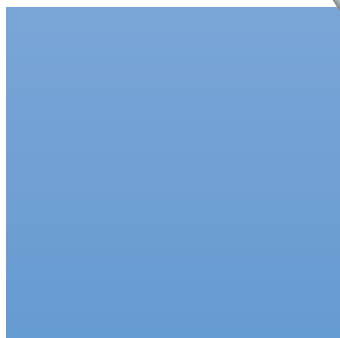
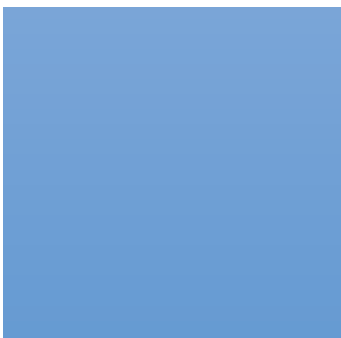
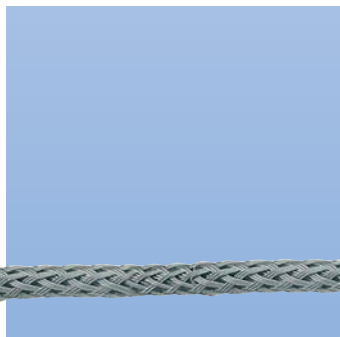
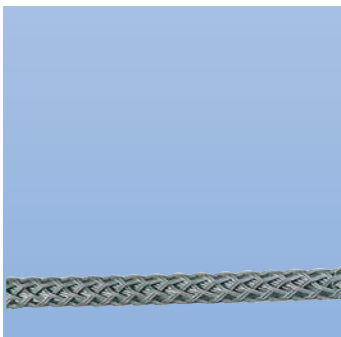
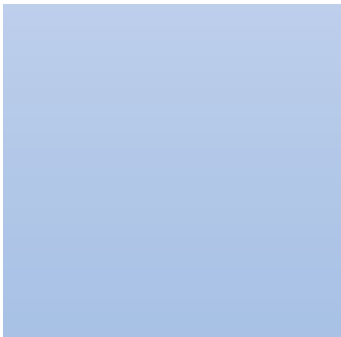
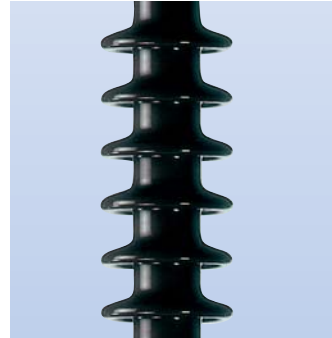
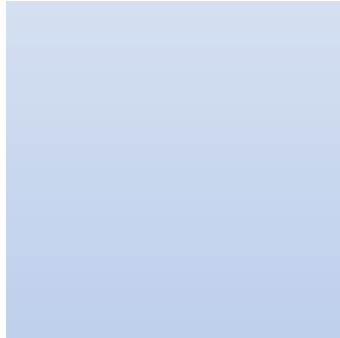


# Overhead line stringing equipment and machines

500





**Overhead cable pulleys for insulated cables**

**Pulling grips of Kevlar for overhead insulated cables**

**Equipment for pulling new OPGW or changing old overhead lines**

**Aluminium and steel mounting snatch blocks**

**Line pulleys for medium and high voltage**

**Line pulleys for high voltage**

**Overhead line grips**

**Connectors and rotating swivels for overhead lines**

**Electrical conductive overhead line connectors and swivels**

**Rope and ACSR cutters**

**Conductor cleaning brushes**

**Come along clamps for steel-, ACSR- and CU conductors**

**Steel rope and ratchet chain hoists**

**Dynamometers for catenaries and overhead line stringing**

**Pole erection and pulling-out equipment**

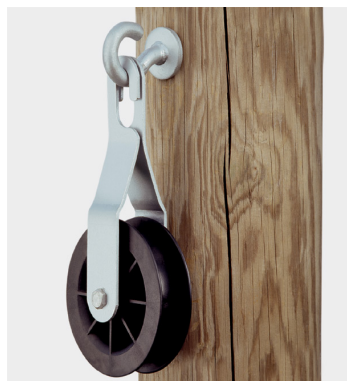
**Pole climbers and pole aluminium ladders**

**Personal safety equipment**

**Overhead line pulling machines**

**Overhead line unwinding and winding units**

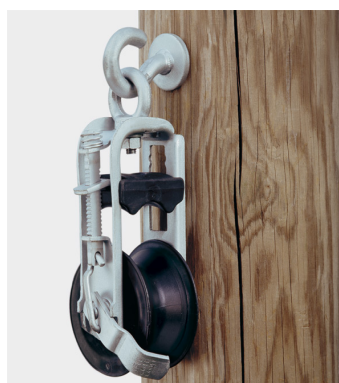
**Line pull plastic ropes**



## Overhead insulated cable pulley

Overhead insulated cable pulley of polyamide with gaping hook. Steel frame galvanized.

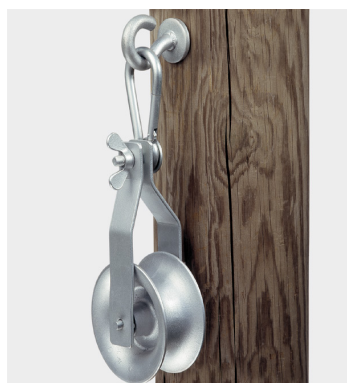
| Code   | Type    | Pulley-D | Groove-D | Min. break. | kg   |
|--------|---------|----------|----------|-------------|------|
| 510090 | LKP 150 | 150/90   | 46 mm    | 6 kN        | 1,10 |



## Pulley and clamp

Overhead insulated cable pulley and clamp construction. Steel frame with swivelling eye. Roller of polyamide with soft elastomeric inlay. After the cable pull the cable can be safely fixed by simple relocating the clamp lever.

| Code   | Type    | Pulley-D  | For cable                  | Min. break. | kg   |
|--------|---------|-----------|----------------------------|-------------|------|
| 510092 | LKM 108 | 108/80x52 | 2x25-4x95 mm <sup>2</sup>  | 5 kN        | 1,50 |
| 510094 | LKM 115 | 115/80x65 | 4x95-4x150 mm <sup>2</sup> | 5 kN        | 2,20 |



## Overhead insulated cable pulley

Overhead insulated cable pulley of alu with ball bearings, steel suspension with spring hook, galvanized.

| Code   | Type    | Pulley-D | Groove-D | Min. break. | kg   |
|--------|---------|----------|----------|-------------|------|
| 510170 | LKK 140 | 140/86   | 58 mm    | 6 kN        | 2,30 |



## Pole bracket

Pole bracket for overhead cable pulleys for fixing on wooden or concrete poles, galvanized, with belt.

| Code   | Type    | For pulley | Min. break. | kg   |
|--------|---------|------------|-------------|------|
| 510200 | MBF 140 | LKK 140    | 6 kN        | 1,60 |
| 510360 | MBF 300 | LKR 300    | 15 kN       | 3,00 |



## Overhead insulated cable pulley

Overhead insulated cable pulley of alu with ball bearings, steel suspension with swivelling hook, galvanized.

| Code   | Type    | Pulley-D | Groove-width | Min. break. | kg   |
|--------|---------|----------|--------------|-------------|------|
| 510130 | LKD 140 | 140/86   | 58 mm        | 6 kN        | 2,90 |
| 510250 | LKD 250 | 250/166  | 48 mm        | 6 kN        | 4,40 |
| 510270 | LKD 300 | 300/160  | 92 mm        | 6 kN        | 8,10 |



## Overhead insulated cable pulley

Overhead insulated cable pulley of alu with ball bearings, steel suspension without hook, galvanized.

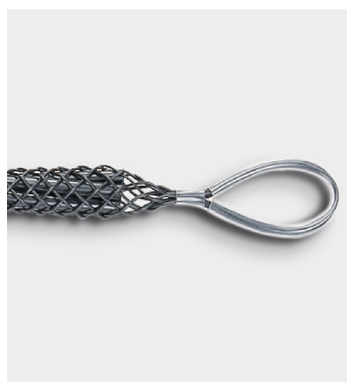
| Code   | Type    | Pulley-D | Groove-width | Min. break. | kg   |
|--------|---------|----------|--------------|-------------|------|
| 510310 | LKR 300 | 300/160  | 92 mm        | 15 kN       | 8,60 |



## Double tandem pulleys

Double tandem pulleys, steel construction galvanized. Four high wattage Polyamide pulleys with ball bearings. Mainly used in sea cable laying. The device adapt automatically to each pulling angle. The double rocker construction allows big bending radius. See pdf-drawing on the left.

| Code   | Type     | Pulley-D | Groove width | Rad. 45° | Breaking | Dimension    | kg     |
|--------|----------|----------|--------------|----------|----------|--------------|--------|
| 510243 | LKT 205P | 200/100  | 125 mm       | 2000 mm  | 150 kN   | 1800x250x800 | 180,00 |
| 510340 | LKT 300P | 300/120  | 230 mm       | 2800 mm  | 150 kN   | 2500x400x850 | 251,00 |



## Overhead insulated cable grips

Overhead insulated cable grips with 1 loop, made of Kevlar strands covered with plastic. Especially for pulling insulated overhead power cables.

- L1, the mentioned mesh lengths are without a cable in.
- The real length on the cable can be, depending on the cable diameter, much shorter.
- B = internal diameter of the loop in mm
- D = thickness of the loop in mm

| Code   | Type     | Cable-D | B  | D  | Min.   | For cables                | L 1/L2    | kg   |
|--------|----------|---------|----|----|--------|---------------------------|-----------|------|
| 510804 | LKS 30/1 | 20-30   | 55 | 12 | 1,6 kN | 4x25-4x50 mm <sup>2</sup> | 1000/1100 | 0,10 |
| 510806 | LKS 40/1 | 30-40   | 55 | 12 | 2,2 kN | 4x50-4x70 mm <sup>2</sup> | 1000/1100 | 0,11 |

510808 LKS 50/1 40-50 55 12 2,8 kN 4x70+2x35 mm<sup>2</sup> 1000/1100 0,12



## OPGW, ADSS double tandem pulleys

Double tandem pulleys, with 4 polyamide or aluminium rollers with ball bearings. Steel construction galvanized. Min. breaking load 36 kN. Mainly used for pulling of OPGW-lines and ADSS Fibre cables, and for exchange of conductors. Due to the low weight and the distance of 500 mm from axle to axle the device adapt automatically to each pulling angle. The double rocker construction allows bending radius from min. 750 to 2750 mm. See PDF-drawing on the left.

| Code   | Type     | Pulleys     | Pulley-/groove-D | Min.  | kg    |
|--------|----------|-------------|------------------|-------|-------|
| 510224 | LKW 140  | 4 polyamide | 140/80/58 mm     | 36 kN | 17,00 |
| 510234 | LKW 140A | 4 aluminium | 140/80/58 mm     | 36 kN | 17,30 |



## Double and triple pulleys for conductor change

Double and triple pulleys for conductor change. Suspension of light steel construction galvanized. See table below.

