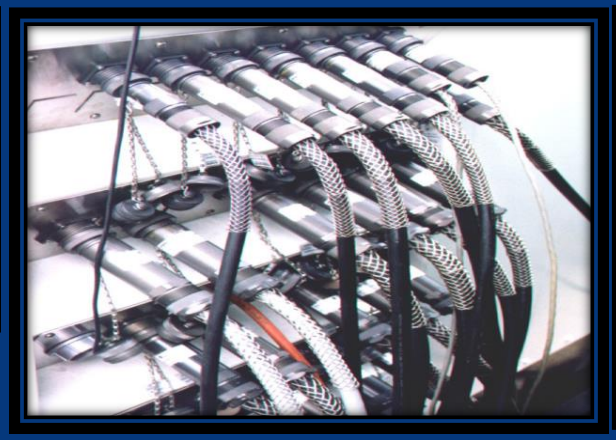
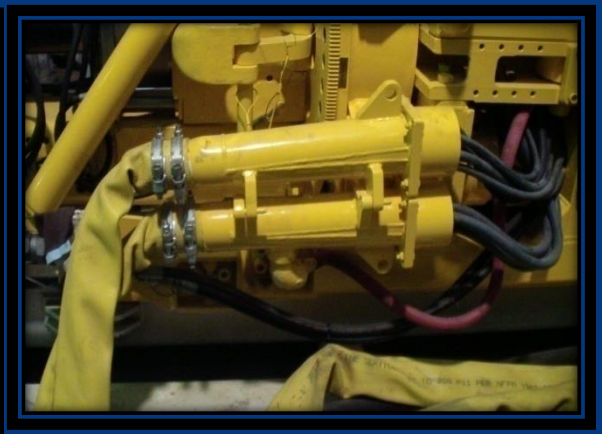
Engineered Products

- Aftermarket sales of service loops
- Custom Cable assemblies
- Fiber Optic Assemblies





Service Loop Design Overview

Service loop designs vary based on customer experience.

- Free Hanging Cable
- Hose Encased
- Ladder Loop

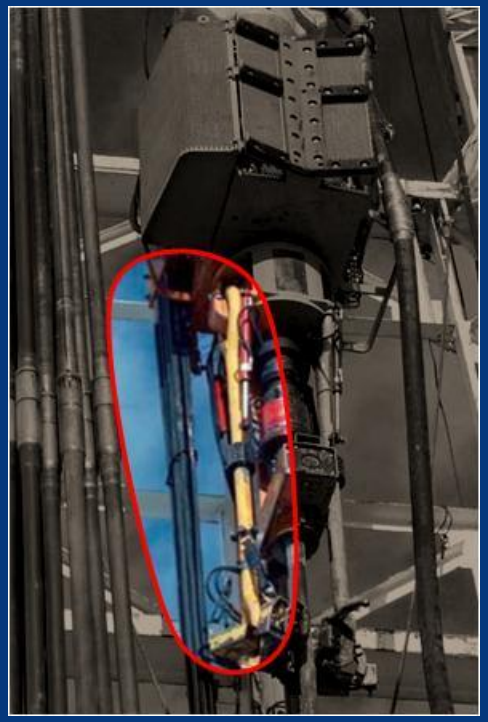
Pros & Cons – Free Hanging Cables

Pros

- Minimum Bend Radius limited only by cable
- Small cross sectional area
- Light Weight
- Cost prevention due to cable sizing requirement of free hanging cable
- Easiest and lowest replacement cost

Cons

- Lack of support = added tensile stresses
- Susceptible to wind and derrick damage
- Lack of protection from handling and abrasion



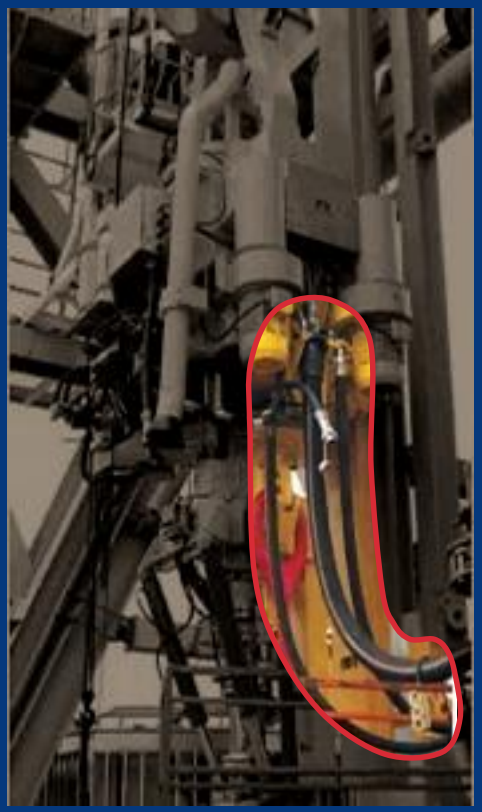
Pros & Cons – Potted Hose Encased

Pros

- Supported along length of hose
- Added abrasion protection and crush resistance
- Reduced susceptibility to wind and derrick damage

