TITAN Push-Pull Props from ISCHEBECK TITAN

TITAN RS and TITAN RSK

ISCHEBECK®

TITAN

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

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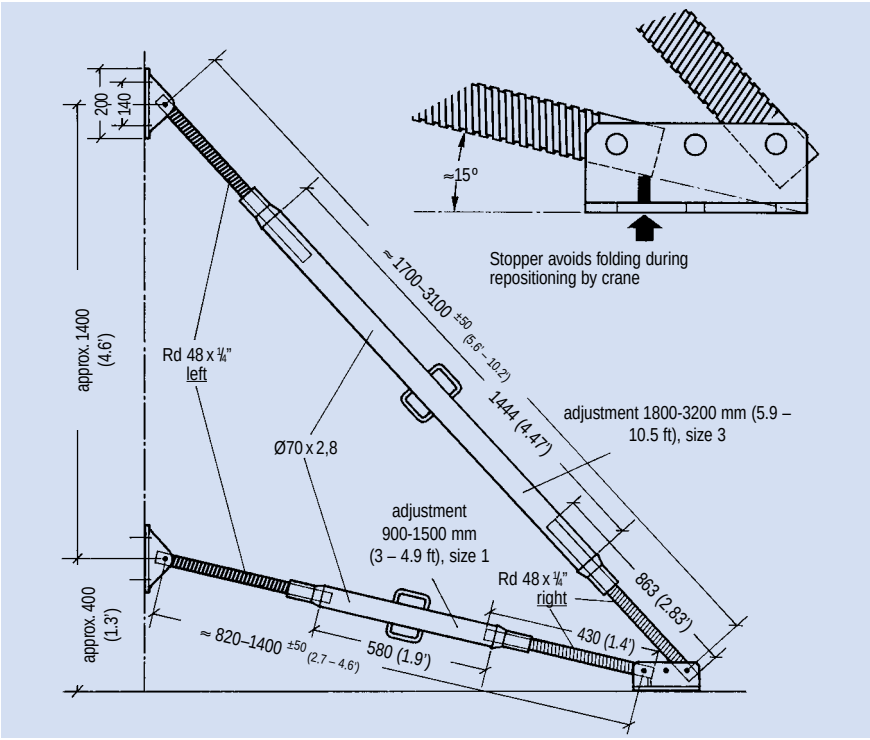
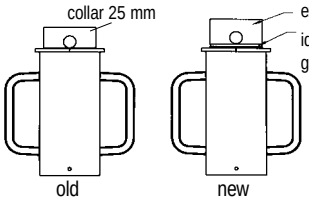


3-dimensional swivel-end accommodates any slope or angle with single bolt fix

Technical data

Type order ref.		TITAN RS no. 2		TITAN RS no. 3		TITAN RSK no. 1	TITAN RSK no. 3	TITAN RSK no. 4	TITAN RSK no. 6	TITAN RSK no. 8
adjustment m (ft)		1,70 - 2,90 (5.6' - 9.5')		2,10 - 3,60 (6.9' - 11.8')		0,90 - 1,50 (2.9' - 4.9')	1,80 - 3,20 (5.9' - 10.5')	2,60 - 4,00 (8,5' - 13.1')	4,60 - 6,00 (15.1' - 19.7')	6,20 - 7,60 (20.3' - 24.9')
perm. axial load on compression*	kN (lbs)	37 - 18 8300 - 4000		24 - 8 5400 - 1800		40 9000	40 - 29,2 - 15,4 9000 - 6600 - 3500	38,8 - 23,3 -12,8 8700 - 5200 - 2900	30,5 - 18,4 - 9,9 6900 - 4100 - 2200	40 - 20,1 - 9,1 9000 - 4500 - 2000
		old	new	old	new					
on tension*	kN (lbs)	15 3400	25 5600	15 3400	25 5600	40 9000	40 9000	40 9000	40 9000	40 9000
weight approx. kg	(lbs)	14 (31)		17 (37)		11 (24)	19 (42)	23 (51)	38 (84)	72 (159)
outer tube Ø mm	(in)	57 (2.24")		57 (2.24")		70 (2.76")	70 (2.76")	70 (2.76")	83 (3.27")	108 (4,25")



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

Subject to technical changes

* 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

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.

