The **RO Max P40 RODI Wall Mount Filtration System** is a high-performance filtration unit capable of delivering up to 8 GPM of purified water for various applications. It combines reverse osmosis (RO) and deionization (DI) technologies to produce ultra-pure water by utilizing a powerful pump and multiple filtration stages. Below is an overview of its components, working principles, and operation procedures:

Key Components:

1. **Comet P40 Pump**:
    - **Attached to a gas engine** that draws water from a **Tap Water Static Tank**.
    - **Pressure Regulation**: The built-in regulator on the P40 adjusts the output pressure to 125-130 PSI.
    - Operates at **10 GPM** when drawing water from the tank.
2. **First Filter Plate**:
    - **Carbon Filter**: A 40-inch carbon filter housed in a 4x40 container, rated to filter up to **180,000 gallons** of water.
    - **High-Flow RO Membranes**: These membranes work to purify the water by removing contaminants and reducing TDS (Total Dissolved Solids).
3. **Second Filter Plate**:
    - Equipped with **three 4x40-inch DI Filter housings**.
    - These DI (deionization) filters further purify the water by removing ions, resulting in highly purified RO water.
4. **Flush and Waste Water System**:
    - The system features a **water hose** connected to a valve that can direct waste water (high in TDS) to a landscape water tank or other locations when the system is in "production" mode.
    - When the valve is open, the **P40's output flow** is routed through this valve. When the P40 is off, little to no flow occurs.
    - **Flushing Procedure**: At the start and end of each job, the system must be flushed for 1-3 minutes using tap water. This flush water can be routed back into the Tap Water Tank.
5. **Temperature Sensitivity**:
    - Water temperature impacts production, and colder water will slow down the rate of purified water output.
6. **Bag of Connectors and Fittings**:
    - The system includes spare connectors and fittings to optimize the placement of the wall-mounted RO and DI plates for different vehicle or trailer configurations.

Working Principle for RO Flush and Waste Water Valve:

- The flush/waste water valve plays a key role in managing the system's operation, allowing for the discharge of waste water and the initial flushing of the system.
- During operation, the valve must be managed to switch between flushing and production modes, ensuring proper flow through the RO and DI filters.

Day-to-Day Operation:

Once the system is properly configured, regular adjustments to the P40 pump regulator are unnecessary. The system is controlled using the RO Flush Valve and pressure release handle on the P40.

Startup (Beginning of Job):

1. **Check water levels** in the Tap Water Static Tank.
2. **Open the RO Flush Valve** (aligned with the hose).
3. **Start the P40 pump**:
    - Ensure the Regulator Control Handle is in the "Open" position.
    - Start the engine and adjust to operating speed.
    - Move the Regulator Control Handle to the "on" position to set the pressure.
4. **Flush the system** for 1-2 minutes.
5. Slowly **close the RO Flush Valve** (turn 90 degrees), putting the system into "Production Mode" to begin generating RODI water.

Shutdown (End of Job):

1. **Open the RO Flush Valve** (aligned with the hose).
2. Wait for 1 to 1.5 minutes.
3. **Release the Regulator Pressure Handle** on the P40 pump.
4. Let the engine idle for 15 seconds.
5. **Turn off the engine**.

Additional Considerations:

- In case of overpressure (pressure spikes due to runaway pressure), the hose-to-barb connections, particularly the 3/4-inch barbs, are designed as the first point of failure to release pressure safely.

By following these guidelines, the RO Max P40 RODI system provides a reliable and efficient method for producing ultra-pure water, suitable for various cleaning or filtration tasks. Proper flushing and shutdown procedures will ensure the longevity and effectiveness of the system.