




CABLE CARRIERS FOR ROUND CABLE

I-beam supported



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General

VAHLE Festoon systems support electric cables or hoses for mobile machinery.

The cable carriers contained in this catalog comply with VDE regulations and international safety requirements. Round cables and fittings per our catalog no. 8L.

Track profiles can be standard I-beams or flat flange beam sizes, some of which are shown in this catalog, however, actual dimensions of beams being utilized for track purposes should be specified with enquiries and orders.

Application

Cable carrier ride on an I-beam parallel to the traversing track of the equipment. This arrangement ensures that the total length of the machine (i. e. hoist, bridge trolley, etc.) is used as storage space. Where there is sufficient space for the storage distance, the cable carriers can also run on the hoist track.

All models have a lead clamp attached to an outrigger of the machinery.

The track clamp is the stationary fastening point of the cables and is bolted to the I-beam track at fixed position. The cable ends extending from the track clamp are terminated at a

junction box. The track clamp, together with the bumper, facing towards the last carrier, serves as a limit stop for the carriers. Tow ropes are optional depending on the cable arrangement, loop depth, speed, and acceleration. The strain relief ropes are slightly shorter than the electric cables in each loop.

Cable loop clamps are available and keep the cables together when the system is in operation.

Layout

When selecting a Festoon System please refer to page 21 in this catalog.

Layout considerations for cable carriers are cable dimensions, storage space available, maximum loop depth allowable, over-all height and width which the system will occupy, -beam selection, and maximum speed of travel.

After the type of carrier and the loop depth have been determined, please refer to the graphs on pages 22-24 for the number of loops required.

In case you desire a detailed quotation on VAHLE Festoon Systems please do not hesitate to contact our nearest local representative or mail the completed questionnaire on page 3 of this catalog.

Our cable carrier programm:

Catalog No. 8a: Cable Carriers on □-Tracks

Catalog No. 8b: Cable Carriers for flatform cable on I-Beam Tracks

Catalog No. 8c: Cable Carriers for round cable on I-Beam Tracks

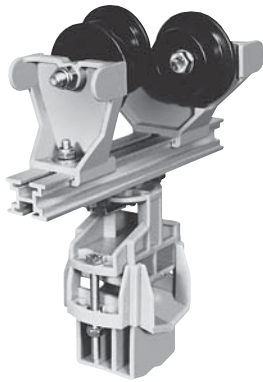
Catalog No. 8d: Cable Carriers on ◇-Tracks

Catalog No. 8e: Conductor cables & Fittings



CABLE CARRIERS W 25 R, W 26 R, W 30 R

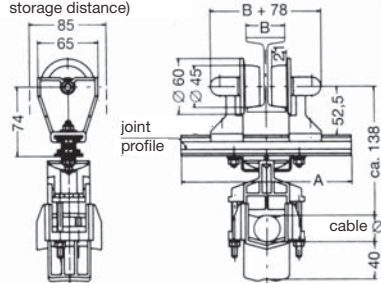
Normal- and europe profile



Engineering data

| Type | W 25 R (2 wheels) | W 26 R (3 wheels) | W 30 R (4 wheels) |
|-------------------|---|-------------------|-------------------|
| Carrying capacity | 10 kg | 10 kg | 20 kg |
| Wheels | K Flanged polyamid wheels Ø 45/60 mm on stainless steel bushed bearings KL Flanged polyamid wheels Ø 45/60 mm on sealed (2 RS) precision ball bearings | | |
| Material | Polyamid carrierbody adjustable on light metal profile. Cable support saddles: polyamid Hardware: galvanized | | |
| Temperature range | - 30° C to + 100° C | | |
| Travelling speed | max. 60 m/min | | |

(for calculation of storage distance)

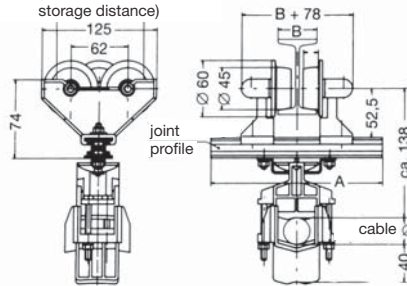


Cable carrier for round cable and hoses

Type W 25 R (2 wheels)

| Type | Wheels | Cable ø mm | A mm | for Track-Profile | | Weight kg | Order-No. |
|----------------|--------|---------------|------|-------------------|---------|-----------|-----------|
| | | | | INP | IPE | | |
| W 25 R/65 K -1 | K | 5 mm to 38 mm | 185 | 80-220 | 80-200 | 0,550 | 346 665 |
| W 25 R/65 K -2 | | | 235 | 240-380 | 220-300 | 0,580 | 346 666 |
| W 25 R/65 KL-1 | KL | | 185 | 80-220 | 80-200 | 0,630 | 346 667 |
| W 25 R/65 KL-2 | | | 235 | 240-380 | 220-300 | 0,660 | 346 668 |

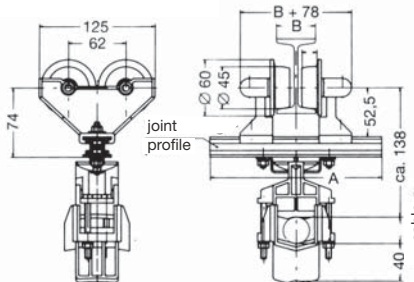
(for calculation of storage distance)



Cable carrier for round cable and hoses

Type W 26 R (3 wheels)

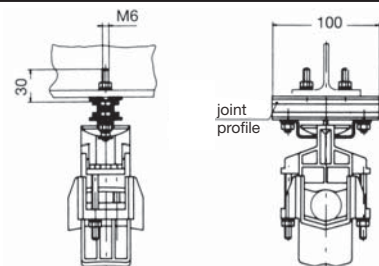
| Type | Wheels | Cable ø mm | A mm | for Track-Profile | | Weight kg | Order-No. |
|-----------------|--------|---------------|------|-------------------|---------|-----------|-----------|
| | | | | INP | IPE | | |
| W 26 R/125 K -1 | K | 5 mm to 38 mm | 185 | 80-220 | 80-200 | 0,620 | 346 669 |
| W 26 R/125 K -2 | | | 235 | 240-380 | 220-300 | 0,650 | 346 670 |
| W 26 R/125 KL-1 | KL | | 185 | 80-220 | 80-200 | 0,740 | 346 671 |
| W 26 R/125 KL-2 | | | 235 | 240-380 | 220-300 | 0,770 | 346 672 |



Cable carrier for round cable and hoses

Type W 30 R (4 wheels)

| Type | Wheels | Cable ø mm | A mm | for Track-Profile | | Weight kg | Order-No. |
|-----------------|--------|---------------|------|-------------------|---------|-----------|-----------|
| | | | | INP | IPE | | |
| W 30 R/125 K -1 | K | 5 mm to 38 mm | 185 | 80-220 | 80-200 | 0,690 | 346 673 |
| W 30 R/125 K -2 | | | 235 | 240-380 | 220-300 | 0,720 | 346 674 |
| W 30 R/125 KL-1 | KL | | 185 | 80-220 | 80-200 | 0,850 | 346 675 |
| W 30 R/125 KL-2 | | | 235 | 240-380 | 220-300 | 0,880 | 346 676 |



Lead carrier and

Track clamp for round cable and hoses

| Type | for cable carrier | Weight kg | Order-No. |
|-----------|-------------------|-----------|-----------|
| E 25-30 R | W 25 R/ 65 ... | 0,310 | 346 677 |
| | W 26 R/125 ... | | |
| | W 30 R/125 ... | | |

Support saddles for round cable and hoses

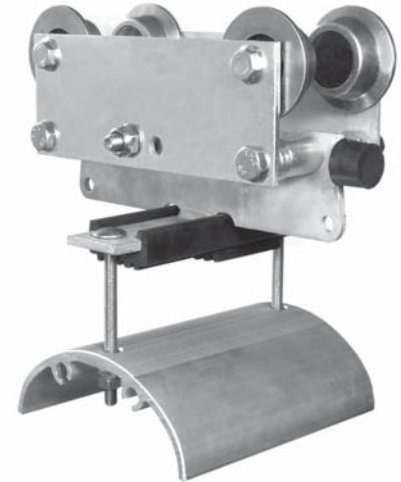
for additional tiers

| Type | for cable carrier | Weight kg | Order-No. |
|------|-------------------|-----------|-----------|
| LAR | all Types | 0,110 | 312 500 |



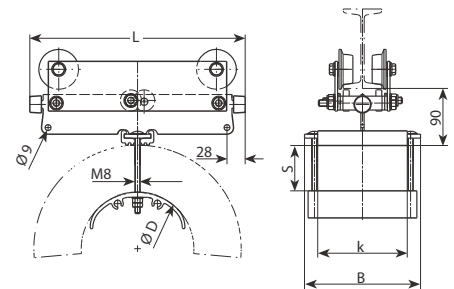
Engineering data

| | |
|--------------------|---|
| Type | W 45 FR on I-profil for flatform and round cable |
| Carrying capacity | 50 kg (max. 80 kg - consult factory) |
| Travel speed | max. 120 m/min. when using appropriate cable tension relief |
| Wheel sets | for standard tracks INP 80 to INP 200 and for flat flange beams IPE 80 to IPE 200 other profiles on request on stainless steel bushed bearing |
| Wheels | flanged steel wheels Ø 45/60 mm, hardened and galvanized, steel kick-up rollers Ø 32 mm with bushed bearing and tread hardened and galvanized |
| Material | Carrier body: steel galvanized Support saddle: aluminium |
| Operating ambients | -30 °C to +100 °C |

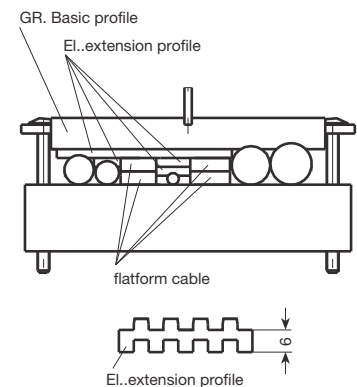


Cable carrier W 45 FR

| Type | max. clamping capacity mm height x width (s x k) | L mm | B mm | D mm | Weight kg | Order-no. w/o kick-up rollers | Order-no. w/kick-up rollers |
|-----------------------|--|------|------|------|-----------|-------------------------------|-----------------------------|
| W 45 FR/160- 80 B 175 | 35 x 135 | 160 | 175 | 80 | 2,750 | 348 663 | 348 685 |
| W 45 FR/160- 80 B 225 | 35 x 185 | 160 | 225 | 80 | 2,880 | 348 664 | 348 686 |
| W 45 FR/160-100 B 175 | 25 x 135 | 160 | 175 | 100 | 2,830 | 348 665 | 348 687 |
| W 45 FR/160-100 B 225 | 25 x 185 | 160 | 225 | 100 | 3,000 | 348 666 | 348 688 |
| W 45 FR/200- 80 B 175 | 55 x 135 | 200 | 175 | 80 | 3,050 | 348 667 | 348 689 |
| W 45 FR/200- 80 B 225 | 55 x 185 | 200 | 225 | 80 | 3,180 | 348 668 | 348 690 |
| W 45 FR/200-100 B 175 | 45 x 135 | 200 | 175 | 100 | 3,130 | 348 669 | 348 691 |
| W 45 FR/200-100 B 225 | 45 x 185 | 200 | 225 | 100 | 3,300 | 348 670 | 348 692 |
| W 45 FR/200-140 B 175 | 25 x 135 | 200 | 175 | 140 | 3,370 | 348 671 | 348 693 |
| W 45 FR/200-140 B 225 | 25 x 185 | 200 | 225 | 140 | 3,610 | 348 672 | 348 694 |
| W 45 FR/250-100 B 175 | 70 x 135 | 250 | 175 | 100 | 3,490 | 348 673 | 348 695 |
| W 45 FR/250-100 B 225 | 70 x 185 | 250 | 225 | 100 | 3,660 | 348 674 | 348 696 |
| W 45 FR/250-140 B 175 | 50 x 135 | 250 | 175 | 140 | 3,730 | 348 675 | 348 697 |
| W 45 FR/250-140 B 225 | 50 x 185 | 250 | 225 | 140 | 3,970 | 348 676 | 348 698 |
| W 45 FR/250-170 B 175 | 35 x 135 | 250 | 175 | 170 | 3,790 | 348 677 | 348 699 |
| W 45 FR/250-170 B 225 | 35 x 185 | 250 | 225 | 170 | 4,040 | 348 678 | 348 700 |
| W 45 FR/290-140 B 175 | 70 x 135 | 290 | 175 | 140 | 4,010 | 348 679 | 348 701 |
| W 45 FR/290-140 B 225 | 70 x 185 | 290 | 225 | 140 | 4,250 | 348 680 | 348 702 |
| W 45 FR/290-170 B 175 | 55 x 135 | 290 | 175 | 170 | 4,070 | 348 681 | 348 703 |
| W 45 FR/290-170 B 225 | 55 x 185 | 290 | 225 | 170 | 4,230 | 348 682 | 348 704 |
| W 45 FR/325-170 B 175 | 72 x 135 | 325 | 175 | 170 | 4,290 | 348 683 | 348 705 |
| W 45 FR/325-170 B 225 | 72 x 185 | 325 | 225 | 170 | 4,540 | 348 684 | 348 706 |

