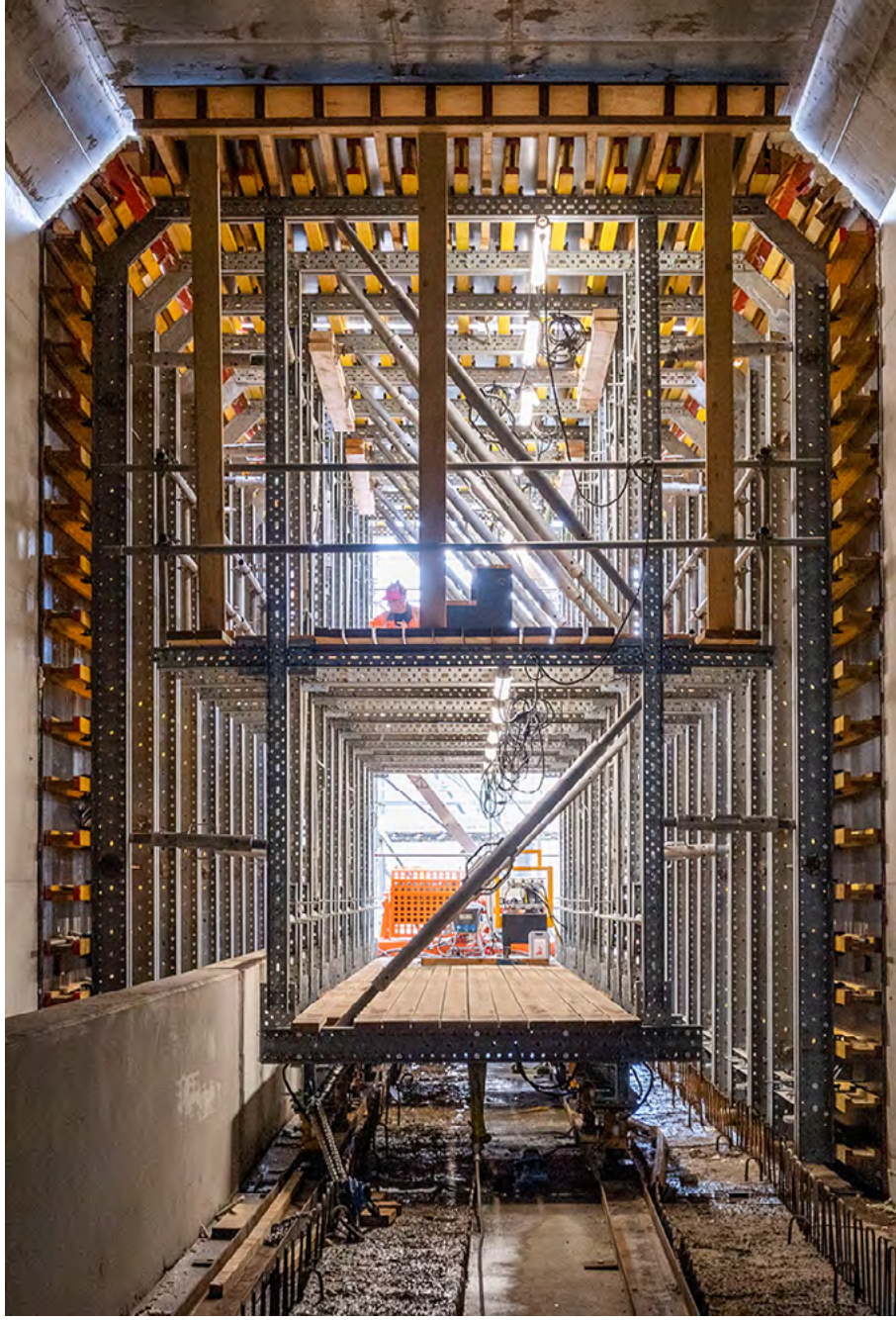
# INFRA-KIT

**INFRA-KIT is a modular system for infrastructure projects. It offers maximum flexibility with a minimal number of required system parts.**