- Optional polyamide-pulleys with friction bearings or alu-pulleys with ball bearings, see table below.
- Select the pulley with a aluminium clamp suitable to your rope of 8-10 mm, see below.
- Select the pulley with a brass clamp suitable to your rope of 12-22 mm, see below.

| Code   | Type      | Pulleys     | Pulley-/Groove-D | Min.   | For rope-D | kg   |
|--------|-----------|-------------|------------------|--------|------------|------|
| 511100 | DRG 132/P | 2 Polyamide | 130/60/68 mm     | 3,6 kN | 12-22 mm   | 2,40 |
| 511101 | DRG 132/P | 2 Poly      | 130/60/68 mm     | 3,6 kN | 8-10 mm    | 2,40 |
| 511130 | DRG 132/A | 2 Aluminium | 130/60/68 mm     | 3,6 kN | 12-22 mm   | 3,00 |
| 511131 | DRG 132/A | 2 Alu       | 130/60/68 mm     | 3,6 kN | 8-10 mm    | 2,60 |
| 511300 | DRG 133/P | 3 Polyamide | 130/60/68 mm     | 3,6 kN | 12-22 mm   | 4,35 |
| 511301 | DRG 133/P | 3 Poly      | 130/60/68 mm     | 3,6 kN | 8-10 mm    | 4,04 |
| 511330 | DRG 133/A | 3 Aluminium | 130/60/68 mm     | 3,6 kN | 12-22 mm   | 4,80 |
| 511331 | DRG 133/A | 3 Alu       | 130/60/68 mm     | 3,6 kN | 8-10 mm    | 4,50 |



## Alu snatch pulley

Alu snatch pulley with spring hook, min. breaking load 6 kN. Very light pulleys for hanging on the belt.

| Code   | Type      | Pulley-D | Groove-D | Hook load | Dimension  | kg   |
|--------|-----------|----------|----------|-----------|------------|------|
| 513050 | MRK 02-80 | 115/80   | 15       | 4 kN      | 300x115x85 | 1,20 |



## Alu snatch blocks

Alu snatch blocks with safety hook. Pulley is recessed in the cheeks. For mounting and hoisting works in overhead line construction.

| Code   | Type       | Pulley-D | Groove-D | Hook load | Dimension  | kg   |
|--------|------------|----------|----------|-----------|------------|------|
| 513071 | MRK 05-70  | 70/50    | 22       | 10 kN     | 230x90x43  | 1,10 |
| 513076 | MRK 10-120 | 120/96   | 40       | 15 kN     | 320x140x55 | 3,00 |
| 513078 | MRK 30-120 | 120/100  | 44       | 30 kN     | 330x140x73 | 4,13 |
| 513081 | MRK 30-220 | 220/194  | 44       | 30 kN     | 470x300x73 | 9,80 |



## Steel snatch blocks

Steel snatch blocks, steel pulleys with friction bearing, swivelling hook. For diversion of pulling ropes and for mounting works on poles.

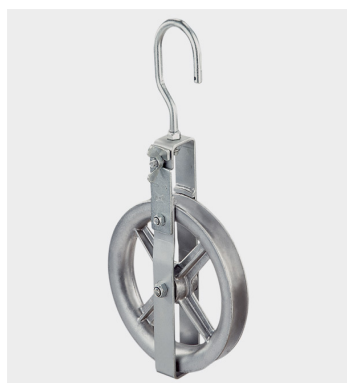
| Code   | Type   | Pulley-D | Groove-D | Hook load | Dimension  | kg    |
|--------|--------|----------|----------|-----------|------------|-------|
| 548240 | DSR 10 | 85/105   | 7        | 10 kN     | 305x110x25 | 3,30  |
| 548243 | DSR 20 | 150/190  | 13       | 20 kN     | 425x200x30 | 8,90  |
| 548246 | DSR 30 | 180/220  | 15       | 32 kN     | 496x230x40 | 15,50 |
| 548249 | DSR 60 | 210/260  | 18       | 64 kN     | 655x280x50 | 26,50 |



## Overhead line pulleys, lightweight

Overhead line pulleys of alu with ball bearings, lightweight steel suspension with swivelling hook of internal Ø 75 mm. Galvanized. Techn. detail see table below.

| Code   | Type    | Pulley-D | Groove-D | Min. break. | Dimension  | kg   |
|--------|---------|----------|----------|-------------|------------|------|
| 513110 | SRD 115 | 115/80   | 25       | 3 kN        | 370x115x80 | 1,50 |
| 513170 | SRD 200 | 200/130  | 33       | 6 kN        | 480x200x85 | 3,10 |



## Overhead line pulleys

Overhead line pulleys of alu with ball bearings, sturdy steel suspension all around of the pulley, alu pulley with ball bearings. For suspension with tongue, hook or pin. Accessory see below.

| Code   | Type    | Pulley-D | Groove-D | Min. break. | Dimension   | kg   |
|--------|---------|----------|----------|-------------|-------------|------|
| 513540 | SRD 315 | 315/250  | 42       | 6 kN        | 620x315x120 | 6,30 |



## Overhead line pulleys

Overhead line pulleys of alu with ball bearings, sturdy steel suspension all around of the pulley, alu pulley with ball bearings. For suspension with tongue, hook or pin. Accessory see below.

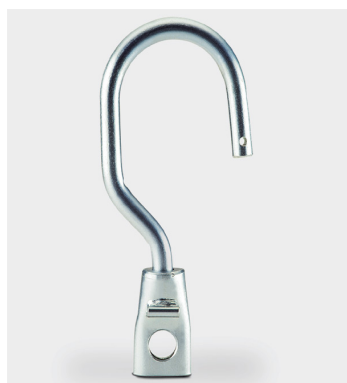
| Code   | Type   | Pulley-D | Groove-D | Min. break. | Dimension   | kg   |
|--------|--------|----------|----------|-------------|-------------|------|
| 513250 | SR 200 | 200/130  | 33       | 15 kN       | 340x200x100 | 4,20 |



## Overhead line pulleys

Overhead line pulleys of alu with ball bearings, sturdy steel suspension all around of the pulley, alu pulley with ball bearings. For suspension with tongue, hook or pin. Accessory see below.

| Code   | Type   | Pulley-D | Groove-D | Min. break. | Dimension   | kg   |
|--------|--------|----------|----------|-------------|-------------|------|
| 513590 | SR 315 | 315/250  | 42       | 18 kN       | 515x315x155 | 7,70 |



## Rotating hook

Rotating hook ID 75 mm, for pulleys SR 200 and SR 315. Steel galvanized.

| Code   | Type   | Suitable for      | Min. break. | Dimension  | kg   |
|--------|--------|-------------------|-------------|------------|------|
| 516220 | AHD 16 | SR 200 and SR 315 | 6 kN        | 240x120x75 | 0,70 |



## Pin for pulley

Pin for pulleys SR 200 and SR 315, steel galvanized.

| Code   | Type   | Suitable for      | Min. break. | Dimension | kg   |
|--------|--------|-------------------|-------------|-----------|------|
| 516130 | SB 250 | SR 200 and SR 315 | 18 kN       | Ø 22x250  | 0,80 |



## Screw clamp

Screw clamp for pulleys SR 200 and SR 315. Clamping range 35-110 mm. Steel galvanized.

| Code   | Type   | Suitable for      | Min. break. | Clamp range | Dimension  | kg   |
|--------|--------|-------------------|-------------|-------------|------------|------|
| 516600 | SZ 310 | SR 200 and SR 315 | 18 kN       | 35-110 mm   | 230x155x40 | 1,47 |



## Insulator mounted alu roller

Insulator mounted alu roller for 240 mm², hinged alu casing with 3 rollers, with rubberised tensioning claws.

- Suitable for horizontal and vertical pulls up to 4°.
- Can be mounted by hand without tools on any pin insulator.
- After regulation the conductor can be placed directly in the insulator groove using the conductor lifter.

| Code   | Type    | For                 | Min. break. | Dimension   | kg   |
|--------|---------|---------------------|-------------|-------------|------|
| 516760 | STR 020 | ACSR up to 150 mm². | 15 kN       | 155x355x145 | 3,00 |



## Conductor lifter

Conductor lifter suitable to take out the conductors off the insulator mounted pulley and to lay it directly into the insulator groove.

| Code   | Type    | For     | Dimension  | kg   |
|--------|---------|---------|------------|------|
| 516765 | SCL 025 | STR 020 | 300x130x45 | 1,20 |



## Insulator mounted corner roller

Insulator mounted angle pulley, suitable for all pin insulators. With rubberised tensioning claws. Can be mounted by hand without tools on any pin insulator. Suitable for straight and for angle pulls up to 40°. Once the pulling motion is completed, the conductor can be placed directly in the insulator groove. Suitable for ACSR

| Code   | Type    | For                 | Min. break. | Dimension   | kg   |
|--------|---------|---------------------|-------------|-------------|------|
| 516790 | STE 030 | ACSR up to 240 mm². | 15 kN       | 500x200x140 | 6,70 |



## Overhead line pulleys

Overhead line pulleys of alu with ball bearings, sturdy steel suspension not all around only down to the axle. For suspension with tongue or hook. Accessory see below.

