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PUSH-PULL-PROPS and accessories



MOUNTING TECHNOLOGY



ROBUSTA-GAUKEL GMBH & CO. KG

Customised solutions for constructions

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MOUNTING TECHNOLOGY

PUSH-PULL-PROPS AND ACCESSORIES



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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





General information:

- usable everywhere with an adjustment range of 1.80 m to more than 20 m
- ideal for supporting and adjusting prefab elements and wall formwork
- universal and quick fixing possibilities with suitable accessories
- safe in using because of built in protection against unscrewing
- turnable handles for adjustment at a convenient height
- easy adjusting because of durable trapezoidal thread

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 M

Handy, easy to move prop with a weight of max. 25 kg per piece.

With adjustment possibilities of **1.80 m to 4.30 m** it is most suitable for the placing of hollow 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.





Push-pull-prop Type M

GENERAL:

- three types, adjusting ranges from 1.80 to 4.30 m, loads from 27.8 kN to 13.4 kN
- admissible traction = 30 kN, regardless of the extension length
- telescopic construction with internal and external tube
- sturdy built-in protection against unscrewing because of additional welded safety ring
- strengthened handles to turn the knurled nut
- securing with undetachable G-hook
- one-hole end hinges for quick mounting and using of the prop as a space diagonal
- bushing reducers against moving of the end hinge
- installation of up to 8 props at 1 base plate at only two fixing points in the ground

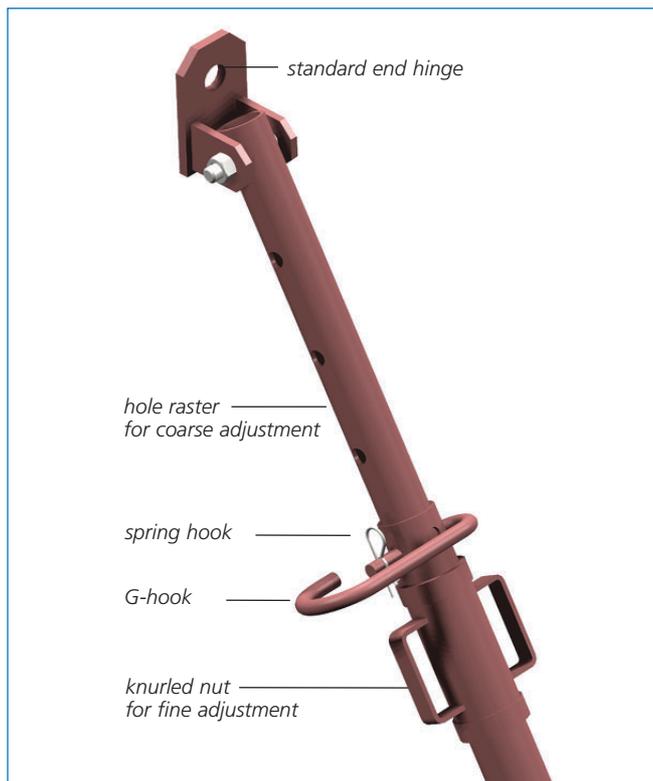
Our prop **type M** was the first prop on the market where the internal tube and the external tube have been connected with a nut for **traction and pressure**.

The **standard end hinges** with a hole diameter of 27 mm guarantee a quick and effective fixing, by turning round the anchor point the props are diagonally adjustable at any time.

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

The coarse adjustment results from borings in the internal tube in a raster of 100 mm, fixed with the **G-hook**. Because of its profiling this one is fixed undetachable to the internal tube and will be secured with a spring hook against slipping out.

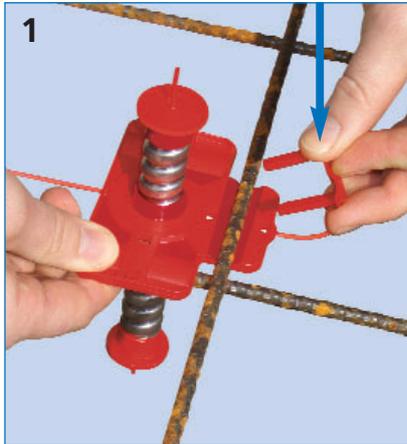
For correct fine adjustment the **knurled nut** is used with strengthened handles which are durable against hooking from a hammer or crowbar.



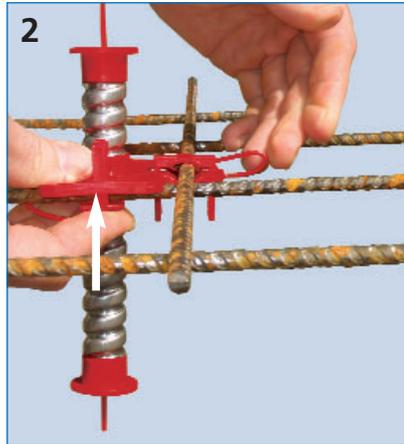
Not like this: result of too weak handles



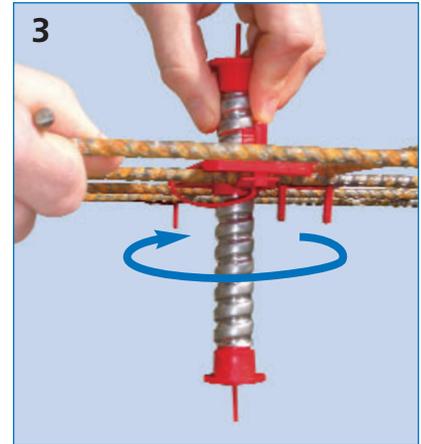
Quick and easy mounting with Clip-Fix



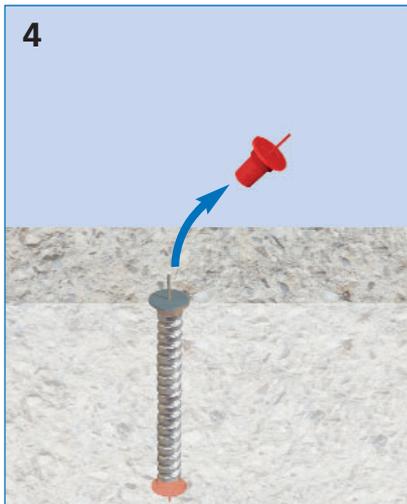
Fixing first clip from above



Afterwards fixing of the second clip from underneath



Adjust exact level by turning the sleeve. Vertical position is guaranteed.



Remove marking cap



Screwing in the flexible screw-on-set.

Alternatively:

The threaded sleeve with the marking cap is inserted into the fresh concrete while concreting.

Accessory: Screw-on-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), hammer will be enough!

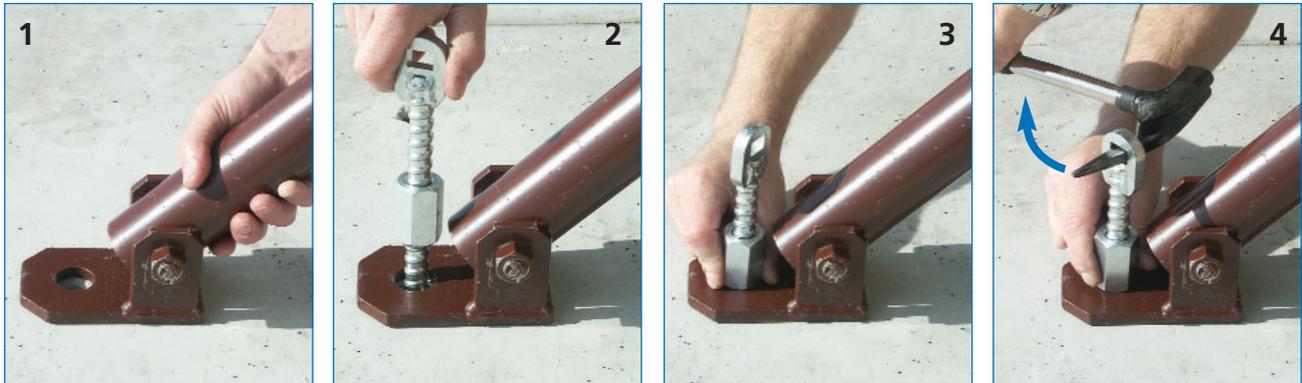
No additional costs for adapter sleeves or washers.