At Work For You



HÜNNEBECK
BY BRAND SAFWAY

# INFRA-KIT
# Overview of applications

## Maximum flexibility with a minimal number of required system parts

### Applications based on the INFRA-KIT modular system

Incremental launching

Parapet Traveller

Tunnel construction

Heavy duty shoring

### Other infrastructure applications offered in cooperation with Strukturas

Form Traveller

Movable scaffolding system

# INFRA-KIT
# Technical data

Successful infrastructure projects with the modular INFRA-KIT system; greatest flexibility with just a few components.

| INFRA-KIT L waler | For light applications |
|---|---|
| Fields of application | Tunnel construction; bridge and civil construction |
| Lengths of walers | 62,5 I 75 I 100 I 125 I 150 I 200 I 250 I 300 I 350 I 400 I 450 I 500 I 550 cm |
| Waler connectors | Connectors to walers or spindles with or without additional spindle connection |
| Bolts | Load dependent Ø 16 and Ø 20 |
| Spindle lengths | Spindles for light and heavy loads available; from 50 cm to 480 cm in different extension lengths |
| Corrosion protection | Fully galvanised |
| Accessories | Connection options to side protection systems, scaffold tubes and wheels |

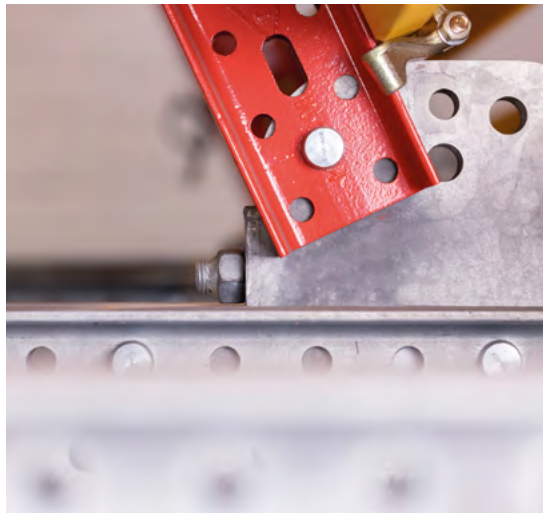
| INFRA-KIT M waler | For moderately heavy applications |
|---|---|
| Fields of application | Tunnel construction; bridge and civil construction |
| Lengths of walers | 150 I 200 I 250 I 300 I 350 I 400 I 450 I 500 I 550 I 600 cm |
| Waler connectors | Connectors to walers or spindles with or without additional spindle connection |
| Bolts | Load dependent Ø 20 and Ø 25 |
| Spindle lengths | Spindles for light and heavy loads available; from 50 cm to 480 cm in different extension lengths |
| Corrosion protection | Fully galvanised |
| Accessories | Connection options to side protection systems, scaffold tubes and wheels |

# INFRA-KIT
# Technical data

| INFRA-KIT H beam | Heavy-duty shoring |
|---|---|
| Fields of application | Tunnel construction; bridge and civil construction |
| Main beam lengths | 62 I 175 I 300 I 450 I 600 cm |
| Lengths of load-bearing frame props | 50 I 75 I 100 I 150 I 200 cm |
| Load | Up to 210 kN load capacity per support |
| Beam connections | Beam joint with connecting bolts (18% flexural strength)<br>Beam joint with screws (37% bending strength)<br>Beam joint with beam joint plate and screws (83%)<br>Butt plate joint with screws |
| Vertical supports | Load-bearing frame prop I INFRA-KIT beam I MkII soldiers I MODEX HD Tower |
| Support connections | Prop jack-2 I Pin-jointed base plate |
| Spindle range | 0 cm – 30 cm I resp. 0 cm – 60 cm (with two prop jacks) |
| Angular compensation | 0° to 10° |
| Application above ground | 1.0 – 16.0 m (higher with separate structural analysis) |
| Corrosion protection | Fully galvanised |
| Accessories | Among others: Centring bar and clip I abutment clamping device I beam clamp I walkway bracket and post I wall strut |

