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 grove

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:
¾" Pre-assembled Certa-Set Riser or ½" Aluminum Assembled Riser

A. ¾" 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. ½" Aluminum Assembled Riser (manufactured by others)

1. The ½ riser consists of the following pieces: A ½" riser cap, chevron gasket and ½" assembled riser.
Note: Westlake Pipe & Fittings does not manufacture or warranty ½" risers beyond the riser cap.

Components to field assemble ½" 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 1/2" 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

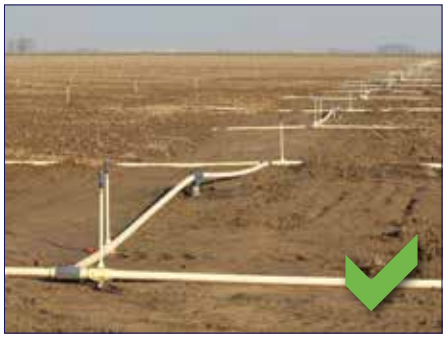

Spline not inserted in same direction


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 Mainline Pipe Assembly and Installation sections).



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

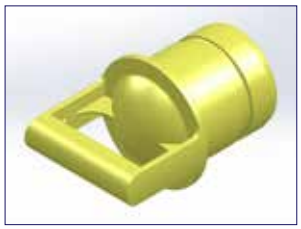
Certa-Set pipe entirely installed in a "U" design pattern

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

Mainline Pipe Assembly & Installation

Certa-Set Mainline Pipe Assembly & Installation

General Notes:

- Certa-Set mainline 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

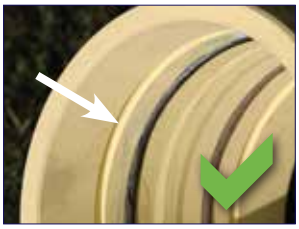
O-ring misaligned

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.

Mainline 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 mainline piping and couplings can be disassembled and reused. See Mainline 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 mainline 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 burried mainline

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

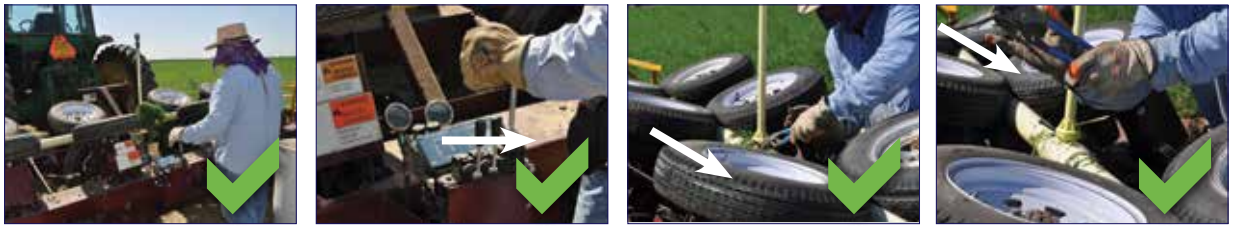
6. Drive the AIM Pipe Retriever into position parallel with the head of the field. Using a spotter, align both ramps of the machine with the pipeline, ensuring almost perfect alignment across the machine.

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 mainline 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 mainline

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.