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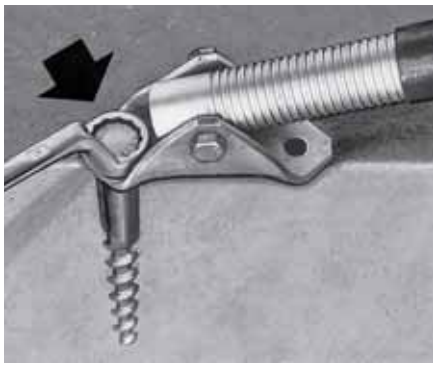
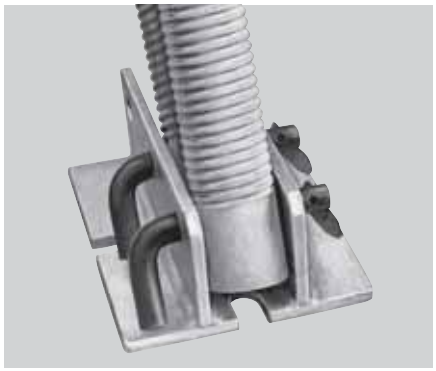
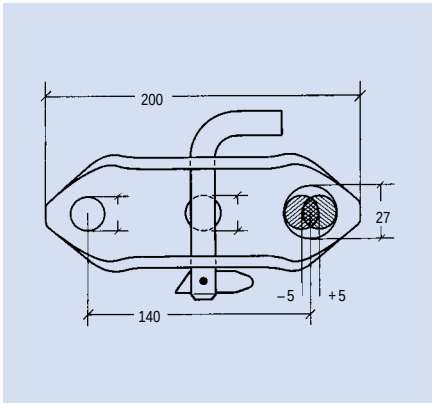
Proven anchorage to fix TITAN push-pull props in detail

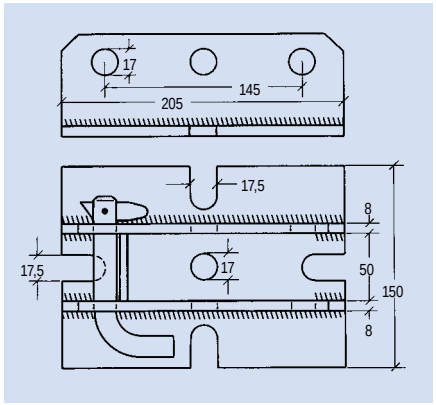
Fixing to the ground





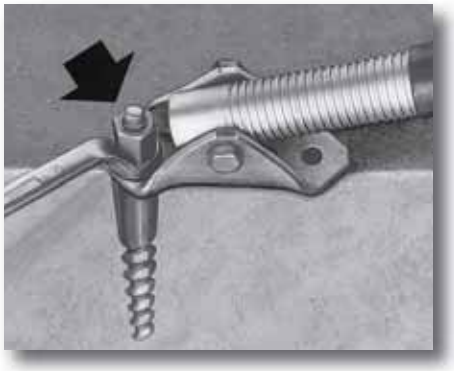


TITAN recoverable anchor screw M24 / D15 x 160 with bolt M24 x 30 acc. to DIN 601, fits to ring spanner 36, perm. load 30 kN in concrete strength B30 (30 N/mm²). Always sufficient for single point fixing.



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 TITAN 15
tie bar with hex. nut SW 30 x 50, fits to ring spanner 30, perm. load 30 kN in concrete strength B15
(15 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 pci). Normally a 2-point fixing is mandatory.

Pin handle
Fast and self-locking bolt to reduce time for assembly and crane handling.

