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**STRINGING MACHINES**  
MADE IN GERMANY

[www.zeck-gmbh.com](http://www.zeck-gmbh.com)



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# STRINGING MACHINES

MADE IN GERMANY

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# ABOUT ZECK



# A1 WHO WE ARE



## FIELD OF ACTIVITY

ZECK is a leading global manufacturer of machines and stringing tools for the construction and servicing of overhead transmission lines, catenary, antenna and underground cable construction. ZECK excels in creative engineering for special projects and unconventional solutions for special-purpose machine construction. The family-owned company – in its 3rd generation already – has a staff of over 100 employees and is active in more than 90 countries.



Michael ZECK & Fritz ZECK

## OUR TEAM



Our current team, including apprentices: Who are given the opportunity to be trained by experienced instructors in order to become fitters, cutting machine operator and engineers.

Many of our employees have been working with us for decades and have not only experienced but decisively promoted the growth and development of our company which was founded in 1918.

As a result, we have expanded our distribution area all over the world. Furthermore, we are one of the internationally leading manufacturers of special-purpose machines.





# A2 WHAT WE DO

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## OVERHEAD TRANSMISSION LINE CONSTRUCTION

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The wiring of overhead power transmission lines requires an installation technology which avoids contact of the conductors with the ground. For this purpose, we manufacture tension stringing equipment: the puller pulls the conductor off the drum, while it is tensioned by the tensioner on the opposite side. Besides these machines, this installation requires a wide range of additional equipment which is part of our product range as well. Furthermore we manufacture the complete equipment for the erection of power transmission line towers.

## CATENARY INSTALLATION

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Efficient and accurate installation of catenary systems is achieved by machines which install the wires under the same tension at which they need to be finally fixed. Our catenary installation units can be mounted on road-rail vehicles or on rail-wagons. As local conditions and regulations in the railway industry are never the same our catenary installation units are always customized. We are able to adjust our products to any technical requirement. We have ample experience in the manufacturing of catenary installation units for new railway tracks (for instance bullet trains) and for renewal of old railway tracks.

## STRINGING TOOLS

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Providing a highly valuable range of machines is not enough. In addition, we are able to offer you all the stringing tools needed for your project. As a matter of course, our stringing tools are also high-quality. The braided steel ropes and steel reels are made by ZECK Thailand.



## TECHNICAL INNOVATION

The development of the world's first puller-tensioner combination machine in 1973 was one of ZECK's most important pioneering achievements.

The development of special purpose machines for overhead line construction began in 1966. The manufacturing of machines for catenary construction started in 1996. Both were great steps which positively influenced the history of our company.

In 2005 there was another highlight for ZECK, when our line car LF 923 was honoured with the Bavarian State Award.

ZECK has established its good reputation thanks to its unrelenting dedication to improve details in close cooperation with its customers worldwide. Due to continuous innovation and the resulting technological lead in the process of development, our machines have an internationally leading position in terms of reliability, technology, efficiency and safety.

# A3 WHY US

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Trusted since 1918, ZECK has been recognized as a leading producer of high-quality special machines for transmission and catenary line construction. Our products are designed, manufactured and wholly supported by a team of talented employees whose passion for line construction is matched only by the customers we serve.

## RENTAL MACHINES

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If you need a ZECK machine only temporarily, we are nevertheless your ideal partner. Our supply of rental machines is extensive and available at all times. Thus we can provide assistance on short notice and at an affordable price.

## FINANCING & LEASING

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Since our clients' satisfaction is a major priority for us, we can offer you several possibilities to finance the purchase of our ZECK machines on attractive terms. Moreover a wide variety of leasing plans is available.

## SPARE PARTS

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As manufacturer of our machines and stringing tools, we are able to offer you a lifetime support for spare parts. Because of the easy availability of any spare parts – always shippable in the short run – the downtime of your ZECK machine will be reduced to a minimum.



## TECHNICAL SUPPORT

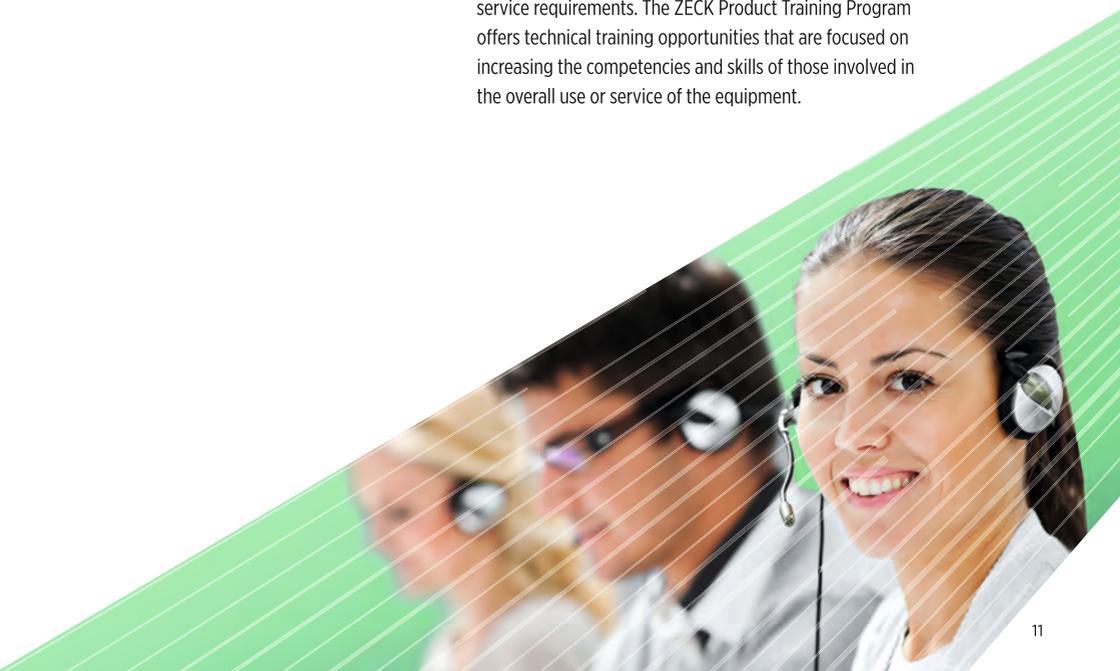
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At ZECK, our goal is to ensure your satisfaction, while offering the highest levels of professional service to keep up your productivity on the job-site. Whether you're trying to troubleshoot an issue to fix by yourself, schedule service with a qualified technician, or order a spare part, we can point you in the right direction. Support is available 24 hours a day, 7 days a week.

## EDUCATION & TRAINING

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ZECK is taking commercial partnerships with the operators of our equipment to support them in the successful completion of their projects. A well trained crew should have a solid understanding of the operation recommended by the factory & safety guidelines, as well as the maintenance and service requirements. The ZECK Product Training Program offers technical training opportunities that are focused on increasing the competencies and skills of those involved in the overall use or service of the equipment.



# A4 OUR HISTORY

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- 1918** Michael ZECK Sr. founds the company: Specialization in manufacturing, repair & trade of agricultural (special purpose) machines; family-owned since then
  - 1966** Fritz ZECK starts developing and manufacturing special purpose machines for overhead transmission line construction
  - 1973** Development of the world's first puller-tensioner combination machine
  - 1993** Relocation to new company building; Michael ZECK Jr. becomes member of the Board
  - 1996** Starting the production of machines for catenary construction
  - 2003** Construction award for "Research & Development" for our catenary installation machines
  - 2004** Expansion of production and office rooms
  - 2005** "Bavarian State Award for Innovation" for the line car LF 923
  - 2007** Expansion of production and office rooms

- 2008**

ZECK celebrates its 90th anniversary; inauguration of new production halls
- 2010**

Expansion of production and office rooms; award "Bavaria's Best 50"

Michael ZECK and Dirk Braun-Friderici are founding "ZECK Thailand".
- 2011**

ZECK Thailand starts the production of braided steel ropes and steel reels according to ISO 9001:2008 and under the management of Dirk Braun-Friderici.
- 2012**

First certification according to the global quality management standard DIN EN ISO 9001
- 2014**

Construction of a new After Sales Service hall. Certification according to DIN EN ISO 3834-3 "Quality requirements for fusion welding for metallic materials"

## AWARD WINNING EXPERTISE

Since 2003 we have been awarded for:

- |  |  |
|--|--|
| <ul style="list-style-type: none"> <li style="margin-bottom: 10px;"><b>2003</b> Construction Award</li> <li style="margin-bottom: 10px;"><b>2005</b> Bavarian State Award</li> <li style="margin-bottom: 10px;"><b>2010</b> Bavaria's Best 50 Award</li> </ul> | <ul style="list-style-type: none"> <li style="margin-bottom: 10px;"><b>2010</b> Europe's 500 Award</li> <li style="margin-bottom: 10px;"><b>2012</b> Bavaria's Best 50 Award</li> <li style="margin-bottom: 10px;"><b>2013</b> Bavarian Quality Award</li> </ul> |
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# A5 INTERNATIONALITY

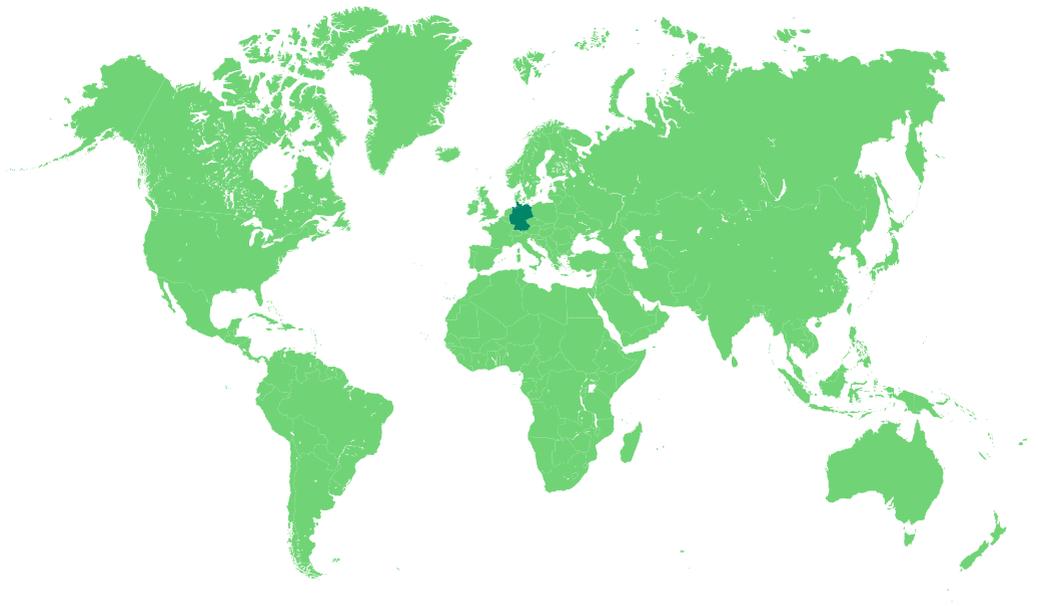
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## MADE IN GERMANY & DELIVERED WORLDWIDE

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At ZECK, being simultaneously family-owned and internationally acclaimed is no contradiction. Being solidly rooted in Germany but always trying to reach for the world is our motto. Our long-term relationships with clients across the globe have given us the experience to adapt our technology, logistics and service to you and your country's specific needs. Today more than 7000 ZECK machines are in operation all over the world. No matter where you are, we can handle your specific needs with confidence and efficiency. Choosing ZECK means choosing an allround carefree package from the internationally highly esteemed experts from Germany.

We appreciate new climatic, logistic and administrative challenges. Requests that are out of the ordinary and require thinking outside the box are frequent for us and we never shy away from a challenge. By employing specialist staff we have created a team that has vast expertise in tech advice, design and production in particular. We would be excited to hear about your idea and we are confident that we will be able to help you with your custom project.





# OVERHEAD TRANSMISSION LINE CONSTRUCTION







# OVERHEAD TRANSMISSION LINE CONSTRUCTION

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**B0 SUITABLE MACHINE  
COMBINATION**



# SUITABLE MACHINE COMBINATION



OPGW

## PULLER SITE

For new lines:

**PULLER (REEL WINDER INCLUDED)**

**SPW 2.5 E** Max. force **25** kN (Page: B2-090)

**SPW 2.5** Max. force **25** kN (Page: B2-100)

**SPW 3.5 E** Max. force **35** kN (Page: B2-120)



OR

For new lines or reconductoring:

**PULLER-TENSIONER**

**WB 1500/2.5**

Max. force **25** kN (Page: B4-060)

**WB 1500/4**

Max. force **45** kN (Page: B4-300)



**HYDRAULIC REEL WINDER**

**HTB E** (Page: B6-101)



+

OR

**HYDRAULIC REEL WINDER**

**HTB** (Page: B6-100)



## TENSIONER SITE OPGW

### TENSIONER

**B 1500/2.5 E**

Max. force **25 kN** (Page: B3-050)



**OR**

**+**

### DRUM STAND

**TB ZECK**

(Page: B5-100)



### TENSIONER

**B 1500/2**

Max. force **20 kN** (Page: B3-110)



**OR**

**+**

**OR**

### DRUM STAND

**TB IT**

(Page: B5-300)



### PULLER-TENSIONER

**WB 1500/2.5**

Max. force **25 kN** (Page: B4-060)

**WB 1500/4**

Max. force **45 kN** (Page: B4-300)



# SUITABLE MACHINE COMBINATION



## 110 KV PULLER SITE

For new lines:

**PULLER** (REEL WINDER INCLUDED)

**SPW 5** Max. force **50** kN (Page: B2-180)

**SPW 7.5** Max. force **75** kN (Page: B2-210)



OR

For new lines or reconductoring:

**PULLER-TENSIONER**

**WB 1500/4**

Max. force **45** kN (Page: B4-300)

**WB 1500/6**

Max. force **60** kN (Page: B4-320)

**WB 1300/9**

Max. force **90** kN (Page: B4-400)



**HYDRAULIC REEL WINDER**

**HTB E** (Page: B6-101)



+

OR

**HYDRAULIC REEL WINDER**

**HTB** (Page: B6-100)



### TENSIONER

#### B 1500/4 E

Max. force **40 kN** (Page: B3-060)



OR

### DRUM STAND

#### TB ZECK

(Page: B5-100)



+

### PULLER-TENSIONER

#### WB 1200/4

Max. force **45 kN** (Page: B4-200)

#### WB 1500/6

Max. force **60 kN** (Page: B4-320)

#### WB 1500/9

Max. force **90 kN**

(Page: B4-501)



OR

OR

### DRUM STAND

#### TB IT

(Page: B5-300)



+

### TENSIONER

#### B 1200/4

Max. force **40 kN** (Page: B3-200)

#### B 1500/4

Max. force **40 kN** (Page: B3-300)

#### B 1500/7.5

Max. force **75 kN**

(Page: B4-351)



# SUITABLE MACHINE COMBINATION



220 KV (2 / 3 BUNDLE)

## PULLER SITE

For new lines:

**PULLER** (REEL WINDER INCLUDED)

**SPW 7.5** Max. force **75** kN (Page: B2-210)

**SPW 9** Max. force **90** kN (Page: B2-300)

**SPW 13** Max. force **130** kN (Page: B2-382)



OR

For new lines or reconducting:

**PULLER-TENSIONER**

**WB 1500/9+4.5**

Max. force **90** kN (Page: B4-530)



OR

**HYDRAULIC REEL WINDER**

**HTB E** (Page: B6-101)



+

OR

For new lines or reconducting:

**PULLER-TENSIONER**

**WB 1500/9**

Max. force **90** kN (Page: B4-501)

**WB 1300/9**

Max. force **90** kN (Page: B4-400)



+

**HYDRAULIC REEL WINDER**

**HTB** (Page: B6-100)



## TENSIONER SITE

220 KV (2 / 3 BUNDLE)

### TENSIONER

#### B 1500/9

Max. force **90** kN  
(Page: B3-501)

#### B 1300/9

Max. force **90** kN  
(Page: B3-400)

#### B 1500/12

Max. force **120** kN  
(Page: B3-512)



+

### DRUM STAND

#### TB ZECK

(Page: B5-100)



OR

### TENSIONER

#### B 1500/4.5x2

Max. force **45+45** kN  
(Page: B3-521)



+

OR

### PULLER-TENSIONER

#### WB 1500/9

Max. force **90** kN  
(Page: B4-501)

#### WB 1300/9

Max. force **90** kN  
(Page: B4-400)



+

### DRUM STAND

#### TB IT

(Page: B5-300)



OR

### PULLER-TENSIONER

#### WB 1500/9+4.5

Max. force **90** kN  
(Page: B4-530)

#### WB 1500/12

Max. force **120** kN  
(Page: B4-560)



+

# SUITABLE MACHINE COMBINATION



500 KV (4 / 5 / 6 BUNDLE)

## PULLER SITE

For new lines:

**PULLER** (REEL WINDER INCLUDED)

**SPW 16** Max. force **160** kN (Page: B2-385)

**SPW 17** Max. force **170** kN (Page: B2-387)

**SPW 19** Max. force **190** kN (Page: B2-405)

**SPW 26** Max. force **260** kN (Page: B2-554)

**SPW 28** Max. force **280** kN (Page: B2-610)



OR

For new lines or reconductoring:

**PULLER-TENSIONER**

**WB 1500/15**

Max. force **150** kN (Page: B4-570)

**WB 1500/18**

Max. force **180** kN (Page: B4-700)

**WB 1700/18+9**

Max. force **180** kN (Page: B4-820)



**HYDRAULIC REEL WINDER**

**HTB E** (Page: B6-101)



+

OR

**HYDRAULIC REEL WINDER**

**HTB** (Page: B6-100)



## TENSIONER SITE 500 KV (4 / 5 / 6 BUNDLE)

### TENSIONER

#### B 1500/9x2

Max. force **90+90** kN  
(Page: B3-531)

#### B 1700/13x2

Max. force **130+130** kN  
(Page: B3-550)

#### B 1800/12x2

Max. force **120+120** kN  
(Page: B3-548)

#### B 1500/12x2

Max. force **140+140** kN  
(Page: B3-558)



### DRUM STAND

#### TB ZECK

(Page: B5-100)



OR

+

### PULLER-TENSIONER

#### WB 1500/16+4+4+4

Max. force **160** kN  
(Page: B4-830)



OR

### DRUM STAND

#### TB IT

(Page: B5-300)



OR

+

### PULLER-TENSIONER

#### WB 1700/18+9

Max. force **180** kN (Page: B4-820)







# OVERHEAD TRANSMISSION LINE CONSTRUCTION

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## B1 DRUM WINCH









## PULLER PERFORMANCE

Max. pulling force (inner rope layer): 10 kN  
Max. speed (outer rope layer): 27 m/min

## DRUM CAPACITY

K = 30500 => e.g. Ø 9 mm 370 m

## DIMENSIONS/WEIGHT

Length x width x height: 1190 x 900 x 1010 mm  
Weight (without rope): 175 kg



## ENGINE

- Max. 4.1 kW (5.5 hp)
- Gasoline engine with hand start

## DRIVE SYSTEM

- Drum with completely enclosed drive unit (motor + brake + gear box) for minimal maintenance and high efficiency
- Continuously variable rope speed and accurate control at max. load
- Automatically activated drum safety brake system

## CONTROL SYSTEM

- Control of rope in/out via hand lever

## GENERAL FEATURES

- Simple anchoring of the base frame to the ground
- Automatic rope guiding device
- Large rope drum with stable pressure rollers for fixing the rope

## OPTIONAL FEATURES

- Gasoline engine with 8.7 kW (11.8 hp) (hand start or electro start)
- Trailer with 1 axle chassis and aluminum flap
- Chassis for construction site
- Free wheel device to pull out ropes by hand (without engine)
- Radio remote control
- Cover
- Ropes in various versions (steel or synthetic fibres)

Special modifications or equipment on request.

## KEY FACTS

Flexible drum winch with a max. pulling force of 10 kN and a max. speed of 27 m/min. Suitable for fast and safe tower equipping, erection or final sagging.

# DRUM WINCH ST 110 L



## PULLER PERFORMANCE

Max. pulling force (inner rope layer): 15.7 kN  
Max. speed (outer rope layer): 65 m/min

## DRUM CAPACITY

K = 55000 => e.g. Ø 12 mm 380 m

## DIMENSIONS/WEIGHT

Length x width x height: 3500 x 1600 x 1500 mm  
Weight (with rope): max. 749 kg



## ENGINE

- Max. 16.5 kW (22.1 hp)
- Gasoline engine with electro start
- 12 V system with high capacity battery

## DRIVE SYSTEM

- Control of rope in/out via hand lever
- Drum with completely enclosed drive unit (motor + brake + gear box) for minimal maintenance and high efficiency
- Continuously variable rope speed and accurate control at max. load
- Automatically activated drum safety brake system

## CONTROL SYSTEM

- Control instruments for the pulling force and all machine data
- Automatically controlled oil cooling system

## GENERAL FEATURES

- 1 spring-mounted axle chassis with brake-/lighting system and mudguard for up to 80 km/h (car application)
- Cover
- Back support via mechanical sprag
- Front support via mechanical parking jack
- Automatic rope guiding device
- Large rope drum with stable pressure rollers for fixing the rope

## OPTIONAL FEATURES

- Lockable aluminum cover
- Cable or radio remote control
- Free wheel device to pull out ropes by hand (without engine)
- Biodegradable hydraulic oil
- Ropes in various versions (steel or synthetic fibres)

Special modifications or equipment on request.

## KEY FACTS

Flexible drum winch with a max. pulling force of 15.7 kN and a max. speed of 65 m/min. Suitable for fast and safe tower equipping, erection or final sagging.

Weight less than 750 kg for towing with the EU driving license class "B".

## PULLER PERFORMANCE

Max. pulling force (inner rope layer): 15.7 kN  
Max. speed (outer rope layer): 47 m/min

## DRUM CAPACITY

K = 55000 => e.g. Ø 12 mm 380 m

## DIMENSIONS/WEIGHT

Length x width x height: 1680 x 1300 x 1360 mm  
Weight (without rope): 430 kg



## ENGINE

- Max. 8.7 kW (11.7 hp)
- Gasoline engine with hand start

## DRIVE SYSTEM

- Drum with completely enclosed drive unit (motor + brake + gear box) for minimal maintenance and high efficiency
- Continuously variable rope speed and accurate control at max. load
- Automatically activated drum safety brake system

## CONTROL SYSTEM

- Control of rope in/out via hand lever

## GENERAL FEATURES

- Chassis for construction site, which can be tilted by hand to dismount the wheels and removable towing bar => simple anchoring of the base frame in the ground
- Automatic rope guiding device
- Large rope drum with stable pressure rollers for fixing the rope

## OPTIONAL FEATURES

- Diesel engine with 10.7 kW (14.5 hp) (electro start)
- Gasoline engine with 16.5 kW (22.1 hp) (electro start)
- Radio remote control
- Free wheel device to pull out ropes by hand (without engine)
- Tarpaulin
- Ropes in various versions (steel or synthetic fibres)

Special modifications or equipment on request.

## KEY FACTS

Flexible drum winch with a max. pulling force of 15.7 kN and a max. speed of 47 m/min. Suitable for a fast and safe tower equipping, erection or final sagging.

# DRUM WINCH ST 140 Z250



## PULLER PERFORMANCE

Max. pulling force (inner rope layer): 15.7 kN  
Max. speed (outer rope layer): 76 m/min

## DRUM CAPACITY

K = 55000 => e.g. Ø 12 mm 380 m

## DIMENSIONS/WEIGHT

Length x width x height: 3440 x 1620 x 1750 mm  
Weight (without rope): 800 kg



## ENGINE

- Max. 16.5 kW (22.1 hp)
- Gasoline engine with electro start
- 12 V system with high capacity battery

## DRIVE SYSTEM

- Drum with completely enclosed drive unit (motor + brake + gear box) for minimal maintenance and high efficiency
- Continuously variable rope speed and accurate control at max. load
- Automatically activated drum safety brake system

## CONTROL SYSTEM

- Control of rope in/out via hand lever
- PLC controlled machine for optimized productivity and safety
- WQVGA Color display for monitoring the pulling force, hydraulic-, motor- and electrical system with intelligent diagnostic and troubleshooting system
- Automatically controlled oil-cooling system
- Overload protection system

## GENERAL FEATURES

- Diesel engine with 25 kW (34 hp)
- 1 spring-mounted axle chassis with brake-/lighting system and mudguard for up to 80 km/h (car application)
- Lockable aluminum cover
- Back support via mechanical sprag
- Front support via mechanical parking jack
- Automatic rope guiding device
- Large rope drum with stable pressure rollers for fixing the rope

## OPTIONAL FEATURES

- 1 spring-mounted axle chassis with brake-/lighting system and mudguard for car application up to 100 km/h
- Cable or radio remote control
- Height adjustable towing bar with change coupling for truck application
- Free wheel device to pull out ropes by hand (without engine)
- Slack rope safety system => prevents rope from getting loose and crossed over (only for steel ropes)
- Protective undercarriage cover
- Spare wheel with lockable holding device
- Lockable tool box
- Grounding plate
- Noise reduction kit
- Arctic kit - with preheating system for up to -30 °C
- Extra-large drum
- Biodegradable hydraulic oil
- Ropes in various versions (steel or synthetic fibres)

Special modifications or equipment on request.

## KEY FACTS

Full electronically controlled drum winch with a max. pulling force of 15.7 kN and max. speed of 76 m/min. Suitable for fast and safe tower equipping, erection or final sagging.

## PULLER PERFORMANCE

Max. pulling force (inner rope layer): 22 kN  
Max. speed (outer rope layer): 36 m/min

## DRUM CAPACITY

K = 55000 => e.g. Ø 14 mm 280 m

## DIMENSIONS/WEIGHT

Length x width x height: 1680 x 1300 x 1360 mm  
Weight (without rope): 430 kg



## ENGINE

- Max. 8.7 kW (11.7 hp)
- Gasoline engine with hand start

## DRIVE SYSTEM

- Drum with completely enclosed drive unit (motor + brake + gear box) for minimal maintenance and high efficiency
- Continuously variable rope speed and accurate control at max. load
- Automatically activated drum safety brake system

## CONTROL SYSTEM

- Control of rope in/out via hand lever

## GENERAL FEATURES

- Chassis for construction site, which can be tilted by hand to dismount the wheels and removable towing bar => simple anchoring of the base frame in the ground
- Automatic rope guiding device
- Large rope drum with stable pressure rollers for fixing the rope

## OPTIONAL FEATURES

- Diesel engine with 10.7 kW (14.5 hp) (electro start)
- Radio remote control
- Free wheel device to pull out ropes by hand (without engine)
- Tarpaulin
- Ropes in various versions (steel or synthetic fibres)

Special modifications or equipment on request.

## KEY FACTS

Flexible drum winch with a max. pulling force of 22 kN and max. speed of 36 m/min. Suitable for fast and safe tower equipping, erection or final sagging.

# DRUM WINCH ST 180 Z250



## PULLER PERFORMANCE

Max. pulling force (inner rope layer): 22 kN  
Max. speed (outer rope layer): 50 m/min

## DRUM CAPACITY

K = 55000 => e.g. Ø 14 mm 280 m

## DIMENSIONS/WEIGHT

Length x width x height: 3440 x 1620 x 1750 mm  
Weight (without rope): 800 kg



## ENGINE

- Max. 16.5 kW (22.1 hp)
- Gasoline engine with electro start
- 12 V system with high capacity battery

## DRIVE SYSTEM

- Drum with completely enclosed drive unit (motor + brake + gear box) for minimal maintenance and high efficiency
- Continuously variable rope speed and accurate control at max. load
- Automatically activated drum safety brake system

## CONTROL SYSTEM

- Control of rope in/out via hand lever
- PLC controlled machine for optimized productivity and safety
- WQVGA Color display for monitoring the pulling force, hydraulic-, motor- and electrical system with intelligent diagnostic and troubleshooting system
- Automatically controlled oil-cooling system
- Overload protection system

## GENERAL FEATURES

- 1 spring-mounted axle chassis with brake-/lighting system and mudguard for up to 80 km/h (car application)
- Lockable aluminum cover
- Back support via mechanical sprag
- Front support via mechanical parking jack
- Automatic rope guiding device
- Large rope drum with stable pressure rollers for fixing the rope

## OPTIONAL FEATURES

- Diesel engine with 25 kW (34 hp)
- 1 spring-mounted axle chassis with brake-/lighting system and mudguard for car application up to 100 km/h
- Cable or radio remote control
- Height adjustable towing bar with change coupling for truck application
- Free wheel device to pull out ropes by hand (without engine)
- Slack rope safety system => prevents rope from getting loose and crossed over (only for steel ropes)
- Protective undercarriage cover
- Spare wheel with lockable holding device
- Lockable tool box
- Grounding plate
- Noise reduction kit
- Arctic kit – with preheating system for up to -30 °C
- Extra-large drum
- Biodegradable hydraulic oil
- Ropes in various versions (steel or synthetic fibres)

## KEY FACTS

Full electronically controlled drum winch with a max. pulling force of 22 kN and max. speed of 50 m/min. Suitable for fast and safe tower equipping, erection or final sagging.

## PULLER PERFORMANCE

Max. pulling force (inner rope layer): 34 kN  
Max. speed (outer rope layer): 21 m/min

## DRUM CAPACITY

K = 55000 => e.g. Ø 11 mm 450 m

## DIMENSIONS/WEIGHT

Length x width x height: 1680 x 1300 x 1360 mm  
Weight (without rope): 430 kg



## ENGINE

- Max. 8.7 kW (11.7 hp)
- Gasoline engine with hand start

## DRIVE SYSTEM

- Drum with completely enclosed drive unit (motor + brake + gear box) for minimal maintenance and high efficiency
- Continuously variable rope speed and accurate control at max. load
- Automatically activated drum safety brake system

## CONTROL SYSTEM

- Control of rope in/out via hand lever

## GENERAL FEATURES

- Chassis for construction site, which can be tilted by hand to dismount the wheels and removable towing bar => simple anchoring of the base frame in the ground
- Automatic rope guiding device
- Large rope drum with stable pressure rollers for fixing the rope

## OPTIONAL FEATURES

- Diesel engine with 10.7 kW (14.5 hp) (electro start)
- Radio remote control
- Free wheel device to pull out ropes by hand (without engine)
- Tarpaulin
- Ropes in various versions (steel or synthetic fibres)

Special modifications or equipment on request.

## KEY FACTS

Flexible drum winch with a max. pulling force of 34 kN and a max. speed of 21 m/min. Suitable for fast and safe tower equipping, erection or final sagging.

# DRUM WINCH ST 280 Z250



## PULLER PERFORMANCE WITH 2-STAGE-SYSTEM

### Stage 1:

Max. pulling force (inner rope layer): 34 kN  
Max. speed (outer rope layer): 39 m/min

### Stage 2:

Max. pulling force (inner rope layer): 12.5 kN  
Max. speed (outer rope layer): 78 m/min

## DRUM CAPACITY

K = 55000 => e.g. Ø 11 mm 450 m

## DIMENSIONS/WEIGHT

Length x width x height: 3440 x 1620 x 1750 mm  
Weight (without rope): 800 kg



## ENGINE

- Max. 16.5 kW (22.1 hp)
- Gasoline engine with electro start
- 12 V system with high capacity battery

## DRIVE SYSTEM

- Drum with completely enclosed drive unit (motor + brake + gear box) for minimal maintenance and high efficiency
- Continuously variable rope speed and accurate control at max. load
- Automatically activated drum safety brake system

## CONTROL SYSTEM

- Control of rope in/out via hand lever
- PLC controlled machine for optimized productivity and safety
- WQVGA Color display for monitoring the pulling force, hydraulic-, motor- and electrical system with intelligent diagnostic and troubleshooting system
- Automatically controlled oil cooling system
- Overload protection system
- Switchable 2-stage-system for max. flexibility

## GENERAL FEATURES

- 1 spring-mounted axle chassis with brake-/lighting system and mudguard for up to 80 km/h (car application)
- Lockable aluminum cover
- Back support via mechanical sprag
- Front support via mechanical parking jack
- Automatic rope guiding device
- Large rope drum with stable pressure rollers for fixing the rope

## OPTIONAL FEATURES

- Diesel engine with 25 kW (34 hp)
- 1 spring-mounted axle chassis with brake-/lighting system and mudguard for car application up to 100 km/h
- Cable or radio remote control
- Height adjustable towing bar with change coupling for truck application
- Free wheel device to pull out ropes by hand (without engine)
- Slack rope safety system => prevents rope from getting loose and crossed over (only for steel ropes)
- Protective undercarriage cover
- Spare wheel with lockable holding device
- Lockable tool box
- Grounding plate
- Noise reduction kit
- Arctic kit – with preheating system for up to -30 °C
- Extra-large drum
- Biodegradable hydraulic oil
- Ropes in various versions (steel or synthetic fibres)

Special modifications or equipment on request.

## KEY FACTS

Flexible drum winch with a switchable 2-stage system, a max. pulling force of 34 kN / 12.5 kN and max. speed of 39 m/min / 78 m/min . Suitable for fast and safe tower equipping, erection or final sagging.

## PULLER PERFORMANCE – UPPER WINCH

Max. pulling force (inner rope layer): 18 kN  
Max. speed (outer rope layer): 45 m/min

## PULLER PERFORMANCE – LOWER WINCH

Max. pulling force (inner rope layer): 34 kN  
Max. speed (outer rope layer): 37 m/min

## DRUM CAPACITY

K = 55000 => e.g. Ø 8 mm 850 m (upper winch)  
K = 55000 => e.g. Ø 11 mm 450 m (lower winch)

## DIMENSIONS/WEIGHT

Length x width x height: 3440 x 1620 x 1800 mm  
Weight (without rope): 1170 kg



## ENGINE

- Max. 16.5 kW (22.1 hp)
- Gasoline engine with electro start
- 12 V system with high capacity battery

## DRIVE SYSTEM

- Each drum with completely enclosed drive unit (motor + brake + gear box) for minimal maintenance and high efficiency
- Continuously variable rope speed and accurate control at max. load
- 2 automatically activated drum safety brake systems

## CONTROL SYSTEM

- Control of rope in/out via hand lever
- PLC controlled machine for optimized productivity and safety
- WQVGA Color display for monitoring the pulling force, hydraulic-, motor- and electrical system with intelligent diagnostic and troubleshooting system
- Automatically controlled oil cooling system
- ZECK stringing data record system with USB interface
- Overload protection system

## GENERAL FEATURES

- 1 spring-mounted axle chassis with brake-/lighting system and mudguard for up to 80 km/h (car application)
- Lockable aluminum cover
- Back support via mechanical sprag
- Front support via mechanical parking jack
- Automatic rope guiding device
- Large rope drum with stable pressure rollers for fixing the rope

## OPTIONAL FEATURES

- Diesel engine with 17 kW (23 hp)
- Upper winch with max. pulling force of 23 kN and 36 m/min
- Upper winch with max. pulling force of 34 kN and 37 m/min
- 1 spring-mounted axle chassis with brake-/lighting system and mudguard for car application up to 100 km/h
- Cable or radio remote control
- Electronic printer for ZECK stringing data record system
- Height adjustable towing bar with change coupling for car or truck application
- Free wheel device to pull out ropes by hand (without engine)
- Slack rope safety system => prevents rope from getting loose and crossed over (only for steel ropes)
- Protective undercarriage cover
- Spare wheel with lockable holding device
- Lockable tool box
- Grounding plate
- Noise reduction kit
- Arctic kit – with preheating system for up to -30 °C
- Extra-large drum
- Biodegradable hydraulic oil
- Both drum winches operate simultaneously
- Ropes in various versions (steel or synthetic fibres)

Special modifications or equipment on request.

## KEY FACTS

Full electronically controlled drum winch with max. pulling force of 18 kN / 34 kN and max. speed of 45 m/min / 37 m/min. Suitable for tower equipping, erection or final sagging.

# DRUM WINCH ST 340



## PULLER PERFORMANCE

Max. pulling force (inner rope layer): 40.8 kN  
Max. speed (outer rope layer): 34 m/min

## DRUM CAPACITY

K = 55000 => e.g. Ø 12 mm 380 m

## DIMENSIONS/WEIGHT

Length x width x height: 3440 x 1620 x 1750 mm  
Weight (without rope): 1000 kg



## ENGINE

- Max. 16.5 kW (22.1 hp)
- Gasoline engine with electro start
- 12 V system with high capacity battery

## DRIVE SYSTEM

- Drum with completely enclosed drive unit (motor + brake + gear box) for minimal maintenance and high efficiency
- Continuously variable rope speed and accurate control at max. load
- Automatically activated drum safety brake system

## CONTROL SYSTEM

- Control of rope in/out via hand lever
- PLC controlled machine for optimized productivity and safety
- WQVGA Color display for monitoring the pulling force, hydraulic-, motor- and electrical system with intelligent diagnostic and troubleshooting system
- Automatically controlled oil cooling system
- ZECK stringing data record system with USB interface
- Overload protection system

## GENERAL FEATURES

- 1 spring-mounted axle chassis with brake-/lighting system and mudguard for up to 80 km/h (car application)
- Lockable aluminum cover
- Back support via mechanical sprag
- Front support via mechanical parking jack
- Automatic rope guiding device
- Large rope drum with stable pressure rollers for fixing the rope

## OPTIONAL FEATURES

- Diesel engine with 25 kW (34 hp)
- 1 spring-mounted axle chassis with brake-/lighting system and mudguard for car application up to 100 km/h
- Cable or radio remote control
- Electronic printer for ZECK stringing data record system
- Height adjustable towing bar with change coupling for truck application
- Free wheel device to pull out ropes by hand (without engine)
- Slack rope safety system => prevents rope from getting loose and crossed over (only for steel ropes)
- Protective undercarriage cover
- Spare wheel with lockable holding device
- Lockable tool box
- Grounding plate
- Noise reduction kit
- Arctic kit - with preheating system for up to -30 °C
- Extra-large drum
- Biodegradable hydraulic oil
- Ropes in various versions (steel or synthetic fibres)

Special modifications or equipment on request.

## KEY FACTS

Full electronically controlled drum winch with a max. pulling force of 40.8 kN and max. speed of 34 m/min. Suitable for fast and safe tower equipping, erection or final sagging.

