

AGRICULTURAL IRRIGATION

CERTA-SET®

Field Installation Guide

Westlake
Pipe & Fittings

Lateral Pipe Assembly & Preparation

Certa-Set 3" Lateral Pipe Assembly

General Notes:

- Certa-Set pipe is intended for pressure pipe applications involving irrigation water systems. Please refer to the Field Layout Best Practices for field options and potential irrigation ideas.
- For instructions regarding pipe handling and additional installation information, please visit westlakepipe.com.



1. Install an O-Ring in the back groove of each female end of the sled coupling.

Note: The front groove is the spline groove.



O-ring missing



O-ring misaligned



O-ring in spline groove



O-ring properly installed

2. Apply lubrication to the O-ring on one side of the sled coupling.



Lubricant



Properly installed
O-ring



Applying lubricant

3. Lubricate the spigot end of the pipe.



Lubricant



Applying lubricant

Notes:

1. Avoid getting lubricant in the spline grooves.
2. Do not use excess lubricant.

4. Press the sled coupling onto the spigot end of the pipe until the pipe has seated over the O-ring. The spline hole will align with the groove in the pipe when properly installed.



Misaligned pipe and sled coupling



Properly aligned pipe and sled coupling



Push sled coupling onto pipe



Push sled coupling onto pipe

5. Insert a spline at a low angle to the pipe until the insertion mark (raised dot) reaches the spline hole on the sled coupling.



Insert pointed end of spline first



Push spline into spline hole



Push spline into spline hole



Spline fully inserted

6. Sprinkler risers:

$\frac{3}{4}$ " Pre-assembled Certa-Set Riser or $\frac{1}{2}$ " Aluminum Assembled Riser

A. $\frac{3}{4}$ " Pre-assembled Certa-Set Risers

1. Insert the flanged O-ring into the riser. The larger ridge faces the riser cap; the smaller ridge faces the sled coupling. Do not use lubricant.



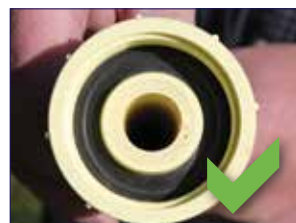
Missing O-ring



Incorrect O-ring positioning



Correct O-ring positioning



Correct O-ring positioning

2. After inserting the O-ring, screw the assembled riser onto the sled coupling by hand (clockwise). Hand tighten until it is seated. No tools are required. Do not overtighten.



Position riser to align with sled coupling



Hand tighten



Hand tighten



No tools required

3. Once riser and sled coupling are assembled, attach the sprinkler to the sprinkler end of the riser.



Place [MRDC] [MR] or [MDC] onto riser first



Hand tighten



Place [MRDC] [MR] or [MDC] onto riser first



Place sprinkler head onto [MRDC] [MR] or [MDC]; hand tighten



Sprinkler head installed



Do not install sprinkler head with [MRDC] [MR] or [MDC]

B. 1/2" Aluminum Assembled Riser (manufactured by others)

1. The 1/2" riser consists of the following pieces: A 1/2" riser cap, chevron gasket and 1/2" assembled riser.

Note: Westlake Pipe & Fittings does not manufacture or warranty 1/2" risers beyond the riser cap.



Components to field assemble 1/2" riser

2. Insert chevron gasket into sled coupling "open side down" without lubricant. Screw ½" riser cap (clockwise) until it is hand tight and seated.



In-correct gasket positioning



Align gasket with the sled coupling before inserting the gasket into the top opening



Correct gasket positioning



Hand tighten riser cap

3. Insert ½" riser and turn until the hook is engaged against the stop. Hand tighten until it is seated. No tools are required. Do not overtighten.