Easy mounting see page 6.



Easy mounting of the screw-on-set:



1. Place clamping part over the anchoring point.
2. Screw bolt into the anchoring ground.
3. Tighten hexagonal nut 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 e.g. German style roofing hammer.

Fixing of several props on the ground:

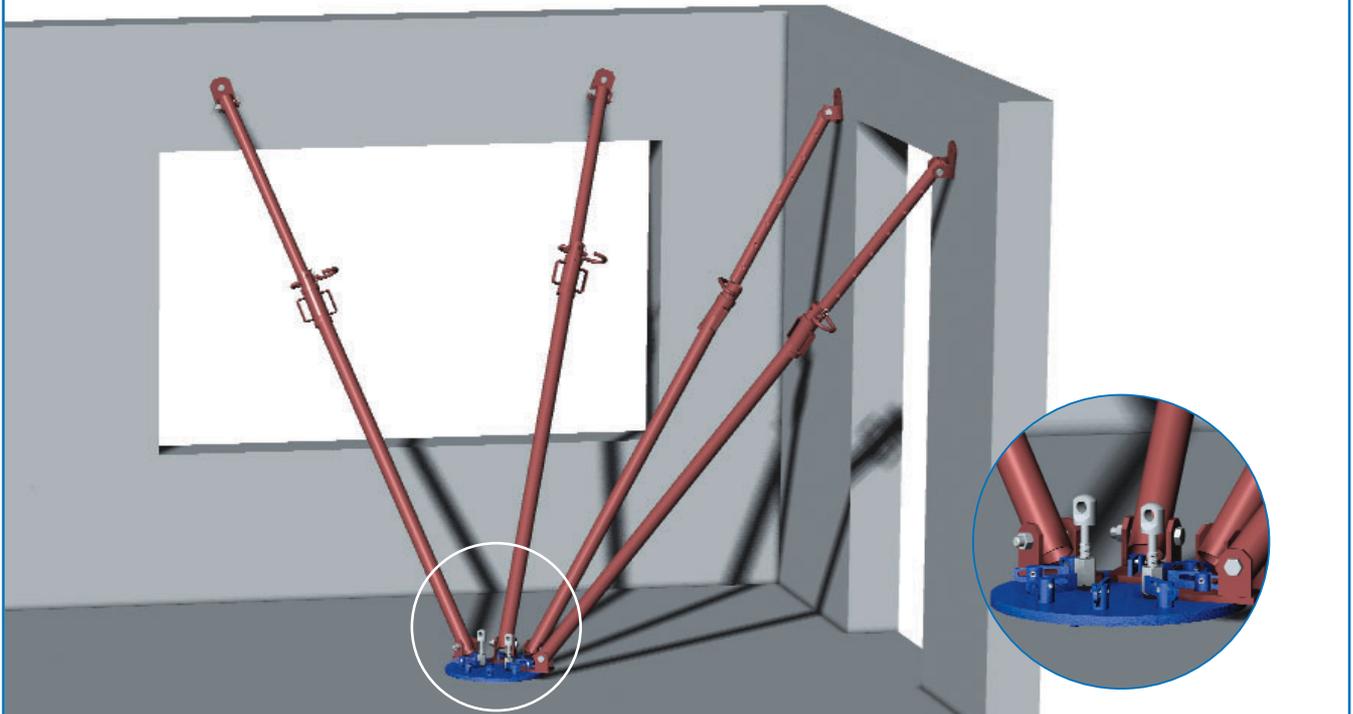
Base plate

If the ROBUSTA-base plate is centered in the middle of the room **up to 8 props** can be fixed at the same time. The fixing on the ground functions with **only two anchoring points** in an axis distance of 120 mm. Therefore the turning of the plate will be prevented.

That means a saving of **6 anchoring points!**

For a safe and time saving fixing into the concrete we recommend to use our threaded sleeves with the according screw-on-set.

The wedge bolts with slot are turnable and securely installed into the base plate.



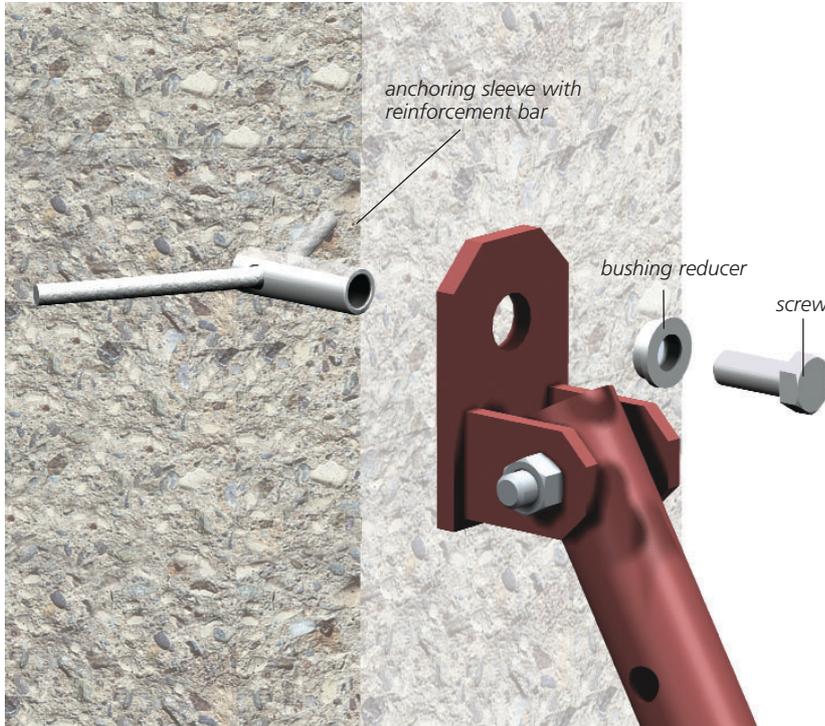


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PUSH-PULL-PROPS TYPE M – FIXING

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.

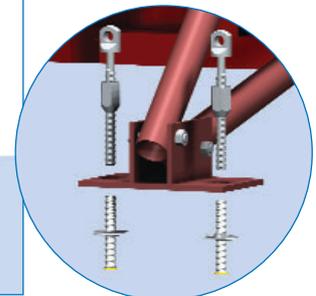
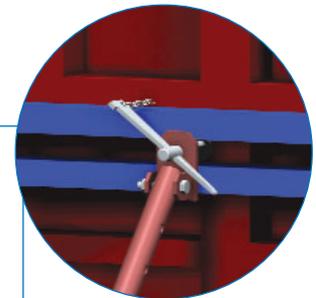
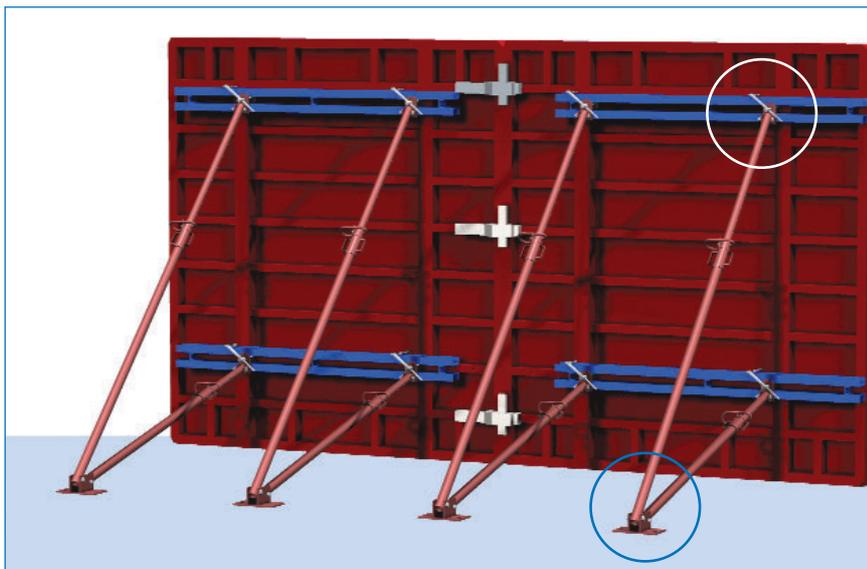
The **hole tolerance is reduced to 1 mm** and additional washers are not necessary any more.