Cons

- Min. Bend Radius limited by hose diameter
- Added bend stress = increased fatigue
- Additional Weight
- Cost increase due to cable sizing requirement of multiple cables in raceway (hose) and potting cost
- Difficulty and cost of replacement



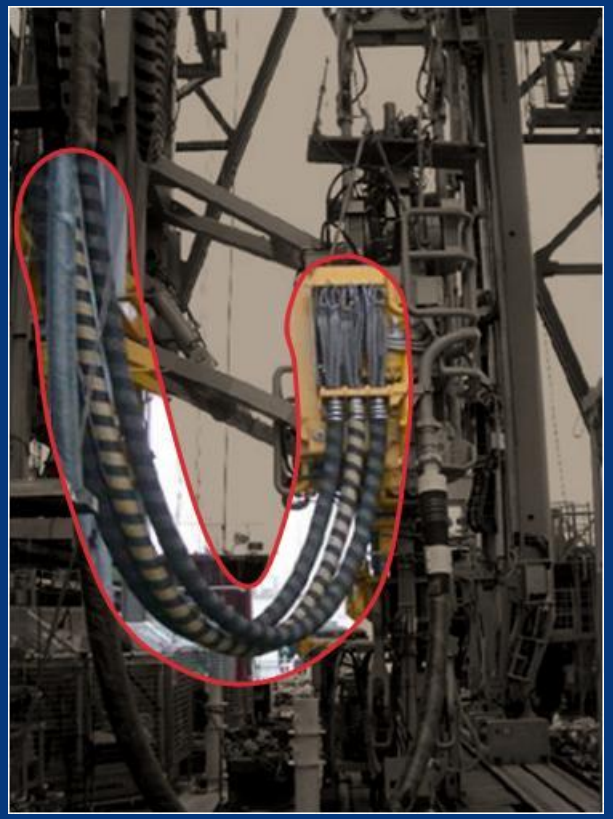
Pros & Cons – Non-potted Hose Encased

Pros

- Light Weight
- Added abrasion protection
- Reduced susceptibility to wind and derrick damage
- Low cost repair/replacement

Cons

- Min. Bend Radius limited by hose diameter
- Cost increase due to cable sizing requirement of multiple cables in raceway (hose)
- Difficulty of repair/replacement



Pros & Cons – Ladder Loop

Pros

- Minimum Bend Radius limited only by cable
- Reduced susceptibility to wind
- Lower cost repair/replacement
- Cost prevention due to cable sizing requirement of free hanging cable

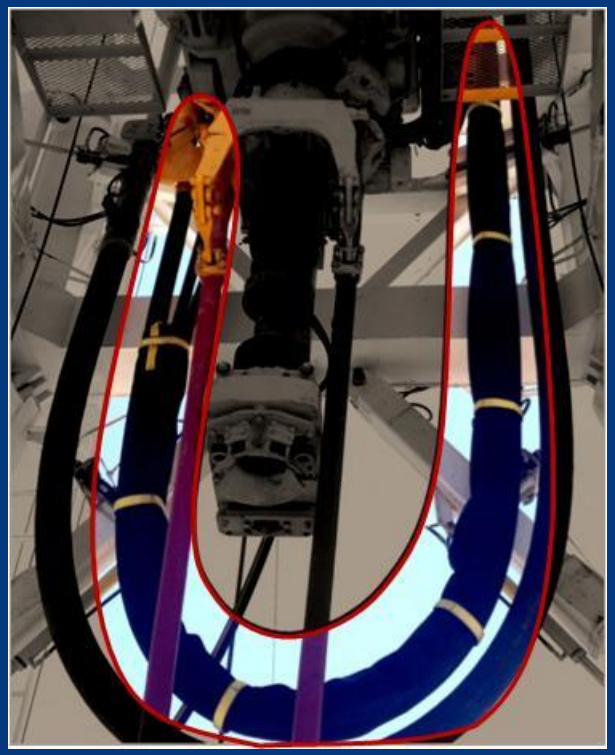
Cons

- Lack of protection from handling and abrasion

Shrouded Designs

Shrouded Hose Encased

- Lowest vulnerability to wind and derrick damage



Shrouded Free Hanging Cables

- Lower vulnerability to wind and derrick damage than free cables
- Additional abrasion and handling protection