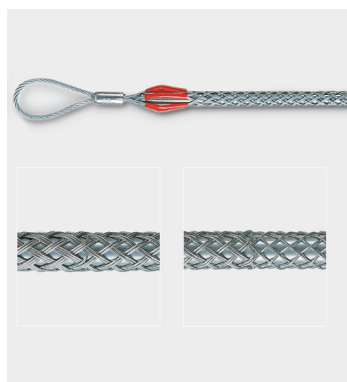
| Code   | Type    | Pulley-D | Groove-D | Min.  | Rubber | Dimension   | kg    |
|--------|---------|----------|----------|-------|--------|-------------|-------|
| 513480 | TS 315  | 315/250  | 42       | 15 kN | no     | 440/315x115 | 5,80  |
| 515110 | TS 350  | 350/260  | 58       | 45 kN | no     | 500/350x150 | 9,50  |
| 515120 | TS 350G | 350/280  | 58       | 45 kN | yes    | 500/350x150 | 10,00 |
| 517250 | TS 580  | 580/480  | 58       | 45 kN | no     | 730/580x150 | 16,20 |
| 517260 | TS 580G | 580/500  | 58       | 45 kN | yes    | 730/580x150 | 17,20 |



## Overhead line pulleys

Overhead line pulleys of alu with ball bearings, sturdy steel suspension all around of the pulley, alu pulley with ball bearings. For suspension with tongue, hook or pin. Accessory see below.

| Code   | Type    | Pulley-D | Groove-D | Min.  | Rubber | Dimension   | kg    |
|--------|---------|----------|----------|-------|--------|-------------|-------|
| 515170 | SR 350  | 350/260  | 58       | 60 kN | no     | 515/350x150 | 12,30 |
| 515180 | SR 350G | 350/280  | 58       | 60 kN | yes    | 515/350x150 | 12,80 |
| 517310 | SR 580  | 580/480  | 58       | 60 kN | no     | 750/580x150 | 16,60 |
| 517320 | SR 580G | 580/500  | 58       | 60 kN | yes    | 750/580x150 | 17,60 |

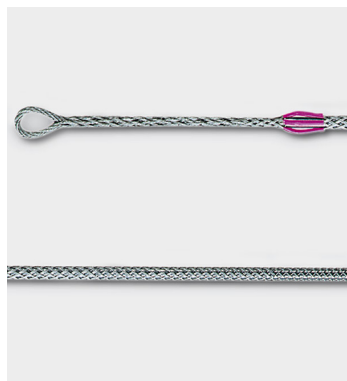


## Overhead line grips pressed loops

Overhead line grips with 1 pressed loop. Galvanized bowden wire. Highest tensile strength over entire length and tension resulting from variable mesh 3-2-1-strand. These grips with pressed loops are for conventional pulling operations but not for negotiating capstan heads, for this select types MSP. All Vetter grips are handmade therefore of high flexibility. They adapt easy at any difference in conductor diameter and are therefore simple to handle.

- L1, the mentioned mesh lengths are without a conductor in.
- The real length on the conductor can be, depending on the conductor diameter, much shorter.
- B = internal diameter of the loop in mm
- D = thickness of the loop in mm
- kN = minimum breaking load

| Code   | Type   | D     | Section mm <sup>2</sup> | B  | D  | Min.   | L1/L2 mm  | Colour | kg   |
|--------|--------|-------|-------------------------|----|----|--------|-----------|--------|------|
| 540070 | MS 11  | 6-11  | 25-50                   | 30 | 8  | 18 kN  | 770/980   | violet | 0,20 |
| 540120 | MS 16  | 11-16 | 50-120                  | 45 | 10 | 36 kN  | 900/1170  | green  | 0,40 |
| 540170 | MS 21  | 16-21 | 95-210                  | 60 | 10 | 66 kN  | 1180/1520 | yellow | 0,70 |
| 540220 | MS 27  | 21-27 | 210-340                 | 70 | 12 | 93 kN  | 1550/1980 | grey   | 1,40 |
| 540250 | MS 38S | 27-38 | 380-680                 | 70 | 10 | 66 kN  | 1650/2100 | red    | 1,80 |
| 540260 | MS 38  | 27-38 | 380-680                 | 70 | 14 | 135 kN | 1650/2100 | red    | 1,80 |
| 540310 | MS 45  | 38-45 | 680 -.....              | 75 | 18 | 135 kN | 1850/2300 | brown  | 2,10 |



## Overhead line grips spliced loops

Overhead line grips with 1 hand-spliced loop. Galvanized bowden wire. Highest tensile strength over entire length and tension resulting from variable mesh 3-2-1-strand. These grips with hand-spliced loops are also suitable for negotiating capstan heads. All Vetter grips are handmade therefore of high flexibility. They adapt easy at any difference in conductor diameter and are therefore simple to handle.

- L1, the mentioned mesh lengths are without a conductor in.
- The real length on the conductor can be, depending on the conductor diameter, much shorter.
- B = internal diameter of the loop in mm
- D = thickness of the loop in mm
- kN = minimum breaking load

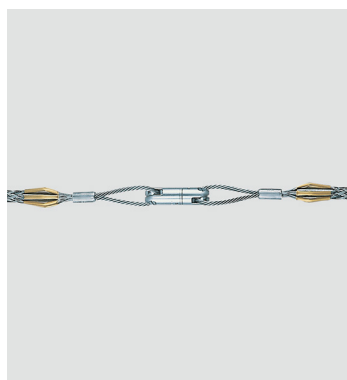
| Code   | Type   | D     | Section mm <sup>2</sup> | B  | D  | Min.   | L1/L2 mm  | Colour | kg   |
|--------|--------|-------|-------------------------|----|----|--------|-----------|--------|------|
| 540410 | MSP 11 | 6-11  | 25-50                   | 35 | 10 | 18 kN  | 770/1100  | violet | 0,30 |
| 540420 | MSP 16 | 11-16 | 50-120                  | 45 | 15 | 36 kN  | 900/1380  | green  | 0,55 |
| 540430 | MSP 21 | 16-21 | 95-210                  | 50 | 16 | 66 kN  | 1180/1690 | yellow | 0,90 |
| 540440 | MSP 27 | 21-27 | 210-340                 | 55 | 20 | 93 kN  | 1550/2200 | grey   | 2,10 |
| 540450 | MSP 38 | 27-38 | 380-680                 | 60 | 22 | 135 kN | 1650/2340 | red    | 2,80 |
| 540460 | MSP 45 | 38-45 | 680 -.....              | 65 | 23 | 135 kN | 1850/2600 | brown  | 3,20 |



## Line connecting grips

Rope connecting grips. Suitable for changing crane ropes. Not to use for overhead lines, for this it is recommended to use 2 MS grips and 1 FVD swivel. Connecting grips would be destroyed by the torsion between two conductors.

| Code   | Type   | D     | Min.    | Length | kg   |
|--------|--------|-------|---------|--------|------|
| 540560 | SVS 10 | 6-10  | 6,6 kN  | 1000   | 0,10 |
| 540600 | SVS 15 | 10-15 | 10,2 kN | 1500   | 0,13 |
| 540650 | SVS 20 | 15-20 | 20,4 kN | 1500   | 0,27 |
| 540660 | SVS 25 | 20-25 | 22,2 kN | 2000   | 0,40 |
| 540700 | SVS 30 | 25-30 | 24,3 kN | 2000   | 0,49 |
| 540750 | SVS 40 | 30-40 | 35,1 kN | 2000   | 0,60 |

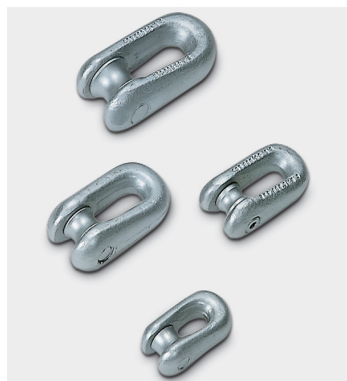


## Line connection

For connecting two lines the most reliable method is to use two overhead line grips MS or MSP 11-45, as above shown. These will be connected by a swivel type FVD to avoid torsion.

- One set for safe working consist of the followings:
- Code 540.xxx - two overhead line grips as shown above
- Code 537.xxx - one overhead line swivel with ball bearings to avoid torsion.

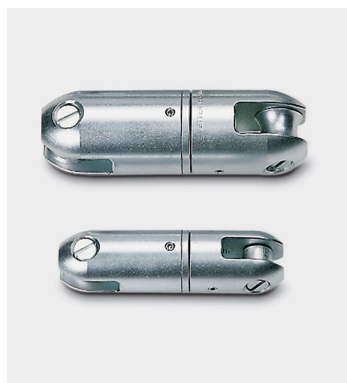
| Code         | Type      | Article     | Overhead line grips |
|--------------|-----------|-------------|---------------------|
| 540.070-.460 | MS-MSP    | Article see | - 0,00              |
| 537.280-.640 | FVD 18-60 | Article see | - 0,00              |



## Connector rigid

Rigid line connector for overhead line pulling, for connection of different pull ropes, slim construction for easy running through the pulleys. These swivels are suitable for pulling over capstans or line tensioners.

| Code   | Type   | D  | L   | Fork | Bolt | Min.   | kg   |
|--------|--------|----|-----|------|------|--------|------|
| 537010 | FTS 28 | 28 | 59  | 11   | 17   | 70 kN  | 0,14 |
| 537040 | FTS 41 | 41 | 72  | 14   | 19   | 110 kN | 0,35 |
| 537080 | FTS 48 | 48 | 90  | 19   | 20   | 160 kN | 0,53 |
| 537120 | FTS 56 | 56 | 101 | 19   | 22   | 220 kN | 0,77 |
| 537170 | FTS 60 | 60 | 120 | 26   | 27   | 360 kN | 1,05 |



## Overhead line swivels

Overhead line swivels, connection between pulling rope and pulling grip. With ball bearings, therefore only suitable to absolute twist-free steel ropes. Avoids untwisting the conductor. These swivels may not be used for pulling over capstans or line tensioners. For this please use above mentioned types FTS 28-60.

| Code   | Type    | D   | L   | Fork | Bolt | Min.   | kg    |
|--------|---------|-----|-----|------|------|--------|-------|
| 537280 | FVD 18  | 18  | 80  | 6,5  | 6    | 21 kN  | 0,11  |
| 537300 | FVD 25  | 25  | 109 | 9    | 10   | 45 kN  | 0,30  |
| 537360 | FVD 30  | 30  | 128 | 12   | 12   | 60 kN  | 0,50  |
| 537410 | FVD 35  | 35  | 137 | 12   | 14   | 90 kN  | 0,70  |
| 537490 | FVD 40  | 40  | 160 | 14   | 16   | 120 kN | 1,10  |
| 537550 | FVD 50  | 55  | 187 | 18   | 16   | 180 kN | 1,90  |
| 537580 | FVD 55  | 55  | 190 | 20   | 18   | 180 kN | 2,30  |
| 537640 | FVD 60  | 60  | 220 | 23   | 20   | 225 kN | 3,10  |
| 537670 | FVD 65  | 65  | 235 | 26   | 24   | 300 kN | 3,50  |
| 537700 | FVD 75  | 75  | 270 | 30   | 27   | 320 kN | 6,70  |
| 537730 | FVD 85  | 85  | 305 | 35   | 30   | 400 kN | 9,40  |
| 537760 | FVD 100 | 100 | 340 | 38   | 36   | 500 kN | 14,30 |



## Overhead line swivels electrical conductive

Overhead line swivels. With high electrical conductivity to deflect induced currents in the neighbourhood of live wires, tested up to 84 amperes. With ball bearings, therefore only suitable to absolute twist-free steel ropes. Avoids untwisting the conductor. These swivels may not be used for pulling over capstans or line tensioners. For this please use above mentioned types FTS 28-60.

| Code   | Type   | D  | L   | Fork | Bolt | Min.   | kg   |
|--------|--------|----|-----|------|------|--------|------|
| 537820 | FED 40 | 40 | 160 | 14   | 16   | 120 kN | 1,20 |
| 537835 | FED 55 | 55 | 190 | 20   | 18   | 180 kN | 2,70 |



## Conductor pulling heads

Overhead line pull connectors, for pulling conductors in the neighbourhood of live wires instead of using pulling grips. To complete the safety use only swivels with high electrical conductivity, e.g. FED 40 as a.m. Please ask for more information.

