

# A/C MANIFOLD GAUGE SET

Item Number W89730

## OWNER'S MANUAL

**▲ WARNING: USE ONLY R-134A REFRIGERANT WITH THE A/C MANIFOLD GAUGE SET**

### **▲ WARNING**

**TO PREVENT EXPLOSION, SERIOUS INJURY, AND DEATH:**

- Service of air conditioning systems must be done only by trained and experienced technician to avoid overfilling.
- Technicians opening refrigeration circuit in automotive air conditioning systems **MUST** be certified in refrigerant recovery and recycling procedures in compliance with section 609 of Clean Air Act Amendments of 1990. For additional information regarding ozone depletion and air conditioning service regulations, visit EPA's website: [www.epa.gov/ozone](http://www.epa.gov/ozone)



*Performance Tool*<sup>®</sup>

**▲WARNING:** READ, UNDERSTAND AND FOLLOW ALL INSTRUCTIONS AND WARNINGS BEFORE OPERATING THIS TOOL. FAILURE TO DO SO MAY RESULT IN PERSONAL INJURY AND/OR PROPERTY DAMAGE AND WILL VOID WARRANTY.

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## SPECIFICATIONS:

Blue (Low) Gauge.....	0-120 PSI
Blue Hose.....	1/4 in. FFL x 50 in.
Red (High) Gauge.....	0-500 PSI
Red Hose.....	1/4 in. FFL x 50 in.
Yellow Hose.....	1/2 in. ACME x 50 in.
Gauge Accuracy.....	+/-2%

**Specifications are subject to change without notice.**

## SAFETY GUIDELINES / DEFINITIONS

*This instruction manual is intended for your benefit. Please read and follow the safety, installation, maintenance and troubleshooting steps described within to ensure your safety and satisfaction. The contents of this instruction manual are based upon the latest product information available at the time of publication. The manufacturer reserves the right to make product changes at any time without notice.*

**▲WARNING:** Read and understand this entire instruction manual before attempting to assemble, install, operate or maintain this product. Failure to comply with the instructions may result in serious personal injury and/or property damage!  
The following signal words are used to emphasize safety warnings that must be followed when using this product:

**▲DANGER:** Indicates an imminently hazardous situation that, if not avoided, WILL result in death or serious injury.

**▲WARNING:** Indicates a potentially hazardous situation that, if not avoided, COULD result in death or serious injury.

**▲CAUTION:** Indicates a potentially hazardous situation that, if not avoided, MAY result in minor or moderate injury.

**▲NOTICE:** Indicates important information, which if not followed, MAY cause damage to equipment.

## SAFETY GUIDELINES / DEFINITIONS

1. Keep work area clean and well lit.
2. Keep children away. Children must never be allowed in the work area. Do not let them handle the A/C Manifold Gauge Set.
3. There are certain applications for which this A/C Manifold Gauge Set was designed. It will do the job better and more safely at the rate for which it was intended. Do not modify this A/C Manifold Gauge Set and do not use this A/C Manifold Gauge Set for a purpose for which it was not intended.
4. Dress properly. Do not wear loose clothing or jewelry as they can be caught in moving engine parts. Protective clothes and nonskid footwear are recommended when working. Wear restrictive hair covering to contain long hair.
5. Wear ANSI-approved impact safety goggles and heavy-duty work gloves at all times during setup and use.
6. Do not overreach. Keep proper footing and balance at all times.
7. Maintain gauge with care. Keep the A/C Manifold Gauge Set clean for better and safer performance. Inspect hoses periodically, and if damaged, have them repaired by a qualified technician.
8. Stay alert. Watch what you are doing, use common sense. Do not operate gauge when you are tired.
9. Check for damaged parts. Before using any gauge, any part that appears damaged should be carefully checked to determine that it will operate properly and perform its intended function. Check for alignment and binding of moving parts; any broken parts or mounting fixtures; and any other condition that may affect proper operation. Any part that is damaged should be properly repaired or replaced by a qualified technician.
10. Replacement parts and accessories. When servicing, use only identical replacement parts. Use of any other parts will void the warranty. Only use accessories intended for use with this gauge.
11. Do not operate gauge if under the influence of alcohol or drugs. Read warning labels if taking prescription medicine to determine if your judgment or reflexes are impaired while taking drugs. If there is any doubt, do not operate the gauge.
12. Maintenance. For your safety, service and maintenance should be performed regularly by a qualified technician.
13. Industrial applications must follow OSHA requirements.
14. People with pacemakers should consult their physician(s) before using this product. Electromagnetic fields in close proximity to a heart pacemaker could cause interference to or failure of the pacemaker.

