Thousands of TITAN push-pull props have proven themselves over many years. They have the following advantages:

- Virtually no play, adjustable by the millimetre (1/32")
- Takes tension and compression forces
- Efficient handles always in operative’s reach
- Infinite adjustment by smooth but robust ACME thread with large adjustment range
- 3-dimensional swivel-end accommodates any slope or angle with single bolt fix
- Positive and safe - max. extension cannot be exceeded
- High strength with light weight - only 1 or 2 operatives to carry
GENERAL RULES

1) The length of the brace (push-pull prop) should be identical to the height of the element.

2) Each element must be supported by a minimum of two braces.

3) If the swivel end is connected to the element at a single point, the brace should be at an angle of less than 45° to avoid additional offset forces.

4) If several TITAN RSK props are used (e.g. along a wallform), it is recommended that all threads with the same direction of rotation should be installed at the same side (e.g. all left handed threads at the ground). In this way, all props can be lengthened or shortened by rotating in the same direction.

In order to see the difference between left handed and right handed screw jacks:

- Left handed thread is black polyseal-coated,
- Right handed thread is hot-dip galvanized.

3-dimensional swivel-end accommodates any slope or angle with single bolt fix

Subject to technical changes

The new version of the TITAN RS can resist a higher load on tension because of an extended collar on the handle.

* according to static calculation dd. 30. November 2005

Photos are illustrative only. Imperial figures are rounded. Products must be used in conformity with safe practices and applicable codes and regulations.
Proven anchorage to fix TITAN push-pull props in detail

Swivel end with fixing at 2 positions with 2 heavy duty dowels M 16 (5/8"). The hole 27 mm dia. (1.06") has the function of a slotted hole to eliminate a tolerance of ± 5 mm (± 0.2") when positioning the dowel.

Swivel end with fixing at 1 position is used when the brace is positioned inclined in two directions to the element that has to be supported. By rotating around the fixing position and simultaneous rotation around the axis of the brace the swivel end can be easily brought into the required position to facilitate erection of the element.

TITAN recoverable anchor screw M24 / D15 x 160 with bolt M24 x 30 acc. to DIN 601, fits to ring spanner 36, perm. load 30 kN in concrete strength B30 (30 N/mm²). Always sufficient for single point fixing.

Double end for fixing two TITAN braces, ideal to push formwork exactly into position.

Fixing of prefabricated panels Cast-in sleeve type “Robusta” 25 Ø x 200 (1”Ø x 8”) with special bolt 25 Ø x 150 mm (1”Ø x 6”) permissible load 10 kN (2250 lbs) in concrete strength B 30 (4200 psi) out of the design only one point fixing possible, this reduces the perm. load of the TITAN brace to 14 kN (3100 lbs) on compression.

Heavy duty dowel M 16 (5/8") hole dia. 24 mm (0.95”), min. hole depth 130 mm (5.12”), with reducing sleeve 26 / 17 perm. load as dowel group 13.5 kN (3000 lbs) in concrete strength B 35 (5000 psi). Normally a 2-point fixing is mandatory.

Pin handle Fast and self-locking bolt to reduce time for assembly and crane handling.
Fixing to steel or aluminium waler. Wedge end steel waler with pin handle. To reduce time for assembly and crane handling, adjustment from 145 to 155 mm (5.7 to 6"), perm. load 5 kN, suitable for all standard steel or aluminium waler made of double U 100 profile.

Spanner 500 mm (1.65'), suitable for TITAN RSK push pull props.

Fixing to scaffold tube 1.9" with bolted on half coupler (clamp).

For various types of formwork with double U-channel having sufficient space to adapt the 48 mm Ø (1.9") screw jacks of type TITAN RSK.
Push-Pull Props for various applications

- U-channel 1.25 m (4')
- Retaining claw
- Ledger frame
- Rail post
- Connecting bracket
- Aluminium Prop TITAN Size 6 + 1 m (3.3') extension + jack 1.20 m (3.9')

Fixing the push-pull prop with screw M16x100

To be cut on site
Fixing the push-pull prop TITAN RSK 1 with two spring clips with speed thread R12x50

ledger frame

4x4-timber to be cut on site

hinge plate

combi plate 15

RSK 1

F70 washer faced nut

Fixing the push-pull prop TITAN RSK 1 with two spring clips with speed thread R12x50

ledger frame
The TITAN BKS heavy duty push-pull props have the following advantages:

