# Pressure Loss

Every pressure loss inside a booster system must be compensated by pump power. Even small hydraulic inefficiencies become significant over years of operation. A manifold with excessive turbulence requires additional energy to maintain the same system duty point. Optimized flow paths help reduce unnecessary pressure loss and contribute to improved operating efficiency.

## Why is it important?

In booster pump system manifolds, water flow efficiency is directly affected by the internal geometry of the manifold. Traditional fabricated branches often create abrupt transitions, weld protrusions, and uneven internal surfaces that can increase turbulence and pressure loss. As fluid passes through these discontinuities, energy is dissipated through turbulence and recirculation. The result is increased pressure loss and reduced hydraulic efficiency.

| | |
|---|---|
| • Sudden internal flow interruption | • Improved flow continuity |
| • Internal weld protrusions | • Reduced flow separation |
| • Localized turbulence zones | • Lower turbulence generation |
| • Flow separation near branch connections | • More uniform velocity distribution |
| • Higher hydraulic losses | • Consistent manufacturing quality |

## How does it benefit booster systems?

A well-designed manifold is not simply a pipe assembly—it is a hydraulic component that influences the overall performance of the booster system. By minimizing flow disturbance and pressure loss, Pull-Out Forming Technology helps:

- Increase pressure loss
- Create uneven flow distribution
- Generate hydraulic noise
- Increase vibration within the system
- Unequal pump loading
- Increased wear on specific pumps
- Reduced operating stability
- Shortened equipment life
- Seal wear
- Bearing stress
- Vibration levels

Copyright © YURONG All rights reserved.

- Fatigue loading on pipework

## Traditional Welding vs. Pull-Out Forming

| Traditional Welded Branch | Pull-Out Formed Branch |
|---|---|
| Separate branch pipe welded onto a cut opening | Branch formed directly from the header pipe |
| Potential internal weld protrusions | Smooth internal transition |
| Higher turbulence and localized pressure loss | Lower turbulence and improved flow characteristics |
| Greater dependence on welding quality | Stronger and more consistent structure |

## Conclusion

Both manufacturing methods can produce functional manifolds. However, the internal geometry created by Pull-Out Technology offers measurable hydraulic advantages in many booster system applications. By improving flow continuity, reducing turbulence and minimizing pressure loss, Pull-Out Technology helps engineers achieve higher efficiency, more stable operation and improved long-term reliability.

Copyright © YURONG All rights reserved.