- Overhead line grips are tending to burst open at a spark erosion.
- The conductor stringing clamp together with the swivel FED 40 are continuously conductive.
- A safe connection to avoid destruction and the fall down of the conductors.
- The pulling clamp can be reused often.

| Code   | Type       | D mm | Cross section           | Conductor-D | kN  | kg   |
|--------|------------|------|-------------------------|-------------|-----|------|
| 538802 | LZK 40-070 | 40   | 50-70 mm <sup>2</sup>   | 9,6-12,0    | 60  | 1,20 |
| 538805 | LZK 40-125 | 40   | 95-125 mm <sup>2</sup>  | 13,6-16,3   | 60  | 1,20 |
| 538810 | LZK 45-185 | 45   | 150-185 mm <sup>2</sup> | 17,1-19,0   | 75  | 1,28 |
| 538815 | LZK 50-265 | 50   | 210-265 mm <sup>2</sup> | 20,3-22,4   | 90  | 2,30 |
| 538820 | LZK 55-385 | 55   | 300-385 mm <sup>2</sup> | 24,1-26,7   | 120 | 2,30 |



## Rope and ACSR cutters

Rope and ACSR cutters, type Felco highest quality. For steel ropes and conductors according to table below.

| Code   | Type  | ACSR                | Open  | Steel-D | Cable | kg   |
|--------|-------|---------------------|-------|---------|-------|------|
| 543090 | C 9   | 35 mm <sup>2</sup>  | 12 mm | 9 mm    | 9 mm  | 0,80 |
| 543120 | C 12  | 70 mm <sup>2</sup>  | 15 mm | 12 mm   | 12 mm | 1,50 |
| 543250 | C 16  | 95 mm <sup>2</sup>  | 25 mm | 14 mm   | 20 mm | 2,30 |
| 543300 | C 16E | 125 mm <sup>2</sup> | 28 mm | 10 mm   | 25 mm | 2,30 |



## Hydraulic rope and ACSR cutters

Hydraulic rope and ACSR cutters, cutting heads rotating 180°. For steel ropes and conductors according to table below.

| Code   | Type  | ACSR                 | Open  | Steel-D | Cable | Pressure | Length | kg   |
|--------|-------|----------------------|-------|---------|-------|----------|--------|------|
| 543500 | SH 24 | 300 mm <sup>2</sup>  | 24 mm | 22 mm   | 24 mm | 110 kN   | 426 mm | 3,90 |
| 543530 | SH 32 | 495 mm <sup>2</sup>  | 32 mm | 32 mm   | 32 mm | 200 kN   | 675 mm | 9,30 |
| 543610 | SH 40 | 550 mm <sup>2</sup>  | 40 mm | 22 mm   | 40 mm | 90 kN    | 630 mm | 5,20 |
| 543670 | SH 55 | 1000 mm <sup>2</sup> | 55 mm | 30 mm   | 54 mm | 125 kN   | 610 mm | 7,80 |



## Accu-Hydraulic ACSR and rope cutters

Accu-hydraulic ACSR and rope cutters, cutting heads rotating 180°. For steel ropes and conductors according to table below. Included are the following accessories:

- 1 Charger CAR 01, loading approx. 55 minutes, 2 accus BAT 20
- 1 Carrying belt and 1 plastic case.
- A safe connection to avoid destruction and the fall down of the conductors.
- The pulling clamp can be reused often.

| Code   | Type  | ACSR                 | Open  | Steel-D | Cable | Pressure | kg   |
|--------|-------|----------------------|-------|---------|-------|----------|------|
| 543730 | RS 40 | 1000 mm <sup>2</sup> | 40 mm | 16 mm   | 40 mm | 68 kN    | 6,90 |



## Conductor cleaning brush

Conductor cleaning brush, hinged aluminium shell with stainless steel V2A bristles. Blue for AL conductors.

| Code   | Type   | Colour | For conductor | kg   |
|--------|--------|--------|---------------|------|
| 560400 | SRA 40 | blue   | Alu-Ø 10-40   | 0,20 |



## Conductor cleaning brush

Conductor cleaning brush, hinged aluminium shell with stainless steel V2A bristles. Red for CU conductors.

| Code   | Type   | Colour | For conductor | kg   |
|--------|--------|--------|---------------|------|
| 560410 | SRC 40 | rot    | CU-Ø 10-40    | 0,20 |



## Come along clamps for St and Cu

Come along clamps for St and Cu ropes with long parallel clamping jaws made of height quality steel. Jaws hardened.

| Code   | Type   | Cond-D    | Cross section          | WLL   | Jaw-L  | Eye-D | kg   |
|--------|--------|-----------|------------------------|-------|--------|-------|------|
| 561500 | SCS 5  | 1,0-5,0   | 1-16 mm <sup>2</sup>   | 5 kN  | 60 mm  | 20    | 0,27 |
| 561510 | SCS 9  | 3,0-9,0   | 6-35 mm <sup>2</sup>   | 10 kN | 90 mm  | 22    | 0,85 |
| 561520 | SCS 12 | 4,0-12,0  | 16-70 mm <sup>2</sup>  | 17 kN | 110 mm | 27    | 1,20 |
| 561530 | SCS 18 | 5,0-18,0  | 50-150 mm <sup>2</sup> | 30 kN | 120 mm | 25x38 | 1,85 |
| 561540 | SCS 28 | 10,0-28,0 | 90-400 mm <sup>2</sup> | 35 kN | 140 mm | 30x40 | 3,80 |

561550    SCS 40    20,0-40,0    240-800 mm<sup>2</sup>    40 kN    140 mm    30x40    6,20



## Come along clamps for Al and ACSR

Come along clamps for Al, ACSR and Aldrey conductors. With long parallel clamping jaws made of height quality steel. Jaws with fine grooves, hardened.

| Code   | Type   | Cond-D    | Cross section           | WLL   | Jaw-L  | Eye-D | kg   |
|--------|--------|-----------|-------------------------|-------|--------|-------|------|
| 561580 | SAA 8  | 5,4-8,5   | 25-35 mm <sup>2</sup>   | 10 kN | 90 mm  | 22    | 0,80 |
| 561600 | SAA 12 | 5,0-12,0  | 16-70 mm <sup>2</sup>   | 17 kN | 110 mm | 27    | 1,15 |
| 561630 | SAA 18 | 8,0-18,0  | 50-150 mm <sup>2</sup>  | 30 kN | 120 mm | 25x38 | 2,00 |
| 561680 | SAA 28 | 15,0-28,0 | 120-400 mm <sup>2</sup> | 35 kN | 140 mm | 30x40 | 3,80 |
| 561685 | SAA 32 | 15,0-32,0 | 120-620 mm <sup>2</sup> | 40 kN | 140 mm | 30x40 | 3,90 |



## Come along clamps for bare wires

Come along clamps for all kind of bare wires, for pulling and tensioning of metal wires. Made of high quality steel. Parallel plain jaws without grooves.

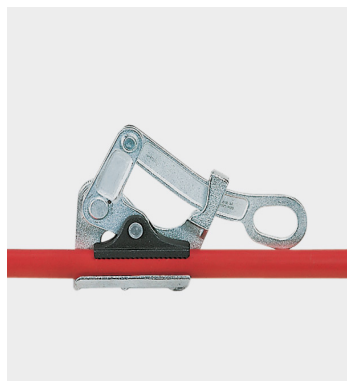
| Code   | Type   | Cond-D    | WLL   | Jaw-L  | Eye   | Dimension  | kg   |
|--------|--------|-----------|-------|--------|-------|------------|------|
| 561702 | LSK 15 | 5,0-15,0  | 20 kN | 90 mm  | 31x44 | 260x100x30 | 1,60 |
| 561704 | LSK 20 | 8,0-20,0  | 30 kN | 130 mm | 31x44 | 330x130x50 | 2,90 |
| 561708 | LSK 32 | 18,0-32,0 | 30 kN | 190 mm | 66x93 | 500x180x70 | 9,60 |



## Wedge type clamps

Wedge type clamps for bare wires, for clamping or catching the line during pulling. Self-clamping, the greater the pull, the greater the clamping pressure.

| Code   | Type   | Cond-D    | WLL   | Jaw-L  | Dimension  | kg   |
|--------|--------|-----------|-------|--------|------------|------|
| 561720 | KSP 10 | 5,0-10,0  | 10 kN | 100 mm | 275x80x35  | 1,00 |
| 561722 | KSP 14 | 10,5-14,0 | 20 kN | 155 mm | 365x100x40 | 2,00 |
| 561724 | KSP 21 | 15,0-21,0 | 30 kN | 240 mm | 500x150x50 | 5,20 |



## Cable clamps for insulated cables

Cable clamps for insulated cables, galvanized, with long parallel clamping round jaws of high quality steel hardened. No slipping on one-core to four-core bundle cables.

| Code   | Type   | Cable-D   | Cross section            | Eye   | L mm | WLL   | kg   |
|--------|--------|-----------|--------------------------|-------|------|-------|------|
| 561780 | KSK 25 | 8,0-25,0  | 4x35 mm <sup>2</sup>     | 27x40 | 70   | 5 kN  | 0,90 |
| 561800 | KSK 34 | 16,0-34,0 | 4x70 mm <sup>2</sup>     | 30x45 | 100  | 12 kN | 2,20 |
| 561810 | KSK 45 | 28,0-45,0 | 4x95-150 mm <sup>2</sup> | 30x45 | 100  | 18 kN | 3,10 |



## Clamps for insulated telecom cables

Clamps for insulated telecom air cables. Clamping jaws and guide clamps made of glass fibre reinforced plastic, housing made of galvanized sheet steel.