- Proven load capacities
- Flexible lengths up to 18 m (60 ft) with interchangeable modular sections
- Sturdy construction withstands abusive handling on site
- Fine adjustment up to 1.40 m (55 inch) with screw jacks top and bottom
- Adjustment of screw jacks always within arm's length for maximum safety
- Fast adjustment with double-start speed thread, 25 mm (1 inch) per turn
### Technical Data

<table>
<thead>
<tr>
<th>Type</th>
<th>adjustment range</th>
<th>perm. axial load on compression</th>
<th>screw jack element</th>
<th>extension</th>
<th>weight</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>L m ft</td>
<td>L kN lbs</td>
<td>L kN lbs</td>
<td>L kN lbs</td>
<td>pcs. pcs. pcs. kg lbs</td>
</tr>
<tr>
<td>BKS 1</td>
<td>2.3 - 3.7 7.5 to 12.1</td>
<td>50.0 11200</td>
<td>50.0 11200</td>
<td>50.0 11200</td>
<td>2 - - 72</td>
</tr>
<tr>
<td>BKS 2</td>
<td>4.7 - 6.1 15.4 to 20.0</td>
<td>50.0 11200</td>
<td>50.0 11200</td>
<td>41.5 9300</td>
<td>2 1 - 122</td>
</tr>
<tr>
<td>BKS 3</td>
<td>6.0 - 7.4 19.7 to 24.3</td>
<td>50.0 11200</td>
<td>50.0 11200</td>
<td>37.4 8400</td>
<td>2 - 1 144</td>
</tr>
<tr>
<td>BKS 4</td>
<td>7.1 - 8.5 23.3 to 27.9</td>
<td>50.0 11200</td>
<td>45.3 7300</td>
<td>32.6 6300</td>
<td>2 2 - 172</td>
</tr>
<tr>
<td>BKS 5</td>
<td>8.4 - 9.8 27.6 to 32.9</td>
<td>50.0 11200</td>
<td>39.1 8800</td>
<td>28.2 6300</td>
<td>2 1 1 194</td>
</tr>
<tr>
<td>BKS 6</td>
<td>9.7 - 11.1 31.9 to 36.4</td>
<td>45.7 10300</td>
<td>33.2 7500</td>
<td>23.8 5400</td>
<td>2 - 2 216</td>
</tr>
<tr>
<td>BKS 7</td>
<td>10.8 - 12.2 35.4 to 40.0</td>
<td>39.0 8800</td>
<td>28.3 6400</td>
<td>20.1 4500</td>
<td>2 2 1 244</td>
</tr>
<tr>
<td>BKS 8</td>
<td>12.1 - 13.5 39.7 to 44.3</td>
<td>32.5 7300</td>
<td>23.8 5400</td>
<td>16.7 3800</td>
<td>2 1 2 266</td>
</tr>
<tr>
<td>BKS 9</td>
<td>13.2 - 14.6 43.3 to 47.8</td>
<td>25.1 5500</td>
<td>19.9 4500</td>
<td>13.7 3100</td>
<td>2 3 1 294</td>
</tr>
<tr>
<td>BKS 10</td>
<td>14.5 - 15.9 47.6 to 52.2</td>
<td>19.3 4300</td>
<td>15.9 3600</td>
<td>11.2 2500</td>
<td>2 2 2 316</td>
</tr>
<tr>
<td>BKS 11</td>
<td>15.8 - 17.2 51.8 to 56.4</td>
<td>14.6 3300</td>
<td>11.9 2700</td>
<td>9.1 2000</td>
<td>2 1 3 338</td>
</tr>
<tr>
<td>BKS 12</td>
<td>17.1 - 18.5 56.1 to 60.7</td>
<td>10.8 2400</td>
<td>8.7 2000</td>
<td>6.8 1500</td>
<td>2 - 4 390</td>
</tr>
</tbody>
</table>

Subject to technical changes.

Imperial figures are rounded.

**Components:**
- Screw jack element adjustment 1.15 – 1.85 m (3.77 to 6.1 ft) - 36 kg (79 lbs)
- Short extension, 159 mm Ø (6.26") x 4.5 mm (1.8") x 2.40 m (7.9 ft) - 50 kg (110 lbs)
- Long extension, 159 mm Ø (6.26") x 4.5 mm (1.8") x 3.70 m (12.1 ft) - 72 kg (159 lbs)

---

**Remarks:**
- 4 screws M 16 x 60, strength 10.9, galvanized are required to connect prop elements. They are included in the price.
TITAN BKS-ALU is a modular system consisting of BKS-Alu-spindle element, TITAN ALU-extension element and ALU-connecting brackets.