## PULLER PERFORMANCE – UPPER WINCH

Max. pulling force (inner rope layer): 18 kN  
Max. speed (outer rope layer): 49 m/min

## PULLER PERFORMANCE – LOWER WINCH

Max. pulling force (inner rope layer): 40.8 kN  
Max. speed (outer rope layer): 34 m/min

## DRUM CAPACITY

K = 55000 => e.g. Ø 8 mm 850 m (upper winch)  
K = 55000 => e.g. Ø 12 mm 380 m (lower winch)

## DIMENSIONS/WEIGHT

Length x width x height: 4020 x 1630 x 1750 mm  
Weight (without rope): 1300 kg



## ENGINE

- Max. 16.5 kW (22.1 hp)
- Gasoline engine with electro start
- 12 V system with high capacity battery

## DRIVE SYSTEM

- Each drum with completely enclosed drive unit (motor + brake + gear box) for minimal maintenance and high efficiency
- Continuously variable rope speed and accurate control at max. load
- 2 automatically activated drum safety brake systems

## CONTROL SYSTEM

- Control of rope in/out via hand lever
- PLC controlled machine for optimized productivity and safety
- WQVGA Color display for monitoring the pulling force, hydraulic-, motor- and electrical system with intelligent diagnostic and troubleshooting system
- Automatically controlled oil cooling system
- Overload protection system

## GENERAL FEATURES

- 1 spring-mounted axle chassis with brake-/lighting system and mudguard for up to 80 km/h (car application)
- Lockable aluminum cover
- Back support via mechanical sprag
- Front support via mechanical parking jack
- Automatic rope guiding device
- Large rope drum with stable pressure rollers for fixing the rope

## OPTIONAL FEATURES

- Diesel engine with 25 kW (34 hp)
- Upper winch with max. pulling force of 23 kN and 31 m/min
- Upper winch with max. pulling force of 34 kN and 33 m/min
- 1 spring-mounted axle chassis with brake-/lighting system and mudguard for car application up to 100 km/h
- Cable or radio remote control
- Height adjustable towing bar with change coupling for truck application
- Free wheel device to pull out ropes by hand (without engine)
- Slack rope safety system => prevents rope from getting loose and crossed over (only for steel ropes)
- Protective undercarriage cover
- Spare wheel with lockable holding device
- Lockable tool box
- Grounding plate
- Noise reduction kit
- Arctic kit – with preheating system for up to -30 °C
- Extra-large drum
- Biodegradable hydraulic oil
- Both drum winches operate simultaneously
- Ropes in various versions (steel or synthetic fibres)

Special modifications or equipment on request.

## KEY FACTS

Full electronically controlled drum winch with a max. pulling force of 18 kN / 40.8 kN and max. speed of 49 m/min / 34 m/min. Suitable for fast and safe tower equipping, erection or final sagging.

# DRUM WINCH ST 500 D



## PULLER PERFORMANCE – BOTH WINCHES

Max. pulling force (inner rope layer): 60 kN  
Max. speed (outer rope layer): 78 m/min

## DRUM CAPACITY

K = 87500 => e.g. Ø 14 mm 450 m

## DIMENSIONS/WEIGHT

Length x width x height: 4330 x 2300 x 2200 mm  
Weight (without rope): 4000 kg



## ENGINE

- Max. 65 kW (88 hp)
- Liquid-cooled diesel engine with automatic rpm control
- 24 V system with high capacity battery

## DRIVE SYSTEM

- Drum with completely enclosed drive unit (motor + brake + gear box) for minimal maintenance and high efficiency
- Continuously variable rope speed and accurate control at max. load
- 2 automatically activated drum safety brake systems

## CONTROL SYSTEM

- Control of conductor in/out via joystick
- PLC controlled machine for optimized productivity and safety
- WVGA Color display for monitoring the pulling force, hydraulic-, engine- and electrical systems with intelligent diagnostic and troubleshooting system
- Automatically controlled oil-cooling system
- ZECK stringing data record system with USB interface
- Overload protection system

## GENERAL FEATURES

- 2 rigid axle chassis with parking brake for up to 30 km/h
- Lockable aluminum cover
- Back support via mechanical sprag
- Front support via mechanical parking jack
- Automatic rope guiding device
- Large rope drum with stable pressure rollers for fixing the rope

## OPTIONAL FEATURES

- Brake-/lighting system and mudguards (for rigid axle chassis)
- 2 spring-mounted axle chassis with brake-/lighting system and mudguard for up to 80 km/h
- Cable or radio remote control
- Electronic printer for ZECK stringing data record system
- Remote diagnosis with GPS modem
- Height adjustable towing bar with change coupling for car or truck application
- Free wheel device to pull out ropes by hand (without engine)
- Slack rope safety system => prevents rope from getting loose and crossed over (only for steel ropes)
- Protective undercarriage cover
- Spare wheel with lockable holding device
- Lockable tool box
- Grounding plate
- Noise reduction kit
- Arctic kit – with preheating system for up to -30 °C
- Extra-large drum
- Biodegradable hydraulic oil
- Both drum winches operate simultaneously
- Ropes in various versions (steel or synthetic fibres)

Special modifications or equipment on request.

## KEY FACTS

Full electronically controlled double drum winch with a max. pulling force of 60 kN at each winch and max. speed of 78 m/min. Suitable for fast and safe tower equipping, erection or final sagging. Upper winch is e.g. often limited to 2.5 t (for gin pole lifting) according to customer requirements.

## PULLER PERFORMANCE

Max. pulling force (inner rope layer): 60 kN  
Max. speed (outer rope layer): 46 m/min

## DRUM CAPACITY

K = 87500 => e.g. Ø 14 mm 450 m

## DIMENSIONS/WEIGHT

Length x width x height: 3250 x 2290 x 1550 mm  
Weight (without rope): 1500 kg



## ENGINE

- Max. 38 kW (51.7 hp)
- Liquid-cooled diesel engine
- 12 V system with high capacity battery

## DRIVE SYSTEM

- Drum with completely enclosed drive unit (motor + brake + gear box) for minimal maintenance and high efficiency
- Continuously variable rope speed and accurate control at max. load
- Automatically activated drum safety brake system

## CONTROL SYSTEM

- Control of rope in/out via hand lever
- Control instruments for the pulling force and all machine data
- Automatically controlled oil cooling system

## GENERAL FEATURES

- 1 rigid axle chassis for car application and up to 30 km/h
- Lockable aluminum cover
- Back support via mechanical sprag
- Front support via mechanical parking jack
- Automatic rope guiding device
- Large rope drum with stable pressure rollers for fixing the rope

## OPTIONAL FEATURES

- Brake-/lighting system and mudguards (for rigid axle chassis)
- 1 spring-mounted axle chassis with brake-/lighting system and mudguard for up to 80 km/h (car application)
- Height adjustable towing bar with change coupling for truck application
- Cable or radio remote control
- Free wheel device to pull out ropes by hand (without engine)
- Slack rope safety system => prevents rope from getting loose and crossed over (only for steel ropes)
- Spare wheel with lockable holding device
- Lockable tool box
- Grounding plate
- Noise reduction kit
- Arctic kit – with preheating system for up to -30 °C
- Extra-large drum K=176100 => e.g. 14 mm = 890 m (machine type **ST 550 E**)
- Biodegradable hydraulic oil
- Ropes in various versions (steel or synthetic fibres)

Special modifications or equipment on request.

## KEY FACTS

Flexible drum winch with a max. pulling force of 60 kN and max. speed of 46 m/min. Suitable for fast and safe tower equipping, erection or final sagging.

# DRUM WINCH ST 1100 E



## PULLER PERFORMANCE

Max. pulling force at stage (inner rope layer):	135 kN
Max. speed at stage (outer rope layer):	18 m/min
	28 m/min (at 60 kN)

## DRUM CAPACITY

K = 114000 => e.g. Ø 21 mm	250 m
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## DIMENSIONS/WEIGHT

Length x width x height:	4480 x 2310 x 1700 mm
Weight (without rope):	2500 kg



## ENGINE

- Max. 38 kW (51.7 hp)
- Liquid-cooled diesel engine
- 12 V system with high capacity battery

## DRIVE SYSTEM

- Drum with completely enclosed drive unit (motor + brake + gear box) for minimal maintenance and high efficiency
- Continuously variable rope speed and accurate control at max. load
- Automatically activated drum safety brake system

## CONTROL SYSTEM

- Control of rope in/out via hand lever
- Control instruments for the pulling force and all machine data
- Automatically controlled oil cooling system
- Switchable 2-stage-system for max. flexibility

## GENERAL FEATURES

- 1 rigid axle chassis for car application and up to 30 km/h
- Lockable aluminum cover
- Back support via mechanical sprag
- Front support via mechanical parking jack
- Automatic rope guiding device
- Large rope drum with stable pressure rollers for fixing the rope

## OPTIONAL FEATURES

- Brake-/lighting system and mudguards (for rigid axle chassis)
- 1 spring-mounted axle chassis with brake-/lighting system and mudguard for up to 80 km/h (car application)
- Cable or radio remote control
- Height adjustable towing bar with change coupling for truck application
- Slack rope safety system => prevents rope from getting loose and crossed over (only for steel ropes)
- Spare wheel with lockable holding device
- Lockable tool box
- Grounding plate
- Noise reduction kit
- Arctic kit - with preheating system for up to -30 °C
- Extra-large drum
- Biodegradable hydraulic oil
- Ropes in various versions (steel or synthetic fibres)

Special modifications or equipment on request.

## KEY FACTS

Flexible drum winch with a max. pulling force of 135 kN and max. speed of 28 m/min (at 60 kN). Suitable for fast and safe tower equipping, erection or final sagging.

## PULLER PERFORMANCE – UPPER WINCH

Max. pulling force (inner rope layer): 60 kN  
Max. speed (outer rope layer): 78 m/min

## PULLER PERFORMANCE – LOWER WINCH

Max. pulling force (inner rope layer): 135 kN  
Max. speed (outer rope layer): 37 m/min

## DRUM CAPACITY

K = 87500 => e.g. Ø 14 mm (upper drum) 450 m  
K = 114000 => e.g. Ø 21 mm (lower drum) 250 m

## DIMENSIONS/WEIGHT

Length x width x height: 4590 x 2300 x 2200 mm  
Weight (without rope): 4000 kg



## ENGINE

- Max. 65 kW (88 hp)
- Liquid-cooled diesel engine with automatic rpm control
- 24 V system with high capacity battery

## DRIVE SYSTEM

- Drum with completely enclosed drive unit (motor + brake + gear box) for minimal maintenance and high efficiency
- Continuously variable rope speed and accurate control at max. load
- 2 automatically activated drum safety brake systems

## CONTROL SYSTEM

- Control of conductor in/out via joystick
- PLC controlled machine for optimized productivity and safety
- WVGA Color display for monitoring the pulling force, hydraulic-, engine- and electrical systems with intelligent diagnostic and troubleshooting system
- Automatically controlled oil-cooling system
- ZECK stringing data record system with USB interface
- Overload protection system

## GENERAL FEATURES

- 2 rigid axle chassis with parking brake for up to 30 km/h
- Lockable aluminum cover
- Back support via mechanical sprag
- Front support via mechanical parking jack
- Automatic rope guiding device
- Large rope drum with stable pressure rollers for fixing the rope

## OPTIONAL FEATURES

- Brake-/lighting system and mudguards (for rigid axle chassis)
- 2 spring-mounted axle chassis with brake-/lighting system and mudguard for up to 80 km/h
- Cable or radio remote control
- Electronic printer for ZECK stringing data record system
- Remote diagnosis with GPS modem
- Spare wheel with lockable holding device
- Free wheel device to pull out ropes by hand at upper winch (without engine)
- Lockable tool box
- Slack rope safety system => prevents rope from getting loose and crossed over (only for steel ropes)
- Grounding plate
- Noise reduction kit
- Arctic kit - with preheating system for up to -30 °C
- Biodegradable hydraulic oil
- Both drum winches operate simultaneously
- Ropes in various versions (steel or synthetic fibres)

Special modifications or equipment on request.

## KEY FACTS

Full electronically controlled double drum winch with a max. pulling force of 60 kN / 135 kN and max. speed of 78 m/min / 37 m/min. Suitable for fast and safe tower equipping, erection or final sagging.



# OVERHEAD TRANSMISSION LINE CONSTRUCTION



## B2 PULLER



## PULLER PERFORMANCE

Max. pulling force:	25 kN
Max. speed:	4 km/h
Speed at max. pulling force:	1.7 km/h

## BULL WHEELS

Number of bull wheels:	2
Diameter of bull wheels:	350 mm
Groove diameter:	41 mm

## DIMENSIONS/WEIGHT

Length x width x height:	3270 x 1670 x 1650 mm
Weight:	1220 kg



## ENGINE

- Max. 26 kW (35 hp)
- Liquid-cooled diesel engine
- 12 V system with high capacity battery

## DRIVE SYSTEM

- Each bull wheel with completely closed individual drive unit (motor + brake + gear box) for minimal maintenance and high efficiency
- Automatically controlled oil cooling system
- Each bull wheel with an automatically activated safety brake system
- Hydraulic reel drive via hydraulic engine and gear box for minimal maintenance
- Automatic rope guiding device
- Hydraulic reel lifting device for reels with  $\varnothing$  1100 – 1400 mm
- Special reel shaft – fast change of reels without tools

## CONTROL SYSTEM

- Control of rope in/out via hand lever
- Control instruments for the pulling force and all machine data
- Overload protection system

## GENERAL FEATURES

- 1 rigid axle chassis for up to 30 km/h
- Lockable aluminum cover
- Back support via robust mechanical supporting plates
- Front support via robust mechanical sprag
- Automatic rope clamping system with grounding device

## OPTIONAL FEATURES

- Electronic pulling force recorder
- Cable or radio remote control
- Biodegradable hydraulic oil
- Pre-cleaner for engine air filter
- Noise reduction kit

Special modifications or equipment on request.

## KEY FACTS

Puller with large bull wheels ( $\varnothing$  350 mm) made of hardened steel with groove diameter 41 mm. Max. pulling force of 25 kN.

# PULLER SPW 2.5



## PULLER PERFORMANCE

Max. pulling force:	25 kN
Max. speed:	6 km/h
Speed at max. pulling force:	1.6 km/h

## BULL WHEELS

Number of bull wheels:	2
Diameter of bull wheels:	350 mm
Groove diameter:	41 mm

## DIMENSIONS/WEIGHT

Length x width x height:	4120 x 1950 x 2200 mm
Weight:	1800 kg



## ENGINE

- Max. 26 kW (35 hp)
- Liquid-cooled diesel engine with automatic rpm control
- 12 V system with high capacity battery

## DRIVE SYSTEM

- Each bull wheel with completely closed individual drive unit (motor + brake + gear box) for minimal maintenance and high efficiency
- Automatically controlled oil cooling system
- Each bull wheel with an automatically activated safety brake system
- Hydraulic reel drive via hydraulic engine and gear box for minimal maintenance
- Automatic rope guiding device
- Hydraulic reel lifting device for reels with  $\varnothing$  1100 – 1400 mm
- Special reel shaft – fast change of reels without tools

## CONTROL SYSTEM

- Control of rope in/out via hand lever
- Display for pulling/tensioning force and all instruments to control machine data
- Overload protection system

## GENERAL FEATURES

- 1 rigid axle chassis for car application and up to 30 km/h
- Lockable aluminum cover
- Back support via robust mechanical supporting plates
- Front support via hydraulic sprag
- Automatic rope clamping system with grounding device

## OPTIONAL FEATURES

- 1 spring-mounted axle chassis with brake-/lighting system and mudguard for up to 80 km/h (car application)
- PLC control system with WQVGA color display
- Electronic pulling force recorder
- Diameter of bull wheels 400 mm
- Cable or radio remote control
- Biodegradable hydraulic oil
- Pre-cleaner for engine air filter
- Arctic kit – with preheating system for up to -30 °C
- Noise reduction kit
- For operation as underground cable puller

Special modifications or equipment on request.

## KEY FACTS

Puller with large bull wheels ( $\varnothing$  350 mm) made of hardened steel with groove diameter 41 mm. Max. pulling force of 25 kN.

## PULLER PERFORMANCE

Max. pulling force:	30 kN
Max. speed:	5 km/h
Speed at max. pulling force:	1.6 km/h

## BULL WHEELS

Number of bull wheels:	2
Diameter of bull wheels:	400 mm
Groove diameter:	41 mm

## DIMENSIONS/WEIGHT

Length x width x height:	3100 x 1950 x 2200 mm
Weight:	2000 kg (max. 3500 kg with rope)



## ENGINE

- Max. 26 kW (35 hp)
- Liquid-cooled diesel engine with automatic rpm control
- 12 V system with high capacity battery

## DRIVE SYSTEM

- Each bull wheel with completely closed individual drive unit (motor + brake + gear box) for minimal maintenance and high efficiency
- Automatically controlled oil cooling system
- Each bull wheel with an automatically activated safety brake system
- Hydraulic reel drive via hydraulic engine and gear box for minimal maintenance
- Automatic rope guiding device
- Hydraulic reel lifting device for reels with  $\varnothing$  1100 – 1400 mm
- Special reel shaft – fast change of reels without tools

## CONTROL SYSTEM

- Control of conductor in/out via joystick
- PLC controlled machine for optimized productivity and safety
- WQVGA Color display for monitoring the pulling/tensioning force, hydraulic-, engine- and electrical system with intelligent diagnostic and troubleshooting system
- ZECK stringing data record system with USB interface
- Overload protection system

## GENERAL FEATURES

- 1 spring-mounted axle chassis with brake-/lighting system and mudguard for up to 80 km/h (car application)
- Lockable aluminum cover
- Back support via hydraulic cylinder
- Front support via robust mechanical supporting plates
- Automatic rope clamping system with grounding device

## OPTIONAL FEATURES

- Special rope guiding device for operation as underground cable puller
- Electronic printer for ZECK stringing data record system
- Cable or radio remote control
- Biodegradable hydraulic oil
- Pre-cleaner for engine air filter
- Arctic kit – with preheating system for up to -30 °C
- Noise reduction kit

Special modifications or equipment on request.

## KEY FACTS

Full electronically controlled puller with large bull wheels ( $\varnothing$  400 mm) made of hardened steel and groove diameter 41 mm. Max. pulling force of 30 kN and ZECK stringing data record system. Machine can be towed on the highway with mounted steel reel including rope.

# PULLER SPW 3.5 E



## PULLER PERFORMANCE

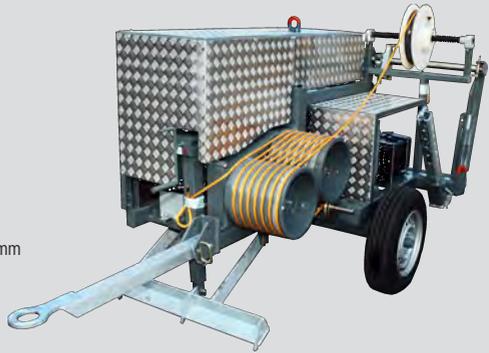
Max. pulling force:	35 kN
Max. speed:	4 km/h
Speed at max. pulling force:	1.2 km/h

## BULL WHEELS

Number of bull wheels:	2
Diameter of bull wheels:	350 mm
Groove diameter:	41 mm

## DIMENSIONS/WEIGHT

Length x width x height:	3270 x 1670 x 1650 mm
Weight:	1220 kg



## ENGINE

- Max. 26 kW (35 hp)
- Liquid-cooled diesel engine
- 12 V system with high capacity battery

## DRIVE SYSTEM

- Each bull wheel with completely closed individual drive unit (motor + brake + gear box) for minimal maintenance and high efficiency
- Automatically controlled oil cooling system
- Each bull wheel with an automatically activated safety brake system
- Hydraulic reel drive via hydraulic engine and gear box for minimal maintenance
- Automatic rope guiding device
- Hydraulic reel lifting device for reels with  $\varnothing$  1100 – 1400 mm
- Special reel shaft – fast change of reels without tools

## CONTROL SYSTEM

- Control of rope in/out via hand lever
- Control instruments for the pulling force and all machine data
- Overload protection system

## GENERAL FEATURES

- 1 rigid axle chassis for up to 30 km/h
- Lockable aluminum cover
- Back support via robust mechanical supporting plates
- Front support via robust mechanical sprag
- Automatic rope clamping system with grounding device

## OPTIONAL FEATURES

- Electronic pulling force recorder
- Cable or radio remote control
- Biodegradable hydraulic oil
- Pre-cleaner for engine air filter
- Noise reduction kit

Special modifications or equipment on request.

## KEY FACTS

Puller with large bull wheels ( $\varnothing$  350 mm) made of hardened steel with groove diameter 41 mm. Max. pulling force of 35 kN.

## PULLER PERFORMANCE

Max. pulling force:	50 kN
Max. speed:	5 km/h
Speed at max. pulling force:	2.6 km/h

## BULL WHEELS

Number of bull wheels:	2
Diameter of bull wheels:	450 mm
Groove diameter:	49 mm

## DIMENSIONS/WEIGHT

Length x width x height:	4300 x 2180 x 1850 mm
Weight:	2620 kg



## ENGINE

- Max. 65 kW (88 hp)
- Liquid-cooled diesel engine with automatic rpm control
- 24 V system with high capacity battery

## DRIVE SYSTEM

- Each bull wheel with completely closed individual drive unit (motor + brake + gear box) for minimal maintenance and high efficiency
- Automatically controlled oil cooling system
- Each bull wheel with an automatically activated safety brake system
- Hydraulic reel drive via hydraulic engine and gear box for minimal maintenance
- Automatic rope guiding device
- Hydraulic reel lifting device for reels with Ø 1100 – 1400 mm
- Special reel shaft – fast change of reels without tools

## CONTROL SYSTEM

- Control of conductor in/out via joystick
- PLC controlled machine for optimized productivity and safety
- WVGA Color display for monitoring the pulling force, hydraulic-, engine- and electrical systems with intelligent diagnostic and troubleshooting system
- ZECK stringing data record system with USB interface
- Overload protection system

## GENERAL FEATURES

- 1 rigid axle chassis with parking brake for up to 30 km/h
- Lockable aluminum cover
- Back support via robust mechanical supporting plates
- Front support via robust mechanical sprag
- Automatic rope clamping system with grounding device

## OPTIONAL FEATURES

- Brake-/lighting system and mudguards (for rigid axle chassis)
- 1 spring-mounted axle chassis with brake-/lighting system and mudguard for up to 80 km/h (car application)
- Electronic printer for ZECK stringing data record system
- Cable or radio remote control
- Back support via hydraulic cylinder
- Front support via hydraulic sprag
- Synchronization-System
- Remote diagnosis with GPS modem
- Biodegradable hydraulic oil
- Pre-cleaner for engine air filter
- Arctic kit – with preheating system for up to -30 °C
- Noise reduction kit
- Special rope guiding device for operation as underground cable puller

Special modifications or equipment on request.

## KEY FACTS

Full electronically controlled puller with large bull wheels (Ø 450 mm) made of hardened steel and groove diameter 49 mm. Max. pulling force of 50 kN and ZECK stringing data record system.

# ROPE RECOVERING UNIT

## WV 7/2



### PULLER PERFORMANCE

Max. pulling force (inner/outer rope layer): 70 kN / 24 kN  
Max. speed (inner/outer rope layer): 46 m/min / 130 m/min

### DRUM CAPACITY

K = 1103100 => e.g. Ø 19 mm: 3100 m  
Width: 850 mm; outside Ø 1360 mm;  
inner Ø 460 mm

### DIMENSIONS/WEIGHT

Length x width x height: 5300 x 2400 x 2520 mm  
Weight: 3800 kg



### ENGINE

- Max. 54 kW (73 hp)
- Liquid-cooled diesel engine with automatic rpm control
- 12 V system with high capacity battery

### DRIVE SYSTEM

- Drum with completely enclosed drive unit (motor + brake + gear box) for minimal maintenance and high efficiency
- Automatically controlled oil cooling system
- Automatically activated drum safety brake system
- Hydraulic drum drive via hydraulic engine and gear box for minimal maintenance
- Hydraulic rope guiding device
- Drum flanges can be opened hydraulically => easy handling of the old conductor package

### CONTROL SYSTEM

- Cable remote control
  - Pulls rope in/out
  - Operates the rope guiding system
  - Opens/closes the drum flanges
- PLC controlled machine for optimized productivity and safety
- WVGA Color display for monitoring the pulling force, hydraulic-, engine- and electrical systems with intelligent diagnostic and troubleshooting system
- ZECK stringing data record system with USB interface
- Overload protection system

### GENERAL FEATURES

- 2 rigid axle chassis with parking brake for up to 30 km/h
- Lockable aluminum cover
- Back support via robust mechanical supporting plates
- Front support via hydraulic cylinder

### OPTIONAL FEATURES

- Brake-/lighting system and mudguards (for rigid axle chassis)
- 2 spring-mounted axle chassis with brake-/lighting system and mudguard for up to 80 km/h
- Special reel for pulling ropes => machine can be used as puller
- Electronic printer for ZECK stringing data record system
- Radio remote control
- Hydraulic system (700 bar) to power compression tools
- Biodegradable hydraulic oil
- Pre-cleaner for engine air filter
- Arctic kit – with preheating system for up to -30 °C
- Noise reduction kit

Special modifications or equipment on request.

### KEY FACTS

Full electronically controlled winch for conductor scrapping with a max. pulling force of 70 kN, max. speed of 130 m/min and ZECK stringing data record system.

Machine is specially constructed for highly efficient scrapping of old conductors where even conductor spacers can be wound up on the drum.

## PULLER PERFORMANCE

Max. pulling force:	75 kN
Max. speed:	5 km/h
Speed at max. pulling force:	1.7 km/h

## BULL WHEELS

Number of bull wheels:	2
Diameter of bull wheels:	450 mm
Groove diameter:	49 mm

## DIMENSIONS/WEIGHT

Length x width x height:	4300 x 2180 x 1850 mm
Weight:	2620 kg



## ENGINE

- Max. 65 kW (88 hp)
- Liquid-cooled diesel engine with automatic rpm control
- 24 V system with high capacity battery

## DRIVE SYSTEM

- Each bull wheel with completely closed individual drive unit (motor + brake + gear box) for minimal maintenance and high efficiency
- Automatically controlled oil cooling system
- Each bull wheel with an automatically activated safety brake system
- Hydraulic reel drive via hydraulic engine and gear box for minimal maintenance
- Automatic rope guiding device
- Hydraulic reel lifting device for reels with  $\varnothing$  1100 – 1400 mm
- Special reel shaft – fast change of reels without tools

## CONTROL SYSTEM

- Control of conductor in/out via joystick
- PLC controlled machine for optimized productivity and safety
- WVGA Color display for monitoring the pulling force, hydraulic-, engine- and electrical systems with intelligent diagnostic and troubleshooting system
- ZECK stringing data record system with USB interface
- Overload protection system

## GENERAL FEATURES

- 1 rigid axle chassis with parking brake for up to 30 km/h
- Lockable aluminum cover
- Back support via robust mechanical supporting plates
- Front support via robust mechanical sprag
- Automatic rope clamping system with grounding device

## OPTIONAL FEATURES

- Brake-/lighting system and mudguards (for rigid axle chassis)
- 1 spring-mounted axle chassis with brake-/lighting system and mudguard for up to 80 km/h (car application)
- Electronic printer for ZECK stringing data record system
- Cable or radio remote control
- Back support via hydraulic cylinder
- Front support via hydraulic sprag
- Synchronization-System
- Remote diagnosis with GPS modem
- Biodegradable hydraulic oil
- Pre-cleaner for engine air filter
- Arctic kit – with preheating system for up to -30 °C
- Noise reduction kit
- Special rope guiding device for operation as underground cable puller

Special modifications or equipment on request.

## KEY FACTS

Full electronically controlled puller with large bull wheels ( $\varnothing$  450 mm) made of hardened steel and groove diameter 49 mm. Max. pulling force of 75 kN and ZECK stringing data record system.

# PULLER SPW 7.5 R



## PULLER PERFORMANCE

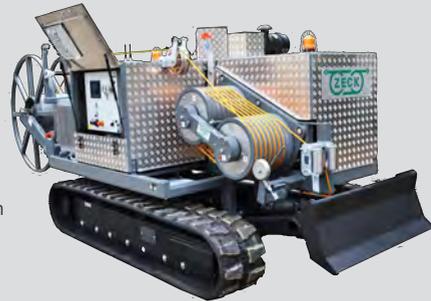
Max. pulling force:	75 kN
Max. speed:	5 km/h
Speed at max. pulling force:	1.7 km/h

## BULL WHEELS

Number of bull wheels:	2
Diameter of bull wheels:	450 mm
Groove diameter:	49 mm

## DIMENSIONS/WEIGHT

Length x width x height:	4400 x 1820 x 2020 mm
Weight:	4400 kg



## ENGINE

- Max. 65 kW (88 hp)
- Liquid-cooled diesel engine with automatic rpm control
- 24 V system with high capacity battery

## DRIVE SYSTEM

- Each bull wheel with completely closed individual drive unit (motor + brake + gear box) for minimal maintenance and high efficiency
- Automatically controlled oil cooling system
- Each bull wheel with an automatically activated safety brake system
- Hydraulic reel drive via hydraulic engine and gear box for minimal maintenance
- Automatic rope guiding device
- Hydraulic reel lifting device for reels with  $\varnothing$  1100 – 1400 mm
- Special reel shaft – fast change of reels without tools

## CONTROL SYSTEM

- PLC controlled machine for optimized productivity and safety
- WVGA Color display for monitoring the pulling force, hydraulic-, engine- and electrical systems with intelligent diagnostic and troubleshooting system
- ZECK stringing data record system with USB interface
- Overload protection system
- Radio remote control for crawler chassis and pulling operation

## GENERAL FEATURES

- Crawler chassis; max. speed 4.7 km/h
- Lockable aluminum cover
- Front support via hydraulic sprag
- Automatic rope clamping system with grounding device
- Special rope guiding device for operation as underground cable puller

## OPTIONAL FEATURES

- Electronic printer for ZECK stringing data record system
- Synchronization-System
- Remote diagnosis with GPS modem
- Biodegradable hydraulic oil
- Pre-cleaner for engine air filter
- Arctic kit – with preheating system for up to  $-30^{\circ}\text{C}$
- Noise reduction kit

Special modifications or equipment on request.

## KEY FACTS

Full electronically controlled puller with crawler chassis for overhead transmission lines and underground cable installation. Large bull wheels ( $\varnothing$  450 mm) made of hardened steel and groove diameter 49 mm. Max. pulling force of 75 kN and ZECK stringing data record system.

## PULLER PERFORMANCE

Max. pulling force:	90 kN
Max. speed:	5 km/h
Speed at max. pulling force:	2.3 km/h

## BULL WHEELS

Number of bull wheels:	2
Diameter of bull wheels:	540 mm
Groove diameter:	52 mm

## DIMENSIONS/WEIGHT

Length x width x height:	4550 x 2180 x 2180 mm
Weight:	3690 kg



## ENGINE

- Max. 103 kW (140 hp)
- Liquid-cooled diesel engine with automatic rpm control
- 24 V system with high capacity battery

## DRIVE SYSTEM

- Each bull wheel with completely closed individual drive unit (motor + brake + gear box) for minimal maintenance and high efficiency
- Automatically controlled oil cooling system
- Hydraulic reel drive via hydraulic engine and gear box for minimal maintenance
- Automatic rope guiding device
- Hydraulic reel lifting device for reels with  $\varnothing$  1100 – 1400 mm
- Special reel shaft – fast change of reels without tools

## CONTROL SYSTEM

- Control of conductor in/out via joystick
- PLC controlled machine for optimized productivity and safety
- WVGA Color display for monitoring the pulling force, hydraulic-, engine- and electrical systems with intelligent diagnostic and troubleshooting system
- ZECK stringing data record system with USB interface
- Overload protection system

## GENERAL FEATURES

- 1 rigid axle chassis with parking brake for up to 30 km/h
- Lockable aluminum cover
- Back support via robust mechanical supporting plates
- Front support via hydraulic sprag
- Automatic rope clamping system with grounding device

## OPTIONAL FEATURES

- Brake-/lighting system and mudguards (for rigid axle chassis)
- 1 spring-mounted axle chassis with brake-/lighting system and mudguard for up to 80 km/h (car application)
- Electronic printer for ZECK stringing data record system
- Cable or radio remote control
- Back support via hydraulic cylinder
- Synchronization-System
- Remote diagnosis with GPS modem
- Biodegradable hydraulic oil
- Pre-cleaner for engine air filter
- Arctic kit – with preheating system for up to -30 °C
- Noise reduction kit
- Special rope guiding device for operation as underground cable puller

Special modifications or equipment on request.

## KEY FACTS

Full electronically controlled puller with large bull wheels ( $\varnothing$  540 mm) made of hardened steel and groove diameter 52 mm. Max. pulling force of 90 kN and ZECK stringing data record system.

# PULLER SPW 9+5



## PULLER PERFORMANCE

Max. pulling force:	2 x 50 kN or 1 x 90 kN
Max. speed:	5 km/h
Speed at max. pulling force:	2.3 km/h

## BULL WHEELS

Number of bull wheels:	4
Diameter of bull wheels:	540 mm (90 kN) and 450 mm (50 kN)
Groove diameter:	52 mm (90 kN) and 49 mm (50 kN)

## DIMENSIONS/WEIGHT

Length x width x height:	5520 x 2280 x 2140 mm
Weight:	5150 kg



## ENGINE

- Max. 103 kW (140 hp)
- Liquid-cooled diesel engine with automatic rpm control
- 24 V system with high capacity battery

## DRIVE SYSTEM

- Each bull wheel with completely closed individual drive unit (motor + brake + gear box) for minimal maintenance and high efficiency
- Automatically controlled oil cooling system
- Each bull wheel with an automatically activated safety brake system
- Hydraulic reel drive via hydraulic engine and gear box for minimal maintenance
- Automatic rope guiding device
- Hydraulic reel lifting device for reels with  $\varnothing$  1100 – 1400 mm
- Special reel shaft – fast change of reels without tools

## CONTROL SYSTEM

- Control of conductor in/out via joystick
- PLC controlled machine for optimized productivity and safety
- WVGA Color display for monitoring the pulling force, hydraulic-, engine- and electrical systems with intelligent diagnostic and troubleshooting system
- ZECK stringing data record system with USB interface
- Overload protection system

## GENERAL FEATURES

- 1 rigid axle chassis with parking brake for up to 30 km/h
- Lockable aluminum cover
- Back support via robust mechanical supporting plates
- Front support via hydraulic sprag
- Automatic rope clamping system with grounding device

## OPTIONAL FEATURES

- Brake-/lighting system and mudguards (for rigid axle chassis)
- 2 spring-mounted axle chassis with brake-/lighting system and mudguard for up to 80 km/h
- Electronic printer for ZECK stringing data record system
- Cable or radio remote control
- Back support via hydraulic cylinder
- Synchronization-System
- Remote diagnosis with GPS modem
- Biodegradable hydraulic oil
- Pre-cleaner for engine air filter
- Arctic kit – with preheating system for up to -30 °C
- Noise reduction kit
- Special rope guiding device for operation as underground cable puller

Special modifications or equipment on request.

## KEY FACTS

Full electronically controlled puller for 2 ropes with large bull wheels ( $\varnothing$  540 mm (90 kN) and 450 mm (50 kN)) made of hardened steel and groove diameter 52 mm (90 kN) and 49 mm (50 kN). Max. pulling force of 2 x 50 kN or 1 x 90 kN and ZECK stringing data record system.

## PULLER PERFORMANCE

Max. pulling force:	130 kN
Max. speed:	4.5 km/h
Speed at max. pulling force:	2.2 km/h

## BULL WHEELS

Number of bull wheels:	2
Diameter of bull wheels:	620 mm
Groove diameter:	60 mm

## DIMENSIONS/WEIGHT

Length x width x height:	4800 x 2300 x 2330 mm
Weight:	5000 kg



## ENGINE

- Max. 147 kW (200 hp)
- Liquid-cooled diesel engine with automatic rpm control
- 24 V system with high capacity battery

## DRIVE SYSTEM

- Each bull wheel with completely closed individual drive unit (motor + brake + gear box) for minimal maintenance and high efficiency
- Automatically controlled oil cooling system
- Each bull wheel with an automatically activated safety brake system
- Hydraulic reel drive via hydraulic engine and gear box for minimal maintenance
- Automatic rope guiding device
- Hydraulic reel lifting device for reels with  $\varnothing$  1100 – 1400 mm
- Special reel shaft – fast change of reels without tools

## CONTROL SYSTEM

- Control of conductor in/out via joystick
- PLC controlled machine for optimized productivity and safety
- WVGA Color display for monitoring the pulling force, hydraulic-, engine- and electrical systems with intelligent diagnostic and troubleshooting system
- ZECK stringing data record system with USB interface
- Overload protection system

## GENERAL FEATURES

- 1 rigid axle chassis with parking brake for up to 30 km/h
- Lockable aluminum cover
- Back support via robust mechanical supporting plates
- Front support via hydraulic sprag
- Automatic rope clamping system with grounding device

## OPTIONAL FEATURES

- Brake-/lighting system and mudguards (for rigid axle chassis)
- 2 spring-mounted axle chassis with brake-/lighting system and mudguard for up to 80 km/h
- Electronic printer for ZECK stringing data record system
- Cable or radio remote control
- Back support via hydraulic cylinder
- Synchronization-System
- Remote diagnosis with GPS modem
- Biodegradable hydraulic oil
- Pre-cleaner for engine air filter
- Arctic kit – with preheating system for up to -30 °C
- Noise reduction kit
- Special rope guiding device for operation as underground cable puller

Special modifications or equipment on request.

## KEY FACTS

Full electronically controlled puller with large bull wheels ( $\varnothing$  620 mm) made of hardened steel and groove diameter 60 mm. Max. pulling force of 130 kN and ZECK stringing data record system.

# PULLER SPW 16



## PULLER PERFORMANCE

Max. pulling force:	160 kN
Max. speed:	4,5 km/h
Speed at max. pulling force:	2 km/h

## BULL WHEELS

Number of bull wheels:	2
Diameter of bull wheels:	620 mm
Groove diameter:	60 mm

## DIMENSIONS/WEIGHT

Length x width x height:	4750 x 2270 x 2350 mm
Weight:	5000 kg



## ENGINE

- Max. 147 kW (200 hp)
- Liquid-cooled diesel engine with automatic rpm control
- 24 V system with high capacity battery

## DRIVE SYSTEM

- Each bull wheel with completely closed individual drive unit (motor + brake + gear box) for minimal maintenance and high efficiency
- Automatically controlled oil cooling system
- Each bull wheel with an automatically activated safety brake system
- Hydraulic reel drive via hydraulic engine and gear box for minimal maintenance
- Automatic rope guiding device
- Hydraulic reel lifting device for reels with  $\varnothing$  1100 – 1400 mm
- Special reel shaft – fast change of reels without tools

## CONTROL SYSTEM

- Control of conductor in/out via joystick
- PLC controlled machine for optimized productivity and safety
- WVGA Color display for monitoring the pulling force, hydraulic-, engine- and electrical systems with intelligent diagnostic and troubleshooting system
- ZECK stringing data record system with USB interface
- Overload protection system

## GENERAL FEATURES

- 1 rigid axle chassis with parking brake for up to 30 km/h
- Lockable aluminum cover
- Back support via robust mechanical supporting plates
- Front support via hydraulic sprag
- Automatic rope clamping system with grounding device

## OPTIONAL FEATURES

- Brake-/lighting system and mudguards (for rigid axle chassis)
- 2 spring-mounted axle chassis with brake-/lighting system and mudguard for up to 80 km/h
- Electronic printer for ZECK stringing data record system
- Cable or radio remote control
- Back support via hydraulic cylinder
- Synchronization-System
- Remote diagnosis with GPS modem
- Biodegradable hydraulic oil
- Pre-cleaner for engine air filter
- Arctic kit – with preheating system for up to -30 °C
- Noise reduction kit
- Special rope guiding device for operation as underground cable puller

Special modifications or equipment on request.

## KEY FACTS

Full electronically controlled puller with large bull wheels ( $\varnothing$  620 mm) made of hardened steel and groove diameter 60 mm. Max. pulling force of 160 kN and ZECK stringing data record system.

