

# **FACTION FUSION**

CONNECTION PRODUCTS

We are only as good as  
our **Connections.**



## **Welded HDPE Saddles**

**Faction-Saddle™**

Brochure and Technical Manual

**FactionFusion.com**

info@factionfusion.com | 1-877-Fusion9

## **HDPE is amazing.....**

But it lacks the adaptable configurations that you may find with (for instance) PVC. With this need in mind, we have launched our "Faction-Saddle" which we believe is the start in our journey to make HDPE more versatile and convenient to use in the gravity sewer market.



# The Faction-Saddle™ Advantage

The welded HDPE **Faction-Saddle™** connection creates a long term solution that is leak free, root proof, and durable. The Faction Fusion process for gravity flow connections are manufactured in the field. The Fusion process uses conventional heating elements with our Patent Pending VAC (Vacuum/ Atmospheric / Connection) application system. This process makes for an extremely consistent and reliable weld. Each installed connection is Vacuum tested during the process and easily verifiable by visual inspection.



- Fusion Welded Connection • Leak proof and Root Proof • In-Ditch Fusion •
- Non-Protruding design • Ease of Use • Restrained • Smooth Flow Line •
- Durable • Compatible • Lifespan •

Not only can the **Faction-Saddle™** be welded at angles up to 45 degrees, but can also be welded in smaller spaces than conventional sidewall fusion equipment. “The **Faction-Saddle™** can conveniently be welded within excavations. There is no need to dig all the way around the pipe, just dig down to the side of the pipe where the connection is needed and fusion weld the faction saddle in place. **Faction-Saddle™** saves time and money. The average 4 inch saddle can be welded in approx 10-15 minutes getting quality connections back in service quickly. Once again, each

saddle is vacuum tested during the process and is easily verifiable by a visual inspection. The **Faction-Saddle™** is durable, homogenous connection with Zero Leakage. Equally as important as the saddle itself is the internal bore of the connection. Our boring and clean-up tools have been designed to open the connection to its maximum ID while providing a smooth flow line. Many of these connections will be very closely inspected by a CCTV Camera on most projects, so its important to install a **Faction-Saddle™** .....every time!

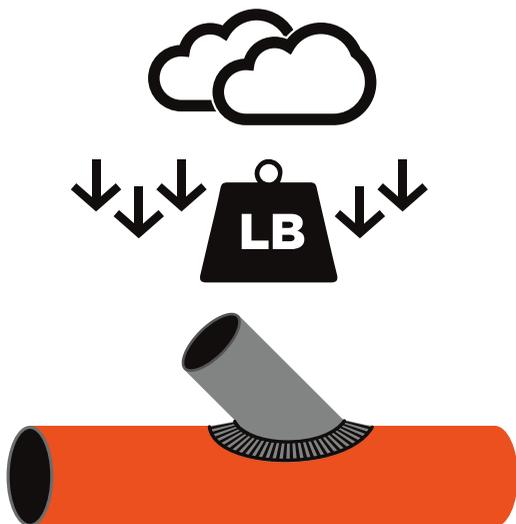
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# HOW IT WORKS

- 1** The Mainline pipe and **Faction-Saddle™** are heated at the connection point to Fusion Temperatures.
- 2** The heater plate is then removed and mating portions of pipe are engaged.
- 3** Melted plastic will create a seal between the mating surfaces of pipe.
- 4** Vacuum pressure will be obtained from within the saddle connection by means of a vacuum pump.
- 5** Vacuum pressure is obtained causing the external forces of our Atmospheric Pressure to be applied to the saddle in a consistent and unobstructed manner.
- 6** Without fixtures or clamping devices, the saddle has the ability to equalize and adjust to the most consistent distribution of pressure.
- 7** Connection is held under constant pressure while the plastic cools and stabilizes.

