Maintenance and Off-Season Storage of Irrigation Equipment

An irrigation system is an expensive investment. Regular maintenance and following recommended off-season storage procedures will help keep your system operating properly for many years. Following these procedures also reduces the risk of equipment failures that may lead to lost production time or crop loss. These procedures are particularly critical in wastewater application systems, where equipment failures could result in a discharge of liquid wastes and damage to the environment.

This publication and presentation provides general checklists and recommendations for routine equipment inspections, regular maintenance schedules and winterization procedures for surface irrigation systems used for applying fresh water and those applying animal, industrial or municipal wastewater. Turf, landscape, surface drip, and subsurface drip irrigation systems are not covered.

The original operation and maintenance manual for a piece of irrigation equipment is your primary source of information regarding its required maintenance procedures. If the manual can not be located, ask your local dealer or equipment manufacturer for a replacement.

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Maintenance of Irrigation Equipment

• Ensures longevity of equipment
• Minimizes unexpected downtime
• Apply effluent when environmental conditions are optimum
• Reduce risk of discharges of wastes
  – environmental damage
  – possible fines
Overview

• Maintenance
• Off-Season Storage Procedures
  – Hard Hose Travelers
  – Sprinklers/Big Guns
  – Pumps
  – Diesel Engines
  – Electric Motors
Hard Hose Travelers
Ensure Pressure Gauges are Operating Properly
Check gauge liquid level. Refill with glycerin or hydraulic fluid if needed.

Gauge is only 1/2 full with glycerin

Remove cap to refill
Filters sound like a good idea, but have short lives in real world operations. Consider 1/4 turn ball valve instead.
Lubricate travelers according to manufacture’s recommendation
Inspect nozzles and rings for wear. Use calipers to measure rings.
Inspect intake lines for holes and wear
If possible, store travelers under roof and keep dry and clean.
If available, use an air “blow out” cap to blow water from hose before storing.
Engine Drive Travelers
Check Engine Oil Level Daily
Turbine Drives

- If installed, remove drain plug before storing
- Use strainer in intake line if solids are greater than 2%
Keep all chains lubricated and inspect belts for wear.
Keep turbine properly greased
Diesel Engine Pumps
Ensure that all gauges are operating properly.
Follow O&M procedures for servicing air filtering system
Check with service dealer before servicing timing or turbocharger
Most packing seals need to drip approximately 40 - 45 drips per minute.

Adjust gland nuts evenly.
Check chain connections before each irrigation event
Check connections and seals to minimize excessive leaks.

Worn seal needing to be replaced
Insure air and pressure relief valves are free of debris.

Watch for bees and spiders!!
Pivots and Linears
As with all electrical equipment, insure the power is turned off before performing any maintenance or service checks.
Drain and refill wheel oil annually or every 1,000 of operation.
After validating rotation speed, manually check emergency-stop or auto reverse devices or switches.
Drain sand/grit traps periodically. Monitor for excess accumulation and nozzle wear.
Check seals, flanges and couplings for leaks
Look for sprinkler wear on splash plates and wobbler heads. Remove hair or other debris.