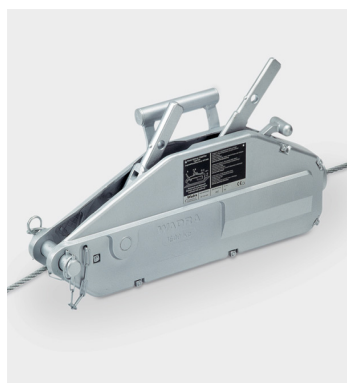
| Code   | Type     | Cable-D   | WLL   | Dimension  | kg   |
|--------|----------|-----------|-------|------------|------|
| 561910 | KST 10,5 | 5,5-10,5  | 4 kN  | 174x45x32  | 0,17 |
| 561912 | KST 13,5 | 10,5-13,5 | 7 kN  | 236x61x39  | 0,40 |
| 561914 | KST 17,5 | 13,5-17,5 | 9 kN  | 276x70x47  | 0,65 |
| 561916 | KST 22,5 | 17,5-22,5 | 16 kN | 437x102x53 | 1,35 |



## Cable supporting clamp

Cable supporting clamp, bow for stress-free suspension of insulated cables. For tension up to 1000 volts. Cast iron, furnished equipped with shackle suspension.

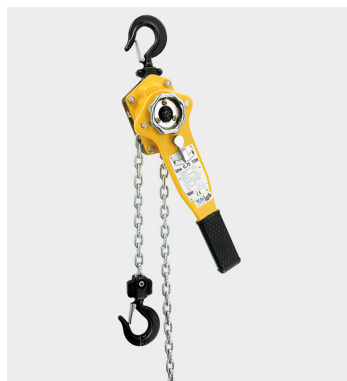
| Code   | Type   | Cable-D   | Radius | L mm | kg   |
|--------|--------|-----------|--------|------|------|
| 563125 | KTB 21 | 10,0-21,0 | 100 mm | 130  | 1,60 |
| 563130 | KTB 28 | 21,0-28,0 | 130 mm | 170  | 2,50 |
| 563135 | KTB 36 | 28,0-36,0 | 170 mm | 220  | 3,50 |
| 563140 | KTB 48 | 36,0-48,0 | 220 mm | 290  | 5,50 |



## Steel rope hoists

Steel rope hoists, lightweight alu-construction for pulling and hoisting works. Officially approved by safety institution. Including 20 m special steel rope with hook.

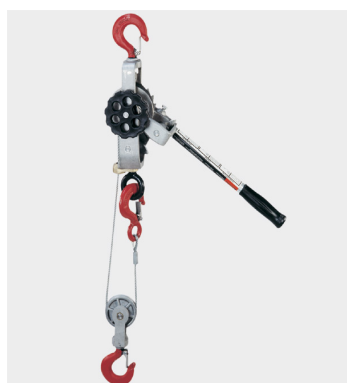
| Code   | Type   | Pull force | Rope-D | Hook load | L/W/H mm   | kg    |
|--------|--------|------------|--------|-----------|------------|-------|
| 550280 | SZA 08 | 8 kN       | 8,4    | 800 kg    | 420x60x230 | 15,50 |
| 550310 | SZA 16 | 16 kN      | 11,5   | 1600 kg   | 550x80x280 | 26,00 |
| 550340 | SZA 32 | 32 kN      | 16,0   | 3200 kg   | 680x90x330 | 21,00 |



## Ratchet chain hoists

Ratchet chain hoists, especially lightweight construction, with round link chains. Chain release device. Swivelling hooks. Lift 1,50 m.

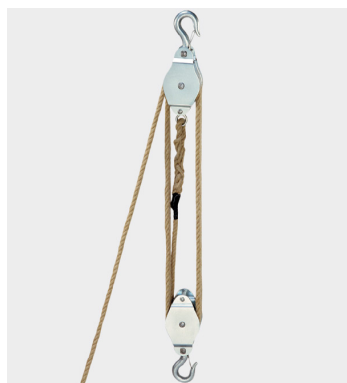
| Code   | Type   | Pull-lift force | Dimension   | kg    |
|--------|--------|-----------------|-------------|-------|
| 550580 | KRZ 02 | 250 kg          | 270x55x90   | 2,20  |
| 550582 | KRZ 07 | 750 kg          | 295x111x142 | 7,00  |
| 550584 | KRZ 15 | 1500 kg         | 380x140x166 | 11,00 |
| 550586 | KRZ 30 | 3000 kg         | 420x174x184 | 14,90 |



## Steel rope tensioners, lightweight

Steel rope tensioner, lightweight, for pulling and tensioning, not for hoisting of loads. Steel rope Ø 4,8 mm.

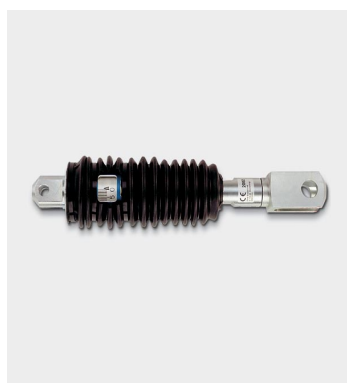
| Code   | Type    | single strand/L | double strand/L | Dimension   | kg   |
|--------|---------|-----------------|-----------------|-------------|------|
| 550370 | SLM 546 | 500 kp/4,60 m   | 1000 kp/2,30 m  | 600x400x155 | 4,50 |
| 550374 | SLM 763 | 700 kp/6,00 m   | 1400 kp/3,00 m  | 600x400x155 | 6,00 |
| 550376 | SLM 952 | 900 kp/5,20 m   | 1800 kp/2,60 m  | 600x400x155 | 5,90 |



## Pulley blocks, 3 fold

Pulley blocks, 3 fold with 20 m of hemp wire, 3-grooved rollers, swivelling hook.

| Code   | Type   | Pull-lift force | Roller-D | Rope-D | kg   |
|--------|--------|-----------------|----------|--------|------|
| 550660 | FLZ 60 | 250 kg          | 60 mm    | 10 mm  | 2,60 |
| 550670 | FLZ 70 | 300 kg          | 70 mm    | 12 mm  | 4,30 |
| 550680 | FLZ 80 | 350 kg          | 80 mm    | 12 mm  | 4,40 |



## Dynamometer for catenaries accuracy $\pm 0,6$ %

Dynamometer for catenary and overhead line works. High accuracy of  $\pm 0,6$  %. With 2 fork heads. Pull results on a black and white drum type scale. Overload protection. Complete body protected in a rubber joint.

| Code   | Type   | Cap.      | Scale | Break. | D/L    | kg   |
|--------|--------|-----------|-------|--------|--------|------|
| 550035 | DBA 02 | 0-250 kg  | 5 kg  | 15 kN  | 70/289 | 1,90 |
| 550065 | DBA 05 | 0-500 kg  | 10 kg | 25 kN  | 70/289 | 1,90 |
| 550095 | DBA 10 | 0-1000 kg | 20 kg | 50 kN  | 70/289 | 1,90 |
| 550105 | DBA 15 | 0-1500 kg | 20 kg | 75 kN  | 70/289 | 2,40 |



## Dynamometer for overhead lines $\pm 0,6 \%$

Dynamometer for overhead line works. High accuracy of  $\pm 0,6 \%$ . With 2 fork heads. Pull results on a black and white drum type scale. Overload protection.

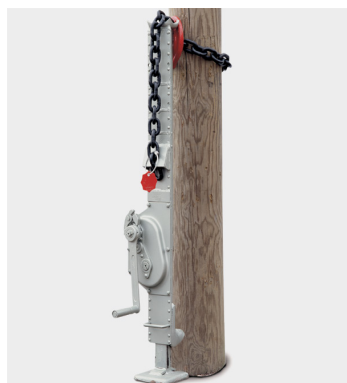
| Code   | Type   | Cap.      | Scale | Break. | D/L    | kg   |
|--------|--------|-----------|-------|--------|--------|------|
| 550090 | DYB 10 | 0-1000 kg | 20 kg | 25 kN  | 50/266 | 1,90 |
| 550120 | DYM 20 | 0-2000 kg | 25 kg | 50 kN  | 50/266 | 7,80 |
| 550150 | DYO 30 | 0-3000 kg | 50 kg | 100 kN | 86/395 | 7,80 |



## Dynamometer for overhead lines $\pm 3,0 \%$

Dynamometer for overhead line works, clock type with round scale. Accuracy  $\pm 3,0 \%$ . With 2 eyes. Overload protection. Including leather case.

| Code   | Type   | Cap.      | Scale | Break. | D/L    | kg   |
|--------|--------|-----------|-------|--------|--------|------|
| 550190 | DMO 05 | 0-500 kg  | 10 kg | 20 kN  | 65/110 | 1,00 |
| 550192 | DMO 10 | 0-1000 kg | 20 kg | 40 kN  | 65/135 | 1,20 |
| 550194 | DMO 20 | 0-2000 kg | 50 kg | 40 kN  | 86/135 | 1,50 |
| 550196 | DMO 30 | 0-3000 kg | 50 kg | 60 kN  | 80/150 | 2,60 |



## Pole lifting jack

Pole lifting jack with safety crank and pole pulling chain. Big lifting height.

| Code   | Type   | Extraction force | Extraction height | Min. height | kg    |
|--------|--------|------------------|-------------------|-------------|-------|
| 550810 | MHW 50 | 5 t              | 700 mm            | 1120 mm     | 46,40 |



## Pole hand ground borer

Pole hand ground borer, of high quality steel furnished, consisting of borer, borer-handle and extension 700 mm.

| Code   | Type     | Hole-D    | Hole depth | For borer-D | kg   |
|--------|----------|-----------|------------|-------------|------|
| 551310 | MEB 1515 | 150 mm    | 1500 mm    | --          | 5,30 |
| 551313 | MEB 1520 | 200 mm    | 1500 mm    | --          | 6,10 |
| 551316 | MEB 1525 | 250 mm    | 1500 mm    | --          | 8,80 |
| 551323 | MEV 0718 | Extension | + 700      | 150-200 mm  | 1,40 |
| 551324 | MEV 1018 | Extension | + 1000     | 150-200 mm  | 2,10 |
| 551327 | MEV 0720 | Extension | + 700      | 250-300 mm  | 1,80 |

551328    MEV 1020    Extension    + 1000    250-300 mm    2,60



## Pole ground anchor

Pole ground anchor, high quality steel, galvanized, for screwing in the grown soil, socket wrench EST 1520 order separately.

