

## Hunter Starting Smarter Irrigation Project

# Pre-season Checklist Centre Pivots & Laterals

### Is your system well set-up?

A pre-season check of your centre pivot or lateral move irrigator/s will ensure you are ready to start irrigating *on time* and are set-up well for the season ahead.

Remember, a delayed start to irrigating your pasture or crop at the first indication of monitored soil moisture depletion will result in loss of production and income.

Simple checks to correct issues that were evident during the previous season, or have occurred whilst the system has been idle, will result in more efficient water and power use and avoid mid-season break downs. A close inspection also identifies items for updating maintenance checklists and proactive management of foreseeable issues before they become a costly crisis. These are high performance systems that give their best when operating to specifications.

All pressurised irrigation systems need to have a pump that is properly selected to the system's duty, is operating efficiently and is well maintained. If the pump is not performing properly, the irrigation system won't either. Ensure the pipe sizes are adequate, especially the suction pipe, ensure the foot-valve and strainer are not blocked, check inside the pump for partial or full blockages, ensure the operating pressure and flow are according to specifications, and have the efficiency checked at regular intervals.

### What do I need to check?

Irrigation New Zealand's [Guide to Good Irrigation](#) (2011) is well worth a check prior to each season. It will act as a reminder of the preparations, operations and management considerations which should be addressed.

To check your system properly prior to the season and during the season, it is essential to have appropriate gauges and meters. These include a pressure gauge and flow meter at the pump, pressure gauges on either side of the filter, a pressure gauge at the centre (CPs) or cart (LMs) and perhaps another flow meter, and a pressure gauge on an outer emitter just above the pressure regulator.

A check list is provided on the next page. These are the fundamental common items which should be used to guide your site specific system checks. It is always best to do these checks with a second person- the additional labour costs will certainly be returned when your system is having less break-downs, using less energy and correctly applying water over the coming season!

### Tips

- Safety First- many items can be fixed on-farm, others require specialist skills or equipment. Know your limits and obligations.
- Reduce the likelihood of implements and machinery striking the irrigator- erect reflective signage.
- Walk the irrigator track before turning on the system to check for obstacles (eg. fallen trees or branches, failed fences, implements left behind) and any changes to paddock surface.
- Walk the system with new employees before they operate the machine for the first time and have all operators read the operating instructions prior to start-up.
- Include management of the wheel tracks in the farm maintenance program. Wheel ruts significantly increase the load and the wear on the drive train and can slow a section of the irrigator down, affecting the irrigator alignment.
- Consider soil moisture monitoring and weather forecasting options. Linking soil moisture monitoring with weather forecasts, using a simple water balance tool such as the Scheduling Irrigation Diary for Dairy, allows you to better gauge when to start-up and take advantage of rainfall to save time (irrigation days) and money (pumping costs).
- An efficient irrigation system is only as good as the scheduling of irrigation.



Take the time to develop your skills, and those of staff, in identifying potential risks to the performance of your system before the irrigation season commences. Simple hazards may cause outages which will impact your production results within days over the hot, dry periods.

## Pre-season Checklist- Centre Pivot & Lateral Irrigators

### SYSTEM “OFF” CHECKS

Component	Check
Safety	<input type="checkbox"/> Electrical isolator switch is tagged/locked
Pump	<input type="checkbox"/> Clean inside and out, flow meter and pressure gauge serviceable
	<input type="checkbox"/> Belt drive is tight
Filtration	<input type="checkbox"/> Rings/screens clean, intact
	<input type="checkbox"/> Pressure gauges in good condition
Pivot point (CP)	<input type="checkbox"/> Lubrication, grease
Cart (LM)	<input type="checkbox"/> All checks completed
Drag hose (LM)	<input type="checkbox"/> Hose condition, fittings secure
Towers	<input type="checkbox"/> Micro-switches, cable and rod connections
	<input type="checkbox"/> Wheel bolts, tyre condition and pressure
	<input type="checkbox"/> Gearboxes, drive shafts, U joints for wear, lubricate as required
Riser pipe and spans	<input type="checkbox"/> Boots – tighten bands if necessary
	<input type="checkbox"/> Flanges
End gun, corners	<input type="checkbox"/> Connections
	<input type="checkbox"/> Wiring and hydraulic lines
	<input type="checkbox"/> Booster pump operable
Sprinklers	<input type="checkbox"/> Every sprinkler against nozzle chart for correct size, wear, damage, blockages
	<input type="checkbox"/> Regulators for wear or damage
	<input type="checkbox"/> Droppers for wear or damage, replace as necessary
Control unit	<input type="checkbox"/> Electronic controls and battery charge; insects
Prepare to start	<input type="checkbox"/> Ensure nothing is parked in front of the irrigator

### SYSTEM “ON” CHECKS

Component	Check
Pump	<input type="checkbox"/> Pressure and flow as specified
Pivot point	<input type="checkbox"/> For leaks, movement
Riser pipe and spans	<input type="checkbox"/> For leaks along spans and at towers
	<input type="checkbox"/> Flanges – call service company if flanges leaking
Towers	<input type="checkbox"/> Motors, gear box and drive shaft operation for noise or vibration
Sprinklers	<input type="checkbox"/> Each sprinkler is turning correctly and cage not damaged
	<input type="checkbox"/> Each sprinkler is throwing level, not at angle
	<input type="checkbox"/> Droppers hanging straight, leaks
End gun, corners	<input type="checkbox"/> Connections
	<input type="checkbox"/> Operation, esp. pressure
	<input type="checkbox"/> Gun angles are correct, turn on and off at right locations
	<input type="checkbox"/> Corner arm sprinklers turn on and off correctly
System pressure	<input type="checkbox"/> Inlet pressure gauge with alternative – replace if necessary
	<input type="checkbox"/> Inlet pressure is correct
	<input type="checkbox"/> End pressure – above pressure regulator at end dropper (at least 5 psi higher)
Other	<input type="checkbox"/>
	<input type="checkbox"/>

Checked by: \_\_\_\_\_ Date: \_\_\_\_\_



Australian Government

National  
Landcare  
Program



Local Land  
Services  
Hunter



Dairy  
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The Hunter Starting Smarter Irrigation Project wishes to acknowledge that this checklist has been prepared using information from Irrigation New Zealand's Pre-Season Checklist found at [www.irrigationnz.co.nz](http://www.irrigationnz.co.nz)

*Hunter Starting Smarter Irrigation Project*