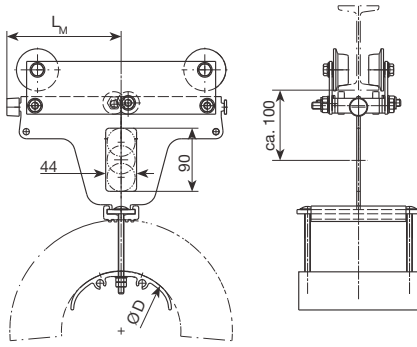


Collecting clamp for round cables
Extension rubber profile can be ordered per meter (Order-no.: 348 845)



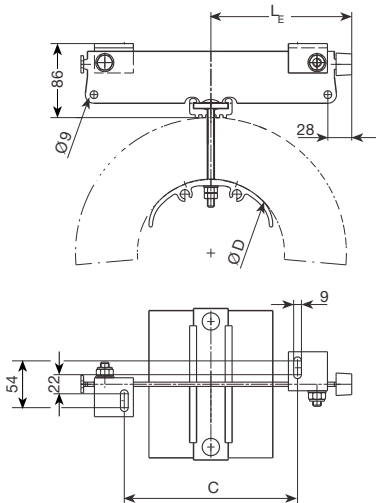


Lead clamp MW 45



| Type | for Cable carrier | L _M mm | D mm | Weight kg | Order-No. |
|-------------------------------|---|----------------------|---------|--------------|-----------|
| MW 45 FR/200- 80 B 175 | W 45 FR/160- 80 B 175 W 45 FR/200- 80 B 175 | 100 | 80 | 3,290 | 348 741 |
| MW 45 FR/200- 80 B 225 | W 45 FR/160- 80 B 225 W 45 FR/200- 80 B 225 | 100 | 80 | 3,430 | 348 742 |
| MW 45 FR/200-100 B 175 | W 45 FR/160-100 B 175 W 45 FR/200-100 B 175 | 100 | 100 | 3,370 | 348 743 |
| MW 45 FR/200-100 B 225 | W 45 FR/160- 100 B 225 W 45 FR/200- 100 B 225 | 100 | 100 | 3,550 | 348 744 |
| MW 45 FR/200-140 B 175 | W 45 FR/200-140 B 175 | 100 | 140 | 3,610 | 348 745 |
| MW 45 FR/200-140 B 225 | W 45 FR/200-140 B 225 | 100 | 140 | 3,860 | 348 746 |
| MW 45 FR/325-100 B 175 | W 45 FR/250-100 B 175 | 162 | 100 | 4,280 | 348 747 |
| MW 45 FR/325-100 B 225 | W 45 FR/250-100 B 225 | 162 | 100 | 4,450 | 348 748 |
| MW 45 FR/325-140 B 175 | W 45 FR/250-140 B 175 W 45 FR/290-140 B 175 | 162 | 140 | 4,510 | 348 749 |
| MW 45 FR/325-140 B 225 | W 45 FR/250-140 B 225 W 45 FR/290-140 B 225 | 162 | 140 | 4,760 | 348 750 |
| MW 45 FR/325-170 B 175 | W 45 FR/250-170 B 175 W 45 FR/290-170 B 175 W 45 FR/325-170 B 175 | 162 | 170 | 4,570 | 348 751 |
| MW 45 FR/325-170 B 225 | W 45 FR/250-170 B 225 W 45 FR/290-170 B 225 W 45 FR/325-170 B 225 | 162 | 170 | 4,830 | 348 752 |

Track clamp E 45



| Type | for Cable carrier | L _E mm | D mm | C mm | Weight kg | Order-No. |
|------------------------------|-----------------------|----------------------|---------|---------|--------------|-----------|
| E 45 FR/160- 80 B 175 | W 45 FR/160- 80 B 175 | 80 | 80 | 35 | 1,120 | 348 786 |
| E 45 FR/160- 80 B 225 | W 45 FR/160- 80 B 225 | 80 | 80 | 35 | 1,250 | 348 787 |
| E 45 FR/160-100 B 175 | W 45 FR/160-100 B 175 | 80 | 100 | 35 | 1,200 | 348 788 |
| E 45 FR/160-100 B 225 | W 45 FR/160-100 B 225 | 80 | 100 | 35 | 1,370 | 348 789 |
| E 45 FR/200- 80 B 175 | W 45 FR/200- 80 B 175 | 100 | 80 | 75 | 1,220 | 348 790 |
| E 45 FR/200- 80 B 225 | W 45 FR/200- 80 B 225 | 100 | 80 | 75 | 1,350 | 348 791 |
| E 45 FR/200-100 B 175 | W 45 FR/200-100 B 175 | 100 | 100 | 75 | 1,300 | 348 792 |
| E 45 FR/200-100 B 225 | W 45 FR/200-100 B 225 | 100 | 100 | 75 | 1,470 | 348 793 |
| E 45 FR/200-140 B 175 | W 45 FR/200-140 B 175 | 100 | 140 | 75 | 1,540 | 348 794 |
| E 45 FR/200-140 B 225 | W 45 FR/200-140 B 225 | 100 | 140 | 75 | 1,780 | 348 795 |
| E 45 FR/250-100 B 175 | W 45 FR/250-100 B 175 | 125 | 100 | 125 | 1,420 | 348 796 |
| E 45 FR/250-100 B 225 | W 45 FR/250-100 B 225 | 125 | 100 | 125 | 1,590 | 348 797 |
| E 45 FR/250-140 B 175 | W 45 FR/250-140 B 175 | 125 | 140 | 125 | 1,660 | 348 798 |
| E 45 FR/250-140 B 225 | W 45 FR/250-140 B 225 | 125 | 140 | 125 | 1,900 | 348 799 |
| E 45 FR/250-170 B 175 | W 45 FR/250-170 B 175 | 125 | 170 | 125 | 1,720 | 348 800 |
| E 45 FR/250-170 B 225 | W 45 FR/250-170 B 225 | 125 | 170 | 125 | 1,970 | 348 801 |
| E 45 FR/290-140 B 175 | W 45 FR/290-140 B 175 | 145 | 140 | 165 | 1,760 | 348 802 |
| E 45 FR/290-140 B 225 | W 45 FR/290-140 B 225 | 145 | 140 | 165 | 2,000 | 348 803 |
| E 45 FR/290-170 B 175 | W 45 FR/290-170 B 175 | 145 | 170 | 165 | 1,820 | 348 804 |
| E 45 FR/290-170 B 225 | W 45 FR/290-170 B 225 | 145 | 170 | 165 | 2,070 | 348 805 |
| E 45 FR/325-170 B 175 | W 45 FR/325-170 B 175 | 162 | 170 | 200 | 1,900 | 348 806 |
| E 45 FR/325-170 B 225 | W 45 FR/325-170 B 225 | 162 | 170 | 200 | 2,150 | 348 807 |



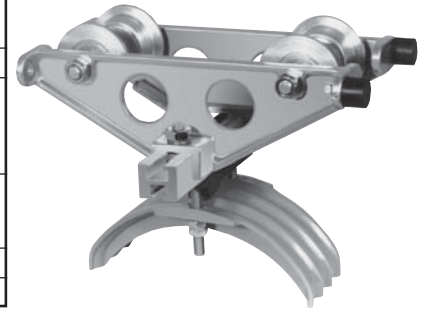
CABLE CARRIERS W 110

Normal- and europe profile



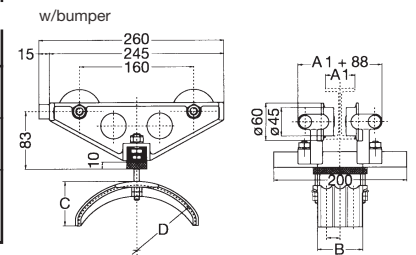
Engineering data

| | |
|--|--|
| Type | WE 110 R ... (S) for beam -IPE 80 – 200 WN 110 R ... (S) for beam -INP 80 – 220 |
| Carrying capacity | 30 kg |
| Wheels | a) Flanged polyamid wheels on stainless steel bushed bearings b) Steel wheels hardened and galvanized with sealed ball bearings |
| Material | carrierbody: light metal - seawater resistant support saddles: polyamid hardware: galvanized |
| Temperature resistance for all materials | -30° C to +100° C |
| Travelling speed | max. 80 m/min |



Cable carrier for round cable

| Type ⁽¹⁾ | | wheels | max. cable Ø mm | B | C | D | Weight kg | Order- No. | Order-No. with bumpe |
|--|----------------------|--------|--------------------|----|----|-----|--------------|---------------|----------------------------|
| | | | | mm | | | | | |
| Cable carrier standard beam | WN 110 R/200 | a | 3 x Ø 20 | 71 | 65 | 200 | 1,360 | 345 920 | 345 923 |
| Cable carrier Fl. fl. beam | WE 110 R/200 | a | 3 x Ø 20 | 71 | 65 | 200 | 1,360 | 345 921 | 345 924 |
| Cable carrier standard and Fl. fl. beam | W 110 R/200 S | b | 3 x Ø 20 | 71 | 65 | 200 | 2,130 | 345 922 | 345 925 |



Standard beam

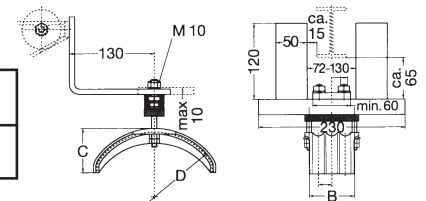
| | | | | | | | | |
|-----------------|----|-----|-----|-----|-----|-----|-----|-----|
| Beam TNP | 80 | 100 | 120 | 140 | 160 | 180 | 200 | 220 |
| Dim. A | 42 | 50 | 58 | 66 | 74 | 82 | 90 | 98 |

Flat flange beam

| | | | | | | | |
|-----------------|----|-----|-----|-----|-----|-----|-----|
| Beam IPE | 80 | 100 | 120 | 140 | 160 | 180 | 200 |
| Dim. A 1 | 46 | 55 | 64 | 73 | 82 | 91 | 100 |

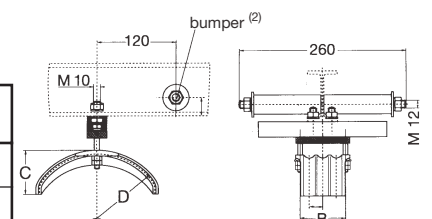
Lead clamp for round cable

| Type | for cable carrier | B | C | D | Weight kg | Order- No. | |
|-------------------|--------------------|-------------------------------|----|----|--------------|---------------|---------|
| | | mm | | | | | |
| Lead clamp | M 110 R/200 | W (N, E) 110 R/200 (S) | 71 | 65 | 200 | 1,170 | 345 926 |



Track clamp for round cable and bumper

| Type | for cable carrier | B | C | D | Weight kg | Order- No.. | |
|--------------------|----------------------------------|-------------------------------|----|----|--------------|----------------|---------|
| | | mm | | | | | |
| Track clamp | E 110 R/200⁽²⁾ | W (N, E) 110 R/200 (S) | 71 | 65 | 200 | 0,450 | 345 927 |
| Bumper | PS 3-4 | - | - | - | 0,410 | 340 100 | |



⁽¹⁾ Use suffix-P for bumper version (example: W 110 R/200 S-P)

⁽²⁾ Bumper PS 3-4 to be ordered separately.



