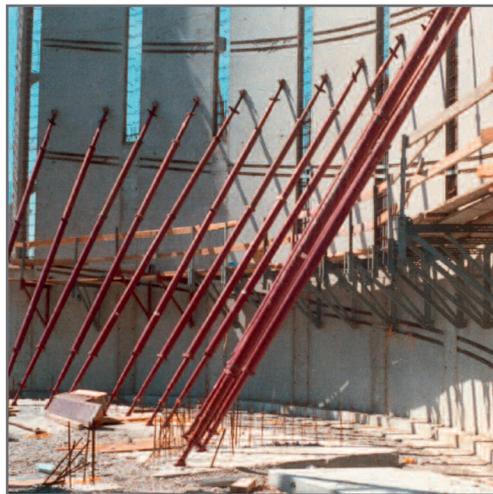


6

6.1. PUSH-PULL PROPS and accessories



MOUNTING TECHNOLOGY



ROBUSTA
GAUKEL

6

PUSH-PULL PROPS AND ACCESSORIES

GENERAL INFORMATION



INDEX

General information	3
Push-pull props Type R	4
Push-pull props Type S	11
Push-pull props Type BKS	16



Type S in use in prefab construction work



Type BKS in use in prefab construction work



Type BKS in use in sliding shuttering work



Type BKS for formwork construction: abutment of bridge construction



Your benefits at a glance:

- Ideal for supporting and adjusting precast components and wall formwork
- Universal, rapid fastening thanks to meaningful accessories
- Safe in use due to the limiting device against unscrewing the individual parts
- Handles for turning always at a convenient height
- Smooth adjustments thanks to robust trapezoidal threading
- Extension range possible from 1.80 m to over 20 m

The **ROBUSTA-Push-Pull Props system** has proved itself in practice for many years. For all possible cases to support prefab elements, standard system formwork and in steel construction the ROBUSTA-push-pull-prop system offers **3 types of props** for traction and pressure forces.

Because of suitable accessory parts like different end hinges, you get high flexibility, saving of time, easy mounting and last but not least a high level of security.

Please choose the appropriate prop for your construction project:

Type R (replaces Type M)

Handy, easy to move prop with a weight of max. 25 kg per piece. With adjustment ranges from **1.50 m** up to **5.00 m** it is most suitable for the placing of twin walls at basement constructions and also for wall and column formwork in housing construction.

Type S

With these types high loads and high adjustment lengths from **2.60 m** to **7.60 m** are covered.

Nevertheless the props are still handy and can be mounted in most cases without the help of a crane at a weight of 21 kg to 84 kg per piece.

These props are mostly used at hangar and industrial construction sites, where wall formwork at a height up to 8 m and prefab element columns up to an approx. length of 15 m have to be supported.

Type BKS

Very stable and sturdy construction, the props can only be moved by a crane because of the very big adjustment ranges of to more than **20 m** and the simultaneous heavy loads.

Because of the size and the weights of the prefab elements and formworks in heavy constructive engineering in most cases a structural analysis to determine the occurring loads is necessary.

By request we can, of course, provide these static designs of the props for you.



6

PUSH-PULL PROPS AND ACCESSORIES

PUSH-PULL PROPS TYPE R



Your benefits at a glance:

- 3 sizes, adjustment ranges from 1.50 m to 5.00 m, loads from 30.0 kN to 5.0 kN
- Admissible traction = 30 kN, regardless of the extension length
- Telescopic construction with internal and external tube
- Hole raster with 100 mm for coarse adjustment
- Galvanized for long life
- Optimized adjustment ranges
- New, stable standard end hinge, galvanized
- One-hole end hinges for quick mounting and using of the prop as a space diagonal
- Bushing reducers against moving of the end hinge

Our prop **Type M** was the first prop on the market, in which the inner tube has been connected to the outer tube by a nut, pressure and pull resistant.

With our prop **Type R** we have developed an improved version of our prop Type M.

The variation between the types of props has been optimized, so an enlarged extension with the same number of types can be reached.

Because of the visible outer thread the possible use of the spindle can be recognized.

So the pin can be inserted always in the optimum position.

All borings and connection parts are produced with highest precision.

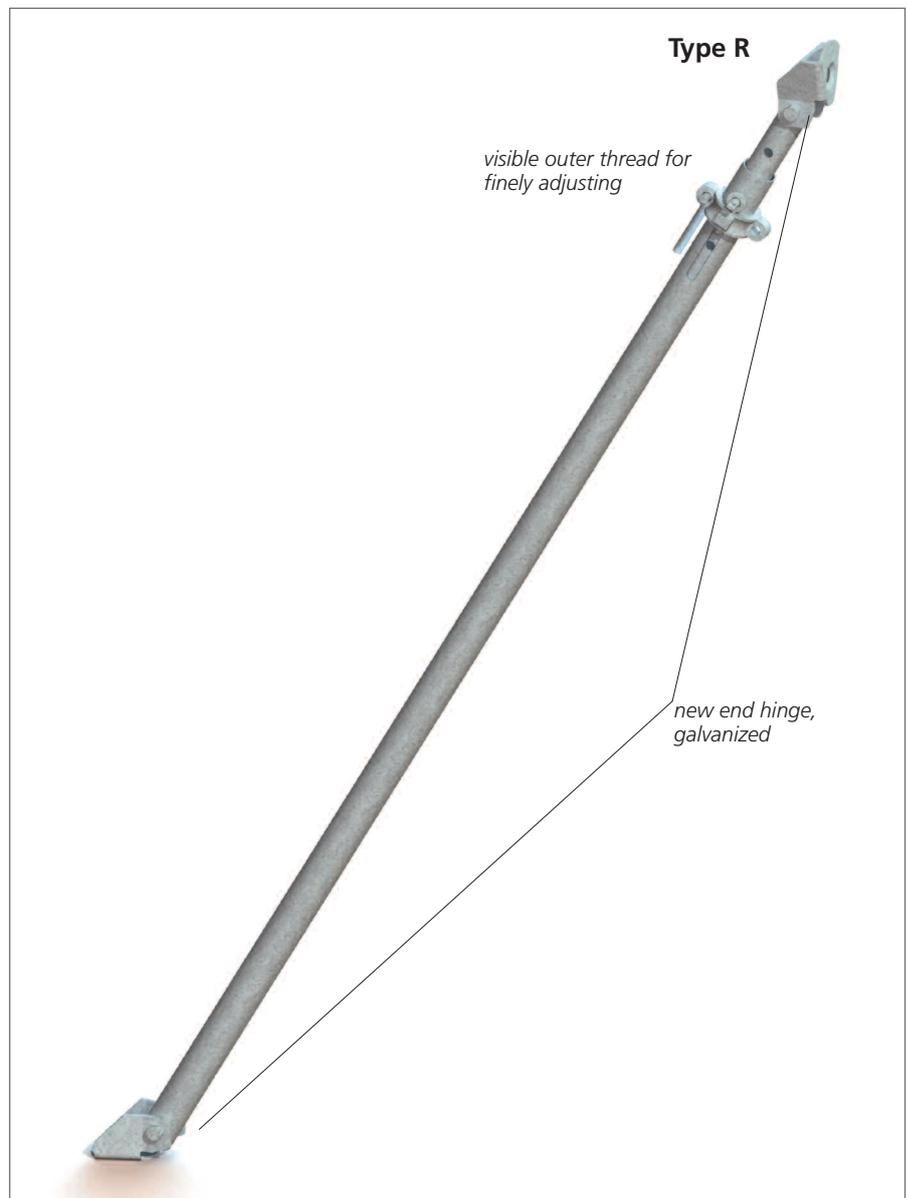
This can be noticed in the slight axial tolerance of the prop.

Galvanizing increases the validity and working service of the prop.

The **standard end hinges** with a whole diameter of 27 mm guarantee for a quick and efficient fixing, by turning the anchoring point the props can be adjusted diagonal.

Because of the **telescopic construction** a quick and easy handling of the prop is guaranteed.

All the accessories for fixing, storing and transportation are usable of course also for our new prop Type R.





PUSH-PULL PROPS AND ACCESSORIES

6

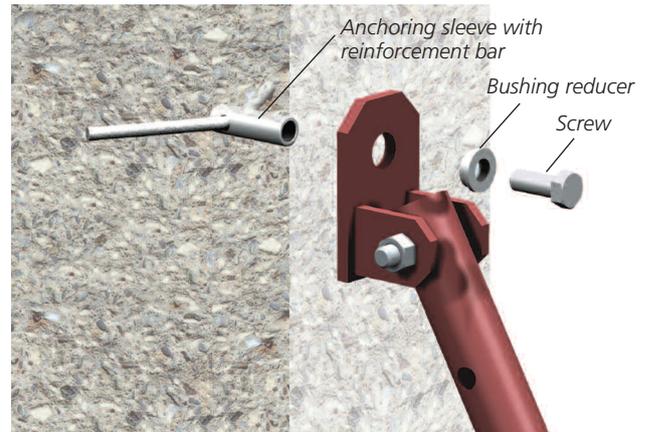
PUSH-PULL PROPS TYPE R: FIXING

Fixing on top in prefab elements with anchoring sleeves and bushing reducer:

The fixing in prefab elements results from an **anchoring sleeve with metric thread** (mostly above): according to the respective screw diameter the **bushing reducers** are available with flange in the according inner diameters.

The **hole tolerance is reduced to 1 mm** and additional washers are not necessary any more.

We always have 4 different measurements on stock for the screw diameters M12, M16, M20 and D&W 15 mm.



Vertical anchoring points guaranteed with vertical positioner

The **ROBUSTA-vertical positioner** is a threaded plate made of plastic that is easily fixed with wire-tie to the reinforcement.

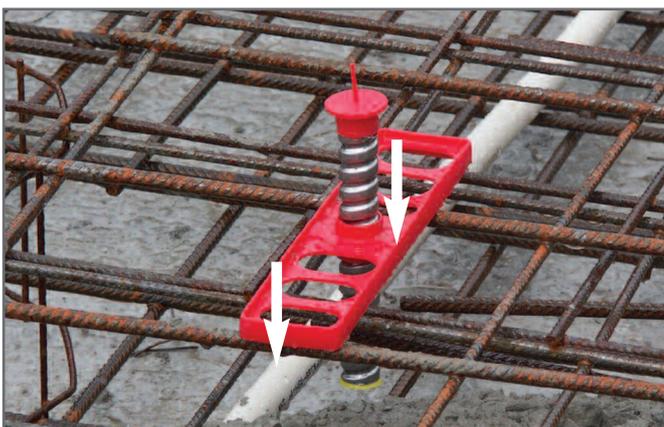
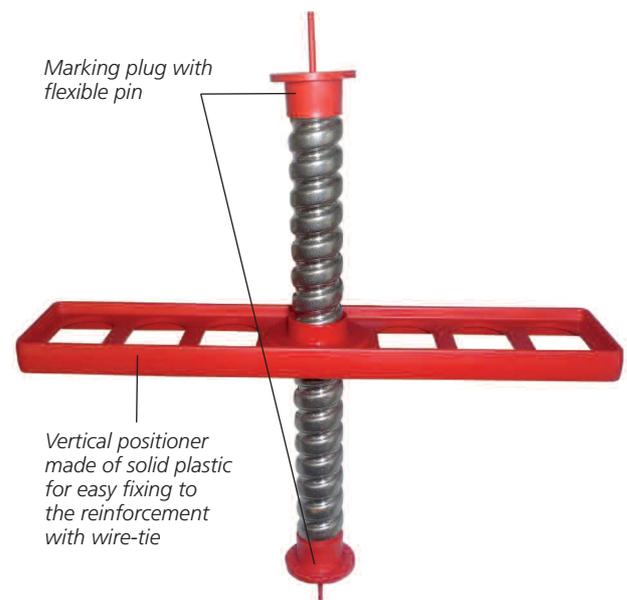
The mounting is easy and quick.

