

## conrader RCBM-HU

# Conrader Pilot Unloader Valve Instruction Manual

Model: RCBM-HU | Brand: conrader

## 1. PRODUCT OVERVIEW

The Conrader Pilot Unloader Valve is a critical component in compressed air systems, designed to actuate other devices using a pneumatic (air) signal. This valve operates in conjunction with other equipment, such as throttle controls to manage engine speed, discharge valves to vent air, or intake unloaders in compressor heads. Its primary function is to regulate the compressor's operation within a set pressure range, ensuring efficient cycling between unload and load settings.

When the system reaches the unload setting, the pilot valve opens, sending a signal to actuate the associated device (e.g., opening a discharge valve to vent air). Conversely, at the load setting, the pilot valve closes, allowing the compressor to return to normal operation and build pressure. This precise control helps maintain system efficiency and prevents continuous compressor operation when not required.

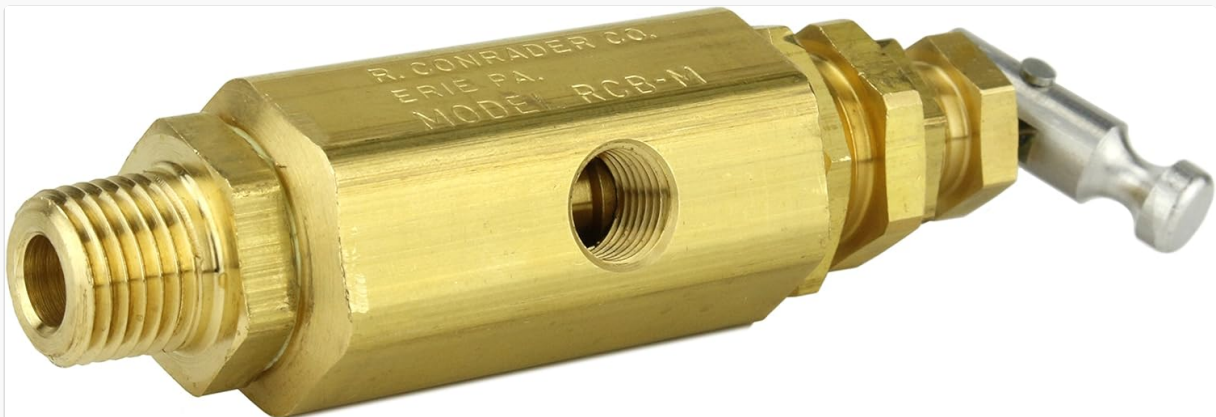


Figure 1: Main view of the Conrader Pilot Unloader Valve, showing the threaded inlet and the manual unloader lever.

## 2. SPECIFICATIONS

Attribute	Value
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Attribute	Value
Model Number	RCBM-HU
Valve Type	Pilot Unloader Valve
Material	Stainless Steel
Inlet Connection Size	1/4" Male NPT
Outlet Connection Size	1/8" FNPT
Number of Ports	2
Operating Pressure Range	95-125 PSI (Adjustable 30-40 PSI)
Maximum Operating Pressure	250 PSI
Temperature Rating	15°F to 350°F
Item Dimensions (L x W x H)	4 x 1.25 x 1.25 inches
Item Weight	8 ounces
Features	Manual Hand Unloader

### 3. SETUP AND INSTALLATION

Proper installation is crucial for the safe and effective operation of the pilot unloader valve. Ensure the air compressor system is completely depressurized before beginning any installation or maintenance work.

#### 3.1. Tools Required

- Wrench (appropriate size for 1/4" NPT and 1/8" FNPT connections)
- Thread sealant (e.g., PTFE tape or pipe thread compound)

#### 3.2. Installation Steps

1. **Depressurize System:** Ensure the air compressor is turned off and all air pressure is completely vented from the system.
2. **Identify Connection Points:** Locate the appropriate 1/4" NPT male inlet port on your compressor system where the pilot valve will connect. Identify the 1/8" FNPT outlet for the pneumatic signal line.
3. **Apply Thread Sealant:** Apply a suitable thread sealant (such as PTFE tape or pipe thread compound) to the male threads of the pilot unloader valve's inlet. This ensures an airtight seal and prevents leaks.
4. **Install Valve:** Carefully thread the pilot unloader valve into the designated inlet port. Tighten with a wrench until snug, but do not overtighten, as this can damage the threads or the valve body.
5. **Connect Outlet Line:** Connect the pneumatic signal line from the device to be actuated (e.g., throttle control, discharge valve) to the 1/8" FNPT outlet of the pilot valve. Ensure this connection is also sealed properly.
6. **Verify Connections:** Double-check all connections for tightness and proper sealing.
7. **Repressurize and Test:** Slowly repressurize the air compressor system and check for any air leaks around the newly installed valve and connections. Listen for hissing sounds or use a soapy water solution to detect bubbles.



Figure 2: Angled view of the valve, highlighting the inlet and outlet ports for connection.

## 4. OPERATING INSTRUCTIONS

The Conrader Pilot Unloader Valve operates automatically based on the pressure within your air compressor system. It is designed to cycle the compressor efficiently within its specified pressure range (95-125 PSI).

### 4.1. Automatic Operation

- **Unload Setting:** As the air compressor builds pressure and reaches the upper limit of its operating range (the unload setting, typically 125 PSI), the pilot valve will open. This action sends a pneumatic signal to the connected device (e.g., a throttle control to slow down the engine or a discharge valve to vent excess air), effectively