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

Fixing to wall formwork:

Clamping bolt with wedge and chain

It fits to the standard double-U-flange 100 and 120 mm.
Because of the double flange the bolt will be centered automatically.

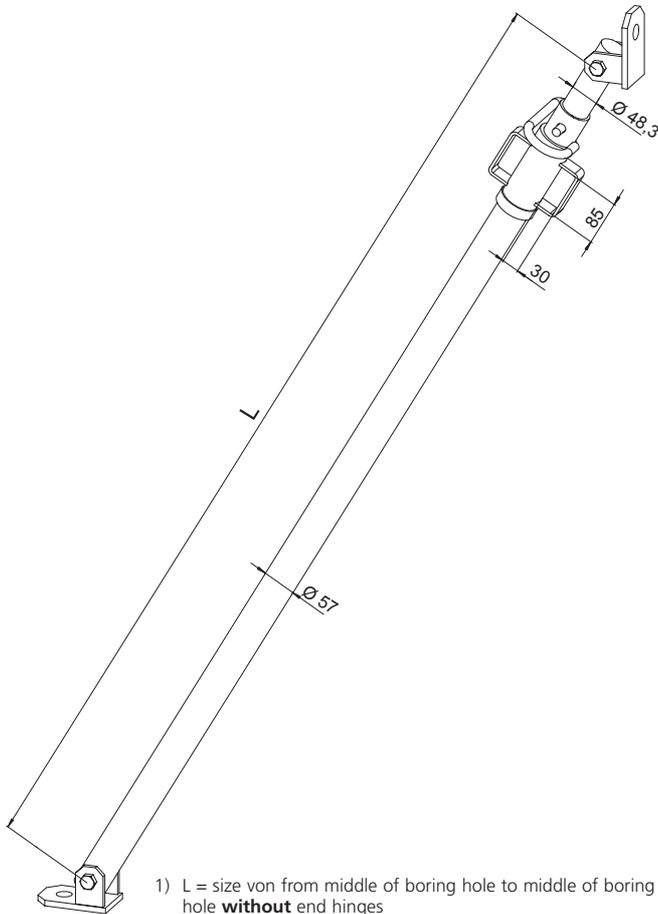


Double-end hinge

It allows the connecting of a pair of push-pull-props for an exact placing of wall formwork. The fixing to the ground is made by two anchors with an axis distance of 200 mm.



TECHNICAL DATA:



- 1) L = size von 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.

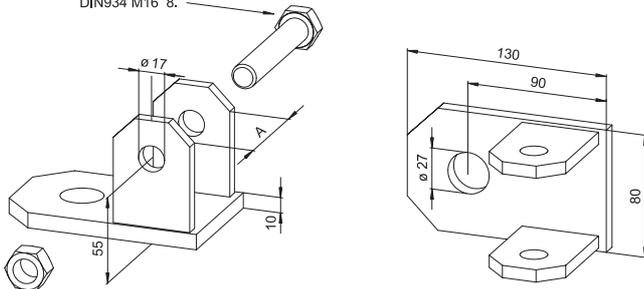
Push-pull-props Type M

Type	L ¹⁾ [m]	Weight [kg/unit]	Item No.
I-M	1.74 – 2.94	17.0	610130
II-M	2.04 – 2.59	21.0	610236
III-M	2.44 – 4.24	25.0	610343

Load table

Extension-length ²⁾ [m]	Type 1-M Adm. load [kN] ³⁾	Type 2-M Adm. load [kN] ³⁾	Type 3-M Adm. load [kN] ³⁾
1.80	27.8		
1.90	27.2		
2.00	26.7		
2.10	26.1	26.9	
2.20	25.5	26.2	
2.30	25.0	25.5	
2.40	24.4	24.8	
2.50	23.8	24.1	23.9
2.60	23.2	23.4	23.3
2.70	22.7	22.7	22.7
2.80	22.1	22.0	22.2
2.90	21.5	21.3	21.6
3.00	21.9	20.6	21.0
3.10		19.9	20.4
3.20		19.2	19.8
3.30		18.5	19.3
3.40		17.8	18.7
3.50		17.1	18.1
3.60		16.4	17.5
3.70			16.9
3.80			16.4
3.90			15.8
4.00			15.2
4.10			14.6
4.20			14.0
4.30			13.4

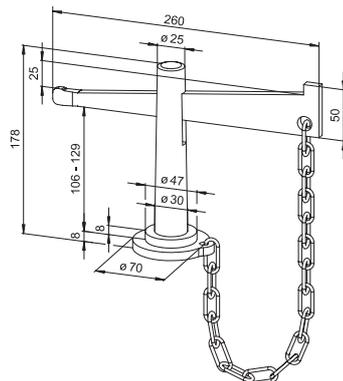
DIN931 M16x90 8.8
DIN934 M16 8.



Standard-end hinge for outer and inner tubes

end hinge for	distance of cleat A [mm]	bolt	Weight [kg/unit]	Item No.
outer tube:	60	M16 x 100	1.36	610901
inner tube:	50	M16 x 90	1.36	610902

complete with hexagonal bolt and matching nut



Clamping bolt with wedge and chain

Weight [kg/unit]	Item No.
1.60	610940

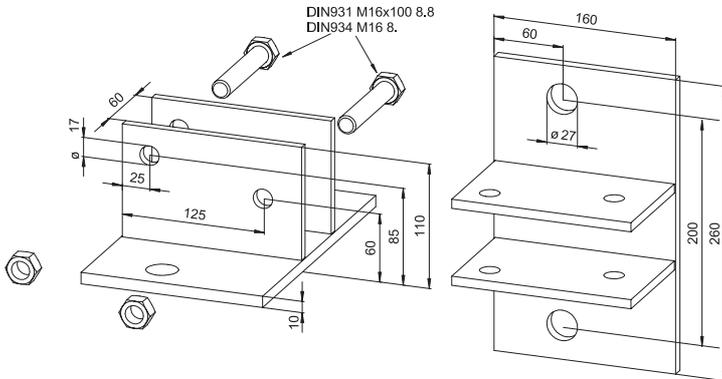


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PUSH-PULL-PROPS TYPE M – ACCESSORIES

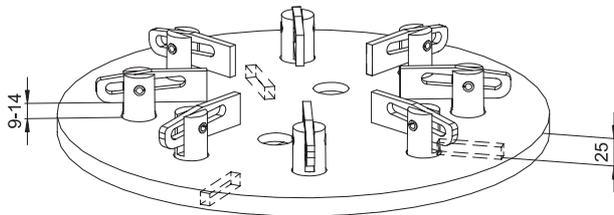
TECHNICAL DATA:



Double-end hinge for outer tube

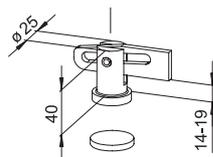
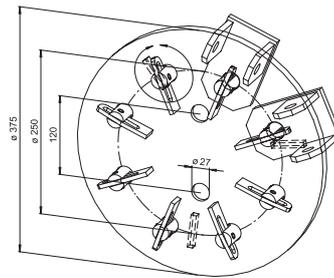
Weight [kg/unit]	bolt [mm]	Item No.
3.90	2 x M16 x 100	610903

complete with hexagonal bolt and matching nut



Base plate

Weight [kg/unit]	Item No.
9.60	610937



Wedge bolt with slot Ø 26 mm

Weight [kg/unit]	Item No.
0.20	610938

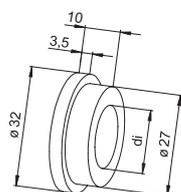
Covering plate for wedge bolt with slot

Weight [kg/unit]	Item No.
0.06	610939



Fixing bolts

Size [mm]	Weight [kg/100 units]	Item No.
M12 x 35	4.13	610912
M16 x 40	9.02	610916
M20 x 50	17.60	610920