The threaded sleeve with marking plugs guarantees, that the anchoring point after concreting and smoothing the concrete surface is easy to discover again.

Special advantage: With the vertical positioner a perfect vertical position of sleeve is guaranteed. The sleeve can be screwed after mounting.

Therefore the upper edge of the plug is adjustable in height and can so be used as a level marker for the concrete.

Especially suitable for slabs with embedded heating and cooling channels, because hard and dangerous drilling is not necessary.



Easy mounting: the installation-kit with vertical positioner is quickly fixed with wire-tie. Afterwards the marking plug can be adjusted to the concrete height..



The installation-kit is attached firmly to the reinforcement and remains in vertical position. After smoothing the concrete surface it is very easy to discover the anchoring point by the flexible pin of the marking plug.



6

PUSH-PULL PROPS AND ACCESSORIES

PUSH-PULL PROPS TYPE R: FIXING



Subsequent fixing:

Impact dowel D&W 15 mm

For the subsequent fixing of Push-Pull Props Type R we deliver the fitting impact dowel and the fitting accessories like hard-metal-drill and punching pin.



Accessory for universal fixing: Screw-in set

Wide range applicable bolt with nut, which makes you independent in multiple ways:

User defined clamping thickness, regardless of clamping a steel plate with 5 mm or a planking with 5 cm thickness.

User defined screwing depth, regardless of screwing the bolt into the dowel 35 mm or into the threaded sleeve 100 mm.

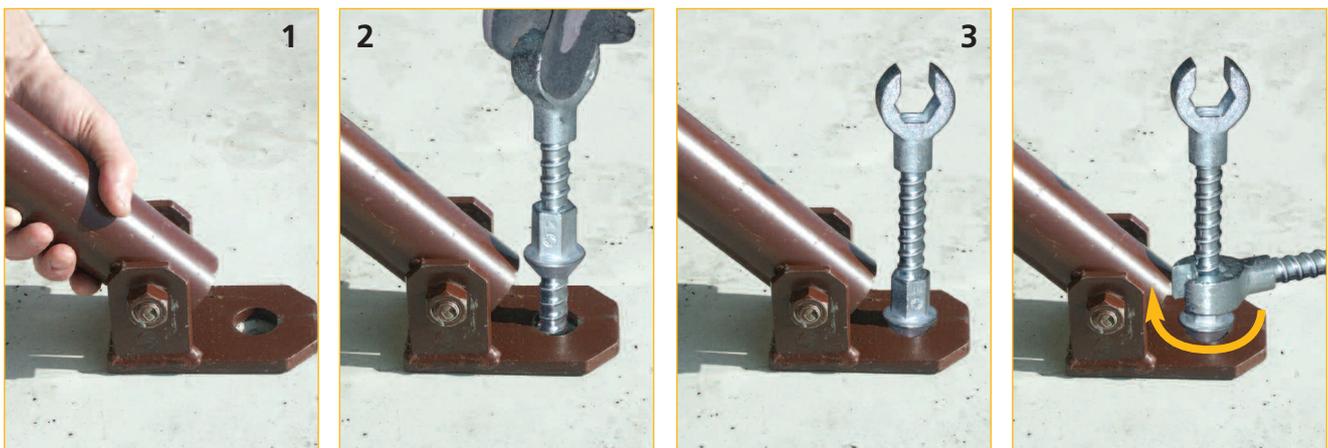
User defined whole diameter between 17 and 30 mm, the tightening of the conical shaped nut guarantees automatic centering without any tolerance in the middle of the hole. A shifting is not possible.

Tightening without any special tool (fork wrench), a second screw-in set will be enough!

No additional costs for adapter sleeves or washers.



Easy mounting of screw-in set:



1. Place clamping part over the anchoring point.
2. Screw bolt into the anchoring ground.
3. Tighten hexagonal part by hand, in this way the nut will center the clamping part without tolerances.
4. Final tightening of the screw by simply turning it with second screw-in set. Because of the form of a screw spanner of the screw-in set also a conical flange nut can be tightened.



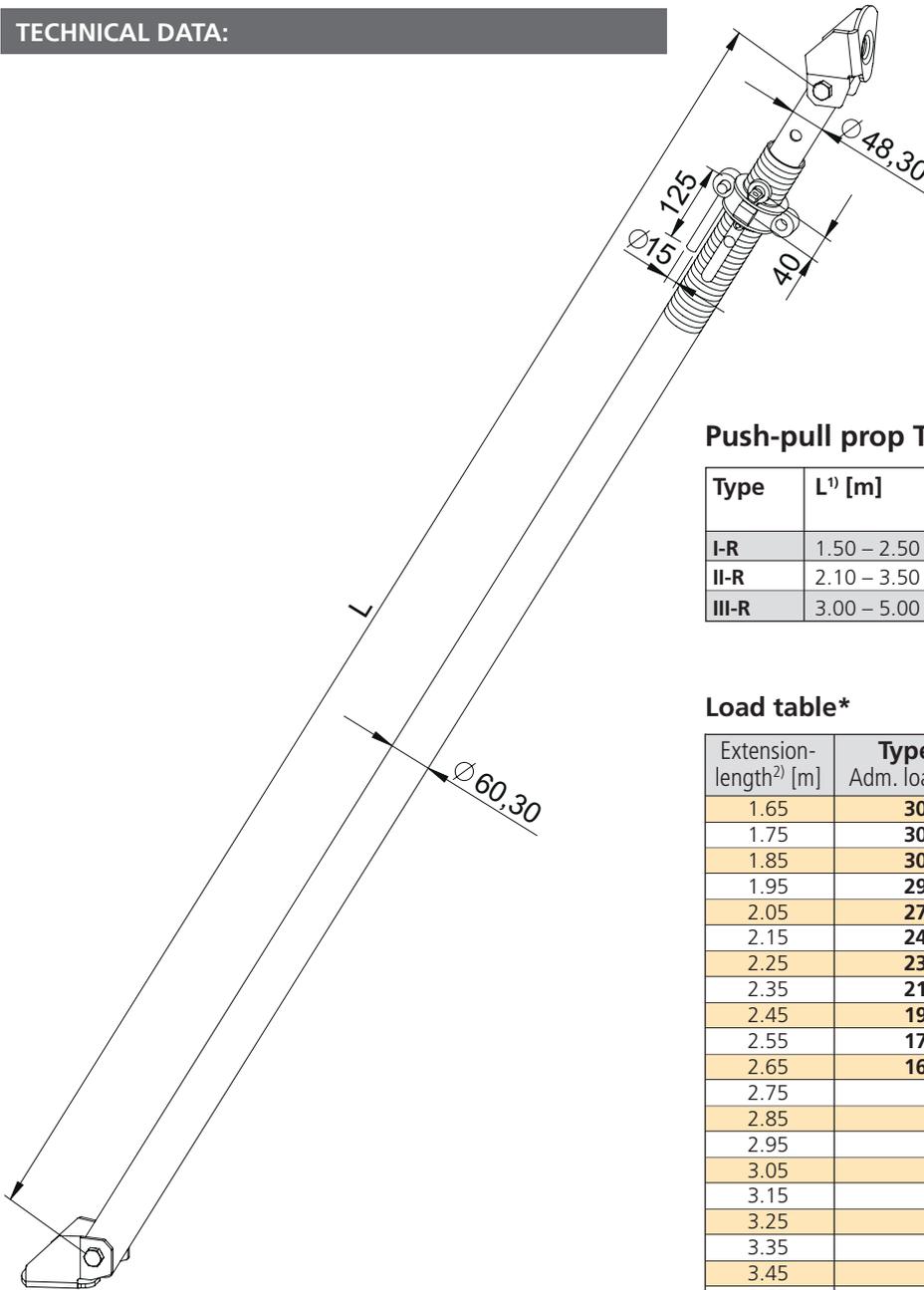


PUSH-PULL PROPS AND ACCESSORIES

6

PUSH-PULL PROPS TYPE R

TECHNICAL DATA:



Push-pull prop Type R

Type	L ¹⁾ [m]	Weight [kg/unit]	Item No.
I-R	1.50 – 2.50	17.0	611125
II-R	2.10 – 3.50	19.0	611235
III-R	3.00 – 5.00	25.0	611350

Load table*

Extension-length ²⁾ [m]	Type I-R Adm. load [kN] ³⁾	Type II-R Adm. load [kN] ³⁾	Type III-R Adm. load [kN] ³⁾
1.65	30.0		
1.75	30.0		
1.85	30.0		
1.95	29.2		
2.05	27.0		
2.15	24.9		
2.25	23.0	26.6	
2.35	21.2	24.5	
2.45	19.5	22.7	
2.55	17.9	21.0	
2.65	16.3	19.4	
2.75		18.0	
2.85		16.8	
2.95		15.6	
3.05		14.6	
3.15		13.7	16.0
3.25		12.8	14.8
3.35		12.0	13.8
3.45		11.2	12.9
3.55		10.5	12.1
3.65		9.9	11.3
3.75			10.7
3.85			10.0
3.95			9.5
4.05			9.0
4.15			8.5
4.25			8.0
4.35			7,6
4.45			7.3
4.55			6.9
4.65			6.6
4.75			6.3
4.85			6.0
4.95			5.7
5.05			5.5
5.15			5.2

- 1) L = size from middle of boring hole to middle of boring hole **without** end hinges
- 2) Extension length = measurement **with** end hinges
- 3) The stated loads show the admissible **pressure load**.
The admissible **tension load** is 30 kN for all 3 sizes, regardless of the extension length.

