fitting. All water can be controlled at the back flow check valve, discharge valves and the bypass valve. Remember, the HOSE TESTER will move during testing because of the elongation factor of all hoses. Make sure that you have taken this into consideration when locating the HOSE TESTER for the tests.

3. Connect your fire hose(s) to one or all of the discharge outlets. Make sure that each length of hose to be service tested has been visually inspected. Any length that does not pass inspection shall be removed from the service test area, repaired as required, and then service tested under pressure.

4. Now open each discharge valve on the manifold that has a hose connected to a discharge, one at a time, filling each hose line with water. Unscrew the relief valve stem counter clockwise until you feel little or no spring tension on the relief valve. The nozzles or drain petcocks must be open to expel all air from the hoses and the HOSE TESTER'S piping. For example, if only two (2) of the four (4) discharges are to be used, you must still crack open each discharge valve for a few seconds to be sure that all the air is bled from that part of the discharge manifold that is not being used. DO NOT CLOSE the 1/2" bypass valve at this time. ALL AIR MUST BE BLED FROM THE TOTAL TEST SYSTEM. If any hose shows any sign of leakage while filling (unless so designed), or damage of any type, remove from the HOSE TESTER before applying service test pressures. When the hose is filled to hydrant pressure, you then close nozzles or petcocks at the end of each hose line to be tested. Now the 1-1/2" back flow valve is to be closed so that you can start to build Service Test Pressure pursuant to NFPA 1962 in increments as set forth therein when the motor is turned on without pumping back into your local water supply.

5. Turn the HOSE TESTER motor switch to the "ON" position. Pressure will not build because the bypass valve is still 10% open and the relief valve is fully opened. Close the 1/2" bypass all the way.

6. Turn the relief valve stem in a clockwise direction to increase pressure. Slowly increase pressure until the gauge shows the correct test pressure. If you can not obtain the specified Service Test pressure found on the NFPA 1962 charts, you may have leaks that exceed 3.0 GPM in the total system. Locate and fix all leaks before restarting your Service Test. Never slam the 1/2" bypass valve totally closed. This may cause a surge and spin the pressure gauge causing it internal damage. This is an expensive error as the pressure gauge will have to be replaced. The bypass valve should be opened about 1% (just a slight whisper of water) so that the pump head stays cool at all times.

7. The test pump will build test pressure in a direct proportion to the size and amount of hose you have connected to the HOSE TESTER, if you have 1200 feet of 5" relay hose connected it will require some time to build to the service test pressure of 150 PSI or 200 PSI.

8. Remember that all fire hose has an elongation factor of 2-8%. As an example, a 300' lay of 5" rubber relay hose with a 8% elongation factor at test pressure, the hose will elongate approximately 24'. The 3 GPM pump has to pump this much more water into the hose before it starts to build towards the test pressure. If you had four (4)-300' lays of hose, about 96' of new hose is added after elongation. It takes some time, give the machine time to pump the water, and bring the hose up to the test pressure levels found in NFPA 1962 charts.

9. While bringing the hose up to the desired "Service Test Pressure" the operator must always be aware of what is happening. The operator should always stand a short distance behind the HOSE TESTER and its handle and opposite the hose(s) being tested to watch for a burst hose or leaks and close to the motor switch in case of a hose failure to shut off the pump motor. The operator should be alert and watching the total testing area and each length of hose being tested. At the first sign of water leakage, the HOSE TESTER should be turned off and the problem, or problems, fixed before resuming the test procedure on the remaining hoses.

10. When everything is running smoothly and the operator is satisfied that all safety procedures have been followed, you may continue testing. The HOSE TESTER pump has a rated capacity of about 3.0 Gallons Per Minute. You should have limited HIGH WATER VOLUME SURGE and most of all, a limited possibility of a whipping hose line if a testing hose bursts. Once a hose ruptures or you have noticeable slippage at a coupling to the HOSE TESTER, action needs to be taken to rectify the situation. If a hose rupture occurs, switch off the motor and close that manifold discharge valve and then switch the motor back on to bring the other lines being tested back up to desired test pressure. In short, the operator needs to shut the motor off to stop all testing and remove the ruptured hose before continuing to test.

Note: When testing 4" or 5" hose, it has proven to be much quicker to fill all the hoses from a hydrant. Once the hose is brought up to or close to the hydrant pressure then the system is provided with the volume of water and pressure required for the initial elongation of each fire hose. After filling to hydrant pressure, close the back flow valve, turn on the pump motor and continue to pressurize the hoses to the service test pressures on the NFPA 1962 charts. This will still require time to finish the total elongation of the hose and pump up to the required service test pressure. Remember you have a 3 GPM twin piston pump.

Note: When testing short lengths of hose 50 - 100' one at a time and there is a sudden rupture of the hose, it has been reported by end-users that the HOSE TESTER in response to a burst hose can have some real erratic movement itself and actual jump or move 1-3 feet. Therefore, it is incumbent on the person operating the HOSE TESTER to make sure that all other personnel stand clear of the hoses being tested as well as HOSE TESTER and that the operator remain alert to the potential of erratic movement of the HOSE TESTER on a burst hose condition.

NOTICE - SPRAY WASHER

1. You will never develop the pressure and volume of the high pressure washer that you get at any wand type of car wash. The reason is very simple. At the car wash you have a 70 GPM pump @ 850 PSI not a 3 GPM pump @ 500-600 PSI. Also you only have a nozzle that flows 2 GPM. The Spray washer is for maintenance and not high pressure power blasting, it is for general clean up and a handy wash down tool for a fire department.

2. In order to induce soap or wax, the spray wand tip must be turned to the low pressure side. You will get a low pressure spray as the tip is rotated. You can look at the clear plastic tube and see the soap or wax being picked up. Our spray wand and tip must be matched just like the 95 GPM nozzle and 95 GPM foam educator. If you do not have a matched system you will not educe the soap or wax products. As you turn the spray tip you are matching the tip with the educator.

CAUTIONS

- **BURST HOSES** – When bringing the test hoses up to Service Test Pressures in accordance with the Charts in the NFPA 1962 Standards, a sudden hose failure under pressure may cause the burst hose to whip about in an uncontrolled manner striking personnel inside the safety perimeter that should be maintained at all times pursuant to the distance specified in Chapter 7 of the NFPA 1962 Standard on hose service testing.
- **TIE DOWN** – A hose safety tie-line should be used to tie all of the test hoses together at every coupling connection to either the adapters or bleeder caps for reducing the possibility of a burst hose whipping about and striking personnel who inadvertently or intentionally come inside the safety perimeter as specified in NFPA 1962 when conducting the hose service testing.
- **ELECTRICAL CONNECTIONS** – Do not use an electrical extension cord unless the extension cord is rated for the same amperage as the motor. Also, routinely inspect the electrical cord on the unit and any extension cords to avoid using frayed or damaged electric lines that could cause potential electrocution of personnel or damage to the motor. Never place the HOSE TESTER electrical cord or any extension cord used with the equipment into a pool of water that could result in electrical shock to the operator or personnel in the service test area.