You said: AIR SOURCE TREATMENT

An **Air Source Treatment Unit** (commonly referred to as an **FRL unit**: **Filter, Regulator, Lubricator**) is a critical pneumatic accessory designed to clean, regulate, and condition compressed air, ensuring optimal, long-lasting performance of downstream pneumatic tools and machinery. Naturally available air contains impurities like dust, water, and oil mist which can cause component corrosion, valve sticking, and premature equipment failure if left untreated. [

The Core Components of an FRL Unit

An air source treatment unit typically integrates three main functions into a modular configuration: [1, 2, 3]

- **Air Filter**: Removes moisture, rust, dust, and fluid oil particles. Standard elements filter down to 40µm, while high-precision environments utilize 5µm elements. [1, 2, 3]
- **Pressure Regulator**: Stabilizes and controls the incoming pressure, keeping it constant despite line fluctuations. This protects sensitive valves or actuators from unexpected spikes. [1, 2, 3, 4]
- **Lubricator**: Atomizes and injects a fine mist of pneumatic oil into the clean air stream. This minimizes friction on rapid-moving components like cylinders. [1, 2, 3, 4]

□ Proper Operation and Maintenance Techniques [1]

To achieve consistent system performance, follow these essential operational guidelines outlined by industrial manufacturers: [1, 2]

1. **Pressure Adjustments**: Pull up the regulator knob before turning. Rotate **clockwise** to raise the pressure and **counterclockwise** to decrease it. Adjust it evenly and incrementally rather than in a single large twist. [1, 2, 3, 4]
2. **Drainage Protocols**: Air source filters feature either manual or differential pressure drainage mechanisms. For manual setups, you must purge collected water before it accumulates up to the level of the filter element. [1]
3. **Lubrication Care**: Use dedicated lightweight, non-detergent mineral oils such as **ISO VG 32** or **ISO VG 46**. Refill the fluid reservoir cup up to a maximum of 80% capacity. Adjust the oil-drip knob clockwise between positions 0 (minimum) and 9 (maximum). [