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Dwyer 2205

Dwyer® Magnehelic® Differential Pressure Gage User Manual

Model: 2205

1. Introduction

This manual provides essential information for the proper installation, operation, and maintenance of your Dwyer® Magnehelic® Differential Pressure Gage, Model 2205. This precision instrument is designed for high accuracy measurement of low air or non-corrosive gas pressures, including positive, negative (vacuum), or differential pressures. Its robust design resists shock, vibration, and over-pressures, offering a reliable and fluid-free alternative to manometers.

2. Safety Information

Always observe the following safety precautions to prevent personal injury and damage to the instrument.

- Do not exceed the specified pressure limits of -20 in Hg to 15 psig.
- Ensure the gage is used only with air and non-combustible, compatible gases.
- Avoid exposing the gage to temperatures outside the range of 20 to 140°F (-6.67 to 60°C).
- Always depressurize the system before connecting or disconnecting the gage.
- Handle the instrument with care to avoid physical damage.

3. Product Overview

The Dwyer Magnehelic Gage Model 2205 features a clear dial for easy reading and robust construction for reliable performance.



Figure 3.1: Front view of the Magnehelic Gage, Model 2205. The dial clearly displays pressure readings in pounds per square inch (PSI) from 0 to 5. A red needle indicates the current pressure. The face also includes a caution label regarding maximum pressure and temperature limits.



Figure 3.2: Angled view of the Magnehelic Gage, Model 2205, highlighting the side pressure connection ports. Also shown are the included brass barb fittings for hose connections and threaded plugs for sealing unused ports, demonstrating the versatility of its process connections.

Key Features:

- High accuracy: Guaranteed within 2% of full scale.
- Frictionless Magnehelic gage movement for quick indication.
- Resistant to shock, vibration, and over-pressures.
- No manometer fluid required, eliminating evaporation, freezing, or toxic issues.
- Process Connections: 1/8" female NPT duplicate high and low pressure taps - one pair side and one pair back.

4. Setup and Installation

Mounting:

The standard mounting orientation for the Magnehelic gage is with the diaphragm in a vertical position. For other mounting orientations, consult the manufacturer for specific instructions to ensure accurate readings.

Process Connections:

The gage is equipped with 1/8" female NPT (National Pipe Taper) taps for pressure connections. There are two sets of taps: one pair on the side and one pair on the back.

1. Identify the high and low pressure ports. These are typically marked on the gage.

2. Connect your pressure lines to the appropriate ports using 1/8" NPT fittings. Ensure all connections are sealed properly to prevent leaks.
3. Use the side taps or back taps as convenient for your installation. Unused taps should be sealed with the provided plugs.
4. For differential pressure measurement, connect the higher pressure source to the "High" port and the lower pressure source to the "Low" port.

5. Operating Instructions

Once installed, the Dwyer Magnehelic Gage operates automatically.

1. Ensure the system is pressurized within the gage's operating limits.
2. The gage's needle will move to indicate the current pressure reading on the dial.
3. Read the pressure directly from the scale. The gage is calibrated in pounds per square inch (PSI).
4. For zero adjustment, if necessary, gently turn the external zero adjustment screw located on the face of the gage until the needle aligns with the zero mark when no pressure is applied.

6. Maintenance

The Dwyer Magnehelic Gage is designed for minimal maintenance.

- **Cleaning:** Wipe the exterior of the gage with a soft, damp cloth. Do not use abrasive cleaners or solvents.
- **Inspection:** Periodically inspect the pressure connections for any signs of leaks or damage.
- **Calibration:** While the gage is highly accurate, periodic calibration by a qualified technician is recommended to ensure continued precision, especially in critical applications.
- **Storage:** When not in use, store the gage in a clean, dry environment within its specified temperature limits.

7. Troubleshooting

Problem	Possible Cause	Solution
No reading or erratic reading	• No pressure applied • Leaking connections • Blocked pressure lines • Gage damaged	• Verify pressure source • Check and tighten all connections • Clear any obstructions in lines • Contact manufacturer for service
Inaccurate reading	• Incorrect mounting orientation • Zero not adjusted • Gage out of calibration • Exceeding pressure/temperature limits	• Ensure vertical diaphragm orientation • Adjust zero screw • Arrange for professional calibration • Operate within specified limits
Needle sticks or moves slowly	• Internal obstruction or damage • Excessive vibration	• Contact manufacturer for service • Reduce vibration at mounting point

8. Specifications

Parameter	Value

Parameter	Value
Service	Air and non-combustible, compatible gases (Natural Gas option available)
Pressure Limits	-20 in Hg. to 15 psig
Temperature Limits	20 to 140°F (-6.67 to 60°C)
Accuracy	±2% of full scale
Mounting Orientation	Diaphragm in vertical position (consult factory for others)
Process Connections	1/8" female NPT duplicate high and low pressure taps - one pair side and one pair back
Material	Aluminum
Item Weight	1.2 Pounds
Package Dimensions	6.2 x 5.5 x 2.9 inches

9. Warranty and Support

For warranty information, technical support, or service inquiries, please contact Dwyer Instruments, Inc. directly. Refer to your purchase documentation for specific warranty terms and conditions.
Manufacturer: Dwyer Instruments, Inc.
Contact Information: Please visit the official Dwyer Instruments website or refer to the contact details provided with your product packaging for the most current support information.

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