*This load is meant as "characteristic values" at an inclination of the prop of 45°



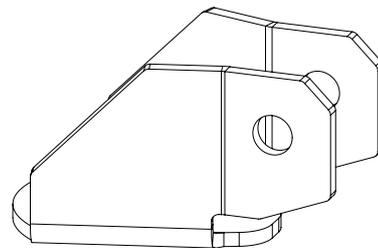
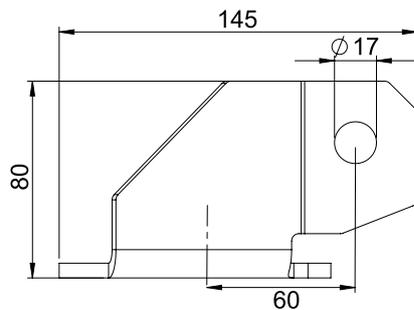
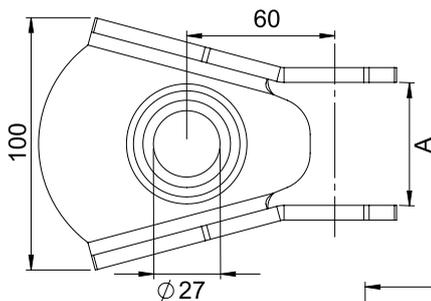
6

PUSH-PULL PROPS AND ACCESSORIES

PUSH-PULL PROPS TYPE R: ACCESSORIES



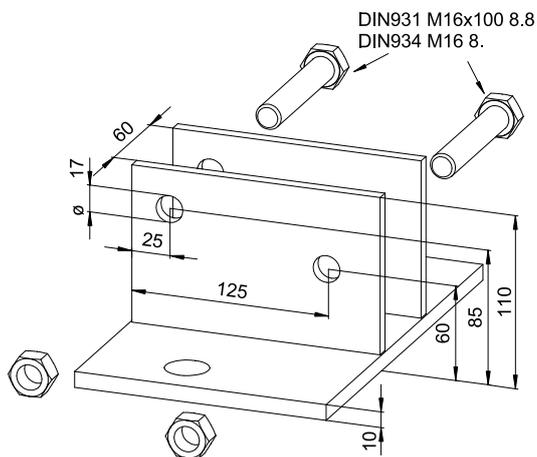
TECHNICAL DATA:



One hole end hinge R for outer and inner tubes, galvanized

End hinge for	Distance of cleat A [mm]	Bolt	Weight [kg/unit]	Item No.
outer tube:	60	M16 x 100	1.00	611901
inner tube:	50	M16 x 90	1.00	611902

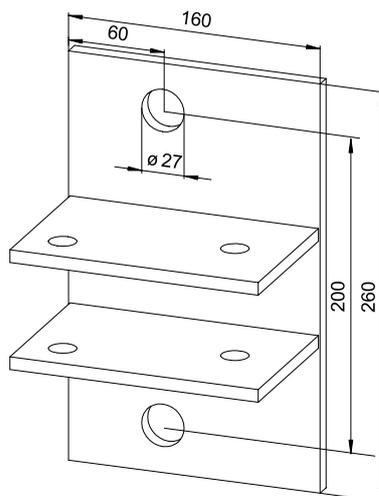
complete with hexagonal bolt and matching nut



Double end hinge R for outer tube

Weight [kg/unit]	Bolt [mm]	Item No.
3.90	2 x M16 x 100	610903

complete with hexagonal bolt and matching nuts



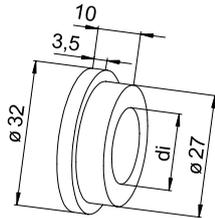


PUSH-PULL PROPS AND ACCESSORIES

6

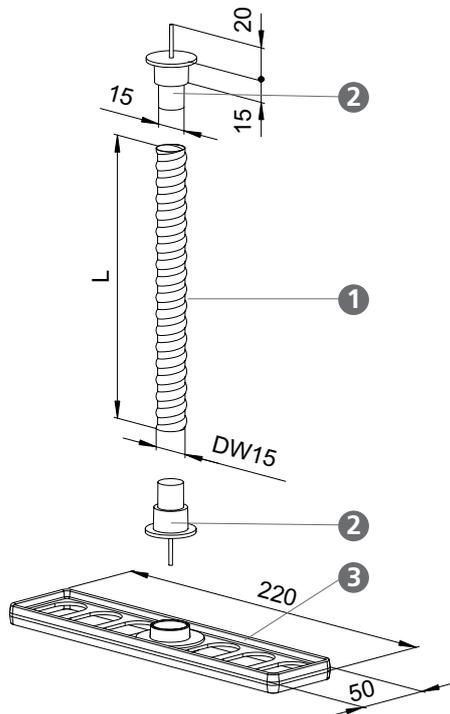
PUSH-PULL PROPS TYPE R: FIXING

TECHNICAL DATA:



Bushing reducer with outer-Ø 27 mm

Inner-Ø [mm]	for fixing bolt	Weight [kg/100 units]	Item No.
13	M12	3.50	610913
17	M16	3.35	610917
19	D&W15	2.91	610919
21	M20	2.41	610921



Installation-kit Ø 15 mm

with marking plugs and vertical positioner (red colour)

Length [mm]	Weight [kg/100 units]	Item No. S 235 JR	Item No. V2 A
120	4.40	101312	101362
170	4.90	101317	101367

Installation-kit consisting of:

- ① threaded sleeve (item no. 1015..* – V2 A: item no. 1016..*)
- ② 2 marking plugs (item no. 101598)
- ③ vertical positioner (item no. 101588)

*the last two numbers indicate the length of threaded sleeve.

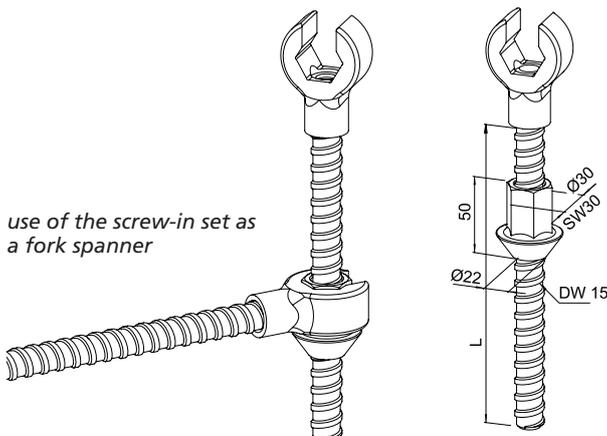
All parts of the installation-kit are also available separately.

Screw-in set, Ø 15 mm, galvanized

Length* [mm]	Weight [kg/unit]	Item No.
180	0.46	111820
300	0.78	111825

*other lengths available upon request.

use of the screw-in set as a fork spanner



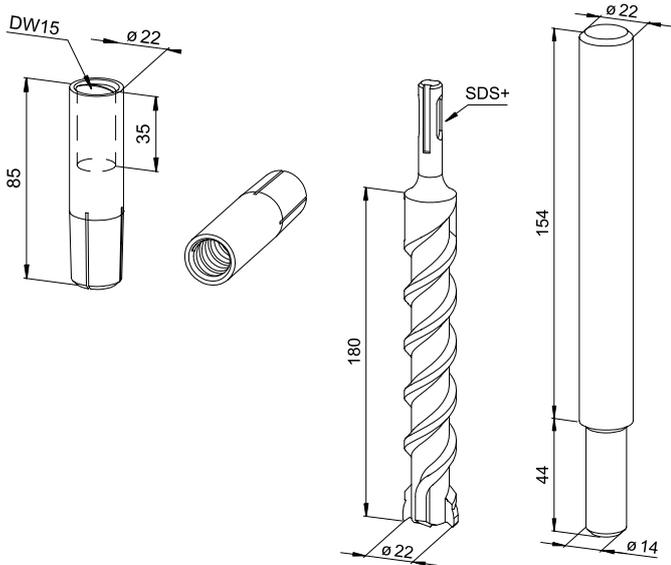
6

PUSH-PULL PROPS AND ACCESSORIES

PUSH-PULL PROPS TYPE R: FIXING AND TRANSPORTATION



TECHNICAL DATA:



Impact dowel D&W 15, galvanized

Weight [kg/100 units]	Item No.
16.5	121515

Hard metal drill

Weight [kg/100 units]	Item No.
40.0	121517

Punching pin, galvanized

Weight [kg/100 units]	Item No.
45,0	121516

Rack, standard version, stapable, galvanized for crane transportation

Size L x W x H [mm]	Adm. load [kN]	Weight [kg/unit]	Item No.
1490 x 870 x 775	38.0	15.0	639901

units per rack:

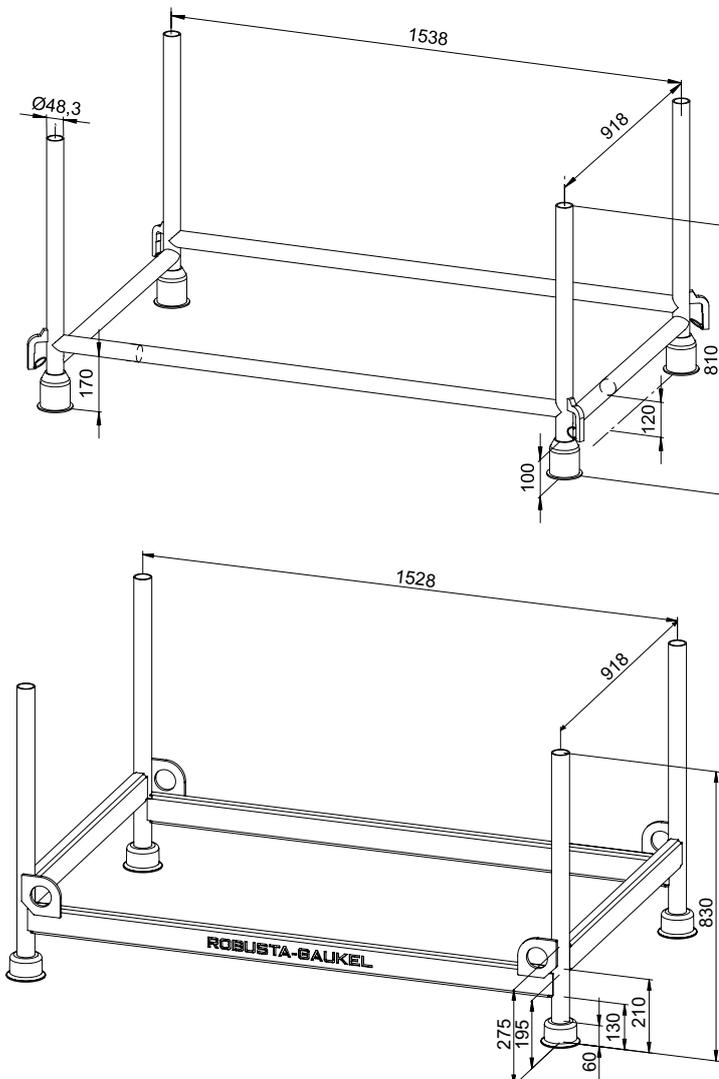
- Type R 50
- Type 3-S 50
- Type 4-S 50
- Type 6-S 40
- Type 8-S 20

Rack, reinforced version, stackable, for crane and fork-lift transportation

Size L x W x H [mm]	Adm. load [kN]	Weight [kg/unit]	Item No.
1490 x 870 x 775	52.0	15.0	639902

units per rack:

- Type R 50
- Type 3-S 50
- Type 4-S 50
- Type 6-S 40
- Type 8-S 20





Your benefits at a glance:

- 5 types, extension lengths from 0.90 to 7.60 m, loads from 40.0 kN to 9.5 kN
- Admissible traction = 40 kN, regardless of the extension length
- Construction of screw shackle with middle tube and lefthand/righthand spindles
- Spindles with durable thread TR48 and internal built-in protection against unscrewing
- Adjustment range 1.40 m per prop
- Handles to turn at both ends of the prop
- 3 different end hinges available according to your needs
- One hole end hinges for a quick mounting and using of the props as a space diagonal
- Bushing reducers against moving of the end hinge

The prop **Type S** with **construction of a screw shackle** consists of a stable middle tube which is especially secured against bending under pressure loads. Two trumpet nuts with contrarotating spindles are welded of both ends.

For a better distinction the spindle with the lefthand thread is black, the spindle with the righthand thread is galvanized in silver.

Because of the fully **adjustable range of 2 x 700 mm** the prop is ideal for use in every construction situation, that means the bearing of the load is guaranteed continuously during adjustment of length.

As a rule the props type S with the **standard end hinge** are delivered for a 2 point fixing. For a special installing situation we can also deliver the **one hole end hinges** and **combination end hinges** of the props type BKS if desired.

