

Hynds Hybencher

(South Island only)

Technical Guide D4.3

The Hybencher is a flanged base with a pre-benched polyethylene liner with a number of inlet options and one outlet, providing an efficient manhole solution.



08.24 | DRAINAGE | D4.3 HYNDS HYBENCHER

Product Attributes

- Flexible on-site connections
- Pre-benched (polyethylene liner)
- Up to five inlets and one outlet
- Inlets/outlet designed for standard Ø150 mm & 300 mm PVC pipes and Hyseal connectors
- Compatible with standard Hynds Ø1050 Manhole Riser sections

Applications

- Manholes for sewer and stormwater

Approvals/Standards

- NZS 3101, Concrete Structure Standards
- NZS 3109, Concrete Construction

Quality

- ISO 9001:2008 Quality Management Standard

We are the supply partner of choice for New Zealand's civil construction industry, specialising in water and infrastructure based solutions.



By taking the successful Sherriff Bencher used in the Done Manholes, and making some small modifications, Hynds have developed the Hybencher.

Flexible for multiple inlet options to suit individual site requirements. The Hybencher is designed to ensure a consistent quality manhole benching installation in a short time frame. It achieves this by utilising a moulded in Polyethylene liner with a pre-formed benching. There are two pre-formed options available:

1. 1050mm 600mm high – 5x inlets one outlet suitable for 150mm PVC pipe with Hyseal Connector
2. 1050mm 700mm high – 3x inlets one outlet suitable for 300mm PVC pipe with Hyseal Connector or 300mm concrete pipe joined into manhole by epoxy mortar or concrete.

The smooth surface of the PE lining helps to ensure an easy change of direction for any flows. There will be no deterioration of the benching during the life of the manhole due to the good chemical resistance of the Polyethylene. As the Hybencher is cast in one piece with the liner this greatly reduces any chance of leaking or water ingress, which makes this manhole ideal for high water table areas. Reliable sealing of the 150 mm inlet and outlet pipes is made by using the Hyseal Connector inside the cast preformed hole.

About the Hyseal connector

The Hyseal connectors are able to withstand shock, sound or vibrations from man-made or natural causes including changes in internal pipe pressure, earthquakes or natural ground movement.

With the use of a socket and driver for tightening nuts, these connectors achieve a high interface pressure, while offering greater flexibility when aligning connecting pipes to access chambers.

Materials and Specifications

- The connector is manufactured from natural rubber to AS 1646, Elastomeric seals for waterworks purposes.
- Marine grade stainless steel, SAE 316, is used for all nuts and bolts.
- Factory tested to 90 kPa.

TABLE 1 Product Range

Product Code	Description	Inlet pipe Ø (mm)	Outlet pipe Ø (mm)	Mass (kg/unit)	Lifting Anchor Load Group (*)
FB10500600BEN	Hybencher with 5x inlets one outlet	150	150	1360	3 x 2.5
FB100700BEN300	Hybencher with 3x inlets one outlet	300 PVC with Hyseal Connector 300 Concrete Pipe with Epoxy Mortar	300 PVC with Hyseal Connector 300 Concrete Pipe with Epoxy Mortar	1770	4 x 2.5

Note: (*) The load group specified the maximum lifting capacity or Working Load Limit (WLL) of the lifting clutch expressed in tonnes.

TABLE 2 Hyseal Connector

Product Code	Description
CON150HYSEAL	Hyseal MH connector ring for Ø 150mm PVC pipe
CONHYSEAL11L	Hyseal MH connector ring for Ø 300mm PVC pipe

Note:

One Hyseal connector is required for each inlet used and the outlet.



