F-10 FLAP GATE

- SIZES 6" TO 60"
- CAST IRON BODY WITH CAST IRON SEAT
- RATED FOR UP TO 10 FEET OF SEATING HEAD

MARKETS

AGRICULTURE

CIVIL

WATER/ WASTEWATER

SPECIFICATIONS

Size Range	6"-60"
Seat Angle	5° (6"-24"); 2.5° (30" and larger)
Mounting	Flatback, spigotback, taper setting collar
Flange Drilling	Not applicable
Assembly Hardware	Stainless steel ASTM F-593 & F-594 Type 316
Seating Head	Up to 10 feet
Frame & Cover Materials	Cast iron ASTM A-126 Class B
Seat Materials	Cast iron ASTM A-126 Class B
Hinge Bolt & Hinge Link	Bolt: stainless steel ASTM F-593 & F-594 Type 316 Link: stainless steel ASTM A-276, Type 316
Hinge Bushings	Seamless 85 red brass ASTM B-43; Alloy 230

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Scan for detailed drawings

FEATURES AND BENEFITS

1. **Heavy-Duty Cast Iron Frame & Cover**

   The Waterman Red Top F-10 Flap Gate is designed as a competitive drainage gate solution for use with concrete pipe, headwalls, and corrugated metal pipe, with seating heads up to 10 feet. The frame and cover are manufactured from heavy-duty cast iron, delivering dependable strength and long-term durability in gravity flow applications. This design has made the F-10 a widely used solution on federal, state, and municipal projects.

   The F-10 is available with mounting options including Flatback (headwall mounting), Spigotback (for corrugated metal pipe), and Taper Setting Collars for concrete pipe installations.

2. **Durable Hinge System for Long-Term Operation**

   The F-10 utilizes galvanized steel angle links engineered to absorb unbalanced side shock during operation. These links are balance-pivoted on bronze bushings to reduce friction and promote smooth flap movement. This simple hinge configuration supports consistent operation while minimizing wear between moving components.

3. **Reliable Metal-to-Metal Sealing for Gravity Services**

   The cast iron cover seats directly against the frame, creating a durable metal-to-metal seating surface designed for gravity flow applications. The F-10 provides free outflow under normal discharge conditions while delivering practical sealing against reverse flow.

   This configuration supports dependable backflow protection in stormwater drainage systems, waste lines, sewage treatment facilities, flood control structures, and irrigation applications. The straightforward mechanical design supports long service life with minimal maintenance requirements.

   Note: The F-10 is not recommended for pump discharge or applications where violent slamming may occur.

4. **Optimized 5° / 2.5° Seat Angle Geometry**

   The F-10 incorporates a 5° seat angle on sizes 6"– 24" and a 2.5° seat angle on sizes 30" and larger. This seat angle geometry eliminates the need for special pipe cuts or sections and helps prevent the gate from standing open due to minor pipe deflection or settlement.

   By utilizing gravity and flow dynamics to assist closure, the F-10 ensures proper gate seating and reliable sealing performance.

5. **Set It, Forget It: Automatic Operation with Minimal Maintenance**

   Designed for automatic operation, the F-10 opens easily during normal outflow and closes securely when reverse flow occurs, helping prevent backflow. The simple gravity-operated design requires no power or manual operation, allowing the gate to work continuously with minimal maintenance. This hands-off operation makes the F-10 a reliable solution for drainage and outfall applications while reducing the need for ongoing attention.

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