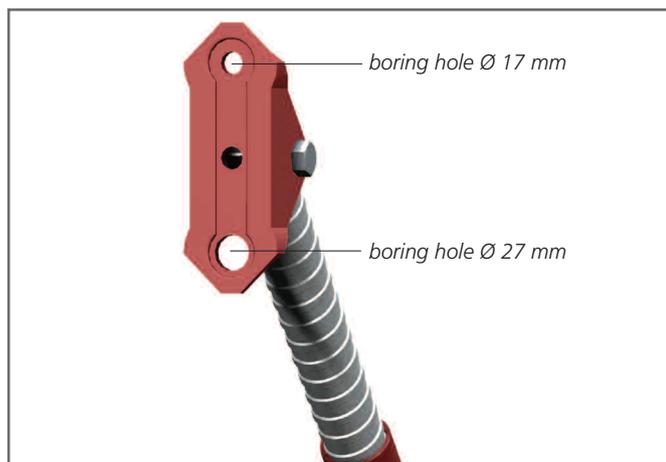


Standard end hinge

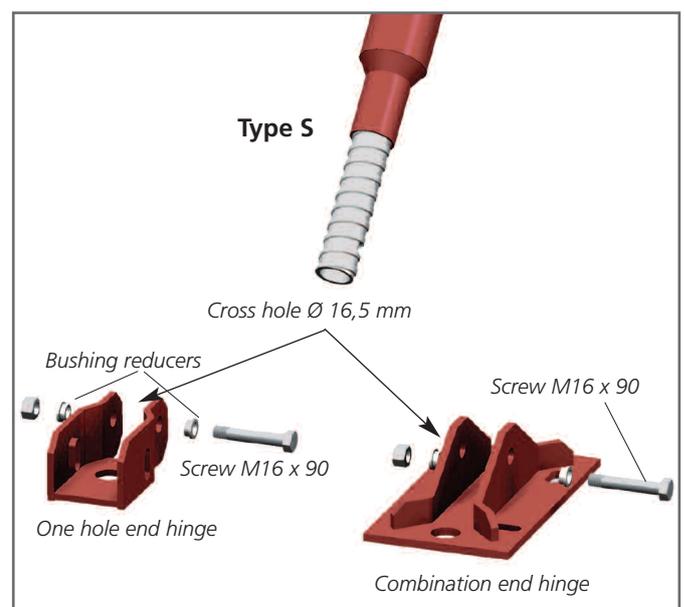
It will be fixed with two heavy load dowels M16. The bigger boring $\varnothing 27$ mm has the function of a slotted hole to compensate for inaccuracy when setting the dowels with a tolerance of ± 5 mm.

This end hinge can also be used with fixing with one anchor point to enable turning around the anchor point (diagonally spaced setting of the prop).

When planning the anchor points it has to be observed that the prop is inclined to an angle of 45° , to reduce excentricities of the forces onto the fixing anchor.



One hole end hinge Combination end hinge (exact description see Type BKS)



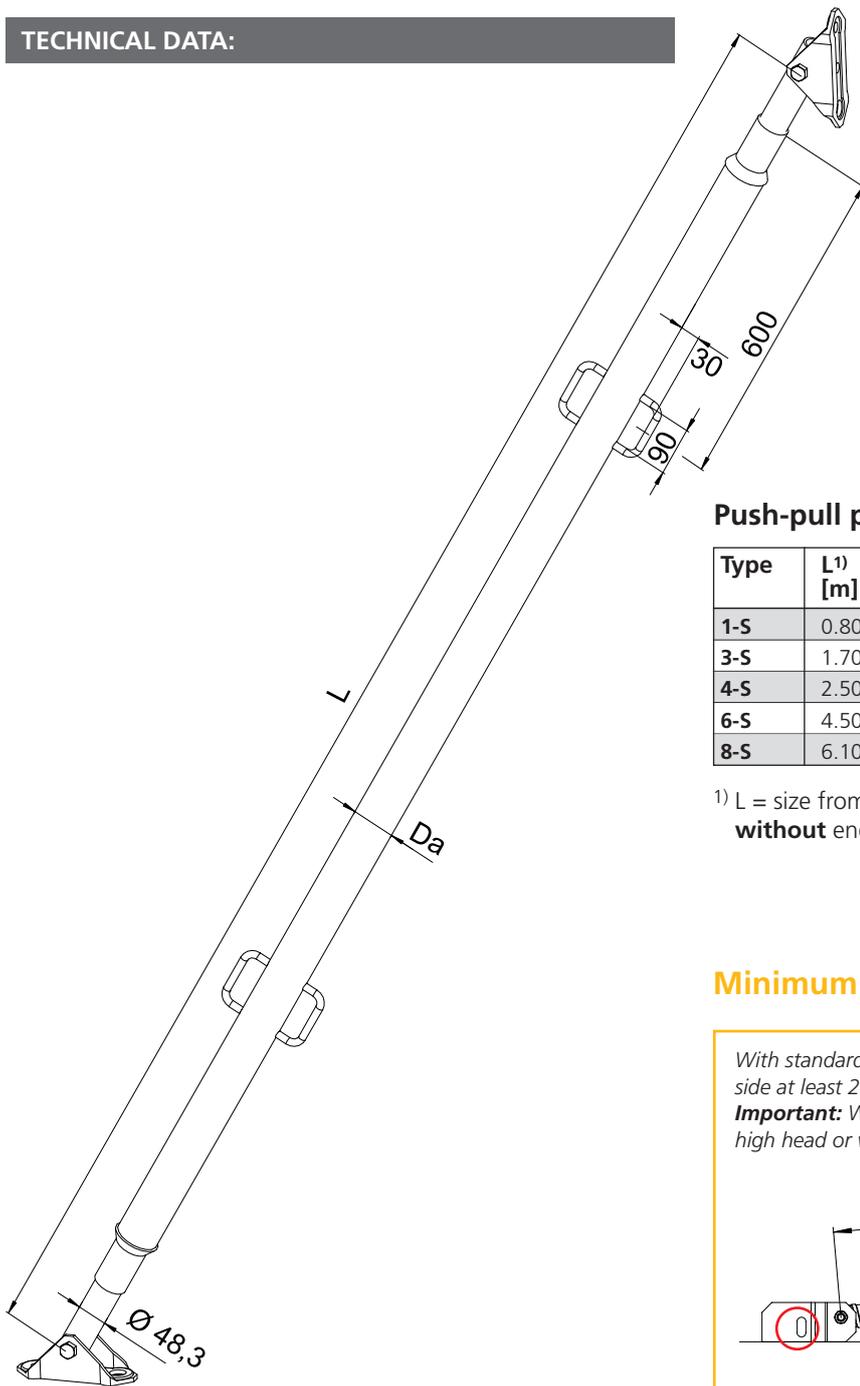
6

PUSH-PULL PROPS AND ACCESSORIES

PUSH-PULL PROPS TYPE S



TECHNICAL DATA:



Push-pull props Type S

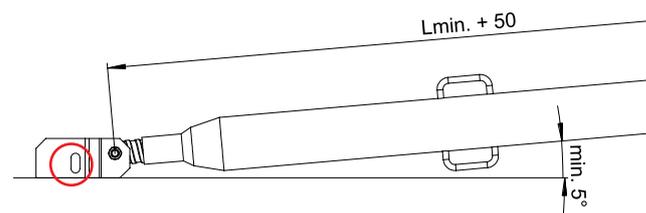
Type	L ¹⁾ [m]	Ø Da [mm]	Weight [kg/unit]	Item No.
1-S	0.80 – 1.40	70.0	11.0	612115
3-S	1.70 – 3.10	70.0	19.0	612332
4-S	2.50 – 3.90	70.0	23.0	612440
6-S	4.50 – 5.90	83.0	38.0	612660
8-S	6.10 – 7.50	108.0	72.0	612876

¹⁾ L = size from middle of boring hole to middle of boring hole **without** end hinges

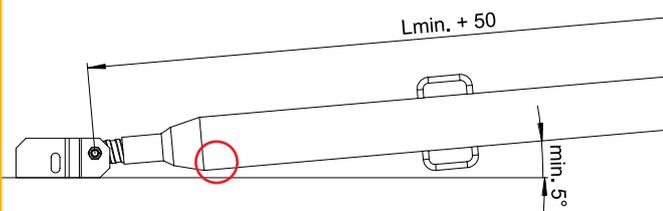
Minimum inclination of angles

With standard end hinge, the prop has to be adjusted on each side at least 25 mm.

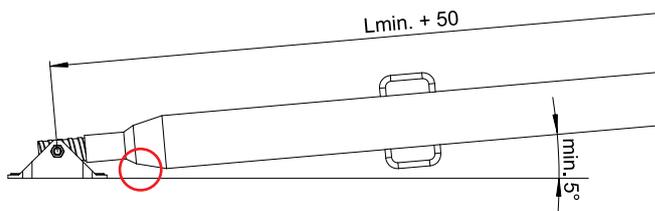
Important: When fixing the end hinge with special bolts with high head or with threaded rods the angle can enlarge!



With one hole end hinge, the prop has to be adjusted on each side at least 50 mm..



With combination end hinge, the prop has to be adjusted on each side at least 50 mm.



Important: When fixing the end hinge with special bolts with high head or with threaded rods the angle can enlarge!



PUSH-PULL PROPS AND ACCESSORIES

6

PUSH-PULL PROPS TYPE S

Load tables*

*This load is meant as "characteristic values"

Type 1 S Extension length ²⁾ [m]	Adm. load ³⁾ [kN]
0.90	40.0
1.00	40.0
1.10	40.0
1.20	40.0
1.30	40.0
1.40	40.0
1.50	40.0

Type 3 S Extension length ²⁾ [m]	Adm. load ³⁾ [kN]
1.80	40.0
1.90	40.0
2.00	40.0
2.10	38.0
2.20	36.0
2.30	34.0
2.40	32.0
2.50	30.0
2.60	27.5
2.70	25.0
2.80	23.0
2.90	21.0
3.00	19.0
3.10	17.0
3.20	15.5

Type 4 S Extension length ²⁾ [m]	Adm. load ³⁾ [kN]
2.60	38.0
2.70	34.5
2.80	32.0
2.90	29.5
3.00	27.5
3.10	26.0
3.20	24.0
3.30	22.5
3.40	21.0
3.50	19.5
3.60	18.5
3.70	17.0
3.80	16.0
3.90	14.5
4.00	13.5

Type 6 S Extension length ²⁾ [m]	Adm. load ³⁾ [kN] bei	
	⁴⁾ 0°	⁴⁾ 60°
4.60	28.5	29.5
4.70	27.0	28.0
4.80	25.5	26.5
4.90	24.0	25.5
5.00	22.5	24.0
5.10	21.5	23.0
5.20	20.0	21.5
5.30	19.0	20.5
5.40	17.5	19.5
5.50	16.5	18.0
5.60	15.0	17.0
5.70	14.0	15.5
5.80	13.0	14.5
5.90	12.0	13.5
6.00	11.0	12.5

Type 8 S Extension length ²⁾ [m]	Adm. load ³⁾ [kN] bei	
	⁴⁾ 0°	⁴⁾ 60°
6.20	38.5	41.5
6.30	34.5	38.0
6.40	31.5	35.0
6.50	28.5	32.0
6.60	26.0	30.0
6.70	24.0	28.0
6.80	22.0	26.0
6.90	20.5	24.0
7.00	18.5	22.5
7.10	17.0	20.5
7.20	15.5	19.0
7.30	14.0	17.5
7.40	12.5	16.0
7.50	11.0	14.0
7.60	9.5	13.0

²⁾ Extension length = measurement **with** end hinges

³⁾ The stated loads refer to spindles which are adjusted on both sides in identical lengths and show the admissible **pressure load**. The admissible **tension load** for all 3 sizes is 40 kN, regardless of the extension length.