FIG. 1 Standard Seal, Linked Seal

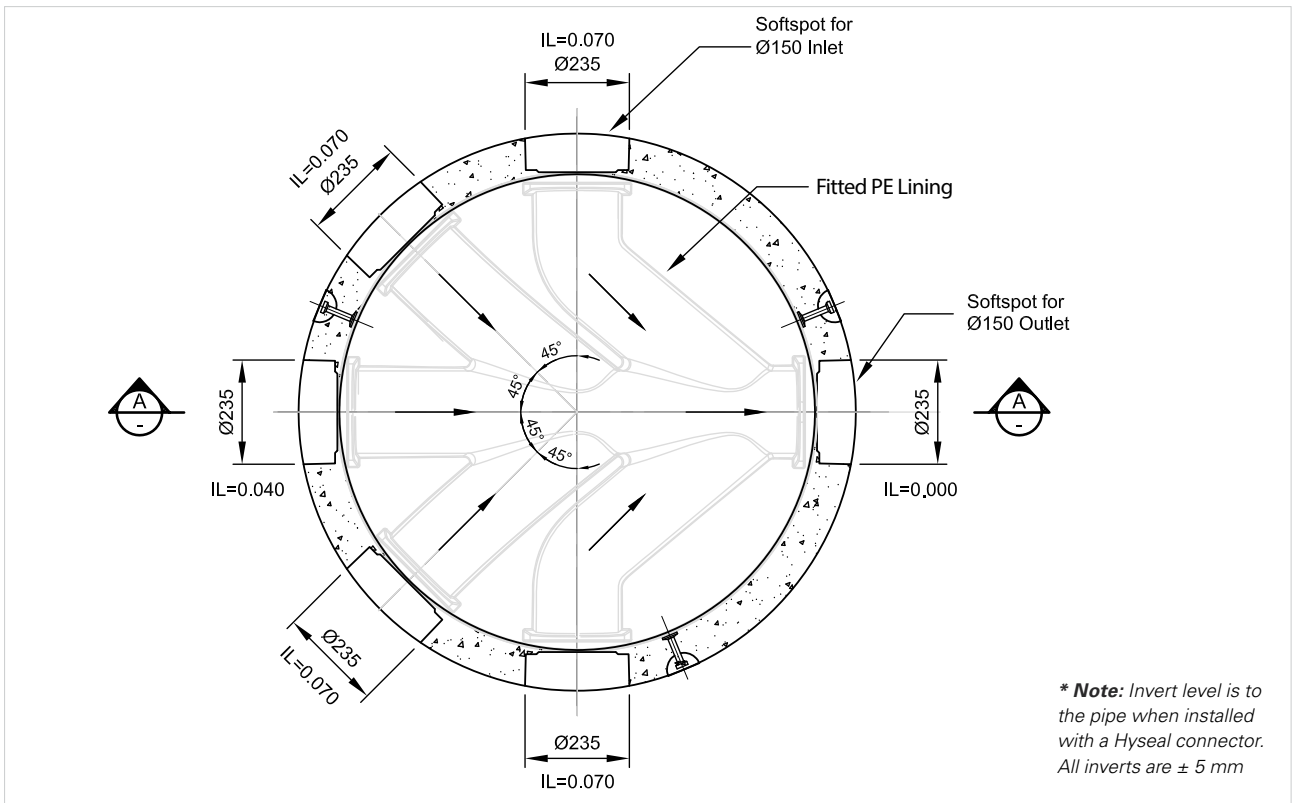


FIG. 2 Plan section of Ø150mm PVC Hybencher

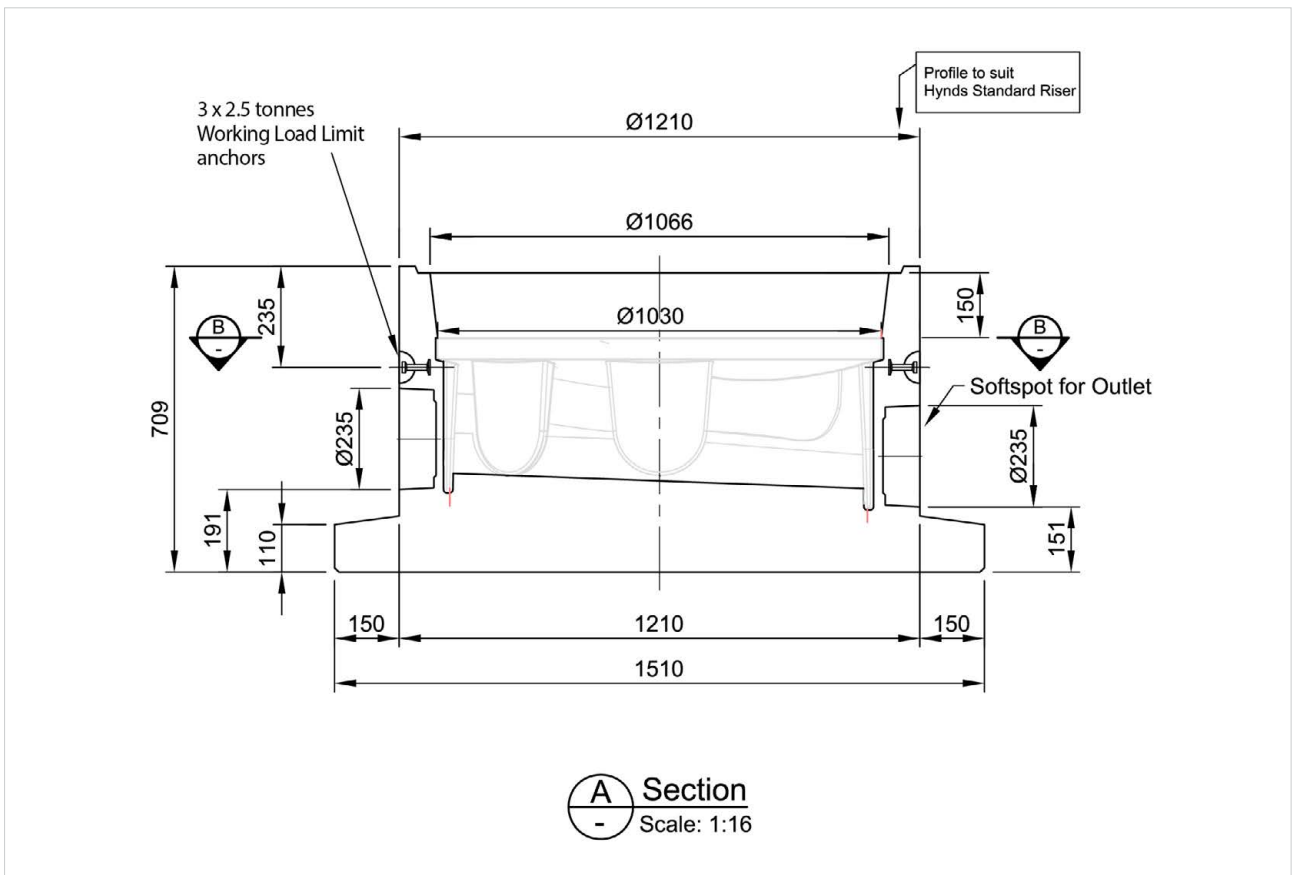


FIG. 3 Section 'A-A' With Inlet and Outlet Pipe Fitted of Ø150mm PVC Hybencher

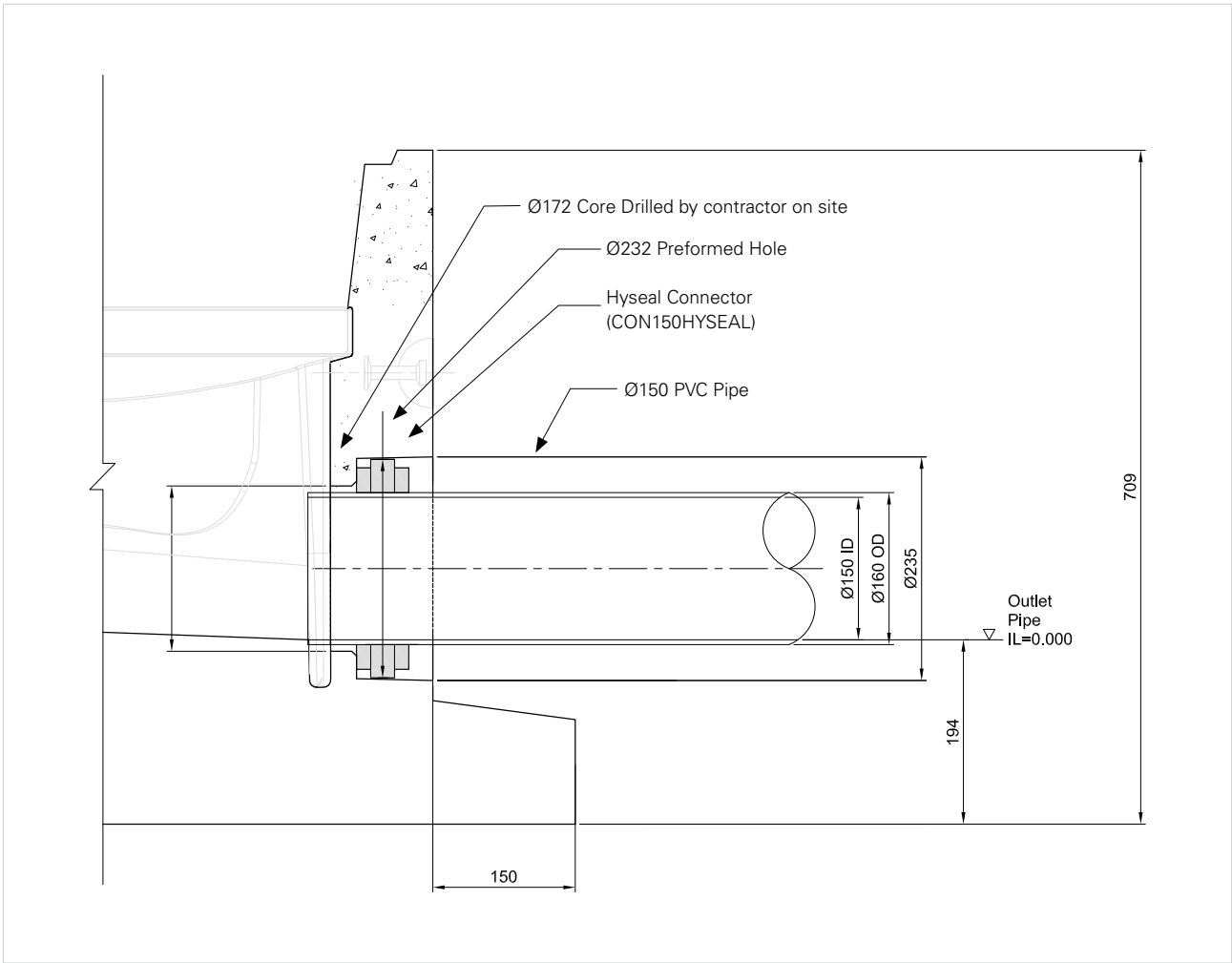


FIG. 4 Outlet Pipe Connection Detail of Ø150mm Hybencher



FIG. 5 Detailed view of the HDPE preformed benching of Ø150mm PVC Hybencher

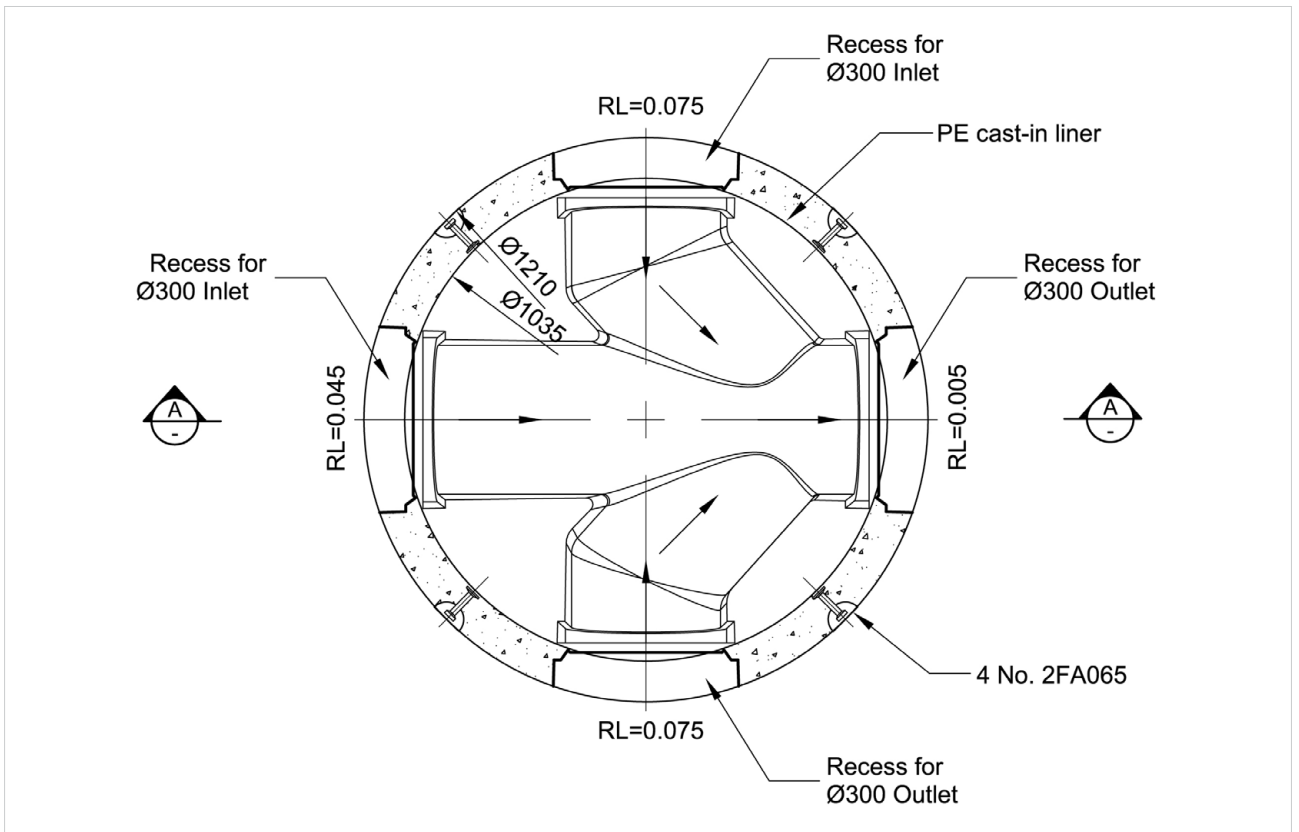


FIG. 6 Plan section of Ø300mm PVC Hybencher

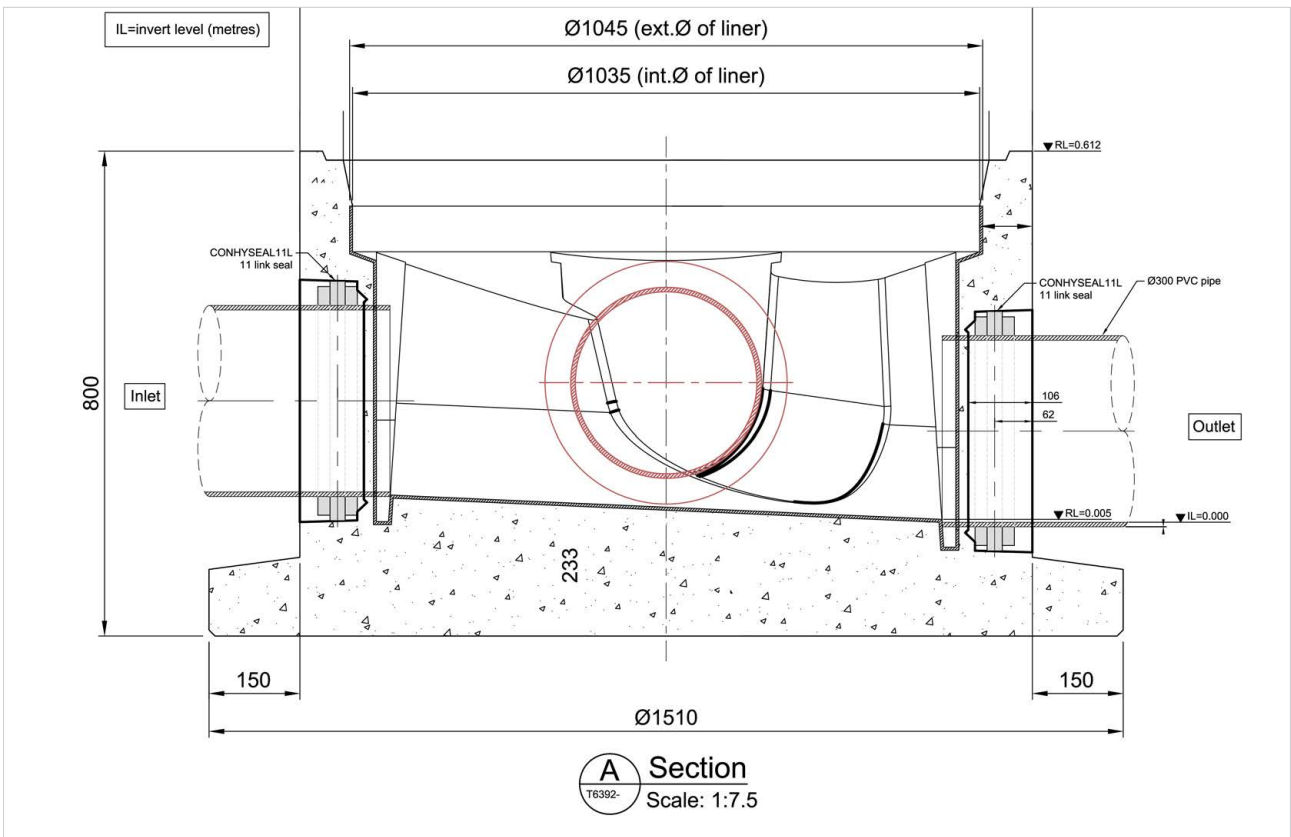


FIG. 7 Section A-A with Inlet and Outlet of Ø300mm PVC Hybencher



FIG. 8 Hybencher installation in Cromwell

Installation procedure

The Hybencher manhole is designed to use the Hyseal connector to ensure a watertight seal around the inlet and outlet pipes.