## PULLER PERFORMANCE

Max. pulling force:	170 kN
Max. speed:	4.5 km/h
Speed at max. pulling force:	2.3 km/h

## BULL WHEELS

Number of bull wheels:	2
Diameter of bull wheels:	620 mm
Groove diameter:	60 mm

## DIMENSIONS/WEIGHT

Length x width x height:	4780 x 2280 x 2450 mm
Weight:	5100 kg



## ENGINE

- Max. 200 kW (272 hp)
- Liquid-cooled diesel engine with automatic rpm control
- 24 V system with high capacity battery

## DRIVE SYSTEM

- Each bull wheel with completely closed individual drive unit (motor + brake + gear box) for minimal maintenance and high efficiency
- Automatically controlled oil cooling system
- Each bull wheel with an automatically activated safety brake system
- Hydraulic reel drive via hydraulic engine and gear box for minimal maintenance
- Automatic rope guiding device
- Hydraulic reel lifting device for reels with  $\varnothing$  1100 – 1400 mm
- Special reel shaft – fast change of reels without tools

## CONTROL SYSTEM

- Control of conductor in/out via joystick
- PLC controlled machine for optimized productivity and safety
- WVGA Color display for monitoring the pulling force, hydraulic-, engine- and electrical systems with intelligent diagnostic and troubleshooting system
- ZECK stringing data record system with USB interface
- Overload protection system

## GENERAL FEATURES

- 1 rigid axle chassis with parking brake for up to 30 km/h
- Lockable aluminum cover
- Back support via robust mechanical supporting plates
- Front support via hydraulic sprag
- Automatic rope clamping system with grounding device

## OPTIONAL FEATURES

- Brake-/lighting system and mudguards (for rigid axle chassis)
- 2 spring-mounted axle chassis with brake-/lighting system and mudguard for up to 80 km/h
- Electronic printer for ZECK stringing data record system
- Cable or radio remote control
- Back support via hydraulic cylinder
- Synchronization-System
- Remote diagnosis with GPS modem
- Biodegradable hydraulic oil
- Pre-cleaner for engine air filter
- Arctic kit – with preheating system for up to -30 °C
- Noise reduction kit
- Special rope guiding device for operation as underground cable puller

Special modifications or equipment on request.

## KEY FACTS

Full electronically controlled puller with large bull wheels ( $\varnothing$  620 mm) made of hardened steel and groove diameter 60 mm. Max. pulling force of 170 kN and ZECK stringing data record system.

# PULLER SPW 19



## PULLER PERFORMANCE

Max. pulling force:	190 kN
Max. speed:	5 km/h
Speed at max. pulling force:	3.6 km/h

## BULL WHEELS

Number of bull wheels:	2
Diameter of bull wheels:	620 mm
Groove diameter:	60 mm

## DIMENSIONS/WEIGHT

Length x width x height:	4780 x 2280 x 2480 mm
Weight:	5100 kg



## ENGINE

- Max. 200 kW (272 hp)
- Liquid-cooled diesel engine with automatic rpm control
- 24 V system with high capacity battery

## DRIVE SYSTEM

- Each bull wheel with completely closed individual drive unit (motor + brake + gear box) for minimal maintenance and high efficiency
- Automatically controlled oil cooling system
- Each bull wheel with an automatically activated safety brake system
- Hydraulic reel drive via hydraulic engine and gear box for minimal maintenance
- Automatic rope guiding device
- Hydraulic reel lifting device for reels with  $\varnothing$  1100 – 1400 mm
- Special reel shaft – fast change of reels without tools

## CONTROL SYSTEM

- Control of conductor in/out via joystick
- PLC controlled machine for optimized productivity and safety
- WVGA Color display for monitoring the pulling force, hydraulic-, engine- and electrical systems with intelligent diagnostic and troubleshooting system
- ZECK stringing data record system with USB interface
- Overload protection system

## GENERAL FEATURES

- 1 rigid axle chassis with parking brake for up to 30 km/h
- Lockable aluminum cover
- Back support via robust mechanical supporting plates
- Front support via hydraulic sprag
- Automatic rope clamping system with grounding device

## OPTIONAL FEATURES

- Brake-/lighting system and mudguards (for rigid axle chassis)
- 2 spring-mounted axle chassis with brake-/lighting system and mudguard for up to 80 km/h
- Electronic printer for ZECK stringing data record system
- Cable or radio remote control
- Back support via hydraulic cylinder
- Synchronization-System
- Remote diagnosis with GPS modem
- Biodegradable hydraulic oil
- Pre-cleaner for engine air filter
- Arctic kit – with preheating system for up to -30 °C
- Noise reduction kit
- Special rope guiding device for operation as underground cable puller

Special modifications or equipment on request.

## KEY FACTS

Full electronically controlled puller with large bull wheels ( $\varnothing$  620 mm) made of hardened steel and groove diameter 60 mm. Max. pulling force of 190 kN and ZECK stringing data record system.

## PULLER PERFORMANCE

Max. pulling force:	2 x 90 kN or 1 x 180 kN
Max. speed:	5 km/h
Speed at max. pulling force:	2 km/h

## BULL WHEELS

Number of bull wheels:	4
Diameter of bull wheels:	620 mm (180 kN) and 540 mm (90 kN)
Groove diameter:	60 mm (180 kN) and 52 mm (90 kN)

## DIMENSIONS/WEIGHT

Length x width x height:	6330 x 2320 x 2495 mm
Weight:	8000 kg



## ENGINE

- Max. 200 kW (272 hp)
- Liquid-cooled diesel engine with automatic rpm control
- 24 V system with high capacity battery

## DRIVE SYSTEM

- Each bull wheel with completely closed individual drive unit (motor + brake + gear box) for minimal maintenance and high efficiency
- Automatically controlled oil cooling system
- Each bull wheel with an automatically activated safety brake system
- Hydraulic reel drive via hydraulic engine and gear box for minimal maintenance
- Automatic rope guiding device
- Hydraulic reel lifting device for reels with  $\varnothing$  1100 – 1400 mm
- Special reel shaft – fast change of reels without tools

## CONTROL SYSTEM

- Control of conductor in/out via joystick
- PLC controlled machine for optimized productivity and safety
- WVGA Color display for monitoring the pulling force, hydraulic-, engine- and electrical systems with intelligent diagnostic and troubleshooting system
- ZECK stringing data record system with USB interface
- Overload protection system

## GENERAL FEATURES

- 1 rigid axle chassis with parking brake for up to 30 km/h
- Lockable aluminum cover
- Back support via robust mechanical supporting plates
- Front support via hydraulic sprag
- Automatic rope clamping system with grounding device

## OPTIONAL FEATURES

- Brake-/lighting system and mudguards (for rigid axle chassis)
- 2 spring-mounted axle chassis with brake-/lighting system and mudguard for up to 80 km/h
- Electronic printer for ZECK stringing data record system
- Cable or radio remote control
- Back support via hydraulic cylinder
- Synchronization-System
- Remote diagnosis with GPS modem
- Biodegradable hydraulic oil
- Pre-cleaner for engine air filter
- Arctic kit – with preheating system for up to -30 °C
- Noise reduction kit
- Special rope guiding device for operation as underground cable puller

Special modifications or equipment on request.

## KEY FACTS

Full electronically controlled puller for 2 ropes with large bull wheels ( $\varnothing$  620 mm (180 kN) and 540 mm (90 kN)) made of hardened steel and groove diameter 60 mm (180 kN) and 52 mm (90 kN). Max. pulling force of 2 x 90 kN or 1 x 180 kN and ZECK stringing data record system.

# PULLER SPW 26



## PULLER PERFORMANCE

Max. pulling force:	260 kN
Max. speed:	5 km/h
Speed at max. pulling force:	2 km/h

## BULL WHEELS

Number of bull wheels:	2
Diameter of bull wheels:	800 mm
Groove diameter:	82 mm

## DIMENSIONS/WEIGHT

Length x width x height:	5820 x 2300 x 2600 mm
Weight:	8700 kg



## ENGINE

- Max. 262 kW (356 hp)
- Liquid-cooled diesel engine with automatic rpm control
- 24 V system with high capacity battery

## DRIVE SYSTEM

- Each bull wheel with completely closed individual drive unit (motor + brake + gear box) for minimal maintenance and high efficiency
- Automatically controlled oil cooling system
- Each bull wheel with an automatically activated safety brake system
- Hydraulic reel drive via hydraulic engine and gear box for minimal maintenance
- Automatic rope guiding device
- Hydraulic reel lifting device for reels with  $\varnothing$  1100 – 1400 mm
- Special reel shaft – fast change of reels without tools

## CONTROL SYSTEM

- Control of conductor in/out via joystick
- PLC controlled machine for optimized productivity and safety
- WVGA Color display for monitoring the pulling force, hydraulic-, engine- and electrical systems with intelligent diagnostic and troubleshooting system
- ZECK stringing data record system with USB interface
- Overload protection system

## GENERAL FEATURES

- 1 rigid axle chassis with parking brake for up to 30 km/h
- Lockable aluminum cover
- Back support via robust mechanical supporting plates
- Front support via hydraulic sprag
- Automatic rope clamping system with grounding device

## OPTIONAL FEATURES

- Brake-/lighting system and mudguards (for rigid axle chassis)
- 2 spring-mounted axle chassis with brake-/lighting system and mudguard for up to 80 km/h
- Electronic printer for ZECK stringing data record system
- Cable or radio remote control
- Back support via hydraulic cylinder
- Synchronization-System
- Remote diagnosis with GPS modem
- Biodegradable hydraulic oil
- Pre-cleaner for engine air filter
- Arctic kit – with preheating system for up to -30 °C
- Noise reduction kit
- Special rope guiding device for operation as underground cable puller

Special modifications or equipment on request.

## KEY FACTS

Full electronically controlled puller with large bull wheels ( $\varnothing$  800 mm) made of hardened steel and groove diameter 82 mm. Max. pulling force of 260 kN and ZECK stringing data record system.

## PULLER PERFORMANCE

Max. pulling force:	280 kN
Max. speed:	4.8 km/h
Speed at max. pulling force:	2.4 km/h

## BULL WHEELS

Number of bull wheels:	2
Diameter of bull wheels:	900 mm
Groove diameter:	85 mm

## DIMENSIONS/WEIGHT

Length x width x height:	6680 x 2370 x 2700 mm
Weight:	10400 kg



## ENGINE

- Max. 360 kW (490 hp)
- Liquid-cooled diesel engine with automatic rpm control
- 24 V system with high capacity battery

## DRIVE SYSTEM

- Each bull wheel with completely closed individual drive unit (motor + brake + gear box) for minimal maintenance and high efficiency
- Automatically controlled oil cooling system
- Each bull wheel with an automatically activated safety brake system
- Hydraulic reel drive via hydraulic engine and gear box for minimal maintenance
- Automatic rope guiding device
- Hydraulic reel lifting device for reels with  $\varnothing$  1100 – 1900 mm
- Special reel shaft – fast change of reels without tools

## CONTROL SYSTEM

- Control of conductor in/out via joystick
- PLC controlled machine for optimized productivity and safety
- WVGA Color display for monitoring the pulling force, hydraulic-, engine- and electrical systems with intelligent diagnostic and troubleshooting system
- ZECK stringing data record system with USB interface
- Overload protection system

## GENERAL FEATURES

- 2 rigid axle chassis with parking brake for up to 30 km/h
- Lockable aluminum cover
- Back support via hydraulic cylinder
- Front support via hydraulic sprag
- Automatic rope clamping system with grounding device

## OPTIONAL FEATURES

- Brake-/lighting system and mudguards (for rigid axle chassis)
- 2 spring-mounted axle chassis with brake-/lighting system and mudguard for up to 80 km/h
- Electronic printer for ZECK stringing data record system
- Cable or radio remote control
- Back support via hydraulic cylinder
- Synchronization-System
- Remote diagnosis with GPS modem
- Biodegradable hydraulic oil
- Pre-cleaner for engine air filter
- Arctic kit – with preheating system for up to -30 °C
- Noise reduction kit
- Special rope guiding device for operation as underground cable puller

Special modifications or equipment on request.

## KEY FACTS

Full electronically controlled puller with large bull wheels ( $\varnothing$  900 mm) made of hardened steel and groove diameter 85 mm. Max. pulling force of 280 kN and ZECK stringing data record system.

# PULLER SPW 36



## PULLER PERFORMANCE

Max. pulling force:	360 kN
Max. speed:	4.8 km/h
Speed at max. pulling force:	2.0 km/h

## BULL WHEELS

Number of bull wheels:	2
Diameter of bull wheels:	960 mm
Groove diameter:	90 mm

## DIMENSIONS/WEIGHT

Length x width x height:	6680 x 2500 x 2900 mm
Weight:	13800 kg



## ENGINE

- Max. 360 kW (490 hp)
- Liquid-cooled diesel engine with automatic rpm control
- 24 V system with high capacity battery

## DRIVE SYSTEM

- Each bull wheel with completely closed individual drive unit (motor + brake + gear box) for minimal maintenance and high efficiency
- Automatically controlled oil cooling system
- Each bull wheel with an automatically activated safety brake system
- Hydraulic reel drive via hydraulic engine and gear box for minimal maintenance
- Automatic rope guiding device
- Hydraulic reel lifting device for reels with  $\varnothing$  1100 – 1900 mm
- Special reel shaft – fast change of reels without tools

## CONTROL SYSTEM

- Control of conductor in/out via joystick
- PLC controlled machine for optimized productivity and safety
- WVGA Color display for monitoring the pulling force, hydraulic-, engine- and electrical systems with intelligent diagnostic and troubleshooting system
- ZECK stringing data record system with USB interface
- Overload protection system

## GENERAL FEATURES

- 2 rigid axle chassis with parking brake for up to 30 km/h
- Lockable aluminum cover
- Back support via hydraulic cylinder
- Front support via hydraulic sprag
- Automatic rope clamping system with grounding device

## OPTIONAL FEATURES

- Brake-/lighting system and mudguards (for rigid axle chassis)
- 2 spring-mounted axle chassis with brake-/lighting system and mudguard for up to 80 km/h
- Electronic printer for ZECK stringing data record system
- Cable or radio remote control
- Synchronization-System
- Remote diagnosis with GPS modem
- Biodegradable hydraulic oil
- Pre-cleaner for engine air filter
- Arctic kit – with preheating system for up to -30 °C
- Noise reduction kit
- Special rope guiding device for operation as underground cable puller

Special modifications or equipment on request.

## KEY FACTS

Full electronically controlled puller with large bull wheels ( $\varnothing$  960 mm) made of hardened steel and groove diameter 90 mm. Max. pulling force of 360 kN and ZECK stringing data record system.

## PULLER PERFORMANCE

Max. pulling force:	190 kN
Max. speed:	5 km/h
Speed at max. pulling force:	1.9 km/h

## BULL WHEELS

Number of bull wheels:	2
Diameter of bull wheels:	620 mm
Groove diameter:	60 mm

## DIMENSIONS/WEIGHT

Length x width x height:	5600 x 2520 x 2300 mm
Weight:	5900 kg



## ENGINE

- Max. 155 kW (210 hp)
- Liquid-cooled diesel engine with automatic rpm control
- 24 V system with high capacity battery

## DRIVE SYSTEM

- Each bull wheel with completely closed individual drive unit (motor + brake + gear box) for minimal maintenance and high efficiency
- Automatically controlled oil cooling system
- Each bull wheel with an automatically activated safety brake system
- 1 hydraulic system to control 1 external drum stand/reel winder
- Manually operated crane for mounting/dismounting the machine independently

## CONTROL SYSTEM

- Control of conductor in/out via joystick
- PLC controlled machine for optimized productivity and safety
- WVGA Color display for monitoring the pulling force, hydraulic-, engine- and electrical systems with intelligent diagnostic and troubleshooting system
- ZECK stringing data record system with USB interface
- Overload protection system

## GENERAL FEATURES

- 2 rigid axle chassis with parking brake for up to 30 km/h
- Machine can be easily dismantled for helicopter transport  
Weight of each part less than 1200 kg
- Lockable aluminum cover
- Front and back support via 5 robust mechanical supporting plates
- Automatic rope clamping system with grounding device

## OPTIONAL FEATURES

- Brake-/lighting system and mudguards (for rigid axle chassis)
- Electronic printer for ZECK stringing data record system
- Cable or radio remote control
- Remote diagnosis with GPS modem
- Biodegradable hydraulic oil
- Pre-cleaner for engine air filter
- Noise reduction kit
- Special rope guiding device for operation as underground cable puller

Special modifications or equipment on request.

## KEY FACTS

Full electronically controlled puller which is dismantlable for helicopter transport. Each part is less than 1200 kg. Large bull wheels made of hardened steel (Ø 620 mm) and groove diameter 60 mm. Max. pulling force of 190 kN and ZECK stringing data record system.

# PULLER SPW 30 T



## PULLER PERFORMANCE

Max. pulling force:	300 kN
Max. speed:	5 km/h
Speed at max. pulling force:	1.2 km/h

## BULL WHEELS

Number of bull wheels:	2
Diameter of bull wheels:	700 mm
Groove diameter:	75 mm (optional 80 mm)

## DIMENSIONS/WEIGHT

Length x width x height:	5600 x 2520 x 2300 mm
Weight:	6800 kg



## ENGINE

- Max. 147 kW (200 hp)
- Liquid-cooled diesel engine with automatic rpm control
- 24 V system with high capacity battery

## DRIVE SYSTEM

- Each bull wheel with completely closed individual drive unit (motor + brake + gear box) for minimal maintenance and high efficiency
- Automatically controlled oil cooling system
- Each bull wheel with an automatically activated safety brake system
- 1 hydraulic system to control 1 external drum stand/reel winder
- Manually operated crane for mounting/dismounting the machine independently

## CONTROL SYSTEM

- Control of conductor in/out via joystick
- PLC controlled machine for optimized productivity and safety
- WVGA Color display for monitoring the pulling force, hydraulic-, engine- and electrical systems with intelligent diagnostic and troubleshooting system
- ZECK stringing data record system with USB interface
- Overload protection system

## GENERAL FEATURES

- 2 rigid axle chassis with parking brake for up to 30 km/h
- Machine can be easily dismantled for helicopter transport  
Weight of each part less than 1200 kg
- Lockable aluminum cover
- Front and back support via 5 robust mechanical supporting plates
- Automatic rope clamping system with grounding device

## OPTIONAL FEATURES

- Brake-/lighting system and mudguards (for rigid axle chassis)
- Groove diameter 80 mm
- Electronic printer for ZECK stringing data record system
- Cable or radio remote control
- Remote diagnosis with GPS modem
- Biodegradable hydraulic oil
- Pre-cleaner for engine air filter
- Noise reduction kit
- Special rope guiding device for operation as underground cable puller

Special modifications or equipment on request.

## KEY FACTS

Full electronically controlled puller which is dismantlable for helicopter transport. Each part is less than 1200 kg. Large bull wheels made of hardened steel ( $\varnothing$  700 mm) and groove diameter 75 mm (optional 80 mm). Max. pulling force of 300 kN and ZECK stringing data record system.

## PULLER PERFORMANCE

Max. pulling force:	380 kN
Max. speed:	5 km/h
Speed at max. pulling force:	0.95 km/h

## BULL WHEELS

Number of bull wheels:	2
Diameter of bull wheels:	700 mm
Groove diameter:	75 mm (optional 80 mm)

## DIMENSIONS/WEIGHT

Length x width x height:	5600 x 2520 x 2300 mm
Weight:	7200 kg



## ENGINE

- Max. 147 kW (200 hp)
- Liquid-cooled diesel engine with automatic rpm control
- 24 V system with high capacity battery

## DRIVE SYSTEM

- Each bull wheel with completely closed individual drive unit (motor + brake + gear box) for minimal maintenance and high efficiency
- Automatically controlled oil cooling system
- Each bull wheel with an automatically activated safety brake system
- 1 hydraulic system to control 1 external drum stand/reel winder
- Manually operated crane for mounting/dismounting the machine independently

## CONTROL SYSTEM

- Control of conductor in/out via joystick
- PLC controlled machine for optimized productivity and safety
- WVGA Color display for monitoring the pulling force, hydraulic-, engine- and electrical systems with intelligent diagnostic and troubleshooting system
- ZECK stringing data record system with USB interface
- Overload protection system

## GENERAL FEATURES

- 2 rigid axle chassis with parking brake for up to 30 km/h
- Machine can be easily dismantled for helicopter transport  
Weight of each part less than 1200 kg
- Lockable aluminum cover
- Front and back support via 5 robust mechanical supporting plates
- Automatic rope clamping system with grounding device

## OPTIONAL FEATURES

- Brake-/lighting system and mudguards (for rigid axle chassis)
- Groove diameter 80 mm
- Electronic printer for ZECK stringing data record system
- Cable or radio remote control
- Remote diagnosis with GPS modem
- Biodegradable hydraulic oil
- Pre-cleaner for engine air filter
- Noise reduction kit
- Special rope guiding device for operation as underground cable puller

Special modifications or equipment on request.

## KEY FACTS

Full electronically controlled puller which is dismantlable for helicopter transport. Each part is less than 1200 kg. Large bull wheels made of hardened steel (Ø 700 mm) and groove diameter 75 mm (optional 80 mm). Max. pulling force of 380 kN and ZECK stringing data record system.

# PULLER SPW 45 T



## PULLER PERFORMANCE

Max. pulling force:	450 kN
Max. speed:	5 km/h
Speed at max. pulling force:	0.75 km/h

## BULL WHEELS

Number of bull wheels:	2
Diameter of bull wheels:	700 mm
Groove diameter:	75 mm (optional 80 mm)

## DIMENSIONS/WEIGHT

Length x width x height:	5600 x 2520 x 2500 mm
Weight:	8050 kg



## ENGINE

- Max. 147 kW (200 hp)
- Liquid-cooled diesel engine with automatic rpm control
- 24 V system with high capacity battery

## DRIVE SYSTEM

- Each bull wheel with completely closed individual drive unit (motor + brake + gear box) for minimal maintenance and high efficiency
- Automatically controlled oil cooling system
- Each bull wheel with an automatically activated safety brake system
- 1 hydraulic system to control 1 external drum stand/reel winder
- Manually operated crane for mounting/dismounting the machine independently

## CONTROL SYSTEM

- Control of conductor in/out via joystick
- PLC controlled machine for optimized productivity and safety
- WVGA Color display for monitoring the pulling force, hydraulic-, engine- and electrical systems with intelligent diagnostic and troubleshooting system
- ZECK stringing data record system with USB interface
- Overload protection system

## GENERAL FEATURES

- 2 rigid axle chassis with parking brake for up to 30 km/h
- Machine can be easily dismantled for helicopter transport  
Weight of each part less than 1360 kg
- Lockable aluminum cover
- Front and back support via 5 robust mechanical supporting plates
- Automatic rope clamping system with grounding device

## OPTIONAL FEATURES

- Brake-/lighting system and mudguards (for rigid axle chassis)
- Groove diameter 80 mm
- Electronic printer for ZECK stringing data record system
- Cable or radio remote control
- Remote diagnosis with GPS modem
- Biodegradable hydraulic oil
- Pre-cleaner for engine air filter
- Noise reduction kit
- Special rope guiding device for operation as underground cable puller

Special modifications or equipment on request.

## KEY FACTS

Full electronically controlled puller which is dismantlable for helicopter transport. Each part is less than 1360 kg. Large bull wheels made of hardened steel ( $\varnothing$  700 mm) and groove diameter 75 mm (optional 80 mm). Max. pulling force of 450 kN and ZECK stringing data record system.



# OVERHEAD TRANSMISSION LINE CONSTRUCTION



## B3 TENSIONER



# TENSIONER

## B 1500/2.5 E



### TENSIONER PERFORMANCE

Max. tensioning force:	25 kN
Min. tensioning force:	2 kN
Max. speed:	5 km/h

### BULL WHEELS

Number of bull wheels:	2
Diameter of bull wheels:	1500 mm
Groove diameter:	40 mm
Number of conductors:	1

### DIMENSIONS/WEIGHT

Length x width x height:	3350 x 1700 x 2360 mm
Weight:	1650 kg



### DRIVE SYSTEM

- 1 bull wheel with a completely closed individual drive unit (motor + brake + gear box) for minimal maintenance and high efficiency
- Hydraulic oil cooling system
- 1 automatically activated bull wheel safety brake system

### CONTROL SYSTEM

- Tensioning force can be continuously regulated at the control panel
- Control instruments for the tensioning force
- Bull wheel safety brake system manually controlled

### GENERAL FEATURES

- 1 rigid axle chassis for up to 30 km/h
- Back support via robust mechanical parking jack
- Front support via robust mechanical supporting winch
- Automatic conductor clamping system with grounding device
- Free-wheel device for conductor loading

### OPTIONAL FEATURES

- Meter counter
- Machine version for left and right laid conductor

Special modifications or equipment on request.

### KEY FACTS

Tensioner for 1 conductor without engine with 2 bull wheels (Ø1500 mm), groove diameter 40 mm and max. tensioning force of 25 kN.

### TENSIONER PERFORMANCE

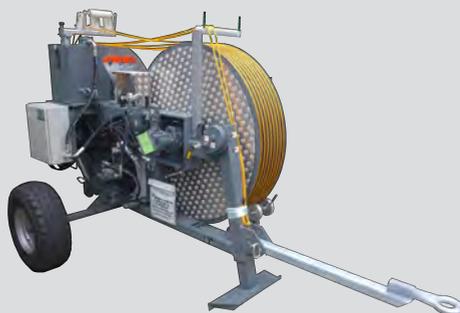
Max. tensioning force:	40 kN
Min. tensioning force:	approx. 3.5 kN
Max. speed:	5 km/h

### BULL WHEELS

Number of bull wheels:	2
Diameter of bull wheels:	1500 mm
Groove diameter:	40 mm
Number of conductors:	up to 2

### DIMENSIONS/WEIGHT

Length x width x height:	3300 x 1800 x 2400 mm
Weight:	2150 kg



### DRIVE SYSTEM

- Each bull wheel with a completely enclosed individual drive unit (motor + brake + gear box) for minimal maintenance and high efficiency
- Hydraulic oil cooling system
- Each bull wheel with an automatically activated safety brake system

### CONTROL SYSTEM

- Tensioning force can be continuously regulated at the control panel
- Control instruments for the tensioning force
- Bull wheel safety brake system manually controlled

### GENERAL FEATURES

- 1 rigid axle chassis for up to 30 km/h
- Back support via robust mechanical parking jack
- Front support via robust mechanical supporting winch
- Automatic conductor clamping system with grounding device
- Free-wheel device for conductor loading

### OPTIONAL FEATURES

- Meter counter
- Machine version for left and right laid conductor

Special modifications or equipment on request.

### KEY FACTS

Tensioner for up to 2 conductors without engine, with 2 bull wheels (Ø 1500 mm), groove diameter 40 mm and max. tensioning force of 40 kN.

# TENSIONER B 1500/2



## TENSIONER PERFORMANCE

Max. tensioning force:	20 kN
Min. tensioning force:	2 kN
Max. speed:	6 km/h

## PULL-BACK PERFORMANCE

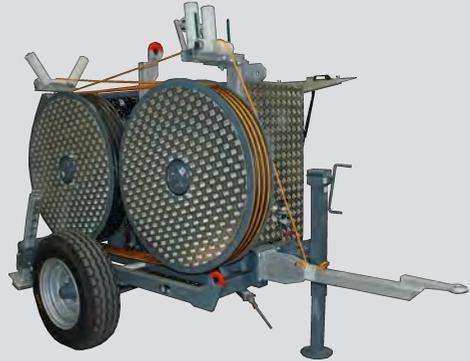
Max. pulling force:	20 kN
Speed at max. pulling force:	0.8 km/h

## BULL WHEELS

Number of bull wheels:	2
Diameter of bull wheels:	1500 mm
Groove diameter:	45 mm
Number of conductors:	1

## DIMENSIONS/WEIGHT

Length x width x height:	4850 x 2240 x 2570 mm
Weight:	2500 kg



## ENGINE

- Max. 12.5 kW (17 hp)
- Liquid-cooled diesel engine
- 12 V system with high capacity battery

## DRIVE SYSTEM

- Each bull wheel with a completely enclosed individual drive unit (motor + brake + gear box) for minimal maintenance and high efficiency
- Automatically controlled oil cooling system
- Hydraulic system to control 1 drum stand
- Each bull wheel with an automatically activated safety brake system

## CONTROL SYSTEM

- Control of rope in/out via hand lever
- Control instruments for the pulling/tensioning force and all machine data
- Automatic Tensioning System (ATS)
- Digital meter counter

## GENERAL FEATURES

- 1 rigid axle chassis for up to 30 km/h
- Lockable aluminum cover
- Back support via robust mechanical sprag
- Front support via robust mechanical supporting winch
- Automatic conductor clamping system with grounding device

## OPTIONAL FEATURES

- Brake-/lighting system and mudguards (for rigid axle chassis)
- 1 spring-mounted axle chassis with brake-/lighting system and mudguard for up to 80 km/h (car application)
- Back support via hydraulic sprag
- Cable remote control for tensioning force
- Digital tachometer
- Electronic pulling force recorder
- Hydraulic system (700/1000 bar) to power compression tools
- Biodegradable hydraulic oil
- Pre-cleaner for engine air filter
- Arctic kit – with preheating system for up to -30 °C
- Noise reduction kit
- Large, lockable tool box
- Machine version for left and right laid conductor

Special modifications or equipment on request.

## KEY FACTS

Tensioner for 1 conductor with 2 bull wheels (Ø 1500 mm), groove diameter 45 mm and max. pulling/tensioning force of 20 kN.

### TENSIONER PERFORMANCE

Max. tensioning force:	40 kN
Min. tensioning force:	approx. 3.5 kN
Max. speed:	6 km/h

### PULL-BACK PERFORMANCE

Max. pulling force:	40 kN
Speed at max. pulling force:	0.8 km/h

### BULL WHEELS

Number of bull wheels:	2
Diameter of bull wheels:	1200 mm
Groove diameter:	45 mm
Number of conductors:	1, optional 2

### DIMENSIONS/WEIGHT

Length x width x height:	4150 x 2190 x 2300 mm
Weight:	2600 kg



### ENGINE

- Max. 26 kW (35 hp)
- Liquid-cooled diesel engine
- 12 V system with high capacity battery

### DRIVE SYSTEM

- Each bull wheel with a completely enclosed individual drive unit (motor + brake + gear box) for minimal maintenance and high efficiency
- Automatically controlled oil cooling system
- Hydraulic system to control 1 drum stand
- Each bull wheel with an automatically activated safety brake system

### CONTROL SYSTEM

- Control of rope in/out via hand lever
- Control instruments for the pulling/tensioning force and all machine data
- Automatic Tensioning System (ATS)
- Digital meter counter

### GENERAL FEATURES

- 1 rigid axle chassis for up to 30 km/h
- Lockable aluminum cover
- Back support via robust mechanical sprag
- Front support via robust mechanical supporting winch
- Automatic conductor clamping system with grounding device

### OPTIONAL FEATURES

- Version for up to 2 conductors
- Brake-/lighting system and mudguards (for rigid axle chassis)
- 1 spring-mounted axle chassis with brake-/lighting system and mudguard for up to 80 km/h (car application)
- Back support via hydraulic sprag
- Cable remote control for tensioning force
- Digital tachometer
- Electronic pulling force recorder
- Hydraulic system (700/1000 bar) to power compression tools
- Biodegradable hydraulic oil
- Pre-cleaner for engine air filter
- Arctic kit - with preheating system for up to -30 °C
- Noise reduction kit
- Large, lockable tool box
- Machine version for left and right laid conductor

Special modifications or equipment on request.

### KEY FACTS

Tensioner for 1 conductor (optional 2); with 2 bull wheels (Ø 1200 mm), groove diameter 45 mm and a max. pulling/tensioning force of 40 kN.

# TENSIONER

## B 1500/4



### TENSIONER PERFORMANCE

Max. tensioning force:	40 kN
Min. tensioning force:	approx. 3.5 kN
Max. speed:	6 km/h

### PULL-BACK PERFORMANCE

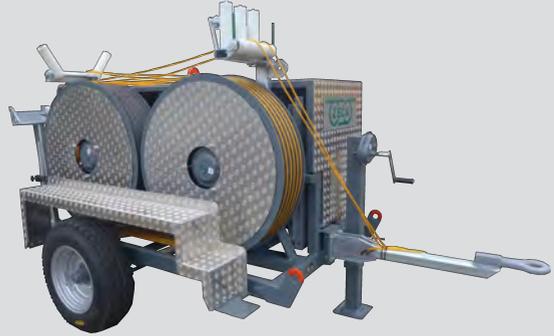
Max. pulling force:	40 kN
Speed at max. pulling force:	0.8 km/h

### BULL WHEELS

Number of bull wheels:	2
Diameter of bull wheels:	1500 mm
Groove diameter:	45 mm
Number of conductors:	1, optional 2

### DIMENSIONS/WEIGHT

Length x width x height:	4850 x 2240 x 2570 mm
Weight:	2950 kg



### ENGINE

- Max. 26 kW (35 hp)
- Liquid-cooled diesel engine
- 12 V system with high capacity battery

### DRIVE SYSTEM

- Each bull wheel with a completely enclosed individual drive unit (motor + brake + gear box) for minimal maintenance and high efficiency
- Automatically controlled oil cooling system
- Hydraulic system to control 1 drum stand
- Each bull wheel with an automatically activated safety brake system

### CONTROL SYSTEM

- Control of rope in/out via hand lever
- Control instruments for the pulling/tensioning force and all machine data
- Automatic Tensioning System (ATS)
- Digital meter counter

### GENERAL FEATURES

- 1 rigid axle chassis for up to 30 km/h
- Lockable aluminum cover
- Back support via robust mechanical sprag
- Front support via robust mechanical supporting winch
- Automatic conductor clamping system with grounding device

### OPTIONAL FEATURES

- Version for up to 2 conductors
- Brake-/lighting system and mudguards (for rigid axle chassis)
- 1 spring-mounted axle chassis with brake-/lighting system and mudguard for up to 80 km/h (car application)
- Back support via hydraulic sprag
- Cable remote control for tensioning force
- Digital tachometer
- Electronic pulling force recorder
- Hydraulic system (700/1000 bar) to power compression tools
- Biodegradable hydraulic oil
- Pre-cleaner for engine air filter
- Arctic kit - with preheating system for up to -30 °C
- Noise reduction kit
- Large, lockable tool box
- Machine version for left and right laid conductor

Special modifications or equipment on request.

### KEY FACTS

Tensioner for 1 conductor (optional 2) with 2 bull wheels (Ø 1500 mm), groove diameter 45 mm and max. pulling/tensioning force of 40 kN.

## TENSIONER PERFORMANCE

Max. tensioning force:	75 kN
Min. tensioning force:	approx. 5 kN
Max. speed:	5 km/h

## PULL-BACK PERFORMANCE

Max. pulling force:	75 kN
Speed at max. pulling force:	0.5 km/h

## BULL WHEELS

Number of bull wheels:	2
Diameter of bull wheels:	1500 mm
Groove diameter:	45 mm
Number of conductors:	up to 2

## DIMENSIONS/WEIGHT

Length x width x height:	4600 x 2270 x 2760 mm
Weight:	3980 kg



## ENGINE

- Max. 26 kW (35 hp)
- Liquid-cooled diesel engine
- 12 V system with high capacity battery

## DRIVE SYSTEM

- Each bull wheel with a completely enclosed individual drive unit (motor + brake + gear box) for minimal maintenance and high efficiency
- Automatically controlled oil cooling system
- Hydraulic systems to control 2 drum stands individually
- Each bull wheel with an automatically activated safety brake system

## CONTROL SYSTEM

- Control of rope in/out via hand lever
- Control instruments for the pulling/tensioning force and all machine data
- Automatic Tensioning System (ATS)
- Digital meter counter and tachometer

## GENERAL FEATURES

- 1 rigid axle chassis with parking brake for up to 30 km/h
- Lockable aluminum cover
- Back support via robust mechanical supporting plates
- Front support via robust mechanical supporting winch
- Automatic conductor clamping system with grounding device

## OPTIONAL FEATURES

- Groove diameter 60 mm
- Brake-/lighting system and mudguards (for rigid axle chassis)
- Back support via hydraulic sprag
- Cable remote control for tensioning force
- Electronic pulling force recorder
- Hydraulic system (700/1000 bar) to power compression tools
- Biodegradable hydraulic oil
- Pre-cleaner for engine air filter
- Arctic kit – with preheating system for up to -30 °C
- Noise reduction kit
- Large, lockable tool box
- Machine version for left and right laid conductor

Special modifications or equipment on request.

## KEY FACTS

Tensioner for up to 2 conductors with 2 bull wheels (Ø 1500 mm), groove diameter 45 mm (optional 60 mm) and max. pulling/tensioning force of 75 kN.

# TENSIONER

## B 1300/9



### TENSIONER PERFORMANCE

Max. tensioning force:	90 kN
Min. tensioning force:	approx. 6 kN
Max. speed:	5 km/h

### PULL-BACK PERFORMANCE

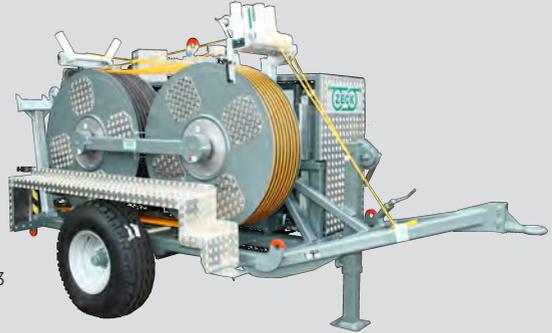
Max. pulling force:	90 kN
Speed at max. pulling force:	1 km/h

### BULL WHEELS

Number of bull wheels:	2
Diameter of bull wheels:	1300 mm
Groove diameter:	45 mm
Number of conductors:	up to 2, optional 3

### DIMENSIONS/WEIGHT

Length x width x height:	4700 x 2260 x 2420 mm
Weight:	4250 kg



### ENGINE

- Max. 65 kW (88 hp)
- Liquid-cooled diesel engine with automatic rpm control
- 24 V system with high capacity battery

### DRIVE SYSTEM

- Each bull wheel with a completely enclosed individual drive unit (motor + brake + gear box) for minimal maintenance and high efficiency
- Automatically controlled oil cooling system
- Hydraulic systems to control 2 drum stands individually
- Each bull wheel with an automatically activated safety brake system

### CONTROL SYSTEM

- Control of conductor in/out via joystick
- PLC controlled machine for optimized productivity and safety
- WVGA Color display for monitoring the pulling/tensioning force, hydraulic-, engine- and electrical systems with intelligent diagnostic and troubleshooting system
- ZECK stringing data record system with USB interface
- Automatic Tensioning System (ATS)
- Overload protection system

### GENERAL FEATURES

- 1 rigid axle chassis with parking brake for up to 30 km/h
- Lockable aluminum cover
- Back support via hydraulic sprag
- Front support via robust mechanical supporting winch
- Automatic conductor clamping system with grounding device

### OPTIONAL FEATURES

- Version for up to 3 conductors
- Groove diameter 60 mm
- Brake-/lighting system and mudguards (for rigid axle chassis)
- 2 spring-mounted axle chassis with brake-/lighting system and mudguard for up to 80 km/h
- Front support via hydraulic cylinder
- Cable or radio remote control for tensioning mode
- Electronic printer for ZECK stringing data record system
- Synchronization-System
- Remote diagnosis with GPS modem
- Hydraulic system (700/1000 bar) to power compression tools
- Biodegradable hydraulic oil
- Pre-cleaner for engine air filter
- Arctic kit – with preheating system for up to -30 °C
- Noise reduction kit
- Large, lockable tool box
- Machine version for left and right laid conductor

Special modifications or equipment on request.