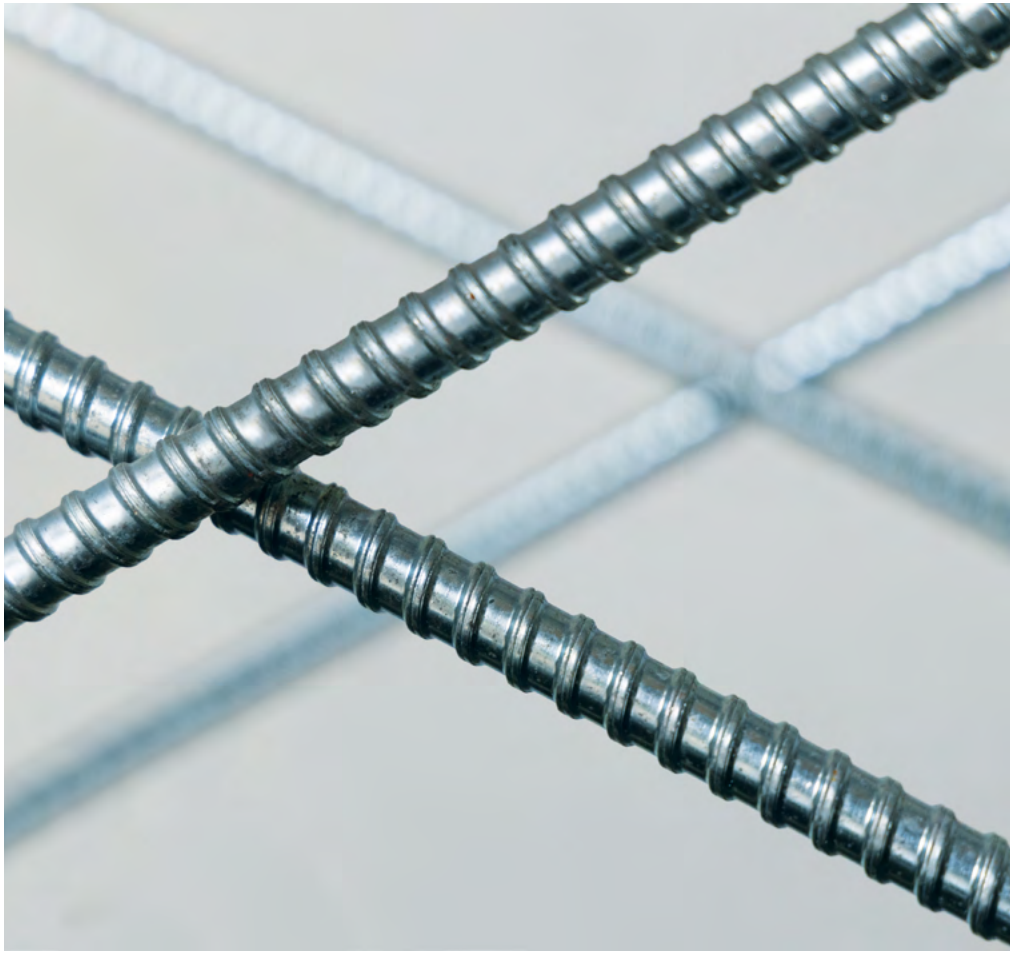
# INFRA-KIT
# Work productively

- Economical infrastructure construction with only a few system components and minimal planning; expensive special configurations not required
- Pre-assembly possible, increasing efficiency in tight spaces
- Just right for every application: Beams of different lengths available for all three load classes
- Plug connectors ensure quick and simple assembly
- Easy to insert tie rods for bracing
- Base jack can divert high loads; minimal material required



# INFRA-KIT
# Work safely

- Diagonal bracing with tie rods ensures stability (1)
- Using high grade steel and hot dip galvanised steel ensure long serviceable life and stability (2)
- Standard walkway brackets such as PROTECTO or MODEX side protection keep workers safe