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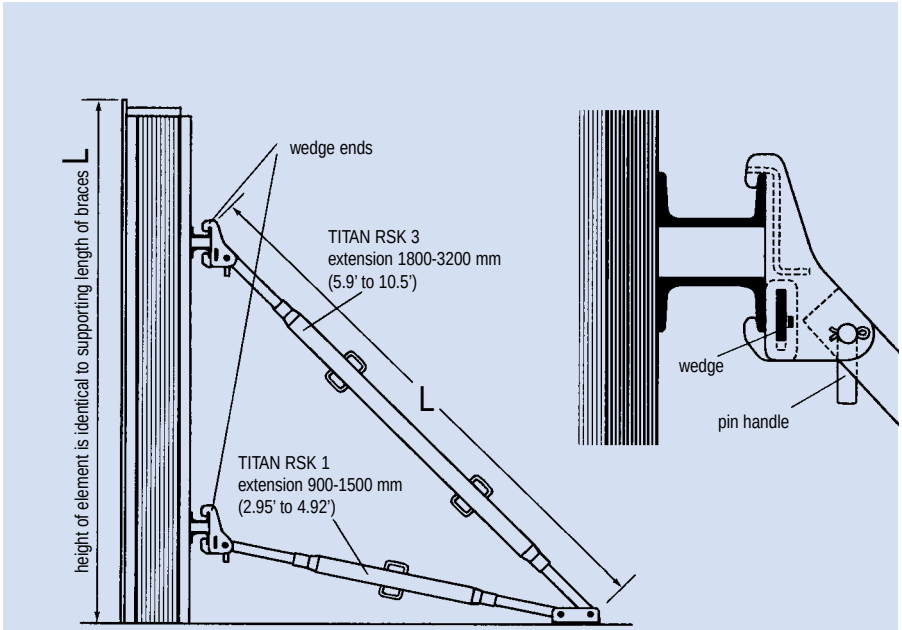
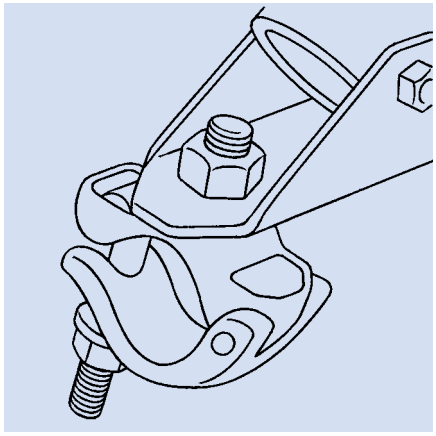
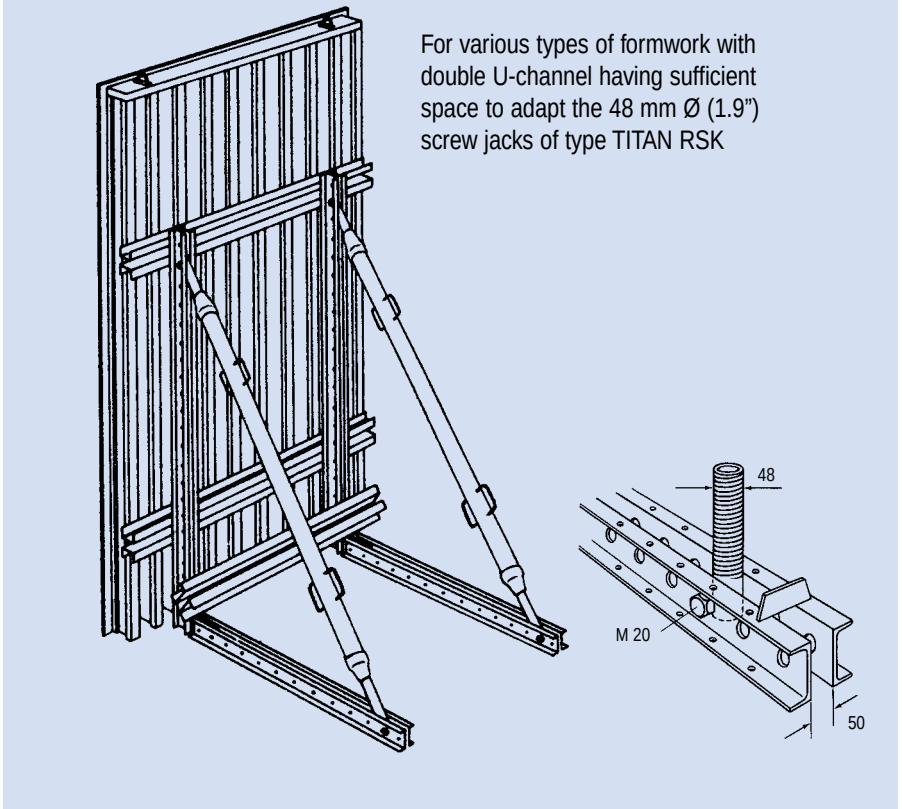
Fixing to steel or aluminium waler Wedge end steel waler with pin handle, to reduce time for assembly and crane handling, adjustment from 145 to 155 mm (5.7 to 6”), perm. load 5 kN, suitable for all standard steel or aluminium waler made of double U 100 profile.



