Yellow Jacket 41780

Yellow Jacket 41780 Manifold User Manual

Model: 41780

1. Introduction

This manual provides essential information for the safe and effective operation, maintenance, and troubleshooting of your Yellow Jacket 41780 Manifold. This manifold is designed for testing and charging refrigeration and air conditioning systems, specifically compatible with R-410A refrigerant.
The Yellow Jacket 41780 Manifold features a robust forged brass body, full porting for maximum capacity, and full-size metal valve handles for easy operation. Hose anchors are integrated into the back of the body at a 45-degree angle for convenient hose management.

2. Safety Information

Always observe the following safety precautions to prevent personal injury and damage to the equipment:

- Wear appropriate personal protective equipment (PPE), including safety glasses and gloves, when handling refrigerants.
- Ensure proper ventilation when working with refrigerants.
- Never over-pressurize a system. Always refer to the system manufacturer's specifications for maximum allowable pressures.
- Do not use the manifold with refrigerants other than those specified (R-410A) unless explicitly stated by Yellow Jacket.
- Keep the manifold and hoses clean and free of debris.
- Store the manifold in a cool, dry place when not in use.

3. Components Overview

The Yellow Jacket 41780 Manifold consists of the following key components:

- **Manifold Body:** Forged brass construction with full porting.
- **Gauges:** Two 2-1/2 inch steel case gauges, indicating pressure in bar/MPa, specifically calibrated for R-410A. One gauge typically measures low-side pressure (blue), and the other measures high-side pressure (red).
- **Valve Handles:** Full-size metal handles for precise control of refrigerant flow.
- **Hose Anchors:** Integrated 45-degree anchors for secure hose connection.

- **Fittings:** 1/4 inch fittings for connecting hoses.

Figure 3.1: Yellow Jacket 41780 Manifold. This image shows the complete manifold assembly, including the blue low-side gauge, red high-side gauge, brass manifold body, metal valve handles, and the integrated hanging hook.

4. Setup

Before initial use, ensure all components are clean and free from damage.

1. **Inspect Components:** Check the manifold body, gauges, valve handles, and fittings for any signs of damage or wear. Ensure the gauge lenses are clear and readable.
2. **Connect Hoses:** Attach appropriate refrigeration hoses (not included) to the manifold's 1/4 inch fittings. Typically, a blue hose connects to the low-side port, a red hose to the high-side port, and a yellow hose to the

service port (center port). Ensure connections are hand-tight, then snug with a wrench if necessary, but do not overtighten.

3. **Gauge Calibration Check:** Before connecting to a system, ensure both gauges read zero (or atmospheric pressure if not under vacuum). If a gauge does not read zero, it may require calibration or replacement.

5. Operating Instructions

This section outlines general procedures for using the manifold. Always refer to specific equipment service manuals for detailed procedures.

5.1. Pressure Testing

1. Ensure the system is depressurized and isolated.
2. Connect the manifold hoses to the system's service ports (low and high side).
3. Slowly open the manifold valves to allow system pressure to register on the gauges.
4. Observe the pressure readings. Compare them to the manufacturer's specifications.
5. Close the manifold valves and disconnect hoses once testing is complete.

5.2. Refrigerant Charging

1. Ensure the system is evacuated to the required vacuum level.
2. Connect the manifold hoses to the system's service ports and the center hose to the refrigerant cylinder.
3. Purge the center hose of air by slightly cracking the manifold valve connected to the refrigerant cylinder, allowing a small amount of refrigerant to escape.
4. Open the appropriate manifold valve (typically the low-side valve for vapor charging, or both for liquid charging with a liquid-charging adapter) to allow refrigerant to flow into the system.
5. Monitor the gauges and the amount of refrigerant charged (using a scale if precise charging is required).
6. Once the desired charge is achieved, close the manifold valves and disconnect the hoses.

6. Maintenance

Regular maintenance ensures the longevity and accuracy of your manifold.

- **Cleaning:** Wipe the manifold body and gauges with a clean, damp cloth after each use. Avoid using harsh chemicals that could damage the finish or gauge lenses.
- **Valve Inspection:** Periodically check the valve stems and seats for leaks. If leaks are detected, replacement of valve stem packing or O-rings may be necessary (consult a qualified technician).
- **Gauge Accuracy:** Have the gauges checked for accuracy annually by a certified calibration service.
- **Storage:** Store the manifold in its original packaging or a protective case to prevent damage to the gauges and fittings.

7. Troubleshooting

Common issues and their potential solutions:

Problem	Possible Cause	Solution
Gauge not reading correctly	Damaged gauge, out of calibration, or debris in fitting.	Inspect gauge for physical damage. Check calibration. Clean fittings. Replace gauge if necessary.

Problem	Possible Cause	Solution
Refrigerant leak from manifold	Loose fittings, worn O-rings, or damaged valve stem packing.	Tighten fittings. Replace O-rings on hoses. Consult a technician for valve stem packing replacement.
Difficulty turning valve handles	Debris or corrosion in valve mechanism.	Clean the manifold thoroughly. If problem persists, professional service may be required.

8. Specifications

Feature	Detail
Model Number	41780
Brand	Yellow Jacket
Refrigerant Compatibility	R-410A
Gauge Size	2-1/2 inch (Steel Case)
Gauge Units	bar/MPa
Fittings	1/4 inch
Body Material	Forged Brass
Valve Handles	Metal, Full Size
Hose Anchors	Integrated 45°
Product Dimensions	2 x 2 x 2 inches (approximate)
Item Weight	2.09 Pounds
UPC	686800417806

9. Warranty and Support

For warranty information and technical support, please contact Yellow Jacket customer service directly. Refer to the product packaging or the official Yellow Jacket website for the most current contact details and warranty terms. Manufacturer: Fotronic Corporation