TITAN WK wall-mounted supports

Carrying loads while maintaining floor access – the alternative to conventional falsework and heavy-duty props
Fast formwork cycles
Tunnel for A3 motorway, Aschaffenburg, Germany

The WK 2000 wall-mounted supports enabled the entire superstructure formwork to be moved as one unit. Further features:
- Formwork can be slid in and out
- Very large access openings with spans of about 10–12 m
- No additional impact protection necessary (as is the case with conventional falsework)

Easy to remove
Hillevågsveien 100, Stavanger, Norway

Construction of a new 165 m long tunnel for taxis and buses only. The use of the lightweight WK 1000 wall-mounted supports to support the roof formwork offered several advantages:
- The formwork was mounted on roller skates on the WK 1000 supports so that it could be moved to the next section.
- The use of comparatively lightweight components enabled formwork to be erected and dismantled without the need for heavy equipment

Ideal where access is difficult
Trunk road bridge over River Wiesenta near Wüstendittersdorf, Germany

The use of WK 2000 wall-mounted supports enabled this new bridge to be built without additional falsework in the river. Compliance with the flood defence stipulations during the construction period was therefore ensured.
TITAN WK 1000 and WK 2000 wall-mounted supports

TITAN WK wall-mounted supports represent alternatives to falsework where elaborate and expensive temporary foundations would otherwise be necessary and openings for traffic must be kept clear. The support plate for each wall-mounted support is fixed in place with a cast-in anchor screw that can be recovered afterwards. The structure is therefore supported on the wall-mounted supports fixed to the concrete wall cast in advance.

The benefits of TITAN WK wall-mounted supports are:
• Safe working load up to 100 kN (WK 1000) or 240 kN (WK 2000)
• Loads carried while keeping the floor clear – no need for separate (temporary) foundations
• No need for impact protection
• Can be fixed at any height
• Ideal for creating large access openings
• Consists of only a few parts
• Anchor screws can be fixed in an existing concrete wall (core-drilling)

TITAN anchor screw M36/D20-Ø 70x450 with support plate and support bolt

Wall bracket*

*Example shows WK 2000
WK 1000 and WK 2000 wall-mounted supports

The **WK 1000 aluminium wall-mounted support** is suitable for light to medium loads of up to 100 kN (permissible load irrespective of screw jack extension). Owing to its low weight, the WK 1000 is suitable for manual installation, even in places with difficult access.

**WK 1000**
Aluminium wall bracket
Weight 27 kg
Part No. 0120750023

Aluminium screw jack
Length 810 mm
400 mm adjustment
Weight 6.1 kg
Part No. 0220150021

For installing before or after concreting
The screw jack is fixed accurately in position with a threaded bar or nailing plate prior to concreting and then cast in. Alternatively, the anchor screw can be inserted into a hole core-drilled in an existing structure.

The **WK 2000 steel wall-mounted support** is galvanised and can be used where heavy loads have to be carried. It can carry loads of up to 240 kN depending on the concrete strength.

**WK 2000**
Steel wall bracket
Weight 150 kg
Part No. 0120750016

For use with, for example, screw jack
Ø 100 x 700 mm
300 mm adjustment
Weight 46 kg
Part No. 0120750017

or
**TITAN 500 wedge jack**
(not illustrated, see p. 7)
The TITAN anchor screw made from quenched and tempered steel has high axial and shear strength. The anchor can be cast in during concreting or subsequently inserted in a core-drilled hole. After removal, no metal parts remain in the concrete, so there are no unsightly rust stains. Especially when compared with other cast-in components such as wavy-tail anchors, cable loops, threaded sockets, plates, etc., the TITAN anchor screw pays for itself after just a few uses.