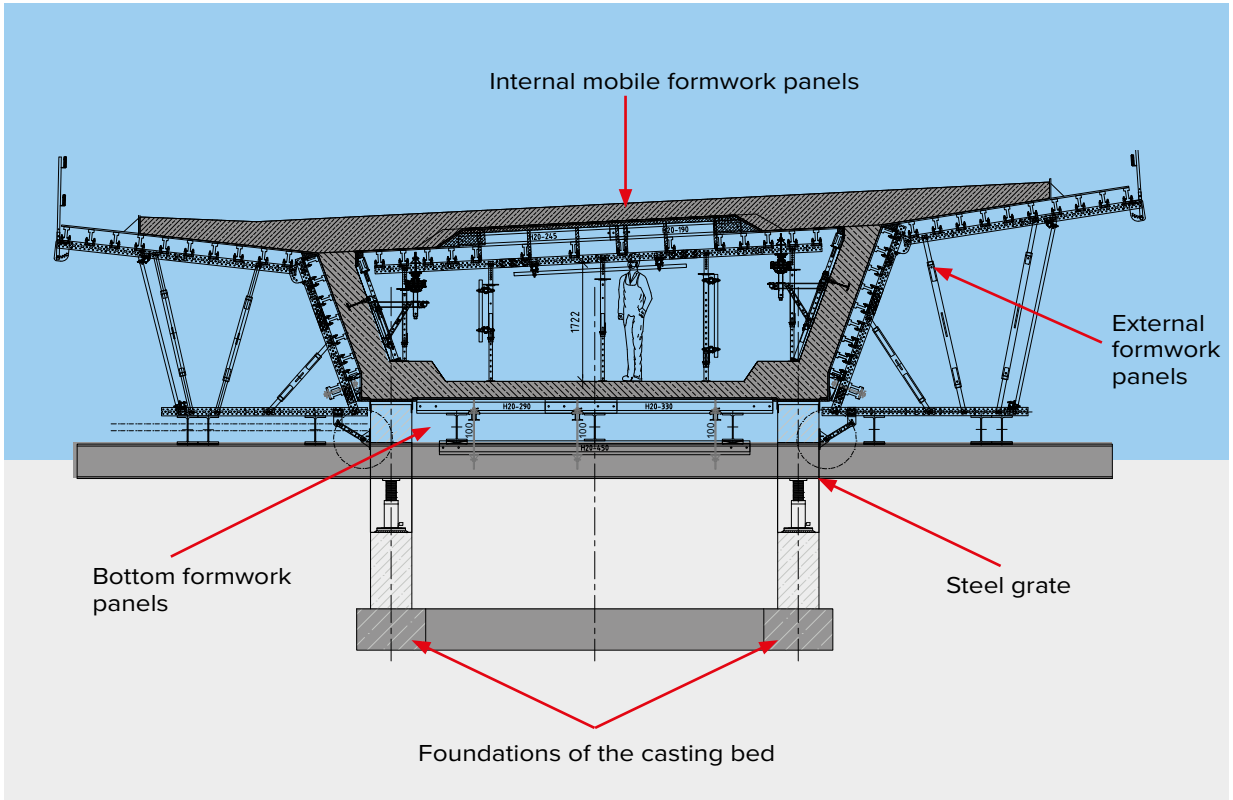
# INFRA-KIT
# Incremental launching

With the incremental launching method, the superstructure is concreted in segments in a stationary formwork (the casting bed) behind the abutment. The segments are then pushed forward using hydraulic cylinders and cables on pillars which were casted earlier.


For project-specific erection of the casting bed, the INFRA-KIT modular system in combination with H20 girders and the PROTECTO fall protection system is perfectly suited. For abutments and piers, the Hünnebeck systems for wall formwork and access solutions are suitable, as well as the PROTECTO fall protection system.

## Scope of application of the incremental launching method

- Long bridges (over 150-200 m), with a constant cross-section, straight or in a constant curve.
- When crossing natural obstacles like rivers, deep ravines, etc.
- When construction takes place in unstable ground conditions.