⁴⁾ The inclination 0° refers to the horizontal placement of the prop. The inclination 60° refers to the angle towards the horizontal ground.



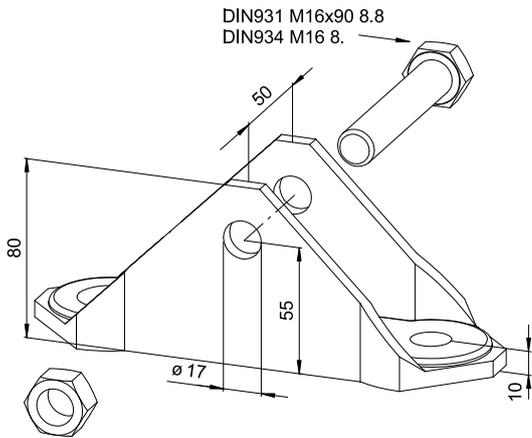
6

PUSH-PULL PROPS AND ACCESSORIES

PUSH-PULL PROPS TYPE S: ACCESSORIES



TECHNICAL DATA:

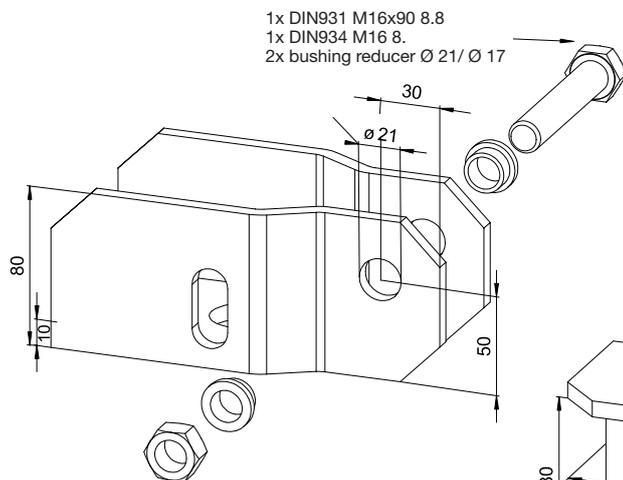
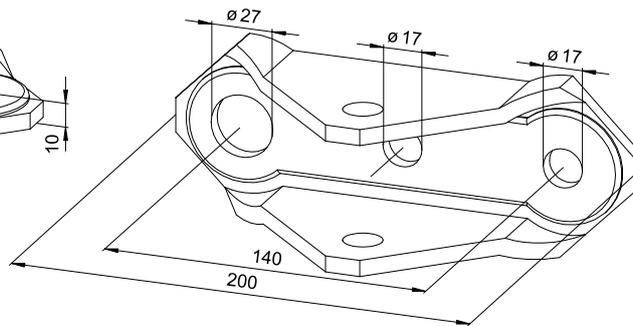


DIN931 M16x90 8.8
DIN934 M16 8.

Standard end hinge

Weight [kg/unit]	Item No.
1.32	612903

complete with bolt M 16 x 90 and matching nut

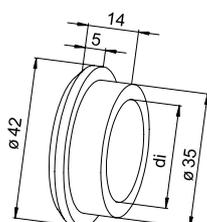
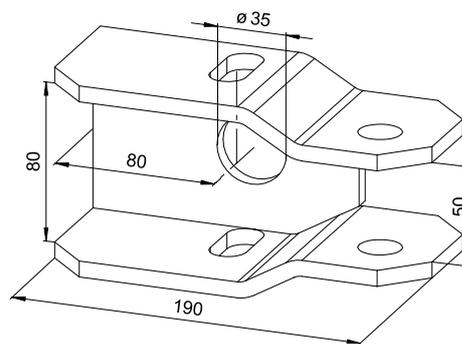


1x DIN931 M16x90 8.8
1x DIN934 M16 8.
2x bushing reducer $\varnothing 21/\varnothing 17$

One hole end hinge

Weight [kg/unit]	Item No.
2.44	612902

complete with bolt M 16 x 90, matching nut and 2 bushing reducers



Bushing reducers with outer- \varnothing 35 mm

Weight [kg/100 units]	Inner- \varnothing [mm]	Item No.
7.20	27	613927
8.50	21	613921



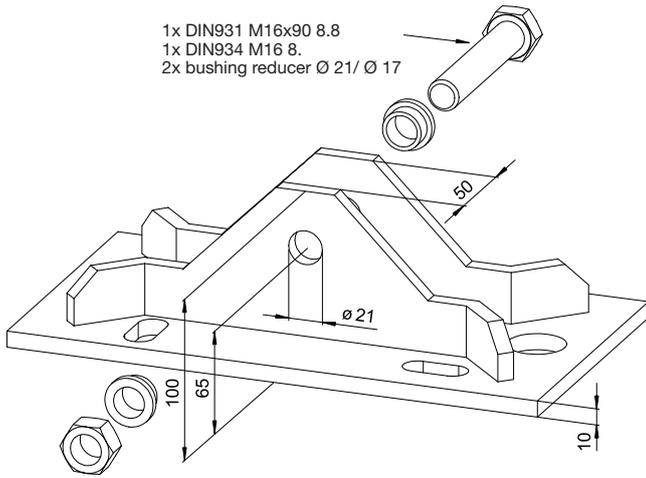
PUSH-PULL PROPS AND ACCESSORIES

6

PUSH-PULL PROPS TYPE S: ACCESSORIES

TECHNISCHE DATEN:

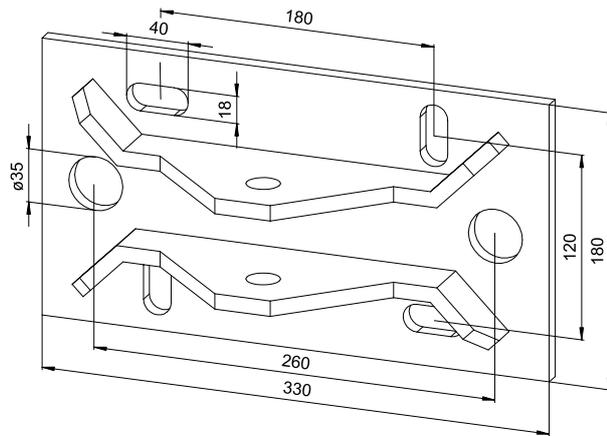
- 1x DIN931 M16x90 8.8
- 1x DIN934 M16 8.
- 2x bushing reducer $\varnothing 21/\varnothing 17$



Combination end hinge

Weight [kg/unit]	Item No.
7.20	612904

complete with bolt M 16 x 90, matching nut and 2 bushing reducers



Rack, standard version, stapable, galvanized for crane transport

Größe L x B x H [mm]	Zul. Nutzlast [kN]	Gewicht [kg/Stck.]	Artikel-Nr.
1638 x 1018 x 810	38,0	15,0	639901

Stück pro Barelle

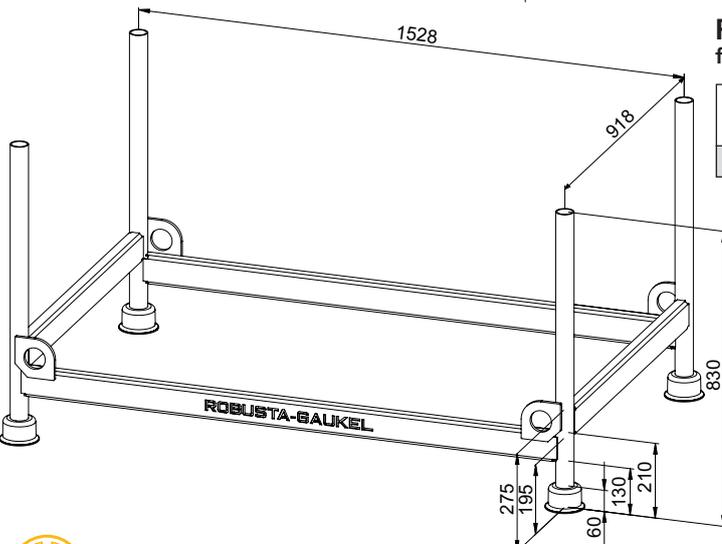
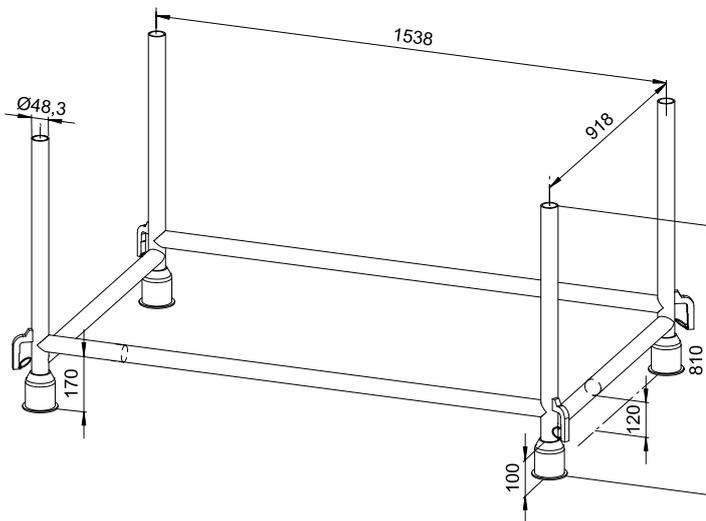
- Type R 50
- Type 3-S 50
- Type 4-S 50
- Type 6-S 40
- Type 8-S 20

Rack, reinforced version, stackable, for crane and fork-lift transportation

Size L x W x H [mm]	Adm. load [kN]	Weight [kg/unit]	Item No.
1633 x 1023 x 830	52.0	15.0	639902

units per rack:

- Type R 50
- Type 3-S 50
- Type 4-S 50
- Type 6-S 40
- Type 8-S 20





Your benefits at a glance:

- Multiple combinations, adjustment ranges from 1.20 to more than 20 m, loads from 50.0 kN to 13.7 kN
- Admissible traction load = 50 kN, regardless of the extension length
- Modular-Assembly-System consisting of several connections and a spindle element, optional to combine
- Delivery of props mostly pre-mounted
- Spindles with durable thread TR73 and internal built in protection against unscrewing
- Adjustment range 0.70 m per spindle
- Clamping nut to turn at the spindle element below at a handy height
- Two different end hinges available according to your needs
- One hole end hinges for quick mounting and using of the props as a space diagonal
- Bushing reducers against moving of the end hinge

The Push-Pull Props type BKS are mounted from **4 different connection part sizes** and **one threaded spindle element**. Because of these elements, which can be **optionally combined**, the props type BKS can be used universally.

This connection results in cover plate joints which are bend resistant.

Because of the **continuous adjustment range of 700 mm per spindle element** the load is guaranteed during adjustment of length.

In special cases, for example in steel construction, where the installation lengths cannot be chosen individually, the props can be mounted with spindle elements on both sides in order to obtain a more precise adjustment in the variation of length.

The stated lengths are valid from cross bolt to cross bolt, the additional lengths for the end hinges have to be added according to the respective inclination of angle.

Per element joint 4 bolts M16 x 60 – 8.8 are necessary.

The delivery is made in mounted condition, if transported in a sensible way by truck, there are only one or max. two element joints that have to be secured on site.