CABLE CARRIERS W 120 • HEAVY DUTY

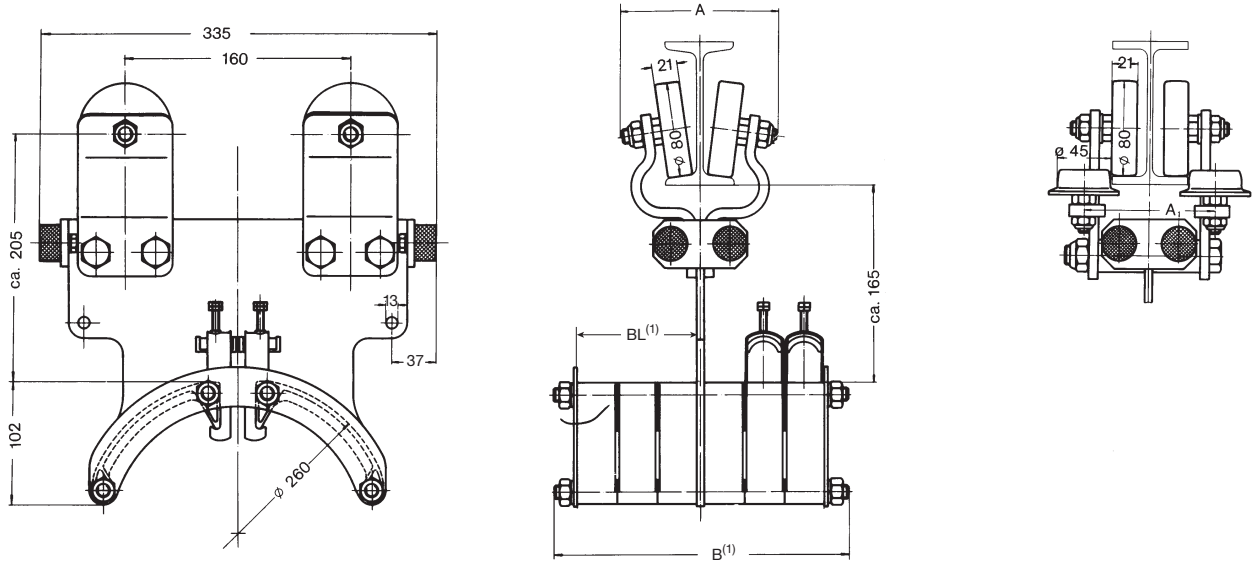
Normal- and europe profile



Engineering data

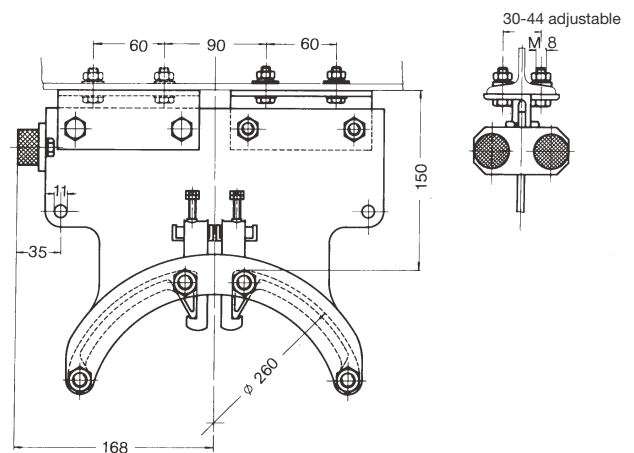
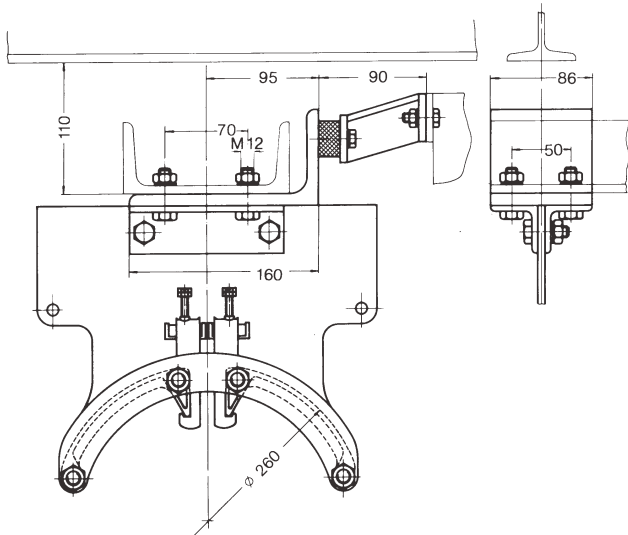
| | |
|-------------------|---|
| Type | WN 120 R/260 for beam $\text{INP } 100 - 160$ WE 120 R/260 for beam $\text{IPE } 100 - 160$ |
| Carrying capacity | 350 kg |
| Wheels | steel wheels hardened and galvanized with sealed precision ball bearings; flanged steel guide rollers hardened and galvanized with sealed ball bearings for WE-series only |
| Guide rollers | (only at WE-type) roller with ball bearing, made of steel, hardened, galvanically zinc-plated; |
| Material | carrier body: steel galvanized support saddles: polyamid temperature resistance for all materials: $-30^{\circ}\text{C} - +100^{\circ}\text{C}$ |
| Travelling speed | max. 120 m/min (525 ft/min) when using proper cable tension relief tow ropes |

Cable carrier



Lead clamp

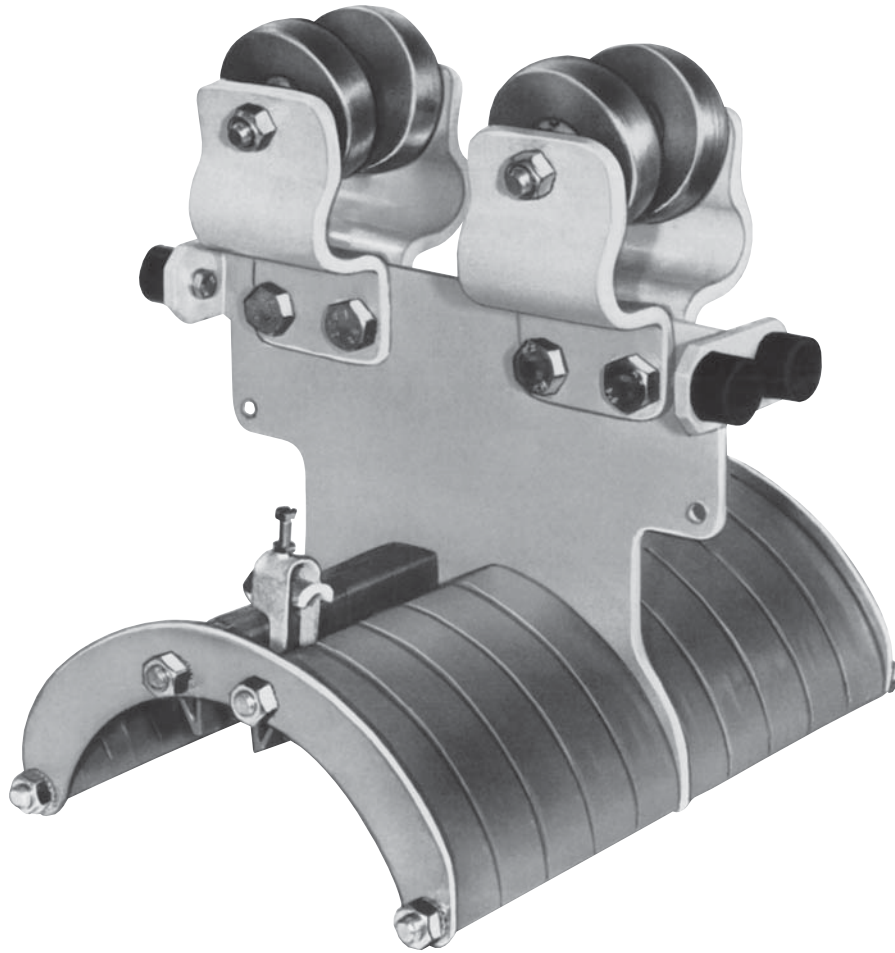
Track clamp





CABLE CARRIERS W 120 • HEAVY DUTY

Normal- and europe profile



Standard beam

| | | | | |
|----------|-----|-----|-----|-----|
| I NP | 100 | 120 | 140 | 160 |
| Dim A mm | 130 | 130 | 130 | 130 |

Flat flange beam

| | | | | |
|------------------------|-----|-----|-----|-----|
| I PE | 100 | 120 | 140 | 160 |
| Dim. A ₁ mm | 103 | 112 | 121 | 130 |

Standard beam

| Type | | Number of tiers | max. cable ø mm | Weight kg | Order-No. |
|-----------------------------|--------------|-----------------|-----------------|-----------|-----------|
| Cable carrier | WN 120 R/260 | 1 | 26 | 10,100 | 341 410 |
| Lead carrier ⁽¹⁾ | M 120 R/260 | 1 | 26 | 6,300 | 341 420 |
| Track clamp | E 120 R/260 | 1 | 26 | 3,800 | 341 430 |

Europe profile

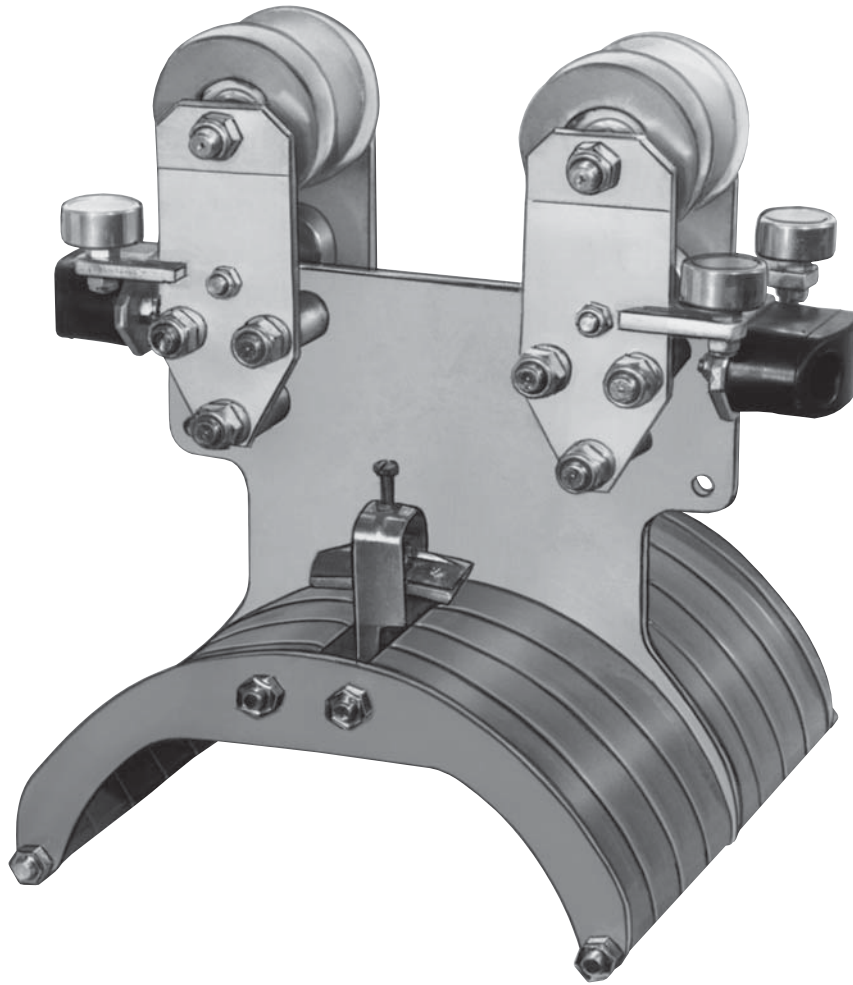
| Type | | Number of tiers | max. cable ø mm | Weight kg | Order-No. |
|-----------------------------|--------------|-----------------|-----------------|-----------|-----------|
| LCable carrier | WE 120 R/260 | 1 | 26 | 11,200 | 341 440 |
| Lead carrier ⁽¹⁾ | M 120 R/260 | 1 | 26 | 6,300 | 341 420 |
| Track clamp | E 120 R/260 | 1 | 26 | 3,800 | 341 430 |

⁽¹⁾ incl.bumper extension.