# INFRA-KIT
# Incremental launching

## Work productively

- Quick stripping possible – allows effective concreting cycles of the superstructure
- Less material required
- Reduced logistical effort throughout the construction process
- Standard solutions for rent – special construction required to a limited extent

## Work safely

- High level of occupational safety by using the PROTECTO fall protection system
- Robust and durable system components thanks to hot-dip galvanisation

**How it works:**

1. The casting bed preparation
2. The formwork assembly
3. The launching nose assembly
4. Concreting of the first segment
5. Pushing the first segment forward
6. Concreting of the next segment
7. Pushing the next segment forward
8. Pushing of the entire bridge superstructure to the final position

# INFRA-KIT
# Parapet Traveller

Variable-use parapet traveller for the efficient production or renovation of parapets. Can be used for any bridge length, any bridge radius and also for special geometries.

| Product description | Parapet traveller for bridge construction |
|---|---|
| Rail profiles | U-profiles; width adjustable according to application |
| Spindle struts | Any size possible from 50 – 480 cm |
| Lengths of scaffold tubes | 50 \| 100 \| 150 \| 200 \| 250 \| 300 \| 350 \| 400 \| 450 \| 550 \| 600 cm |
| Couplers | Rigid, swivel and half couplers |
| Lengths of walers | **INFRA-KIT M** 150 \| 200 \| 250 \| 300 \| 350 \| 400 \| 450 \| 550 \| 600 cm<br>**INFRA-KIT L** 100 \| 125 \| 150 \| 200 \| 250 \| 300 \| 350 \| 400 \| 450 \| 550 cm |
| Weights | **INFRA-KIT M** 73.84 – 298.3 kg = Ø 185.9 kg/running metre<br>**INFRA-KIT L** 25.45 – 142.12 kg = Ø 78.68 kg/running metre |
| Load transfer | Loads are transferred via the IK jack (180 kN).<br>Heavy-duty fixed and swivel castors 30 kN/60 kN |
| Beam connections | Numerous different adapters available. All adapters can be bolted together |
| Corrosion protection | Fully galvanised |
| Accessories | Wheel connection, heavy-duty fixed castors, heavy-duty swivel castors, jack, PROTECTO/MODEX side protection system |

# INFRA-KIT
# Parapet Traveller

## Work productively

- Quick assembly and disassembly: Pre-assembly possible.
- Bolting of the adapters substantially reduces time-consuming screwing.
- Anchoring to the structure not required
- Operation in a few seconds allows rapid work progress
- High load capacity for optimum system utilization
- Flexible arrangement of beams and spindles thanks to numerous adjustment options. Traveller can therefore be adapted to any parapet.
- Continuously perforated U-beams for installing the fasteners at any point. Formwork can be used at any desired angle.
- Can also be used as a demolition traveller.

## Work safely

- The traveller is moved on stable fixed and swivel castors on U-steel profiles.
- Robust and durable system components thanks to hot-dip galvanisation.
- High level of occupational safety by using PROTECTO or MODEX side protection

# INFRA-KIT
# Tunnel construction

**Variable-use tunnel carriers for the efficient production of cut and cover or mining tunnels**
Our Infrastructure Competence Centre provides comprehensive solutions for any type of tunnel construction. With our experienced engineers, working together globally to find the best solution for you, we have completed numerous tunnel construction projects with various structures and shapes and in different countries all around the world. All Hünnebeck tunnelling solutions are based on one system: the modular INFRA-KIT system, allowing a maximum of flexibility with a minimal number of required system parts.

**With our systems, we support all kinds of tunnel construction methods:**

- Open cut, monolithic and partly monolithic
- Mine
- Cut and cover construction method
- Special construction methods

Many of the applications can be achieved with standard materials, which keeps costs low.

Hünnebeck also has vast experience with customised tunnel solutions; moreover, we can provide prototype machines adapted to the project's needs.

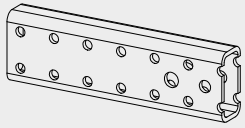
Customised equipment is usually equipped with hydraulic jacks and spindles with external vibrators, a concrete distributor and an electrical or hydraulic repositioning system. A single remote control can be designed to move and operate the formwork as requested.