Spanner
500 mm (1,65’), suitable for TITAN RSK push pull props



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



TITAN RS and TITAN RSK

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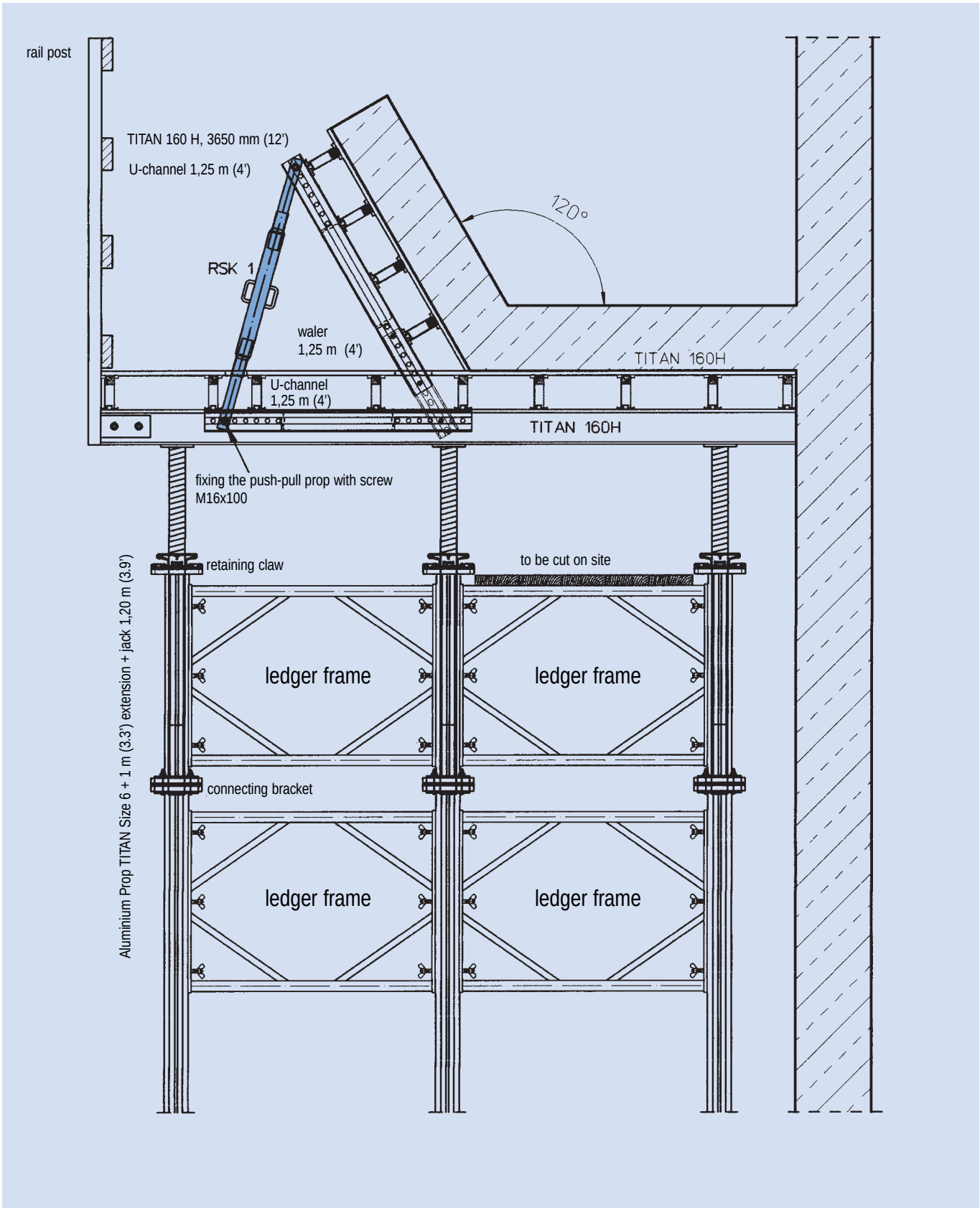
Push-Pull Props for various applications