| Code   | Type     | Anchor-D | Anchor-Length | kg   |
|--------|----------|----------|---------------|------|
| 551340 | MES 1515 | 150 mm   | 1500 mm       | 2,80 |
| 551342 | MES 1520 | 200 mm   | 1500 mm       | 3,25 |
| 551345 | MES 2015 | 150 mm   | 2000 mm       | 3,60 |
| 551347 | MES 2020 | 200 mm   | 2000 mm       | 4,00 |
| 551349 | MES 2024 | 240 mm   | 2000 mm       | 5,00 |



## Accessory for pole ground anchors

Socket wrench reinforced for pole ground anchors.

| Code   | Type     | Suitable for                     | Length  | kg   |
|--------|----------|----------------------------------|---------|------|
| 551352 | EST 1520 | Ground anchors MES 1515-MES 2024 | 1700 mm | 5,00 |



## Accessory for pole ground anchors

Eye nut for screwing on the pole ground anchors. Thread M 16, galvanized, DIN 582.

| Code   | Type   | Suitable for | kg   |
|--------|--------|--------------|------|
| 551355 | RIM 16 | ground borer | 0,24 |



## Accessory for pole ground anchors

Turn buckle for connecting stay wires with the ground anchors. Size 16, with 1 hook and 1 eye. Galvanized, DIN 1480.

| Code   | Type   | Suitable for | kg   |
|--------|--------|--------------|------|
| 551358 | SPS 16 | ground borer | 1,00 |



## Pole erection bars

Pole erection bars with spiked head chain of 15 links, for wooden poles Ø 100-250 mm, alu-tube rods Ø 54 mm, consisting of:

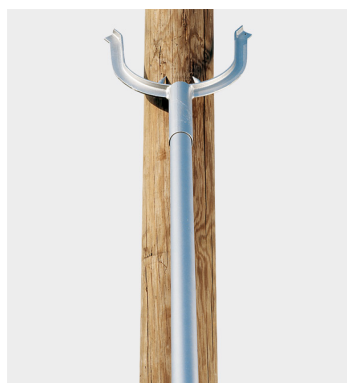
| Code   | Type    | Total L | Tube length         | kg    |
|--------|---------|---------|---------------------|-------|
| 551200 | MSG 301 | 3,00 m  | 1x3,00 m            | 15,00 |
| 551202 | MSG 402 | 4,00 m  | 2x2,00 m            | 22,00 |
| 551204 | MSG 502 | 5,00 m  | 1x3,00 m + 1x2,00 m | 25,00 |
| 551206 | MSG 602 | 6,00 m  | 2x3,00 m            | 28,00 |
| 551208 | MSG 704 | 7,00 m  | 3x2,00 m + 1x1,00 m | 38,00 |



## Pole spiked chain, only

Pole spiked chain, only for self-mounting on wooden rods of Ø 65 mm, chain length 350 mm, for poles of Ø 100-250 mm.

| Code   | Type    | For pole-D | Chain length | Rod-D | kg   |
|--------|---------|------------|--------------|-------|------|
| 551213 | MSL 250 | 100-250 mm | 350 mm       | 65 mm | 1,50 |



## Pole erection forks

Pole erection forks for poles-Ø 100-250 mm, alu-tube rods Ø 54 mm, divisible, consisting of: 1-2 rods with fork, intermediate rods, foot rod with handles, base plate and tip.

| Code   | Type    | Total L | Tube length         | kg    |
|--------|---------|---------|---------------------|-------|
| 551220 | MGA 301 | 3,00 m  | 1x3,00 m            | 11,00 |
| 551222 | MGA 402 | 4,00 m  | 2x2,00 m            | 14,00 |
| 551224 | MGA 502 | 5,00 m  | 1x3,00 m + 1x2,00 m | 16,00 |
| 551226 | MGA 602 | 6,00 m  | 2x3,00 m            | 18,00 |



## Pole fork only

Pole fork only for self-mounting on wooden rods of Ø 55 mm, for poles of Ø 100-250 mm.

| Code   | Type    | For pole-D | Rod-D | kg   |
|--------|---------|------------|-------|------|
| 551232 | MGL 250 | 100-250 mm | 55 mm | 3,80 |



## Pole climbers for wooden poles

Pole climbers for wooden poles, Drop forged steel wit 3 riveted spurs, galv. Footplates with lateral foot protection, straps and heelpiece. According to DIN 48345.

| Code   | Type      | Wooden pole-D | kg   |
|--------|-----------|---------------|------|
| 556500 | SHO 200/3 | 90-180 mm     | 3,90 |
| 556530 | SHO 260/3 | 150-240 mm    | 4,20 |
| 556560 | SHO 320/3 | 200-300 mm    | 4,40 |



## Pole ascent ladders

Pole ascent ladders. Rectangular side rails and ripped non-slip aluminium rungs 30x30 mm. Combination of several single parts, one lower ladder of 3,52 m, one or more middle ladders of 2,85 m and one upper ladder of 2,80 m. Incl. safety rail of aluminium. Fall arrester as accessory.

- Ladder external width 505 mm, ladder beam 58 mm
- For pole diameters 140 up to 1000 mm. Load capacity per ladder combination 150 kg
- Quick and simple mounting on the pole in any terrain
- According to standards: EN 353, EN 0121, DIN 18799-1, EN 14122-4, EN 131

| Code   | Type     | Length | Low ladder | Middle | Upper | Spokes | kg    |
|--------|----------|--------|------------|--------|-------|--------|-------|
| 585380 | MGA 8,8  | 8,8 m  | 1 pc.      | 1 pc.  | 1 pc. | 32 pc. | 40,00 |
| 585390 | MGA 11,6 | 11,6 m | 1 pc.      | 2 pc.  | 1 pc. | 42 pc. | 52,00 |
| 585400 | MGA 14,4 | 14,4 m | 1 pc.      | 3 pc.  | 1 pc. | 52 pc. | 64,00 |
| 585420 | MGA 20,0 | 20,0 m | 1 pc.      | 5 pc.  | 1 pc. | 72 pc. | 88,00 |



## Fall arrester

Fall arrester suitable for all pole ascent ladders. Easy to mount and dismount. Can already be used for safety when mounting the ladders on the poles.

| Code   | Type     | kg   |
|--------|----------|------|
| 585430 | VST 8820 | 1,70 |



## Suspension ladders

Suspension ladders with strong rectangular side rails of 58-68 mm and aluminium rungs. Ribbed, non-slip rectangular rungs 30x30 mm. Inside-/outside width 420/370 mm. Galvanised steel stop hooks Ø 320 mm with chain locking device. According to BGV D 36/DIN 4567.

Important: these suspension ladders are not suitable for horizontal use.

| Code   | Type    | Rungs | Length | Load vertical | kg    |
|--------|---------|-------|--------|---------------|-------|
| 585620 | MHA 214 | 6     | 2,14 m | 100 kg        | 8,90  |
| 585630 | MHA 270 | 8     | 2,70 m | 100 kg        | 9,80  |
| 585640 | MHA 326 | 10    | 3,26 m | 100 kg        | 10,70 |
| 585650 | MHA 382 | 12    | 3,82 m | 100 kg        | 11,60 |
| 585660 | MHA 438 | 14    | 4,38 m | 125 kg        | 13,50 |
| 585670 | MHA 494 | 16    | 4,94 m | 125 kg        | 15,10 |



## Pole extension ladders

Pole extension ladders, 2-parts made of aluminium. Upper ladder sliding by tackle line, automatic engaging lock. Running mechanism on the top of the extension ladder with 2 rubber wheels Ø 125 mm and 2 rubber wheels Ø 80 mm. For poles Ø 150-400 mm.

| Code   | Type     | Rungs | Min. length | Max. length | kg    |
|--------|----------|-------|-------------|-------------|-------|
| 585500 | MSA 7,2  | 2x14  | 4,13 m      | 7,20 m      | 22,20 |
| 585502 | MSA 8,3  | 2x16  | 4,70 m      | 8,30 m      | 24,20 |
| 585504 | MSA 9,2  | 2x18  | 5,20 m      | 9,20 m      | 30,60 |
| 585506 | MSA 10,3 | 2x20  | 5,77 m      | 10,30 m     | 33,80 |



### Pole working platform

Pole working platform for timber poles for one person or max. 150 kg total weight. Made of aluminium with non-slip perforated floor plate. Collapsible, mounted securely to the pole with ratchet-tightened straps. Length 1600 mm, width 350 mm, height 600 mm.

| Code   | Type    | Length  | Width  | Height | kg    |
|--------|---------|---------|--------|--------|-------|
| 586804 | MPF 160 | 1600 mm | 350 mm | 600 mm | 19,90 |



### Full body harness

Full body harness adjustable, Particularly suited to long periods of wearing in overhead line construction and similar applications. Elastic straps and back support. Fully equipped with quick acting closures and all necessary eyes.

| Code   | Type   | Size  | Hip measurement | Standard       | kg   |
|--------|--------|-------|-----------------|----------------|------|
| 556000 | AGK 62 | 50-62 | 80-140 cm       | EN 361/358 CE. | 1,85 |



### Lanyard with connector

Lanyard with connector and 2 m safety line with safety hook.

| Code   | Type   | Standard  | kg   |
|--------|--------|-----------|------|
| 556009 | VBS 02 | EN 354 CE | 1,10 |



### Fall arrester

Fall arrester guide type and hinged for cladded core rope Ø 12 mm, 0,5 m lanyard with safety hook.

| Code   | Type   | Standard  | Length | kg   |
|--------|--------|-----------|--------|------|
| 556011 | AGM 12 | EN 353 CE | 0,50 m | 0,90 |



## Safety line

Safety line 20 m, Ø 12 mm, with 1 safety hook

| Code   | Type   | kg   |
|--------|--------|------|
| 556013 | SIS 20 | 2,00 |



## Webbed strap

Webbed strap 600 mm, mobile stop designed specifically for braced masts. According to EN 795.

| Code   | Type    | Standard  | Length | kg   |
|--------|---------|-----------|--------|------|
| 556015 | GBS 600 | EN 795 CE | 0,60 m | 0,02 |



## Safety line for poles

Safety line for timber and concrete poles 2 m, stay rope Ø 12 mm, with line shortener and safety hook.

| Code   | Type    | kg   |
|--------|---------|------|
| 556018 | HSK 212 | 0,70 |



## Harness for timber poles

Harness for timber poles and trees. Protects against falls even in wet conditions. Specially certified device. See below.

| Code   | Type    | Standard  | kg   |
|--------|---------|-----------|------|
| 556022 | ABS 100 | EN 358 CE | 1,70 |



## Tool bag

Tool bag 300x200x80 mm, made of extremely strong plastic woven textile with leather bottom. With safety hook for full body harness.

| Code   | Type    | Size          | kg   |
|--------|---------|---------------|------|
| 556026 | GTK 300 | 300x200x80 mm | 0,26 |

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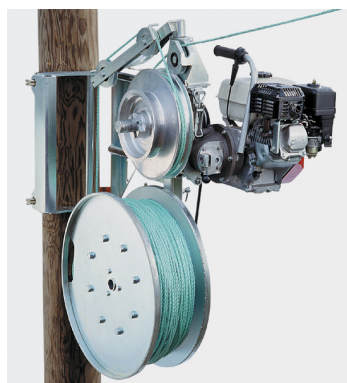


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## Safety hook of alu

Safety hook of alu screw locking, 114x12 mm, opening 22 mm.

| Code   | Type    | Size   | Opening | kg   |
|--------|---------|--------|---------|------|
| 556170 | ALK 114 | 114x12 | 22 mm   | 0,05 |



## Overhead pole capstan winch

Overhead pole capstan winch. Capstan winch designed for mounting conductors or replacing old conductors. With mechanical drive by a petrol engine. For fixing on wooden poles or with accessory also on concrete poles. The capstan gives constant output and speed.