Bushing reducer

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

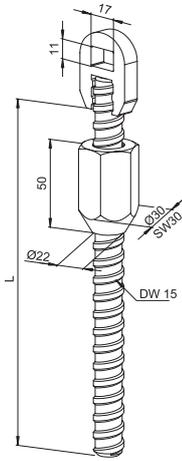
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PUSH-PULL-PROPS TYPE M – ACCESSORIES



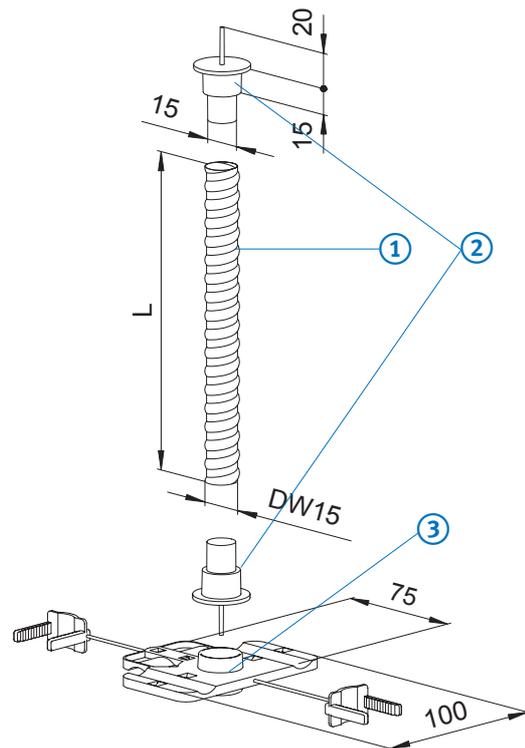
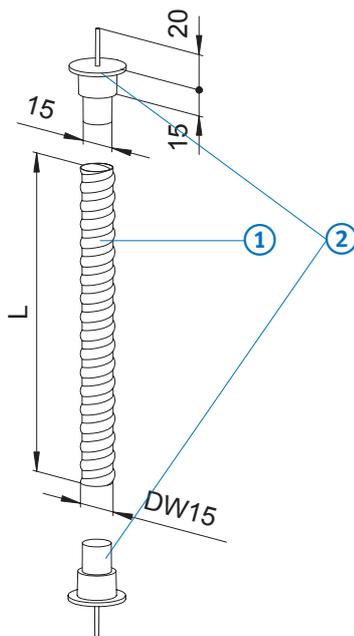
TECHNICAL DATA:



Anchoring-set Ø 15 mm, galvanized

Length* [mm]	Weight [kg/unit]	Item No.
180	0.46	111818
300	0.78	111830

*other lengths available on request



Installation-kit Ø 15 mm with installation-caps

Length [mm]	Weight [kg/100 units]	Item No. S 235 JR	Item No. V2 A
120	2.30	101212	101262
170	2.80	101217	101267

Installation-kit consisting of:

- ① Threaded sleeve
- ② 2 installation-caps

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

Installation-kit Ø 15 mm with installation-caps and Clip-Fix

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
- ② 2 installation-caps
- ③ Clip-Fix

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

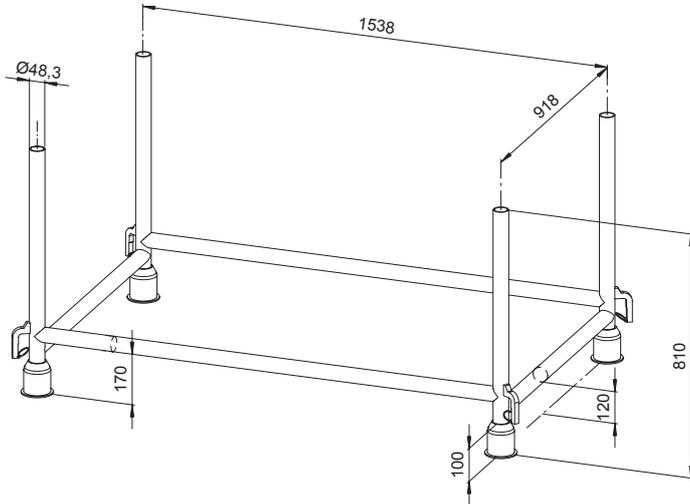


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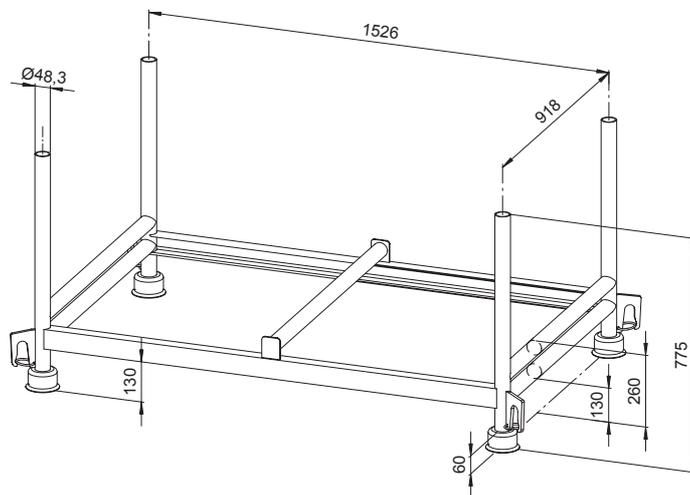
PUSH-PULL-PROPS TYPE M – STOCKING AND TRANSPORTATION

TECHNICAL DATA:



Stacking pallet, standard version, stackable for crane transportation

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



Stacking pallet, reinforced version, stackable, for crane and fork-lift transportation

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



Push-pull-prop Type S

GENERAL:

- 3 types, adjusting ranges from 2.60 m to 7.60 m. loads from 43.5 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.

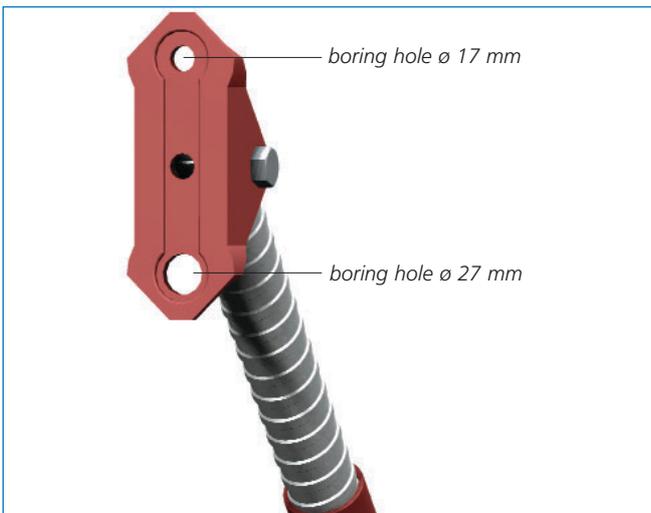
As a rule the props type S with the **standard end hinge** are delivered for a 2 point fixing. For a special installing situation we can also deliver the **one-hole end hinges** and **combination-end hinges** of the props type BKS if desired.