# INFRA-KIT
# Application & use

**On the following pages you will find excerpts from our user manuals. The complete instructions are available at www.huennebeck.com.**

## Connecting 2no. Walers L – without spindle connectors (with IK Waler Connector Flex L)

Components needed:

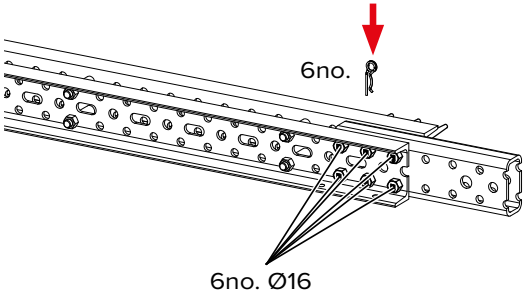


1no. IK Waler Connector Flex L (code:608490)

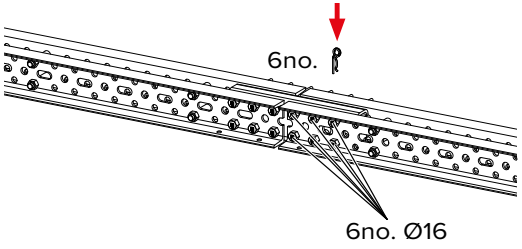
12no. IK Pins Ø16 (code:608816)

12no. Spring Cotter Pins 4 (code:173776)

**Step 1** Insert the IK Waler Connector Flex L into the first Waler L and fasten with 6no. IK Pins Ø16. Secure the IK Pins with the Spring Cotter Pins.

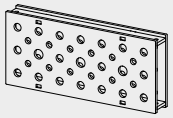



**Step 2** Slide the second waler over the IK Waler Connector Flex L and fasten with 6no. IK Pins Ø16. Secure the IK Pins with the Spring Cotter Pins.




## Perpendicular connection of IK Walers M

Components needed:

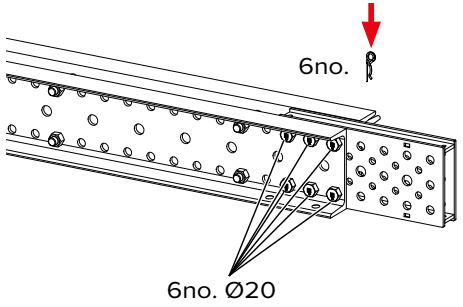


1no. IK Waler Connector Flex M (code:608485)

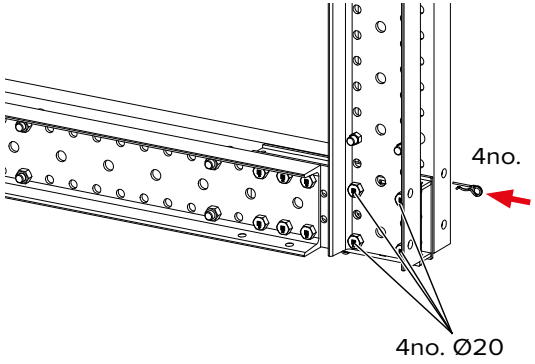
10no. IK Pins Ø20 (code:608820)

10no. Spring Cotter Pins 4 (code:173776)

**Step 1** Insert the IK Waler Connector Flex M into the first Waler M and fasten with 6no. IK Pins Ø20. Secure the IK Pins with the Spring Cotter Pins.




**Step 2** Slide the second Waler M onto the IK Waler Connector Flex M at a right angle to the first IK Waler and fasten with 4no. IK Pins Ø20. Secure the IK Pins with the Spring Cotter Pins.



# INFRA-KIT
# Application & use

## Connecting Walers on top of one another

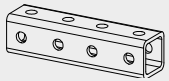
Two Walers L can be connected one on top of the other, parallel or crosswise using, the IK Adapter L.

The following Walers can be connected to one another using the IK Adapter M/L.