CABLE CARRIERS W 130 • HEAVY DUTY

Normal- and europe profile



Standard beam

| | | | | |
|-----------|-----|-----|-----|-----|
| I NP | 140 | 160 | 180 | 200 |
| Dim. A mm | 114 | 122 | 130 | 138 |

Flat flange beam

| | | | | |
|------------------------|-----|-----|-----|-----|
| I PE | 140 | 160 | 180 | 200 |
| Dim. A ₁ mm | 121 | 130 | 139 | 148 |

Standard beam

| | Type | Number of tiers | max. cable Ø mm | Weight kg | Order-No. |
|---------------------------------------|------------------|-----------------|-----------------|-----------|-----------|
| Cable carrier | WN 130 R/360 | 1 | 36 | 21,700 | 341 470 |
| | WN 130 R/360/260 | 2 | 36 | 25,200 | 341 480 |
| Lead clamp including bumper extension | M 130 R/360 | 1 | 36 | 12,500 | 341 490 |
| | M 130 R/360/260 | 2 | 36 | 16,000 | 341 500 |
| Track clamp | E 130 R/360 | 1 | 36 | 8,000 | 341 510 |
| | E 130 R/360/260 | 2 | 36 | 11,500 | 341 520 |

Flat flange beam

| | Type | Number of tiers | max. cable Ø mm | Weight kg | Order-No. |
|---------------------------------------|------------------|-----------------|-----------------|-----------|-----------|
| Cable carrier | WE 130 R/360 | 1 | 36 | 21,700 | 341 530 |
| | WE 130 R/360/260 | 2 | 36 | 25,200 | 341 540 |
| Lead clamp including bumper extension | M 130 R/360 | 1 | 36 | 12,500 | 341 490 |
| | M 130 R/360/260 | 2 | 36 | 16,000 | 341 500 |
| Track clamp | E 130 R/360 | 1 | 36 | 8,000 | 341 510 |
| | E 130 R/360/260 | 2 | 36 | 11,500 | 341 520 |



CABLE CARRIERS W 140 · HEAVY DUTY

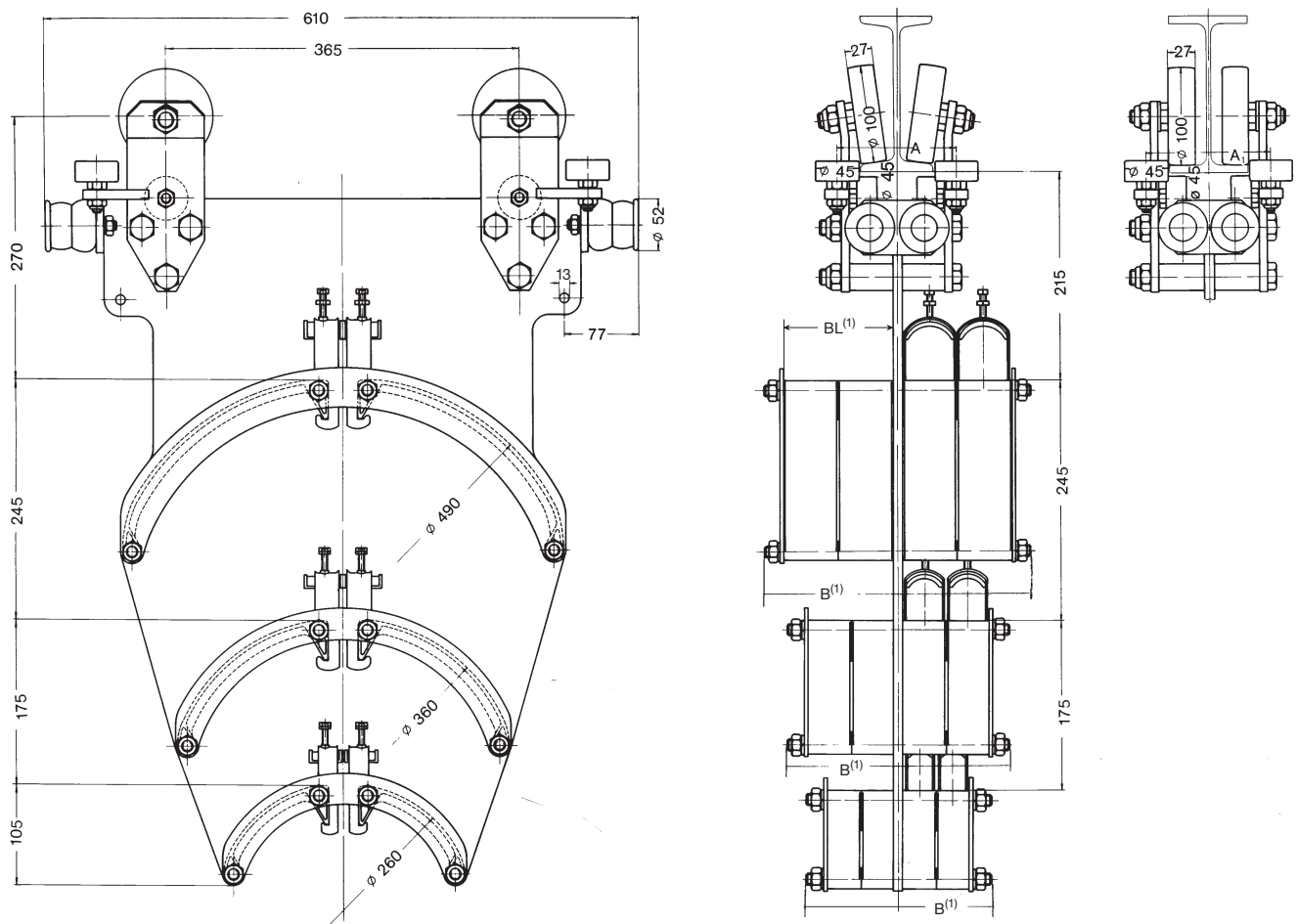
Normal- and europe profile



Engineering data

| | |
|---------------------------|--|
| Type | WN 140 R/490 for INP 140-200 WN 140 R/490/360 for INP 140-200 WN 140 R/490/360/260 for INP 140-200 WE 140 R/490 for IPE 140-200 WE 140 R/490/360 for IPE 140-200 WE 140 R/490/360/260 for IPE 140-200 |
| Carrying capacity | 550 kg |
| Wheels | steel wheels hardened and galvanized with sealed precision ball bearings; guide rollers hardened and galvanized with sealed ball bearings |
| Guide and support rollers | Cylindrical running rollers with ball bearing, made of steel, running surface hardened, galvanically zinc-plated; |
| Material | carrierbody: steel galvanized; support saddles: polyamid temperature resistance for all materials: -30° C – +100° C |
| Travelling speed | max. 120 m/min (525 ft/min) when using proper cable tension relief tow ropes |

Cable carrier



⁽¹⁾ see page 14 and 15 for dim. B and BL

Wheel set arrangements for profiles with differing flange dimensions on request.

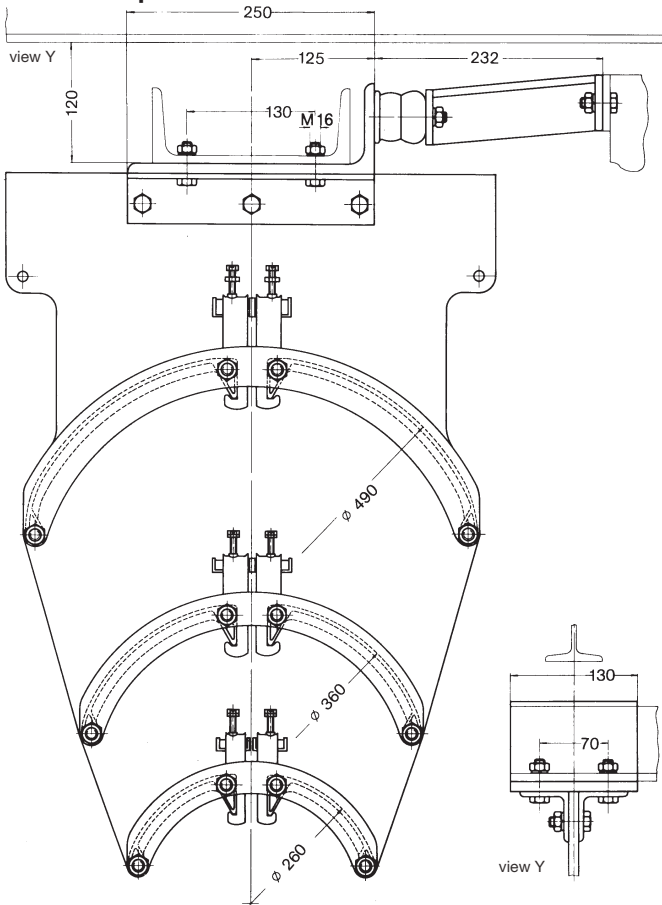


CABLE CARRIERS W 140 • HEAVY DUTY

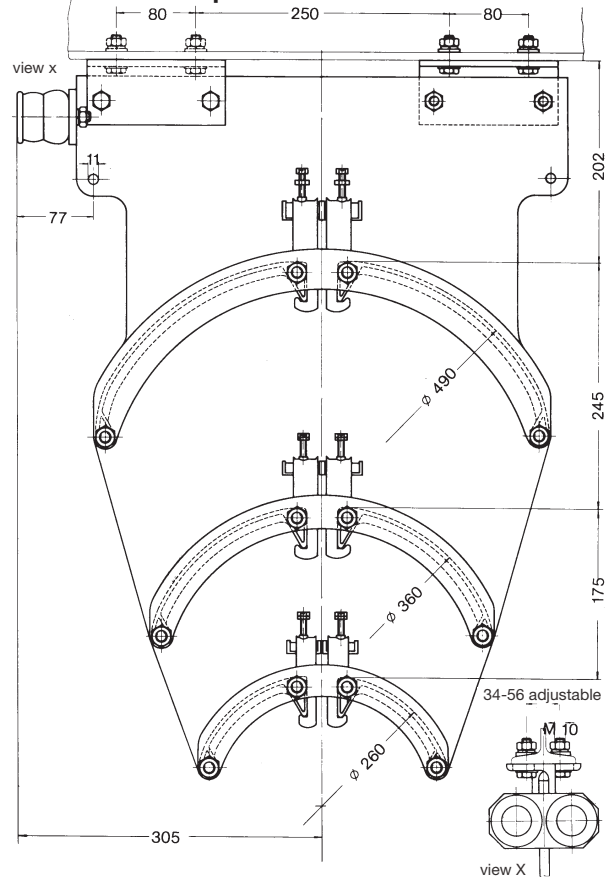
Normal- and europe profile



Lead clamp



Track clamp



Standard beam

| | | | | |
|-----------|-----|-----|-----|-----|
| INP | 140 | 160 | 180 | 200 |
| Dim. A mm | 114 | 122 | 130 | 138 |

Flat flange beam

| | | | | |
|------------|-----|-----|-----|-----|
| IPE | 140 | 160 | 180 | 200 |
| Dim. A, mm | 121 | 130 | 139 | 148 |