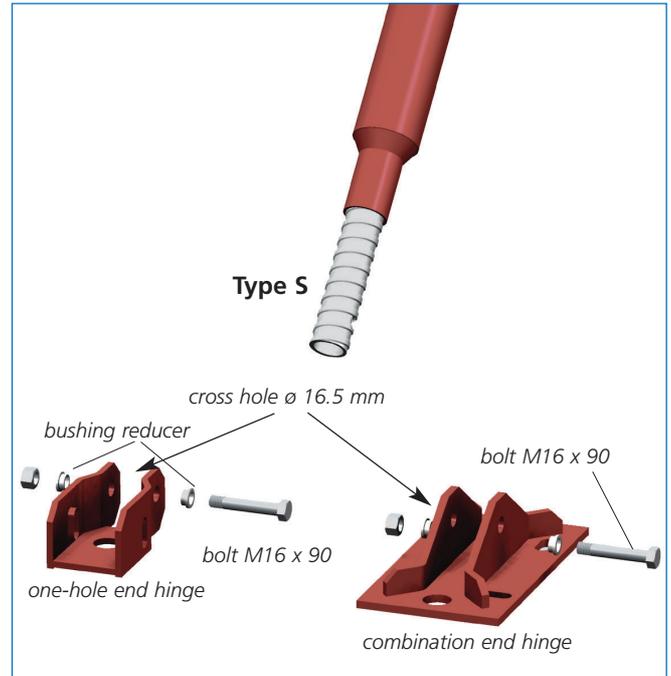
Standard end hinge

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 eccentricities of the forces onto the fixing anchor.



One-hole end hinge combination end hinge

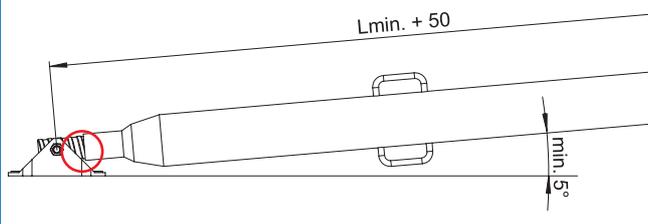
(exact description see Type BKS)



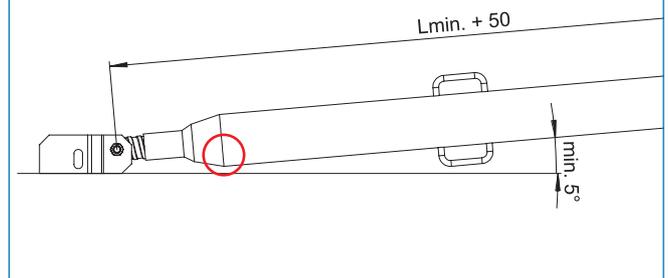
Minimum inclination of angles

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

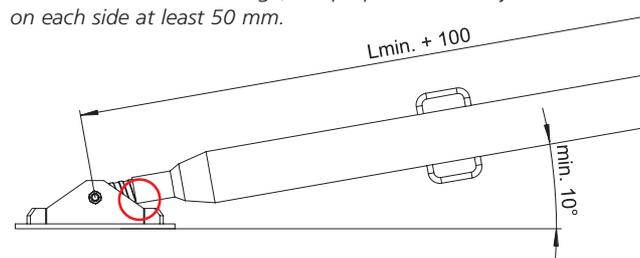
Important: When fixing the end hinge with special bolts with high head or with threaded rods the angle can enlarge!



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



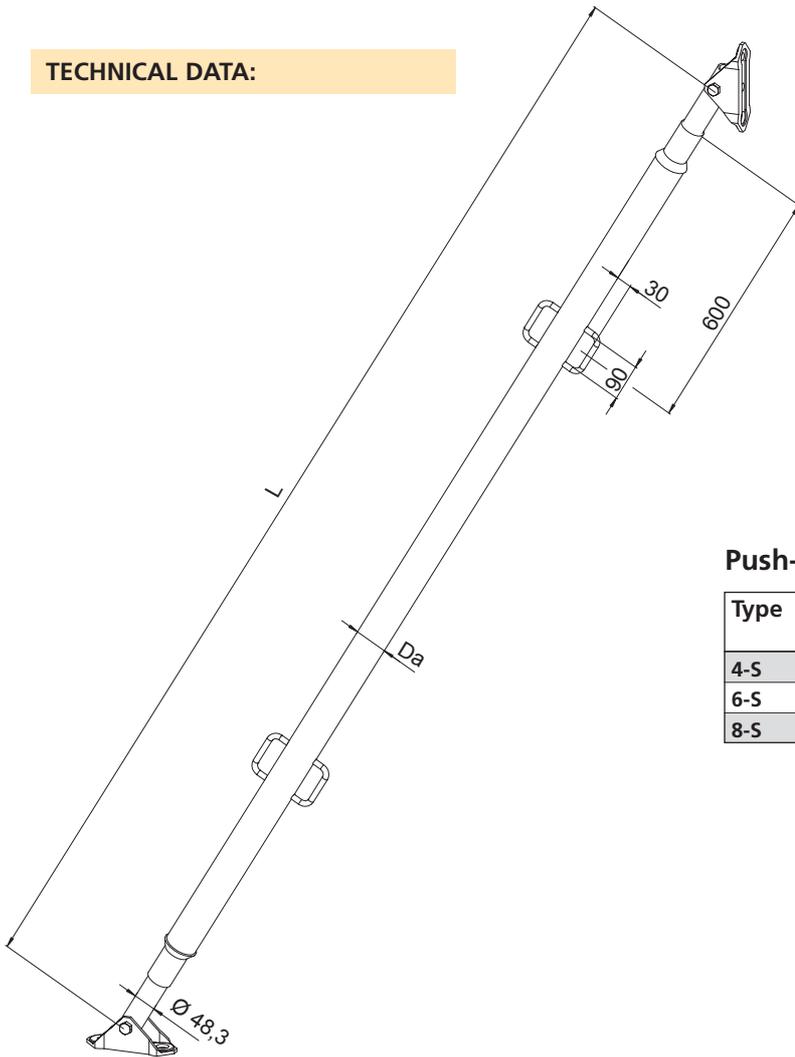
With combination end hinge, the prop has to be adjusted on each side at least 50 mm.



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



TECHNICAL DATA:



Push-pull-props Type S

Type	L ¹⁾ [m]	ø Da [mm]	Weight [kg/unit]	Item No.
4-S	2.50 – 3.90	70.0	22.6	612440
6-S	4.50 – 5.90	82.5	37.8	612660
8-S	6.10 – 7.50	108.0	71.8	612876

Load tables

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] at	
		40°	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] at	
		40°	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

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

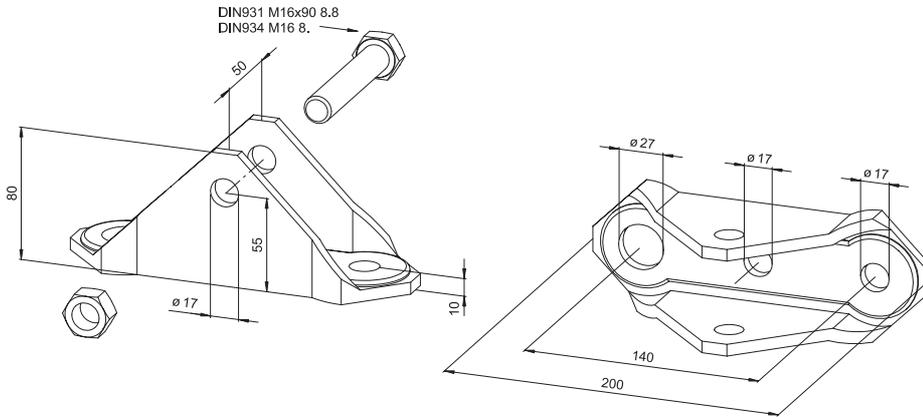
2) Extension length = measurement **with** end hinges

3) The stated loads refer to spindles which are adjusted on both sides in identical lengths and show the admissible **pressure load**. 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.