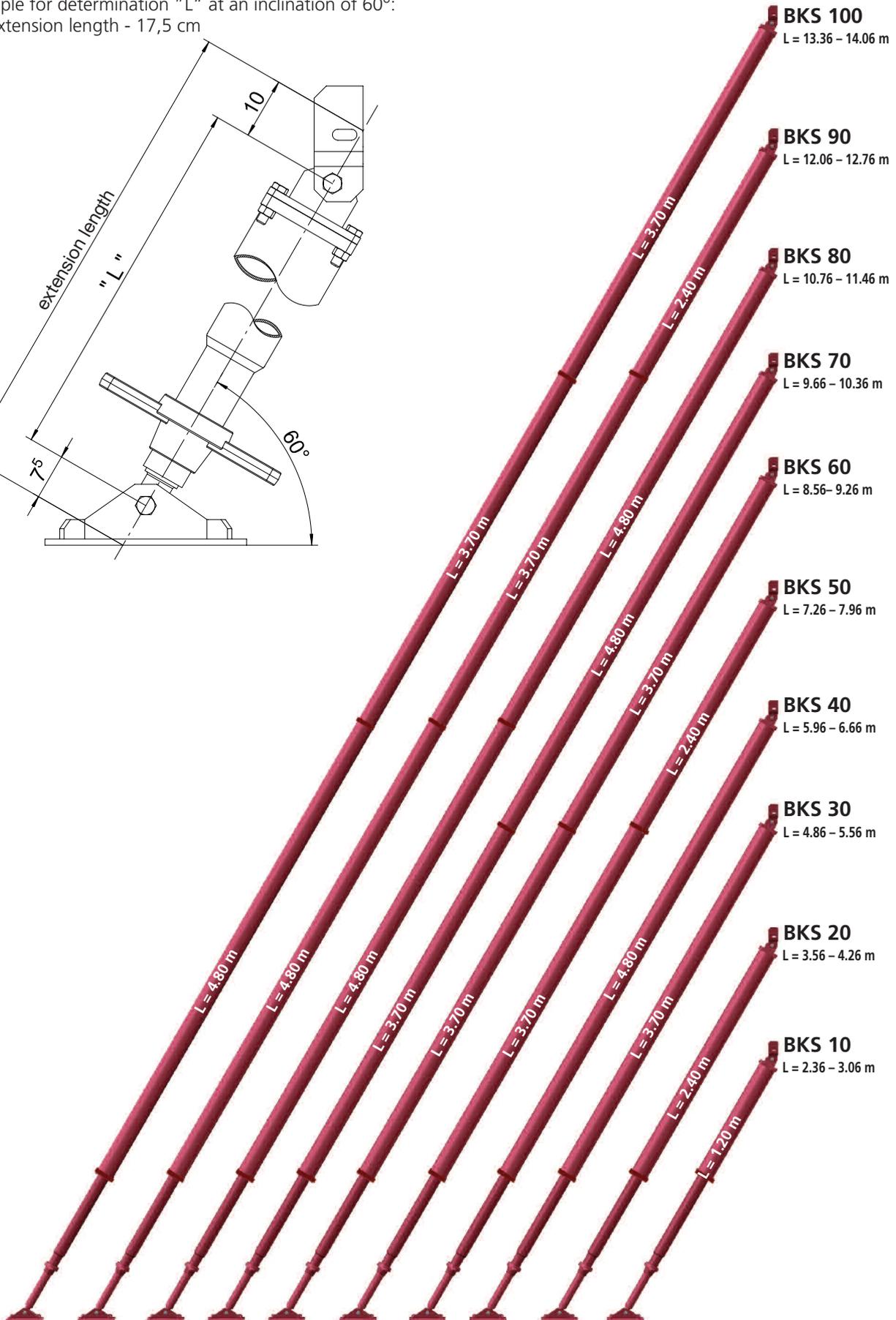
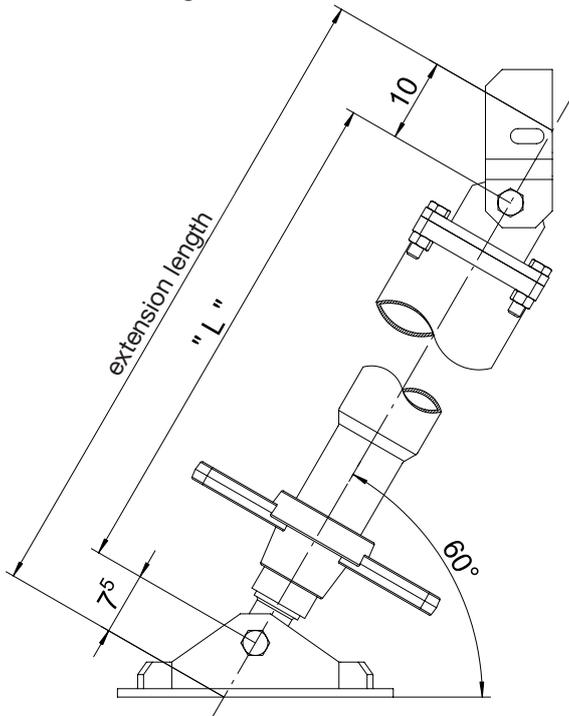


PUSH-PULL PROPS AND ACCESSORIES

6

PUSH-PULL-PROPS TYPE BKS – COMBINATION OF ELEMENTS

Example for determination "L" at an inclination of 60°:
L = extension length - 17,5 cm



6

PUSH-PULL PROPS AND ACCESSORIES

PUSH-PULL PROPS TYPE BKS – FIXING



Advantages in prefab construction

With very high columns the fastening points of the props at the prefab element have to be placed underneath the next slab, so that the prefab elements of the next floor can be laid without delay.

The supporting forces because of wind and inclined position will rise, the more the fastening point will move down.

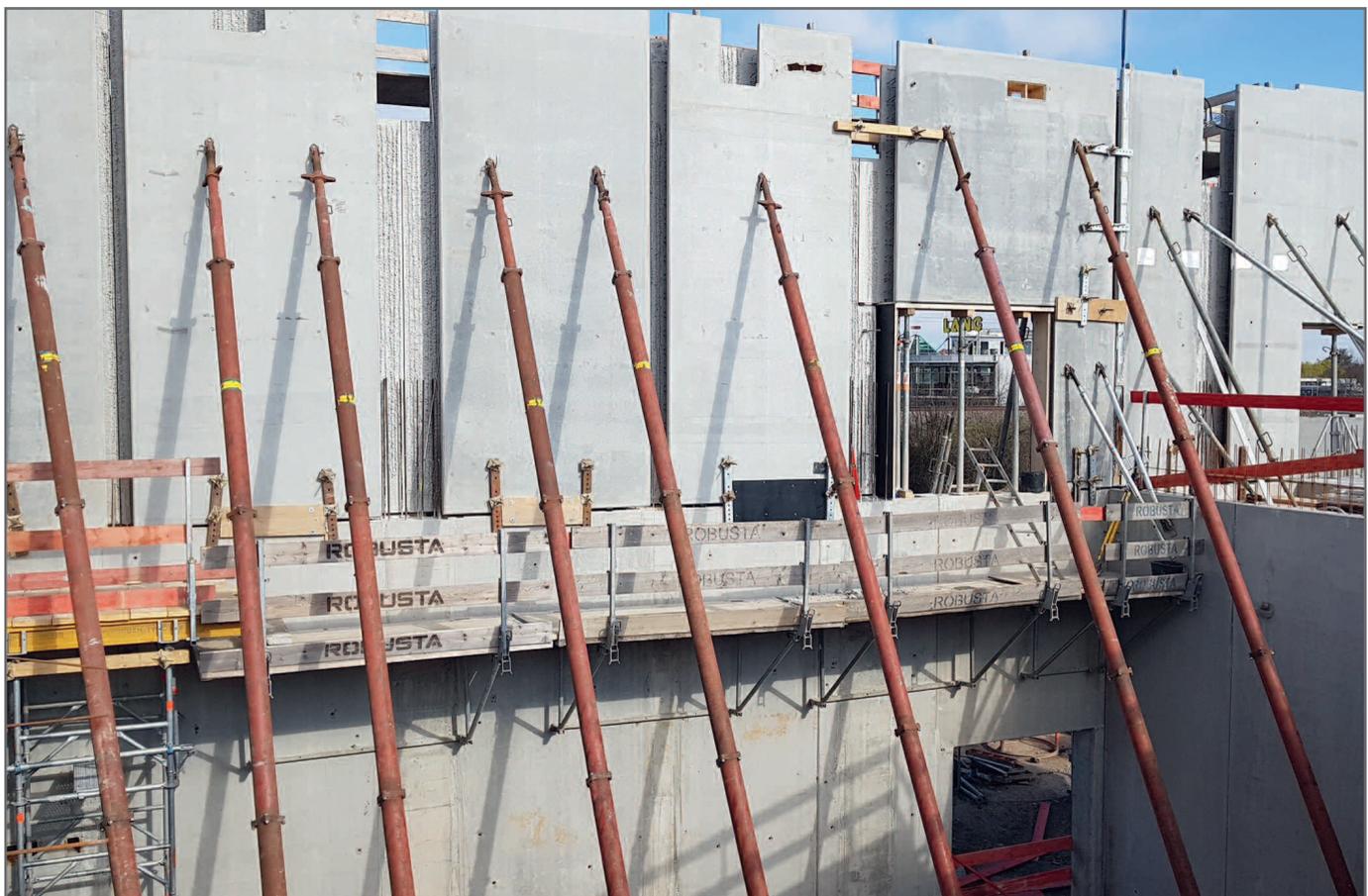
Because of the high admissible loads the usage of the BKS-props under these conditions is possible on the construction site.

As a rule the BKS-props will be delivered with the one-hole end hinge for a single hole fixing to the concreted anchoring sleeves in the prefab element.

The spindle element with the combination end hinge will be mounted below, which can be doweled subsequently because of two different hole images.

For special installation situations the one-hole or combination end hinges can be mounted optionally on both sides.

According to end hinge and spindle length different inclination angles are possible.





One hole end hinge

Optimal fixing on top of the prop, because in the prefab element or at the formwork mostly **1-point-fixings** are used.

By turning the end hinge around the fixing point the prop can be adjusted in an inclined position (space diagonal).

For fixing the boring diameter 35 mm can be adjusted according to the diameter of the anchor screws with bushing reducers in order to reduce the tolerance.

Combination end hinge

Used mostly at the bottom and will be fixed with dowels subsequently.

Universal fixing possibilities because of two different hole groups.

a) **two-hole group diam. 35 mm** for two dowels M 20. To reduce the tolerance in min. one hole diam. 35 mm we recommend the use of the bushing reducer diam. 35/21 mm.

The second hole has the function of a slotted hole, to reduce discrepancies with a tolerance of +/- 7.5 mm when setting the dowels.