- Pulling force through the small bollard constantly 4,0 kN at 25 m/min.
- Pulling force on big bollard constantly 2,5 kN at 40 m/min.
- Self-locking gear for securing the load in both direction.
- For transportation the winch can be dismantled and ease remounted on the site.
- These parts are: petrol engine, capstan gear box, rope drum and pole clamp.

| Code   | Type    | Petrol | Rope drum  | Wood. poles | kg    |
|--------|---------|--------|------------|-------------|-------|
| 570070 | PCW 400 | 4,8 kW | 700 m/7 mm | Ø 200-400   | 90,00 |



### Overhead pole drum winch

Overhead pole drum winch, designed for mounting conductors or replacing old conductors. With mechanical drive by a petrol engine. For fixing on wooden poles. This is not a capstan winch. The pull is exerted directly by the rope drum, therefore the pulling force and the speed vary from the bottom of the drum to the top.

- Direct pull on the rope drum coil of 3,50-1,75 kN at 30-60 m/min. depending on filling quantity.
- Irreversible gear for sustain of load in both directions.
- For transportation the winch can be dismounted and easily be re-assembled mounted on the site.
- These parts are: petrol engine, gear box, rope drum and pole clamp.

| Code   | Type    | Petrol | Rope drum  | Wood. poles | kg    |
|--------|---------|--------|------------|-------------|-------|
| 570100 | PDW 175 | 4,8 kW | 500 m/7 mm | Ø 200-400   | 78,00 |



### Overhead pole coiling winch

Overhead pole coiling winch, designed for winding old overhead lines. With mechanical drive by a petrol engine. For fixing on wooden poles. This is not a capstan winch. The pull is exerted directly by the coiling drum, therefore the pulling force and the speed vary from the bottom of the coiling drum to the top.

- Direct pull on the coil winder of 3,50-1,75 kN at 30-60 m/min. depending on filling quantity.
- Self-locking gear for securing the load in both direction.
- For transportation the winch can be dismounted and ease remounted on the site.
- These parts are: petrol engine, gear box, coil winder and pole clamp.

| Code   | Type    | Petrol | Rope drum  | Wood. poles | kg    |
|--------|---------|--------|------------|-------------|-------|
| 570180 | PRW 175 | 4,8 kW | 500 m/7 mm | Ø 200-400   | 79,00 |



### Polyester-Diolen plastic ropes, extension 8-10 %

Covered plastic ropes, 3-fold, prestretched, limited extension 8-10 %. Supplied in rings in carton box, or on through away drum, or winded on the winch drums. Other diameters are available.

| Code   | Type      | Rope-D | Min. break. | kg   |
|--------|-----------|--------|-------------|------|
| 571312 | FKS 07-21 | 7 mm   | 12 kN       | 0,04 |



## Swivels

Swivels with friction bearings, turnable connector between winch rope and cable grip. The friction bearing guarantees that the swivel reduces rotation and torsion with increasing pulling force. Swivels with ball bearings turn off and destroy the steel ropes, they can only be used in connection with absolute twist free steel ropes.

- Swivels for underground cables must be equipped only with friction bearings.
- With increasing pulling force friction bearings twist harder and thus avoid the untwisting of the pulling rope
- Ball bearings let untwist the ropes and leads to destruction.

| Code   | Type   | D mm | L mm | Fork | Min. kN | kg   |
|--------|--------|------|------|------|---------|------|
| 243020 | V 20 D | 20   | 86   | 7    | 21      | 0,15 |
| 243040 | V 25 D | 25   | 120  | 9    | 30      | 0,32 |

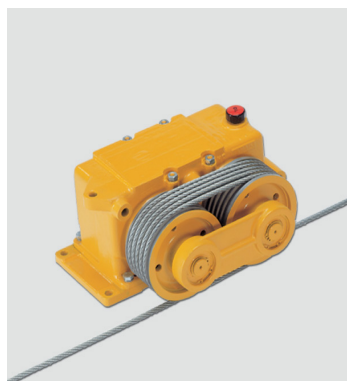


## Overhead line capstan winch 15 kN

Overhead line capstan winches with hydraulic drive, 15 kN. Please select digital pull recorder or dynamometer as accessory to your need. If the winch is equipped with a low torsion steel rope, a swivel with friction bearing is included. If the winch is equipped with a torsion-free rope a swivel with ball bearing is included. All other techn. details and accessory see below.

- Without rope, Cap. m/: 1300/8 mm or up to 1600/7 mm.
- Types ... DRH with Honda petrol engine 15 kW, paying-out 0-80 m/min.
- Types ... DRHZ with Hatz Diesel Silent-Pack 10 kW, pay-out 0-62 m/min.
- Easy pay out of the rope without energy due to automatic unwinding of the drum of 0-62 m/min.
- Mounted on one axle trailer with height adjustable draw bar and overrun brake, eye or ball coupling.
- Reinforced glass fibre top. Furnishing RAL 1007 yellow.

| Code   | Type         | Engine | kN 1: m/min. | kN 2: m/min.  | kg     |
|--------|--------------|--------|--------------|---------------|--------|
| 572700 | TF 1522 DRH  | Petrol | 15 kN / 0-20 | 7,5 kN / 0-80 | 760,00 |
| 572800 | TF 1522 DRHZ | Diesel | 15 kN / 0-15 | 7,5 kN / 0-60 | 870,00 |





## Overhead line capstan placing winches

Overhead line capstan winches with hydraulic drive, 15 kN. Please select digital pull recorder or dynamometer as accessory to your need. If the winch is equipped with a low torsion steel rope, a swivel with friction bearing is included. If the winch is equipped with a torsion-free rope a swivel with ball bearing is included. All other techn. details and accessory see below.

- Without rope, Cap. m/: 1300/8 mm or up to 1600/7 mm.
- Types ... DH with Honda petrol engine 15 kW, paying-out 0-80 m/min.
- Types ... DHZ with Hatz Diesel Silent-Pack 10 kW, pay-out 0-62 m/min.
- Easy pay out of the rope without energy due to automatic unwinding of the drum of 0-62 m/min.
- Mounted on static chassis for placing on trucks or on the ground with adjustable legs.
- Reinforced glass fibre top. Furnishing RAL 1007 yellow.

| Code   | Type        | Engine | kN 1: m/min. | kN 2: m/min.  | kg       |
|--------|-------------|--------|--------------|---------------|----------|
| 276400 | TL 2422 DH  | Petrol | 15 kN / 0-20 | 7,5 kN / 0-80 | 945,00   |
| 276420 | TL 2422 DHZ | Diesel | 15 kN / 0-15 | 7,5 kN / 0-60 | 1.025,00 |



## Electronic pull recorder MP 30 USB

Electronic digital line pull data recorder with USB. Digital display and storage of pulling force, pulling speed and cable length.

- The MP 30 saves the cable pull dates on an USB stick. Afterwards they can be imported in a PC.
- The OpenOffice software can be used independent of the operation system.
- In this report as PDF file company name and logo can be inserted.
- There is also possible to write a comment in the report of e.g. site or cable details.
- You will find all the programmes on the provided CD.

| Code   | Type     | Suitable for | For pulling forces | Adjustable   | kg   |
|--------|----------|--------------|--------------------|--------------|------|
| 473173 | MP 30/43 | TF 1522      | up to 32 kN        | exact per kp | 3,00 |



## Dynamometer

Dynamometer with admissible pull indicator and automatic cut-off. No registration of the data.

| Code   | Type     | Suitable for | For pulling forces | Adjustable   | kg    |
|--------|----------|--------------|--------------------|--------------|-------|
| 474063 | ZK 20/32 | TF 1522      | up to 32 kN        | Scale 100 kp | 10,00 |



## Electronic pull recorder MP 30, USB and dynamometer

Combination of electronic digital line pull data recorder MP 30, USB and dynamometer ZK. With interface for PC. Digital display and storage of pulling force, pulling speed and cable length. This combination secures a pull control even if one of the instruments gets invalid.

- The MP 30 saves the cable pull dates on an USB stick. Afterwards they can be imported in a PC.
- The OpenOffice software can be used independent of the operation system.
- In this report as PDF file company name and logo can be inserted.
- There is also possible to write a comment in the report of e.g. site or cable details.
- You will find all the programmes on the provided CD.

| Code   | Type      | Suitable for | For pulling forces | Adjustable   | kg   |
|--------|-----------|--------------|--------------------|--------------|------|
| 473181 | MPZ 30/33 | TF 1522      | up to 32 kN        | exact per kp | 3,00 |



## Radio control

Radio control suitable for cable capstan winches types TF 1522. Consisting of light mobile transmitter and receiver on the winch. Control command of winding, unwinding, continuously fast, slow.

| Code   | Type   | Control distance | kg   |
|--------|--------|------------------|------|
| 474712 | FST 30 | approx. 300 m    | 5,50 |



## Change over to manual control

Additional change over from radio control FST 30 to manual hydraulic control on all winches with radio control FST 30. Important accessory in case of failure of the radio control or due to intended manual control of the cable pull.

| Code   | Type   | Change over to           | kg   |
|--------|--------|--------------------------|------|
| 474730 | APH 30 | manual hydraulic control | 3,60 |



## Steel rope torsion-free

Steel rope for cable capstan winches, high torsion-free quality, galvanized, rated strength of wire 1960 N

| Code   | Type    | Rope-D | Min. break. | kg   |
|--------|---------|--------|-------------|------|
| 487460 | ROT 6-9 | 6 mm   | 20 kN       | 0,13 |
| 487590 | ROT 7-9 | 7 mm   | 29 kN       | 0,15 |
| 487710 | VS 8-35 | 8 mm   | 49 kN       | 0,30 |
| 487840 | VS 9-35 | 9 mm   | 62 kN       | 0,37 |



## Overhead line swivels

Overhead line swivels, connection between pulling rope and pulling grip. With ball bearings, therefore only suitable to absolute twist-free steel ropes. Avoids untwisting the conductor. These swivels may not be used for pulling over capstans or line tensioners.

| Code   | Type   | D  | L   | Fork | Bolt | Min.   | kg   |
|--------|--------|----|-----|------|------|--------|------|
| 537300 | FVD 25 | 25 | 109 | 9    | 10   | 45 kN  | 0,30 |
| 537360 | FVD 30 | 30 | 128 | 12   | 12   | 60 kN  | 0,50 |
| 537410 | FVD 35 | 35 | 137 | 12   | 14   | 90 kN  | 0,70 |
| 537490 | FVD 40 | 40 | 160 | 14   | 16   | 120 kN | 1,10 |



## Drum unwind stand

Drum unwind stand for overhead line construction. Band brake is only for unintended unwinding of the drum at line pulling stop, it is not suitable for braking or sagging the line. Easy height levelling out of the two sides by hand crank, drums can be fixed horizontal in each kind of ground. Steel construction galvanized.