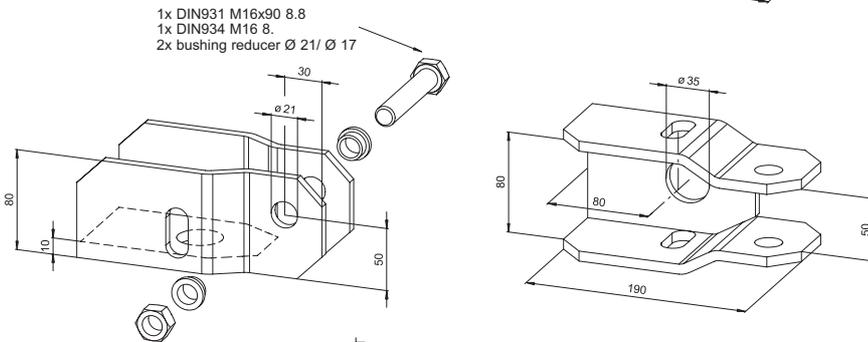
TECHNICAL DATA:



Standard end hinge

Weight [kg/unit]	Item No.
1.32	612903

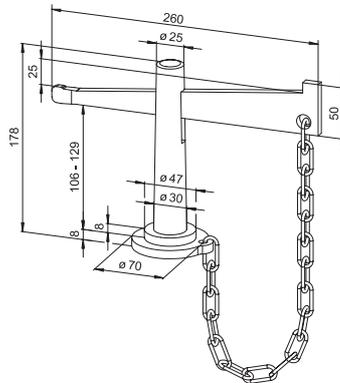
complete with bolt M 16 x 90 and matching nut



One-hole end hinge

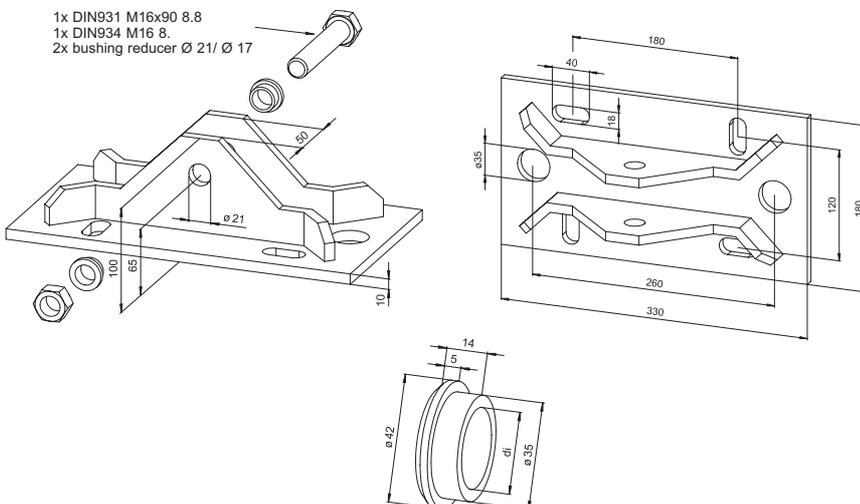
Weight [kg/unit]	Item No.
2.44	612902

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



Clamping bolt with wedge and chain

Weight [kg/unit]	Item No.
1.60	610940



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

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

Stacking pallets for stocking and transportation see page 11.



Push-pull-prop Type BKS

GENERAL:

- 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.



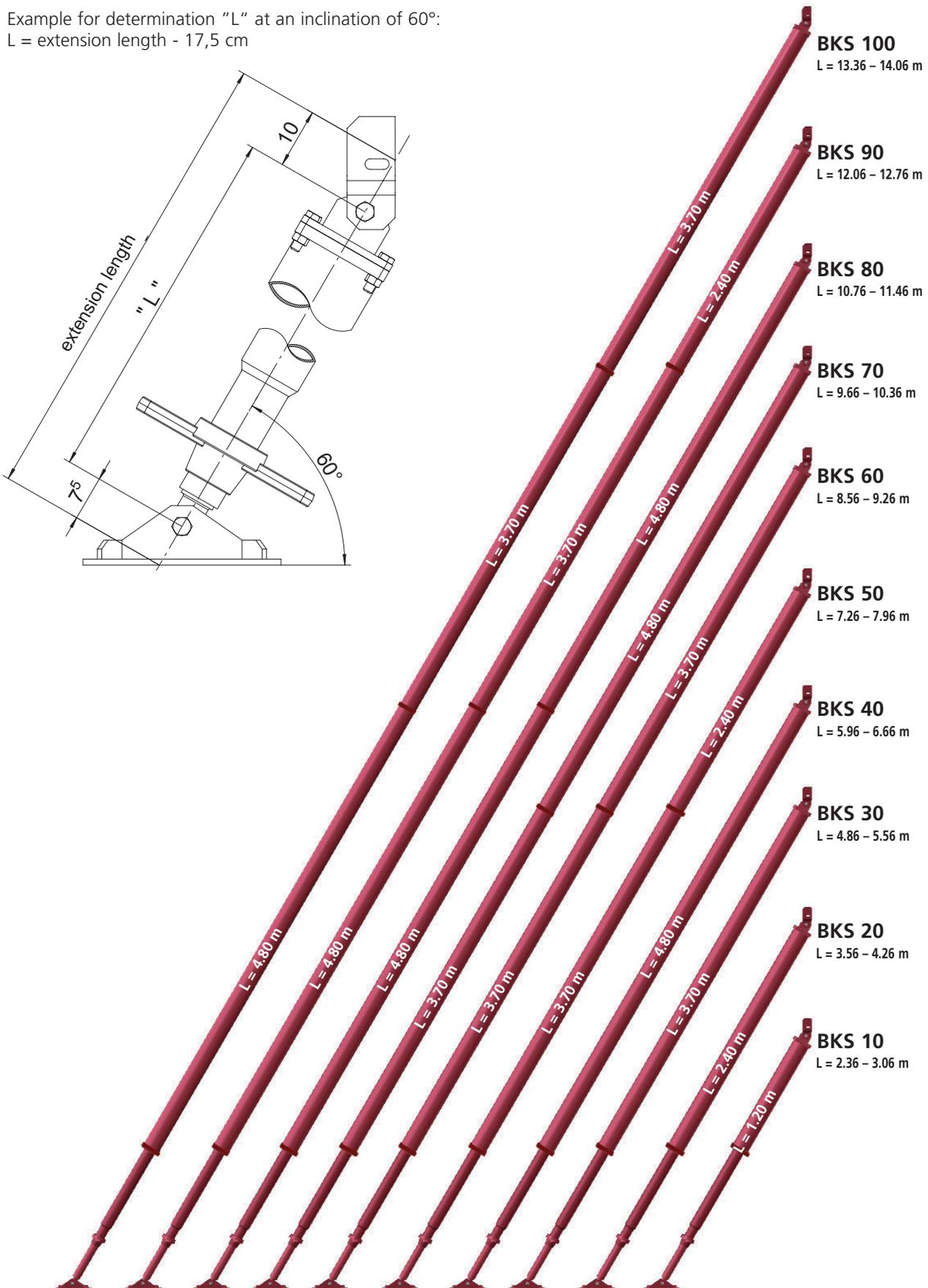


MOUNTING TECHNOLOGY

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PUSH-PULL-PROPS TYPE BKS – COMBINATION OF ELEMENTS

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





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.