In addition, people with pacemakers should observe the following: Caution is necessary when near the coil, spark plug cables, or distributor of a running engine.

15. The warnings, cautions, and instructions discussed in this instruction manual cannot cover all possible conditions and situations that may occur. It must be understood by the operator that common sense and caution are factors, which cannot be built into this product, but must be supplied by the operator.

### **16. ONLY USE REFRIGERANT R-134a WITH THIS A/C MANIFOLD GAUGE SET.**

17. Do not start an engine in an enclosed area (like a garage).

A running gasoline engine generates carbon monoxide; carbon monoxide is a colorless, odorless gas that can cause serious injury and death, if inhaled.

18. Keep hands away from the moving parts and hot parts of vehicle's engine.

19. Read and understand all instructions and safety precautions as outlined in the vehicle manufacturer's manual for air condition servicing. Only qualified mechanics that are trained in servicing air conditioning systems should use this product.

20. When warming up an engine in preparation for checking of the A/C system, make sure the vehicle's transmission is placed in "Park" and the emergency brake is applied.

21. Refrigerant can cause severe frostbite if it comes in contact with skin. Follow the safety warnings and instructions provided by the refrigerant manufacturer.

22. Do not disconnect any pressurized hose. Pressurized refrigerant can cause severe injury.

23. Use caution when opening an air conditioning system line or can of refrigerant. When checking, always place a towel around the service valves of the air conditioning unit and Red and Blue Couplers (22 and 23).

