

## Swing Joints

### Innovative Elbow Design Reduces Pressure Losses by Over 50%

Looking to enhance the performance of your golf course irrigation system? Rain Bird® Swing Joints are the perfect solution. Featuring superior flow characteristics and excellent structural integrity, these swing joints are designed to deliver the performance you expect from Rain Bird while saving you money. They are available in a wide range of configurations. Rain Bird Swing Joints are the perfect complement to our Rain Bird Rotors.

#### Features

- Superior flow characteristics through an innovative swept-elbow design that reduces pressure loss by over 50% compared to other swing joints. With an available enlarging outlet or reducing outlet (no additional adapters required), you can save money using smaller-diameter swing joints with many larger rotor heads.
- Excellent structural integrity from the swept-elbow design reduces the costs associated with fatigue-related failures.
- Double O-ring protection provides a better seal ensuring joints are kept clean and can be repositioned more easily. When Rain Bird Swing Joints are assembled underwater, a unique pressure-relieving vent bypasses trapped water from the joint threads, preventing O-ring damage or extrusion.
- Modified ACME outlet improves safety by losing seal engagement before losing thread engagement during rotor removal. This provides a visual indication that the system is still under pressure.
- Threaded inlets are oversized making hand tightening and blind installations (underwater) easier. This also reduces the risk of potential damage caused by over-tightening with a wrench.
- An available triple-top outlet configuration allows for easier adjustments when turf height changes or rotors settle. It also provides greater flexibility in setting the rotor to the grade.

#### Operating Range

- **Pressure Rating:** 315 psi (21,7 bar) at 73°F (22,8°C)



#### Specifications

- **Diameters:** 1" (2,5 cm), 1¼" (3,2 cm) and 1½" (3,8 cm)
- **Lengths:** 8" (20,3 cm), 12" (30,5 cm) and 18" (45,7 cm)
- **Inlet Types:** NPT, BSP, ACME, AquaFuse® AquaSaddle, spigot
- **Outlet Thread Types:** NPT, BSP or ACME
- **Enlarging ACME Outlets\*:** Available on 1" (2,5 cm) and 1¼" (3,2 cm) swing joints for connections to many rotors with 1¼" (3,2 cm) and 1½" (3,8 cm) inlet sizes respectively (no additional adapters required)
- **Reducing ACME Inlet\*\*:** Available on 1¼" (3,2 cm) swing joints for use with a 1½" (3,8 cm) ACME Service Tee outlet
- **Inlet Configurations:** Standard or top-mount
- **Outlet Configurations:** Standard or triple-top

#### AquaFuse® AquaSaddle™ Inlet

Directly connect Rain Bird Swing Joints to AquaFuse AquaSaddle without the need for a separate adapter.



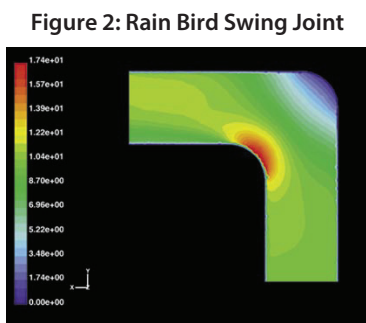
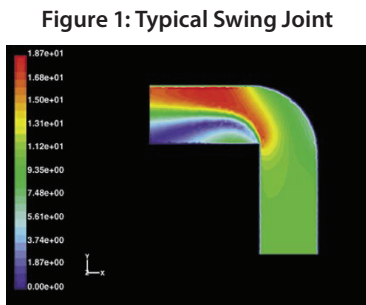
*Swing joints featuring Aquasaddle Inlets are offered in various configurations, including lay arm lengths of 8", 12", and 18". Additionally, these swing joints are available in diameters of 1", 1.25", and 1.5".*

## Go with the Flow

Using sophisticated Computational Fluid Dynamics analysis, Rain Bird engineers studied numerous designs to reduce pressure losses associated with swing joints. The result is an innovative swing joint with superior flow characteristics.

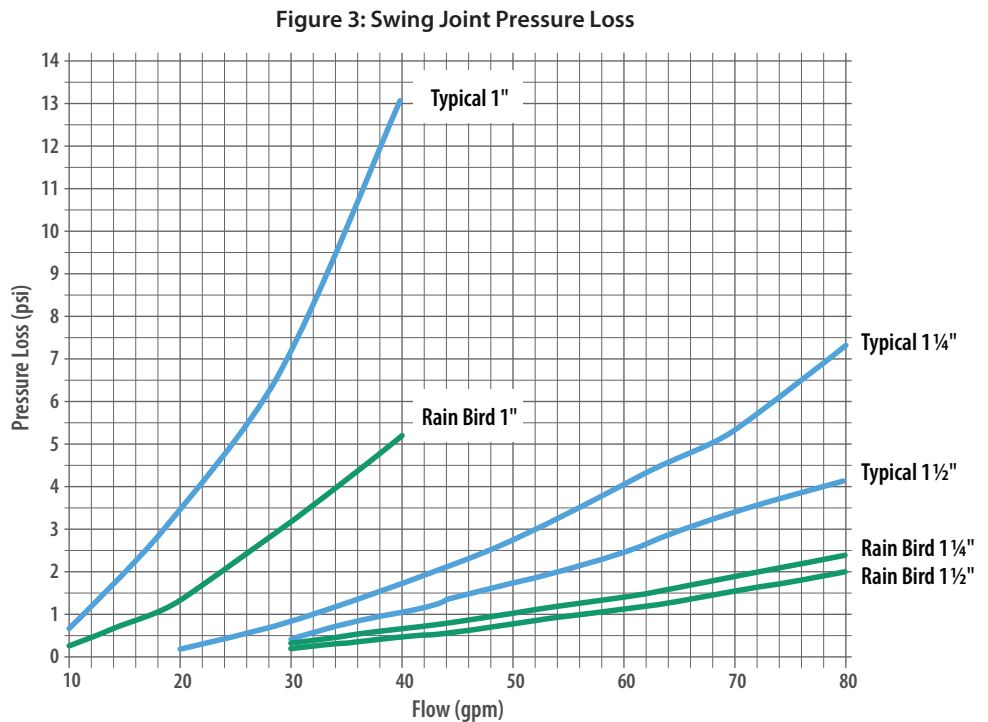
On a typical swing joint, flow around the corner of an elbow results in turbulence and pressure loss. The different colors in **Figure 1** below represent the many flow rates past an elbow in a typical swing joint.

Rain Bird incorporates two significant features into our swing joint elbow design that improve flow rate. First, the cross-sectional area of each elbow has been increased. Second, the sharp corner of the elbow has been softened. The result is a smoother flow through each elbow as shown in **Figure 2**.



These features dramatically reduce pressure losses by over 50% compared to competing swing joints. Because of the improved flow rate, a smaller-diameter swing joint on a larger rotor can be used without penalty for pressure loss. For example, a Rain Bird 952 Rotor would require a typical swing joint with a 1½" (3,8 cm) diameter. Using a Rain Bird Swing Joint, only a 1¼" (3,2 cm) diameter model with an enlarging outlet would be needed.

The chart in **Figure 3** below illustrates this example. The pressure loss through a Rain Bird 1¼" diameter swing joint is less than the pressure loss through competing 1½" diameter swing joints.



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