Align riser with riser cap



Rotate riser



Hook engaged with stop

4. Once riser and coupling are assembled, attach the sprinkler to the sprinkler end of the riser.



Place [MRDC] [MR] or [MDC] onto riser first



Place [MRDC] [MR] or [MDC] onto riser first



Place sprinkler head onto [MRDC] [MR] or [MDC]; hand tighten

Notes:

1. Splines should be inserted the same direction to facilitate the removal of the splines when the pipe is removed from the field with the automatic pipe removal system. Please refer to the Field Layout Planning Guide and the Lateral Field Installation sections.
2. All 1½" riser stubs below the quick disconnect hook must be a minimum of 2.25" in length to ensure full engagement of the coupling boss for proper riser support. Riser OD shaft specification 0.840 +/- 0.010". Maximum height for the riser is 36 inches when used with rotator sprinklers and 24 inches when used with impact sprinklers. When using a riser that is higher than the stated dimensions, it is recommended that stakes be utilized to stabilize the system.

7. Load the assembled 3" Certa-Set piping onto the trailer to transport to the field. Please refer to the Lateral Field Installation section for additional information.

Lateral Field Installation

Field Installation of Certa-Set 3" Lateral Pipe

1. Once Certa-Set Lateral Pipe is assembled and loaded on to a flatbed trailer, it is ready to transport to the field for final installation.
2. Before the pipe is removed from the flatbed trailer, inspect the sled couplings to ensure that the O-ring is inserted correctly and lubricate the O-ring in the female end of each sled coupling.



O-ring missing



O-ring misaligned



O-ring in spline groove



O-ring properly installed

3. While the pipe is still on the flatbed trailer, verify the male end of the pipe is clean and lubricated.



Unclean pipe



Lubricant



Applying lubricant

Notes:

1. Avoid getting lubricant in the spline grooves.
2. Do not use excess lubricant.

4. Place roller tables in line with intended furrow. Note: The use of roller tables is preferred, but not required.



Pipe roller table setup



Pipe roller table setup



Pipe roller table setup



Pipe roller table setup

5. Connect the Certa-Set 3" lateral pipe to the tractor via a pulling connection.



Connecting to tractor
hitch #1



Connecting to tractor
hitch #2



Final connection



Final connection



Final connection
(another option)



Final connection
(another option)



Connecting pipe
to tractor

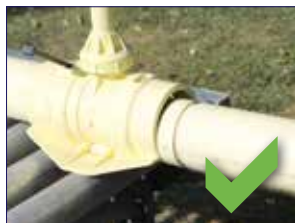


Connecting pipe
to tractor

6. Remove pipe from flatbed trailer and insert the assembled lateral pipe into the female end of the sled coupling.



Insert pipe into sled
coupling



Insert pipe into sled
coupling



Insert pipe into sled
coupling

7. Insert the spline into the into the sled coupling. Note the importance of spline direction as it relates to pipe removal.



Insert pointed end of
spline first



Push spline into the
spline hole



Spline not inserted in
same direction



Spline not fully inserted



Correctly inserted
splines

8. Repeat steps 6 and 7 continuously while the tractor pulls the pipe into the field until the desired lateral length is complete. Adjust tractor speed to match the speed of pipe assembly.
9. Connect lateral line to the rest of the system. (See the Field Layout and Main Line Pipe Assembly and Installation sections).



Certa-Set pipe entirely installed in an "H" design pattern



Certa-Set pipe entirely installed in a "U" design pattern



Certa-Set pipe entirely installed in the field

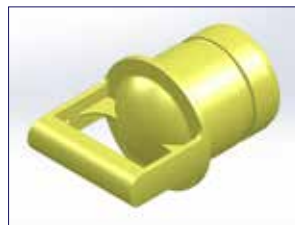


Certa-Set pipe installed in the field

10. Flush lateral lines and install the end plugs.



Flush lateral pipe



End plug



Install end plug

CERTA-SET CLIC SPLINE REMOVAL AND INSERTION

To remove the Certa-Set CLIC spline from the Certa-Set CLIC sled coupling:

1. With the end of the coupling facing toward you, begin to gently pull upward and clockwise on the CLIC spline tab until the spline begins to feed through the spline hole in the coupling.