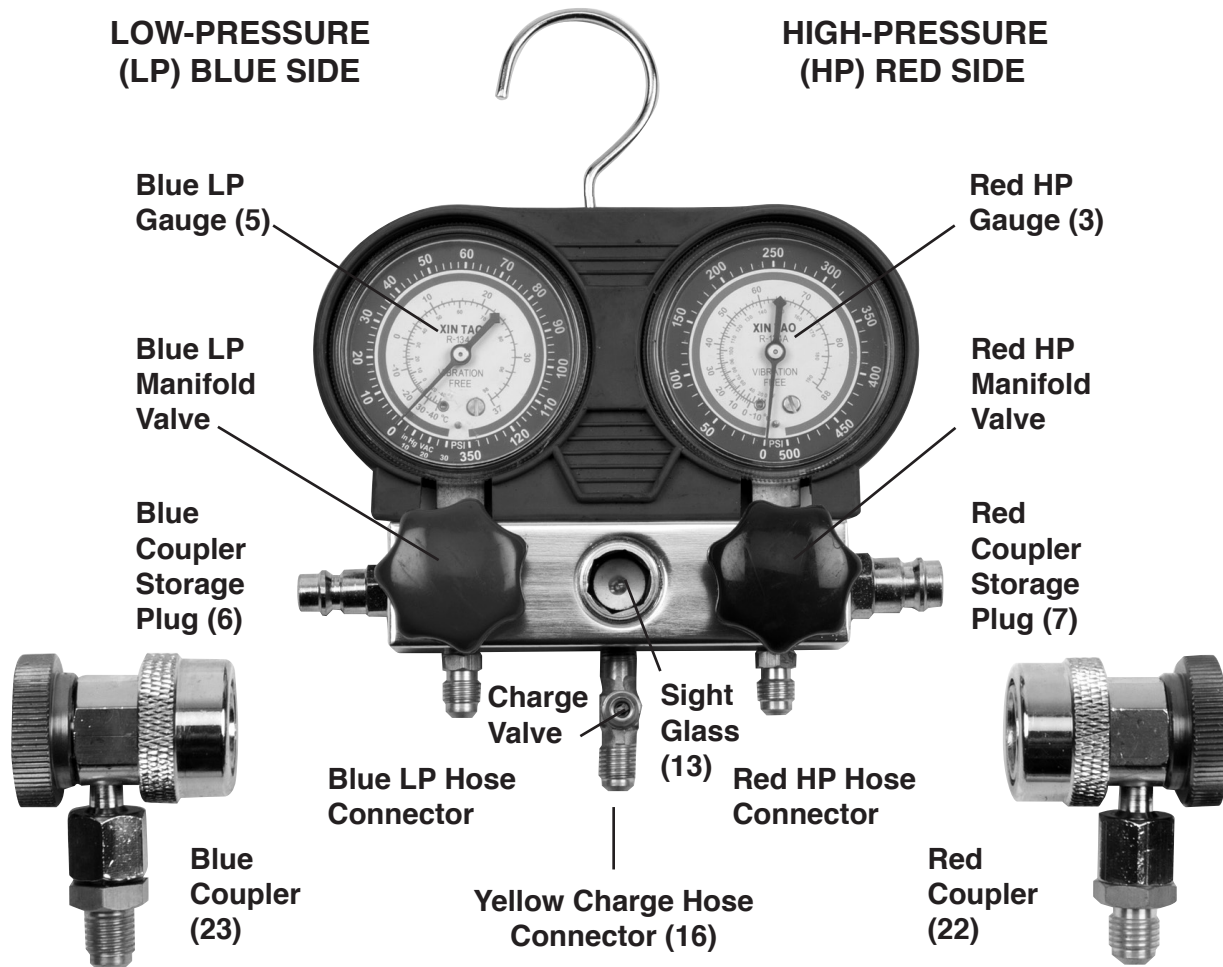
24. Keep refrigerant away from excessive heat as pressure in the container could increase enough to rupture the can.

25. Do not discharge refrigerant into the atmosphere. Capture refrigerant into an approved recovery container (not included), and then dispose of properly. Contact your local Hazardous Waste Authority for disposal guidelines.

26. Only use refrigerant in a manner consistent with the air conditioning system's repair manual.

## COMPONENTS AND FUNCTIONS

1. The Red HP Gauge (3) is used to measure high pressure compressor discharge side pressure.
2. The Blue LP Gauge (5) is used to measure low-pressure side suction or pressure.
3. The Manifold Valves (11) control the flow of refrigerant to and from the Yellow Hose (18), also called the Charge Hose.
4. The Coupler Valves (22,23) control the flow to the Gauges (3, 5) from the Red and Blue Hoses (17,19).
5. The Sight Glass (13) allows checking the appearance of the refrigerant.
6. The Yellow Hose (18), also called Charge Hose can be used three ways:
  - a. Refrigerant recovery/evacuation.
  - b. Charging (filling) the system.
  - c. For checking, attach the Yellow Hose (18) to both branches of the T-fitting (16) to reduce the risk of leaks.
7. The charge valve allows for simultaneous connection of a refrigerant recovery system.
8. General instructions for A/C service are outlined in this manual. Specific procedures for each individual system type and model should be referenced in the vehicle manufacturer's specific A/C system service manual.
9. See Operation instructions that follow.



## OPERATION

Read the **ENTIRE SAFETY WARNINGS** section at the beginning of this manual before set up or use of this product.