Normalprofil

| Type | | Number of tiers | max. cable Ø mm | Weight kg | Order-No. |
|---------------------------------------|----------------------|-----------------|-----------------|-----------|-----------|
| Cable carrier | WN 140 R/490 | 1 | 49 | 25,700 | 341 590 |
| | WN 140 R/490/360 | 2 | 49 | 34,200 | 341 600 |
| | WN 140 R/490/360/260 | 3 | 49 | 38,200 | 341 610 |
| Lead clamp including bumper extension | M 140 R/490 | 1 | 49 | 16,800 | 341 620 |
| | M 140 R/490/360 | 2 | 49 | 25,300 | 341 630 |
| | M 140 R/490/360/260 | 3 | 49 | 29,300 | 341 640 |
| Track clamp | E 140 R/490 | 1 | 49 | 12,000 | 341 650 |
| | E 140 R/490/360 | 2 | 49 | 20,500 | 341 660 |
| | E 140 R/490/360/260 | 3 | 49 | 24,500 | 341 670 |

Flat flange beam

| | | | | | |
|---------------------------------------|----------------------|---|----|--------|---------|
| Cable carrier | WE 140 R/490 | 1 | 49 | 25,700 | 341 680 |
| | WE 140 R/490/360 | 2 | 49 | 34,200 | 341 690 |
| | WE 140 R/490/360/260 | 3 | 49 | 38,200 | 341 700 |
| Lead clamp including bumper extension | M 140 R/490 | 1 | 49 | 16,800 | 341 620 |
| | M 140 R/490/360 | 2 | 49 | 25,300 | 341 630 |
| | M 140 R/490/360/260 | 3 | 49 | 29,300 | 341 640 |
| Track clamp | E 140 R/490 | 1 | 49 | 12,000 | 341 650 |
| | E 140 R/490/360 | 2 | 49 | 20,500 | 341 660 |
| | E 140 R/490/360/260 | 3 | 49 | 24,500 | 341 670 |



CABLE SUPPORT SADDLES



| Cable arrangement | | type of support saddle | Order-No. | type of support saddle | Order-No. | dimension B ⁽¹⁾ mm | Weight kg |
|--|--------------|------------------------|--------------|------------------------|-----------|-------------------------------|-----------|
| ○ = Ø 10–26 mm ◉ = Ø 27–36 mm ● = Ø 37–49 mm | | LA 490/ 2 | 342 100 | LK 490/ 2 | 342 980 | 162 | 1,810 |
| | | LA 490/ 4 | 342 110 | LK 490/ 4 | 342 990 | 274 | 2,910 |
| | | LA 490/ 6 | 342 120 | LK 490/ 6 | 343 000 | 386 | 4,010 |
| | | LA 490/ 8 | 342 130 | LK 490/ 8 | 343 010 | 498 | 5,110 |
| | | LA 490/ 10 | 342 140 | LK 490/ 10 | 343 020 | 610 | 6,210 |
| Ø of support saddle 490 mm | | LA 490/ 202 | 342 150 | LK 490/ 202 | 343 030 | 274 | 2,690 |
| | | LA 490/ 204 | 342 160 | LK 490/ 204 | 343 040 | 386 | 3,570 |
| | | LA 490/ 206 | 342 170 | LK 490/ 206 | 343 050 | 386 | 3,770 |
| | | LA 490/ 208 | 342 180 | LK 490/ 208 | 343 060 | 498 | 4,650 |
| | | LA 490/ 2010 | 342 190 | LK 490/ 2010 | 343 070 | 498 | 4,850 |
| | | LA 490/ 2012 | 342 200 | LK 490/ 2012 | 343 080 | 610 | 5,730 |
| | | LA 490/ 402 | 342 210 | LK 490/ 402 | 343 090 | 386 | 3,790 |
| | | LA 490/ 404 | 342 220 | LK 490/ 404 | 343 100 | 498 | 4,670 |
| | | LA 490/ 406 | 342 230 | LK 490/ 406 | 343 110 | 498 | 4,870 |
| | | LA 490/ 408 | 342 240 | LK 490/ 408 | 343 120 | 610 | 5,750 |
| | | LA 490/ 4010 | 342 250 | LK 490/ 4010 | 343 130 | 610 | 5,950 |
| | | LA 490/ 602 | 342 260 | LK 490/ 602 | 343 140 | 498 | 4,890 |
| | LA 490/ 604 | 342 270 | LK 490/ 604 | 343 150 | 610 | 5,770 | |
| | LA 490/ 606 | 342 280 | LK 490/ 606 | 343 160 | 610 | 5,970 | |
| | LA 490/ 802 | 342 290 | LK 490/ 802 | 343 170 | 610 | 5,990 | |
| | LA 490/ 804 | 342 300 | LK 490/ 804 | 343 180 | 610 | 6,190 | |
| | LA 490/ 22 | 342 310 | LK 490/ 22 | 343 190 | 274 | 2,770 | |
| | LA 490/ 24 | 342 320 | LK 490/ 24 | 343 200 | 386 | 3,730 | |
| | LA 490/ 26 | 342 330 | LK 490/ 26 | 343 210 | 498 | 4,690 | |
| | LA 490/ 28 | 342 340 | LK 490/ 28 | 343 220 | 498 | 4,970 | |
| | LA 490/ 210 | 342 350 | LK 490/ 210 | 343 230 | 610 | 5,930 | |
| | LA 490/ 42 | 342 360 | LK 490/ 42 | 343 240 | 386 | 3,970 | |
| | LA 490/ 44 | 342 370 | LK 490/ 44 | 343 250 | 498 | 4,930 | |
| | LA 490/ 46 | 342 380 | LK 490/ 46 | 343 260 | 610 | 5,890 | |
| | LA 490/ 48 | 342 390 | LK 490/ 48 | 343 270 | 610 | 6,170 | |
| | LA 490/ 62 | 342 400 | LK 490/ 62 | 343 280 | 498 | 4,970 | |
| | LA 490/ 64 | 342 410 | LK 490/ 64 | 343 290 | 610 | 5,930 | |
| | LA 490/ 82 | 342 420 | LK 490/ 82 | 343 300 | 610 | 6,070 | |
| | LA 490/ 222 | 342 430 | LK 490/ 222 | 343 310 | 386 | 3,650 | |
| | LA 490/ 224 | 342 440 | LK 490/ 224 | 343 320 | 386 | 3,850 | |
| | LA 490/ 226 | 342 450 | LK 490/ 226 | 343 330 | 498 | 4,730 | |
| | LA 490/ 228 | 342 460 | LK 490/ 228 | 343 340 | 610 | 5,610 | |
| | LA 490/ 2210 | 342 470 | LK 490/ 2210 | 343 350 | 610 | 5,810 | |
| | LA 490/ 242 | 342 480 | LK 490/ 242 | 343 360 | 386 | 3,930 | |
| | LA 490/ 244 | 342 490 | LK 490/ 244 | 343 370 | 498 | 4,810 | |
| | LA 490/ 246 | 342 500 | LK 490/ 246 | 343 380 | 610 | 5,690 | |
| | LA 490/ 248 | 342 510 | LK 490/ 248 | 343 390 | 610 | 5,890 | |
| | LA 490/ 262 | 342 520 | LK 490/ 262 | 343 400 | 498 | 4,890 | |
| | LA 490/ 264 | 342 530 | LK 490/ 264 | 343 410 | 610 | 5,770 | |
| | LA 490/ 266 | 342 540 | LK 490/ 266 | 343 420 | 610 | 5,970 | |
| | LA 490/ 282 | 342 550 | LK 490/ 282 | 343 430 | 610 | 5,850 | |
| | LA 490/ 422 | 342 560 | LK 490/ 422 | 343 440 | 498 | 4,850 | |
| | LA 490/ 424 | 342 570 | LK 490/ 424 | 343 450 | 498 | 5,050 | |
| | LA 490/ 426 | 342 580 | LK 490/ 426 | 343 460 | 610 | 5,930 | |
| | LA 490/ 428 | 342 590 | LK 490/ 428 | 343 470 | 610 | 6,130 | |
| | LA 490/ 442 | 342 600 | LK 490/ 442 | 343 480 | 498 | 5,130 | |
| | LA 490/ 444 | 342 610 | LK 490/ 444 | 343 490 | 610 | 6,010 | |
| | LA 490/ 462 | 342 620 | LK 490/ 462 | 343 500 | 610 | 6,090 | |
| | LA 490/ 622 | 342 630 | LK 490/ 622 | 343 510 | 610 | 5,850 | |
| | LA 490/ 624 | 342 640 | LK 490/ 624 | 343 520 | 610 | 6,050 | |

Maximal usable support saddle⁽²⁾ per side in mm = $BL \frac{B - 50 \text{ mm}}{2}$

⁽¹⁾ Dimension B = max. width of support saddles, see pages 8-13.

⁽²⁾ Dimension BL see pages 8-13.



CABLE LOOP CLAMPS



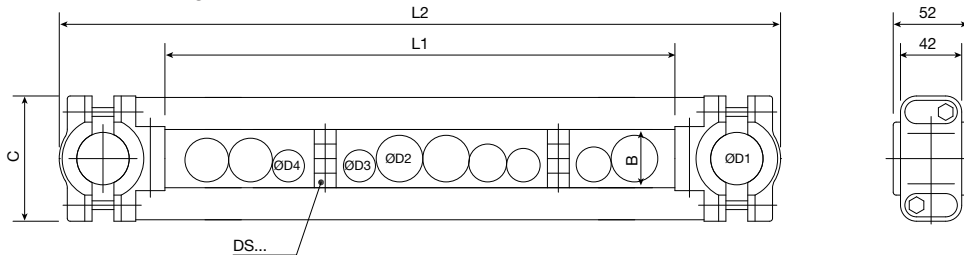
Material:

Light metal, seawater resistant

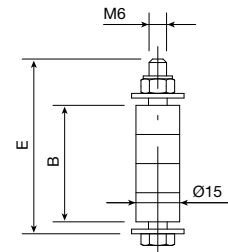
Clamping insert made of rubber

Spacer made of PVC

Screws and accessories made of steel, galvanized⁽¹⁾



| Cable loop clamp | | | | | | | | | |
|------------------|----|----|---------|---------|------------------------|-----|----------|--------------|-----------|
| Type | B | C | D1 | D2 | D3 + D4 ⁽²⁾ | L1 | L2 | Weight kg | Order-No. |
| | | | | | | | | | |
| LS26 - 100 | | | | | | 100 | max. 234 | 0,71 | 347 100 |
| LS26 - 150 | | | | | | 150 | max. 284 | 0,77 | 347 101 |
| LS26 - 200 | | | | | | 200 | max.334 | 0,82 | 347 102 |
| LS26 - 250 | | | | | | 250 | max.384 | 0,88 | 347 103 |
| LS26 - 300 | | | | | | 300 | max.434 | 0,94 | 347 104 |
| LS26 - 350 | 30 | 75 | 14 - 26 | max. 26 | 34 | 350 | max.484 | 0,99 | 347 105 |
| LS26 - 400 | | | | | | 400 | max.534 | 1,05 | 347 106 |
| LS26 - 450 | | | | | | 450 | max.584 | 1,10 | 347 107 |
| LS26 - 500 | | | | | | 500 | max.634 | 1,16 | 347 108 |
| LS26 - 550 | | | | | | 550 | max.684 | 1,21 | 347 109 |
| LS26 - 600 | | | | | | 600 | max.734 | 1,27 | 347 110 |
| LS36 - 100 | | | | | | 100 | max.245 | 0,78 | 347 111 |
| LS36 - 150 | | | | | | 150 | max.295 | 0,84 | 347 112 |
| LS36 - 200 | | | | | | 200 | max.345 | 0,89 | 347 113 |
| LS36 - 250 | | | | | | 250 | max.395 | 0,95 | 347 114 |
| LS36 - 300 | | | | | | 300 | max.445 | 1,01 | 347 115 |
| LS36 - 350 | 40 | 86 | 24 - 36 | max. 46 | 46 | 350 | max.495 | 1,08 | 347 116 |
| LS36 - 400 | | | | | | 400 | max.545 | 1,12 | 347 117 |
| LS36 - 450 | | | | | | 450 | max.595 | 1,17 | 347 118 |
| LS36 - 500 | | | | | | 500 | max.645 | 1,23 | 347 119 |
| LS36 - 550 | | | | | | 550 | max.695 | 1,28 | 347 120 |
| LS36 - 600 | | | | | | 600 | max.745 | 1,34 | 347 121 |
| LS46 - 100 | | | | | | 100 | max.260 | 0,86 | 347 122 |
| LS46 - 150 | | | | | | 150 | max.310 | 0,92 | 347 123 |
| LS46 - 200 | | | | | | 200 | max.360 | 0,97 | 347 124 |
| LS46 - 250 | | | | | | 250 | max.410 | 1,03 | 347 125 |
| LS46 - 300 | | | | | | 300 | max.460 | 1,09 | 347 126 |
| LS46 - 350 | 50 | 96 | 30 - 46 | max. 48 | 56 | 350 | max.510 | 1,14 | 347 127 |
| LS46 - 400 | | | | | | 400 | max.560 | 1,20 | 347 128 |
| LS46 - 450 | | | | | | 450 | max.610 | 1,25 | 347 129 |
| LS46 - 500 | | | | | | 500 | max.660 | 1,31 | 347 130 |
| LS46 - 550 | | | | | | 550 | max.710 | 1,36 | 347 131 |
| LS46 - 600 | | | | | | 600 | max.760 | 1,42 | 347 132 |



