

**Jackcontrol**  
monitoring microtunneling 



**The  
Hydraulic Joint**

**The perfect way  
of curved Microtunneling**

**Jackcontrol AG** · Buchholzstrasse 50 · 8750 Glarus · Switzerland  
Phone +41 (0)55 650 20 20 · Fax +41 (0)55 650 20 30  
info@jackcontrol.com · www.jackcontrol.com

# The Hydraulic Joint



Jacking pipe DN2000, equipped with Hydraulic Joint, ready for installation



Close-up picture of Hydraulic Joint

## For each alignment the right pressure transmission ring – including monitoring of the Jacking process!

**The Hydraulic Joint – pressure transmission ring and force sensor in one.** Using the principle of communicating vessels, the Hydraulic Joint opens up to pipe jacking a new range of applications and thanks to the real-time monitoring of the pipe structure, taking into account the geology and loading history, it's a deciding quality improvement – **as the client orders a qualitatively flawless pipe!**

Thanks to its flexibility, the Hydraulic Joint allows driving curves to any existing Pipe Jacking and Microtunneling equipment.

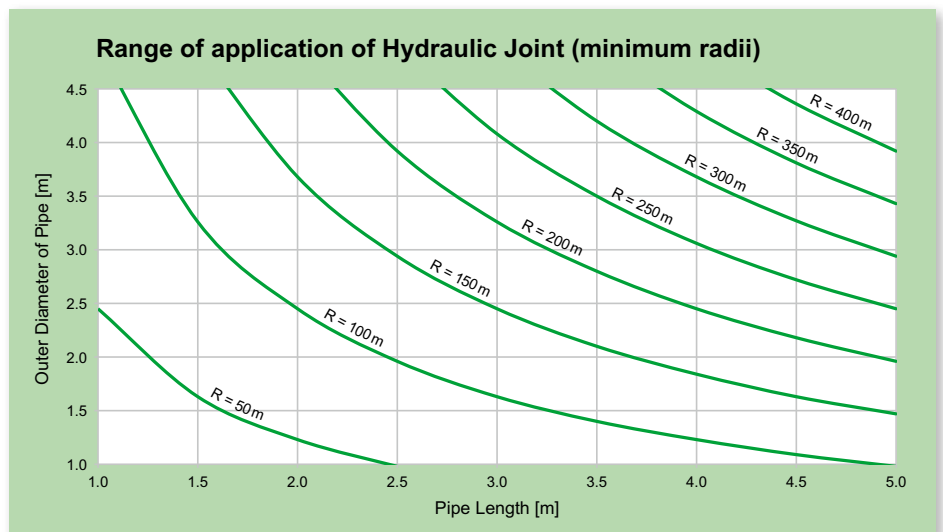
- ✓ higher jacking forces
- ✓ smaller radii of curvature
- ✓ longer jacking pipes
- ✓ real-time monitoring of jacking process

### ... lead to decisive improvements:

- ✓ optimum quality assurance
- ✓ minimum risk during the jacking process
- ✓ shorter construction times
- ✓ no need for intermediate shafts and installations
- ✓ wider range of application
- ✓ more economical

## Huge range of application makes pipe jacking even more attractive

Depending on the pipe geometry (length and external diameter) the possible minimum radii of curvature can be read out from the diagram below. The Jackcontrol team will gladly design the optimal combination of pipe/joint with all those participating in the project, **project-specific and cost effective.**



## The Hydraulic Joint can do more – optional extras

### Option: P-Type

- After successful driving the Hydraulic Joints are compressed and remain in the pipe leg as a sealing ring.
- In combination with grout sealing the P-Type Hydraulic Joints seal in radial and tangential directions and thus provide complete internal sealing with excellent sealing properties.
- Sealing grouting for each seal or, optionally, only in the case of leakages. Grouting can be carried out later and over the whole working life of the pipe.
- Grouting carried out by Jackcontrol or specialized partner firms.