### KEY FACTS

Full electronically controlled tensioner for up to 2 conductors (optional 3) with 2 bull wheels (Ø 1300 mm) and groove diameter 45 mm (optional 60 mm). Max. pulling/tensioning force of 90 kN and ZECK stringing data record system.

### TENSIONER PERFORMANCE

Max. tensioning force:	90 kN
Min. tensioning force:	approx. 6 kN
Max. speed:	5 km/h

### PULL-BACK PERFORMANCE

Max. pulling force:	90 kN
Speed at max. pulling force:	1 km/h

### BULL WHEELS

Number of bull wheels:	2
Diameter of bull wheels:	1500 mm
Groove diameter:	45 mm
Number of conductors:	up to 2, optional 3

### DIMENSIONS/WEIGHT

Length x width x height:	4650 x 2280 x 2760 mm
Weight:	4400 kg



### ENGINE

- Max. 65 kW (88 hp)
- Liquid-cooled diesel engine with automatic rpm control
- 24 V system with high capacity battery

### DRIVE SYSTEM

- Each bull wheel with a completely enclosed individual drive unit (motor + brake + gear box) for minimal maintenance and high efficiency
- Automatically controlled oil cooling system
- Hydraulic systems to control 2 drum stands individually
- Each bull wheel with an automatically activated safety brake system

### CONTROL SYSTEM

- Control of conductor in/out via joystick
- PLC controlled machine for optimized productivity and safety
- WVGA Color display for monitoring the pulling/tensioning force, hydraulic-, engine- and electrical systems with intelligent diagnostic and troubleshooting system
- ZECK stringing data record system with USB interface
- Automatic Tensioning System (ATS)
- Overload protection system

### GENERAL FEATURES

- 1 rigid axle chassis with parking brake for up to 30 km/h
- Lockable aluminum cover
- Back support via hydraulic sprag
- Front support via robust mechanical supporting winch
- Automatic conductor clamping system with grounding device

### OPTIONAL FEATURES

- Version for up to 3 conductors
- Groove diameter 60 mm
- Brake-/lighting system and mudguards (for rigid axle chassis)
- 2 spring-mounted axle chassis with brake-/lighting system and mudguard for up to 80 km/h
- Front support via hydraulic cylinder
- Cable or radio remote control for tensioning mode
- Electronic printer for ZECK stringing data record system
- Synchronization-System
- Remote diagnosis with GPS modem
- Hydraulic system (700/1000 bar) to power compression tools
- Biodegradable hydraulic oil
- Pre-cleaner for engine air filter
- Arctic kit – with preheating system for up to -30 °C
- Noise reduction kit
- Large, lockable tool box
- Machine version for left and right laid conductor

Special modifications or equipment on request.

### KEY FACTS

Full electronically controlled tensioner for up to 2 conductors (optional 3) with 2 bull wheels (Ø 1500 mm) and groove diameter 45 mm (optional 60 mm). Max. pulling/tensioning force of 90 kN and ZECK stringing data record system.

# TENSIONER

## B 1500/4.5x2



### TENSIONER PERFORMANCE

Max. tensioning force:	2 x 45 kN
Min. tensioning force:	approx. 3.5 kN
Max. speed:	5 km/h

### PULL-BACK PERFORMANCE

Max. pulling force:	2 x 45 kN
Speed at max. pulling force:	1 km/h

### BULL WHEELS

Number of bull wheels:	4 (2 x 2)
Diameter of bull wheels:	1500 mm
Groove diameter:	45 mm
Number of conductors:	up to 2 (1 + 1)

### DIMENSIONS/WEIGHT

Length x width x height:	5400 x 2100 x 2600 mm
Weight:	5400 kg



### ENGINE

- Max. 65 kW (88 hp)
- Liquid-cooled diesel engine with automatic rpm control
- 24 V system with high capacity battery

### DRIVE SYSTEM

- Each bull wheel with a completely enclosed individual drive unit (motor + brake + gear box) for minimal maintenance and high efficiency
- Automatically controlled oil cooling system
- Hydraulic systems to control 2 drum stands individually

### CONTROL SYSTEM

- Control of conductor in/out via joystick
- PLC controlled machine for optimized productivity and safety
- WVGA Color display for monitoring the pulling/tensioning force, hydraulic-, engine- and electrical systems with intelligent diagnostic and troubleshooting system
- ZECK stringing data record system with USB interface
- Automatic Tensioning System (ATS)
- Overload protection system

### GENERAL FEATURES

- 1 rigid axle chassis with parking brake for up to 30 km/h
- Lockable aluminum cover
- Back support via hydraulic sprag
- Front support via robust mechanical supporting winch
- Automatic conductor clamping system with grounding device

### OPTIONAL FEATURES

- Groove diameter 60 mm
- Brake-/lighting system and mudguards (for rigid axle chassis)
- 2 spring-mounted axle chassis with brake-/lighting system and mudguard for up to 80 km/h
- Front support via hydraulic cylinder
- Cable or radio remote control for tensioning mode
- Electronic printer for ZECK stringing data record system
- Synchronization-System
- Remote diagnosis with GPS modem
- Hydraulic system (700/1000 bar) to power compression tools
- Biodegradable hydraulic oil
- Pre-cleaner for engine air filter
- Arctic kit – with preheating system for up to -30 °C
- Noise reduction kit
- Machine version for left and right laid conductor

Special modifications or equipment on request.

### KEY FACTS

Full electronically controlled tensioner for up to 2 conductors with 4 bull wheels (Ø 1500 mm), groove diameter 45 mm (optional 60 mm) and individual control of each bull wheel set. Max. pulling/tensioning force of 2 x 45 kN and ZECK stringing data record system.

## TENSIONER PERFORMANCE

Max. tensioning force:	120 kN
Min. tensioning force:	approx. 10 kN
Max. speed:	5 km/h

## PULL-BACK PERFORMANCE

Max. pulling force:	120 kN
Speed at max. pulling force:	0.7 km/h

## BULL WHEELS

Number of bull wheels:	2
Diameter of bull wheels:	1500 mm
Groove diameter:	45 mm
Number of conductors:	up to 2, optional 3

## DIMENSIONS/WEIGHT

Length x width x height:	5000 x 2500 x 2400 mm
Weight:	4900 kg



## ENGINE

- Max. 65 kW (88 hp)
- Liquid-cooled diesel engine with automatic rpm control
- 24 V system with high capacity battery

## DRIVE SYSTEM

- Each bull wheel with a completely enclosed individual drive unit (motor + brake + gear box) for minimal maintenance and high efficiency
- Automatically controlled oil cooling system
- Hydraulic systems to control 2 drum stands individually
- Each bull wheel with an automatically activated safety brake system

## CONTROL SYSTEM

- Control of conductor in/out via joystick
- PLC controlled machine for optimized productivity and safety
- WVGA Color display for monitoring the pulling/tensioning force, hydraulic-, engine- and electrical systems with intelligent diagnostic and troubleshooting system
- ZECK stringing data record system with USB interface
- Automatic Tensioning System (ATS)
- Overload protection system

## GENERAL FEATURES

- 1 rigid axle chassis with parking brake for up to 30 km/h
- Lockable aluminum cover
- Back support via hydraulic sprag
- Front support via robust mechanical supporting winch
- Automatic conductor clamping system with grounding device

## OPTIONAL FEATURES

- Version for up to 3 conductors
- Groove diameter 60 mm
- Brake-/lighting system and mudguards (for rigid axle chassis)
- 2 spring-mounted axle chassis with brake-/lighting system and mudguard for up to 80 km/h
- Front support via hydraulic cylinder
- Cable or radio remote control for tensioning mode
- Electronic printer for ZECK stringing data record system
- Synchronization-System
- Remote diagnosis with GPS modem
- Hydraulic system (700/1000 bar) to power compression tools
- Biodegradable hydraulic oil
- Pre-cleaner for engine air filter
- Arctic kit – with preheating system for up to -30 °C
- Noise reduction kit
- Large, lockable tool box
- Machine version for left and right laid conductor

Special modifications or equipment on request.

## KEY FACTS

Full electronically controlled tensioner for up to 2 conductors (optional 3) with 2 bull wheels (Ø 1500 mm) and groove diameter 45 mm (optional 60 mm). Max. pulling/tensioning force of 120 kN and ZECK stringing data record system.

# TENSIONER

## B 1500/4.5x3



### TENSIONER PERFORMANCE

Max. tensioning force:	3 x 45 kN
Min. tensioning force:	approx. 4 kN
Max. speed:	5 km/h

### PULL-BACK PERFORMANCE

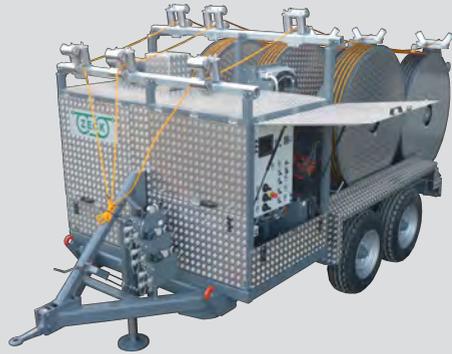
Max. pulling force:	3 x 45 kN
Speed at max. pulling force:	1.5 km/h

### BULL WHEELS

Number of bull wheels:	6 (3 x 2)
Diameter of bull wheels:	1500 mm
Groove diameter:	45 mm
Number of conductors:	up to 3 (1 + 1 + 1)

### DIMENSIONS/WEIGHT

Length x width x height:	6200 x 2300 x 2800 mm
Weight:	8300 kg



### ENGINE

- Max. 96.5 kW (131 hp)
- Liquid-cooled diesel engine with automatic rpm control
- 24 V system with high capacity battery

### DRIVE SYSTEM

- Each bull wheel with a completely enclosed individual drive unit (motor + brake + gear box) for minimal maintenance and high efficiency
- Automatically controlled oil cooling system
- Hydraulic systems to control 3 drum stands individually

### CONTROL SYSTEM

- Control of conductor in/out via joystick
- PLC controlled machine for optimized productivity and safety
- WVGA Color display for monitoring the pulling/tensioning force, hydraulic-, engine- and electrical systems with intelligent diagnostic and troubleshooting system
- ZECK stringing data record system with USB interface
- Automatic Tensioning System (ATS)
- Overload protection system

### GENERAL FEATURES

- 2 rigid axle chassis with parking brake for up to 30 km/h
- Lockable aluminum cover
- Back support via hydraulic sprag
- Automatic conductor clamping system with grounding device

### OPTIONAL FEATURES

- Brake-/lighting system and mudguards (for rigid axle chassis)
- 2 spring-mounted axle chassis with brake-/lighting system and mudguard for up to 80 km/h
- Front support via hydraulic cylinder
- Cable or radio remote control for tensioning mode
- Electronic printer for ZECK stringing data record system
- Synchronization-System
- Remote diagnosis with GPS modem
- Hydraulic system (700/1000 bar) to power compression tools
- Biodegradable hydraulic oil
- Pre-cleaner for engine air filter
- Arctic kit - with preheating system for up to -30 °C
- Noise reduction kit
- Machine version for left and right laid conductor

Special modifications or equipment on request.

### KEY FACTS

Full electronically controlled tensioner for up to 3 conductors with 6 bull wheels (Ø 1500 mm), groove diameter 45 mm and individual control of each bull wheel set. Max. pulling/tensioning force of 3 x 45 kN and ZECK stringing data record system.

### TENSIONER PERFORMANCE

Max. tensioning force:	140 kN
Min. tensioning force:	approx. 10 kN
Max. speed:	5 km/h

### PULL-BACK PERFORMANCE

Max. pulling force:	140 kN
Speed at max. pulling force:	0.5 km/h
Max. pulling speed:	2.5 km/h (at 28 kN)

### BULL WHEELS

Number of bull wheels:	2
Diameter of bull wheels:	1500 mm
Groove diameter:	45 mm
Number of conductors:	up to 4

### DIMENSIONS/WEIGHT

Length x width x height:	5000 x 2290 x 2920 mm
Weight:	6300 kg



### ENGINE

- Max. 65 kW (88 hp)
- Liquid-cooled diesel engine with automatic rpm control
- 24 V system with high capacity battery

### DRIVE SYSTEM

- Each bull wheel with a completely enclosed individual drive unit (motor + brake + gear box) for minimal maintenance and high efficiency
- Automatically controlled oil cooling system
- Hydraulic systems to control 4 drum stands individually
- Each bull wheel with an automatically activated safety brake system

### CONTROL SYSTEM

- Control of conductor in/out via joystick
- PLC controlled machine for optimized productivity and safety
- WVGA Color display for monitoring the pulling/tensioning force, hydraulic-, engine- and electrical systems with intelligent diagnostic and troubleshooting system
- ZECK stringing data record system with USB interface
- Automatic Tensioning System (ATS)
- Overload protection system

### GENERAL FEATURES

- 1 rigid axle chassis with parking brake for up to 30 km/h
- Lockable aluminum cover
- Back support via hydraulic sprag
- Front support via robust mechanical supporting winch
- Automatic conductor clamping system with grounding device

### OPTIONAL FEATURES

- Groove diameter 60 mm
- Brake-/lighting system and mudguards (for rigid axle chassis)
- 2 spring-mounted axle chassis with brake-/lighting system and mudguard for up to 80 km/h
- Front support via hydraulic cylinder
- Cable or radio remote control for tensioning mode
- Electronic printer for ZECK stringing data record system
- Remote diagnosis with GPS modem
- Hydraulic system (700/1000 bar) to power compression tools
- Biodegradable hydraulic oil
- Pre-cleaner for engine air filter
- Arctic kit - with preheating system for up to -30 °C
- Noise reduction kit
- Large, lockable tool box
- Machine version for left and right laid conductor

Special modifications or equipment on request.

### KEY FACTS

Full electronically controlled tensioner for up to 4 conductors with 2 bull wheels (Ø 1500 mm) and groove diameter 45 mm (optional 60 mm). Max. pulling/tensioning force of 140 kN and ZECK stringing data record system.

# TENSIONER B 1500/16 F



## TENSIONER PERFORMANCE

Max. tensioning force:	160 kN
Min. tensioning force:	approx. 10 kN
Max. speed:	5 km/h

## PULL-BACK PERFORMANCE

Max. pulling force:	160 kN
Speed at max. pulling force:	0.5 km/h
Max. pulling speed:	3 km/h (at 25 kN)

## BULL WHEELS

Number of bull wheels:	2
Diameter of bull wheels:	1500 mm
Groove diameter:	45 mm
Number of conductors:	up to 4

## DIMENSIONS/WEIGHT

Length x width x height:	5520 x 2340 x 2680 mm
Weight:	6500 kg



## ENGINE

- Max. 65 kW (88 hp)
- Liquid-cooled diesel engine with automatic rpm control
- 24 V system with high capacity battery

## DRIVE SYSTEM

- Each bull wheel with a completely enclosed individual drive unit (motor + brake + gear box) for minimal maintenance and high efficiency
- Automatically controlled oil cooling system
- Hydraulic systems to control 4 drum stands individually
- Each bull wheel with an automatically activated safety brake system

## CONTROL SYSTEM

- Control of conductor in/out via joystick
- PLC controlled machine for optimized productivity and safety
- WVGA Color display for monitoring the pulling/tensioning force, hydraulic-, engine- and electrical systems with intelligent diagnostic and troubleshooting system
- ZECK stringing data record system with USB interface
- Automatic Tensioning System (ATS)
- Overload protection system

## GENERAL FEATURES

- 1 rigid axle chassis with parking brake for up to 30 km/h
- Lockable aluminum cover
- Back support via hydraulic sprag
- Front support via robust mechanical supporting winch
- Automatic conductor clamping system with grounding device

## OPTIONAL FEATURES

- Groove diameter 60 mm
- Brake-/lighting system and mudguards (for rigid axle chassis)
- 2 spring-mounted axle chassis with brake-/lighting system and mudguard for up to 80 km/h
- Front support via hydraulic cylinder
- Cable or radio remote control for tensioning mode
- Electronic printer for ZECK stringing data record system
- Synchronization-System
- Remote diagnosis with GPS modem
- Hydraulic system (700/1000 bar) to power compression tools
- Biodegradable hydraulic oil
- Pre-cleaner for engine air filter
- Arctic kit – with preheating system for up to -30 °C
- Noise reduction kit
- Large, lockable tool box
- Machine version for left and right laid conductor

Special modifications or equipment on request.

## KEY FACTS

Full electronically controlled tensioner for up to 4 conductors with 2 bull wheels (Ø 1500 mm) and groove diameter 45 mm (optional 60 mm). Max. pulling/tensioning force of 160 kN and ZECK stringing data record system.

## TENSIONER PERFORMANCE

Max. tensioning force:	160 kN
Min. tensioning force:	approx. 10 kN
Max. speed:	5 km/h

## PULL-BACK PERFORMANCE

Max. pulling force:	160 kN
Speed at max. pulling force:	0.5 km/h
Max. pulling speed:	3 km/h (at 25 kN)

## BULL WHEELS

Number of bull wheels:	2
Diameter of bull wheels:	1500 mm
Groove diameter:	40 mm
Number of conductors:	up to 6

## DIMENSIONS/WEIGHT

Length x width x height:	5850 x 2300 x 2830 mm
Weight:	7100 kg



## ENGINE

- Max. 65 kW (88 hp)
- Liquid-cooled diesel engine with automatic rpm control
- 24 V system with high capacity battery

## DRIVE SYSTEM

- Each bull wheel with a completely enclosed individual drive unit (motor + brake + gear box) for minimal maintenance and high efficiency
- Automatically controlled oil cooling system
- Hydraulic systems to control 6 drum stands
- Each bull wheel with an automatically activated safety brake system

## CONTROL SYSTEM

- Control of conductor in/out via joystick
- PLC controlled machine for optimized productivity and safety
- WVGA Color display for monitoring the pulling/tensioning force, hydraulic-, engine- and electrical systems with intelligent diagnostic and troubleshooting system
- ZECK stringing data record system with USB interface
- Automatic Tensioning System (ATS)
- Overload protection system

## GENERAL FEATURES

- 1 rigid axle chassis with parking brake for up to 30 km/h
- Lockable aluminum cover
- Back support via hydraulic sprag
- Front support via robust mechanical supporting winch
- Automatic conductor clamping system with grounding device

## OPTIONAL FEATURES

- Brake-/lighting system and mudguards (for rigid axle chassis)
- 2 spring-mounted axle chassis with brake-/lighting system and mudguard for up to 80 km/h
- Front support via hydraulic cylinder
- Cable or radio remote control for tensioning mode
- Electronic printer for ZECK stringing data record system
- Synchronization-System
- Remote diagnosis with GPS modem
- Hydraulic system (700/1000 bar) to power compression tools
- Biodegradable hydraulic oil
- Pre-cleaner for engine air filter
- Arctic kit - with preheating system for up to -30 °C
- Noise reduction kit
- Large, lockable tool box
- Machine version for left and right laid conductor

Special modifications or equipment on request.

## KEY FACTS

Full electronically controlled tensioner for up to 6 conductors with 2 bull wheels (Ø 1500 mm) and groove diameter 40 mm. Max. pulling/tensioning force of 160 kN and ZECK stringing data record system.

# TENSIONER

## B 1500/18



### TENSIONER PERFORMANCE

Max. tensioning force:	180 kN
Min. tensioning force:	approx. 15 kN
Max. speed:	5 km/h

### PULL-BACK PERFORMANCE

Max. pulling force:	180 kN
Speed at max. pulling force:	0.6 km/h

### BULL WHEELS

Number of bull wheels:	2
Diameter of bull wheels:	1500 mm
Groove diameter:	60 mm
Number of conductors:	up to 4

### DIMENSIONS/WEIGHT

Length x width x height:	5900 x 2280 x 2800 mm
Weight:	6800 kg



### ENGINE

- Max. 70 kW (95 hp)
- Liquid-cooled diesel engine with automatic rpm control
- 24 V system with high capacity battery

### DRIVE SYSTEM

- Each bull wheel with a completely enclosed individual drive unit (motor + brake + gear box) for minimal maintenance and high efficiency
- Automatically controlled oil cooling system
- Hydraulic systems to control 4 drum stands individually
- Each bull wheel with an automatically activated safety brake system

### CONTROL SYSTEM

- Control of conductor in/out via joystick
- PLC controlled machine for optimized productivity and safety
- WVGA Color display for monitoring the pulling/tensioning force, hydraulic-, engine- and electrical systems with intelligent diagnostic and troubleshooting system
- ZECK stringing data record system with USB interface
- Automatic Tensioning System (ATS)
- Overload protection system

### GENERAL FEATURES

- 2 rigid axle chassis with parking brake for up to 30 km/h
- Lockable aluminum cover
- Back support via hydraulic sprag
- Front support via robust mechanical supporting winch
- Automatic conductor clamping system with grounding device

### OPTIONAL FEATURES

- Brake-/lighting system and mudguards (for rigid axle chassis)
- 2 spring-mounted axle chassis with brake-/lighting system and mudguard for up to 80 km/h
- Front support via hydraulic cylinder
- Cable or radio remote control for tensioning mode
- Electronic printer for ZECK stringing data record system
- Synchronization-System
- Remote diagnosis with GPS modem
- Hydraulic system (700/1000 bar) to power compression tools
- Biodegradable hydraulic oil
- Pre-cleaner for engine air filter
- Arctic kit - with preheating system for up to -30 °C
- Noise reduction kit
- Large, lockable tool box
- Machine version for left and right laid conductor

Special modifications or equipment on request.

### KEY FACTS

Full electronically controlled tensioner for up to 4 conductors with 2 bull wheels (Ø 1500 mm) and groove diameter 60 mm. Max. pulling/tensioning force of 180 kN and ZECK stringing data record system.

### TENSIONER PERFORMANCE

Max. tensioning force:	2 x 90 kN
Min. tensioning force:	approx. 6 kN
Max. speed:	0.5 km/h

### PULL-BACK PERFORMANCE

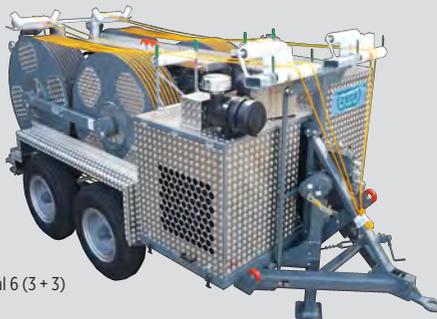
Max. pulling force:	2 x 90 kN
Speed at max. pulling force:	0.5 km/h

### BULL WHEELS

Number of bull wheels:	4 (2 x 2)
Diameter of bull wheels:	1500 mm
Groove diameter:	45 mm
Number of conductors:	up to 4 (2 + 2), optional 6 (3 + 3)

### DIMENSIONS/WEIGHT

Length x width x height:	5560 x 2300 x 2590 mm
Weight:	8300 kg



### ENGINE

- Max. 75 kW (102 hp)
- Liquid-cooled diesel engine with automatic rpm control
- 24 V system with high capacity battery

### DRIVE SYSTEM

- Each bull wheel with a completely enclosed individual drive unit (motor + brake + gear box) for minimal maintenance and high efficiency
- Automatically controlled oil cooling system
- Hydraulic systems to control 4 drum stands individually
- Each bull wheel with an automatically activated safety brake system

### CONTROL SYSTEM

- Control of conductor in/out via joystick
- PLC controlled machine for optimized productivity and safety
- WVGA Color display for monitoring the pulling/tensioning force, hydraulic-, engine- and electrical systems with intelligent diagnostic and troubleshooting system
- ZECK stringing data record system with USB interface
- Automatic Tensioning System (ATS)
- Overload protection system

### GENERAL FEATURES

- 2 rigid axle chassis with parking brake for up to 30 km/h
- Lockable aluminum cover
- Back support via hydraulic sprag
- Front support via robust mechanical supporting winch
- Automatic conductor clamping system with grounding device

### OPTIONAL FEATURES

- Version for up to 6 conductors
- Groove diameter 60 mm
- Brake-/lighting system and mudguards (for rigid axle chassis)
- 2 spring-mounted axle chassis with brake-/lighting system and mudguard for up to 80 km/h
- Front support via hydraulic cylinder
- Cable or radio remote control for tensioning mode
- Electronic printer for ZECK stringing data record system
- Synchronization-System
- Remote diagnosis with GPS modem
- Hydraulic system (700/1000 bar) to power compression tools
- Biodegradable hydraulic oil
- Pre-cleaner for engine air filter
- Arctic kit – with preheating system for up to -30 °C
- Noise reduction kit
- Machine version for left and right laid conductor

Special modifications or equipment on request.

### KEY FACTS

Full electronically controlled tensioner for up to 4 conductors (optional 6) and with 4 bull wheels (Ø 1500 mm), groove diameter 45 mm (optional 60 mm) and individual control of each bull wheel set. Max. pulling/tensioning force of 2 x 90 kN and ZECK stringing data record system.

# TENSIONER

## B 1500/6x3



### TENSIONER PERFORMANCE

Max. tensioning force:	3 x 60 kN
Min. tensioning force:	approx. 8 kN
Max. speed:	5 km/h

### PULL-BACK PERFORMANCE

Max. pulling force:	3 x 60 kN
Speed at max. pulling force:	1 km/h

### BULL WHEELS

Number of bull wheels:	6 (3 x 2)
Diameter of bull wheels:	1500 mm
Groove diameter:	45 mm
Number of conductors:	up to 3 (1 + 1 + 1)

### DIMENSIONS/WEIGHT

Length x width x height:	5900 x 2300 x 2800 mm
Weight:	8600 kg



### ENGINE

- Max. 96.5 kW (131 hp)
- Liquid-cooled diesel engine with automatic rpm control
- 24 V system with high capacity battery

### DRIVE SYSTEM

- Each bull wheel with a completely enclosed individual drive unit (motor + brake + gear box) for minimal maintenance and high efficiency
- Automatically controlled oil cooling system
- Hydraulic systems to control 3 drum stands individually

### CONTROL SYSTEM

- Control of conductor in/out via joystick
- PLC controlled machine for optimized productivity and safety
- WVGA Color display for monitoring the pulling/tensioning force, hydraulic-, engine- and electrical systems with intelligent diagnostic and troubleshooting system
- ZECK stringing data record system with USB interface
- Automatic Tensioning System (ATS)
- Overload protection system

### GENERAL FEATURES

- 2 rigid axle chassis with parking brake for up to 30 km/h
- Lockable aluminum cover
- Back support via hydraulic sprag
- Front support via robust mechanical supporting winch
- Automatic conductor clamping system with grounding device

### OPTIONAL FEATURES

- Brake-/lighting system and mudguards (for rigid axle chassis)
- 2 spring-mounted axle chassis with brake-/lighting system and mudguard for up to 80 km/h
- Front support via hydraulic cylinder
- Cable or radio remote control for tensioning mode
- Electronic printer for ZECK stringing data record system
- Synchronization-System
- Remote diagnosis with GPS modem
- Hydraulic system (700/1000 bar) to power compression tools
- Biodegradable hydraulic oil
- Pre-cleaner for engine air filter
- Arctic kit – with preheating system for up to -30 °C
- Noise reduction kit
- Machine version for left and right laid conductor

Special modifications or equipment on request.

### KEY FACTS

Full electronically controlled tensioner for up to 3 conductors with 6 bull wheels (Ø 1500 mm), groove diameter of 45 mm and individual control of each bull wheel set.  
Max. pulling/tensioning force of 3 x 60 kN and ZECK stringing data record system.

### TENSIONER PERFORMANCE

Max. tensioning force: 4 x 45 kN  
 Min. tensioning force: approx. 3.5 kN  
 Max. speed: 5 km/h

### PULL-BACK PERFORMANCE

Max. pulling force: 4 x 45 kN  
 Speed at max. pulling force: 0.7 km/h

### BULL WHEELS

Number of bull wheels: 8 (4 x 2)  
 Diameter of bull wheels: 1500 mm  
 Groove diameter: 45 mm  
 Number of conductors: up to 4 (1 + 1 + 1 + 1)

### DIMENSIONS/WEIGHT

Length x width x height: 6200 x 2500 x 2800 mm  
 Weight: 10200 kg



### ENGINE

- Max. 75 kW (102 hp)
- Liquid-cooled diesel engine with automatic rpm control
- 24 V system with high capacity battery

### DRIVE SYSTEM

- Each bull wheel with a completely enclosed individual drive unit (motor + brake + gear box) for minimal maintenance and high efficiency
- Automatically controlled oil cooling system
- Hydraulic systems to control 4 drum stands individually

### CONTROL SYSTEM

- Control of conductor in/out via joystick
- PLC controlled machine for optimized productivity and safety
- WVGA Color display for monitoring the pulling/tensioning force, hydraulic-, engine- and electrical systems with intelligent diagnostic and troubleshooting system
- ZECK stringing data record system with USB interface
- Automatic Tensioning System (ATS)
- Overload protection system

### GENERAL FEATURES

- 2 rigid axle chassis with parking brake for up to 30 km/h
- Lockable aluminum cover
- Back support via hydraulic sprag
- Front support via robust mechanical supporting winch
- Automatic conductor clamping system with grounding device

### OPTIONAL FEATURES

- Groove diameter 60 mm
- Brake-/lighting system and mudguards (for rigid axle chassis)
- 2 spring-mounted axle chassis with brake-/lighting system and mudguard for up to 80 km/h
- Front support via hydraulic cylinder
- Cable or radio remote control for tensioning mode
- Electronic printer for ZECK stringing data record system
- Synchronization-System
- Remote diagnosis with GPS modem
- Hydraulic system (700/1000 bar) to power compression tools
- Biodegradable hydraulic oil
- Pre-cleaner for engine air filter
- Arctic kit – with preheating system for up to -30 °C
- Noise reduction kit
- Machine version for left and right laid conductor

Special modifications or equipment on request.

### KEY FACTS

Full electronically controlled tensioner for up to 4 conductors with 8 bull wheels (Ø 1500 mm), groove diameter 45 mm (optional 60 mm) and individual control of each bull wheel set. Max. pulling/tensioning force of 4 x 45 kN and ZECK stringing data record system.

# TENSIONER B 1500/12x2



## TENSIONER PERFORMANCE

Max. tensioning force:	2 x 120 kN
Min. tensioning force:	approx. 8 kN
Max. speed:	5 km/h

## PULL-BACK PERFORMANCE

Max. pulling force:	2 x 120 kN
Speed at max. pulling force:	0.35 km/h
Max. pulling speed:	2 km/h (at 42 kN)

## BULL WHEELS

Number of bull wheels:	4 (2 x 2)
Diameter of bull wheels:	1500 mm
Groove diameter:	45 mm
Number of conductors:	up to 4 (2 + 2), optional 6 (3 + 3)

## DIMENSIONS/WEIGHT

Length x width x height:	6370 x 2500 x 2900 mm
Weight:	12250 kg



## ENGINE

- Max. 70 kW (95 hp)
- Liquid-cooled diesel engine with automatic rpm control
- 24 V system with high capacity battery

## DRIVE SYSTEM

- Each bull wheel with a completely enclosed individual drive unit (motor + brake + gear box) for minimal maintenance and high efficiency
- Automatically controlled oil cooling system
- Hydraulic systems to control 4 drum stands individually

## CONTROL SYSTEM

- Control of conductor in/out via joystick
- PLC controlled machine for optimized productivity and safety
- WVGA Color display for monitoring the pulling/tensioning force, hydraulic-, engine- and electrical systems with intelligent diagnostic and troubleshooting system
- ZECK stringing data record system with USB interface
- Automatic Tensioning System (ATS)
- Overload protection system

## GENERAL FEATURES

- 2 rigid axle chassis with parking brake for up to 30 km/h
- Lockable aluminum cover
- Back support via hydraulic sprag
- Front support via robust mechanical supporting winch
- Automatic conductor clamping system with grounding device

## OPTIONAL FEATURES

- Version for up to 6 conductors
- Groove diameter 60 mm
- Brake-/lighting system and mudguards (for rigid axle chassis)
- 2 spring-mounted axle chassis with brake-/lighting system and mudguard for up to 80 km/h
- Front support via hydraulic cylinder
- Cable or radio remote control for tensioning mode
- Electronic printer for ZECK stringing data record system
- Synchronization-System
- Remote diagnosis with GPS modem
- Hydraulic system (700/1000 bar) to power compression tools
- Biodegradable hydraulic oil
- Pre-cleaner for engine air filter
- Arctic kit – with preheating system for up to -30 °C
- Noise reduction kit
- Machine version for left and right laid conductor

Special modifications or equipment on request.

## KEY FACTS

Full electronically controlled tensioner for up to 4 conductors (optional 6) with 4 bull wheels (Ø 1500 mm), groove diameter 45 mm (optional 60 mm) and individual control of each bull wheel set. Max. pulling/tensioning force of 2 x 120 kN and ZECK stringing data record system.

### TENSIONER PERFORMANCE

Max. tensioning force:	2 x 130 kN
Min. tensioning force:	approx. 10 kN
Max. speed:	5 km/h

### PULL-BACK PERFORMANCE

Max. pulling force:	2 x 130 kN
Speed at max. pulling force:	0.4 km/h

### BULL WHEELS

Number of bull wheels:	4 (2 x 2)
Diameter of bull wheels:	1700 mm
Groove diameter:	60 mm
Number of conductors:	up to 4 (2 + 2), optional 6 (3 + 3)

### DIMENSIONS/WEIGHT

Length x width x height:	6800 x 2530 x 3160 mm
Weight:	13500 kg



### ENGINE

- Max. 85 kW (115 hp)
- Liquid-cooled diesel engine with automatic rpm control
- 24 V system with high capacity battery

### DRIVE SYSTEM

- Each bull wheel with a completely enclosed individual drive unit (motor + brake + gear box) for minimal maintenance and high efficiency
- Automatically controlled oil cooling system
- Hydraulic systems to control 4 drum stands individually

### CONTROL SYSTEM

- Control of conductor in/out via joystick
- PLC controlled machine for optimized productivity and safety
- WVGA Color display for monitoring the pulling/tensioning force, hydraulic-, engine- and electrical systems with intelligent diagnostic and troubleshooting system
- ZECK stringing data record system with USB interface
- Automatic Tensioning System (ATS)
- Overload protection system

### GENERAL FEATURES

- 1 rigid axle chassis with parking brake for up to 30 km/h
- Lockable aluminum cover
- Back support via hydraulic sprag
- Front support via robust mechanical supporting winch
- Automatic conductor clamping system with grounding device

### OPTIONAL FEATURES

- Groove diameter 70 mm
- Brake-/lighting system and mudguards (for rigid axle chassis)
- 2 spring-mounted axle chassis with brake-/lighting system and mudguard for up to 80 km/h
- Front support via hydraulic cylinder
- Cable or radio remote control for tensioning mode
- Electronic printer for ZECK stringing data record system
- Synchronization-System
- Remote diagnosis with GPS modem
- Hydraulic system (700/1000 bar) to power compression tools
- Biodegradable hydraulic oil
- Pre-cleaner for engine air filter
- Arctic kit – with preheating system for up to -30 °C
- Noise reduction kit
- Machine version for left and right laid conductor

Special modifications or equipment on request.

### KEY FACTS

Full electronically controlled tensioner for up to 4 conductors (optional 6) with 4 bull wheels (Ø 1700 mm), groove diameter 60 mm (optional 70 mm) and individual control of each bull wheel set. Max. pulling/tensioning force of 2 x 130 kN and ZECK stringing data record system.

# TENSIONER

## B 1800/14x2



### TENSIONER PERFORMANCE

Max. tensioning force:	2 x 140 kN
Min. tensioning force:	approx. 10 kN
Max. speed:	5 km/h

### PULL-BACK PERFORMANCE

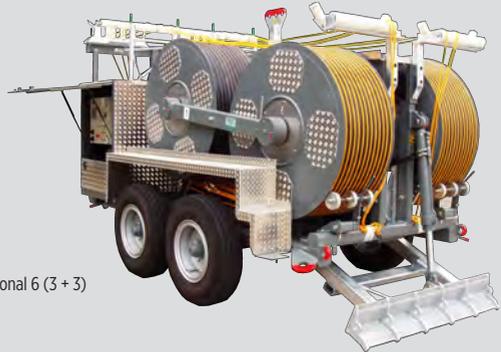
Max. pulling force:	2 x 140 kN
Speed at max. pulling force:	0.5 km/h

### BULL WHEELS

Number of bull wheels:	4 (2 x 2)
Diameter of bull wheels:	1800 mm
Groove diameter:	60 mm
Number of conductors:	up to 4 (2 + 2), optional 6 (3 + 3)

### DIMENSIONS/WEIGHT

Length x width x height:	6700 x 2500 x 3200 mm
Weight:	14500 kg



### ENGINE

- Max. 70 kW (95 hp)
- Liquid-cooled diesel engine with automatic rpm control
- 24 V system with high capacity battery

### DRIVE SYSTEM

- Each bull wheel with a completely enclosed individual drive unit (motor + brake + gear box) for minimal maintenance and high efficiency
- Automatically controlled oil cooling system
- Hydraulic systems to control 4 drum stands individually

### CONTROL SYSTEM

- Control of conductor in/out via joystick
- PLC controlled machine for optimized productivity and safety
- WVGA Color display for monitoring the pulling/tensioning force, hydraulic-, engine- and electrical systems with intelligent diagnostic and troubleshooting system
- ZECK stringing data record system with USB interface
- Automatic Tensioning System (ATS)
- Overload protection system

### GENERAL FEATURES

- 2 rigid axle chassis with parking brake for up to 30 km/h
- Lockable aluminum cover
- Back support via hydraulic sprag
- Front support via robust mechanical supporting winch
- Automatic conductor clamping system with grounding device

### OPTIONAL FEATURES

- Version for up to 6 conductors
- Groove diameter 70 mm
- Brake-/lighting system and mudguards (for rigid axle chassis)
- 2 spring-mounted axle chassis with brake-/lighting system and mudguard for up to 80 km/h
- Front support via hydraulic cylinder
- Electronic printer for ZECK stringing data record system
- Synchronization-System
- Remote diagnosis with GPS modem
- Cable or radio remote control for tensioning mode
- Hydraulic system (700/1000 bar) to power compression tools
- Biodegradable hydraulic oil
- Pre-cleaner for engine air filter
- Arctic kit - with preheating system for up to -30 °C
- Noise reduction kit
- Machine version for left and right laid conductor

Special modifications or equipment on request.

### KEY FACTS

Full electronically controlled tensioner for up to 4 conductors (optional 6) with 4 bull wheels (Ø 1800 mm), groove diameter 60 mm (optional 70 mm) and individual control of each bull wheel set. Max. pulling/tensioning force of 2 x 140 kN and ZECK stringing data record system.