**▲WARNING: TO PREVENT EXPLOSION, SERIOUS INJURY, AND DEATH:** Service of air conditioning systems must be done only by trained and experienced technician to avoid overfilling. Technicians opening refrigeration circuit in automotive air conditioning systems **MUST** be certified in refrigerant recovery and recycling procedures in compliance with section 609 of Clean Air Act Amendments of 1990. For additional information regarding ozone depletion and air conditioning service regulations, visit EPA's website: [www.epa.gov/ozone](http://www.epa.gov/ozone)

**▲WARNING: TO PREVENT SUDDEN LOSS OF CONSCIOUSNESS, AND DEATH:** Connect and use in a well ventilated area **ONLY**. Refrigerant can displace air if allowed to accumulate, causing sudden loss of consciousness followed by death. This can happen **WITHOUT FEELING SHORTNESS OF BREATH**.

## OPERATION CONTINUED

**▲WARNING: TO PREVENT EXPLOSION, SERIOUS INJURY, AND DEATH:** Do not open the red HP Manifold Valve unless requested to do so during the recovery/evacuation procedure. Refrigerant is under great pressure. Attempting to add refrigerant through the HP side of the system may cause the refrigerant can to explode.

*Note: Throughout this manual:*

*HP means High-pressure*

*LP means Low-pressure*

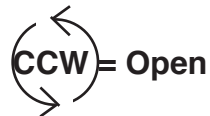
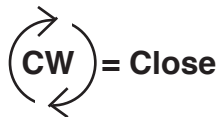
*CW means Clockwise*

*CCW means Counterclockwise*

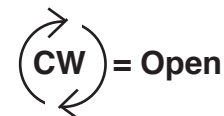
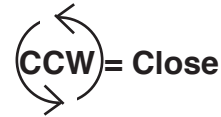
*Note: Procedures such as charging refrigerant through the HP side of the system and adding lubricant to the system are beyond the scope of this manual.*

*Note: For additional information regarding the parts listed in the following pages, refer to the Assembly Diagram near the end of this manual.*

### Manifold Valve (11) operation:



### Coupler Valve (22, 23) operation:



**▲WARNING:** To prevent **SERIOUS INJURY** and **DEATH**:

1. Wear ANSI-approved safety goggles and heavy-duty work gloves during setup and use.
2. **DO NOT OPEN** either Manifold Valve (11) unless directed to do so; otherwise, refrigerant leaks, A/C system contamination, and hazardous expulsion of pressurized refrigerant may occur.
3. Use in well-ventilated area only.
4. Keep gauge and hoses away from moving engine parts.
5. Turn off vehicle's engine and A/C system before attaching gauge.
6. The following procedure is to be performed only by a technician certified in refrigerant recovery and recycling procedures, as explained previously.

## DIAGNOSTIC CHECK

1. **Close both Manifold Valves (11) by turning CW.**  
**Close both Coupler Valves (22, 23) by turning CCW.**

2. **CONNECT HOSES:**

- Connect one end of the Blue Hose (19) to the Blue LP Hose Connector and the other end to the Blue Coupler (23).
- Connect one end of the Red Hose (17) to the Red LP Hose Connector and the other end to the Red Coupler (22).
- Connect one end of the Yellow Hose (18) to the Yellow Charge Hose Connector (16) and the other end to the Charge Valve on that Connector.

