

# Cobra Lock<sup>®</sup> HDD Pipe Solutions (Joint Restraint)

A high strength and versatile joint restraint  
system for municipal installations



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## A Revolutionary Joint Restraint Solution

The Cobra Lock Horizontal direction drilling (HDD) Pipe Solutions from NAPCO, is a non-metallic PVC joint restraint system for use in a wide range of municipal applications. Easy to install and handle, this unique offering reduces labour requirements, speeds installation time and minimizes disruptions to local communities.



## Potential applications for Cobra Lock HDD Pipe Solutions include:

- Municipal water systems
- Horizontal direction drilling (HDD Trenchless)
- Fire protection systems
- Force main sewer systems
- Gravity sewer systems
- Joint restraints for fittings in open cut situations
- Locations where soils cannot support concrete thrust blocks
- Congested utility corridors
- Regions where seismic action is a concern



## About the Cobra Lock HDD Pipe Solutions

This easily installed and flexible system consists of a CIOD PVC C900 pressure pipe, a coupling and two locking splines. The pressure pipe and coupling have precision-machined grooves for easy alignment when the pipe is inserted into the coupling. The coupling's factory-installed o-ring gaskets provide a hydraulic pressure seal. The thermoplastic nylon spline is then inserted into the groove creating a full 360° restraining connection. This high strength connection guarantees even load distribution around the entire joint when pulling the pipe into position.



## The Cobra Lock HDD Pipe Solution benefits include:

- **Easy to assemble** – Machined grooves for easy alignment & precision
- **Reduces costs** – Cobra Lock HDD Pipe eliminates costly concrete thrust blocks and is also ideal for installing in congested areas.
- **Cost-effective and efficient** – The ease of handling and lighter weight means faster installations without the need for special equipment. The system also reduces the need to lay out long lengths of pipe for HDD applications.
- **Choices to suit every need** – Cobra Lock HDD Pipe is available in 100mm to 300mm (4- to 12-inch) in Pressure Class 235 (DR18) in 6.1 metre (20-foot) lengths.
- **Longer product lifecycle** – Because Cobra Lock HDD Pipe is completely non-metallic and corrosion resistant it can easily outperform metal systems.
- **Impact resistant** – The ruggedness of the system means less damage and waste on the job site.
- **Improved performance** – PVC construction provides a larger inside diameter versus PE Pipe for comparable products, while the joint achieves full strength in all weather conditions. (No fusion required)



### Hydrostatic Design Basis

The PVC compound used in the extrusion of Cobra Lock has a Hydrostatic Design Basis of 27.58MPa (4,000psi) for water at 23°C (73°F).

### Tapping

Cobra Lock HDD Pipe has CIOD dimensions and therefore uses the same procedure for installing service connections as on regular bell and spigot PVC pressure pipe. Service connections are tapped through direct tapping, service clamps or saddles.

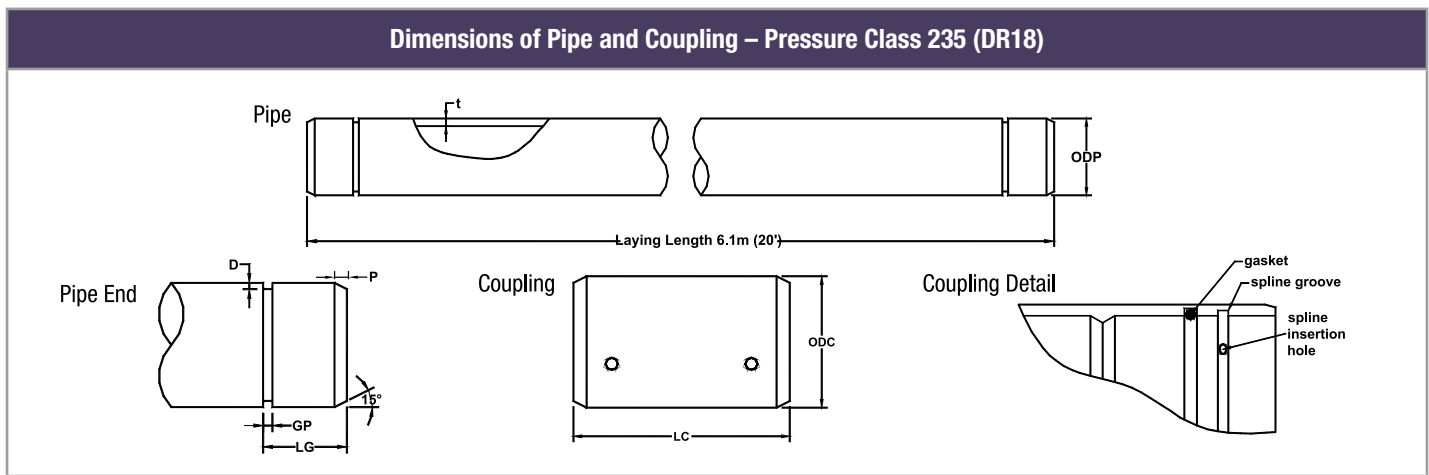
Remember, do not install service taps of any kind into bent pipe. Refer to the NAPCO PVC Pressure Pipe and Fittings Installation Guide or the Uni-Bell Handbook of PVC Pipe for complete details on tapping pressure pipe.

### Ratings and Certifications

The Cobra Lock HDD Pipe Solutions is certified to CSA B137.3, FM, NSF-61 and ULC Standards, as well as meets the performance requirements of AWWA C900. The PVC material used in the manufacture of our pipe meets the PVC cell classification 12454 as specified in ASTM D1784. For special request applications, the Cobra Lock HDD Pipe is also available as a non-certified Pressure Class 305 (DR14) system.



AWWA  
C900



### Maximum Pulling Forces:

The pulling force used to pull the pipeline into place shall not exceed the pulling forces shown in the table below:

Nominal Pipe Size (in)	Maximum Pulling Force Kn (Lbs)	
	Class 235 (DR18)	
	Tightest Bending	Straight (No bending)
100 (4)	29.8 (6,700)	36.5 (8,200)
150 (6)	40.0 (9,000)	56.9 (12,800)
200 (8)	80.1 (18,000)	112.1 (25,200)
250 (10)	113.9 (25,600)	156.6 (35,200)
300 (12)	117.4 (26,400)	182.8 (41,100)

### DR18 Installation Curvature:

The pipeline shall not be bent to a radius less than shown in the table below:

Nominal Size mm (")	Minimum Radius of Curvature m (')
100 (4)	30.5 (100)
150 (6)	45.7 (150)
200 (8)	61.0 (200)
250 (10)	76.2 (250)
300 (12)	91.4 (300)

Visit our web site [nappcopipe.com](http://nappcopipe.com) for additional marketing materials as well as other innovative and industry leading products. NAPCO continues to work together to build neighborhoods of lasting value.

**Our various pipe and fittings solutions have been manufactured to meet the need of our customers and their applications. Contact one of the Sales Centres for more information:**

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