- 2no. Walers M on top of each another, parallel or crosswise
- 1no. Waler L on 1no. Waler M, parallel or crosswise

## Connecting 2no. Walers

Components needed:

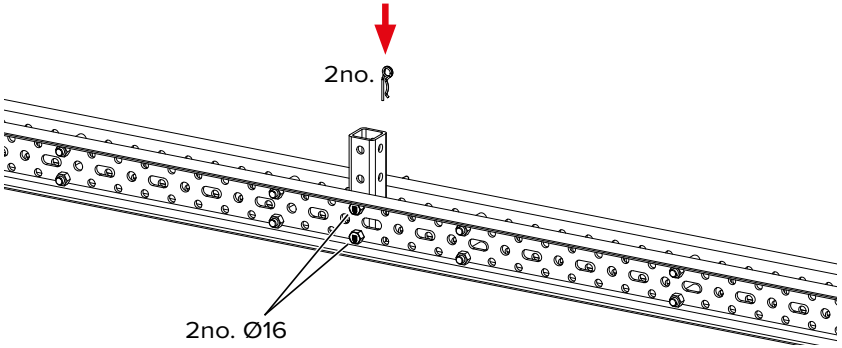


1no. IK Adapter L
(code:608480)

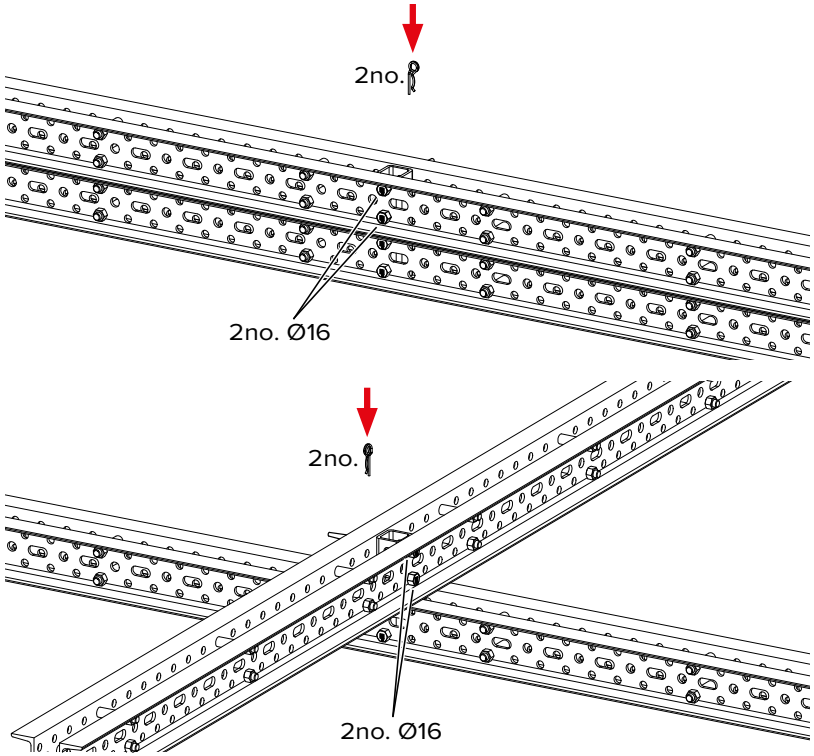
4no. IK Pins Ø16
(code:608816)

4no. Spring Cotter Pins 4
(code:173776)

**Step 1** Insert the IK Adapter L into the first Waler L and fasten with 2no. IK Pins Ø16. Secure the IK Pins with the Spring Cotter Pins.




**Step 2** Slide the second Waler L over the IK Adapter L, parallel or crosswise. Use 2no. IK Pins Ø16 to secure the IK Waler L. Secure the IK Pins with the Spring Cotter Pins.