3. **ATTACH COUPLERS:**

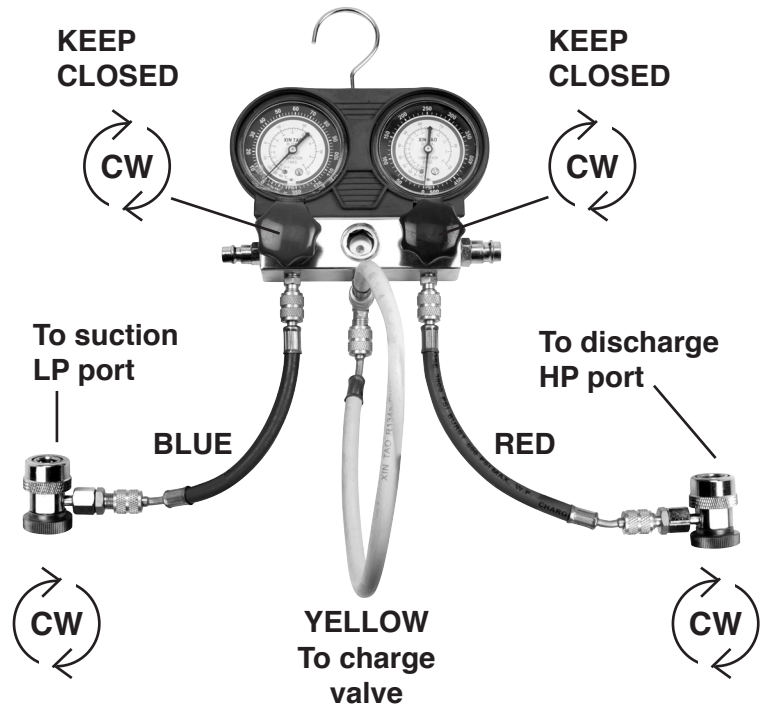
- Attach the Blue Coupler (22) to the suction LP port on the A/C system.
- Attach the Red Coupler (23) to the discharge HP port on the A/C system.

4. **PERFORM CHECK:**

- To do a dynamic check: Turn on the vehicle and allow it to reach normal operating temperature. Then, turn on the A/C system.
- Open both Coupler Valves (22, 23) by turning CW.
- Read the pressure on both of the Gauges (3, 5) and compare to the manufacturer's recommended readings.

5. **AFTER:**

- Close both Coupler Valves (22, 23) by turning CCW.**
- Turn off the vehicle and the A/C system if dynamic check was done.
- Carefully disconnect the Couplers (22, 23), the hoses may contain residual refrigerant.** Pull back the knurled ring on each Coupler (22, 23) and store it on its Coupler Storage Plug (6, 7).



## RECOVERY / EVACUATION

1. **Close both Manifold Valves (11) by turning CW. Close both Coupler Valves (22, 23) by turning CCW.**

2. **CONNECT HOSES:**

- Connect one end of the Blue Hose (19) to the Blue LP Hose Connector and the other end to the Blue Coupler (23).
- Connect one end of the Red Hose (17) to the Red LP Hose Connector and the other end to the Red Coupler (22).
- Connect one end of the Yellow Hose (18) to the Yellow Charge Hose Connector (16) and the other end to the refrigerant recovery system / vacuum pump.

3. **ATTACH COUPLERS:**

- Attach the Blue Coupler (22) to the suction LP port on the A/C system.

- Attach the Red Coupler (23) to the discharge HP port on the A/C system.