TITAN RS and TITAN RSK

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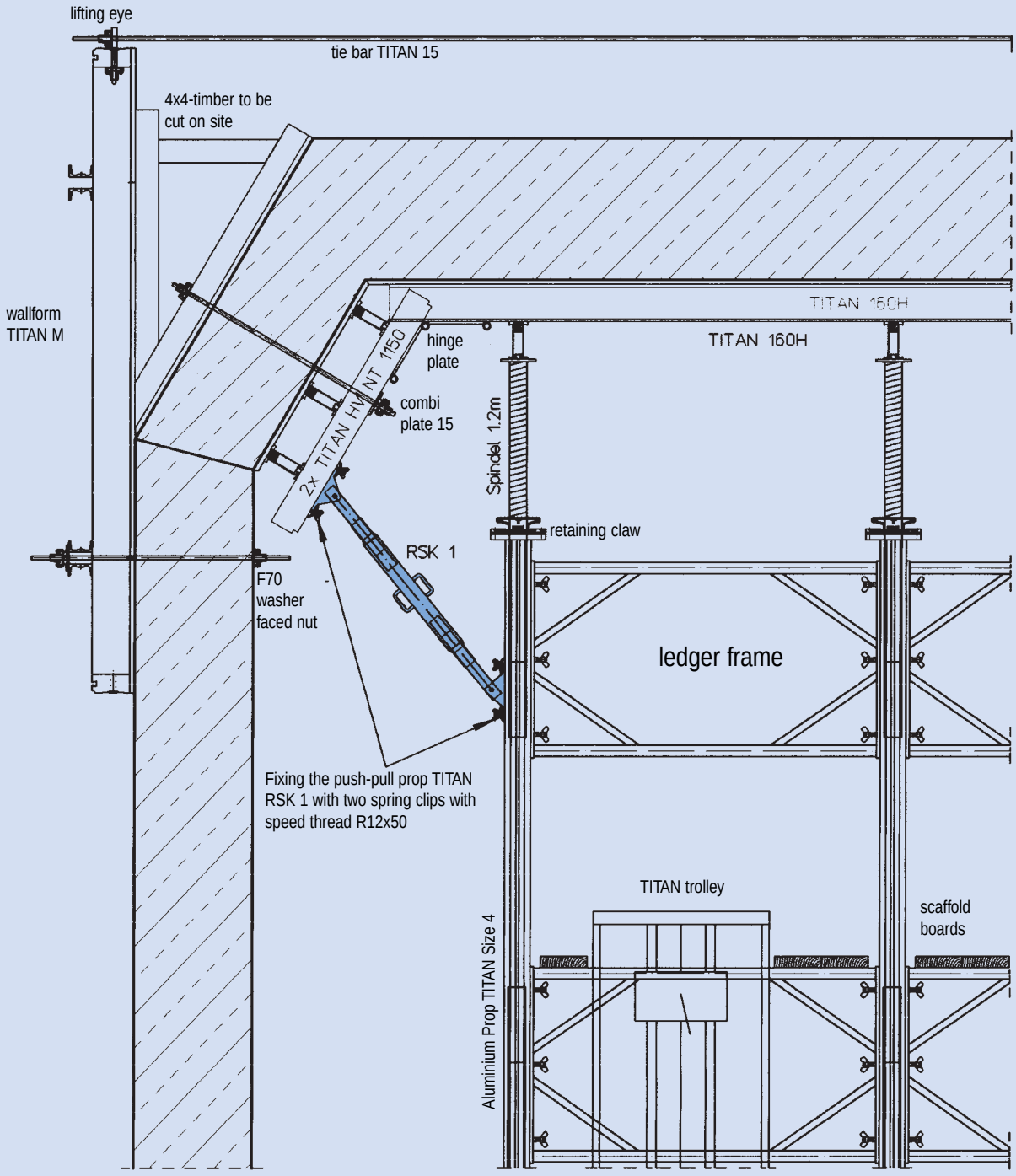

TITAN BKS

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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

Aluminium Push-Pull Prop TITAN BKS-Alu

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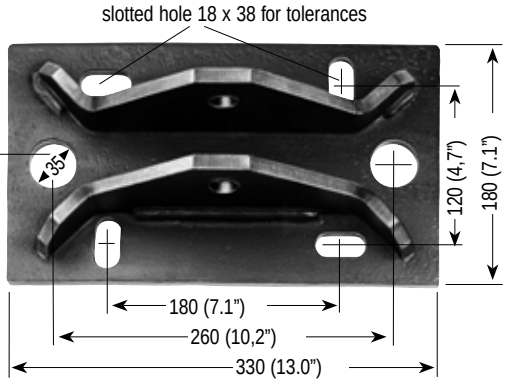


Endplate
for fixing with 4 dowels M 16 required, bore hole depth 120 mm (4.7"), concrete strength B 25 (25 N/mm²), perm. load 10 kN (2300 lbs) per dowel

Remarks:
4 screws M 16 x 60, strength 10.9, galvanised are required to connect prop elements. They are included in the price.

