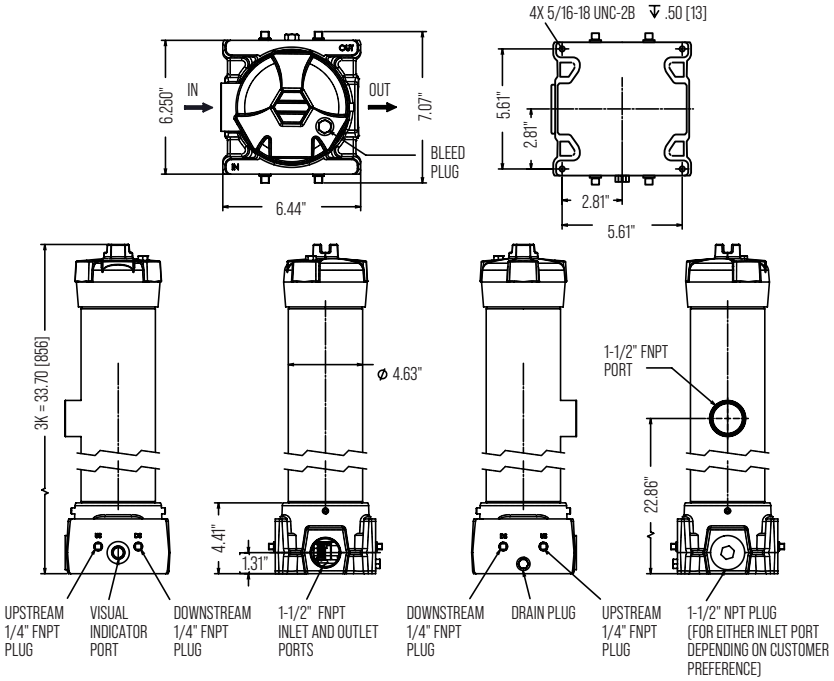
# OPERATION MANUAL

## FMS-60-TBP

## FILTER INSTALLATION

- Define the fluid entry port: lower or upper.
- When fluid exits, is always/only through the lower port, opposite to the entrance.
- Place pressure gauges in the US and DS ports, there is also the option of the delta P indicator port or a sensor with connection to a light for saturation alarm.
- Screw the air bleed button into the filter cover with a hose for drainage.
- Secure the filter using the holes/threads in the base of the filter.
- We recommend to have a spill/leak/safe tray.
- Read the tolerances of the housing and do not exceed them (diagram); recommended flow: 60 GPM.




### HOUSING TECHNICAL SPECIFICATIONS

| | |
|---|---|
| **Max. Flow per Housing** | 60 gpm |
| **Porting** | IN 1 ½" NPT (top & bottom), |
| | OUT 1 ½" NPT (bottom only) |
| **Additional Ports** | 2 x test points, 2 x manometers, |
| | 1 x Delta P indicator (pop-up or sensor) |
| **Elements Options** | FMS-1/60-P (particulate), |
| | 3 x FMS-1/10-PA (particulate & absorbing) |
| **Max. Operating Pressure** | 900 psi (60 bar) |
| **Min. Yield Pressure** | 3200 psi (220 bar) |
| **Temperature Range** | -20°F to 225° (-29°C to 107°C) |
| **Bypass Setting** | 30 psi (40 psi optimal) |
| **Porting Base** | Cast Aluminum |
| **Element Case** | Steel |
| **Cap** | Ductile Iron |
| **Weight** | 41.5 lbs |
| **Element Change Clearance** | 26.5" |

# ELEMENT CHANGE INSTRUCTIONS

## FMS-1/60-P


## ELEMENT INSTALLATION

- Shut down the system to ensure there is no pressure or flow in the filter housing.
- Bleed the pressure from the filter using the bleeder plug on the filter cover. If there is a bleeder valve instead of a bleeder plug, press the button on the valve to bleed the filter. Make sure system pressure is less than 750 psi.
- Drain the filter housing by removing the drain plug.
- Use a 1 ½" socket wrench (open end or crescent wrench) to loosen the threaded cap on the filter tube. Twist the cap counterclockwise until the tube form the filter comes off. (Note: cap is torqued to 20 ft - lb.)
- Remove the contaminated element with a twisting motion from the filter head. Please note that the spring plate and spring are reusable.
- Check the cap with the O-ring and back-up ring. Replace them if necessary. (O-ring part number is LFT-908)
- Lubricate the element seals before placing the replacement element in the housing with system fluid.
- Replace element spring plate and spring on top of element.
- Carefully replace the cap on the newly installed element and place it on the filter tube.
- Screw the cap on clockwise until it is hand tight. Then a 1 ½" socket wrench (open-end or crescent wrench) and tighten until the cap touches the bottom of the filter tube and torque to 20 feet-pounds.
- Tighten the drain plug.
- Tighten the bleeder plug in the cover.

### THETA 4>4310 SINGLE PASS TEST

| | | PARTICLES | | |
|---|---|---|---|---|
| | ISO CODES | 4 µm | 6 µm | 14 µm |
| Reservoir Contaminant Level | 22/21/18 | 31898 | 14071 | 542 |
| Average Cleanliness at Downstream | **10/8/6** | **7.4** | **1.7** | **0.34** |

### ELEMENT TECHNICAL SPECIFICATIONS

| | |
|---|---|
| Efficiency | Beta 4>4193 (ISO 16889:99) |
| DHC | 344 grams (MTD) |
| Maximum Pressure | 100 psi |
| Recommended Flow | 60 gpm |
| Dimensions | 28x4x4" |
| Weight | 4.5 lbs |
| Housings | FMS-60-BP |

⚠ **Reminder: When restarting the system, it is essential to bleed the filter housing by slightly loosening the bleed plug or (pressing the auto bleed adapter) to remove trapped air. This ensures that the filter housing is completely filled with system fluid and that the entire surface of the element is removing contamination.**