4. **PERFORM RECOVERY / EVACUATION:**

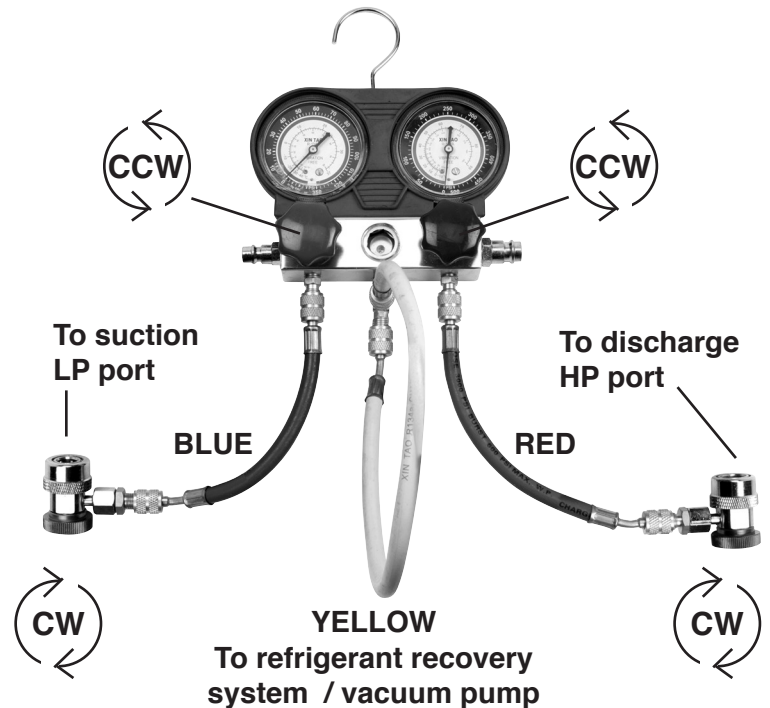
- Turn on the refrigerant recovery system / vacuum pump.
- Open both Coupler Valves (22, 23) by turning CW and both Manifold Valves (11), turning them CCW.
- Read the amount of vacuum on the Blue LP Gauge (5).

## DIAGNOSTIC CHECK CONTINUED

### 5. AFTER:

- a. Shut off the refrigerant recovery system / vacuum pump when the vacuum level reaches the manufacturer's recommended level.
- b. **Close both Coupler Valves (22, 23) by turning CCW.**
- c. Disconnect the Couplers (22, 23) from the A/C system. Pull back the knurled ring on each Coupler (22, 23) and store it on its Coupler Storage Plug (7 & 6, respectively).

**TURN VALVES AS SHOWN ONLY AFTER MAKING ALL CONNECTIONS AND TURNING ON REFRIGERANT RECOVERY SYSTEM / VACUUM PUMP**



## CHARGING

1. **Close both Manifold Valves (11) by turning CW. Close both Coupler Valves (22, 23) by turning CCW.**

### 2. CONNECT HOSES:

- a. Connect one end of the Blue Hose (19) to the Blue LP Hose Connector and the other end to the Blue Coupler (23).
- b. Connect one end of the Red Hose (17) to the Red LP Hose Connector and the other end to the Red Coupler (22).
- c. Connect one end of the Yellow Hose (18) to the Yellow Charge Hose Connector (16) and the other end to refrigerant supply.

**KEEP THE CAN/CYLINDER UPRIGHT.**

### 3. ATTACH COUPLERS:

- a. Attach the Blue Coupler (23) to the suction LP port on the A/C system.
- b. Attach the Red Coupler (23) to the discharge HP port on the A/C system.

### 4. PERFORM CHARGING:

- a. Turn on the vehicle and allow it to come up to normal operating temperature. Then, turn on the A/C system.
- b. Open the Blue Coupler Valve (23) only by turning CW and Blue Manifold Valve (11), turning it CCW.

### 5. AFTER:

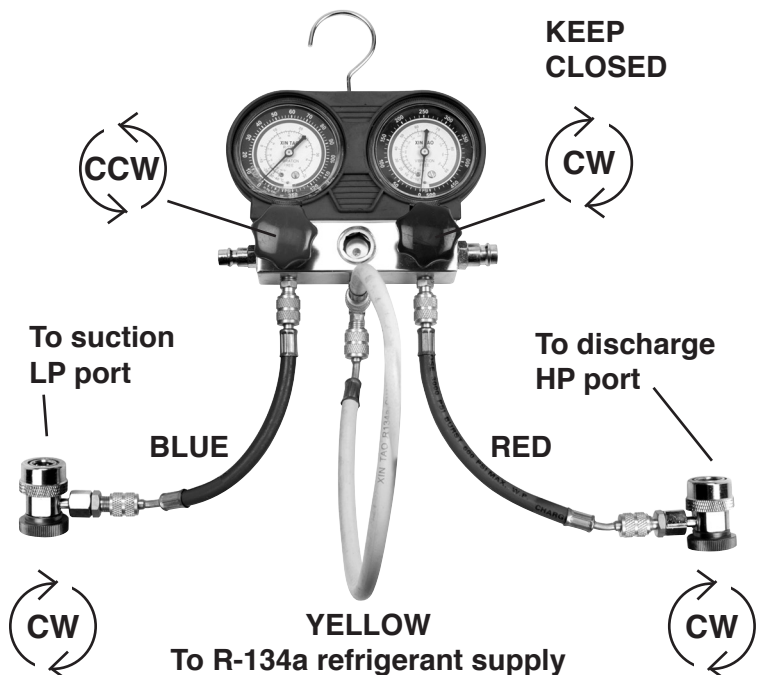
- a. After charging manufacturer recommended amount of R-134a, **close both Coupler Valves (22,**