# OVERHEAD TRANSMISSION LINE CONSTRUCTION

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## B4 PULLER-TENSIONER



# PULLER-TENSIONER WB 1200/2 E



## PULLER PERFORMANCE

Max. pulling force:	18 kN
Max. speed:	4 km/h
Speed at max. pulling force:	3.5 km/h

## TENSIONER PERFORMANCE

Max. tensioning force:	20 kN
Speed at max. tensioning force:	6 km/h
Min. tensioning force:	approx. 1.5 kN

## BULL WHEELS

Number of bull wheels:	2
Diameter of bull wheels:	1200 mm
Groove diameter:	45 mm
Number of ropes/conductors:	1

## DIMENSIONS/WEIGHT

Length x width x height:	3540 x 1760 x 2240 mm
Weight:	1750 kg



## ENGINE

- Max. 26 kW (35 hp)
- Liquid-cooled diesel engine
- 12 V system with high capacity battery

## DRIVE SYSTEM

- Each bull wheel with a completely enclosed individual drive unit (motor + brake + gear box) for minimal maintenance and high efficiency
- Automatically controlled oil cooling system
- Hydraulic system to control 1 drum stand
- Each bull wheel with an automatically activated safety brake system

## CONTROL SYSTEM

- Control of rope in/out via hand lever
- Control instruments for the pulling/tensioning force and all machine data
- Automatic Tensioning System (ATS)
- Overload protection system

## GENERAL FEATURES

- 1 rigid axle chassis for up to 30 km/h
- Lockable aluminum cover
- Back support via robust mechanical supporting plates
- Front support via robust mechanical supporting winch
- Automatic rope/conductor clamping system with grounding device

## OPTIONAL FEATURES

- Brake-/lighting system and mudguards (for rigid axle chassis)
- 1 spring-mounted axle chassis with brake-/lighting system and mudguard for up to 80 km/h (car application)
- Digital meter counter and tachometer
- Electronic pulling force recorder
- Hydraulic system (700/1000 bar) to power compression tools
- Biodegradable hydraulic oil
- Pre-cleaner for engine air filter
- Arctic kit – with preheating system for up to -30 °C
- Noise reduction kit
- Large, lockable tool box
- Machine version for left and right laid conductor

Special modifications or equipment on request.

## KEY FACTS

Puller-Tensioner for 1 rope/conductor with 2 bull wheels (Ø 1200 mm), groove diameter 45 mm and max. pulling/tensioning force of 18 kN.

### PULLER PERFORMANCE

Max. pulling force:	25 kN
Max. speed:	6 km/h
Speed at max. pulling force:	1.2 km/h

### TENSIONER PERFORMANCE

Max. tensioning force:	25 kN
Speed at max. tensioning force:	6 km/h
Min. tensioning force:	approx. 2 kN

### BULL WHEELS

Number of bull wheels:	2
Diameter of bull wheels:	1500 mm
Groove diameter:	45 mm
Number of ropes/conductors:	1, optional 2

### DIMENSIONS/WEIGHT

Length x width x height:	4950 x 1850 x 2700 mm
Weight:	2200 kg



### ENGINE

- Max. 26 kW (35 hp)
- Liquid-cooled diesel engine with automatic rpm control
- 12 V system with high capacity battery

### DRIVE SYSTEM

- Each bull wheel with a completely enclosed individual drive unit (motor + brake + gear box) for minimal maintenance and high efficiency
- Automatically controlled oil cooling system
- Hydraulic system to control 1 drum stand
- Each bull wheel with an automatically activated safety brake system

### CONTROL SYSTEM

- Control of conductor in/out via joystick
- PLC controlled machine for optimized productivity and safety
- WQVGA Color display for monitoring the pulling/tensioning force, hydraulic-, engine- and electrical system with intelligent diagnostic and troubleshooting system
- ZECK stringing data record system with USB interface
- Automatic Tensioning System (ATS)
- Overload protection system

### GENERAL FEATURES

- 1 rigid axle chassis for up to 30 km/h
- Lockable aluminum cover
- Back support via robust mechanical supporting plates
- Front support via robust mechanical supporting winch
- Automatic rope/conductor clamping system with grounding device

### OPTIONAL FEATURES

- Version for up to 2 conductors
- Brake-/lighting system and mudguards (for rigid axle chassis)
- 1 spring-mounted axle chassis with brake-/lighting system and mudguard for up to 80 km/h (car application)
- Back support via hydraulic sprag
- Cable or radio remote control
- Electronic printer for ZECK stringing data record system
- Hydraulic system (700/1000 bar) to power compression tools
- Biodegradable hydraulic oil
- Pre-cleaner for engine air filter
- Arctic kit – with preheating system for up to -30 °C
- Noise reduction kit
- Large, lockable tool box
- Machine version for left and right laid conductor

Special modifications or equipment on request.

### KEY FACTS

Full electronically controlled puller-tensioner for 1 rope/conductor (optional 2) with 2 bull wheels (Ø 1500 mm) and groove diameter 45 mm. Max. pulling/tensioning force of 25 kN and ZECK stringing data record system.

# PULLER-TENSIONER WB 1200/4



## PULLER PERFORMANCE

Max. pulling force:	45 kN
Max. speed:	6 km/h
Speed at max. pulling force:	2 km/h

## TENSIONER PERFORMANCE

Max. tensioning force:	45 kN
Speed at max. tensioning force:	6 km/h
Min. tensioning force:	approx. 3 kN

## BULL WHEELS

Number of bull wheels:	2
Diameter of bull wheels:	1200 mm
Groove diameter:	45 mm
Number of ropes/conductors:	1, optional 2

## DIMENSIONS/WEIGHT

Length x width x height:	4090 x 2190 x 2260 mm
Weight:	3000 kg



## ENGINE

- Max. 65 kW (88 hp)
- Liquid-cooled diesel engine with automatic rpm control
- 24 V system with high capacity battery

## DRIVE SYSTEM

- Each bull wheel with a completely enclosed individual drive unit (motor + brake + gear box) for minimal maintenance and high efficiency
- Automatically controlled oil cooling system
- Hydraulic system to control 1 drum stand
- Each bull wheel with an automatically activated safety brake system

## CONTROL SYSTEM

- Control of conductor in/out via joystick
- PLC controlled machine for optimized productivity and safety
- WVGA Color display for monitoring the pulling/tensioning force, hydraulic-, engine- and electrical systems with intelligent diagnostic and troubleshooting system
- ZECK stringing data record system with USB interface
- Automatic Tensioning System (ATS)
- Overload protection system

## GENERAL FEATURES

- 1 rigid axle chassis with parking brake for up to 30 km/h
- Lockable aluminum cover
- Back support via hydraulic sprag
- Front support via robust mechanical supporting winch
- Automatic rope/conductor clamping system with grounding device

## OPTIONAL FEATURES

- Version for up to 2 conductors
- Brake-/lighting system and mudguards (for rigid axle chassis)
- 2 spring-mounted axle chassis with brake-/lighting system and mudguard for up to 80 km/h
- Front support via hydraulic cylinder
- Cable or radio remote control
- Electronic printer for ZECK stringing data record system
- Synchronization-System
- Remote diagnosis with GPS modem
- Hydraulic system (700/1000 bar) to power compression tools
- Biodegradable hydraulic oil
- Pre-cleaner for engine air filter
- Arctic kit – with preheating system for up to -30 °C
- Noise reduction kit
- Large, lockable tool box
- Machine version for left and right laid conductor

Special modifications or equipment on request.

## KEY FACTS

Full electronically controlled puller-tensioner for 1 rope/conductor (optional 2) with 2 bull wheels (Ø 1200 mm) and groove diameter 45 mm. Max. pulling/tensioning force of 45 kN and ZECK stringing data record system.

### PULLER PERFORMANCE

Max. pulling force:	45 kN
Max. speed:	6 km/h
Speed at max. pulling force:	2 km/h

### TENSIONER PERFORMANCE

Max. tensioning force:	45 kN
Speed at max. tensioning force:	6 km/h
Min. tensioning force:	approx. 3 kN

### BULL WHEELS

Number of bull wheels:	2
Diameter of bull wheels:	1500 mm
Groove diameter:	45 mm
Number of ropes/conductors:	1, optional 2

### DIMENSIONS/WEIGHT

Length x width x height:	4910 x 2200 x 2490 mm
Weight:	3500 kg



### ENGINE

- Max. 65 kW (88 hp)
- Liquid-cooled diesel engine with automatic rpm control
- 24 V system with high capacity battery

### DRIVE SYSTEM

- Each bull wheel with a completely enclosed individual drive unit (motor + brake + gear box) for minimal maintenance and high efficiency
- Automatically controlled oil cooling system
- Hydraulic system to control 1 drum stand
- Each bull wheel with an automatically activated safety brake system

### CONTROL SYSTEM

- Control of conductor in/out via joystick
- PLC controlled machine for optimized productivity and safety
- WVGA Color display for monitoring the pulling/tensioning force, hydraulic-, engine- and electrical systems with intelligent diagnostic and troubleshooting system
- ZECK stringing data record system with USB interface
- Automatic Tensioning System (ATS)
- Overload protection system

### GENERAL FEATURES

- 1 rigid axle chassis with parking brake for up to 30 km/h
- Lockable aluminum cover
- Back support via hydraulic sprag
- Front support via robust mechanical supporting winch
- Automatic rope/conductor clamping system with grounding device

### OPTIONAL FEATURES

- Version for up to 2 conductors
- Brake-/lighting system and mudguards (for rigid axle chassis)
- 2 spring-mounted axle chassis with brake-/lighting system and mudguard for up to 80 km/h
- Front support via hydraulic cylinder
- Cable or radio remote control
- Electronic printer for ZECK stringing data record system
- Synchronization-System
- Remote diagnosis with GPS modem
- Hydraulic system (700/1000 bar) to power compression tools
- Biodegradable hydraulic oil
- Pre-cleaner for engine air filter
- Arctic kit – with preheating system for up to -30 °C
- Noise reduction kit
- Large, lockable tool box
- Machine version for left and right laid conductor

Special modifications or equipment on request.

### KEY FACTS

Full electronically controlled puller-tensioner for 1 rope/conductor (optional 2) with 2 bull wheels (Ø 1500 mm) and groove diameter 45 mm. Max. pulling/tensioning force of 45 kN and ZECK stringing data record system.

# PULLER-TENSIONER WB 1500/6



## PULLER PERFORMANCE

Max. pulling force:	60 kN
Max. speed:	4,6 km/h
Speed at max. pulling force:	1,5 km/h

## TENSIONER PERFORMANCE

Max. tensioning force:	60 kN
Speed at max. tensioning force:	5 km/h
Min. tensioning force:	approx. 5 kN

## BULL WHEELS

Number of bull wheels:	2
Diameter of bull wheels:	1500 mm
Groove diameter:	45 mm
Number of ropes/conductors:	1, optional 2

## DIMENSIONS/WEIGHT

Length x width x height:	5080 x 2270 x 2650 mm
Weight:	4500 kg



## ENGINE

- Max. 65 kW (88 hp)
- Liquid-cooled diesel engine with automatic rpm control
- 24 V system with high capacity battery

## DRIVE SYSTEM

- Each bull wheel with a completely enclosed individual drive unit (motor + brake + gear box) for minimal maintenance and high efficiency
- Automatically controlled oil cooling system
- Hydraulic system to control 1 drum stand
- Each bull wheel with an automatically activated safety brake system

## CONTROL SYSTEM

- Control of conductor in/out via joystick
- PLC controlled machine for optimized productivity and safety
- WVGA Color display for monitoring the pulling/tensioning force, hydraulic-, engine- and electrical systems with intelligent diagnostic and troubleshooting system
- ZECK stringing data record system with USB interface
- Automatic Tensioning System (ATS)
- Overload protection system

## GENERAL FEATURES

- 1 rigid axle chassis with parking brake for up to 30 km/h
- Lockable aluminum cover
- Back support via hydraulic sprag
- Front support via robust mechanical supporting winch
- Automatic rope/conductor clamping system with grounding device

## OPTIONAL FEATURES

- Version for up to 2 conductors
- Groove diameter 60 mm
- Brake-/lighting system and mudguards (for rigid axle chassis)
- 2 spring-mounted axle chassis with brake-/lighting system and mudguard for up to 80 km/h
- Front support via hydraulic cylinder
- Cable or radio remote control
- Electronic printer for ZECK stringing data record system
- Synchronization-System
- Remote diagnosis with GPS modem
- Hydraulic system (700/1000 bar) to power compression tools
- Biodegradable hydraulic oil
- Pre-cleaner for engine air filter
- Arctic kit - with preheating system for up to -30 °C
- Noise reduction kit
- Large, lockable tool box
- Machine version for left and right laid conductor

Special modifications or equipment on request.

## KEY FACTS

Full electronically controlled puller-tensioner for 1 rope/conductor (optional 2) with 2 bull wheels (Ø 1500 mm) and groove diameter 45 mm (optional 60 mm). Max. pulling/tensioning force of 60 kN and ZECK stringing data record system.

### PULLER PERFORMANCE

Max. pulling force:	90 kN
Max. speed:	5 km/h
Speed at max. pulling force:	2.2 km/h

### TENSIONER PERFORMANCE

Max. tensioning force:	90 kN
Speed at max. tensioning force:	5 km/h
Min. tensioning force:	approx. 7 kN

### BULL WHEELS

Number of bull wheels:	2
Diameter of bull wheels:	1300 mm
Groove diameter:	45 mm
Number of ropes/conductors:	up to 2, optional 3

### DIMENSIONS/WEIGHT

Length x width x height:	4650 x 2280 x 2450 mm
Weight:	4400 kg



### ENGINE

- Max. 103 kW (140 hp)
- Liquid-cooled diesel engine with automatic rpm control
- 24 V system with high capacity battery

### DRIVE SYSTEM

- Each bull wheel with a completely enclosed individual drive unit (motor + brake + gear box) for minimal maintenance and high efficiency
- Automatically controlled oil cooling system
- Hydraulic systems to control 2 drum stands individually
- Each bull wheel with an automatically activated safety brake system

### CONTROL SYSTEM

- Control of conductor in/out via joystick
- PLC controlled machine for optimized productivity and safety
- WVGA Color display for monitoring the pulling/tensioning force, hydraulic-, engine- and electrical systems with intelligent diagnostic and troubleshooting system
- ZECK stringing data record system with USB interface
- Automatic Tensioning System (ATS)
- Overload protection system

### GENERAL FEATURES

- 1 rigid axle chassis with parking brake for up to 30 km/h
- Lockable aluminum cover
- Back support via hydraulic sprag
- Front support via robust mechanical supporting winch
- Automatic rope/conductor clamping system with grounding device

### OPTIONAL FEATURES

- Version for up to 3 conductors
- Groove diameter 60 mm
- Brake-/lighting system and mudguards (for rigid axle chassis)
- 2 spring-mounted axle chassis with brake-/lighting system and mudguard for up to 80 km/h
- Front support via hydraulic cylinder
- Cable or radio remote control
- Electronic printer for ZECK stringing data record system
- Synchronization-System
- Remote diagnosis with GPS modem
- Hydraulic system (700/1000 bar) to power compression tools
- Biodegradable hydraulic oil
- Pre-cleaner for engine air filter
- Arctic kit - with preheating system for up to -30 °C
- Noise reduction kit
- Large, lockable tool box
- Machine version for left and right laid conductor

Special modifications or equipment on request.

### KEY FACTS

Full electronically controlled puller-tensioner for up to 2 ropes/conductors (optional 3) with 2 bull wheels (Ø 1300 mm) and groove diameter 45 mm (optional 60 mm). Max. pulling/tensioning force of 90 kN and ZECK stringing data record system.

# PULLER-TENSIONER WB 1500/9



## PULLER PERFORMANCE

Max. pulling force:	90 kN
Max. speed:	5 km/h
Speed at max. pulling force:	2.2 km/h

## TENSIONER PERFORMANCE

Max. tensioning force:	90 kN
Speed at max. tensioning force:	5 km/h
Min. tensioning force:	approx. 7 kN

## BULL WHEELS

Number of bull wheels:	2
Diameter of bull wheels:	1500 mm
Groove diameter:	45 mm
Number of ropes/conductors:	up to 2, optional 3

## DIMENSIONS/WEIGHT

Length x width x height:	4980 x 2320 x 2790 mm
Weight:	5000 kg



## ENGINE

- Max. 103 kW (140 hp)
- Liquid-cooled diesel engine with automatic rpm control
- 24 V system with high capacity battery

## DRIVE SYSTEM

- Each bull wheel with a completely enclosed individual drive unit (motor + brake + gear box) for minimal maintenance and high efficiency
- Automatically controlled oil cooling system
- Hydraulic systems to control 2 drum stands individually
- Each bull wheel with an automatically activated safety brake system

## CONTROL SYSTEM

- Control of conductor in/out via joystick
- PLC controlled machine for optimized productivity and safety
- WVGA Color display for monitoring the pulling/tensioning force, hydraulic-, engine- and electrical systems with intelligent diagnostic and troubleshooting system
- ZECK stringing data record system with USB interface
- Automatic Tensioning System (ATS)
- Overload protection system

## GENERAL FEATURES

- 1 rigid axle chassis with parking brake for up to 30 km/h
- Lockable aluminum cover
- Back support via hydraulic sprag
- Front support via robust mechanical supporting winch
- Automatic rope/conductor clamping system with grounding device

## OPTIONAL FEATURES

- Version for up to 3 conductors
- Groove diameter 60 mm
- Brake-/lighting system and mudguards (for rigid axle chassis)
- 2 spring-mounted axle chassis with brake-/lighting system and mudguard for up to 80 km/h
- Front support via hydraulic cylinder
- Cable or radio remote control
- Electronic printer for ZECK stringing data record system
- Synchronization-System
- Remote diagnosis with GPS modem
- Hydraulic system (700/1000 bar) to power compression tools
- Biodegradable hydraulic oil
- Pre-cleaner for engine air filter
- Arctic kit – with preheating system for up to -30 °C
- Noise reduction kit
- Large, lockable tool box
- Machine version for left and right laid conductor

Special modifications or equipment on request.

## KEY FACTS

Full electronically controlled puller-tensioner for up to 2 ropes/ conductors with 2 bull wheels (Ø 1500 mm) and groove diameter 45 mm (optional 60 mm). Max. pulling/tensioning force of 90 kN and ZECK stringing data record system.

### PULLER PERFORMANCE

Max. pulling force:	2 x 45 kN or 1 x 90 kN
Max. speed:	5 km/h
Speed at max. pulling force:	2.2 km/h

### TENSIONER PERFORMANCE

Max. tensioning force:	2 x 45 kN or 1 x 90 kN
Speed at max. tensioning force:	5 km/h
Min. tensioning force:	approx. 7 kN (90 kN) approx. 4 kN (45 kN)

### BULL WHEELS

Number of bull wheels:	4 (2 x 2)
Diameter of bull wheels:	1500 mm
Groove diameter:	45 mm
Number of ropes/conductors:	up to 2 (1 + 1), optional 3 (2 + 1)

### DIMENSIONS/WEIGHT

Length x width x height:	5440 x 2280 x 2870 mm
Weight:	6400 kg



### ENGINE

- Max. 103 kW (140 hp)
- Liquid-cooled diesel engine with automatic rpm control
- 24 V system with high capacity battery

### DRIVE SYSTEM

- Each bull wheel with a completely enclosed individual drive unit (motor + brake + gear box) for minimal maintenance and high efficiency
- Automatically controlled oil cooling system
- Hydraulic systems to control 2 drum stands individually

### CONTROL SYSTEM

- Control of conductor in/out via joystick
- PLC controlled machine for optimized productivity and safety
- WVGA Color display for monitoring the pulling/tensioning force, hydraulic-, engine- and electrical systems with intelligent diagnostic and troubleshooting system
- ZECK stringing data record system with USB interface
- Automatic Tensioning System (ATS)
- Overload protection system

### GENERAL FEATURES

- 1 rigid axle chassis with parking brake for up to 30 km/h
- Lockable aluminum cover
- Back support via hydraulic sprag
- Front support via robust mechanical supporting winch
- Automatic rope/conductor clamping system with grounding device

### OPTIONAL FEATURES

- Version for up to 3 conductors
- Groove diameter 60 mm
- Brake-/lighting system and mudguards (for rigid axle chassis)
- 2 spring-mounted axle chassis with brake-/lighting system and mudguard for up to 80 km/h
- Front support via hydraulic cylinder
- Cable or radio remote control
- Electronic printer for ZECK stringing data record system
- Synchronization-System
- Remote diagnosis with GPS modem
- Hydraulic system (700/1000 bar) to power compression tools
- Biodegradable hydraulic oil
- Pre-cleaner for engine air filter
- Arctic kit - with preheating system for up to -30 °C
- Noise reduction kit
- Machine version for left and right laid conductor

Special modifications or equipment on request.

### KEY FACTS

Full electronically controlled puller-tensioner for up to 2 ropes/conductors (optional 3) with 4 bull wheels (Ø 1500 mm), groove diameter 45 mm (optional 60 mm) and individual control of each bull wheel set. Max. pulling/tensioning force of 2 x 45 kN or 1 x 90 kN and ZECK stringing data record system.

# PULLER-TENSIONER WB 1500/12



## PULLER PERFORMANCE

Max. pulling force:	120 kN
Max. speed:	4.8 km/h
Speed at max. pulling force:	1.7 km/h

## TENSIONER PERFORMANCE

Max. tensioning force:	120 kN
Speed at max. tensioning force:	4.3 km/h
Min. tensioning force:	approx. 10 kN

## BULL WHEELS

Number of bull wheels:	2
Diameter of bull wheels:	1500 mm
Groove diameter:	45 mm
Number of ropes/conductors:	up to 2, optional 3

## DIMENSIONS/WEIGHT

Length x width x height:	5000 x 2280 x 2570 mm
Weight:	5800 kg



## ENGINE

- Max. 103 kW (140 hp)
- Liquid-cooled diesel engine with automatic rpm control
- 24 V system with high capacity battery

## DRIVE SYSTEM

- Each bull wheel with a completely enclosed individual drive unit (motor + brake + gear box) for minimal maintenance and high efficiency
- Automatically controlled oil cooling system
- Hydraulic systems to control 2 drum stands individually
- Each bull wheel with an automatically activated safety brake system

## CONTROL SYSTEM

- Control of conductor in/out via joystick
- PLC controlled machine for optimized productivity and safety
- WVGA Color display for monitoring the pulling/tensioning force, hydraulic-, engine- and electrical systems with intelligent diagnostic and troubleshooting system
- ZECK stringing data record system with USB interface
- Automatic Tensioning System (ATS)
- Overload protection system

## GENERAL FEATURES

- 1 rigid axle chassis with parking brake for up to 30 km/h
- Lockable aluminum cover
- Back support via hydraulic sprag
- Front support via robust mechanical supporting winch
- Automatic rope/conductor clamping system with grounding device

## OPTIONAL FEATURES

- Version for up to 3 conductors
- Groove diameter 60 mm
- Brake-/lighting system and mudguards (for rigid axle chassis)
- 2 spring-mounted axle chassis with brake-/lighting system and mudguard for up to 80 km/h
- Front support via hydraulic cylinder
- Cable or radio remote control
- Electronic printer for ZECK stringing data record system
- Synchronization-System
- Remote diagnosis with GPS modem
- Hydraulic system (700/1000 bar) to power compression tools
- Biodegradable hydraulic oil
- Pre-cleaner for engine air filter
- Arctic kit - with preheating system for up to -30 °C
- Noise reduction kit
- Large, lockable tool box
- Machine version for left and right laid conductor

Special modifications or equipment on request.

## KEY FACTS

Full electronically controlled puller-tensioner for up to 2 ropes/conductors (optional 3) with 2 bull wheels (Ø 1500 mm) and groove diameter 45 mm (optional 60 mm). Max. pulling/tensioning force 120 kN and ZECK stringing data record system.

### PULLER PERFORMANCE

Max. pulling force: 130 kN  
 Max. speed: 5 km/h  
 Speed at max. pulling force: 2.3 km/h

### TENSIONER PERFORMANCE

Max. tensioning force: 130 kN  
 Speed at max. tensioning force: 5 km/h  
 Min. tensioning force: approx. 10 kN

### BULL WHEELS

Number of bull wheels: 2  
 Diameter of bull wheels: 1700 mm  
 Groove diameter: 45 mm  
 Number of ropes/conductors: up to 4

### DIMENSIONS/WEIGHT

Length x width x height: 5360 x 2550 x 2950 mm  
 Weight: 7980 kg



### ENGINE

- Max. 147 kW (200 hp)
- Liquid-cooled diesel engine with automatic rpm control
- 24 V system with high capacity battery

### DRIVE SYSTEM

- Each bull wheel with a completely enclosed individual drive unit (motor + brake + gear box) for minimal maintenance and high efficiency
- Automatically controlled oil cooling system
- Hydraulic systems to control 4 drum stands individually
- Each bull wheel with an automatically activated safety brake system

### CONTROL SYSTEM

- Control of conductor in/out via joystick
- PLC controlled machine for optimized productivity and safety
- WVGA Color display for monitoring the pulling/tensioning force, hydraulic-, engine- and electrical systems with intelligent diagnostic and troubleshooting system
- ZECK stringing data record system with USB interface
- Automatic Tensioning System (ATS)
- Overload protection system

### GENERAL FEATURES

- 1 rigid axle chassis with parking brake for up to 30 km/h
- Lockable aluminum cover
- Back support via hydraulic sprag
- Front support via robust mechanical supporting winch
- Automatic rope/conductor clamping system with grounding device

### OPTIONAL FEATURES

- Groove diameter 60 mm
- Brake-/lighting system and mudguards (for rigid axle chassis)
- 2 spring-mounted axle chassis with brake-/lighting system and mudguard for up to 80 km/h
- Front support via hydraulic cylinder
- Cable or radio remote control
- Electronic printer for ZECK stringing data record system
- Synchronization-System
- Remote diagnosis with GPS modem
- Hydraulic system (700/1000 bar) to power compression tools
- Biodegradable hydraulic oil
- Pre-cleaner for engine air filter
- Arctic kit - with preheating system for up to -30 °C
- Noise reduction kit
- Large, lockable tool box
- Machine version for left and right laid conductor

Special modifications or equipment on request.

### KEY FACTS

Full electronically controlled puller-tensioner for up to 4 ropes/conductors with 2 bull wheels (Ø 1700 mm) and groove diameter 45 mm (optional 60 mm). Max. pulling/tensioning force of 130 kN and ZECK stringing data record system.

# PULLER-TENSIONER WB 1500/15



## PULLER PERFORMANCE

Max. pulling force:	150 kN
Max. speed:	4,6 km/h
Speed at max. pulling force:	2 km/h

## TENSIONER PERFORMANCE

Max. tensioning force:	150 kN
Speed at max. tensioning force:	5 km/h
Min. tensioning force:	approx. 12 kN

## BULL WHEELS

Number of bull wheels:	2
Diameter of bull wheels:	1500 mm
Groove diameter:	45 mm
Number of ropes/conductors:	up to 4

## DIMENSIONS/WEIGHT

Length x width x height:	5300 x 2430 x 2690 mm
Weight:	7100 kg



## ENGINE

- Max. 147 kW (200 hp)
- Liquid-cooled diesel engine with automatic rpm control
- 24 V system with high capacity battery

## DRIVE SYSTEM

- Each bull wheel with a completely enclosed individual drive unit (motor + brake + gear box) for minimal maintenance and high efficiency
- Automatically controlled oil cooling system
- Hydraulic systems to control 4 drum stands individually
- Each bull wheel with an automatically activated safety brake system

## CONTROL SYSTEM

- Control of conductor in/out via joystick
- PLC controlled machine for optimized productivity and safety
- WVGA Color display for monitoring the pulling/tensioning force, hydraulic-, engine- and electrical systems with intelligent diagnostic and troubleshooting system
- ZECK stringing data record system with USB interface
- Automatic Tensioning System (ATS)
- Overload protection system

## GENERAL FEATURES

- 2 rigid axle chassis with parking brake for up to 30 km/h
- Lockable aluminum cover
- Back support via hydraulic sprag
- Front support via robust mechanical supporting winch
- Automatic rope/conductor clamping system with grounding device

## OPTIONAL FEATURES

- Groove diameter 60 mm
- Brake-/lighting system and mudguards (for rigid axle chassis)
- 2 spring-mounted axle chassis with brake-/lighting system and mudguard for up to 80 km/h
- Front support via hydraulic cylinder
- Cable or radio remote control
- Electronic printer for ZECK stringing data record system
- Synchronization-System
- Remote diagnosis with GPS modem
- Hydraulic system (700/1000 bar) to power compression tools
- Biodegradable hydraulic oil
- Pre-cleaner for engine air filter
- Arctic kit – with preheating system for up to -30 °C
- Noise reduction kit
- Large, lockable tool box
- Machine version for left and right laid conductor

Special modifications or equipment on request.

## KEY FACTS

Full electronically controlled puller-tensioner for up to 4 ropes/conductors with 2 bull wheels (Ø 1500 mm) and groove diameter 45 mm (optional 60 mm). Max. pulling/tensioning force of 150 kN and ZECK stringing data record system.

### PULLER PERFORMANCE

Max. pulling force:	180 kN
Max. speed:	4.6 km/h
Speed at max. pulling force:	2.2 km/h

### TENSIONER PERFORMANCE

Max. tensioning force:	180 kN
Speed at max. tensioning force:	4.6 km/h
Min. tensioning force:	approx. 13 kN

### BULL WHEELS

Number of bull wheels:	2
Diameter of bull wheels:	1500 mm
Groove diameter:	60 mm
Number of ropes/conductors:	up to 4

### DIMENSIONS/WEIGHT

Length x width x height:	6170 x 2500 x 2950 mm
Weight:	8500 kg



### ENGINE

- Max. 200 kW (272 hp)
- Liquid-cooled diesel engine with automatic rpm control
- 24 V system with high capacity battery

### DRIVE SYSTEM

- Each bull wheel with a completely enclosed individual drive unit (motor + brake + gear box) for minimal maintenance and high efficiency
- Automatically controlled oil cooling system
- Hydraulic systems to control 4 drum stands individually
- Each bull wheel with an automatically activated safety brake system

### CONTROL SYSTEM

- Control of conductor in/out via joystick
- PLC controlled machine for optimized productivity and safety
- WVGA Color display for monitoring the pulling/tensioning force, hydraulic-, engine- and electrical systems with intelligent diagnostic and troubleshooting system
- ZECK stringing data record system with USB interface
- Automatic Tensioning System (ATS)
- Overload protection system

### GENERAL FEATURES

- 1 rigid axle chassis with parking brake for up to 30 km/h
- Lockable aluminum cover
- Back support via hydraulic sprag
- Front support via hydraulic cylinder
- Automatic rope/conductor clamping system with grounding device

### OPTIONAL FEATURES

- Brake-/lighting system and mudguards (for rigid axle chassis)
- 2 spring-mounted axle chassis with brake-/lighting system and mudguard for up to 80 km/h
- Cable or radio remote control
- Electronic printer for ZECK stringing data record system
- Synchronization-System
- Remote diagnosis with GPS modem
- Hydraulic system (700/1000 bar) to power compression tools
- Biodegradable hydraulic oil
- Pre-cleaner for engine air filter
- Arctic kit - with preheating system for up to -30 °C
- Noise reduction kit
- Large, lockable tool box
- Machine version for left and right laid conductor

Special modifications or equipment on request.

### KEY FACTS

Full electronically controlled puller-tensioner for up to 4 ropes/conductors with 2 bull wheels (Ø 1500 mm) and groove diameter 60 mm. Max. pulling/tensioning force of 180 kN and ZECK stringing data record system.

# PULLER-TENSIONER WB 1500/16+8



## PULLER PERFORMANCE

Max. pulling force:	2 x 80 kN or 1 x 160 kN
Max. speed:	4,8 km/h
Speed at max. pulling force:	2,4 km/h

## TENSIONER PERFORMANCE

Max. tensioning force:	2 x 80 kN or 1 x 160 kN
Speed at max. tensioning force:	5 km/h
Min. tensioning force:	approx. 6 kN (80 kN) approx. 11 kN (160 kN)

## BULL WHEELS

Number of bull wheels:	4 (2 x 2)
Diameter of bull wheels:	1500 mm
Groove diameter:	60 mm
Number of ropes/conductors:	up to 4 (2 + 2), optional 6 (3 + 3)

## DIMENSIONS/WEIGHT

Length x width x height:	6500 x 2500 x 2800 mm
Weight:	11500 kg



## ENGINE

- Max. 200 kW (272 hp)
- Liquid-cooled diesel engine with automatic rpm control
- 24 V system with high capacity battery

## DRIVE SYSTEM

- Each bull wheel with a completely enclosed individual drive unit (motor + brake + gear box) for minimal maintenance and high efficiency
- Automatically controlled oil cooling system
- Hydraulic systems to control 4 drum stands individually

## CONTROL SYSTEM

- Control of conductor in/out via joystick
- PLC controlled machine for optimized productivity and safety
- WVGA Color display for monitoring the pulling/tensioning force, hydraulic-, engine- and electrical systems with intelligent diagnostic and troubleshooting system
- ZECK stringing data record system with USB interface
- Automatic Tensioning System (ATS)
- Overload protection system

## GENERAL FEATURES

- 2 axle chassis with rigid axles, parking brake and pneumatic brake system for up to 30 km/h
- Lockable aluminum cover
- Front and back support via hydraulic cylinders
- Automatic rope/conductor clamping system with grounding device

## OPTIONAL FEATURES

- Brake-/lighting system and mudguards (for rigid axle chassis)
- 2 spring-mounted axle chassis with brake-/lighting system and mudguard for up to 80 km/h
- Electronic printer for ZECK stringing data record system
- Cable or radio remote control
- Synchronization-System
- Remote diagnosis with GPS modem
- Hydraulic system (700/1000 bar) to power compression tools
- Biodegradable hydraulic oil
- Pre-cleaner for engine air filter
- Arctic kit – with preheating system for up to -30 °C
- Noise reduction kit
- Machine version for left and right laid conductor

Special modifications or equipment on request.

## KEY FACTS

Full electronically controlled puller-tensioner for up to 4 ropes/conductors with 4 bull wheels (Ø 1500 mm), groove diameter 60 mm and individual control of each bull wheel set. Max. pulling/tensioning force of 2 x 80 kN or 1 x 160 kN and ZECK stringing data record system.



# PULLER-TENSIONER WB 1500/16+4+4+4

## PULLER PERFORMANCE

Max. pulling force:	4 x 48 kN or 1 x 170 kN
Max. speed:	4.8 km/h
Speed at max. pulling force:	2.3 km/h

## TENSIONER PERFORMANCE

Max. tensioning force:	4 x 48 kN or 1 x 170 kN
Speed at max. tensioning force:	4.8 km/h
Min. tensioning force:	approx. 3.5 kN (48 kN) approx. 13 kN (170 kN)

## BULL WHEELS

Number of bull wheels:	8 (4 x 2)
Diameter of bull wheels:	1500 mm
Groove diameter:	45 mm
Number of ropes/conductors:	up to 4 (1 + 1 + 1 + 1)

## DIMENSIONS/WEIGHT

Length x width x height:	8500 x 2550 x 3800 mm
Weight:	17500 kg



B  
4



## ENGINE

- Max. 200 kW (272 hp)
- Liquid-cooled diesel engine with automatic rpm control
- 24 V system with high capacity battery

## DRIVE SYSTEM

- Each bull wheel with a completely enclosed individual drive unit (motor + brake + gear box) for minimal maintenance and high efficiency
- Automatically controlled oil cooling system
- Hydraulic systems to control 4 drum stands individually

## CONTROL SYSTEM

- Control of conductor in/out via joystick
- PLC controlled machine for optimized productivity and safety
- WVGA Color display for monitoring the pulling/tensioning force, hydraulic-, engine- and electrical systems with intelligent diagnostic and troubleshooting system
- ZECK stringing data record system with USB interface
- Automatic Tensioning System (ATS)
- Overload protection system

## GENERAL FEATURES

- 2 rigid axle chassis with parking brake for up to 30 km/h
- Lockable aluminum cover
- Back support via hydraulic sprag
- Front support via hydraulic cylinder
- Automatic rope/conductor clamping system with grounding device

## OPTIONAL FEATURES

- Self-propelled chassis controlled by radio remote
- Brake-/lighting system and mudguards (for rigid axle chassis)
- 2 spring-mounted axle chassis with brake-/lighting system and mudguard for up to 80 km/h
- Electronic printer for ZECK stringing data record system
- Cable or radio remote control
- Synchronization-System
- Remote diagnosis with GPS modem
- Hydraulic system (700/1000 bar) to power compression tools
- Biodegradable hydraulic oil
- Pre-cleaner for engine air filter
- Arctic kit - with preheating system for up to -30 °C
- Noise reduction kit
- Machine version for left and right laid conductor

Special modifications or equipment on request.

## KEY FACTS

Full electronically controlled puller-tensioner for up to 4 ropes/conductors with 8 bull wheels (Ø 1500 mm), groove diameter 45 mm and individual control of each bull wheel set. Max. pulling/tensioning force of 4 x 48 kN or 1 x 170 kN and ZECK stringing data record system.

# PULLER-TENSIONER WB 1700/18



## PULLER PERFORMANCE

Max. pulling force:	180 kN
Max. speed:	3 km/h
Speed at max. pulling force:	2.2 km/h

## TENSIONER PERFORMANCE

Max. tensioning force:	180 kN
Speed at max. tensioning force:	5 km/h
Min. tensioning force:	approx. 13 kN

## BULL WHEELS

Number of bull wheels:	2
Diameter of bull wheels:	1700 mm
Groove diameter:	60 mm
Number of ropes/conductors:	up to 4

## DIMENSIONS/WEIGHT

Length x width x height:	6500 x 2530 x 3070 mm
Weight:	9650 kg



## ENGINE

- Max. 200 kW (272 hp)
- Liquid-cooled diesel engine with automatic rpm control
- 24 V system with high capacity battery

## DRIVE SYSTEM

- Each bull wheel with a completely enclosed individual drive unit (motor + brake + gear box) for minimal maintenance and high efficiency
- Automatically controlled oil cooling system
- Hydraulic systems to control 4 drum stands individually
- Each bull wheel with an automatically activated safety brake system

## CONTROL SYSTEM

- Control of conductor in/out via joystick
- PLC controlled machine for optimized productivity and safety
- WVGA Color display for monitoring the pulling/tensioning force, hydraulic-, engine- and electrical systems with intelligent diagnostic and troubleshooting system
- ZECK stringing data record system with USB interface
- Automatic Tensioning System (ATS)
- Overload protection system

## GENERAL FEATURES

- 2 rigid axle chassis with parking brake for up to 30 km/h
- Lockable aluminum cover
- Back support via hydraulic sprag
- Front support via hydraulic cylinder
- Automatic rope/conductor clamping system with grounding device

## OPTIONAL FEATURES

- Brake-/lighting system and mudguards (for rigid axle chassis)
- 2 spring-mounted axle chassis with brake-/lighting system and mudguard for up to 80 km/h
- Cable or radio remote control
- Electronic printer for ZECK stringing data record system
- Synchronization-System
- Remote diagnosis with GPS modem
- Hydraulic system (700/1000 bar) to power compression tools
- Biodegradable hydraulic oil
- Pre-cleaner for engine air filter
- Arctic kit - with preheating system for up to -30 °C
- Noise reduction kit
- Large, lockable tool box
- Machine version for left and right laid conductor

Special modifications or equipment on request.

## KEY FACTS

Full electronically controlled puller-tensioner for up to 4 ropes/conductors with 2 bull wheels (Ø 1700 mm) and groove diameter 60 mm. Max. pulling/tensioning force of 180 kN and ZECK stringing data record system.