Technical Data

Type	adjustment range	perm. axial load on compression min	half	max	screw jack element	extension short	long	weight
	L m ft	L kN lbs	L kN lbs	L kN lbs	pcs.	pcs.	pcs.	kg lbs
BKS 1	2,3 - 3,7 7.5' to12.1'	50,0 11200	50,0 11200	50,0 11200	2	-	-	72 159
BKS 2	4,7 - 6,1 15.4' to 20.0'	50,0 11200	50,0 11200	41,5 9300	2	1	-	122 269
BKS 3	6,0 - 7,4 19.7' to 24.3'	50,0 11200	50,0 11200	37,4 8400	2	-	1	144 317
BKS 4	7,1 - 8,5 23.3' to 27.9'	50,0 11200	45,3 10200	32,6 7300	2	2	-	172 379
BKS 5	8,4 - 9,8 27.6' to 32.2'	50,0 112040	39,1 8800	28,2 6300	2	1	1	194 427
BKS 6	9,7 - 11,1 31.8' to 36.4'	45,7 10300	33,2 7500	23,8 5400	2	-	2	216 476
BKS 7	10,8 - 12,2 35.4' to 40.0'	39,0 8800	28,3 6400	20,1 4500	2	2	1	244 538
BKS 8	12,1 - 13,5 39.7' to 44.3'	32,5 7300	23,8 5400	16,7 3800	2	1	2	266 586
BKS 9	13,2 - 14,6 43.3' to 47.9'	25,1 5600	19,9 4500	13,7 3100	2	3	1	294 648
BKS 10	14,5 - 15,9 47.6' to 52.2'	19,3 4300	15,9 3600	11,2 2500	2	2	2	316 697
BKS 11	15,8 - 17,2 51.8' to 56.4'	14,6 3300	11,9 2700	9,1 2000	2	1	3	338 745
BKS 12	17,1 - 18,5 56.1' to 60.7'	10,8 2400	8,7 2000	6,8 1500	2	-	4	360 794

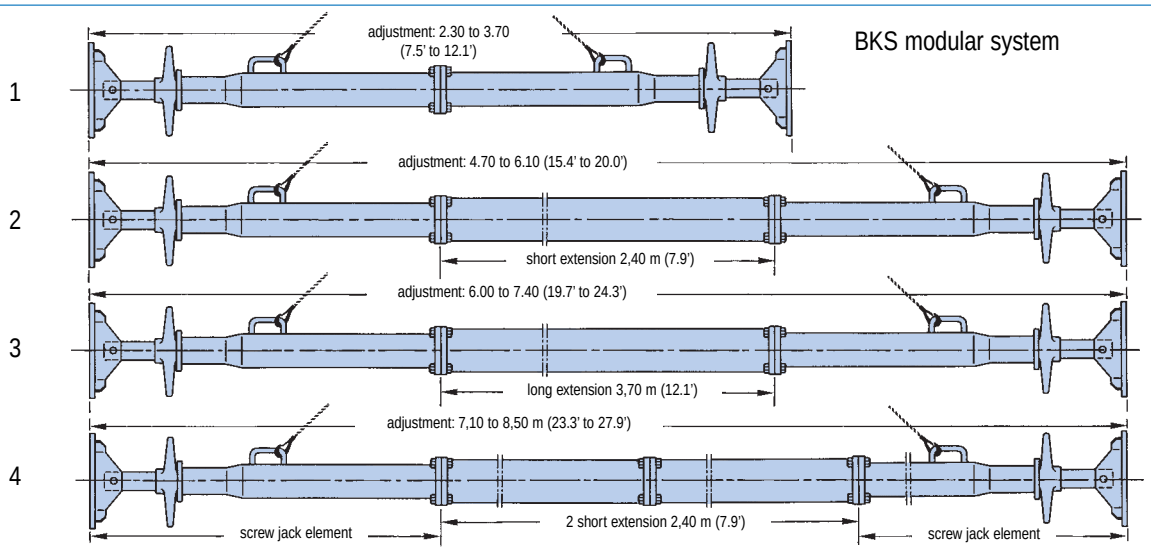
50 kN (11200 lbs) permissible load on tension

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 (7,87 ft)	50 kg (110 lbs)
long extension, 159 mm Ø (6,26") x 4,5 mm (1,8") x 3,70 m (12.15 ft)	72 kg (159 lbs)



Aluminium Push-Pull Prop TITAN BKS-Alu

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TITAN BKS-ALU is a modular system consisting of BKS-Alu-spindle element, TITAN ALU-extension element and ALU-connecting brackets.

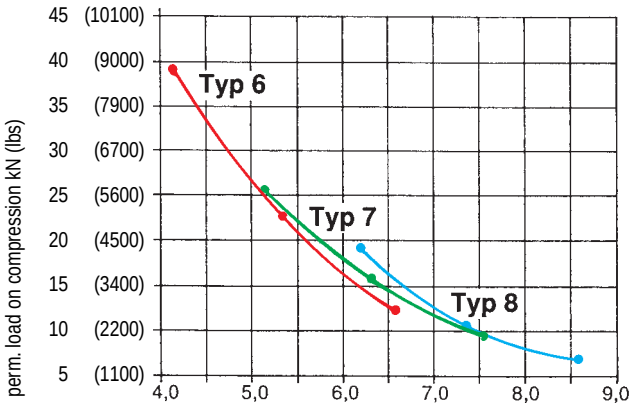
One person can assemble different sizes of TITAN BKS-ALU Push-Pull Prop quickly and easily without using a crane.