**23) by turning CCW.**

b. Turn off the vehicle and the A/C system.

c. **Carefully disconnect the Couplers (22, 23) from the A/C system, the hoses may contain residual refrigerant.** Pull back the knurled ring on each Coupler (22, 23) and store it on its Coupler Storage Plug (7 & 6, respectively).

**TURN VALVES AS SHOWN ONLY AFTER MAKING ALL CONNECTIONS**



## CARE AND MAINTENANCE

**TO PREVENT SERIOUS INJURY FROM TOOL FAILURE:** Do not use damaged equipment. If abnormal noise, vibration, or leaking air occurs, have the problem corrected before further use.

1. **Before each use**, inspect the general condition of the A/C Manifold Set. Check for cracked or broken parts, damaged Hoses (17,18,19), and any other condition that may affect safe operation. If a problem with the Set occurs, have it corrected

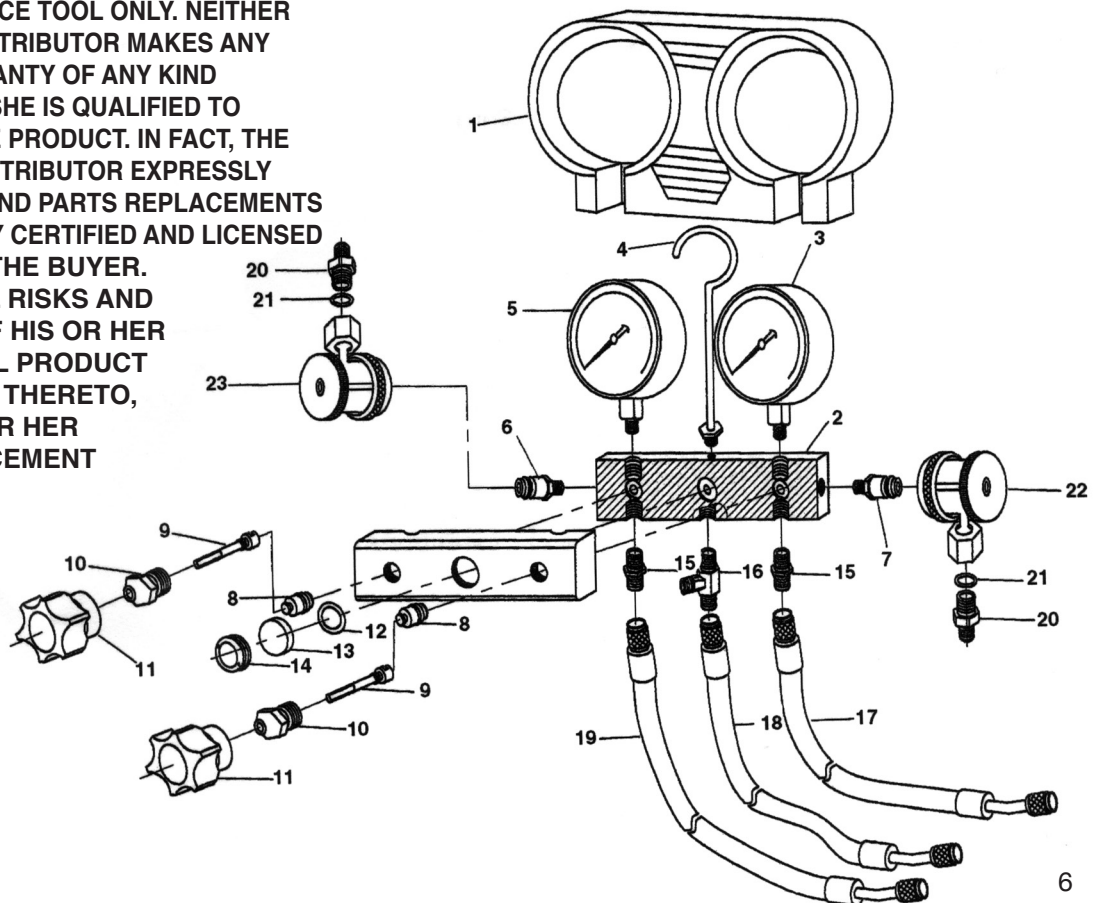
before further use.