**Installation dimensions**

The following minimum installation dimensions must be complied with:
- Min. edge distance: 0.35 m
- Min. c/c spacing: 0.40 m
- Min. wall thickness: 0.50 m

**Dimensions** [all dims. in mm]

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Min. edge distance</td>
<td>0.35 m</td>
</tr>
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Design value for load bearing capacity $V_{\text{Rd}}$ or permissible load bearing capacity ($\text{perm. V}$) depending on concrete strength (Intermediate values may be obtained by linear interpolation)

<table>
<thead>
<tr>
<th>Compressive strength</th>
<th>Design load</th>
<th>Permissible load</th>
</tr>
</thead>
<tbody>
<tr>
<td>$f_{\text{ck, cube}}$ [N/mm²]</td>
<td>$V_{\text{Rd, x}}$</td>
<td>$V_{\text{zul, V}}$</td>
</tr>
<tr>
<td>15</td>
<td>207</td>
<td>138</td>
</tr>
<tr>
<td>25</td>
<td>269</td>
<td>179</td>
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<tr>
<td>37</td>
<td>326</td>
<td>217</td>
</tr>
<tr>
<td>45</td>
<td>360</td>
<td>240</td>
</tr>
</tbody>
</table>

$\gamma_n = 1.5$ and $\gamma_F = 1.5$

**Removal**

Removal and reuse is achieved with an electric impact wrench or special square key. Holes can be closed off with blanking plugs or cement.
Optional system components

1 Aluminium walkway bracket
   for the easy attachment of an 800 mm wide walkway to DIN EN 12811.
   • fits on WK 2000
   • max. 2 m spacing between brackets
   Weight: 7.0 kg
   Part No. 0120250066

2 Aluminium end guards
   for attaching to aluminium walkway bracket, incl. 2 connecting pins
   Weight: 8.75 kg
   Part No. 0620264571

TITAN bridging beam
• A combination of the tried-and-tested TITAN 225 aluminium formwork beam and the new beam coupler
• Verified typical calculations
• Comparable with HEB beam section
• Quickly and easily taken down – can also be dismantled into lighter separate parts

For further information see the TITAN bridging beam brochure.

Aluminium beams with the load-carrying capacity of steel beams
TITAN bridging beam
- Type 2 (weight = approx. 22.5 kg/m) is comparable with HEB 200 beam
- Type 3 (weight = approx. 36 kg/m) is comparable with HEB 240–280 beams

TITAN 225 extender
for extending a TITAN 225 aluminium formwork beam by 120–430 mm at each end (in 28 mm increments). The optional threaded spindle allows infinite vertical fine adjustment.
Weight 15.4 kg
Part No. 0620424570

Friction clamp
for shear-resistant connections between 2 or 3 TITAN 225 aluminium formwork beams to create bridging beam (single beams or with bottom beam curtailed).
Weight 3.4 kg
Part No. 0620420052

TITAN universal beam clamp
with forged clamping arms, perm. clamping force per beam clamp = 3 kN (single-lap joint) and 4.5 kN (double-lap joint), clamping width 5–70 mm
Weight 1.60 kg
Part No. 0620350009
For further information see the TITAN universal beam clamp brochure.

TITAN 500 wedge jack
for carrying concentric and eccentric vertical and horizontal loads, perm. load 420 kN (without wall-mounted support), exact height adjustment 168–268 mm, calculable settlement
Weight 29.5 kg
Part No. 0120350001
For further information see the TITAN wedge jack brochure.

Centring bar
for WK 2000, simply inserted into screw jack, galvanised
Weight 0.60 kg
Part No. 0120750032

Roller skate
(available from various suppliers, e.g. Börkey, Enerpac)
The photos reproduced in this brochure represent momentary snapshots of work on building sites. It is therefore possible that certain facts and circumstances do not fully correspond to the technical (safety) requirements.

**Travelling falsework**
New trunk road underpass at Schierling near Regensburg, Germany

The 50 m long underpass was built in several phases. This called for the falsework to be tied back at every third arch with 13 m long ties and then slid along the wall-mounted supports.