| Spacer | | | | |
|--|----|----|--------------|-----------|
| ⁽²⁾ If the amount of cables side by side is below the values D3 and D4 (see table) a spacer between this cables required. | | | | |
| Type ⁽¹⁾ | B | E | Weight kg | Order-No. |
| DS 26 | 30 | 50 | | 346 710 |
| DS 36 | 40 | 60 | 0,04 | 346 711 |
| DS 46 | 50 | 70 | | 346 712 |

| Order details | | |
|-------------------|--------------------------------------|-----------|
| Cable loop clamp | Type | Order-No. |
| Cable arrangement | Number of cables with cable diameter | |
| Spacer | Type | Order-No. |
| | Amount | |

⁽¹⁾ The type description for hardware made of stainless steel has the addition -K (e.g. LS36-400-K)



1. Steel Ropes (Tow Cables)

Recommended for applications with

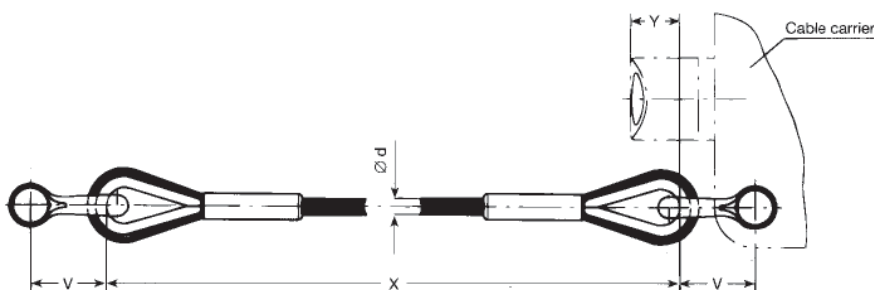
- Over 30 m Travel Distance (Working Travel)
or in general for mechanical sensitive cables and/or in very dusty environments
- Travel Speeds up to 80 m/min
- Accelerations up to 0.3 m/s²

For higher speeds or accelerations please consult the factory.

| Type | Z 4 | Z 4-PVC | Z 5 | Z 5-PVC | Z 6 | Z 6-PVC |
|--|------------------|-------------------------------|------------------|-------------------------------|------------------|-------------------------------|
| Ø d = | 6 mm | 6/8 mm | 6 mm | 6/8 mm | 8 mm | 8/10 mm |
| Weight | 0,125 kg/m | 0,150 kg/m | 0,125 kg/m | 0,150 kg/m | 0,221 kg/m | 0,250 kg/m |
| V = | 28 mm | | 42 mm | | 42 mm | |
| Material and finish | steel galvanized | steel galvanized PVC-shrouded | steel galvanized | steel galvanized PVC-shrouded | steel galvanized | steel galvanized PVC-shrouded |
| Admissible tension force (6 times safety factor) | 3500 N | | 3500 N | | 6100 N | |
| Type of shackle lock | safety nut | | Locknut | | | |
| for Cable carrier | W 45 | | W 120 thru W 140 | | | |

Design: Round cord rope made of steel wires with fibre layers, galvanized or additional PVC-shrouding, in prefabricated length, incl. rope-clips, thimbles and shackles.

Weight: Shackles, thimbles, bush = 0.5 kgs on both sides



Projecting bumper:

| Cable Carrier Type | Y in mm |
|--------------------|---------|
| W 45 | 0 |
| W 120 | -5 |
| W 130 and W 140 | 35 |

How to determine the Tow rope Length:

$$X = \frac{S(f - 0,1) + Z}{n} + 2 Y$$

- X = Length of tow rope mm
- S = working travel mm
- f = Cable safety factor (1,15)
- Z = open space mm (min. one carrier)
- n = number of cable loops
- Y = projecting bumper (mm; see table)

| Length of Two Rope mm | Order-No. | | | | | |
|-----------------------|--------------------|---------|--------------------------------|---------|---------|---------|
| | Cable carrier W 45 | | Cable carrier W 120 thru W 140 | | | |
| | Z 4 | Z 4-PVC | Z 5 | Z 5-PVC | Z 6 | Z 6-PVC |
| thru - 2000 | 346 372 | 346 383 | 346 394 | 346 368 | 346 405 | 346 367 |
| 2001 - 3000 | 346 373 | 346 384 | 346 395 | 346 346 | 346 406 | 346 356 |
| 3001 - 4000 | 346 374 | 346 385 | 346 396 | 346 347 | 346 407 | 346 357 |
| 4001 - 5000 | 346 375 | 346 386 | 346 397 | 346 348 | 346 408 | 346 358 |
| 5001 - 6000 | 346 376 | 346 387 | 346 398 | 346 349 | 346 409 | 346 359 |
| 6001 - 7000 | 346 377 | 346 388 | 346 399 | 346 350 | 346 410 | 346 360 |
| 7001 - 8000 | 346 378 | 346 389 | 346 400 | 346 351 | 346 411 | 346 361 |
| 8001 - 9000 | 346 379 | 346 390 | 346 401 | 346 352 | 346 412 | 346 362 |
| 9001 - 10000 | 346 380 | 346 391 | 346 402 | 346 353 | 346 413 | 346 363 |
| 10001 - 11000 | 346 381 | 346 392 | 346 403 | 346 354 | 346 414 | 346 364 |
| 11001 - 12000 | 346 382 | 346 393 | 346 404 | 346 355 | 346 415 | 346 365 |

Please specify with your order

Tow rope: Type

Length of rope X: mm

Order- No.:



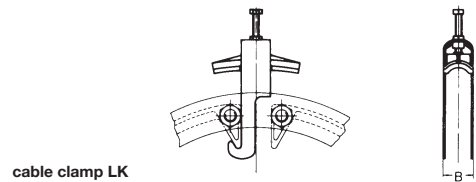
SPARE PARTS

1. Wheels

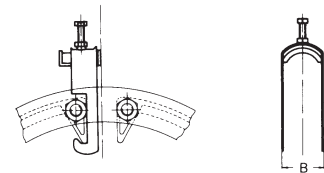
| wheel | side roller | kick-up roller | for cable carriers | dim. dia x width (mm) | flange wheel | cyl. wheel | wheel material | bush-bearing | ball-bearing | Weight kg | Order-No. |
|-------------|-------------|----------------|--|-----------------------|--------------|------------|----------------|--------------|--------------|-----------|-----------|
| x | | | W 25 K, W 26 K, W 30 K WN 110, WE 110 | 45/60 x 24,5 | x | | polyamid | x | | 0,027 | 346 731 |
| x | | | W 25 KL, W 26 KL W 30 KL | 45/60 x 22,5 | x | | polyamid | | x | 0,065 | 346 732 |
| x with axle | | | W 45 FR | 45/60 x 23 | x | | steel | | x | 0,230 | 348 708 |
| | | x with axle | W 45 FR | 32 x 9 | | x | steel | | x | 0,110 | 348 709 |
| x with axle | | | W 110 S | 45/60 x 21 | x | | steel | | x | 0,250 | 344 750 |
| | x with axle | | WE 120 | | | | | | | | |
| | x with axle | x with axle | WN 130, WN 140 WE 130, WE 140 | 45 x 21 | | x | steel | | x | 0,200 | 344 850 |
| x with axle | | | WN 120 WE 120 | 80 x 21 | | x | steel | | x | 0,810 | 346 744 |
| x with axle | | | WN 130, WN 140 WE 130, WE 140 | 100 x 27 | | x | steel | | x | 1,500 | 346 746 |

2. Bumpers incl. attachment hardware

| dim. dia x length mm | for cable carriers | Weight kg | Order-No. |
|------------------------------|---------------------|-----------|-----------|
| Ø 26 x 18 | W 45 FR | 0,010 | 349 335 |
| Ø 20 x 15 ⁽¹⁾ | W 110 | 0,012 | 346 001 |
| Ø 30 x 18 ⁽¹⁾ | W 120 | 0,035 | 344 980 |
| 45 x 100 x 52 ⁽¹⁾ | W 130, W 140 | 0,330 | 345 000 |



cable clamp LK



cable clamp LA

3. Cable clamps for round cable

Clamps, type LA for galvanized steel, compression insert of PVC, hardware galvanized.

| clamp type | for Ø mm | dim. B mm | Weight kg | Order-No. |
|----------------|----------|-----------|-----------|-----------|
| K 12 LA | 8-12 | 16 | 0,040 | 345 020 |
| K 16 LA | 12-16 | 21 | 0,044 | 345 030 |
| K 20 LA | 16-20 | 24 | 0,050 | 345 040 |
| K 24 LA | 20-24 | 29 | 0,055 | 345 050 |
| K 28 LA | 24-28 | 33 | 0,059 | 345 060 |
| K 32 LA | 28-32 | 37 | 0,082 | 345 070 |
| K 36 LA | 32-36 | 41 | 0,087 | 345 080 |
| K 40 LA | 36-40 | 46 | 0,094 | 345 090 |
| K 44 LA | 40-44 | 50 | 0,116 | 345 100 |
| K 48 LA | 44-49 | 54 | 0,119 | 345 110 |

Clamps, type LK for galvanized steel, compression insert of corrosion proof aluminium, hardware of stainless steel.

| clamp type | for Ø mm | dim. B mm | Weight kg | Order-No. |
|----------------|----------|-----------|-----------|-----------|
| K 12 LK | 8-12 | 17 | 0,102 | 345 120 |
| K 16 LK | 12-16 | 21 | 0,105 | 345 130 |
| K 20 LK | 16-20 | 25 | 0,132 | 345 140 |
| K 24 LK | 20-24 | 29 | 0,142 | 345 150 |
| K 28 LK | 24-28 | 33 | 0,152 | 345 160 |
| K 32 LK | 28-32 | 37 | 0,180 | 345 170 |
| K 36 LK | 32-36 | 41 | 0,185 | 345 180 |
| K 40 LK | 36-40 | 46 | 0,210 | 345 190 |
| K 44 LK | 40-44 | 50 | 0,230 | 345 200 |
| K 48 LK | 44-49 | 54 | 0,240 | 345 210 |



TYPICAL APPLICATION AND HOW TO ORDER



Festoon system for round cable

Application:

Electrification system for gantry crane trolley

Cable specification: (see cat. 8 L)

| | | |
|---|-------------------|------------------|
| 12 cables 1 x 120,0 mm ² , 28,5 mm Ø | trolley travel: | 65 m |
| 2 cables 4 x 35,0 mm ² , 42,0 mm Ø | travelling speed: | 60 m/min. |
| 2 cables 4 x 25,0 mm ² , 37,5 mm Ø | I-beam track | I NP 200 |
| 6 cables 24 x 2,5 mm ² , 38,0 mm Ø | loop depth: | 4 m |
| 2 cables 19 x 2,5 mm ² , 33,0 mm Ø | cable length | |
| 5 cables 8 x 2,5 mm ² , 23,0 mm Ø | for termination: | 1 x 2 m, 1 x 7 m |
| 3 cables 4 x 2,5 mm ² , 15,5 mm Ø | | |

How to select the correct system:

1. Choose the correct carriers by considering diameters and weights of the cables per table on pages 14 and 15.

Result:

| | | | |
|--------------------------------------|-----------------------------------|--------------------------------------|-----------------------------------|
| Tier 1 (upper level): LK 490/ 48 for | 2 cables 4 x 35,0 mm ² | Tier 2 (center level): LK 360/12 for | 12 cables 1 x 120 mm ² |
| | 2 cables 4 x 25,0 mm ² | | |
| | 6 cables 24 x 2,5 mm ² | Tier 3 (lower level): LK 260/ 8 for | 5 cables 8 x 2,5 mm ² |
| | 2 cables 18 x 2,5 mm ² | | 3 cables 4 x 2,5 mm ² |

2. The matching trolley chassis: type WN 140 R/490/360/260

3. Find out the quantity of cable loops required per diagram on page 24

4. Find out the storage distance per page 22

5. Tow ropes required? See page 18

6. Determine length of cable required:

(trolley travel + storage incl. open space Z) x 1.15

+ cable hookup lengths for termination, see page 22.

