

[www.RieberLok.com](http://www.RieberLok.com)



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# RieberLok™

## Horizontal Directional Drilling (HDD)

### Guidelines

Information including assembly instructions, field cut instructions, casing guidelines, and more can be found at [www.RieberLok.com](http://www.RieberLok.com)



# RieberLok™ HDD Guidelines

## **Joint Assembly:**

*It is critical that the gasket be installed with the painted face marked with “INSTALL THIS FACE OUT” pointing out of the bell and facing the installer. The gasket must be installed in a clean and dry bell socket.*

- Strict attention must be paid to the assembly of the joint.
  - Do not insert the spigot of the mating pipe into the bell beyond the manufacturer's joint assembly strip as this may reduce the maximum allowable joint deflection.
  - Over insertion of the spigot (over bell) voids both RieberLok's and the pipe manufacturer's warranty.
- Pipe alignment during joint assembly is critical. Ensure that one pipe is aligned with the mating pipe prior to, and during, the joint assembly process.
- RieberLok gaskets must be installed at a temperature above 40° F. If the gaskets are below that temperature, they must be warmed prior to installation.
  - Submersion in warm water prior to installation is one method
- RieberLok Joint Assembly Instructions and Field Cut Instructions can be found at [www.RieberLok.com](http://www.RieberLok.com).

## **Jobsite Considerations:**

- Bore diameter must allow for adequate clearance for the largest OD of the pipe.
  - Bore diameter is a critical factor and affects both pulling force and pipe integrity
  - A bore larger than the minimum recommendation improves the installation
- Bore bend radius is critical to a successful installation
  - Over deflection of the joint, from a tight bend radius, will force the joint to bend beyond design limits and will result in joint failure
  - PVC pipe joint designs typically do not allow for much joint deflection
  - A typical joint deflection for most manufacturers in most sizes is one (1) degree
  - Assuming a 20 foot length of pipe, one degree of joint deflection results in a minimum bend radius of approximately 575 feet
- RieberLok is suitable for HDD applications only where the pipe is pulled back through the bore.
  - RieberLok is not approved for jack and bore operations or any installation where the pipe is pushed into the bore
- The joint may be deflected to the full extent of the pipe manufacturers' instructions and limits.
  - Do not exceed the joint deflection limits stated by the pipe manufacturer.
  - Care must be taken to avoid over-deflection not only in the bore itself, but also the pipes' entry and exit angles to and from the bore.

# RieberLok™ HDD Guidelines

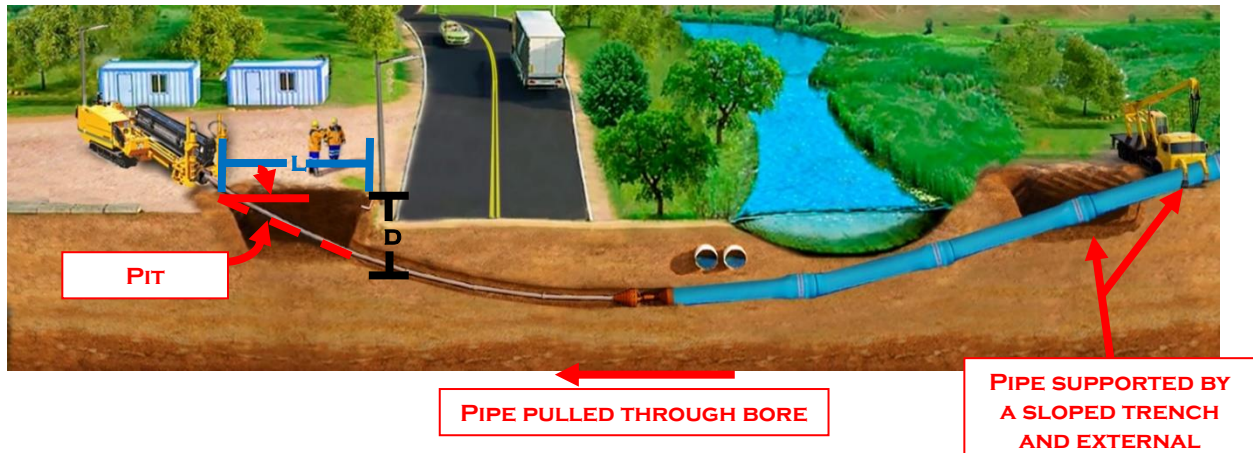
<b><i>Minimum Bore Diameter</i></b>	
<b>Nominal Pipe Size (inches)</b>	<b>Minimum Bore Diameter (inches)</b>
<b>4</b>	<b>10</b>
<b>6</b>	<b>13</b>
<b>8</b>	<b>17</b>
<b>10</b>	<b>20</b>
<b>12</b>	<b>24</b>
<b>16</b>	<b>31</b>

<b><i>Minimum Bore Bend Radius (feet)</i></b>							
<b>Pipe Length (feet)</b>	<b>Rated Deflection (Degrees)</b>						
	<b>0.5</b>	<b>1</b>	<b>1.5</b>	<b>2</b>	<b>2.5</b>	<b>5</b>	<b>10</b>
<b>5.0</b>	286	143	96	72	57	29	15
<b>10.0</b>	573	287	191	143	115	58	29
<b>18.0</b>	1031	516	344	258	207	104	53
<b>20.0</b>	1146	573	382	287	229	115	58

<b><i>Number of 20' Joints required for a change in depth</i></b>							
<b>Allowable Deflection (Degrees)</b>	<b>Change in depth (Feet)</b>						
	<b>1'</b>	<b>2'</b>	<b>3'</b>	<b>4'</b>	<b>5'</b>	<b>10'</b>	<b>20'</b>
<b>0.5</b>	6	12	18	23	29	58	115
<b>1.0</b>	3	6	9	12	15	29	58
<b>1.5</b>	2	4	6	8	10	20	39
<b>2.0</b>	2	3	5	6	8	15	29

# RieberLok™ HDD Guidelines

Illustrated below is an exaggerated example of a jobsite using AWWA C900 pipe. Unlike with HDPE, C900 pipe is rigid and special care must be taken to ensure that entry and exit pits are sized so that the pipe is not over deflected at any point during the installation. The pipe should only be pulled spigot first through the bore. Due to the typical installation angle of HDD applications, it is also necessary to support the pipe in the entry and exit pits when it exceeds the maximum allowable unsupported length.



## Pulling Forces:

- Maximum pulling forces are stated in the chart below.
- In a smooth, correctly sized and radiused bore, pulling forces are typically much less than these maximums

Maximum Allowable Pulling Force		
Size	DR18 Class 235	DR14 Class 305
4"	4,300	5,500
6"	8,800	11,000
8"	15,000	20,000
10"	23,000	30,000
12"	32,000	42,000
16"	55,000	72,000
Size	SDR26 Class 160	SDR21 Class 200
4" IPS	2,500	3,200
6" IPS	5,500	6,900
8" IPS	9,000	12,000