- 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 Permissible axial load kN (lbs)

type / size		6	7	8
adjustment	m ft	4,12 - 6,56 13.52 to 21.52	5,12 - 7,56 16.80 to 24.80	6,12 - 8,5 20.08 to 28.08
perm. load min L on compression	kN lbs	36,0 8100	23,8 5400	16,0 3600
perm. load half L on compression	kN lbs	20,4 4600	13,8 3100	9,2 2100
perm. load max L on compression	kN lbs	10,4 2300	7,3 1600	4,9 1100
perm. load on tension	kN lbs	40 9000	40 9000	40 9000
weight kg (lbs)		43 (95)	51 (112)	59 (130)
Alu-spindle element		2	2	2
Alu-extension 1 m		–	1	2
Alu-connection bracket		2	4	6

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



type 6 without extension
type 7 with extension 1 m (3,3')
type 8 with 2 x extension 1 m (3,3')

load assumption in static calculation:
45° inclination with self-weight, without wind

perm. load on tension 40 kN (9000 lbs)

Aluminium Push-Pull Prop TITAN BKS-Alu

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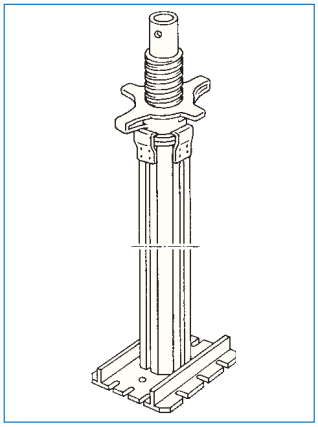
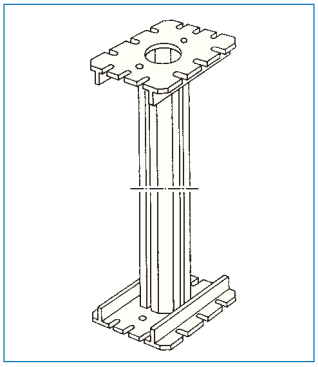
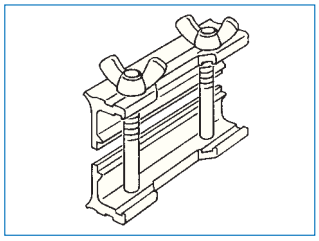


TITAN BKS-Alu-spindle element without swivel end, adjustment 2.06 to 3.28 m (6.8 to 10.7 ft), approx. 21 kg (47 lbs), a spanner is required to ease adjustment under full load.

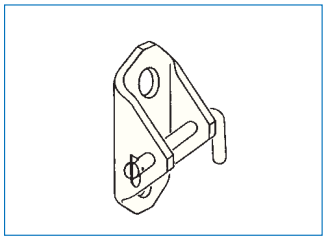


TITAN-ALU extension element

length	weight
500 mm (1' 7")	3.5 kg (7.7 lbs)
1000 mm (3' 3")	6.5 kg (14.3 lbs)
5000 mm (16' 5")	24.0 kg (52.9 lbs)



Connecting bracket
Two connecting brackets, one on each side, secure the connection between the TITAN-BKS-ALU spindle element and the TITAN-ALU extension element or between 2 extension elements.



Swivel end with pin handle
Fast and self-locking bolt for push-pull prop with swivel end to reduce time for assembly and crane

Aluminium push pull props TITAN BKS
with ledger frames
Load chart – static calculation dd. 15.07.2005

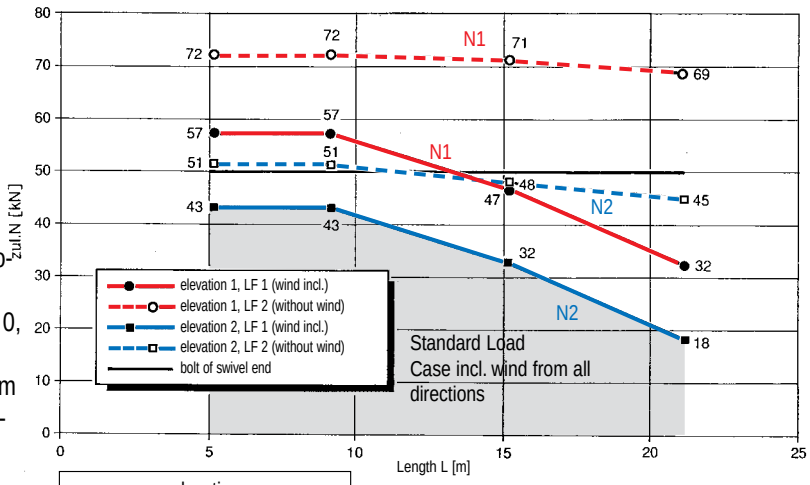
Depending on the direction of the wind, strut length and spacing, the safe working load per strut will vary.
The least value between N_1 and N_2 should be the load allowed for.
The wind load was calculated with a wind pressure of q = 0, 8 kN/m² according to DIN 1055.
Wind can be from all directions, and in this case the bottom line "N_2 wind included" is the limiting factor in deciding permissible strut load.