- Equipped with drum shaft D 70 mm.
- Band brake for controlled unwinding.
- Drum fork and accessory.
- Device dismountable for the transportation in 3 parts.

| Code   | Type   | Cable drum | Drum-D    | Drum width    | kg     |
|--------|--------|------------|-----------|---------------|--------|
| 570800 | DST 30 | to 3000 kg | 1000-1800 | up to 1200 mm | 107,00 |



## Cable trailer straight or adjustable drawbar

Cable drum trailer with straight or height adjustable draw bar and overrun brake for speeds up to 80 km/h, hitch load 75 kg. For loading the support arms are swung down and then raised picking up the drum by a single hand winch. Rigid tubular steel shaft Ø 76 mm. Rotating alu-shaft Ø 75 mm as accessory. Further accessory see below.

- Types G - trailers with straight draw bar can only be equipped with eye coupling
- Types H - trailers with adjustable draw bar are equipped with eye coupling, ball coupling as accessory
- Suitable for one-man operation
- Complete trailer hot galvanized
- Rotating alu shafts as accessory, see below.
- Drum band brake as accessory, see below.



| Code   | Type         | Total   | Pay load | Drum-D   | Width/length   | kg     |
|--------|--------------|---------|----------|----------|----------------|--------|
| 342088 | KVS 1000/80G | 1300 kg | 1000 kg  | 600-1650 | 1300/2140/2930 | 322,00 |
| 342131 | KVS 1500/80G | 2100 kg | 1500 kg  | 600-2400 | 1580/2450/3500 | 591,00 |
| 342146 | KVS 2000/80G | 2600 kg | 2000 kg  | 600-2400 | 1580/2450/3500 | 592,00 |
| 342093 | KVS 1000/80H | 1300 kg | 1000 kg  | 600-1650 | 1300/2140/3320 | 363,00 |
| 342136 | KVS 1500/80H | 2100 kg | 1500 kg  | 600-2400 | 1580/2450/3860 | 667,00 |
| 342151 | KVS 2000/80H | 2700 kg | 2000 kg  | 600-2400 | 1580/2450/3860 | 667,00 |



## Ball coupling

Ball coupling with screws, changeable against height adjustable drawbar eye coupling for trailers with overrun brake.

| Code   | Type  | Suitable for    | Total weight | kg   |
|--------|-------|-----------------|--------------|------|
| 349190 | PK 25 | KVS 1000-2000 H | 3200 kg      | 2,90 |



## Rotating drum shafts

Surcharge for rotating drum shafts. All a.m. trailers are fitted with rigid tubular steel drum shafts. With rotating shafts cable drums unwind much easier, they are necessary if the trailer is equipped with a drum drive or a drum disc brake.

| Code   | Type    | Suitable for  | D/length   | kg    |
|--------|---------|---------------|------------|-------|
| 350787 | APR 750 | KVS 1000      | 75/1450 mm | 20,00 |
| 350788 | APR 752 | KVS 1500-2000 | 75/1730 mm | 21,00 |



## Cable drum band brake

Cable drum band brake for KVS 1000-2000/80 without shaft, to screw on rotating alu shaft. This band brake avoids uncontrolled unwinding of the cable drum. Mostly used for unwinding overhead lines.

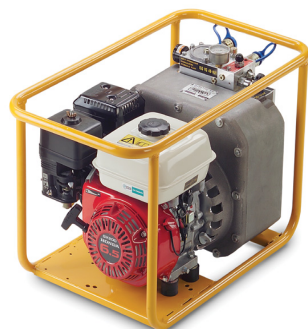
| Code   | Type    | Suitable for  | Braking force at cable | kg    |
|--------|---------|---------------|------------------------|-------|
| 350842 | BTB 202 | KVS 1000-2000 | approx. 200 kp         | 10,00 |



## Drum drive one side

Drum drive one side for cable trailers KVS 1000-2000/80, hydraulic or pneumatic, without hoses and power packs.

| Code   | Type    | Suitable for  | Drive    | Pull   | m/min. | kg    |
|--------|---------|---------------|----------|--------|--------|-------|
| 351210 | THB 201 | KVS 1000      | hydraul. | 150 kg | 0-120  | 65,00 |
| 351220 | THB 201 | KVS 1500-2000 | hydraul. | 150 kg | 0-120  | 66,00 |
| 351300 | TPK 201 | KVS 1000      | Pneum.   | 150 kg | 0-120  | 80,00 |



## Hydraulic power packs for cable feeders and drum drives

Petrol-engine hydraulic power packs for cable feeders and drum drives without hoses and valves. Tank 13 Litre, oil flow 15 l/min.

Electric motor hydraulic power packs for cable feeders and drum drives without hoses and valves

| Code   | Type   | Suitable for          | Hydr. Aggr.    | Pressure | L/W/H mm    | kg    |
|--------|--------|-----------------------|----------------|----------|-------------|-------|
| 425302 | HB 210 | Feeders + Drum drives | Petrol 6,3kW   | 210 bar  | 770/480/500 | 71,00 |
| 425351 | HE 200 | Feeders + Drum drives | Electro 4,0 kW | 200 bar  | 710/400/440 | 67,00 |



## Hydraulic hose set

Hydraulic hose set 7 m, with volume governor for hydraulic power packs.

| Code   | Type | Length | Flow governor  | kg    |
|--------|------|--------|----------------|-------|
| 425380 | SL 7 | 7 m    | up to 30 l/min | 13,50 |



## Covered plastic ropes, extension 3-5 %

Covered plastic ropes, with core and cover exhibit low linear extensibility. Torsion-free and high tension. These ropes are proven in overhead line construction. Ropes are supplied on rings in carton boxes or on one way bobbins. Loops can be spliced.

| Code   | Type       | Rope-D | Stretching | Min. break. | kg   |
|--------|------------|--------|------------|-------------|------|
| 571411 | FKS 06-001 | 6 mm   | 3-5 %      | 780 daN     | 0,03 |
| 571413 | FKS 08-001 | 8 mm   | 3-5 %      | 1500 daN    | 0,05 |
| 571415 | FKS 10-001 | 10 mm  | 3-5 %      | 2200 daN    | 0,07 |
| 571417 | FKS 12-001 | 12 mm  | 3-5 %      | 3200 daN    | 0,10 |

|        |            |       |       |          |      |
|--------|------------|-------|-------|----------|------|
| 571418 | FKS 14-001 | 14 mm | 3-5 % | 4600 daN | 0,14 |
| 571419 | FKS 16-001 | 16 mm | 3-5 % | 6500 daN | 0,18 |
| 571420 | FKS 18-001 | 18 mm | 3-5 % | 7700 daN | 0,21 |
| 571421 | FKS 20-001 | 20 mm | 3-5 % | 8500 daN | 0,26 |



### Double braided plastic ropes, extension 4-6 %

Double braided plastic ropes "Gemini" exhibit low linear extensibility. Torsion-free and high tension. These "Gemini" ropes are proven in overhead line construction. Ropes are supplied on rings in carton boxes or on one way bobbins. Loops can be spliced.

| Code   | Type       | Rope-D | Stretching | Min. break. | kg   |
|--------|------------|--------|------------|-------------|------|
| 571441 | FKS 06-101 | 6 mm   | 4-6 %      | 1100 daN    | 0,03 |
| 571443 | FKS 08-101 | 8 mm   | 4-6 %      | 1500 daN    | 0,04 |
| 571445 | FKS 10-101 | 10 mm  | 4-6 %      | 2350 daN    | 0,07 |
| 571447 | FKS 12-101 | 12 mm  | 4-6 %      | 3600 daN    | 0,09 |
| 571448 | FKS 14-101 | 14 mm  | 4-6 %      | 4500 daN    | 0,13 |
| 571449 | FKS 16-101 | 16 mm  | 4-6 %      | 6500 daN    | 0,18 |
| 571450 | FKS 18-101 | 18 mm  | 4-6 %      | 8300 daN    | 0,23 |
| 571451 | FKS 20-101 | 20 mm  | 4-6 %      | 10000 daN   | 0,29 |



### Covered Dyneema ropes, extension 1-2 %

Covered Dyneema ropes, special braid of very low extensibility and highest tension, torsion-free. Further Dyneema ropes with tensions up to 60 % higher tension are available. These ropes are proven in overhead line construction. Ropes are supplied on rings in carton boxes or on one way bobbins. Loops can be spliced.

| Code   | Type       | Rope-D | Stretching | Min. break. | kg   |
|--------|------------|--------|------------|-------------|------|
| 571471 | FKS 06-121 | 6 mm   | 1-2 %      | 1100 daN    | 0,03 |
| 571473 | FKS 08-121 | 8 mm   | 1-2 %      | 2000 daN    | 0,04 |
| 571475 | FKS 10-121 | 10 mm  | 1-2 %      | 3400 daN    | 0,07 |
| 571477 | FKS 12-121 | 12 mm  | 1-2 %      | 4700 daN    | 0,10 |
| 571478 | FKS 14-121 | 14 mm  | 1-2 %      | 9500 daN    | 0,13 |
| 571479 | FKS 16-121 | 16 mm  | 1-2 %      | 12000 daN   | 0,18 |
| 571480 | FKS 18-121 | 18 mm  | 1-2 %      | 15000 daN   | 0,22 |
| 571481 | FKS 20-121 | 20 mm  | 1-2 %      | 19000 daN   | 0,28 |