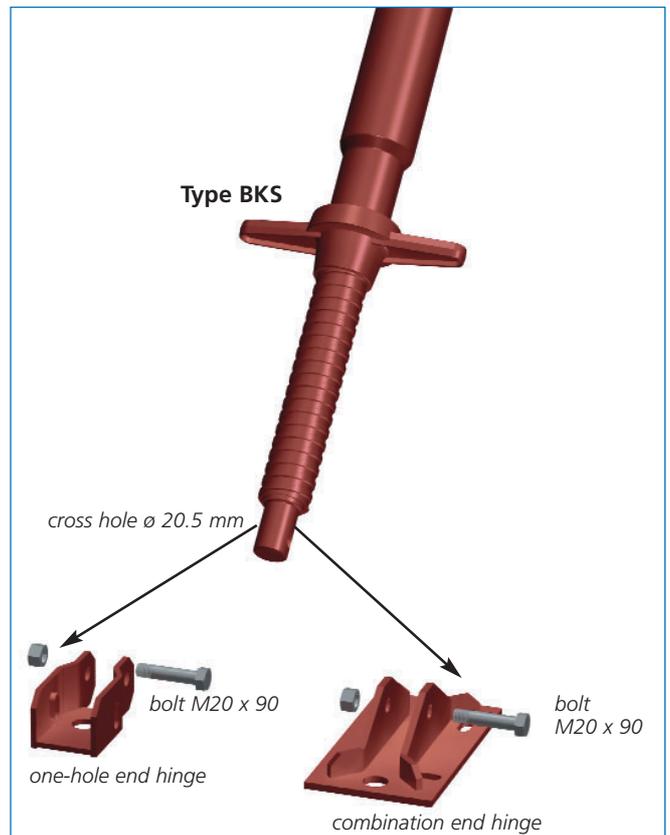
According to end hinge and spindle length different inclination angles are possible.



One-hole end hinge 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.





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.



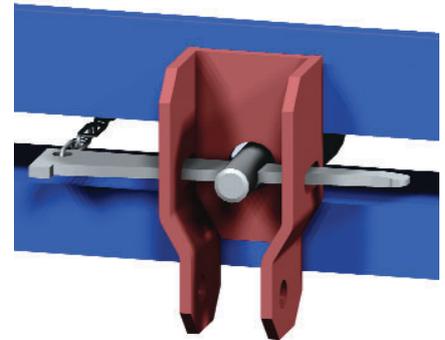
Clamping bolt with wedge and chain

The lateral openings will enable the fixing with our clamping bolt with wedge and chain.

This will fit to the usual double-U-girders 100 and 120 mm of the system formwork providers.

It will be inserted from the formwork side through the girder, so that the bolt with slot will show towards the end hinge.

Because of the double flange the bolt is centered automatically between the two U-profiles.



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.



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.



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MOUNTING TECHNOLOGY

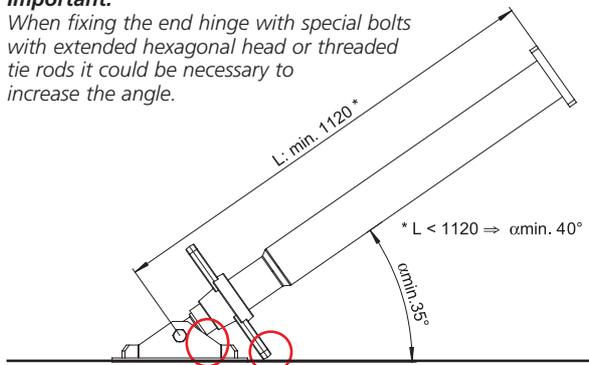
PUSH-PULL-PROPS TYPE BKS – MINIMUM INCLINATION OF ANGLES



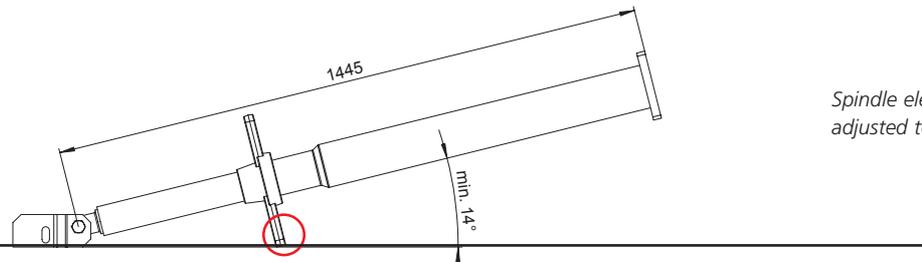
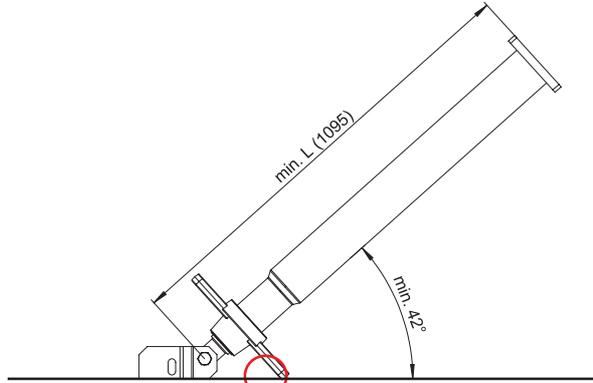
Spindle element with combination end hinge, extended at least 25 mm, that means min. length of 1120 mm, limitation through contact of the spindle at the end hinge. At length of 1095 to 1120 mm contact of the clamping nut to the concrete.

Important:

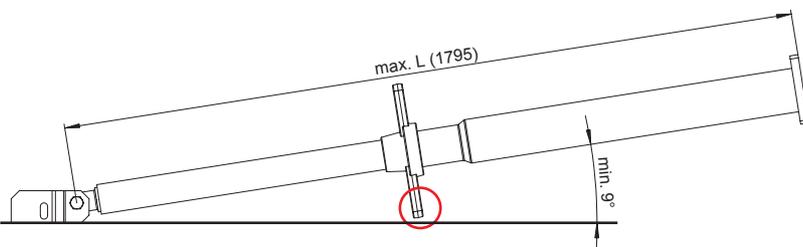
When fixing the end hinge with special bolts with extended hexagonal head or threaded tie rods it could be necessary to increase the angle.



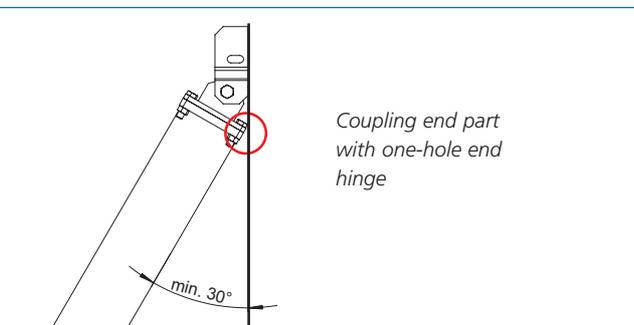
Spindle element with one-hole end hinge, adjusted to minimum length.



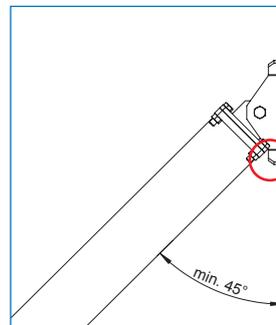
Spindle element with one-hole end hinge, adjusted to half length of 350 mm



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.



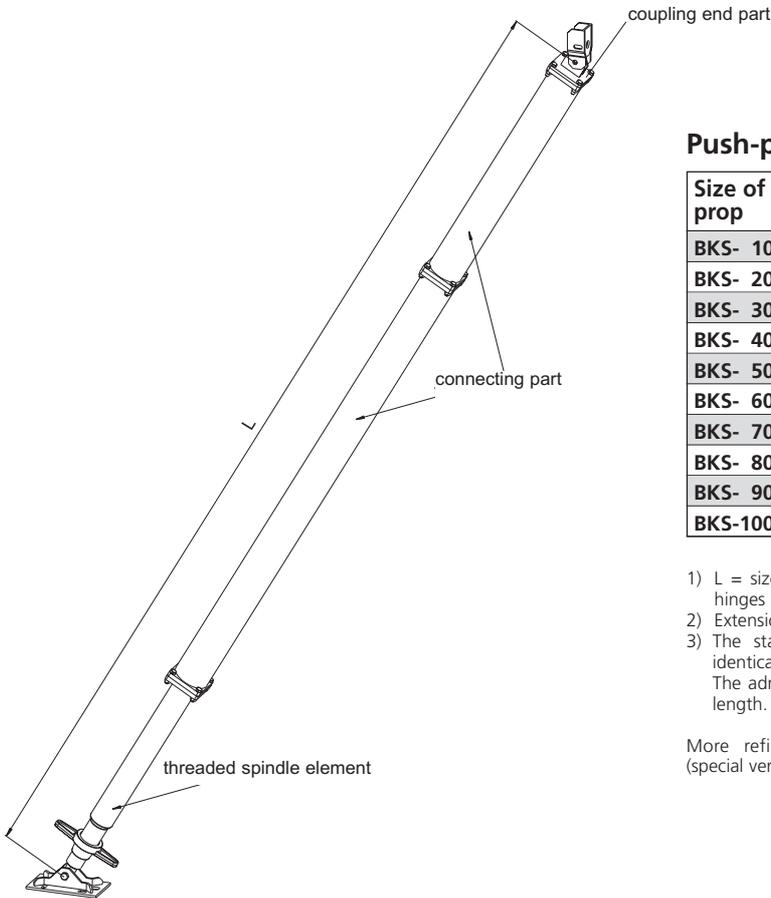


MOUNTING TECHNOLOGY

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PUSH-PULL-PROPS TYPE BKS

TECHNICAL DATA:



Push-pull-prop 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

- 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)

BKS-10	
Extension length ²⁾ [m]	Adm. load ³⁾ [kN]
2.45	50.0
2.55	50.0
2.65	50.0
2.75	50.0
2.85	50.0
2.95	50.0
3.05	50.0
3.15	50.0

BKS-20	
Extension length ²⁾ [m]	Adm. load ³⁾ [kN]
3.65	50.0
3.75	50.0
3.85	50.0
3.95	50.0
4.05	48.8
4.15	46.4
4.25	43.9
4.35	41.5

BKS-30	
Extension length ²⁾ [m]	Adm. load ³⁾ [kN]
4.95	50.0
5.05	50.0
5.15	50.0
5.25	50.0
5.35	48.2
5.45	44.6
5.55	41.0
5.65	37.4

BKS-40	
Extension length ²⁾ [m]	Adm. load ³⁾ [kN]
6.05	50.0
6.15	50.0
6.25	50.0
6.35	47.1
6.45	43.5
6.55	39.9
6.65	36.2
6.75	32.6

BKS-50	
Extension length ²⁾ [m]	Adm. load ³⁾ [kN]
7.35	50.0
7.45	46.9
7.55	43.8
7.65	40.7
7.75	37.5
7.85	34.4
7.95	31.3
8.05	28.2

BKS-60	
Extension length ²⁾ [m]	Adm. load ³⁾ [kN]
8.65	45.7
8.75	42.1
8.85	38.6
8.95	35.0
9.05	31.9
9.15	29.2
9.25	26.5
9.35	23.8

BKS-70	
Extension length ²⁾ [m]	Adm. load ³⁾ [kN]
9.75	39.0
9.85	35.9
9.95	32.9
10.05	29.8
10.15	27.1
10.25	24.8
10.35	22.4
10.45	20.1

BKS-80	
Extension length ²⁾ [m]	Adm. load ³⁾ [kN]
10.85	32.5
10.95	30.0
11.05	27.5
11.15	25.0
11.25	22.8
11.35	20.8
11.45	18.7
11.55	16.7

BKS-90	
Extension length ²⁾ [m]	Adm. load ³⁾ [kN]
12.15	25.1
12.25	23.6
12.35	22.1
12.45	20.6
12.55	19.0
12.65	17.2
12.75	15.5
12.85	13.7

BKS-100	
Extension length ²⁾ [m]	Adm. load ³⁾ [kN]
13.45	19.3
13.55	18.3
13.65	17.4
13.75	16.4
13.85	15.2
13.95	13.9
14.05	12.5
14.15	11.2



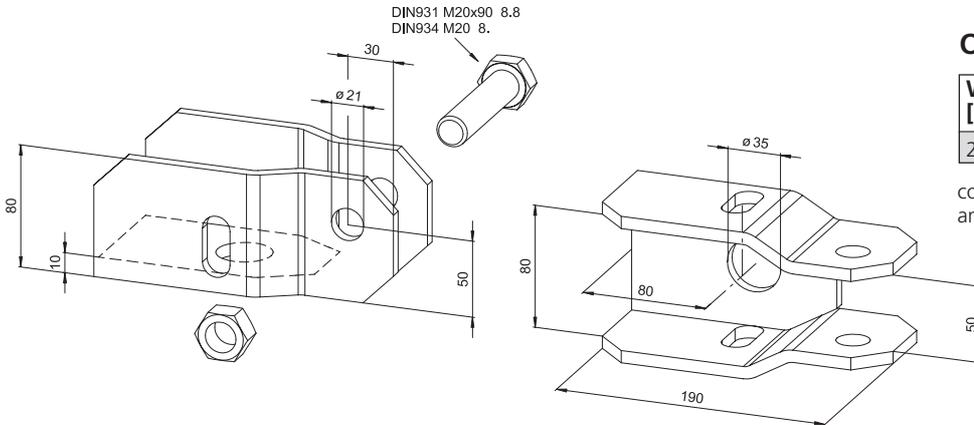


TECHNICAL DATA:

One-hole end hinge

Weight [kg/unit]	Item No.
2.44	612902

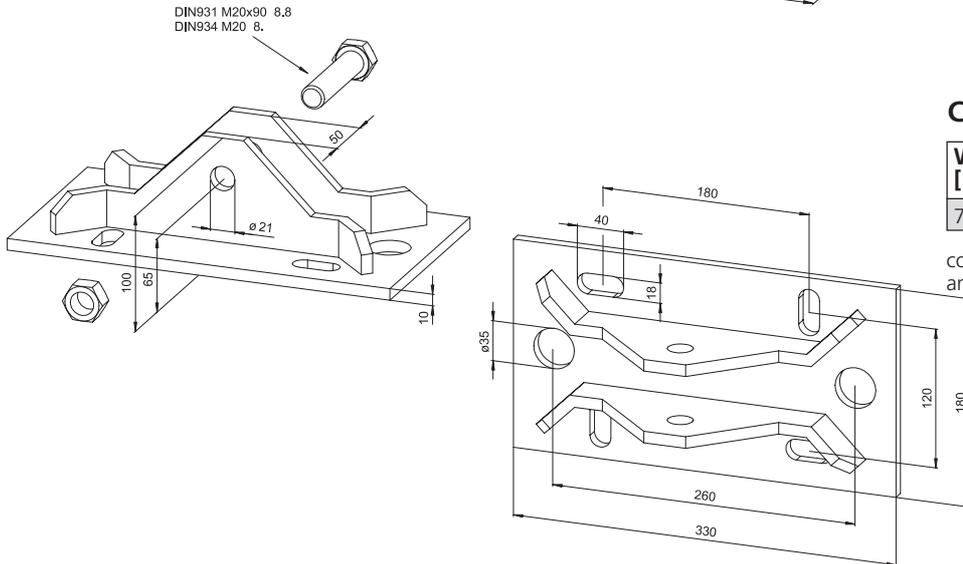
complete with bolt M 16 x 90, matching nut and 2 bushing reducers



Combination end hinge

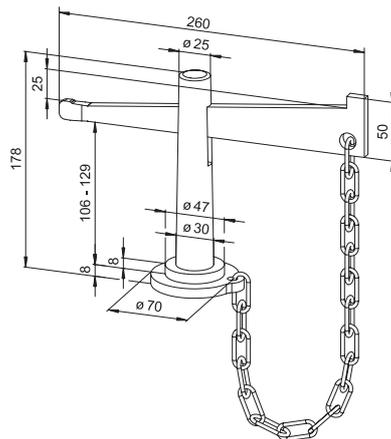
Weight [kg/unit]	Item No.
7.20	612904

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



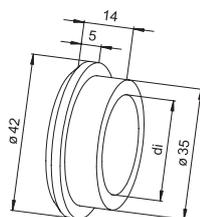
Clamping bolt with wedge and chain

Weight [kg/unit]	Item No.
1.60	610940



Bushing reducers

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



Stacking pallets for stocking and transportation see page 11.

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