- Identify the inlets to be used. A Hyseal connector is required for each one plus the outlet.
- Core drill a 172 mm hole for a 150mm PVC pipe or a 315 mm hole for a 300mm PVC pipe in the centre of the softspot for each inlet.
- Fit the Hyseal connector over the pipe and position it in the preformed recess with the nuts facing outwards.
- The inlet pipes should be pushed 50mm through the seal to allow maximum flexibility and the outlet pipe should be pushed in until it butts up against the liner.
- Tighten the nuts by hand first, then using a 13 mm socket, 100 mm extension and ratchet, tighten a further 3 turns.
- Standard manhole bedding requirements apply.

Lifting and Handling

All Hynds Hybencher incorporate Swiftlift lifting anchors for safe lifting and must be used with the correct lifting clutch. Hynds Pipe Systems has designed and manufactured Hynds Hybencher with a minimum dynamic factor of 1.2. This dynamic factor requires that all the following conditions are observed when lifting, moving or placing the manholes:

3. Lifting with mobile plant (*such as an excavator or similar*) where equipment is specifically exempt from the requirements of the PECPR Regulations 1999, subject to the conditions outlined in the New Zealand Gazette, No. 104, September 2015 and
4. Lifting, travelling and placing over rough or uneven ground where anchor failure is not anticipated to cause harm or injury, by adopting procedures such as:
 - a. Transporting the element as close as practical to ground level (300mm recommended)
 - b. Establishing and maintaining exclusion zones
 - c. Transporting only precast concrete elements that are unlikely to topple if they were to hit the ground
 - d. Inspecting lifting anchors both after transportation and before final lifting into place

Refer to "Safe work with precast concrete - Handling, transportation and erection of precast concrete elements" published by Worksafe New Zealand (October 2018)

Shock loads resulting from travelling with suspended Hybencher over rough terrain and uneven ground may exceed design, dynamic and safety factors of the lifting systems. It is essential that care is taken during lifting and transporting as additional stresses could result in anchor failure.

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Disclaimer: While every effort has been made to ensure that the information in this document is correct and accurate, users of Hynds product or information within this document must make their own assessment of suitability for their particular application. Product dimensions are nominal only, and should be verified if critical to a particular installation. No warranty is either expressed, implied, or statutory made by Hynds unless expressly stated in any sale and purchase agreement entered into between Hynds and the user.

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The logo for Hynds Pipe Systems features the word "HYNDS" in a large, bold, white sans-serif font. Below it, the words "PIPE SYSTEMS" are written in a smaller, white sans-serif font. A yellow curved line, resembling a stylized pipe or a smile, is positioned at the bottom of the logo.