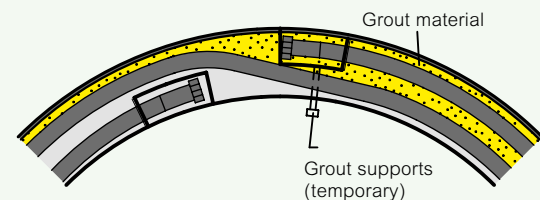
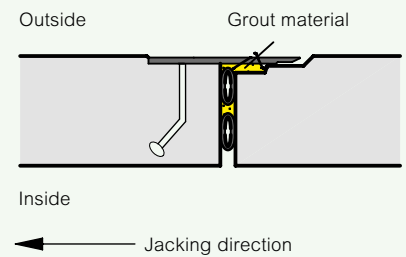
The simultaneous use of pressure transmission rings as internal sealing results in time savings and increases the cost-effectiveness, eliminating many hours performing tedious small jobs in the tunnel.

### Option: Testing Pipe Collars

- In combination with the P-Type option and sealing grouting (limited to concrete and polymer-concrete pipes).
- Apply pressure to the ring space between the wedge-shaped sliding seal and the Hydraulic Joint using packers encased in concrete.
- Simple and safe execution.
- Results in significant cost and time savings compared with the use of conventional pipe collar testing equipment.