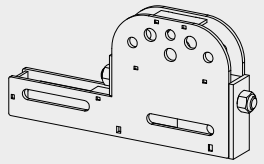


# INFRA-KIT
# Application & use

## Connecting IK Walers L and M

### Attaching the IK Adjustable Connector to an IK Waler L

Components needed:

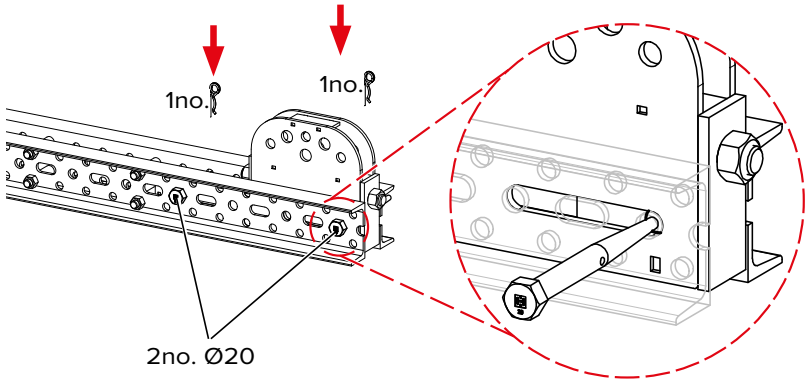


1no. IK Adjustable Connector
(code:608850)

3no. IK Pins Ø20
(code:608820)

3no. Spring Cotter Pins 4
(code:173776)

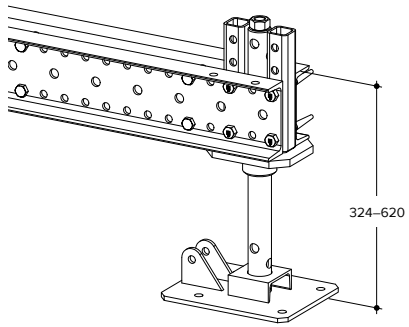
**Step 1** Slide the IK Adjustable Connector into the Waler L and fasten with 2no. IK Pins Ø20. Secure the IK Pins with the Spring Cotter Pins.




## Attaching jacks and bases

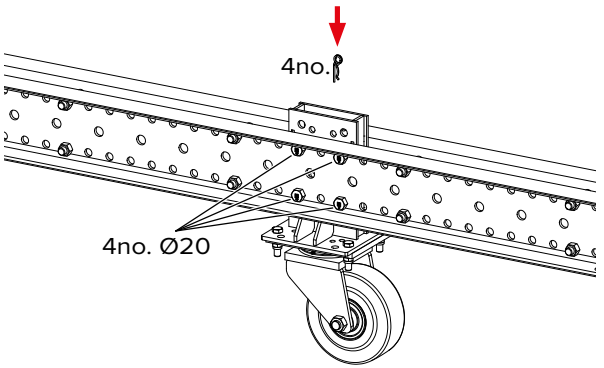
The IK Jacks are used to securely position the INFRA-KIT assemblies on the ground and adjust the height.

The IK Wheel Connector and the Heavy-duty Castors can be used to create mobile INFRA-KIT assemblies. Use the IK Jacks to raise and lower the assemblies.




## Attaching the Heavy-duty Castors to IK Wheel Connector L/M

**Step 1** Slide the IK Wheel Connector into the Waler M and fasten with 2no. IK Pins Ø20. Secure the IK Pins with the Spring Cotter Pins.




## Application & use

- Tunnel construction
- Bridge and civil construction
- Renovation
- Heavy-duty towers
- Temporary passages
- Solid slabs

## INFRA-KIT®
**integrates with**

- PROTECTO side protection
- MODEX side protection
- Load-bearing frame prop

# INFRA-KIT
# Engineering-Services

## Phase 1
**We analyse the situation.**

## Phase 2
**We develop the technical drawings and calculate the costs.**

## Phase 3
**We plan and implement the realisation.**

## Phase 4
**We assist with project finalisation.**

We can design the most complex projects on your behalf quickly and thoroughly. Starting with the ground plan and facade dimensions, we produce the required structural drawings, determine the precise quantities of materials and supply all the required quantity lists.

We help in finding the right safety and access solution. Transparency, flexibility, cost-effectiveness and safety are a matter of course for us and an integral part of our corporate philosophy.

Whatever it takes! We assist you throughout complex construction projects including the engineering of one-off structures. Our mission at all times is to protect you from any unnecessary risks and help you arrive at the best-possible results in every respect.