## ATMOSPHERIC PRESSURE



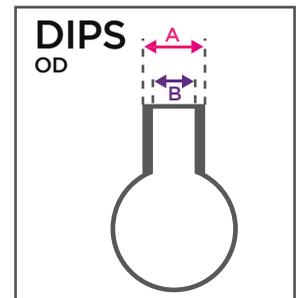
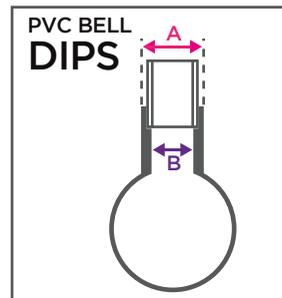
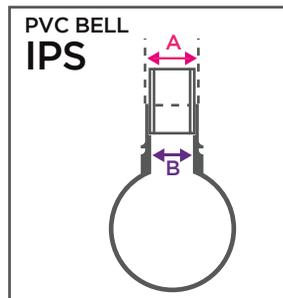
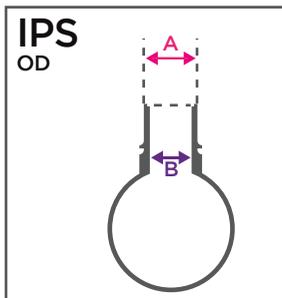
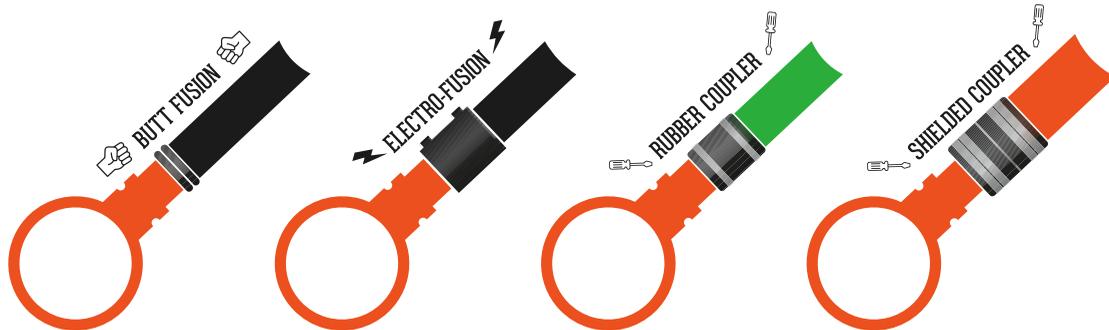
*Faction Fusion products, including the patent pending **Faction-Saddle™** are manufactured from pressure rated polyethylene compounds that meet or exceed pipe material designation codes PE3408/PE3608 and PE4710.*

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# Inlet Connection Options

Once the Faction Saddle has been fusion welded to the HDPE main, connection from the side service piping is to be connected to the inlet side of the Faction Saddle by means of Butt Fusion, Electro-Fusion, or Rubber/Calder Couplings.



STYLE	4" Connection End		6" Connection End	
	A/OD	B/ID	A/OD	B/ID
IPS OD	4.5	3.9	6.625	5.8
PVC Bell IPS	4.5	3.9	6.625	5.8
PVC Bell DIPS	4.8	3.9	6.9	5.8
DIPS OD	4.8	3.9	6.9	5.8

Refer to dimension "A" for coupling size compatibility.

## PVC Bell Connections

When attaching to PVC, the Faction-Saddle HDPE/PVC Bell adaptor saddle transitions from our HDPE to SDR 35 PVC. The transition from HDPE to PVC eliminates the risk of an offset joint by incorporating an oversized bell fitting machined into the HDPE saddle. Sealing between the saddle and PVC is accomplished by means of a rubber transition coupler. There is no need for expensive shielded couplings as the PVC will protrude inside of the HDPE saddle.



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# TRENCHLESS SPECIALTY SADDLE

*We've got you covered!*

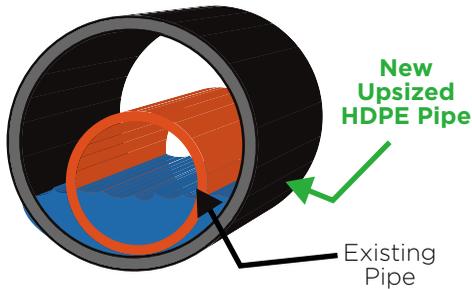


Fig. A

During the trenchless process of pipe bursting, the flow line of the new HDPE pipe most commonly remains at the same elevation as the existing pipe being replaced. In cases of major upsizing in pipe diameter, it is common for the new larger HDPE pipe to expand in an upward direction as shown in Fig A.

## "Low-Rider Saddle"



Existing sewer pipe connection

New larger HDPE pipe with raised connection point

Faction Low-Rider Saddle connects lower to retain proper slope on side service piping

Because the new HDPE pipe is larger, the connection point on the side of the pipe will be higher in elevation than the connection point on a smaller pipe. To solve this problem, the Faction Low-Rider saddle connects slightly lower than the horizontal centerline (approx. 1"-2") which will accommodate more downward flow for the side service piping and may even eliminate the need to Re-Grade side service piping in some cases.