# PULLER-TENSIONER

## WB 1700/18+9

### PULLER PERFORMANCE

Max. pulling force:	2 x 90 kN or 1 x 180 kN
Max. speed:	4.8 km/h
Speed at max. pulling force:	2.1 km/h

### TENSIONER PERFORMANCE

Max. tensioning force:	2 x 90 kN or 1 x 180 kN
Speed at max. tensioning force:	4.8 km/h
Min. tensioning force:	approx. 6 kN (90 kN) approx. 14 kN (180 kN)

### BULL WHEELS

Number of bull wheels:	4 (2 x 2)
Diameter of bull wheels:	1700 mm
Groove diameter:	60 mm
Number of ropes/conductors:	up to 4 (2 + 2), optional 6 (3 + 3)

### DIMENSIONS/WEIGHT

Length x width x height:	7150 x 2570 x 3060 mm
Weight:	14000 kg



B  
4

### ENGINE

- Max. 200 kW (272 hp)
- Liquid-cooled diesel engine
- 24 V system with high capacity battery

### DRIVE SYSTEM

- Each bull wheel with a completely enclosed individual drive unit (motor + brake + gear box) for minimal maintenance and high efficiency
- Automatically controlled oil cooling system
- Hydraulic systems to control 4 drum stands individually

### CONTROL SYSTEM

- Control of conductor in/out via joystick
- PLC controlled machine for optimized productivity and safety
- WVGA Color display for monitoring the pulling/tensioning force, hydraulic-, engine- and electrical systems with intelligent diagnostic and troubleshooting system
- ZECK stringing data record system with USB interface
- Automatic Tensioning System (ATS)
- Overload protection system

### GENERAL FEATURES

- 2 axle chassis with rigid axles, parking brake and pneumatic brake system for up to 30 km/h
- Lockable aluminum cover
- Back support via hydraulic sprag
- Front support via hydraulic cylinder
- Automatic rope/conductor clamping system with grounding device

### OPTIONAL FEATURES

- Version for up to 6 conductors
- Brake-/lighting system and mudguards (for rigid axle chassis)
- 2 spring-mounted axle chassis with brake-/lighting system and mudguard for up to 80 km/h
- Cable or radio remote control
- Electronic printer for ZECK stringing data record system
- Synchronization-System
- Remote diagnosis with GPS modem
- Hydraulic system (700/1000 bar) to power compression tools
- Biodegradable hydraulic oil
- Pre-cleaner for engine air filter
- Arctic kit - with preheating system for up to -30 °C
- Noise reduction kit
- Machine version for left and right laid conductor

Special modifications or equipment on request.

### KEY FACTS

Full electronically controlled puller-tensioner for up to 4 ropes/conductors (optional 6) with 4 bull wheels (Ø1700 mm), groove diameter 60 mm and individual control of each bull wheel set. Max. pulling/tensioning force of 2 x 90 kN or 1 x 180 kN and ZECK stringing data record system.

# PULLER-TENSIONER WB 2400/20



## PULLER PERFORMANCE

Max. pulling force:	200 kN
Max. speed:	2 km/h
Speed at max. pulling force:	1.9 km/h

## TENSIONER PERFORMANCE

Max. tensioning force:	200 kN
Speed at max. tensioning force:	2 km/h
Min. tensioning force:	approx. 15 kN

## BULL WHEELS

Number of bull wheels:	2
Diameter of bull wheels:	2400 mm
Groove diameter:	80 mm
Number of ropes/conductors:	up to 2

## DIMENSIONS/WEIGHT

Length x width x height:	7500 x 2500 x 3530 mm
Weight:	13300 kg



## ENGINE

- Max. 200 kW (272 hp)
- Liquid-cooled diesel engine with automatic rpm control
- 24 V system with high capacity battery

## DRIVE SYSTEM

- Each bull wheel with a completely enclosed individual drive unit (motor + brake + gear box) for minimal maintenance and high efficiency
- Automatically controlled oil cooling system
- Hydraulic systems to control 2 drum stands individually
- Each bull wheel with an automatically activated safety brake system

## CONTROL SYSTEM

- Control of conductor in/out via joystick
- PLC controlled machine for optimized productivity and safety
- WVGA Color display for monitoring the pulling/tensioning force, hydraulic-, engine- and electrical systems with intelligent diagnostic and troubleshooting system
- ZECK stringing data record system with USB interface
- Automatic Tensioning System (ATS)
- Overload protection system

## GENERAL FEATURES

- 2 rigid axle chassis with parking brake for up to 30 km/h
- Lockable aluminum cover
- Front and back support via hydraulic cylinders
- Automatic rope/conductor clamping system with grounding device

## OPTIONAL FEATURES

- Groove diameter 60 or 70 mm
- Brake-/lighting system and mudguards (for rigid axle chassis)
- 2 spring-mounted axle chassis with brake-/lighting system and mudguard for up to 80 km/h
- Cable or radio remote control
- Electronic printer for ZECK stringing data record system
- Synchronization-System
- Remote diagnosis with GPS modem
- Hydraulic system (700/1000 bar) to power compression tools
- Biodegradable hydraulic oil
- Pre-cleaner for engine air filter
- Arctic kit - with preheating system for up to -30 °C
- Noise reduction kit
- Large, lockable tool box
- Machine version for left and right laid conductor

Special modifications or equipment on request.

## KEY FACTS

Full electronically controlled puller-tensioner for up to 2 ropes/conductors with 2 bull wheels (Ø 2400 mm) and groove diameter 80 mm (optional 60 or 70mm). Max. pulling/tensioning force of 200 kN and ZECK stringing data record system.

### PULLER PERFORMANCE

Max. pulling force:	240 kN
Max. speed:	2 km/h
Speed at max. pulling force:	1.6 km/h

### TENSIONER PERFORMANCE

Max. tensioning force:	240 kN
Speed at max. tensioning force:	2 km/h
Min. tensioning force:	approx. 20 kN

### BULL WHEELS

Number of bull wheels:	2
Diameter of bull wheels:	2400 mm
Groove diameter:	80 mm
Number of ropes/conductors:	up to 2

### DIMENSIONS/WEIGHT

Length x width x height:	7500 x 2500 x 3530 mm
Weight:	14000 kg



### ENGINE

- Max. 200 kW (272 hp)
- Liquid-cooled diesel engine with automatic rpm control
- 24 V system with high capacity battery

### DRIVE SYSTEM

- Each bull wheel with a completely enclosed individual drive unit (motor + brake + gear box) for minimal maintenance and high efficiency
- Automatically controlled oil cooling system
- Hydraulic systems to control 2 drum stands individually
- Each bull wheel with an automatically activated safety brake system

### CONTROL SYSTEM

- Control of conductor in/out via joystick
- PLC controlled machine for optimized productivity and safety
- WVGA Color display for monitoring the pulling/tensioning force, hydraulic-, engine- and electrical systems with intelligent diagnostic and troubleshooting system
- ZECK stringing data record system with USB interface
- Automatic Tensioning System (ATS)
- Overload protection system

### GENERAL FEATURES

- 2 rigid axle chassis with parking brake for up to 30 km/h
- Lockable aluminum cover
- Front and back support via hydraulic cylinders
- Automatic rope/conductor clamping system with grounding device

### OPTIONAL FEATURES

- Groove diameter 60 or 70 mm
- Brake-/lighting system and mudguards (for rigid axle chassis)
- 2 spring-mounted axle chassis with brake-/lighting system and mudguard for up to 80 km/h
- Cable or radio remote control
- Electronic printer for ZECK stringing data record system
- Synchronization-System
- Remote diagnosis with GPS modem
- Hydraulic system (700/1000 bar) to power compression tools
- Biodegradable hydraulic oil
- Pre-cleaner for engine air filter
- Arctic kit - with preheating system for up to -30 °C
- Noise reduction kit
- Large, lockable tool box
- Machine version for left and right laid conductor

Special modifications or equipment on request.

### KEY FACTS

Full electronically controlled puller-tensioner for up to 2 ropes/conductors with 2 bull wheels (Ø 2400 mm) and groove diameter 80 mm (optional 60 or 70 mm). Max. pulling/tensioning force of 240 kN and ZECK stringing data record system.





# OVERHEAD TRANSMISSION LINE CONSTRUCTION

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## B5 DRUM STAND TRAILER

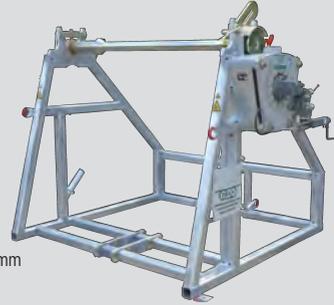


# DRUM STAND ZECK

## TB Z246 | TB Z249 | TB Z550



	TB Z 246	TB Z 249	TB Z 550
Max. diameter:	max. 3000 mm	max. 3000 mm	max. 3000 mm
Max. weight:	max. 8000 kg	max. 10000 kg	max. 13000 kg
Drum shaft:	Ø 76 mm	Ø 76 mm	Ø 95 (optional 76 mm)
Max. width:			
125 mm bore:	1586 mm	1563 mm	1577 mm
80 mm bore:	1484 mm	1462 mm	1640 mm
Max. drive torque:	2900 Nm	2900 Nm	4000 Nm



### DIMENSIONS/WEIGHT

L x W x H:	1985 x 2110 x 1800 mm	2070 x 2350 x 1870 mm	2600 x 2400 x 1910 mm
Weight:	720 kg	1250 kg	1360 kg



### DRUM DRIVE SYSTEM

- Hydraulic drum drive system with planetary gear and hydraulic motor => drive is activated directly on the drum shaft
- Fix mounted drum drive => no need to dismount during change of drum
- Free wheel device
- Mechanical parking brake system

### DRUM HOLDING FIXTURES

- Cone adjustable via hand crank
- Adjustable drum driving bolt for all drum types
- Drum is loaded via crane

### GENERAL FEATURES

- Robust steel frame with anchoring eyes
- Dismountable frame for smaller transport dimensions

### OPTIONAL FEATURES

- Hose set with quick coupling to connect the drive unit
- Suitable for stringing operation via helicopter => max. rope speed approx. 20 km/h
- Automatic rope guiding device
- Longer drum shafts and adapters for wider drum width
- Mounted or separate engine aggregate => independent operation, e.g. as Puller to wind up old conductors
- ATS for automatic rope pull in/out
- Reel with detachable flange HT/TBF for conductor scrapping with high rope capacity
- Steel frame galvanized
- Biodegradable hydraulic oil

Special modifications or equipment on request.

	<b>244-200</b>	<b>244-300</b>
Max. diameter:	2800 mm (min. 1600 mm)	3200 mm (min 2000 mm)
Max. weight:	7000 kg	10000 kg
Drum shaft:	Ø 60 mm	Ø 60 mm
Max. width:	max. 1500 mm	max. 1650 mm

### DIMENSIONS/WEIGHT

incl. transport box		
Length:	2290 x 880 x 720 mm	2290 x 880 x 720 mm
Weight:	515 kg	620 kg



### DRUM TENSIONING SYSTEM

- Disc-brakes on both sides, operation via hand lever

### DRUM HOLDING FIXTURES

- Drum shaft with 4 clamp units on each side to fix the drum
- 2 manual hydraulic systems for lifting and lowering the drum holding fixtures => simple loading of the drum without crane

### GENERAL FEATURES

- 2 separate units for smaller transport dimensions
- Mechanical locking device for drum lifting system

### OPTIONAL FEATURES

- Hydraulic drum drive system (max. drive torque 2900 Nm)
- Hose set with quick coupling to connect the drive unit
- Special clamp unit for drums with 3 spokes

Special modifications or equipment on request.

# DRUM STAND TB 40



Max. diameter:	max. 5000 mm
Max. weight:	40000 kg (optional 50000 kg)
Drum shaft:	Ø 160 mm (optional Ø 132 mm)
Max. width:	2600 mm (other width on request)



## DIMENSIONS/WEIGHT

Length x width x height:	3150 x 4904 x 2000 mm
Weight:	3400 kg



## DRUM TENSIONING SYSTEM

- Disc-brakes on both sides, operation via hand lever

## DRUM HOLDING FIXTURES

- Drum shaft with clamp units on each side to fix the drum
- 2 manual hydraulic systems for lifting and lowering the drum holding fixtures => simple loading of the drum without crane

## GENERAL FEATURES

- 2 separate units for smaller transport dimensions
- Mechanical locking device for drum lifting system

## OPTIONAL FEATURES

- Hydraulic drum drive system (max. drive torque 10000 Nm)
- Hose set with quick coupling to connect the drive unit
- Adapter to fix the drum on the drum shaft (according to drum drawing)

Special modifications or equipment on request.

Max. diameter:	3000 mm
Max. speed:	6 km/h (32 U/min)
Max. weight:	7000 kg
Max. width:	
125 mm bore:	1600 mm
80 mm bore:	1500 mm
Drive torque:	2900 Nm

### DIMENSIONS/WEIGHT

Length x width x height:	4700 x 2550 x 2360 mm
Weight:	2650 kg



### DRUM DRIVE SYSTEM

- Hydraulic drum drive system with planetary gear and hydraulic motor => drive is activated directly on the drum shaft
- Fix mounted drum drive => no need to dismount during change of drum
- Free wheel device
- Mechanical parking brake system

### DRUM HOLDING FIXTURES

- High quality, light drum with Ø 76 mm and 2 adjustable cones
- Cone adjustable via hand crank
- Adjustable drum driving bolt for all drum types
- Engine aggregate (3.7 kW / 5 hp) for easy loading/unloading of drums => self-loading

### GENERAL FEATURES

- 2 spring-mounted axle chassis with brake-/lighting system and mudguards for up to 80 km/h (in EU incl. ABS)
- Robust steel frame
- Front support via robust mechanical supporting winch
- Back support via robust mechanical supporting plates

### OPTIONAL FEATURES

- Steel frame galvanized
- Lockable tool box
- Hose set with quick coupling to connect the drive unit
- Engine aggregate 12.5 kW (17 hp; with gasoline or diesel engine with electro start to use as puller)
- ATS for automatic rope pull in/out for
- Reel with detachable flange HT/TBF for conductor scrapping with high rope capacity
- Biodegradable hydraulic oil

Special modifications or equipment on request.

# DRUM CARRIER TBF 8020 E



Max. diameter:	3200 mm
Max. weight:	8000 kg
Max. width:	1720 mm
Center bore:	80 - 125 mm

## DIMENSIONS/WEIGHT

Length x width x height:	4200 x 2520 x 2300 mm
Weight:	1200 kg



## DRUM HOLDING FIXTURES

- Various holding devices for different drum-Ø
- Easy loading by hydraulic hand pump and cylinders

## GENERAL FEATURES

- 1 rigid axle chassis for car application and up to 30 km/h
- Supporting wheel
- Robust steel frame
- Detachable frame for small shipment dimensions

## OPTIONAL FEATURES

- Lighting system and mudguards
- Engine driven hydraulic aggregate
- Drum drive unit (only with aggregate)
- Drum holding devices for drum-Ø < 1700 mm

Special modifications or equipment on request.



Max. diameter:	3000 mm
Max. speed:	6 km/h (32 U/min)
Max. weight:	7000 kg
Max. width:	
125 mm bore:	1486 mm
80 mm bore:	1384 mm
Drive torque:	2900 Nm

### DIMENSIONS/WEIGHT

Length x width x height:	3200 x 2420 x 2020 mm
Weight:	1200 kg



### DRUM DRIVE SYSTEM

- Hydraulic drum drive system with planetary gear and hydraulic motor => drive is activated directly on the drum shaft
- Fix mounted drum drive => no need to dismount during change of drum
- Free wheel device
- Mechanical parking brake system

### DRUM HOLDING FIXTURES

- High quality, light drum with Ø 76 mm and 2 adjustable cones
- Cone adjustable via hand crank
- Adjustable drum driving bolt for all drum types
- Engine aggregate (3.7 kW / 5 hp) for easy loading/unloading of drums => self-loading

### GENERAL FEATURES

- 1 rigid axle chassis for car application and up to 30 km/h
- Robust steel frame with anchoring eyes
- Lifting rings for easy loading by crane
- Front support via robust mechanical supporting winch

### OPTIONAL FEATURES

- Brake-/lighting system and mudguards (for rigid axle chassis)
- Hose set with quick coupling to connect the drive unit
- Suitable for stringing operation via helicopter => max. rope speed approx. 20 km/h
- Automatic rope guiding device
- Longer drum shafts and adapters for wider drum width
- Mounted or separate engine aggregate => independent operation, e.g. as Puller to wind up old conductors
- ATS for automatic rope pull in/out
- Reel with detachable flange HT/TBF for conductor scrapping with high rope capacity
- Steel frame galvanized
- Biodegradable hydraulic oil

Special modifications or equipment on request.

# DRUM STAND

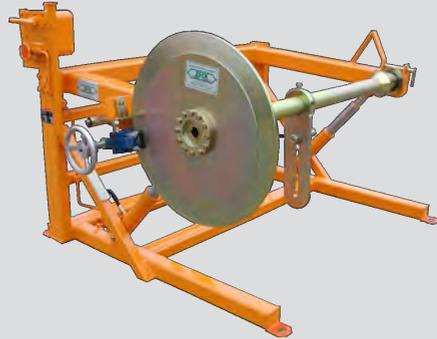
## TBH 18 | TBH 20



Max. diameter:	1800 mm (TBH 18) 2000 mm (TBH 20)
Max. speed:	6 km/h (32 U/min)
Max. weight:	3000 kg
Max. width:	1140 mm
Disc brake tensioning torque:	3200 Nm

### DIMENSIONS/WEIGHT

Length x width x height:	1550 x 1930 x 1200 mm
Weight:	460 kg



### DRUM TENSIONING SYSTEM

- Double acting, large disc-brake system => comfortable operation via a big hand wheel

### DRUM HOLDING FIXTURES

- High quality, light drum with  $\varnothing$  76 mm and 2 adjustable cones
- Cone adjustable via hand crank
- Adjustable drum driving bolt for all drum types
- Manual hydraulic unit for easy loading / unloading of drums => self-loading

### GENERAL FEATURES

- Robust steel frame with anchoring eyes

### OPTIONAL FEATURES

- Hydraulic drum drive system (max. drive torque 2900 Nm)
- Hose set with quick coupling to connect the drive unit
- Holding device to connect a hydraulic drum drive
- Hydraulic drum drive with quick locking device
- Engine aggregate 12.5 kW (17 hp; with gasoline or diesel engine with electro start to use as puller)
- Rope guiding device - hydraulic driven
- Special rope grounding device
- Biodegradable hydraulic oil

Special modifications or equipment on request.



# OVERHEAD TRANSMISSION LINE CONSTRUCTION

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## B6 REEL WINDER REEL



# HYDRAULIC REEL WINDER

## HTB | HTB D



### DIMENSIONS/WEIGHT

Length x width x height: 1800 x 1750 x 1370 mm  
Weight: 560 kg



### REEL DRIVE SYSTEM

- Hydraulic drive system (max. drive torque 1100 Nm)
- Free wheel device
- Hydraulic drum drive with planetary gear and hydraulic motor as enclosed drive system

### DISC BRAKE SYSTEM

- HTB (Ø 300 mm; tensioning torque 1100 Nm)
- HTB D (Ø 700 mm; tensioning torque 1900 Nm)
- Controlled tensioning of the rope without hydraulic supply
- HTB D for pulling rope installation via helicopter

### REEL HOLDING FIXTURE

- Manual hydraulic unit for easy loading/unloading of drums => self-loading
- Special plug-in axle with quick locking device for steel reels  
IT => fast change of reel by one operator
- **Version IT**
  - Ø 1100 and 1400 mm (B6-300) and HT (B6-400)
- **Version ZECK**
  - H0, H1, H2, H3, H0/T, H2/T and HT (B6-400)
- Reel weight: max. 3500 kg
- Reel diameter: 1100 – 1800 mm

### OPTIONAL FEATURES

- Adjustable to all rope diameters and reel widths
- Hydraulic drive system (max. drive torque 1500 Nm)
- Hose set with quick coupling to connect the drive unit
- Biodegradable hydraulic oil
- Automatic rope guiding device

Special modifications or equipment on request.



### DIMENSIONS/WEIGHT

Length x width x height:

1500 x 1450 x 1500 mm

Weight:

460 kg

### REEL DRIVE SYSTEM

- Hydraulic drive system (max. drive torque 1100 Nm)
- Free wheel device
- Hydraulic drum drive with planetary gear and hydraulic motor as enclosed drive system

### ROPE GUIDING DEVICE

- Automatic rope guidance

### REEL HOLDING FIXTURE

- Manual hydraulic to lift and lower the steel reels
- Special plug-in axle with quick locking device for steel reels  
IT => fast change of reel by one operator
- **Version IT**
  - Ø 1100 and 1400 mm (B6-300)
- Reel weight: max. 1700 kg
- Reel diameter: 1100 – 1400 mm

### OPTIONAL FEATURE

- Hose set with quick coupling to connect the drive unit

Special modifications or equipment on request.

# REEL WINDER HB



## DIMENSIONS/WEIGHT

Length x width x height: 2050 x 1200 x 950 mm  
Weight: 125 kg



## HB

- Reel winder without drive unit
- Max. reel  $\varnothing$  1400 mm
- Max. reel weight 2000 kg
- Disc-brake system  $\varnothing$  300 mm for controlled pull out of the rope
- Reel-holding device with maintenance free ball bearing
- Installation for reels with  $\varnothing$  1100 or 1400 mm
- **2 models available:**
  - ZECK reels – H0, H1, H2, H0/T, H1/T and H2/T (B6-400)
  - IT reels – with  $\varnothing$  1.100 and 1.400 mm (B6-300)
- Special plug-in axle with quick locking device for simple reels

## FRAME

- Dismountable frame for smaller transport dimensions

## OPTIONAL FEATURE

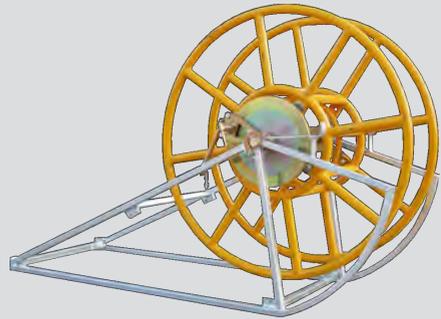
- Large disc-brake system  $\varnothing$  700 mm

Special modifications or equipment on request.

## DIMENSIONS/WEIGHT

Length x width x height:  
Weight:

2550 x 1325 x 1060 mm  
85 kg



## HB E

- Reel winder without drive unit in simple version
- Max. reel Ø 1400 mm
- Max. reel weight 1500 kg
- Installation for reels from 700 – 1400 mm

## FRAME

- Dismountable frame for smaller transport dimensions

## OPTIONAL FEATURE

- Disc-brake system

Special modifications or equipment on request.

## HOT-DIP GALVANIZED

Screwed in stable crosses on both sides for holding the axle. Without integrated bearing.

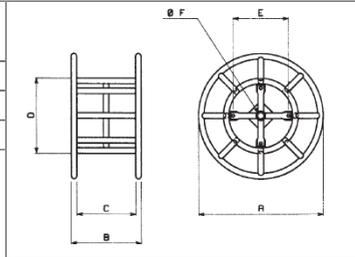
### DETACHABLE:

Reels with a detachable flange and with a conic core, for scrapping of conductors.



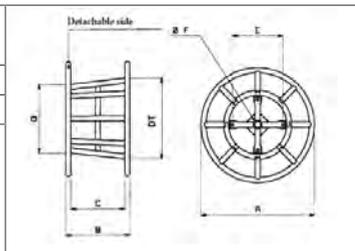
### NON DETACHABLE

Art-Nr.	Dimensions in mm							Weight kg
	A	B	C	D	DT	E	F	
77-9034	1100	560	460	570	-	420	50	66
77-9035	1400	560	460	570	-	420	50	105
77-9037	1800	560	460	570	-	420	50	138



### DETACHABLE

Art-Nr.	Dimensions in mm							Weight kg
	A	B	C	D	DT	E	F	
77-9052	1100	540	460	570	680	420	50	70
77-9054	1400	560	460	620	715	420	50	100



Ø mm	Rope capacity of the reel in m		
	1100 mm	1400 mm	1800 mm
	77-9034, 77-9052	77-9035, 77-9054	77-9037
8	3200	6400	10000
10	2000	4000	7000
12	1400	2800	5000
13	1200	2400	4600
14	1000	2000	4000
16	800	1600	2800
18	--	1200	2000
20	--	1000	1800
22	--	800	1600
24	--	800	1400
26	--	600	1000
28	--	450	800
30	--	400	700

## VERSIONS

- ZECK-reels with mounted axle with maintenance free bearings
  - Detachable reels for conductor scrapping;
  - Bundling wire can be installed even when reels are full
  - Available for reel winder with ZECK and IT holding fixtures



**HT, HT/BM, HT/TBF:** detachable flange can be easily released with a lever (without screws)

## DIMENSIONS

Type of reel	H0	H2	H3	H0/T	H2/T	HT/BM	HT	HT/TBF
Art-Nr.	V201-000	V201-200	V201-300	V201-020	V201-220	V190-200	V201-330	V190-301
Detachable reel				x	x	x	x	x
Suitable for	USP+HTB	SPW+HTB	HTB	USP+HTB	SPW+HTB	TB+TBF+BM	HTB	TB+TBF
Axle Ø (mm)	35	40	40	35	40	Hollow shaft Ø 80	40	Hollow shaft Ø 80
Axle length (mm)	620	680	1000	620	680	990	1000	1360
Outer Ø (mm)	1100	1380	1700	1100	1380	1300	1750	1650
Core Ø (mm)	350	400	400	570/360	580/380	840/500	1040/760	885/400
Clear width (mm)	360	410	580	360	360	694	580	980
Weight (kg)	74	148	220	110	170	345	270	360
Rope capacity factor	240000	460000	1020000	220000	450000	540000	860000	150000

Formula to calculate the rope capacity for reels:

**Rope capacity factor : Rope Ø<sup>2</sup> = Rope capacity (m)**

## ROPE CAPACITY [m]

Rope Ø - mm	H0	H2	H3	H0/T	H2/T	HT/BM	HT	HT/TBF
8	3750	7200	15950	3450	7050	8400	13450	24400
10	2400	4600	10020	2200	4500	5400	8600	15000
12	1670	3200	7100	1530	3140	3750	6000	10400
13	1420	2720	6040	1300	2680	3200	5100	8900
14	1220	2350	5200	1140	2300	2760	4400	7600
16	940	1800	4000	860	1760	2100	3380	4650
18		1420	3150		1400	1670	2660	3670
20		1150	2550		1140	1350	2160	2980
22		950	2100		930	1120	1780	2460
24		800	1770		800	940	1500	2060
28						690	1100	1510
32						530	850	1160

## PULLER/TENSIONER PERFORMANCE

Max. pulling/tensioning force: 4.9 kN  
Max. speed: 310 m/min

## DIMENSIONS/WEIGHT

Length x width x height: 2550 x 1325 x 1060 mm  
Weight: 2000 kg (without drum)



## DRIVE SYSTEM

- Max. 15 kW (20 hp) electro motor
- Hydraulic drive system (max. drive torque 1230 Nm)
- Free wheel device to pull out ropes by hand (without engine)
- Hydraulic drum drive with planetary gear and hydraulic motor as enclosed drive system

## CONTROL SYSTEM

- Control of rope in/out via hand lever
- Control instruments for the pulling/tensioning force and all machine data

## REEL HOLDING FIXTURE

- Hydraulic system for easy loading/unloading of drums => self-loading
- Special plug-in axle with quick locking device for steel reels IT => fast change of reel by one operator
- Drum dimensions
  - Reel weight: max. 4000 kg
  - Reel diameter: max. 2240 mm (min. 500 mm)
  - Reel width: max. 1400 mm (min. 400 mm)
  - Center bore: 50 - 125 mm
- Steel reel dimensions
  - Reel weight: max. 3000 kg
  - Reel diameter: 1100 - 1800 mm
  - Axle diameter: 40 mm (45 mm "IT")
- **Version ZECK**
  - H0, H1, H2, H3, H0/T, H2/T and HT (B6-400)
- **Version IT**
  - Ø 1100 - 1800 mm (B6-300)

## OPTIONAL FEATURES

- Cable remote control
- Automatic rope guiding device
- Meter counter

Special modifications or equipment on request.

## KEY FACTS

Hydraulic rewinder with a max. pulling/tensioning force of 4.9 kN and max. speed of 310 m/min.

Constructed for: rewinding and inspection of ropes/conductors  
Suitable for steel reels or wooden/steel drums.



# OVERHEAD TRANSMISSION LINE CONSTRUCTION

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## B7 MACHINES FOR MEDIUM VOLTAGE LINE

# HYDRAULIC REEL PULLER HB 800



## REEL DRIVE

Drive torque: 3200 Nm

## MAX. PULLING FORCE AND SPEED

Outer rope layer: 5.35 kN (Ø 1200 mm)  
with 50 m/min  
Middle rope layer: 8 kN (Ø 840 mm) with  
35 m/min  
Inner rope layer: 13.8 kN (Ø 460 mm)  
with 20 m/min

## DIMENSIONS/WEIGHT

Length x width x height: 1660 x 1150 x 1730 mm  
Weight: 890 kg



## REEL DRIVE SYSTEM

- Gasoline or diesel engine with 6.8 kW (9 hp)
- Hydraulic reel drive system with planetary gear and hydraulic engine – drive is directly activated on the drum shaft
- Rope can be indefinitely controlled in/out via a hand level

## REEL

- Fixed at the planetary gear box
- Detachable with Ø 1400 mm with conic core
- Rope capacity e.g. 1560 m with Ø 16 mm rope

## GENERAL FEATURES

- Robust steel frame with anchoring eyes
- Central lifting ring for easy loading by crane

## OPTIONAL FEATURES

- 1 axle chassis with rigid axle
- Normal (non-detachable) reel
- Stronger gasoline or diesel engine
- Reels with higher rope capacity
- Free wheel device
- Lockable tool box
- Cable or radio remote control
- Biodegradable hydraulic oil

Special modifications or equipment on request.

### TENSIONING MODE

Max. tensioning force (at  $\varnothing$  1250 mm): 5 kN  
 Max. speed: 30 m/min

### PULLING MODE

Max. pulling force (at  $\varnothing$  1250 mm): 8 kN  
 Max. speed: 8 m/min

### DIMENSIONS/WEIGHT

Length x width x height: 1600 x 2210 x 1230 mm  
 Weight: 890 kg (without drum)



### DRUM DRIVE

- Hydraulic drive torque: max. 5000 Nm
- Diesel aggregate with 5 kW (7 hp)
- Suitable for 2 working modes:
  - Hydraulic tensioning of the drum during stringing operation
  - Hydraulic pulling for sagging
- Mounted drum drive => drive unit need not dismantled to change the drums

### DRUM DIMENSIONS

- Max. diameter: 1600 mm
- Max. width: 1150 mm
- Center bore: 76 – 100 mm
- Max. weight: 2500 kg

### GENERAL FEATURES

- Robust steel frame with anchoring eyes

### OPTIONAL FEATURES

- Drum holding fixtures for bigger drums
- Lockable tool box
- Cable or radio remote control
- Biodegradable hydraulic oil

Special modifications or equipment on request.





# OVERHEAD TRANSMISSION LINE CONSTRUCTION

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## B8 CUSTOMIZED MACHINES





## ZECK MACHINE TYPE:

# WB 1200/8T

(dismountable Puller-Tensioner)

- Dismountable full electronically controlled Puller-Tensioner for Helicopter transport
- Max. pulling and tensioning force with 80 kN
- 2 bull wheels - Ø 1200 mm for 1 rope/conductor
- High tensile elastic groove-lining - Ø 45 mm
- Min. tensioning force 8 kN



## DIMENSIONS/WEIGHT

Length × width × height: 5280 x 2260 x 2940 mm  
Weight: 3490 kg

## ZECK MACHINE TYPE:

# SPW 35 T

(dismountable Puller)

- Electric motor power unit
- Dismountable full electronically controlled puller for helicopter transport in an easy version without chassis etc.
- Max. pulling force with 350 kN
- Bull wheel Ø 700 mm and groove Ø 75mm



## DIMENSIONS/WEIGHT

Bull Wheel Unit: Length × width × height: 1800 x 1750 x 1500 mm  
Weight: 4000 kg  
Power Unit Room: Length × width × height: 2600 x 1400 x 1500 mm  
Weight: 1800 kg

## ZECK MACHINE TYPE:

# HELI Z946

(Helicopter tensioner)

- Rope installation by helicopter
- Max. tensioning force 15 kN with a drum Ø 1200 mm
- Max. speed 25 km/h (416 m/min.)
- Approved drum Ø 1200 - 1500 mm
- Max. drum weight 2200 kg



## DIMENSIONS/WEIGHT

Length × width × height: 4000 x 2550 x 1800 mm  
Weight: 3600 kg



## ZECK MACHINE TYPE:

### B 1500/2.3-25

- Rope installation by helicopter
- Tensioner for Helicopter rope installation
- Max. tensioning force 23 kN
- Max. speed 25 km/h (416 m/min)
- 2 bull wheels - Ø 1500 mm
- High tensile elastic groove-lining - Ø 70 mm

## DIMENSIONS/WEIGHT

Length × width × height: 7065 x 2580 x 2400 mm  
Weight: 3600 kg

## ZECK MACHINE TYPE:

### B 1500/3.6x2



- Full electronically controlled Tensioner
- Max. tensioning force 2 x 36 kN
- 2 x 2 bull wheels - Ø 1500 mm for up to 1+1 conductor
- High tensile elastic groove-lining - Ø 60 mm
- Liquid-cooled diesel engine with 52 kW / 72 hp
- Fully enclosed Safe-Zone Cab with heating and air

## DIMENSIONS/WEIGHT

Length × width × height: 7620 x 2430 x 3050 mm  
Weight: 8400 kg

## ZECK MACHINE TYPE:

### WB 1800/13.6



- Full electronically controlled Puller-Tensioner
- Max. pulling and tensioning force 136 kN
- Max. speed 6.4 km/h (107 m/min)
- 2 bull wheels - Ø 1800 mm
- High tensile elastic groove-lining - Ø 60 mm
- Liquid-cooled diesel engine with 197 kW / 268 hp
- Fully enclosed Safe-Zone Cab with heating and air
- Integrated drum stand

## DIMENSIONS/WEIGHT

Length × width × height: 4630 x 2430 x 3650 mm  
Weight: 12700 kg



# ANTENNA CONSTRUCTION







# ANTENNA CONSTRUCTION





## DRUM WINCH ST 80-100

→ MAX. PULLING FORCE	10 kN
⊙ DRUM CAPACITY	380 m - Ø 9 mm
⇒ MAX. SPEED	27 m/min

More Information:  
**B1-090**



## DRUM WINCH ST 140 Z253

→ MAX. PULLING FORCE	15,7 kN
⊙ DRUM CAPACITY	380 m - Ø 12 mm
⇒ MAX. SPEED	47 m/min

More Information:  
**B1-100**



## DRUM WINCH ST 180 Z253

→ MAX. PULLING FORCE	22 kN
⊙ DRUM CAPACITY	280 m - Ø 14 mm
⇒ MAX. SPEED	26m/min

More Information:  
**B1-110**





## DRUM WINCH ST 280 Z253

→ MAX. PULLING FORCE	34 kN
⊙ DRUM CAPACITY	450 m - Ø 11 mm
⇒ MAX. SPEED	21 m/min

More Information:  
**B1-120**



## DRUM WINCH ST 140 Z250

→ MAX. PULLING FORCE	15.7 kN
⊙ DRUM CAPACITY	380 m - Ø 12 mm
⇒ MAX. SPEED	76 m/min

More Information:  
**B1-200**



## DRUM WINCH ST 180 Z250

→ MAX. PULLING FORCE	22 kN
⊙ DRUM CAPACITY	280 m - Ø 14 mm
⇒ MAX. SPEED	50 m/min

More Information:  
**B1-210**

## DRUM WINCH ST 280 Z250

➔ MAX. PULLING FORCE	34 kN / 15 kN
⊙ DRUM CAPACITY	450 m - Ø 11 mm
➔ MAX. SPEED	39 m/min / 86 m/min

More Information:  
**B1-220**



## DRUM WINCH ST 500 E

➔ MAX. PULLING FORCE	60 kN
⊙ DRUM CAPACITY	450 m - Ø 14 mm
➔ MAX. SPEED	46 m/min

More Information:  
**B1-350**



## DRUM WINCH ST 340 Z250

➔ MAX. PULLING FORCE	40.8 kN
⊙ DRUM CAPACITY	380 m - Ø 12 mm
➔ MAX. SPEED	34 m/min

More Information:  
**B1-550**







# UNDERGROUND CABLE INSTALLATION







# UNDERGROUND CABLE INSTALLATION

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## ZECK PULLERS - UNIVERSALLY APPLICABLE

For overhead transmission lines and underground cable installation

### Advantages for using in underground cable installation:

#### FREE WHEEL DEVICE

Due to the free wheel device, rope can be unwound from the reel at high speed (without using the wheel drive).

Reel can be tensioned by means of a mechanical disc-brake system (USPW 3).

#### REELS WITH HIGH ROPE CAPACITY

e.g. 2800 meters of rope with a rope diameter of 12 mm fit on one reel.

#### TRANSPORT ON ROADS WITH REELS (USPW 3)

Especially the machine USPW 3 can be transported with reel and rope on the road. The machine can be left hitched on the towing vehicle during rope or cable installation.

#### ELECTRONIC DATA RECORDING

Pulling data can be recorded by means of a ZECK stringing data record system and then be stored on an USB stick or even printed with an USB printer.

#### HIGH PULLING SPEED

The bull wheels allow a max pulling speed of 6 km/h.

#### FAST CHANGE OF REELS

Using a special reel shaft and a bolt connector system the reel can be easily changed by just one person without using tools.

#### REMOTE CONTROL

Both, cable remote control or radio remote control can be connected to the machine for a comfortable operation. This creates not only safer working conditions but also allows the operator to work with less noise exposure and gives him a better overview over the installation site.

(The standard ZECK remote control works with all PULLER (SPW) models).

#### LARGE BULL WHEELS

Bull wheel diameter approx. 400 mm → they can also be used to change conductors and run the old conductor over the bull wheels.

This increases the service life of rope and allows running rope with fixed joints over the bull wheels.