2. Continue to feed the spline through the spline hole. It may be necessary to manipulate the orientation of the spline in order to fully remove the spline through the spline hole. Avoid bending the spline excessively during removal.



To Insert the Certa-Set CLIC spline into the Certa-Set CLIC sled coupling:

1. Begin by holding the spline upside down above the top of the coupling with the white stripe facing outward away from the center of the coupling.
2. Feed the flared end of the spline into the spline hole, ensuring that the end of the spline contacts the coupling in the spline groove on the coupling ID.



3. Continue to feed the spline counter clockwise through the spline hole and into the coupling.



4. Once the spline is fully fed into the coupling, it may be necessary to adjust the position of the flared end of the spline so that it catches the lip of the spline hole and creates the springing action when the spline tab is released from the expanded position.
5. When the Certa-Set CLIC spline is correctly inserted, you should be able to see the white stripe on the spline when looking into the coupling.

Main Line Pipe Assembly & Installation

Certa-Set Main Line Pipe Assembly & Installation

General Notes:

- Certa-Set main line pipe is intended for pressure pipe applications involving irrigation systems. Please refer to the Field Layout Planning Guide for field options and potential irrigation ideas.
- For instructions regarding pipe handling and additional installation information, please visit westlakepipe.com.



1. Inspect the female end of the coupling or tapped coupling, ensuring the O-Ring is properly seated in the rear groove and that the spline groove (front) is clean and free of dirt and debris.



O-ring missing



O-ring in spline groove



O-ring misaligned



O-ring properly installed



Lubricant



Applying lubricant



Applying lubricant



Avoid lubricant in spline groove

2. Lubricate the O-ring

Notes:

1. Avoid getting lubricant in the spline grooves.
2. Do not use excess lubricant.

3. Lubricate the spigot end of the pipe. Make sure it is clean and free of debris.



Pipe with debris



Lubricate spigot



Lubricate spigot

4. Start at one end of the pipeline and assemble the pipe against a firm stop, such as lumber or a tractor tire.



Tractor tire



Backhoe

5. If installing over a shallow V-ditch, ensure that sufficient lumber for cribbing (raising the pipe above the floor of the V-ditch) is available. At minimum, a 4" x 4" block in good condition should be used.



6. Insert spigot end of pipe into coupling. Pipe and coupling must be aligned in order for pipe to seat properly against the O-Ring. Pipe should slide straight into the coupling without deflection.



Misaligned pipe and coupling



Properly aligned pipe and coupling

Notes:

Always push on a coupling surface
and NOT on the end of a pipe



Bar and block



Bar and block



Backhoe with a strap



Strap

Notes:

If digging bars are used for leverage, protect the pipe with at minimum, a 2" x 4" block in good condition.

Never "hammer" on pipe that does not seat. Check alignment, then apply pressure with a digging bar again. In difficult situations where pipe is properly lubricated and aligned, use one digging bar to maintain pressure and a second bar to apply additional pressure.

In most cases, when pipe is properly seated, you will feel/hear a slight pop. If the spline will not easily insert into the hole, then the pipe has not been seated properly.

7. Insert each spline(s) into the spline hole until there is a "tail" of the specified dimension below.

Main line size	Spline length	Approximate length of spline extending out
6"	24"	1"
8"	32"	2 ¼"
10"	Two ½ Splines 20" each	1 ½"
12"	Two ½ Splines 24" each	2 ¼"



Spline hole(s)



Insert pointed end of spline first



Push spline into the spline hole



Push spline into the spline hole



Push spline into the spline hole



Splines fully inserted

8. Repeat as necessary.

9. Install valve at tapped coupling.



Tapped coupling



Threaded adapter



Tapped coupling assembly



Nelson valve



Nelson valve installed onto tapped coupling



Secure Nelson valve installed onto tapped coupling with spline



Nelson valve

Notes:

1. The Certa-Set main line piping and couplings can be disassembled and reused. See Main Line Disassembly.
2. Tapped couplings can be easily stripped if threads are not aligned properly. Take precautionary steps to prevent cross threading.