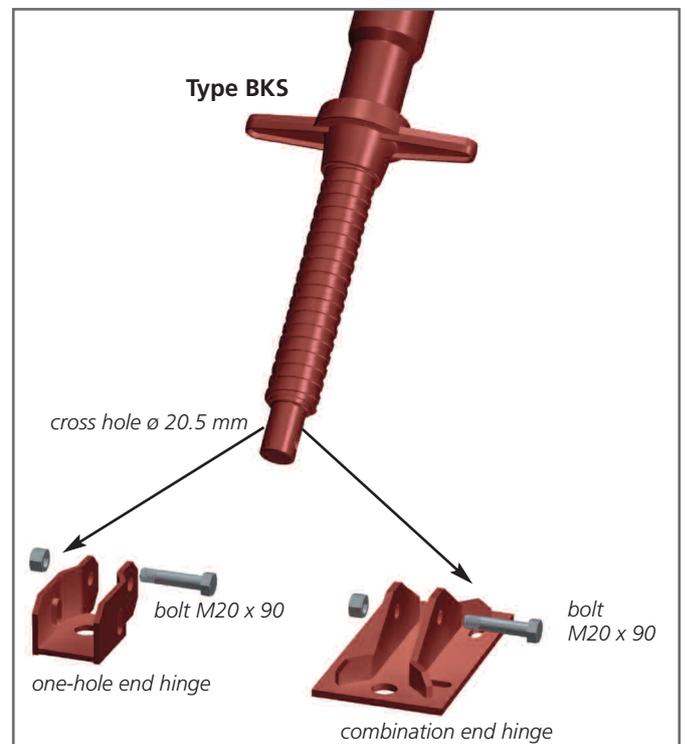
b) **four-hole group** with slotted holes 18 x 38 mm for four dowels M 16.



One hole end hinge Combination end hinge

For fixing the spindles the drillings **in both end hinges** have a diameter of 20.5 mm for a slightest possible tolerance of the cross bolt M20.

The spindle of the type BKS has a cross drilling of \varnothing 20.5 mm, fixing with cross bolt M20.



Bushing reducers

They have two functions:

a) Reducing of the tolerance because of optimum adjustment to the according diameter of the fixing bolt.

b) Washers not necessary.



6

PUSH-PULL PROPS AND ACCESSORIES

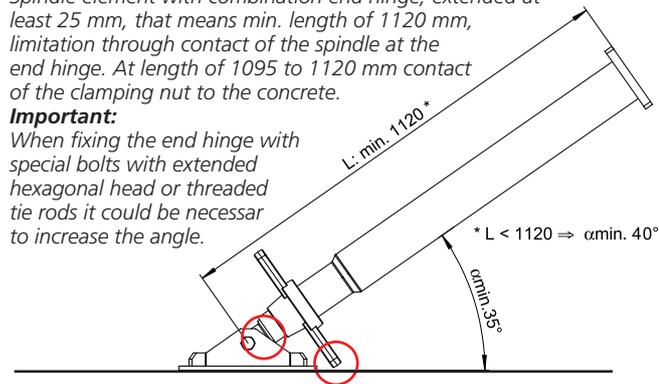
PUSH-PULL PROPS TYPE BKS: MINIMUM INCLINATION OF ANGLES



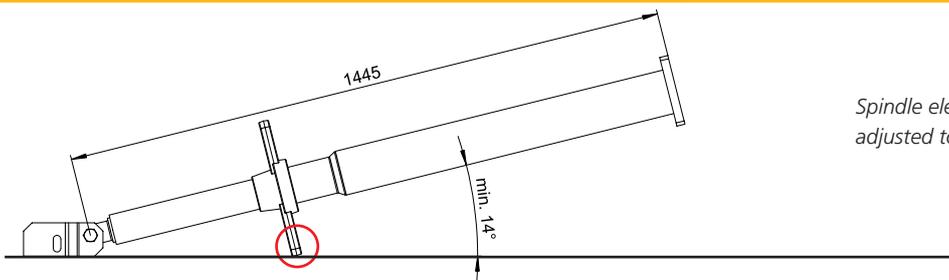
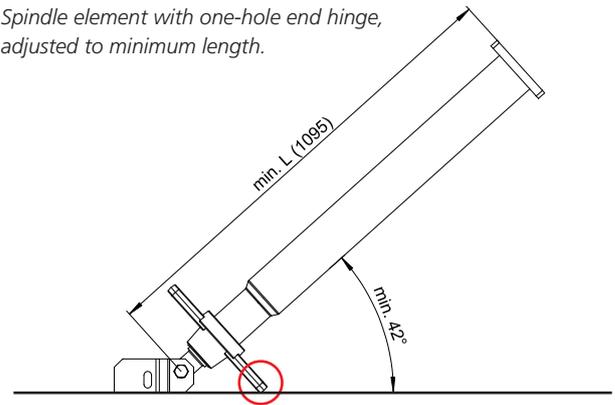
Spindle element with combination end hinge, extended at least 25 mm, that means min. length of 1120 mm, limitation through contact of the spindle at the end hinge. At length of 1095 to 1120 mm contact of the clamping nut to the concrete.

Important:

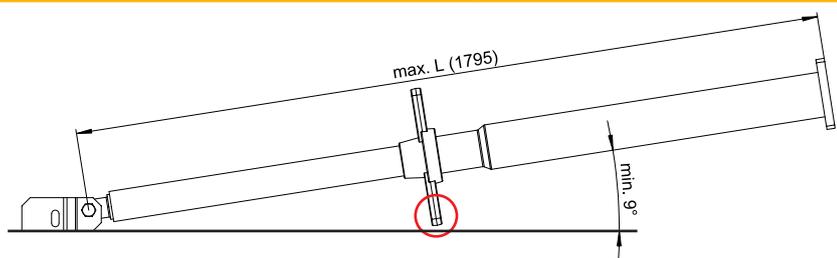
When fixing the end hinge with special bolts with extended hexagonal head or threaded tie rods it could be necessary to increase the angle.



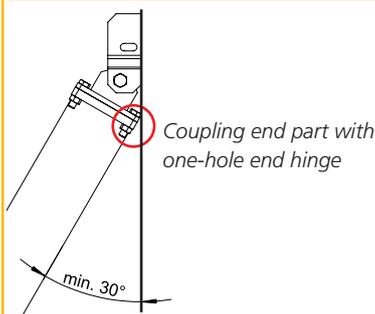
Spindle element with one-hole end hinge, adjusted to minimum length.



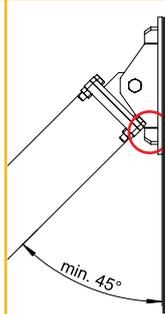
Spindle element with one-hole end hinge, adjusted to half length of 350 mm



Spindle element with one-hole end hinge, adjusted to maximum length of 700 mm



Coupling end part with one-hole end hinge



Coupling end part with combination end hinge

Important:

When fixing the end hinge with special bolts with extended hexagonal head or threaded tie rods it could be necessary to increase the angle.

IMPORTANT:

When planning the placing of the props attention has to be given to the required space of the clamping nut and to the possible inclinations of the angles according to the type of end hinge. In case of doubts please send us a detailed inquiry.

Load tables*

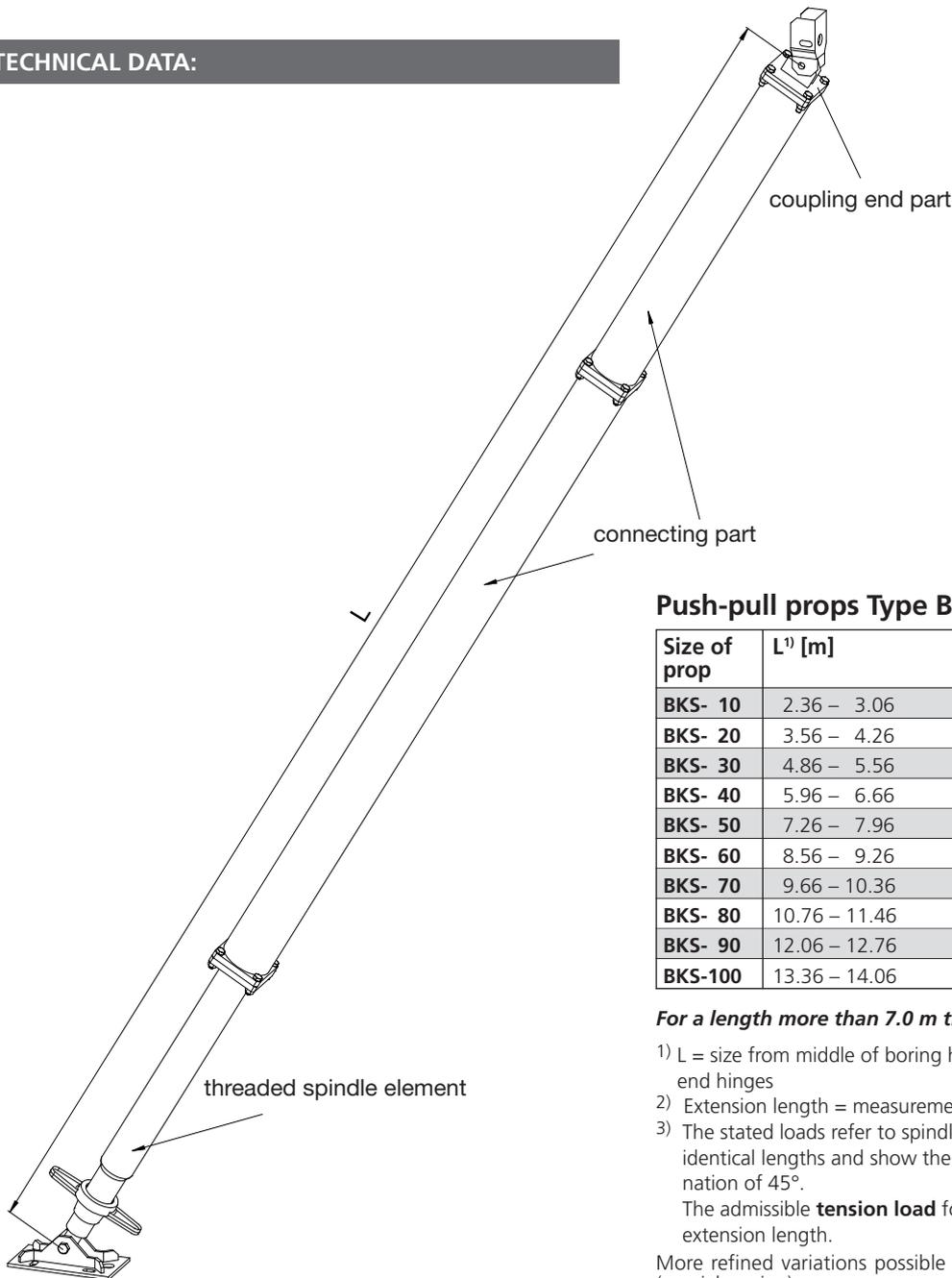
BKS-10		BKS-20		BKS-30		BKS-40		BKS-50	
Extension length ²⁾ [m]	Adm. load ³⁾ [kN]	Extension length ²⁾ [m]	Adm. load ³⁾ [kN]	Extension length ²⁾ [m]	Adm. load ³⁾ [kN]	Extension length ²⁾ [m]	Adm. load ³⁾ [kN]	Extension length ²⁾ [m]	Adm. load ³⁾ [kN]
2.45	50.0	3.65	50.0	4.95	50.0	6.05	50.0	7.35	50.0
2.55	50.0	3.75	50.0	5.05	50.0	6.15	50.0	7.45	46.9
2.65	50.0	3.85	50.0	5.15	50.0	6.25	50.0	7.55	43.8
2.75	50.0	3.95	50.0	5.25	50.0	6.35	47.1	7.65	40.7
2.85	50.0	4.05	48.8	5.35	48.2	6.45	43.5	7.75	37.5
2.95	50.0	4.15	46.4	5.45	44.6	6.55	39.9	7.85	34.4
3.05	50.0	4.25	43.9	5.55	41.0	6.65	36.2	7.95	31.3
3.15	50.0	4.35	41.5	5.65	37.4	6.75	32.6	8.05	28.2

*This load is meant as "characteristic values"





TECHNICAL DATA:



Push-pull props Type BKS

Size of prop	L ¹⁾ [m]	Weight [kg/unit]	Item No.
BKS- 10	2.36 – 3.06	80.0	613131
BKS- 20	3.56 – 4.26	100.0	613243
BKS- 30	4.86 – 5.56	123.0	613356
BKS- 40	5.96 – 6.66	142.0	613467
BKS- 50	7.26 – 7.96	174.0	613580
BKS- 60	8.56 – 9.26	197.0	613693
BKS- 70	9.66 – 10.36	216.0	613710
BKS- 80	10.76 – 11.46	235.0	613811
BKS- 90	12.06 – 12.76	267.0	613913
BKS-100	13.36 – 14.06	290.0	613014

For a length more than 7.0 m the delivery will be in 2 parts.