### PULLER USPW 3

- MAX. PULLING FORCE 30 kN
- ⊙ DIAMETER OF BULL WHEELS 400 mm
- MAX. SPEED 1.6 km/h

More Information:  
**B2-110**





## PULLER SPW 5

- MAX. PULLING FORCE 50 kN
- ⊙ DIAMETER OF BULL WHEELS 450 mm
- ⇒ MAX. SPEED 2.6 km/h

More Information:  
**B2-180**



## PULLER SPW 7.5

- MAX. PULLING FORCE 75 kN
- ⊙ DIAMETER OF BULL WHEELS 450 mm
- ⇒ MAX. SPEED 1.7 km/h

More Information:  
**B2-210**



## PULLER SPW 9

- MAX. PULLING FORCE 90 kN
- ⊙ DIAMETER OF BULL WHEELS 540 mm
- ⇒ MAX. SPEED 2.3 km/h

More Information:  
**B2-300**



## PULLER SPW 13

- MAX. PULLING FORCE 130 kN
- ⊙ DIAMETER OF BULL WHEELS 620 mm
- ⇒ MAX. SPEED 2.2 km/h

More Information:  
**B2-382**

## PULLER SPW 16

- MAX. PULLING FORCE 160 kN
- ⊙ DIAMETER OF BULL WHEELS 620 mm
- MAX. SPEED 2.0 km/h

More Information:  
**B2-385**



## PULLER SPW 19

- MAX. PULLING FORCE 190 kN
- ⊙ DIAMETER OF BULL WHEELS 620 mm
- MAX. SPEED 3.6 km/h

More Information:  
**B2-405**



## PULLER SPW 26

- MAX. PULLING FORCE 260 kN
- ⊙ DIAMETER OF BULL WHEELS 800 mm
- MAX. SPEED 2.0 km/h

More Information:  
**B2-554**



## PULLER SPW 28

- MAX. PULLING FORCE 280 kN
- ⊙ DIAMETER OF BULL WHEELS 900 mm
- MAX. SPEED 2.4 km/h

More Information:  
**B2-610**







# CATENARY INSTALLATION







# CATENARY INSTALLATION

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## E1 CATENARY INSTALLATION UNIT WITH DRUM STAND

# DRUM STAND

## TB18 Z935



### DRUM STAND PERFORMANCE

Max. number:	2
Max. speed:	5 km/h
Max. diameter:	2000 mm

### TENSIONER PERFORMANCE

Max. drive torque:	2900 Nm (optional 4000 Nm)
Max. speed:	5 km/h

### DIMENSIONS/WEIGHT

Length x width x height:	3300 x 1830 x 2500 mm
Weight:	2000 - 4000 kg



### ENGINE

- Max. 36 kW (48 hp)
- Liquid-cooled diesel engine with automatic rpm control
- 12 V system with high capacity battery

### DRIVE SYSTEM

- Hydraulic drum drive system with planetary gear and hydraulic engine – drive is directly activated on the drum shaft
- Automatically controlled oil cooling system

### CONTROL SYSTEM

- Control panel of the pulling/tensioning force and all instruments to control engine, hydraulic and electrical systems
- The pulling/tensioning force control is effected manually via operator stand
- Overload protection system

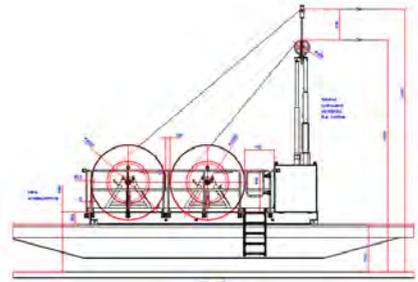
### GENERAL FEATURES

- Basic steel frame in standard container dimensions: 1 x 10' or 1 x 20'
- Lockable aluminum cover

### OPTIONAL FEATURES

- Diesel engine according to latest EU exhaust emission regulation
- Guiding tower or positioner to direct the wires
- Large, lockable toolbox
- Cable or radio remote control
- Biodegradable hydraulic oil
- Arctic kit – with preheating system for up to -30 °C

Special modifications or equipment on request.



### KEY FACTS

Catenary Installation Unit with a max. pulling tensioning force of 8 kN. For installation of 2 new wires or 1 new wire and scrap 1 old wire in one operation.



# CATENARY INSTALLATION

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## E2 ROAD-RAIL DRUM TRAILER



# DRUM STAND ON TRAILER

## TBF 20-2W



### DRUM STAND PERFORMANCE

Max. number:	1
Max. speed:	5 km/h
Max. diameter:	2200 mm

### TENSIONER PERFORMANCE

Max. tensioning force:	5 kN
Max. speed:	5 km/h

### DIMENSIONS/WEIGHT

Length x width x height:	4400 x 2500 x 2030 mm
Weight:	3500 kg



### ENGINE

- Hydraulic hand pump

### DRIVING SYSTEM

- Tensioning force control by mechanical disc brake system

### GENERAL FEATURES

- Road-rail trailer for use on roads and railways
- Track gauge convertible from 1000 mm up to 1435 mm
- Hydraulic control of breaks, drum lifting and rail-bound travelling mechanism

### OPTIONAL FEATURES

- Hydraulic drum drive for pulling/tensioning old wires
- Large, lockable toolbox
- Biodegradable hydraulic oil

Special modifications or equipment on request.



### KEY FACTS

Road-rail drum trailer for use on roads and railways.  
One drum stand with mechanical disc brake system.



# CATENARY INSTALLATION

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## E3 CATENARY INSTALLATION UNIT ON ROAD-RAIL TRUCK



# ON ROAD-RAIL VEHICLE BM 1500 Z921



## DRUM STAND PERFORMANCE

Max. number:	4
Max. speed:	5 km/h
Max. diameter:	1800 mm

## TENSIONER PERFORMANCE

Max. tensioning force:	2 x 30 kN
Max. speed:	5 km/h

## BULL WHEELS

Max. number of bull wheel units:	2
Max. diameter of bull wheels:	1500 mm

## DIMENSIONS/WEIGHT

Length x width x height:	7600 x 2500 x 2800 mm
Weight:	7000 kg



## ENGINE

- Max. 36 kW (48 hp)
- Liquid-cooled diesel engine with automatic rpm control
- 12 V or 24 V system with high capacity battery

## DRIVE SYSTEM

- Each bull wheel with a completely enclosed individual drive unit (motor + brake + gear box) for minimal maintenance and high efficiency
- Each bull wheel with an automatically activated safety brake system
- Hydraulic drum drive system with planetary gear and hydraulic engine – drive is directly activated on the drum shaft
- Laterally movable drum stands to ensure an optimal infeed of the contact wires into the bull wheel unit (<math><3^\circ</math>)
- Automatically controlled oil cooling system

## CONTROL SYSTEM

- Control instruments for the pulling/tensioning force and all machine data
- PLC controlled machine for optimized productivity and safety
- WVGA Color display for monitoring the pulling/tensioning force, hydraulic-, engine- and electrical systems with intelligent diagnostic and troubleshooting system
- ZECK stringing data record system with USB interface
- Automatic Tensioning System (ATS)
- Overload protection system

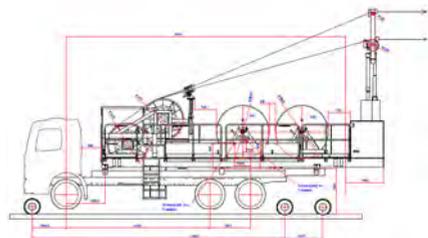
## GENERAL FEATURES

- Basic steel frame in standard container dimensions: 1 x 10' or 1 x 20'
- Lockable aluminum cover

## OPTIONAL FEATURES

- Diesel engine according to latest EU exhaust emission regulation
- Guiding tower or positioner to direct the wires
- Large, lockable toolbox
- Electronic printer for ZECK stringing data record system
- Remote diagnosis with GPS modem
- Cable or radio remote control
- Biodegradable hydraulic oil
- Arctic kit – with preheating system for up to  $-30^\circ\text{C}$

Special modifications or equipment on request.



## KEY FACTS

Fully electronically controlled catenary installation unit with 2 bull wheels ( $\varnothing 1500$  mm), a max. pulling/tensioning force of 2 x 30 kN and ZECK stringing data record system. For installation of 2 new wires or 1 new wire and scrap 1 old wire in one operation.



# CATENARY INSTALLATION

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## E4 CATENARY INSTALLATION UNIT ON RAILWAY VEHICLE



# BM 1500

## BM 1500 Z924



### DRUM STAND PERFORMANCE

Max. number:	6
Max. speed:	5 km/h
Max. diameter:	2000 mm

### TENSIONER PERFORMANCE

Max. tensioning force:	2 x 30 kN
Max. speed:	5 km/h

### BULL WHEELS

Max. number of bull wheel units:	2
Max. diameter of bull wheels:	1500 mm

### DIMENSIONS/WEIGHT

Length x width x height:	18400 x 3000 x 34350 mm
Weight:	17800 kg



### ENGINE

- Max. 95 kW (130 hp)
- Liquid-cooled diesel engine with automatic rpm control
- 24 V system with high capacity battery

### DRIVE SYSTEM

- Each bull wheel with a completely enclosed individual drive unit (motor + brake + gear box) for minimal maintenance and high efficiency
- Each bull wheel with an automatically activated safety brake system
- Hydraulic drum drive system with planetary gear and hydraulic engine – drive is directly activated on the drum shaft
- Laterally movable drum stands to ensure an optimal infeed of the contact wires into the bull wheel unit (<math><3^\circ</math>)
- Automatically controlled oil cooling system

### CONTROL SYSTEM

- Control instruments for the pulling/tensioning force and all machine data
- PLC controlled machine for optimized productivity and safety
- WVGA Color display for monitoring the pulling/tensioning force, hydraulic-, engine- and electrical systems with intelligent diagnostic and troubleshooting system
- ZECK stringing data record system with USB interface
- Automatic Tensioning System (ATS)
- Overload protection system

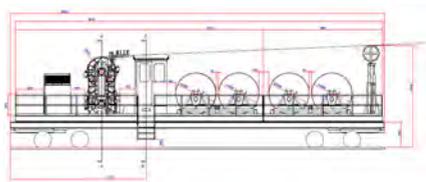
### GENERAL FEATURES

- Basic steel frame in standard container dimensions: 2 x 20' or 2 x 30'
- Lockable aluminum cover

### OPTIONAL FEATURES

- Diesel engine according to latest EU exhaust emission regulation
- Guiding tower or positioner to direct the wires
- Large, lockable toolbox
- Electronic printer for ZECK stringing data record system
- Remote diagnosis with GPS modem
- Cable or radio remote control
- Biodegradable hydraulic oil
- Arctic kit – with preheating system for up to  $-30^\circ\text{C}$

Special modifications or equipment on request.



### KEY FACTS

Full electronically controlled catenary installation unit with 2 bull wheels ( $\varnothing 1500$  mm), a max. pulling/tensioning force of 2 x 30 kN and ZECK stringing data record system. For installation of 2 new wires or 1 new wire and scrap 1 old wire in one operation.



# STRINGING TOOLS







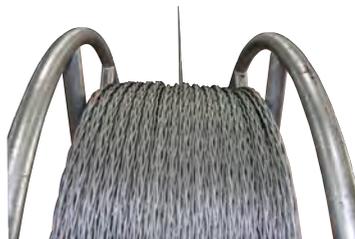
# STRINGING TOOLS

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**F1 ROPE  
CONNECTOR  
PULLING GRIP  
PULLEY BLOCK  
RUNNING BOARD**

## Model 60-10xx Braided steel rope

- Produced by ZECK (Thailand) Ltd.
- ISO 9001 Certified
- Production according to European standards (CE)
  
- Braided steel rope, twist resistant, made of 12 galvanized high tensile wire strands; ideally suitable as pulling rope for construction of overhead transmission lines
- Special features:
  - Twist resistant
  - Premium lubrication of the individual strands
  - High flexibility
  - Hexagonal cross section => lower wear of wheels, rope rollers and scaffolding
  - Spliced eyes at both ends
  - Supplied on hot-dip galvanized steel reels with Ø 1100, 1400 and 1800 mm (see data sheet B6-300)



Model	Rope diameter mm	Breaking load kN	Weight kg/m	Standard production length** m	Max length m		
					with reel-Ø 1100 mm	with reel-Ø 1400 mm	with reel-Ø 1800 mm
60-1008	8	45	0.24	1600	3200	6400	10000
60-1010*	10	72	0.32	1000	2000	4000	7000
60-1012	12	90	0.42	1400	1400	2800	5000
60-1013*	13	105	0.56	1200	1200	2400	4600
60-1014	14	120	0.61	1000	1000	2000	4000
60-1016*	16	160	0.84	800	800	1600	2800
60-1018*	18	205	1.10	1200	-	1200	2000
60-1020*	20	268	1.35	1000	-	1000	1800
60-1022*	22	313	1.52	800	-	800	1600
60-1024*	24	360	1.80	800	-	800	1400
60-1026***	26	400	1.98	700	-	600	1000
60-1028***	28	528	2.62	500	-	450	800
60-1030***	30	658	3.36	500	-	400	700

\* available on stock

\*\* other lengths on request

\*\*\* with 18 strands

## Model 60-51xx PP braided hollow rope

Low strength; high elongation (approx. 6.4% at 20% of the breaking load)

Good abrasion resistance; very easily spliceable (like pulling grip)

=> low-priced; perfect for work at live line condition

## Model 60-53xx PP/PES braided hollow rope

Good strength; normal elongation (approx. 3.2% at 20% of the breaking load)

Very good abrasion resistance; very easily spliceable (like pulling grip)

=> low-priced and light pulling rope; easy handling

## Model 60-52xx PES braided core sheeting rope

Good strength; low elongation (approx. 3.6% at 20% of the breaking load)

Very good abrasion resistance; spliceable

=> strong pulling rope

## Model 60-50xx Braided rope with Dyneema® (DYN-core / PES-sheet)

Very good strength; lowest elongation (approx. 1.2% at 20% of the breaking load)

Very good abrasion resistance; spliceable

=> high-strength pulling rope; rope for drum winches

## Model 60-61xx Braided rope with Dyneema® HF (DYN-core / PES-sheet)

Very good strength; lowest elongation (approx. 0.5% at 20% of the breaking load)

Very good abrasion resistance; spliceable

=> high-strength pulling rope; rope for drum winches

## Model 60-54xx Braided hollow rope with Dyneema®

Highest strength; lowest elongation (approx. 1.0% at 20% of the breaking load)

Satisfying abrasion resistance; very easily spliceable (like pulling grip)

=> if highest breaking load is needed at small diameter

## Model 60-55xx Braided hollow rope with Dyneema® HF

Highest strength; lowest elongation (approx. 0.5% at 20% of the breaking load)

Satisfying abrasion resistance; very easily spliceable (like pulling grip)

=> if highest breaking load is needed at small diameter

### Abbreviations:

PES = Polyester;

PP = Polypropylene;

DYN = Dyneema®

### Delivery:

Card box (standard)

One way drums or on steel reels with Ø 1100, 1400 or 1800 mm (optional) (see data sheet B6 – 300)

Rope- Ø mm	6	8	10	12	14	16	18	20	22	24
<b>PP braided hollow rope</b> Model 60- Weight in kg/100 m Breaking load in kN	-	-	<b>5110</b> 2.7 12.1	<b>5112</b> 4.4 16.5	<b>5114</b> 5.8 23.1	<b>5116</b> 7.3 29.7	<b>5118</b> 10.6 39.6	<b>5120</b> 14.2 47.3	<b>5122</b> 15.5 57.2	<b>5124</b> 18.5 67.1
<b>PP/PES braided hollow rope</b> Model 60- Weight in kg/100 m Breaking load in kN	-	-	-	<b>5312</b> 5.5 29.7	<b>5314</b> 7.5 36.3	<b>5316</b> 9.8 47.3	<b>5318</b> 12.4 66.0	<b>5320</b> 18.5 83.6	-	<b>5324</b> 27.5 115.5
<b>PES braided core sheathing rope</b> Model 60- Weight in kg/100 m Breaking load in kN	<b>5206</b> 2.6 12.1	<b>5208</b> 4.0 16.5	<b>5210</b> 6.8 26.4	<b>5212</b> 9.3 39.6	<b>5214</b> 13.0 49.5	<b>5216</b> 18.0 71.5	<b>5218</b> 23.4 91.3	<b>5220</b> 30.0 110.0	<b>5222</b> 37.3 134.2	<b>5224</b> 43.4 159.5
<b>Braided rope with Dyneema®</b> Model 60- Weight in kg/100 m Breaking load in kN	<b>5006</b> 2.6 18.15	<b>5008</b> 4.0 33.0	<b>5010</b> 6.8 53.9	<b>5012</b> 9.9 82.5	<b>5014</b> 13.3 104.5	<b>5016</b> 17.5 132.0	<b>5018</b> 22.3 165.0	<b>5020</b> 28.0 209.0	<b>5022</b> 33.0 253.0	<b>5024</b> 39.0 280.5
<b>Braided rope with Dyneema® HF</b> Model 60- Weight in kg/100 m Breaking load in kN	-	<b>6108</b> 4.6 55.0	<b>6110</b> 7.3 82.5	<b>6112</b> 9.8 104.5	<b>6114</b> 13.8 132.0	<b>6116</b> 17.0 165.0	<b>6118</b> 22.5 187.0	<b>6120</b> 28.0 264.0	<b>6122</b> 31.0 308.0	<b>6124</b> 37.0 418.0
<b>Braided hollow rope with Dyneema®</b> Model 60- Weight in kg/100 m Breaking load in kN	<b>5406</b> 2.0 29.7	<b>5408</b> 3.5 60.5	<b>5410</b> 5.0 99.0	<b>5412</b> 8.5 132.0	<b>5414</b> 10.5 159.5	<b>5416</b> 12.7 209.0	<b>5418</b> 16.5 264.0	<b>5420</b> 20.0 319.0	<b>5422</b> 24.3 385.0	<b>5424</b> 28.5 451.0
<b>Braided rope with Dyneema® HF</b> Model 60- Weight in kg/100 m Breaking load in kN	<b>5506</b> 2.1 41.8	<b>5508</b> 4.2 82.5	<b>5510</b> 5.5 110.0	<b>5512</b> 9.6 187.0	<b>5514</b> 13.5 253.0	<b>5516</b> 15.3 308.0	<b>5518</b> 20.5 412.5	<b>5520</b> 23.5 473.0	<b>5522</b> 27.5 555.5	<b>5524</b> 31.5 632.5

Spliced eyes have less breaking load of approx. 10%



PP braided hollow rope



PP/PES braided hollow rope



PES braided core sheathing rope



Braided rope with Dyneema®



Braided rope with Dyneema® HF



Braided hollow rope with Dyneema®

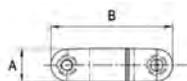


Braided hollow rope with Dyneema® HF

## Model 77-040x Swivel joint

Swivels made of superior galvanized steel. With pressure bearing.

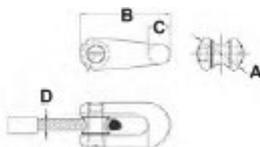
The swivel is suitable to be used as connection element between the pulling rope and the conductor in order to prevent twist.



Model	Ø A mm	Length B mm	Rope Ø mm	Breaking load kN	Weight kg
77-0400	40	143	13	110	0.95
77-0402	49	172	16	190	1.5
77-0405	54	183	18	220	2.2
77-0406	60	234	24	360	3.55
77-0408	77	323	28	750	8.1
77-0409	81	335	32	750	9.3

## Model 77-02xx Fixed joint

Connector made of superior galvanized steel, is designed to connect pulling ropes and is suitable to pass the grooves of pullers.



Model	Dimension mm				Breaking load kN	Weight kg
	A	B	C	D		
77-0200	28	59	15	10	70	0.13
77-0204	40	72.5	19.5	13	110	0.33
77-0206	48	90.5	20	16	160	0.53
77-0208	54	100.5	22	18	220	0.75
77-0210	60	119.5	27	24	360	1.03
77-0212	75	174	42	28	750	3.03

## Model 77-Oxxx Pulling grip for conductor

Optional in pressed or spliced version



Model pressed	Model spliced	Rope-Ø mm	Breaking load kN	
77-0116	77-0117	6.0 – 10.9	18	Made in Germany
77-0122	77-0123	11.0 – 15.9	34	
77-0128	77-0129	16.0 – 20.9	66	
77-0134	77-0135	21.0 – 26.9	93	
77-0140	77-0141	27.0 – 37.9	120	
77-0146	77-0147	38.0 – 44.9	126	
77-0152	77-0153	45.0 – 55.0	138	
77-0013		8 – 17	35	Made in Europe
77-0017		17 – 29	85	
77-0020		29 – 38	130	
77-0022		38 – 50	180	

## Model 77-Oxxx Connection grip for conductor

Pressed version



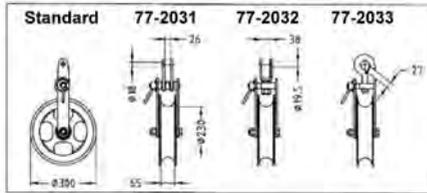
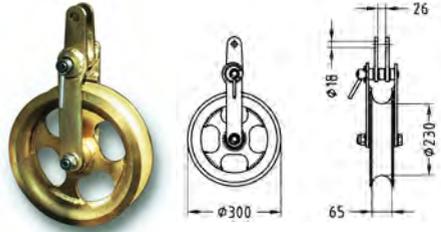
Model pressed	Rope-Ø mm	Breaking load kN	
77-0158	6.0 – 10.9	18	Made in Germany
77-0162	11.0 – 15.9	36	
77-0166	16.0 – 20.9	66	
77-0170	21.0 – 26.9	93	
77-0174	27.0 – 37.9	120	
77-0178	38.0 – 44.9	126	
77-0182	45.0 – 55.0	138	
77-0043	8 – 17	35	Made in Europe
77-0047	17 – 29	85	
77-0050	29 – 38	130	
77-0052	38 – 50	180	

## Model 77-203x Single pulley block

Suitable for steel rope and earth wire. Ball bearing steel sheave and galvanized steel frame.

Breaking load: 70 kN

Weight: 14 kg

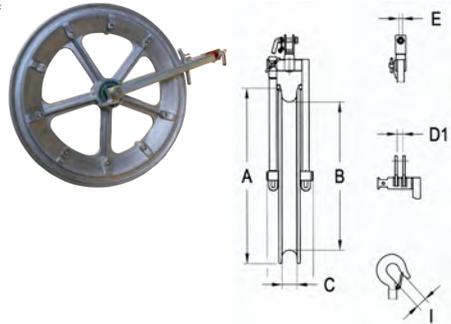


Model	Suspension version
77-2031	fixed clevis
77-2032	turnable clevis
77-2033	turnable hook

## Model 77-20xx Single pulley block

Ball bearing aluminum sheave with interchangeable groove liner of nylon or aluminum.

Galvanized steel frame with turnable clevis attachment.



Optional

- with fixed clevis (D1)
- with turnable hook (I)
- with grounding sheave device and flexible insulated copper cable

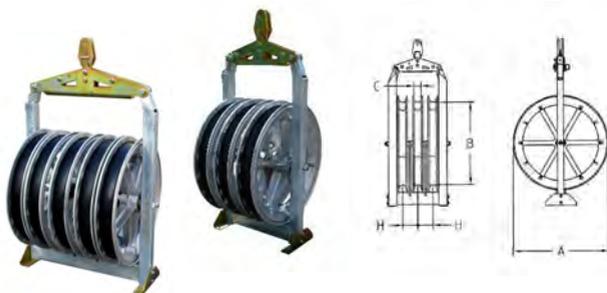


Model with nylon liners	Model with aluminum liners	Dimensions (mm)						Breaking load kN	Weight kg
		A	B	C	I	D1	E		
77-2040	77-2040-A	300	230	38	25	20	12	60	6.0
77-2041	77-2041-A	440	350	48	25	20	12	60	9.7
77-2043	77-2043-A	620	500	68	27	25	16	100	21.5
77-2044	77-2044-A	770	650	68	33	25	16	120	26.0
77-2045	77-2045-A	800	650	95	33	35	18	120	33.0
77-2046	77-2046-A	920	800	68	33	25	16	120	37.0
77-2047	77-2047-A	950	800	95	33	35	18	120	47.0
77-2049	77-2049-A	1150	1000	95	33	35	18	120	58.0

## Model 77-20xx Pulley block for 2, 3 or 4 bundle conductors

Ball bearing aluminum sheave, with interchangeable groove liners of nylon or aluminum.

Galvanized steel frame with turnable clevis attachment.



Optional

– with reinforced sheave in the middle

with grounding sheave device and flexible insulated copper cable



Model with nylon liners	Model with aluminum liners	Pulley block	Dimensions (mm)				Breaking load kN	Weight kg
			A	B	C	H		
77-2076	77-2076-A	3	620	500	68	146	120	90
77-2080	77-2080-A	3	770	650	68	146	120	105
77-2083	77-2083-A	3	800	650	95	174	180	130
77-2084	77-2084-A	3	920	800	68	146	180	120
77-2088	77-2088-A	3	950	800	95	174	180	175
77-2089	77-2089-A	3	1150	1000	95	174	200	210

Model with nylon liners	Model with aluminum liners	Pulley block	Dimensions (mm)				Breaking load kN	Weight kg
			A	B	C	H		
77-2078	77-2078-A	5	620	500	68	100	120	130
77-2082	77-2082-A	5	770	650	68	100	120	155
77-2085	77-2085-A	5	800	650	95	145	180	190
77-2086	77-2086-A	5	920	800	68	100	180	175
77-2087	77-2087-A	5	950	800	95	145	180	255
77-2110	77-2110-A	5	1150	1000	95	145	200	280

# DETACHABLE PULLEY BLOCK



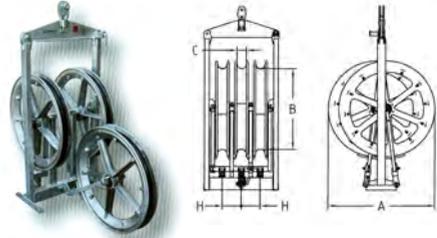
## Model 77-21xx Pulley block for 2, 3 or 4 bundle conductors

Ball bearing, detachable aluminum sheave with interchangeable groove liners of nylon. The middle sheave is also available with aluminum liners (77-....-A).

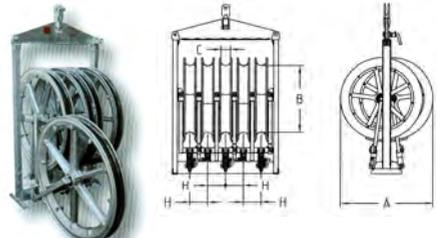
Galvanized steel frame with turnable clevis attachment.

Optional with different gaps between sheaves (H).

The single pulleys can be used separately.



Model with nylon liners	Model with aluminum liners	Pulley block	Dimensions (mm)				Breaking load kN	Weight kg
			A	B	C	H		
77-2101	77-2101-A	3	725	500	68	146	120	120
77-2102	77-2102-A	3	875	650	68	146	120	143
77-2103	77-2103-A	3	910	650	95	174	180	160
77-2104	77-2104-A	3	1040	800	68	146	180	150
77-2105	77-2105-A	3	1060	800	95	174	180	205
77-2106	77-2106-A	3	1255	1000	95	174	200	240



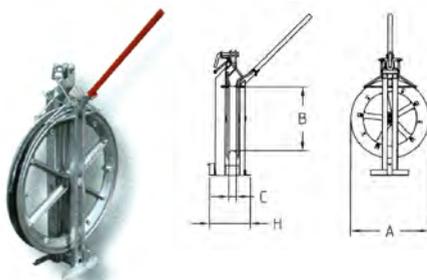
Model with nylon liners	Model with aluminum liners	Pulley block	Dimensions (mm)				Breaking load kN	Weight kg
			A	B	C	H		
77-2183	77-2183-A	5	725	500	68	146	120	175
77-2184	77-2184-A	5	875	650	68	146	120	200
77-2185	77-2185-A	5	910	650	95	178	180	235
77-2186	77-2186-A	5	1040	800	68	146	180	220
77-2187	77-2187-A	5	1060	800	95	178	180	300
77-2188	77-2188-A	5	1255	1000	95	178	200	325

## Model 77-205x Pulley block for single conductor

The ball bearing hinge mechanism makes it possible to insert the pulling rope automatically.

Ball bearing aluminum sheave with interchangeable groove liners of nylon or aluminum. Galvanized steel frame with turnable clevis attachment.

Optional with fixed clevis.



Model with nylon liner	Model with aluminum liner	Dimensions (mm)			Breaking load kN	Weight kg
		A	B	C		
77-2050	77-2050-A	300	230	38	80	12
77-2052	77-2052-A	440	350	48	80	20
77-2053	77-2053-A	620	500	68	100	45
77-2054	77-2054-A	770	650	68	120	50
77-2055	77-2055-A	800	650	95	120	60
77-2056	77-2056-A	920	800	68	120	57
77-2057	77-2057-A	950	800	95	120	65

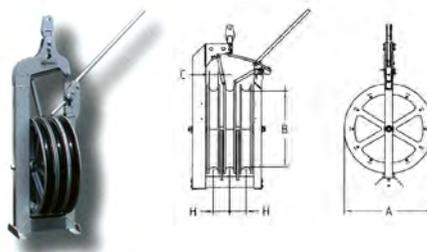
## Model 77-209x Pulley block for 2, 3 or 4 bundle conductor

The ball bearing hinge mechanism makes it possible to insert the pulling line automatically.

Ball bearing aluminum sheave with interchangeable groove liners of nylon. The middle sheave is also available with aluminum liners (77-....-A). Galvanized steel frame with turnable clevis attachment.

Optional with different gaps between sheaves (H).

4 bundle conductor on request.



Model with nylon liners	Model with aluminum liners	Pulley block	Dimensions (mm)				Breaking load kN	Weight kg
			A	B	C	H		
77-2090	77-2090-A	3	620	500	68	146	120	115
77-2094	77-2094-A	3	770	650	68	146	180	160
77-2095	77-2095-A	3	800	650	95	174	180	176
77-2098	77-2098-A	3	920	800	68	146	180	180
77-2099	77-2099-A	3	950	800	95	174	180	240

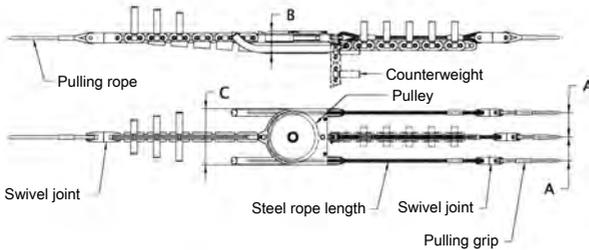
# RUNNING BOARD FOR BUNDLED CONDUCTOR LINE



## Model 77-08xx Running board for bundled conductor line (balancing type)

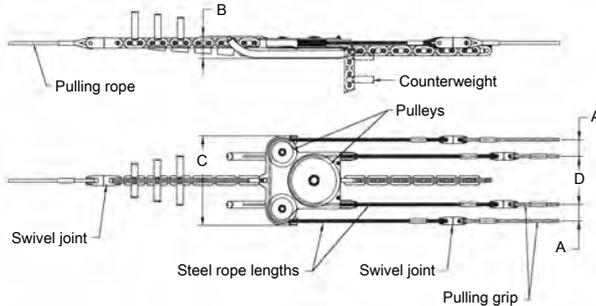
Suitable to connect 2, 3 or 4 bundled conductors to the pulling rope. Balancing wheels with counter weights to balance the stringing operation. Delivered with swivel joints and steel rope with spliced eyes.

For 2 and 3 bundle:



Model	Conductors	Dimensions mm			Swivels		Rope length m	Breaking load kN	Weight kg
		A	B	C	77-0403	77-0406			
77-0800	2	146	160	360	2	1	1x30	300	140
77-0802	2	174	170	410	2	1	1x30	300	155
77-0804	3	146	160	360	3	1	1x30 + 1x15	300	155
77-0806	3	174	170	410	3	1	1x30 + 1x15	300	175

For 4 bundle:



Model	Conductors	Dimensions mm				Swivels		Rope length m	Breaking load kN	Weight kg
		A	B	C	D	77-0403	77-0406			
77-0820	4	100	160	540	292	4	1	2x30	300	200
77-0822	4	145	160	650	356	4	1	2x30	300	220
77-0824	4	146	160	640	292	4	1	2x30	300	220
77-0826	4	178	160	760	356	4	1	2x30	300	240

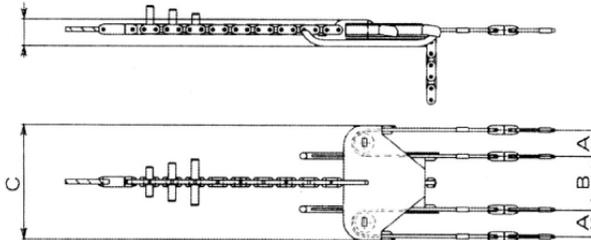
## Model 77-0852 Running board for bundled conductor line (balancing type)

special designed for 4-bundle operation:

- with Tensioner 2x2 (e.g. Tensioner B 1500/8x2)
- with 2 coupled 2-bundle Tensioners (e.g. Tensioner B 1300/8)



Model	Dimensions mm			Swivels		Breaking load kN	Weight kg
	A	B	C	77-0403	77-0406		
77-0852	on request			4	1	300	200



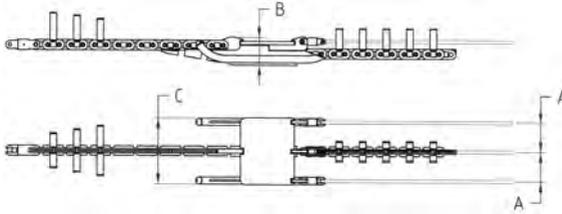
# RUNNING BOARD FOR BUNDLED CONDUCTOR LINE



## Model 77-085x Running board for bundled conductor lines (rigid type)

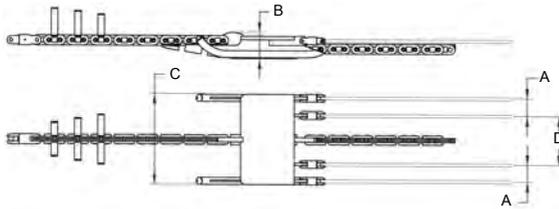
Suitable to connect 2, 3 or 4 conductors to the pulling rope. Delivered with counter weights for stabilisation and swivels.

For 2 and 3 bundle:



Model	Conductors	Dimensions mm			Swivels		Rope length m	Breaking load kN	Weight kg
		A	B	C	77-0403	77-0406			
77-0853	2	146	170	335	2	1	2x3,5	280	98
77-0854	2	174	170	390	2	1	2x3,5	280	100
77-0855	3	146	170	335	3	1	2x3,5	280	105
77-0850	3	174	170	390	3	1	2x3,5	280	108

For 4 bundle:



Model	Conductors	Dimensions mm				Swivels		Rope length m	Breaking load kN	Weight kg
		A	B	C	D	77-0403	77-0406			
77-0856	4	100	292	535	170	4	1	4x3,5	300	122
77-0857	4	145	356	643	170	4	1	4x3,5	300	130
77-0858	4	146	292	635	170	4	1	4x3,5	300	130
77-0851	4	178	356	755	170	4	1	4x3,5	300	137

## Model 77-084x Running board for OPGW

With counter weight in order to prevent torsion of the OPGW.

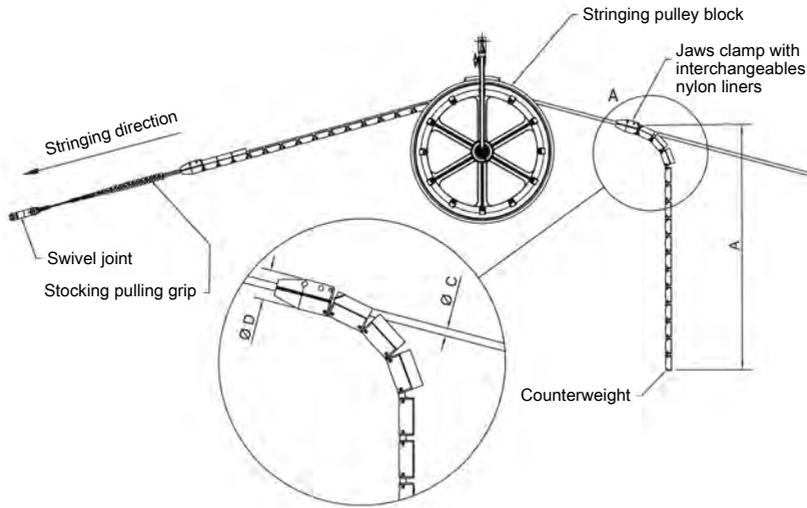
Extent of supply: 2 counter weights incl. clamp unit.

Please specify on the order:

- diameter of OPGW
- groove diameter and width of pulley block used



Model	Dimensions mm			Weight kg	Rope-Ø C mm
	Ø D	A	B		
77-0840	60	990	30	8	10-17
77-0842	60	1320	30	10.5	17-23







# STRINGING TOOLS

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**F2 PRESS**  
**JOINT STIFFENER**  
**SELF-GRIPPING CLAMP**  
**CUTTER**

## Hydraulic press head

Very handy and light press unit. Double acting system for an extremely short pressing cycle and highest reliability.



	100 t compression force, SR 100C2 77-7400CE	200 t compression force, SR 200M 77-7500CE
Compression force:	100 t (1000 kN)	200 t (2000 kN)
Operation pressure:	700 bar	700 bar
Weight:	33 kg	97.5 kg
Power/weight ratio:	3.0 t/kg	2.1 t/kg
Max hexagonal dimension of the compression:	71 mm	90 mm
Max stroke:	24 mm	35 mm
Dies for aluminum compression*	77-7410	77-7510
Dies for steel compression*	77-7420	77-7520
Metal box for hydraulic press and dies	77-7448	-

\* Please specify on the order: conductor type and hexagon size of compression

## Hydraulic power unit

Very reliable power unit with integrated valve and control unit and with 2 hydraulic quick couplings to power double acting presses.



Model	77-7700CE	77-7720CE	77-7750CE	77-7752CE
Operation pressure	700 bar	700 bar	700 bar	700 bar
Engine	Honda 4-stroke gasoline engine 4 kW (5.5 PS)	Honda 4-stroke gasoline engine, 3.2 kW (4.3 PS)	Electric motor 230 V / 50 Hz, 2.2 kW	Electric motor 400 V / 50 Hz, 2.2 kW
Weight (approx.)	63 kg	45 kg	45 kg	45 kg
Dimensions (approx.)	595 x 430 x 530 mm		560 x 465 x 615 mm	
Metal box for unit and hoses	77-7447			

## Hydraulic hoses set

Consists of 2 highest pressure hoses with quick couplings. In order to connect the press head with the hydraulic power unit or a ZECK Tensioner with integrated press power unit.



Hydraulic hoses set**	3.0 m	77-7431CE
	6.0 m	77-7437CE
	10.0 m	77-7433CE
	15.0 m	77-7434CE
	20.0 m	77-7435CE
Box for hoses (up to 10.0m length)	77-7445	

\*\* other lengths on request

## Model 77-045x Joint Stiffener

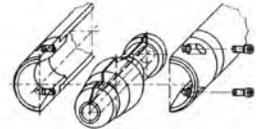
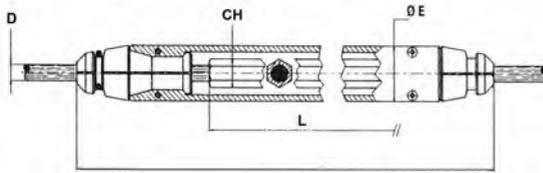
Designed to protect the mid-span joint during the passage over the pulley blocks.

Please specify on the order:

L = joint length after compression

D = conductor Ø

CH = hexagonal joint dimensions after compression



Model	E-Ø mm	Pulleys groove width mm	CH max	Breaking load at the edges kN
77-0450	60	68	40	20
77-0452	80	95	60	20
77-0454	92	95	65	20

## Model 60-8150 Conductor trimmer

Conductor trimmer with adjustable cutter wheel for accurate splice preparation of aluminum by ACSR conductors up to max 34 mm.

Incl. bushing holder and case.

Larger conductor- Ø: on request.



## Model 60-8160 Bushing for conductor trimmer

Bushing for ACSR conductor.

Please specify ACSR conductor diameter on the order (max 34 mm).



Conductor cross section in mm <sup>2</sup> ACSR (aluminum / steel)	
25/4	125/30
35/6	150/25
44/32	185/30
50/8	210/50
50/30	240/40
70/12	265/35
95/15	300/50
95/55	380/50
120/20	435/55
120/70	490/65

Other bushings on request.

## Model 77-30xx Hydraulic cutter

Superior cutter with double piston hydraulic and express feed in order to cut ropes and conductors.

With overload protection by hydraulic pressure valve.