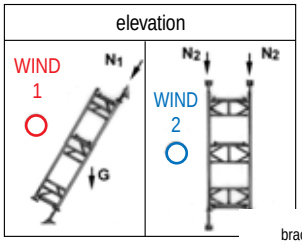
Example 1:
Length L = 21 m; min. value of N = N_2 = 18 kN
Example 2:
For example where L = 15 m with wind parallel to the wall the load chart says:
N_1 = 47 kN, wind included
N_2 = 48 kN, without wind => N = N1 = 47 kN

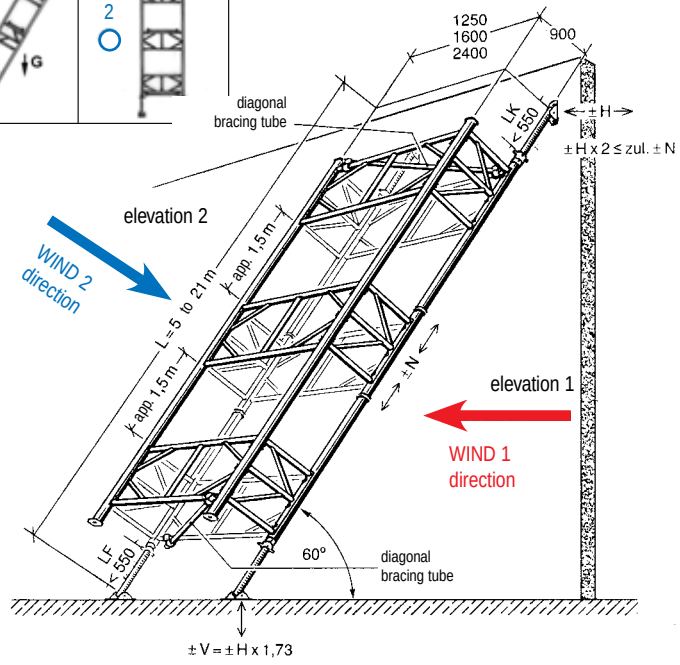
The load chart allows for specific loads depending on the direction of wind, strut spacing and length of strut.

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.

Safe working load zul. N (pressure) per strut (N1; N2)







(Dr.-Ing. K.-C. Fröhlich)

SIGMA KARLSRUHE GmbH PRÜFINSTITUT

Aluminium Push-Pull Prop TITAN BKS-Alu

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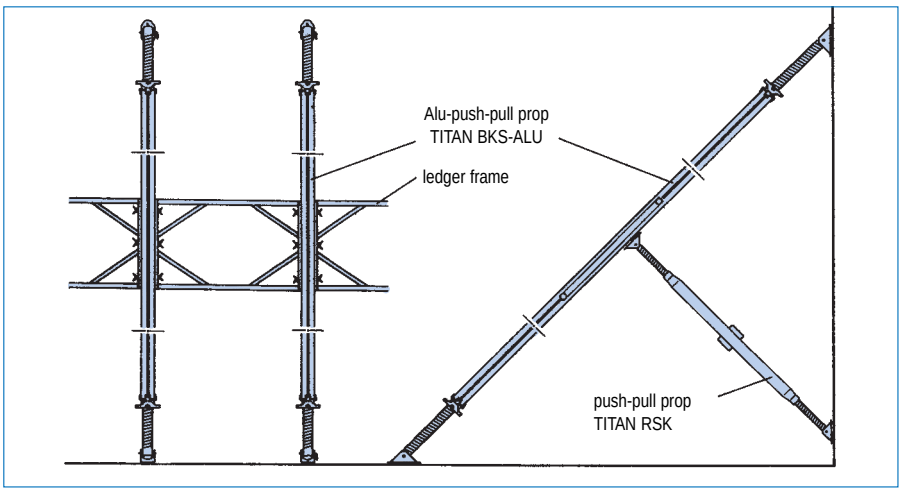
Grouping the TITAN Push-Pull Props to avoid buckling,
e.g. with ledger frames or push-pull props



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Ischebeck Titan Group

Founded in Germany over 120 years ago Ischebeck is renowned internationally for it's 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.

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