One person can assemble different sizes of TITAN BKS-ALU Push-Pull Prop quickly and easily without using a crane.
- For bracing and adjusting prefabricated concrete elements
- For bracing and aligning wall and column formwork
- Long-lasting rental system
- Modular system for different lengths and perm. loads
- Proven load capacities

### Technical Data

<table>
<thead>
<tr>
<th>type / size</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>adjustment</td>
<td>m</td>
<td>ft</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4.12 - 6.56</td>
<td>13.52 to 21.52</td>
<td>5.12 - 7.56</td>
</tr>
<tr>
<td>perm. load min L</td>
<td>kN</td>
<td>lbs</td>
<td>36.0</td>
</tr>
<tr>
<td>on compression</td>
<td>8100</td>
<td>5400</td>
<td>3600</td>
</tr>
<tr>
<td>perm. load half L</td>
<td>kN</td>
<td>lbs</td>
<td>20.4</td>
</tr>
<tr>
<td>on compression</td>
<td>4600</td>
<td>3100</td>
<td>2100</td>
</tr>
<tr>
<td>perm. load max L</td>
<td>kN</td>
<td>lbs</td>
<td>10.4</td>
</tr>
<tr>
<td>on compression</td>
<td>2200</td>
<td>1600</td>
<td>1100</td>
</tr>
<tr>
<td>perm. load</td>
<td>kN</td>
<td>lbs</td>
<td>40</td>
</tr>
<tr>
<td>on tension</td>
<td>9000</td>
<td>9000</td>
<td>9000</td>
</tr>
<tr>
<td>weight kg (lbs)</td>
<td>43 (95)</td>
<td>51 (112)</td>
<td>59 (130)</td>
</tr>
</tbody>
</table>

Alu-spindle element: 2 2 2
Alu-extension 1 m: 1 1 2
Alu-connection bracket: 2 4 6

Perm. load on tension: 40 kN (9000 lbs)

Weight and wind acc. to DIN 4420 have been included in the static calculation.

Load assumption in static calculation:
- 45° inclination with self-weight, without wind
- Perm. load on tension: 40 kN (9000 lbs)
Aluminium push pull props TITAN BKS with ledger frames
Load chart – static calculation dd. 15.07.2005

Depending on the direction of the wind, strut length and spacing, the safe working load per strut will vary.
The least value between $N_1$ and $N_2$ should be the load allowed for.
The wind load was calculated with a wind pressure of $q = 0.8$ kN/m$^2$ according to DIN 1055.
Wind can be from all directions, and in this case the bottom line “$N_2$ wind included” is the limiting factor in deciding permissible strut load.

**Example 1:**
Length $L = 21$ m; min. value of $N = N_2 = 18$ kN

**Example 2:**
For example where $L = 15$ m with wind parallel to the wall the load chart says:
$N_1 = 47$ kN, wind included
$N_2 = 48$ kN, without wind  => $N = N_1 = 47$ kN

The load chart allows for specific loads depending on the direction of wind, strut spacing and length of strut.

Stabilizing the strut cross section
To stabilize the cross section you need diagonal bracing tubes. The tube has to be connected to the horizontal chord (48 mm dia.) of the ledger frame using a swivel coupler.
For a length of up to 8 m each end bay is fully braced and for lengths up to 16 m an additional braced bay is required at approximately mid point of the span. Beyond these lengths the bracing has to be uniformly distributed over the length.
Grouping the TITAN Push-Pull Props to avoid buckling, e.g. with ledger frames or push-pull props.
Ischebeck Titan Group

Founded in Germany over 120 years ago Ischebeck is renowned internationally for its aluminium formwork and false work systems, trench support systems and ground engineering products.

Ischebeck Titan Ltd

The company operates from headquarters centrally located in the heart of the UK.

Product Availability

Substantial stocks of equipment are available ex-stock from the company’s strategically located 4-acre distribution site, with most main product lines available nationwide on a 48-hour delivery. Products are available for both hire and outright purchase.

Technical Support

We will participate in concept stage development. Providing input on applications, production rates, budget design, programming and costings. Active for on site support and training. We can provide guidance on industry special European and national standards.