Result: 10

Result: 6100 mm + Z (one carrier of 600 mm) = 6700 mm

Answer: Yes

Result: 92 m

(see page 22)

Material to order:

| | Type | Order-No. |
|---|----------------------|-----------|
| 9 cable carriers, 3-tier, c/w | WN 140 R/490/360/260 | 341 610 |
| cable support saddles | LK 490/48 | 343 270 |
| cable support saddles | LK 360/12 | 342 780 |
| cable support saddles | LK 260/ 8 | 342 680 |
| 1 lead clamp, 3-tier | M 140 R/490/360/260 | 341 640 |
| c/w cable support saddles | (LK as before) | |
| 1 track clamp, 3-tier | E 140 R/490/360/260 | 341 670 |
| c/w cable support saddles | (LK as before) | |
| 20 cable loop clamps for upper tier | LS 36-350 | 347 116 |
| 20 cable loop clamps for center tier | LS 26-300 | 347 104 |
| 20 cable loop clamps for lower tier | LS 26-200 | 347 102 |
| 60 distance spacer for lower cable clamp | DS 26 | 346 710 |
| 10 tow rope assemblies, 8 mm dia, 6970 mm long, with hardware | Z 6 | 346 410 |
| 12 x 92 m 92 m Rubber sheathed round cable | H 07 RN-F 1 x 120 | 332 300 |
| 2 x 92 m 92 m Rubber sheathed round cable | H 07 RN-F 4 G 35 | 330 320 |
| 2 x 92 m 92 m Rubber sheathed round cable | H 07 RN-F 4 G 25 | 330 310 |
| 6 x 92 m 92 m Rubber sheathed round cable | A 07 RN-F 24 G 2,5 | 330 370 |
| 2 x 92 m 92 m Rubber sheathed round cable | A 07 RN-F 18 G 2,5 | 330 360 |
| 5 x 92 m 92 m Rubber sheathed round cable | A 07 RN-F 8 G 2,5 | 330 340 |
| 3 x 92 m 92 m Rubber sheathed round cable | H 07 RN-F 4 G 2,5 | 330 260 |
| 24 cable glands | M 32 for 1,5 | 332 531 |
| 4 cable glands | M 50 for 1,5 - 2 | 332 536 |
| 4 cable glands | M 50 for 1,5 - 1 | 332 532 |
| 12 cable glands | M 50 for 1,5 - 1 | 332 532 |
| 4 cable glands | M 50 for 1,5 - 1 | 332 532 |
| 10 cable glands | M 32 for 1,5 | 332 531 |
| 6 cable glands | M 25 for 1,5 | 332 530 |



INSTALLATION INFORMATION

with the associated cable carriers

I-Beam Track

1. Install I-beam track parallel with runway of equipment; the side clearance to be sufficient to avoid interference with swinging cables.
2. The support structure for the I-beam must be adequately designed for the anticipated loads. Smooth out welded joints to ensure smooth traversing of cable carriers.

The support of the I-profile has to take place according to the occurring load. The joints have to be carried out aligned. At the tread the welding seams have to be smoothed.

Cable Carrier

The system must be installed in the following order:

1. Cable carriers: adjusted per chosen I-beam
2. Bolt track clamp: to the lower flange of the I-beam
3. Connect lead clamp: The lead carrier of the types W 120 upto W 140 are not carried out as carriers, this units are moving free under the I-profile and will be connected fix with an arm (e. g. U-profile) to the consumer. The arrangement of the arm is apparent in the dimension illustrations of the respective cable carrier types. The cable carriers of the types W 120 upto W 140 are in addition to the absorption of bigger travel inaccuracies equipped with a bumper extension. This bumper extension has to be installed at the first cable carrier behind the lead carrier.

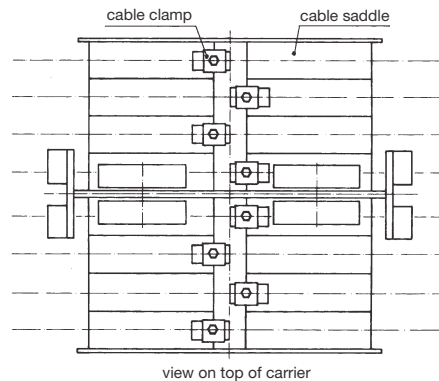
Cables

During installation of the cables please note that the cable length [L] between end clamp and lead carrier is distributed with equally loop depth on the carriers.

$L = (\text{storage length incl. clearance} + \text{travel distance}) \times 1,1 \text{ upto } 1,2$.

During use of tow rope assemblies 1,15 upto 1,25.

The cables will be fixed with single clamps at the cable saddles. They have to be arranged alternating, as shown on the top view of the cable carrier. The locking takes place with conternuts.



Tow Ropes

Tow ropes (see page 18) are to be installed on the cable carriers by means of shackles.

Cable Loop Clamps

with cable loops of approx. 2,5 m it is recommended to use one cable clamp at the lower vertex of each loop. Use two cable clamps in the lower third (one each side of the loop) when the loop depth exceeds 2 m.

Make test runs



Cable Safety Length Directions

| travelling speed | cable loop | safety factor |
|-------------------------------|-----------------|---------------|
| up 35 m/min | more than 0.3 m | f = 1,1 |
| up 50 m/min | up to 0.8 m | f = 1,15 |
| up 50 m/min | more than 0.8 m | f = 1,1 |
| up 80 m/min | up to 0.8 m | f = 1,2 |
| up 80 m/min | more than 0.8 m | f = 1,15 |
| for spiral looped round cable | | f = 1,2 |

For higher speed factors (> 80 m/min) please consult factory.

Storage distance

$$SP = n \times l + Z$$

- S = travel distance (m)
- SP = storage distance (m)
- Z = open space (m)
(min. one carrier)
- n = number of loops
- l = length of carrier (m)
- f = cable safety factor

Cable length

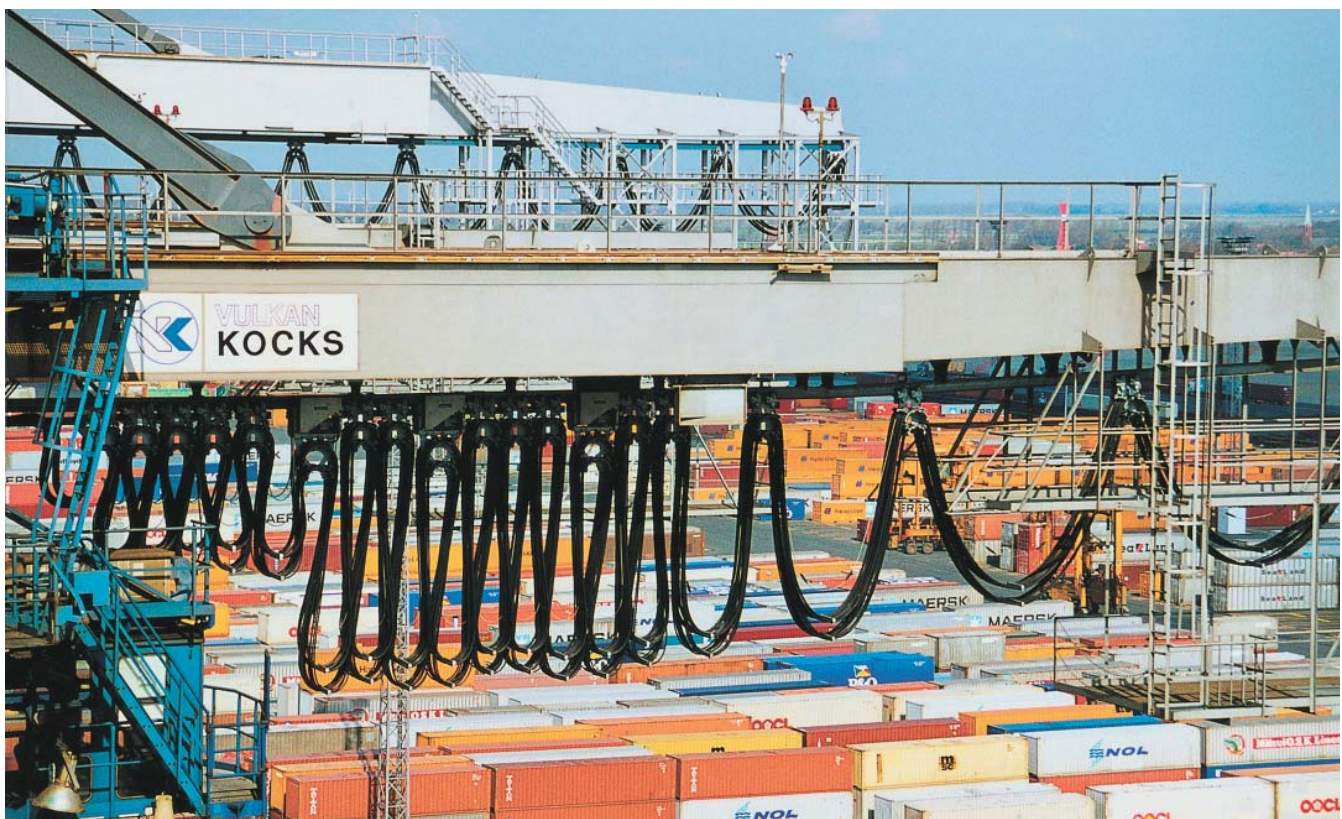
(c/c track clamp – lead clamp without hookup on both ends)

$$L = (S + SP) \times f$$

Number of Carriers

(without lead clamp and track clamp)