- 1) L = size from middle of boring hole to middle of boring hole **without** end hinges
- 2) Extension length = measurement **with** end hinges
- 3) The stated loads refer to spindles which are adjusted on both sides in identical lengths and show the admissible **pressure load** at an inclination of 45°. The admissible **tension load** for all sizes is 50 kN, regardless of the extension length.

More refined variations possible when using a second spindle element (special version)

Load tables*

BKS-60		BKS-70		BKS-80		BKS-90		BKS-100	
Extension length ²⁾ [m]	Adm. load ³⁾ [kN]	Extension length ²⁾ [m]	Adm. load ³⁾ [kN]	Extension length ²⁾ [m]	Adm. load ³⁾ [kN]	Extension length ²⁾ [m]	Adm. load ³⁾ [kN]	Extension length ²⁾ [m]	Adm. load ³⁾ [kN]
8.65	45.7	9.75	39.0	10.85	32.5	12.15	25.1	13.45	19.3
8.75	42.1	9.85	35.9	10.95	30.0	12.25	23.6	13.55	18.3
8.85	38.6	9.95	32.9	11.05	27.5	12.35	22.1	13.65	17.4
8.95	35.0	10.05	29.8	11.15	25.0	12.45	20.6	13.75	16.4
9.05	31.9	10.15	27.1	11.25	22.8	12.55	19.0	13.85	15.2
9.15	29.2	10.25	24.8	11.35	20.8	12.65	17.2	13.95	13.9
9.25	26.5	10.35	22.4	11.45	18.7	12.75	15.5	14.05	12.5
9.35	23.8	10.45	20.1	11.55	16.7	12.85	13.7	14.15	11.2

*This load is meant as "characteristic values"



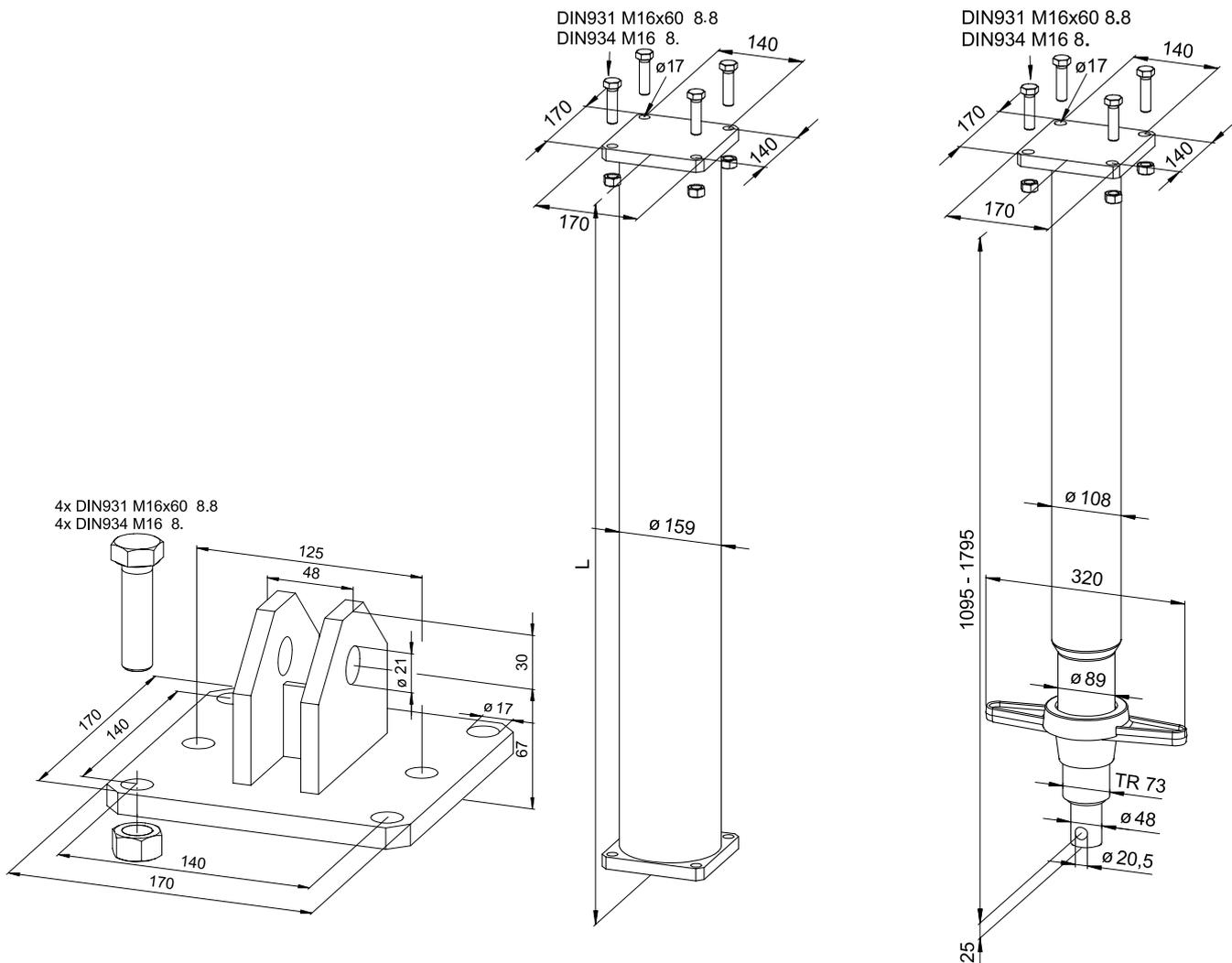
6

PUSH-PULL PROPS AND ACCESSORIES

PUSH-PULL PROPS TYPE BKS: ACCESSORIES



TECHNICAL DATA:



Coupling end part

Weight [kg/unit]	Item No.
3.80	613910

Extension element, 4 different lengths

Length [mm]	Weight [kg/unit]	Item No.
1200	30.0	613012
2400	50.0	613024
3700	73.0	613037
4800	92.0	613048

Threaded spindle element

Length [mm]	Weight [kg/unit]	Item No.
1095 – 1795	36.0	613001

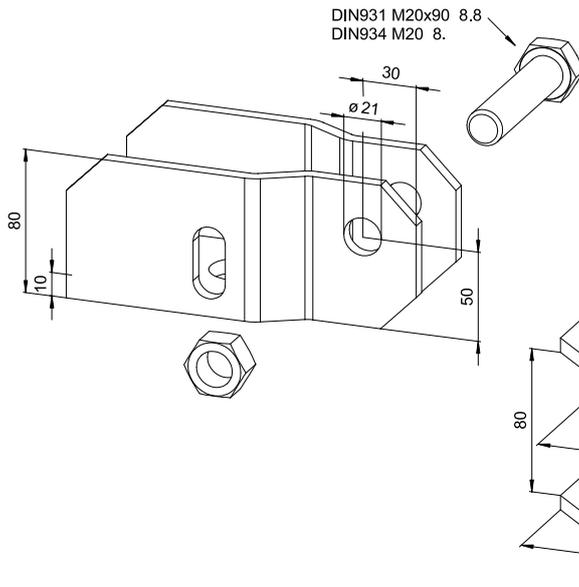


PUSH-PULL PROPS AND ACCESSORIES

6

PUSH-PULL PROPS TYPE BKS:ACCESSORIES

TECHNISCHE DATEN:

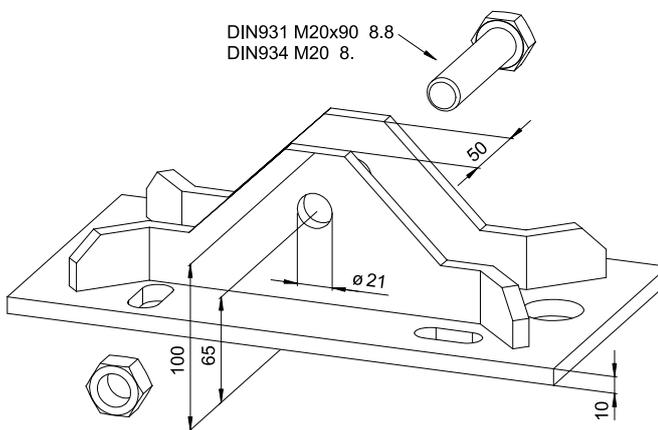


One hole end hinge

Weight [kg/unit]	Item No.
2.44	612902

complete with bolt M 16 x 90, matching nut and 2 bushing reducers

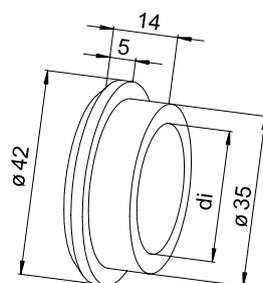
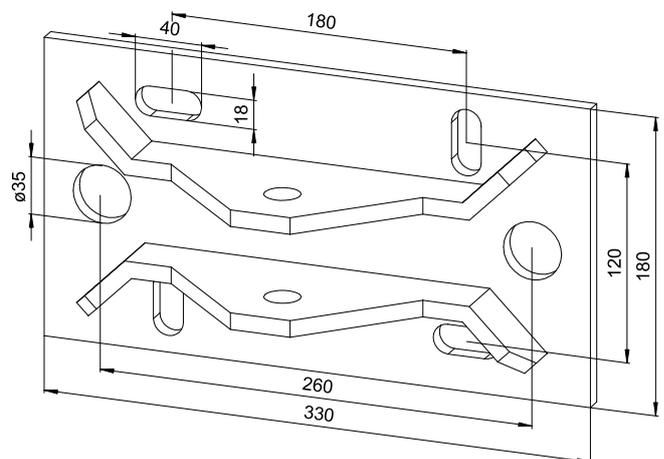
Clamping bolt with wedge and chain for fixing see page 10



Combination end hinge

Weight [kg/unit]	Item No.
7.20	612904

complete with bolt M 16 x 90, matching nut and 2 bushing reducers



Bushing reducers with outer-Ø 35 mm

Weight [kg/100 units]	Inner-Ø [mm]	Item No.
7.20	27	613927
8.50	21	613921



ROBUSTA-GAUKEL GMBH & CO. KG

Headquarter:

Brunnenstraße 36
D-71263 Weil der Stadt-Hausen
Phone: +49 70 33 5 37 10
Fax: +49 70 33 53 71 31
Internet www.robusta-gaukel.com
E-Mail info@robusta-gaukel.com

Berlin office:

Rohdestraße 19
D-12099 Berlin (Tempelhof)
Phone: +49 30 75 70 70 00
Fax: +49 30 75 70 70 07
Internet www.robusta-gaukel.com
E-Mail nl-berlin@robusta-gaukel.com