**Klauke®**

**"MADE IN GERMANY"**



Model	Max conductor mm	Length mm	Width mm	Working pressure bar	Weight kg
77-3000	25	476	150	700	3.2
77-3060	45	560	150	700	4.9
77-3083	55	603	150	700	7.3

## Model 77-308x Hydraulic cutter with storage battery

Superior cordless 18 V hydraulic cutter, advanced ergonomic design for effortless operation.



Model	Max conductor mm	Length mm	Height mm	Width mm	Battery		Weight kg
77-3085	25	116	370	75	18 V	1.3 Ah	2.1
77-3087	45	419	330	75	18 V	3.0 Ah	5.7
77-3088	55	461	337	75	18 V	3.0 Ah	8.0

## Model 77-5xxx Self-gripping clamp

The self-gripping clamps are used in order to anchor and to string conductors (aluminum, ACSR and copper) and steel ropes.

The clamps are made of high-tensile steel, heat-treated, hot forged and cadmium plated. Please specify on the order of clamps with changeable liners the rope diameter.

Max admissible working load could be different depending on local legislation about safety factor.

Model	Breaking load kN	Working load kN	Changeable liners	Aluminum conductors Ø mm	Copper conductors Ø mm	Round steel ropes, earth wires Ø mm	Twist resistant braided steel rope	Weight kg
77-5000	180	60	yes model liner =>	6 – 23 Model 77-5010	6 – 23 Model 77-5020	6 – 16 Model 77-5030	6 – 16 Model 77-5040	7
77-5100	275	91	yes model liner =>	8 – 32 Model 77-5110	8 – 32 Model 77-5120	8 – 22 Model 77-5130	8 – 24 Model 77-5140	13.5
77-5100-S	275	91	yes model liner =>	8 – 35.2 Model 77-5110-S	8 – 35.2 Model 77-5120-S	8 – 22 Model 77-5130-S	8 – 24 Model 77-5140-S	13.5
77-5200	310	103	yes model liner =>	10 – 41 Model 77-5210	10 – 41 Model 77-5220	10 – 34 Model 77-5230	8 – 28 Model 77-5240	17
77-5200-S	310	103	yes model liner =>	10 – 45 Model 77-5210-S	10 – 45 Model 77-5220-S	10 – 34 Model 77-5230-S	8 – 28 Model 77-5240-S	17
77-5500	125	42	no	-	7.5 – 18	7.5 – 18	7.5 – 18	7
77-5600	49	16	no	-	2.5 – 15	2.5 – 15	--	1.5
77-5300	64	21	yes model liner =>	7 – 16 Model 77-5310	7 – 16 Model 77-5320	7 – 13 Model 77-5330	7 – 13 Model 77-5340	2.5
77-5400	180	60	yes model liner =>	especially for OPGW Ø 6 – 23 mm liner model 77-5410			--	7
77-5700	110	36	yes model liner =>	especially for lifting of conductors Ø 7 – 38 mm liner model 77-5710			--	5.5
77-5900	420	140	yes model liner =>	45 – 57 Model 77-5910	--	34 – 57 Model 77-5930	--	26







# STRINGING TOOLS

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**F3 LINE CAR  
BICYCLE  
INSPECTION LINE CAR**

# LINE CAR

## LF 923 | LF 947



### TECHNICAL DATA

Max. speed:	4.5 km/h
Permissible inclination:	max. 15° on wet conductor max. 20° on dry conductor
Conductor diameter:	min. 19 mm / max. 70 mm
Conductor distance:	
LF 923	max. 500 mm
LF 947	max. 600 mm
Usable for up to 4 conductors	

### DIMENSIONS/WEIGHT

<b>LF 923</b>	
Length x width x height:	2200 x 1010 x 1780 mm
Weight:	230 kg
<b>LF 947</b>	
Length x width x height:	2410 x 1140 x 1780 mm
Weight:	270 kg
Carrying capacity:	200 kg; max. 2 persons
Inside operator space:	1150 x 710 mm



### ENGINE

- HONDA 4-stroke gasoline engine with 4.8 kW (6.5 hp)
- Electric- and additional hand starter
- 12 V system with high capacity battery

### DRIVE SYSTEM

- Speed control in both directions via hand lever
- In malfunction the drive can be disconnected, and the line car can be towed off
- The 4 drive wheels are used as wheel brakes
- 2 mechanic shoe brakes are used to work independently from each other as parking brakes
- Wheels with superior wear-resistant tread of groove

### HYDRAULIC SYSTEM

- Large driving gear for highest durability and reliability
- Superior control technology for exact driving and to spread and lift the arms
- Blocking valves in order to hold lifting arms in position safely
- Hydraulic hoses and screw connections with special sealing system

### CONFIGURATION

- 4 and 3 bundles with 400/450 or 500 mm (LF 947: 600 mm)
- 2 bundles horizontal and vertical with 400/450 or 500 mm (LF 947: 600 mm)
- Single conductors also with aircraft warning balls

### FRAME

- Robust frame made of screwed aluminum profiles  
=> Easy maintenance and repairing  
=> No welding seams
- 4 lifting rings to anchor the optional lifting chain or ropes
- Rings on each side for anchoring towing ropes
- 4 supporting foots for easy handling by fork lift or hand pallet

### OPTIONAL FEATURES

- Lifting chain
- Meter counter
- Lockable tool box
- Basic axle with 2 wheels
- Longer bottom plate
- Biodegradable hydraulic oil
- Lifting device
- Transport box
- Extinguisher
- Equipment safety net
- Turnable power unit for horizontal position and long-life engine operation in case of driving with max inclination.

Special modifications or equipment on request

### KEY FACTS

All-purpose line car, hydraulically driven and with hydraulic lifting arms.  
Made of robust screwed aluminum profiles.  
Usable for 2, 3, 4 bundled conductors.  
Distance between conductors up to 600 mm.

## Model 77-613x Hydraulic driven line car

for 2, 3 or 4 bundled conductors. Frame made of tubular aluminum alloy structure.

Powered by a 5 hp engine and a hydraulic power supply for max 40 m/min running speed and max 18° (equivalent to 40%) inclination. 4 opening axels with sheaves suitable to pass over the suspension towers. Driving axle with 2 powered sheaves.

With parking brake and meter counter included.

Working load: 200 kg

Weight: approx. 165 kg

Please specify on the order:

- Distance between conductors



Model	Suitable for:	
77-6130	2 bundles	
77-6131	3 bundles	
77-6132	4 bundles	

## Model 77-613x Line car

Without drive unit.

Working load: 200 kg

Weight: approx. 80 kg

Please specify on the order:

- Distance between conductors



Model	Suitable for:	
77-6133	2 bundles	
77-6134	3 bundles	
77-6135	4 bundles	

Distance between conductors up to 600 mm on request

## Model 77-615x Bicycle

For fitting of spacers and aircraft warning balls.

The innovative mode of drive transmission by "Cardan Joint", permits to avoid the old roller chain system. The slender structure added to the "dynamic negative" brake device aligns the equipment at the more actual safety standards.

The very low transmission ratio requires a very low effort on the pedals for an easy operation until an inclination of 11° (equivalent to 25%).

The adaptability of seat (height and inclination) enables the operator to achieve an optimum of working position.

The quick interchangeability of sheave groups makes it possible to adapt the frame quickly for 2 or 4 bundle.

The bicycle can also be adapted for single and triple bundle conductors.

Further characteristics:

- High-tensile ball-bearing nylon sheaves with groove protection
- Static braking device with jaws locking on conductors, controlled by lever
- Dynamic disc braking device at the drive shaft, controlled by lever
- Easy regulation of distance between sheaves:
  - 2 and 4 bundle: 400, 457 or 500 mm
  - 3 bundle: 400 mm
- Comfortable seat
- Safety belt
- Meter counter device

Optional:

- Storage and transport case
- Mounted engine drive unit

Please specify on the order:

- Distance between conductors



## Model 77-6150 Bicycle for single conductor

Weight: approx. 25 kg

Load capacity: 100 kg

## Model 77-6151 Bicycle for single conductor with engine-drive unit

2-stroke engine, 2.4 hp

Weight: 37 kg

Load capacity: 100 kg



## Model 77-6152 Bicycle for 2 bundle conductor

Weight: approx. 32 kg

Load capacity: 100 kg

## Model 77-6153 Bicycle for 2 bundle conductor with engine-drive unit

2-stroke engine, 2.4 hp

Weight: 44 kg

Load capacity: 100 kg



## Model 77-6154 Bicycle for 3 bundle conductor

Weight: approx. 38 kg

Load capacity: 100 kg

## Model 77-6155 Bicycle for 3 bundle conductor with engine-drive unit

2-stroke engine, 2.4 hp

Weight: 50 kg

Load capacity: 100 kg



## Model 77-6156 Bicycle for 4 bundle conductor

Weight: approx. 42 kg

Load capacity: 100 kg

## Model 77-6157 Bicycle for 4 bundle conductor with engine-drive unit

2-stroke engine, 2.4 hp

Weight: 54 kg

Load capacity: 100 kg



## Model 77-6125 Inspection line car for single conductor

Aluminum frame for 1 operator. Equipped with footrest, ball-bearing nylon sheaves and hand brake. Optional with meter counter

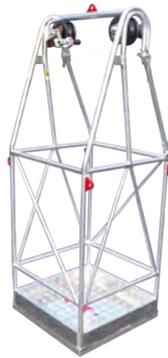
Load capacity: 100 kg

Weight: 12 kg



## Model 77-61xx Other types of inspection line cars on request

Single conductor (1 or 2 lineman)



Up to 4 conductor (1 lineman)







# STRINGING TOOLS

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## F4 PULLING ROBOT CRADLE BLOCK

# PULLING ROBOT LKE 85



## Performance

- Max pull force: approx. 85 kg
- Max speed: approx. 29 m/min (1.7 km/h)
- Conductor-Ø: 10 - 45 mm
- Operating distance: approx. 3000 m with 50 kg pulling force (depends on: inclination, pull force, battery condition, temperature)

## Control and electric system:

- Radio remote control:
  - Type tested (by German TÜV). Additionally with "Reflektomat" => highest safety, no malfunction because of external interferences
  - Transmitter with 2 push buttons for forward / backward
  - Effective radius: approx. 1000 m
- Electric system:
  - Robust and shock resistant control box
  - With battery charge control and with on/off switch
  - Battery pack with housing, electric socket and fixing device => change of pack within 2 minutes

## Drive system

- 2 drive wheels are driven by 24 V electric engine
- The wheels are provided with high quality groove linings with very high abrasion resistance
- It is possible to run over compression connectors due to the special clamping system

## Weights

- Aluminum pulling robot: 22.5 kg (without battery)
- Battery pack (2 x 12 V/33 Ah): 25 kg
- Transport box: 67 kg
- Recovering device: 9 kg

## Dimensions

- Pulling robot with battery (l x w x h): 690 x 570 x 950 mm
- Transport box (l x w x h): 1200 x 800 x 650 mm

## Delivery package

- Robot with radio remote control system including transmitter
- Second battery pack (2 x 12 V/33 Ah)
- Special charger for gel batteries
- Spare battery and charger for radio remote control
- Lockable transport box
- Recovering device for tow off the robot in the case of malfunction

## Optional equipment

- Battery pack with higher capacity (2 x 12 V/44 Ah)

Special equipment or models on request

## Model 77-2000 Cradle block for 2-rope-system

The cradle block will be installed by the pulling robot on the ground wire of the overhead transmission line.

This operation system is specially designed for replacement of existing ground wires by new Optical Ground Wires (OPGW) – even under life line conditions.

Can also be used instead of building a scaffold when crossing a road or railway line.

Suitable for the 2-rope-system (GroundWire/OPGW + fibre rope as supporting rope).

Frame made of high-strength aluminum; polyamide or aluminum rollers with maintenance free ball bearings; robust and very easy to handle rope clamping unit and opening device to install the rope.

The OPGW is perfectly protected by the rollers.

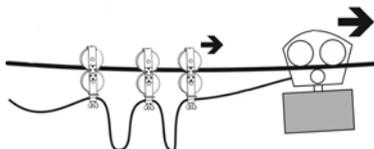
Weight: approx. 2 kg

Working load: 2 kN

### Optional:

Model 77-2010 Cradle block for 2-rope-system with aluminum rollers

Weight: approx. 3.25 kg



## Model 77-2020 Cradle block for 3-rope-systems (also suitable for 2-rope-system)

The cradle block will be installed by the pulling robot on the ground wire of the overhead transmission line. This operation system is specially designed for replacement of existing ground wires by new Optical Ground Wires (OPGW) – even under life line conditions.

Can also be used instead of building a scaffold when crossing a road or railway line.

Suitable for the 3-rope-system (GroundWire/OPGW + fibre rope as supporting rope + fibre rope as pulling rope) and also suitable for the 2-rope-system.

Frame made of high-strength aluminum; aluminum rollers with maintenance free ball bearings; robust and very easy to handle rope clamping unit and opening devices to install the ropes.

The OPGW is perfectly protected by the polyamid plates and the rollers.

Weight: approx. 2 kg

Working load: 2 kN



suitable for 3-rope-system



suitable for 2-rope-system





# STRINGING TOOLS

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**F5 LADDER  
PLATFORM  
GIN POLE**



# LADDER (vertical)



## Model 77-07xx Suspension ladder

Suitable for suspension ladder (vertical) for overhead transmission line work. Made of superior aluminum alloy with corrugate steps.

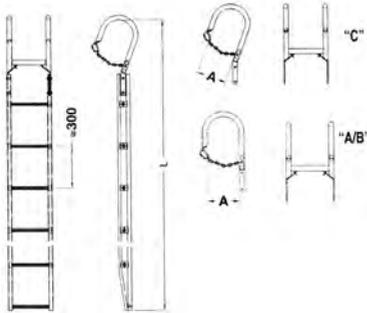
With interchangeable galvanized steel hooks (standard type "C") with safety chain device and special antifall "T" profile.

### Optional:

- hook type "A/B"
- hook opening (measure A) up to 400 mm
- antifall device 77-0705

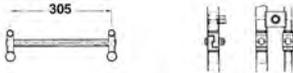


Hook type



Section view

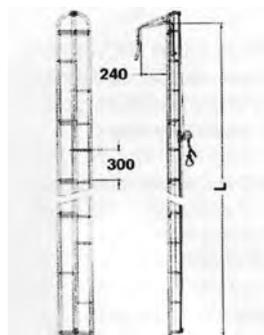
Joint view



Model	Vertical working load kN	Length m	Section number	A mm	Weight kg
77-0709	3	2.5	1	220	8.5
77-0710	3	3	1	220	9.8
77-0711	3	3.5	1	220	10.9
77-0712	3	4	1	220	12.2
77-0713	3	5	1	220	14.8
77-0714	3	6	1	220	17.2
77-0714-2	3	6 (4+2)	1	220	17.8
77-0715	3	8 (4+4)	1	220	22.6
77-0716	3	10 (5+5)	1	220	27.5

## Model 77-073x Ladder for tower climbing

Suitable for tower climbing. Made of superior tubular aluminum alloy with galvanized steel hooks and with complete antifall device.



Model	Vertical working load kN	Length m	Weight kg
77-0730	1	3.7	9
77-0731	1	4.7	11

## Model 77-0705 Antifall device

Personal safety equipment for operators. Self-locking safety equipment, carried along the "T" profile (40 mm) ladder rod. With ring for a safety belt with spring safety hook attachment and with fall absorber.

Corresponds to european standards and with CE mark.

Weight: 1.0 kg

Working load: 1 kN



# LADDER / WORKING PLATFORM (vertical / horizontal)



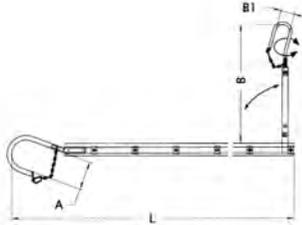
## Model 77-076x Suspension ladder / Platform

Suitable as suspension ladder (vertical) and as horizontal platform for overhead transmission line work. Made of superior aluminum alloy with corrugate steps and "T" profile for optional antifall device.

With interchangeable galvanized steel hook for the tower side (standard type "C") and a foldable and turnable conductor hook for use as horizontal working platform.

### Optional:

- Conductor twisting hook with neoprene sheave type RK (e.g. 77-0760-RK)
- Conductor twisting hook with aluminum sheave type RA (e.g. 77-0760-RA)
- Antifall device 77-0705



77-0760-RK  
77-0760-RA

Model	Vertical working load kN	Horizontal working load kN	Length m	Section number	Opening tower hook measure "A" mm	Height conductor hook measure "B" mm	Opening conductor hook measure "B1" mm	Weight kg
77-0760	3	1	2.5	1	220	900	100	13.2
77-0761	3	1	3	1	220	900	100	14.8
77-0762	3	1	3.5	1	220	900	100	16.3
77-0763	3	1	4	1	220	900	100	17.9
77-0764	3	1	5	1	220	900	100	21.1
77-0765	3	1	6	1	220	900	100	24.2
77-0766	3	1	6 (4+2)	2	220	900	100	25.5

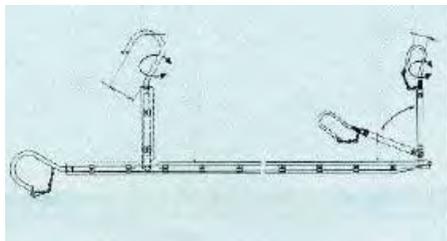
## Model 77-077x Suspension ladder / Platform

Suitable as suspension ladder (vertical) and as horizontal platform for overhead transmission line work. Made of superior aluminum alloy with corrugate steps and "T" profile for optional antifall device.

With foldable and **turnable tower hook** (standard type "C") for easy aligning and a foldable and turnable conductor hook for use as horizontal working platform.

### Optional:

- Conductor twisting hook with neoprene sheave type RK (e.g. 77-0760-RK)
- Conductor twisting hook with aluminum sheave type RA (e.g. 77-0760-RA)
- Antifall device 77-0705



77-0760-RK  
77-0760-RA

Model	Vertical working load kN	Horizontal working load kN	Length m	Section number	Opening tower hook measure "A" mm	Height tower hook measure "A1" mm	Height conductor hook Measure "B" mm	Opening conductor hook measure "B1" mm	Weight kg
77-0770	3	1	3.13	1	220	1000	900	100	19
77-0771	3	1	3.60	1	220	1000	900	100	21
77-0772	3	1	4.16	1	220	1000	900	100	22.5
77-0773	3	1	5.03	1	220	1000	900	100	26.5
77-0774	3	1	6.25	1	220	1000	900	100	32.5
77-0775	3	1	6.25 (4.25+2)	2	220	1000	900	100	33.5

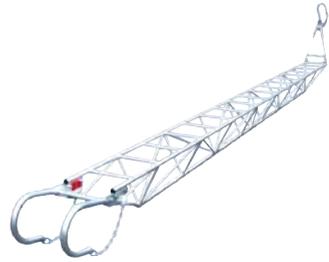
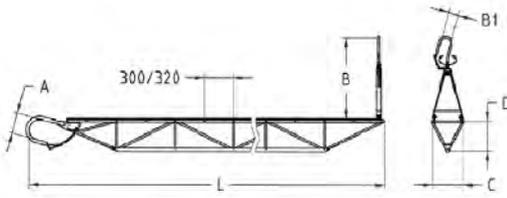
## Model 77-125x Horizontal platform with triangular structure

Suitable as horizontal working platform and as suspension ladder (vertical). Made of superior aluminum alloy with corrugate steps.

With interchangeable galvanized tower hook (standard type "C") and with a foldable and turnable conductor hook for use as horizontal working platform.

### Optional:

- Conductor twisting hook with polyamide sheave type: R (e.g. 77-1250-R)
- Conductor twisting hook with aluminum sheave type: RA (e.g. 77-0760-RA)
- Tower hook opening up to 400 mm



Model	Vertical working load kN	Horizontal working load kN	Length m	Opening tower hook measure "A" mm	Height conductor hook measure "B" mm	Opening conductor hook measure "B1" mm	C mm	D mm	Weight kg
77-1250	3	2	3.5	220	900	100	320	320	17
77-1251	3	2	4	220	900	100	320	320	18.5
77-1252	3	2	4.5	220	900	100	320	320	20
77-1253	3	2	5	220	900	100	320	320	21.5
77-1254	3	2	6	220	900	100	320	350	24.5
77-1255	3	2	6 (4+2)	220	900	100	320	350	26
77-1256	3	2	7 (4+3)	220	900	100	320	350	30.5
77-1257	3	2	8 (4+4)	220	900	100	320	350	34

## Model 77-126x Horizontal platform with trapezoidal structure

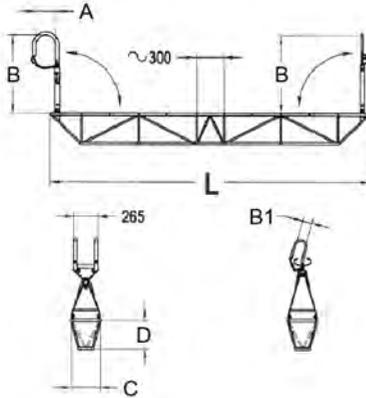
Suitable as horizontal working platform and as suspension ladder (vertical).

Made of superior aluminum alloy with corrugate steps.

With interchangeable galvanized tower hook (standard type "C") and with a foldable and turnable conductor hook for use as horizontal working platform.

### Optional:

- Conductor twisting hook with polyamide sheave type: R (e.g. 77-1260-R)
- Conductor twisting hook with aluminum sheave type: RA (e.g. 77-0760-RA)
- Tower hook opening up to 400 mm



Model	Vertical working load kN	Horizontal working load kN	Length m	Opening tower hook measure "A" mm	Height conductor hook measure "B" mm	Opening conductor hook measure "B1" mm	C mm	D mm	Weight kg
77-1260	3	3	3.5	220	900	100	320	320	19
77-1261	3	3	4	220	900	100	320	320	21
77-1262	3	3	4.5	220	900	100	320	320	23
77-1263	3	3	5	220	900	100	320	320	24.5
77-1264	3	3	6	220	900	100	320	350	28
77-1265	3	3	6 (4+2)	220	900	100	320	350	29.5
77-1266	3	3	7 (4+3)	220	900	100	320	350	34.5
77-1267	3	3	8 (4+4)	220	900	100	320	350	39

## Model 77-12xx Working platform

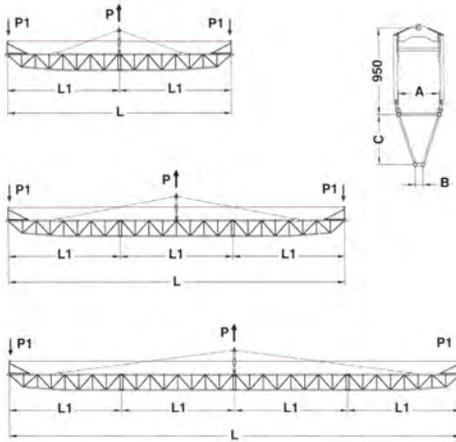
Working platform in trapezoidal structure, made of superior aluminum alloy.

Composed in sections for large lengths – is delivered with suspension device (incl. ropes) and one antifall barrier.

### Optional:

- Railway profile for press trolley, type: 77-12xx-PP2 (weight 2 kg/m)
- Press trolley; turnable at 360°, type: 77-12xx-P2 (weight 12 kg)
- Second antifall barrier 77-1200-AB

### Other capacity, length and composition on request



Model	Working load P kN (max P1 = 3 kN)	Breaking load kN	Total length m	Section number and length (L1) m	A mm	B mm	C mm	Weight kg
77-1200	6	18	4	4	350	85	390	50
77-1201	6	18	5	5	350	85	390	56
77-1202	6	18	6	6	350	85	390	62
77-1203	6	18	6	3+3	350	85	390	65
77-1204	6	18	7	3.5+3.5	350	85	446	77
77-1205	6	18	8	4+4	350	85	446	86
77-1206	6	18	10	4+2+4	350	85	446	103
77-1207	6	18	12	4+4+4	350	85	446	115
77-1208	6	18	14	5+4+5	350	85	446	126
77-1209	6	18	16	4+4+4+4	350	85	446	144
77-1210	6	18	18	6+6+6	350	85	446	160
77-1211	6	18	20	5+5+5+5	450	85	550	200
77-1212	6	18	24	6+6+6+6	450	85	550	254

## Model 77-22xx Gin pole

For erection of towers.

Welded aluminum alloy tubular lattice structure with working capacity up to 100 kN and length up to 20 m (optional up to 25 m).

Internal type included:

- Ground base
- Swivelling head
- Swivelling base



Swivelling head – **internal type**



Swivelling base – **internal type**



Ground base – **internal type**

Working capacity from 10 kN up to 100 kN

Length from 6 up to 20 m. With swivelling head, swivelling base / with tower hook till to 50 kN) and ground base.

The capacity is shown for 3 different working modes.

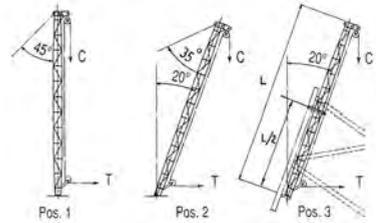
In every case before using the gin pole, the maximum working capacity must be calculated by the user – taking in consideration:

- load condition
- gin pole inclination

Internal rope: 77-22xx-l

**Optional:**

- available also in steel construction



Model	Capacity "P" = T + C kN			Total length m	Standard number of sections and length m	Weight for internal type kg	Weight ground base kg
	P1 Pos. 1 $\alpha = 0^\circ$	P2 Pos. 2 $\alpha = 20^\circ$	P3 Pos. 3 $\alpha = 20^\circ$				
77-2200	10	6	2.4	6	3+3	54	10
77-2202	10	6	2.4	8	4+4	66	
77-2210	15	9	3.6	8	4+4	74	10
77-2212	15	9	3.6	10	5+5	87	
77-2214	15	9	3.6	12	4+4+4	98	
77-2220	20	12	4.8	8	4+4	75	10
77-2222	20	12	4.8	10	4+2+4	88	
77-2224	20	12	4.8	12	4+4+4	99	
77-2230	30	18	7.2	8	4+4	79	19
77-2232	30	18	7.2	12	4+4+4	117	
77-2234	30	18	7.2	16	4+4+4+4	155	
77-2236	30	18	7.2	18	6+6+6	170	
77-2240	40	24	9.6	10	4+2+4	116	19
77-2242	40	24	9.6	12	4+4+4	131	
77-2244	40	24	9.6	16	4+4+4+4	182	
77-2246	40	24	9.6	20	5+5+5+5	225	
77-2250	50	30	12	12	4+4+4	152	19
77-2252	50	30	12	16	4+4+4+4	221	
77-2254	50	30	12	20	5+5+5+5	278	
77-2270	70	42	16.8	12	4+4+4	198	29
77-2272	70	42	16.8	16	4+4+4+4	245	
77-2274	70	42	16.8	20	5+5+5+5	283	
77-2280	100	60	24	16	4+4+4+4	278	60
77-2282	100	60	24	20	5+5+5+5	325	

Weight without accessories



# STRINGING TOOLS

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## F6 GENERAL TOOLS

## Model 77-088x Chain lever hoist

- Standard lifting height 1.5 m
- Freewheel safeguard
- Quad riveted bottom hook
- Nickel-plated load chain grade V (G100)
- Overload limiter



“HIGH QUALITY”



### Optional:

- Without freewheel mechanism
- Overload signal
- Wire rope clip

Model	Lifting height m	Capacity kN	Weight with chain
77-0880-1.5-1676	1.5	10	5.7
77-0880-3.0-1676	3.0		6.8
77-0880-6.0-1676	6.0		9.0
77-0882-1.5-1676	1.5	16	8.0
77-0882-3.0-1676	3.0		9.7
77-0882-6.0-1676	6.0		13.0
77-0884-1.5-1676	1.5	32	15.0
77-0884-3.0-1676	3.0		18.5
77-0884-6.0-1676	6.0		25.4
77-0886-1.5-1676	1.5	63	26.0
77-0886-3.0-1676	3.0		33.1
77-0886-6.0-1676	6.0		47.5

## Model 77-09xx Chain lever hoist

- standard lifting height 1.5 m
- galvanized round steel chain



Model	Capacity kN	Lifting height m	Weight with chain kg
77-0917-1.5	10	1.5	7.5
77-0917-3.0		3.0	9.0
77-0917-6.0		6.0	12.0
77-0918-1.5	16	1.5	9.2
77-0918-3.0		3.0	10.7
77-0918-6.0		6.0	13.7
77-0920-1.5	32	1.5	15.5
77-0920-3.0		3.0	17.0
77-0920-6.0		6.0	20.0
77-0922-1.5	63	1.5	26.5
77-0922-3.0		3.0	28.0
77-0922-6.0		6.0	31.0

## Model 77-095x Grip puller – Made in Europe

For pulling or lifting of load or rope.

Advantages:

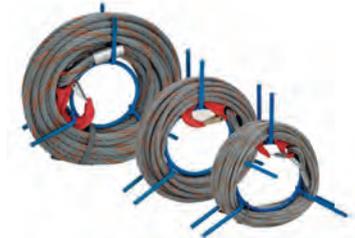
- unlimited pulling length
- type tested for lifting operation



Model	Working load kN	Rope Ø mm	Weight without rope kg
77-0954	8	8.3	6.6
77-0955	16	11.5	13
77-0956	32	16.3	22

## Model 77-09xx Rope for model 77-095x

Special rope with hook on one side.



Model	Rope length m	Rope Ø mm	Breaking load kN
77-0957	10	8.3 (0.25 kg/m)	55
77-0958	20		
77-0959	30		
77-0960	40	11.5 (0.55 kg/m)	90.25
77-0961	10		
77-0962	20		
77-0963	30		
77-0964	40	16.3 (0.98 kg/m)	180.50
77-0965	10		
77-0966	20		
77-0967	30		
77-0968	40		

## Model 77-098x Grip puller – Made in Germany

For pulling or lifting of load or rope.

Advantages:

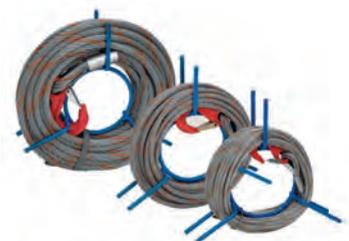
- unlimited pulling length
- type tested for lifting operation



Model	Working load kN	Rope Ø mm	Weight without rope kg
77-0984	8	8.4	6
77-0985	16	11.5	11
77-0986	32	16	21

## Model 77-09xx Rope for model 77-098x

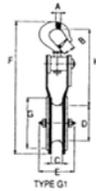
Special rope with hook on one side.



Model	Rope length m	Rope Ø mm	Breaking load kN
77-0988	20	8.4 (0.29 kg/m)	45
77-0992	20	11.5 (0.53 kg/m)	87
77-0996	20	16 (1.0 kg/m)	165

## Model 77-14xx Heavy duty steel snatch block

One side opening, ball-bearing polyamide or steel sheave.



Model	Capacity kN	Attachment	Dimensions mm				Weight kg	Sheave
			C	D	F	G		
77-1402	10	G1	18	102	315	120	1.7	Polyamide
77-1404	15	G1	20	102	330	120	2.0	
77-1440	15	G1	20	105	340	120	3.4	Steel
77-1442	20	G1	25	135	410	150	6.6	
77-1444	30	G1	25	135	440	150	7.2	
77-1446	50	G1	30	185	510	200	13.0	

## Model 77-148x Heavy duty aluminum snatch block

One side opening, ball bearing aluminum sheave.



Model	Capacity kN	Attachment	Dimensions mm				Weight kg
			C	D	F	G	
77-1484	5	G1	22	50	340	120	1.0
77-1485	10	G1	22	103	410	150	1.7
77-1486	20	G1	40	103	440	150	4.2
77-1487	30	G1	40	103	510	200	4.4

## Model 77-803x Lifting tackle

Steel construction with ball-bearing sheaves. Each tackle block consists of 2 sheave units and can be equipped with ropes in various lengths.



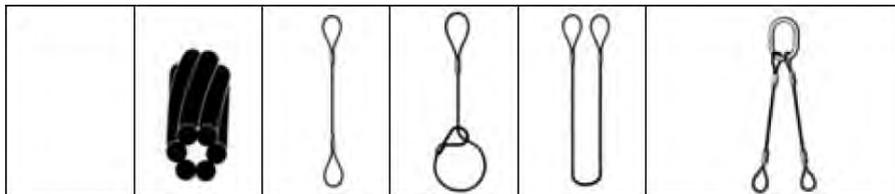
Model	Capacity kN	Rope sheaves	Dimensions					Weight kg per pair
			Ø D mm	Rope Ø mm	L max mm	A mm	B mm	
77-8030	25	2	160	8	380	22	22	20
77-8031	35	3	160	8	450	25	22	27
77-8032	55	5	160	8	500	29	22	45
77-8035	30	2	180	9	370	22	22	25
77-8036	45	3	180	9	430	25	22	30
77-8037	70	5	180	9	470	29	22	45

## Model 77-81xx Wire rope sling

According to DIN EN 1344-1.

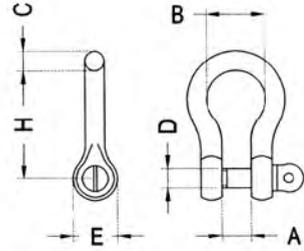
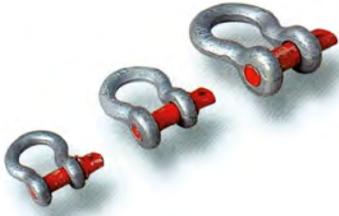
Made of galvanized steel rope with pressed eyes.

Eye length: 15 x rope-Ø



Model	Rope Ø mm	Working load in kN				
				0°	0-45°	45-60°
77-8110	10	10	8	20	14	10
77-8112	12	15	12	30	21	15
77-8114	14	20	16	40	28	20
77-8116	16	27	21.5	54	38	27
77-8118	18	31.5	25	63	44	31.5
77-8120	20	40	32	80	56	40

## Model 76-99xx Shackle



Model	Capacity kN	Dimension mm						Weight kg
		A	B	C	D	E	H	
76-9960	5	12	20	6.5	8	17	28	0.05
76-9962	7.5	13	21	8	10	21	31	0.08
76-9964	10	16	26	10	11	25	36	0.14
76-9966	15	18	29	11	13	27	42	0.22
76-9968	20	21	33	13	16	30	48	0.32
76-9970	32.5	27	43	16	19	40	60	0.65
76-9972	47.5	32	51	19	22	48	71	0.87
76-9974	65	36	58	22	25	54	84	1.52
76-9976	85	43	68	25	29	60	95	2.39
76-9978	95	46	74	29	32	67	108	3.17
76-9980	120	52	82	32	35	76	119	4.32
76-9982	135	57	92	35	38	84	133	5.67
76-9984	170	60	98	38	41	92	146	7.79
76-9986	250	73	127	44	51	110	178	12.51
76-9988	350	83	146	51	57	127	197	18.50
76-9990	550	105	184	63	70	152	267	37.58

## Model 76-971x Dynamometer

- Anodized aluminum housing
- Accuracy: appr. 0.15% of the displayed value
- Complete with plastic case, manual and calibrating certificate
- Shackles included up to 5 t WLL



Model	WLL kN	Resolution kg	A mm	B mm	C mm	D mm	F mm	Bow shackle to	Weight kg
76-9710	25	1	218	85	54	21	160	3.25 incl.	1.35
76-9711	50	2	230	85	54	27	165	6.5 incl.	1.85
76-9712	100	5	315	100	59	38	200	12.0 excl.	3.60
76-9713	200	10	350	126	70	53	210	25.0 excl.	5.50

## Model 76-972x Dynamometer with radio remote control



Model	WLL kg	Resolution kg	A mm	B mm	C mm	D mm	F mm	Bow shackle to	Weight kg
76-9721	5000	2	230	85	54	27	165	6.5 incl.	1.85
76-9722	10000	5	315	100	59	38	200	12.0 excl.	3.60
76-9723	20000	10	350	126	70	53	210	25.0 excl.	5.50

## Model 77-4605 Thermometer

Measuring range: -40 to +70 °C

Weight: 0.6 kg



## Model 77-0001 Sag-scope

Instrument suitable for an accurate measuring of the conductor sag, supplied with special clamping device for tower legs.

Delivery in hardcase.

Weight: 4.7 kg

Optional:  
With fastening belt device





# STRINGING TOOLS

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## F7 SAFETY DEVICE

## Model 77-4000 Running ground

In order to dissipate the electric potential during the conductor stringing operation.

Tested for  $I_{cc}$ : 3.5 kA/0.5 s.

With a copper ground wire (6 m long – 50 mm<sup>2</sup>) and earthing clamp.

Conductor diameter 5 – 40 mm  
Weight: 10 kg



## Model 77-401x Grounding device set

- 3 aluminum conductor clamps with clamping capacity  $\varnothing$  5-60 mm
- 3 flexible copper cables with transparent insulation,
  - cross section: 50 mm<sup>2</sup>, length 6 m or 8 m
  - (cross section 70 / 95 / 120 or other length on request)
- Insulating fibreglass stick, decomposable, length 4 – 6 m
- 3 grounding clamps for steel with clamping capacity on round conductors and bars up to 33 mm



Insulating fibreglass stick				
Model	For conductor diameter	Fibreglass stick	Copper cables	Dimensioned for voltage up to
77-4010	5 to 60 mm	3 x 1.5 m	6 m	150 kV
77-4011	5 to 60 mm	2 x 2.0 m	8 m	150 kV
77-4012	5 to 60 mm	3 x 1.5 m	6 m	220 kV
77-4014	5 to 60 mm	3 x 2.0 m	6 m	400 kV

### Circuit values in function of cable section:

50 mm<sup>2</sup> –  $I_{cc}$ : 11.25 kA/ 1 s.

70 mm<sup>2</sup> –  $I_{cc}$ : 15.10 kA/ 1 s.

95 mm<sup>2</sup> –  $I_{cc}$ : 23.90 kA/ 1 s.

120 mm<sup>2</sup> –  $I_{cc}$ : 30.70 kA/ 1 s.

## Model 77-4110 Fall arrest harness with positioning function

Extreme soft material of belt; with one attachment eye backside, one in the middle of front side and three at lap belt. Wide backrest, padded leg loop, stepless adjustment of belt with quick adjustable buckles.

**Certificated according to EN 358 / 361 / 813**



## Model 77-4162 Twin Lanyard with energy absorber

Webbing belt with steel carabiner at shock absorber and two EH 60 carabiners. Length 120 cm.

**Certificated according to EN 355**



## Model 77-4100 Fall arrest harness

Soft material of belt; with one attachment eye backside and one in the middle of front side. Stepless adjustment of belt with quick adjustable buckles.

**Certificated according to EN 361**



## Model 77-417x Anti-fall unit with fixing material

Steel rope with automatic self rewinding movement. Automatic brake system in case of fall, synthetic cage, swiveling attachment, carabiner on rope, also for horizontal use.

**Certificated according to EN 360**



Model	Length	Weight
77-4170	18.0 m	6.3 kg
77-4172	24.0 m	7.3 kg

## Model 77-41.. Positioning belt

Positioning and restraining function with two fastening eyes sideways, continuously adjustable buckle. Padding at the back with 100 mm width.

**Certificated according to EN 358**



Model	Length
77-4120	75 – 100 cm
77-4121	95 – 120 cm
77-4122	115 – 140 cm



## Model 77-4180 Pylon tool bag

Diameter 30 cm, height approx. 42 cm, flexible synthetic basement, carrying strap



## Model 77-4181 Tool bag

Size 40 x 25 cm, mounting with carabiner with small part pocket and tool fastener outside. Reinforced basement, weather-proof