Best Practices:

Turn the pipe backward so the female end drops in, then tighten. This eliminates stripped threads.

Lateral Pipe Field Removal

Certa-Set Lateral Pipe Field Removal Guide

Typically, the pipe is removed from the field using an AIM Pipe Retriever. There are two models, the Valley Machine and the Salinas Machine.

Alternately, some growers choose to pull the pipe in full lengths into adjacent fields for use or storage.

Field Removal of Certa-Set using the AIM Pipe Retriever

1. Survey field conditions and decide on retrieval direction. Considerations should be taken for pipeline length, spline direction and work area limitations (roads, headland sizes, ditches)
2. Disconnect pipe from the main line connection. Remove swing joints (19 foot 3" Certa-Set lateral) and transition fittings. Note: the transition fitting (Tee or elbow) should be at 90 degrees so that the outlet is facing up.
3. Follow all operating procedures and safety precautions as instructed by the pipe retriever manufacturer. The illustrations and notes below are general guidelines, and all safety and operating requirements from the pipe retriever manufacturer and Occupational Safety and Health Administration (OSHA) shall take precedence.



Swing joints are on both sides of the Nelson valve



Nelson valve with buried main line



Elbows connecting lateral pipe runs



Tees

4. Disconnect 3" Certa-Set end plugs and drain line completely. Failure to drain lines will result in damage to the pipe and will void the warranty.



End plug to be removed



Remove spline



Remove end plug



Drain piping

5. Prior to using the AIM Machine, pull each pipeline with a tractor and strap to break it free from any accumulated silt and entwined foliage.



Silt and foliage surrounding sled coupling



Connecting to tractor to break pipe free for removal

6. Drive the AIM Pipe Retriever into position parallel with the head of the field. Using a spotter, align both ramps of the machine with the pipeline, ensuring almost perfect alignment across the machine.



7. Place an extra section of pipe in the AIM Machine and CLOSE the drive wheels.



8. Connect the pipe in the machine to the first coupling of the pipeline.



9. Begin pulling the pipe with BOTH DRIVE LEVERS pointing to the outboard direction.



10. When the first sled coupling reaches the center of the machine, bump the outboard drive lever inboard to relieve the tensile pressure off of the coupling. The machine operator will then remove the spline and place it in a bucket.



11. Pull the outboard lever to the outboard direction first, separating the pipe from the coupling.



12. Repeat Steps 8-10 until the entire pipeline is removed. Leave the last piece of pipe in the machine to facilitate the connection to the next lateral pipe run to be removed.

13. Repeat steps 7-11 until the pipe is clear of the field.

Pulling the 3" Certa-Set lateral lines into an adjacent field

1. Survey field conditions and decide on retrieval direction. Considerations should be taken for pipeline length, spline direction and work area limitations (roads, headland sizes, ditches).
2. Disconnect pipe from the main line connection. Remove swing joints (19 foot 3" Certa-Set lateral pipe) and transition fittings.



Swing joints are on both sides of the Nelson valve



Nelson valve with buried main line



Elbows connecting lateral pipe runs



Tees

3. Disconnect 3" Certa-Set end plugs and drain line completely. **Failure to drain lines will result in damage to the pipe and will void the warranty**



End plug to be removed



Remove spline



Remove end plug



Drain piping

4. Connect the pipeline to the tractor using a pulling connection.



Position tractor



Connect pipe to tractor hitch



Insert spline



Final connection to tractor to remove/move pipe

5. Slowly pull the pipeline, ensuring that it is not binding up on any obstruction.
6. Tow pipe into place in next field and reconnect as necessary.