**Do not use damaged equipment.**

2. Periodically, clean with a damp cloth using a mild detergent or solvent.
3. When storing, keep the set clean and dry. Also, connect the Red Coupler (22) and the Blue Coupler (23) to its corresponding Coupler Storage Plug (7 or 6 respectively) to prevent contamination.

EXPANDED PARTS LIST			HP means High-Pressure			LP means Low-Pressure		
No.	Description	Qty.	No.	Description	Qty.	No.	Description	Qty.
1	Rubber Cover.....	1	13	Sight Glass.....	1			
2	Manifold Body.....	1	14	Ring Nut.....	1			
3	Red HP Gauge.....	1	15	Connector.....	2			
4	Hook.....	1	16	T-Connector.....	1			
5	Blue LP Gauge.....	1	17	Red Hose (HP Refrigerant).....	1			
6	Blue Coupler Storage Plug.....	1	18	Yellow Hose (HP Refrigerant).....	1			
7	Red Coupler Storage Plug.....	1	19	Blue Hose (LP Refrigerant).....	1			
8	Valve Seat.....	2	20	Connector.....	2			
9	Valve Stem.....	2	21	O-Ring.....	2			
10	Valve Nut.....	2	22	Red Coupler (HP).....	1			
11	Manifold Valve.....	2	23	Blue Coupler (LP).....	1			
12	O-Ring.....	2						

PLEASE READ THE FOLLOWING CAREFULLY THE MANUFACTURER AND/OR DISTRIBUTOR HAS PROVIDED THE PARTS LIST AND ASSEMBLY DIAGRAM IN THIS MANUAL AS A REFERENCE TOOL ONLY. NEITHER THE MANUFACTURER OR DISTRIBUTOR MAKES ANY REPRESENTATION OR WARRANTY OF ANY KIND TO THE BUYER THAT HE OR SHE IS QUALIFIED TO REPLACE ANY PARTS OF THE PRODUCT. IN FACT, THE MANUFACTURER AND/OR DISTRIBUTOR EXPRESSLY STATES THAT ALL REPAIRS AND PARTS REPLACEMENTS SHOULD BE UNDERTAKEN BY CERTIFIED AND LICENSED TECHNICIANS, AND NOT BY THE BUYER. THE BUYER ASSUMES ALL RISKS AND LIABILITY ARISING OUT OF HIS OR HER REPAIRS TO THE ORIGINAL PRODUCT OR REPLACEMENT PARTS THERETO, OR ARISING OUT OF HIS OR HER INSTALLATION OF REPLACEMENT PARTS THERETO.



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PERFORMANCE TOOL, P.O. Box 88259 Tukwila, WA 98138

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