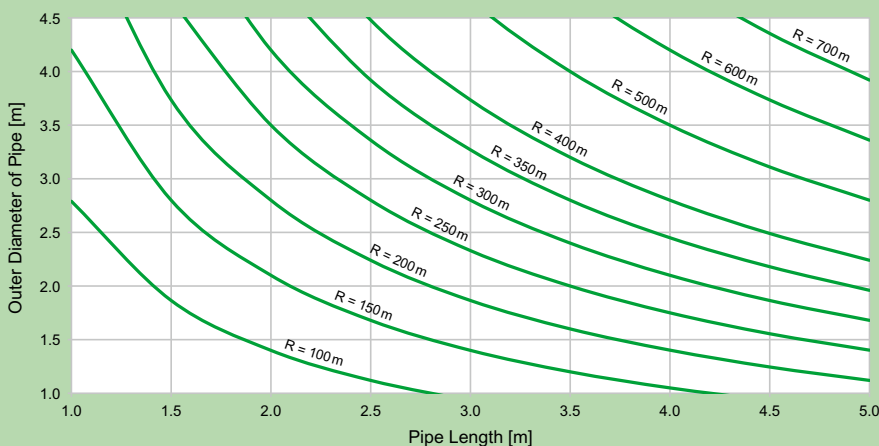


Carrying out sealing grouting



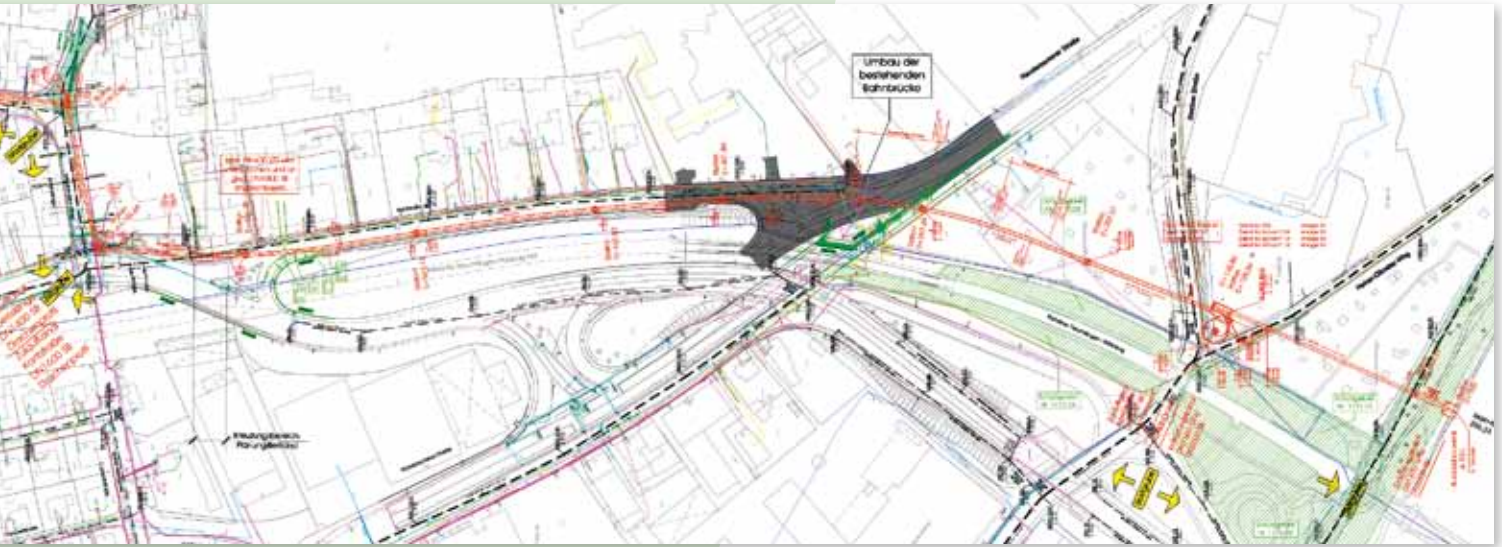
Schematic diagram for P-Type option

### Range of application of Hydraulic Joint P-Type (minimum radii)

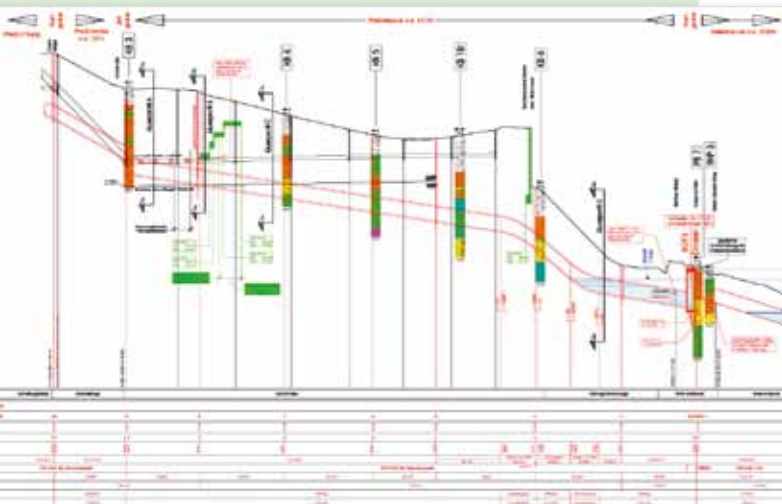




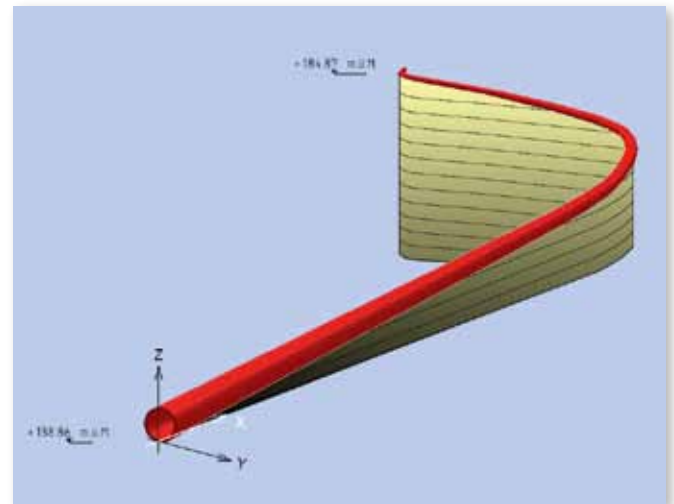
## Example of curved alignment at Würzburg/Germany DN 1600



Situation



Longitudinal section



3D-alignment –  $R_{min} = 220 \text{ m}$



Curved Microtunneling

### Contact/Further information:

#### Jackcontrol AG

Buchholzstrasse 50  
8750 Glarus  
Switzerland

Phone +41 (0)55 650 20 20  
Fax +41 (0)55 650 20 30  
E-mail [info@jackcontrol.com](mailto:info@jackcontrol.com)  
Web [www.jackcontrol.com](http://www.jackcontrol.com)