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# Faction-Saddle™

## Gravity Flow

HDPE BRANCH CONNECTION SYSTEM

### SPECIFICATIONS

#### 45 Degree Wye Saddle

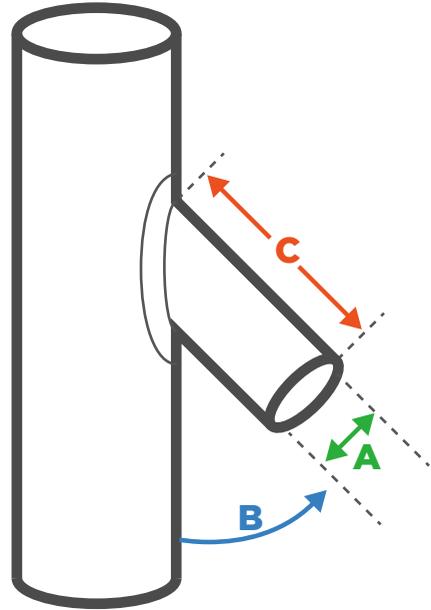
Saddle Size	A/ID	B/Angle	C/Length
4 inch	3.9	45	10
6 inch	5.8	45	13

#### 22.5 Degree Wye Saddle

Saddle Size	A/ID	B/Angle	C/Length
4 inch	3.9	67.5	8
6 inch	5.8	67.5	10

#### 90 Degree "T" Saddle

Saddle Size	A/ID	B/Angle	C/Length
4 inch	3.9	90	6
6 inch	5.8	90	8



Faction-Saddle™ complies to the following standards.

Physical Properties	Test Method	Typical Value
Cell Classification(Black)	ASTM D3350	PE445574C
Melt Index (190/2.16)	ASTM1238	<0.15 G / 10 min
High Load Melt Index (190/21.6)	ASTM D1238	4 - 20 g/ 10 min
Density 2% Carbon Black	ASTM D792	0.96 g / cm <sup>3</sup>
Tensile Strength at yield	ASTM D638	3500 to 4000 psi
Tensile Elongation	ASTM D638	>400%
Flexural Modulus, 2% Secant	ASTM D790	110,000 to 160,000 psi
SCG Resistance, PENT	ASTM F1473	>500 h

Made from ASTM F714 pipe stock

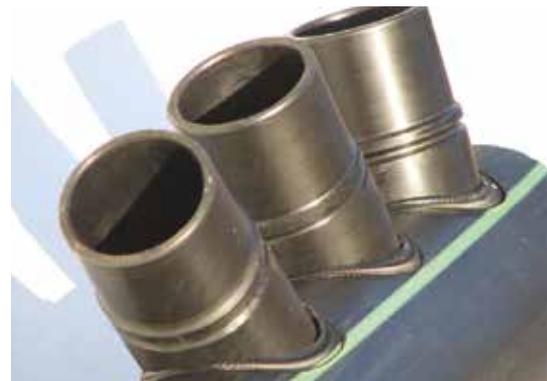
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# Faction-Saddle™

## Gravity Flow

### HDPE BRANCH CONNECTION SYSTEM



## Gravity flow HDPE Fusion Connections

### 90 DEGREE "T" FITTING

✓	SIZE (inches)
	4 x 6
	4 x 8
	4 x 10
	4 x 12
	4 x 14 to 24
	6 x 8
	6 x 10
	6 x 12
	6 x 14 to 24

### 22 DEGREE "WYE" FITTING

✓	SIZE (inches)
	4 x 6
	4 x 8
	4 x 10
	4 x 12
	4 x 14 to 24
	6 x 8
	6 x 10
	6 x 12
	6 x 14 to 24

### 45 DEGREE "WYE" FITTING

✓	SIZE (inches)
	4 x 6
	4 x 8
	4 x 10
	4 x 12
	4 x 14 to 24
	6 x 8
	6 x 10
	6 x 12
	6 x 14 to 24

### INLET CONNECTION END PIPE

✓	STYLE
	DR17 IPS OD
	PVC BELL IPS
	PVC BELL DiPS
	DIPS OD

### MAINLINE PIPE

✓	STYLE
	IPS
	DIPS



### Low-Rider Saddle SIZE (inches)

4" Low-Rider Saddle to be utilized in field as needed

6" Low-Rider Saddle to be utilized in field as needed

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