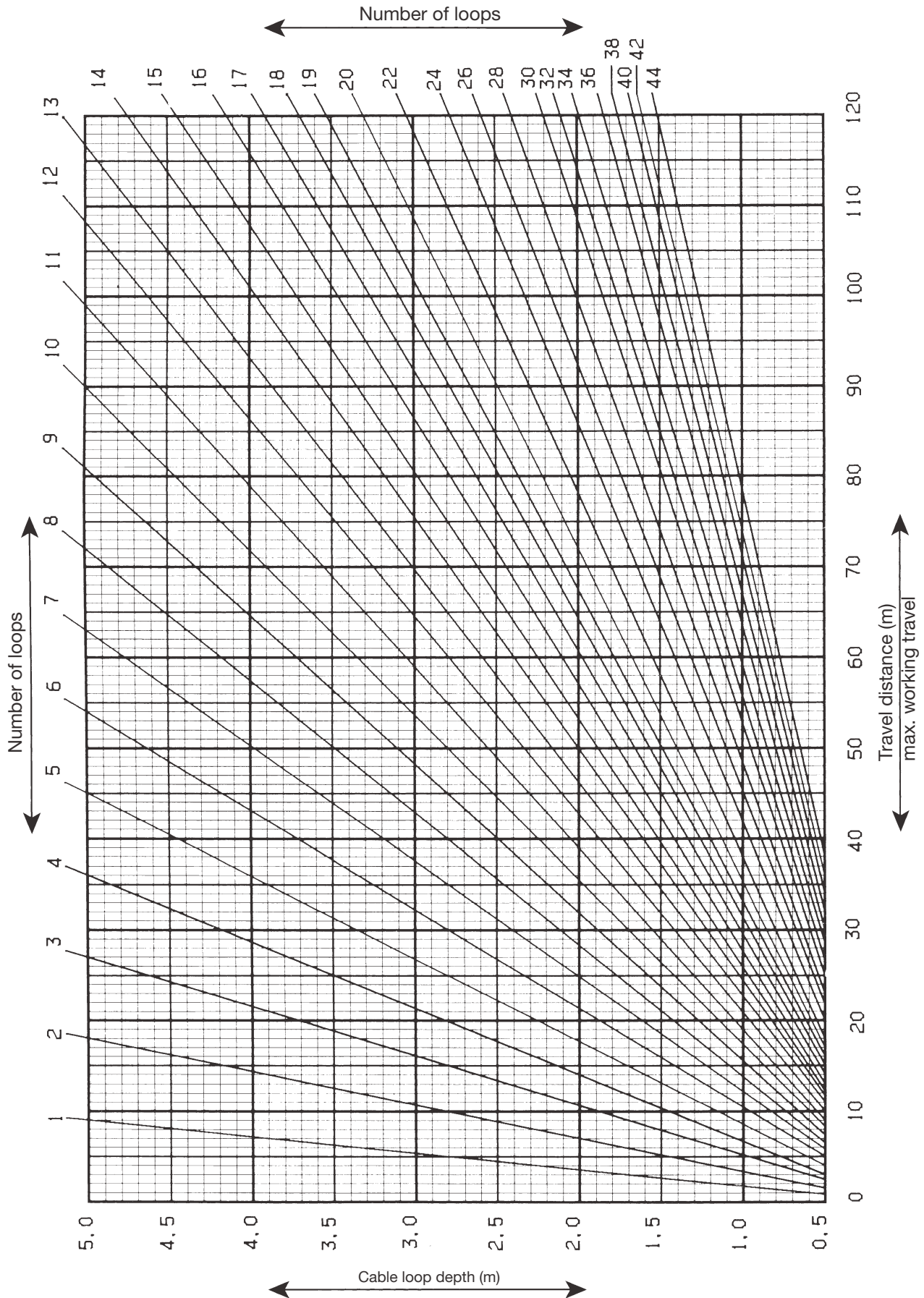
$$= n - 1$$



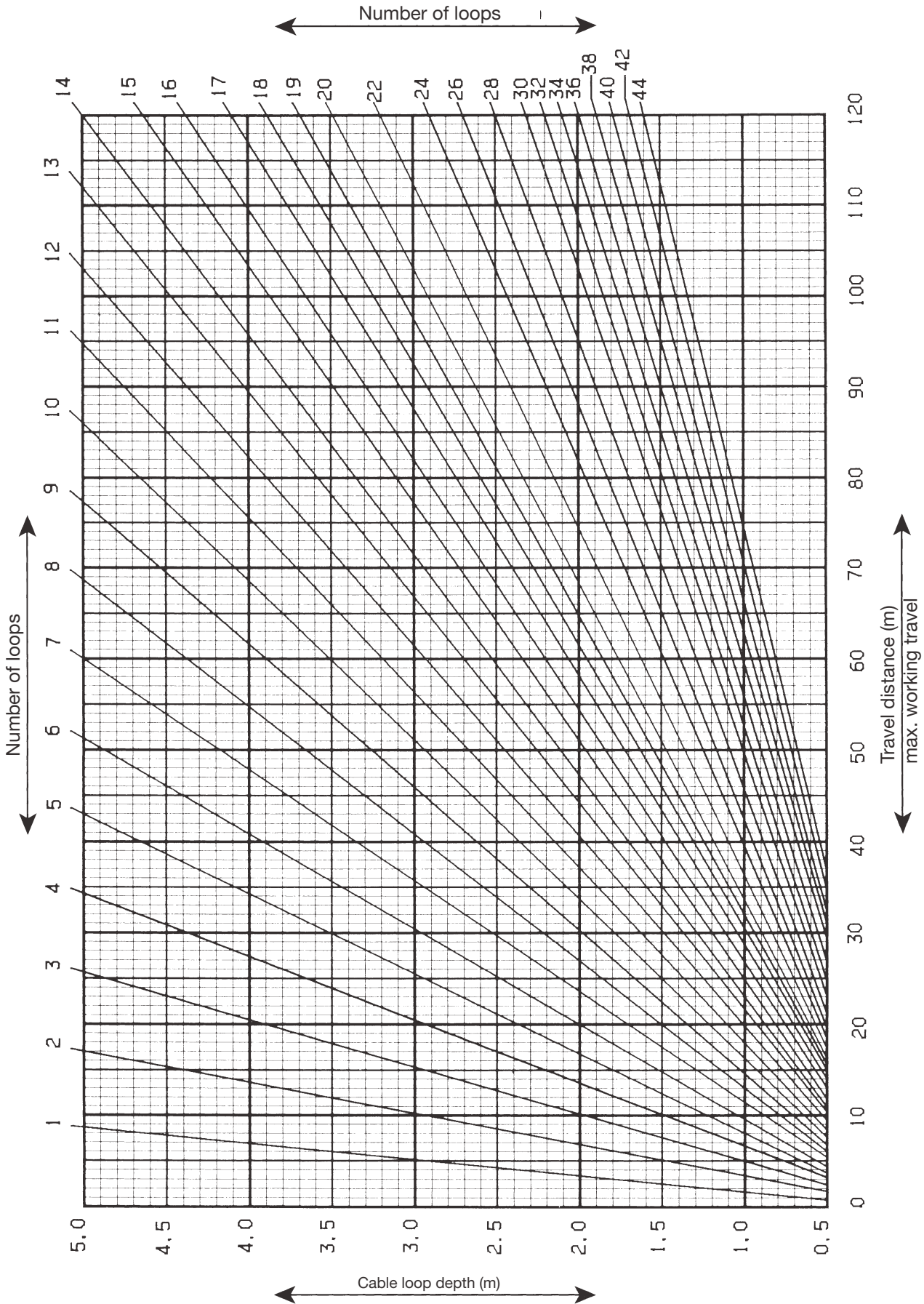
VAHLE cable carriers in Bremerhaven



CABLE LOOPS



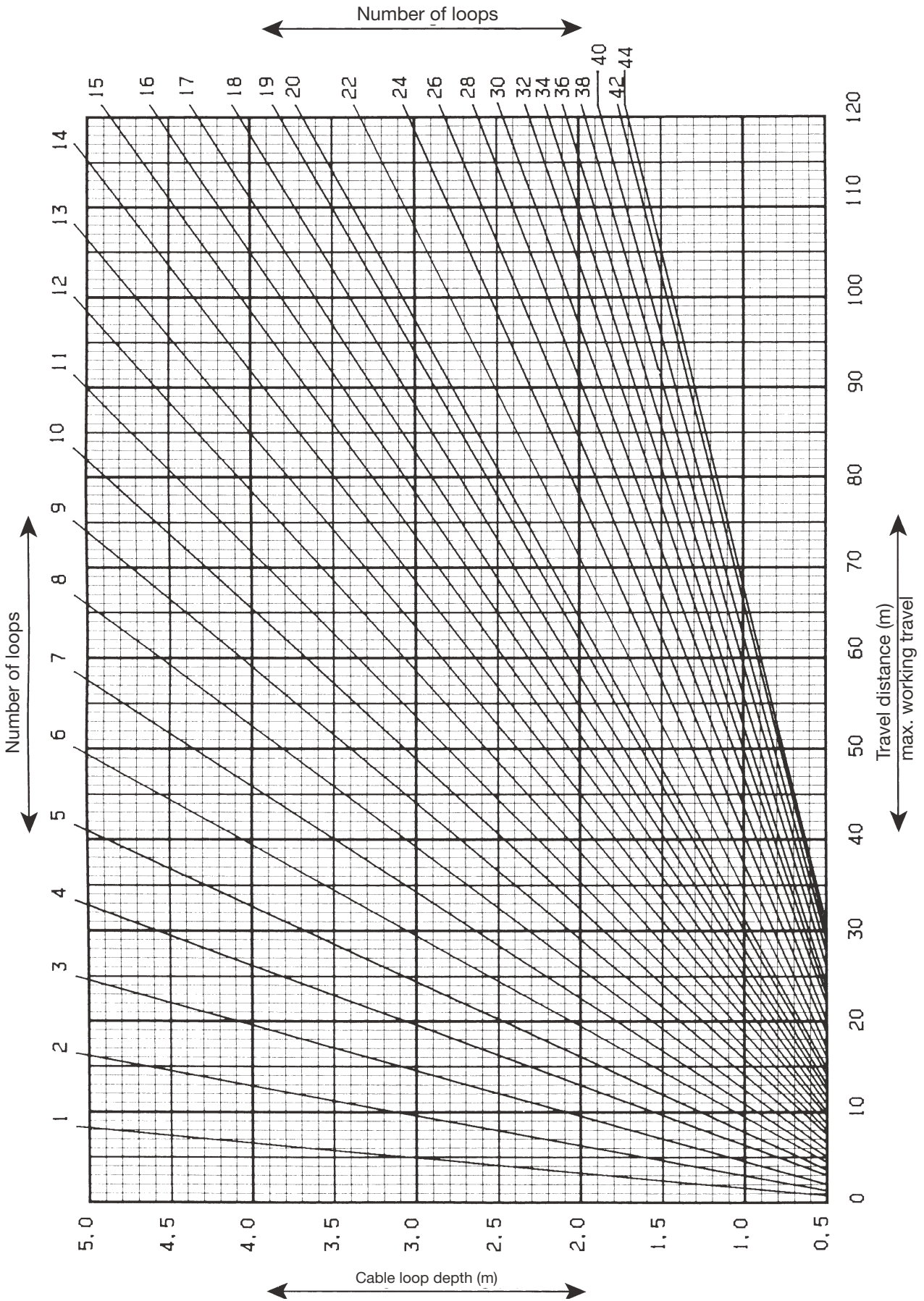
The diagram considers a cable safety length factor of $f=1.10$



The diagram considers a cable safety length factor of $f=1.15$



CABLE LOOPS



The diagram considers a cable safety length factor of $f=1.20$



VAHLE cable carriers at Hamburg harbour





NOTES



Products and Service

Catalog No.

1 Open conductor systems

Open conductor systems

1a

2 Insulated conductor systems

U 10

2a

FABA 100

2b

U 15 - U 25 - U 35

2c

U 20 - U 30 - U 40

2d

3 Compact conductor systems

VKS 10

3a

VKS - VKL

3b

4 Enclosed conductor systems

KBSL - KSL

4a

KBH

4b

MKLD - MKLF - MKLS

4c

LSV - LSVG

4d

5 Contactless power system

Contactless power system (CPS®)

5a

6 Data transmission

VAHLE Powercom®

6a

Slotted Microwave Guide (SMG)

6b

7 Positioning systems

VAHLE-APOS®

7a

8 Festoon systems and cables

Festoon systems for □- tracks

8a

Festoon systems for flat cables on I- tracks

8b

Festoon systems for round flat cables on I- tracks

8c

Festoon systems for ◇- tracks

8d

Cables

8e

9 Reels

Spring operated cable reels

9a

Motor powered cable reels

9b

10 Others

Battery charging systems

10a

Heavy enclosed conductor systems

10b

Tender

10c

Contact wire

10d

Assemblies/Commissioning

Spare parts/Maintenance service

MANAGEMENTSYSTEM



DQS - zertifiziert nach DIN EN ISO 9001:2000
OHSAS 18001 (Reg.-Nr. 003140 QM OH)

VAHLE 
ELECTRIFICATION SYSTEMS