# Product Overview
# Energy Guiding Chains

KAT 3100-0001a-E

wampfler

solutions for a moving world

Provides a safe process: **Boa** steel chain with covers in a steel mill.

# A chain of successes!

Solutions for a moving world: Wherever you find people and things in motion, you'll also find custom-configured Wampfler solutions for the transmission of energy, data and media.

These solutions include an extensive line of energy guiding chains. Container cranes, steel mills and power plants, high-rack storage and retrieval systems, greenhouses and car washes are only a few of the many typical applications for Wampfler energy guiding chains.

The enormous variety of different configurations, materials, designs and accessories, makes Wampfler energy guiding chains the choice of preference when it comes to finding the right solution, no matter how difficult or unusual the application!

And, not only that, Wampfler offers not only products that feature robust, heavy-duty construction and reliable operation even under punishing operating conditions but also fast, efficient service and support.

As a result, it's no surprise that Wampfler energy guiding chains are found – often in combination with other Wampfler energy transmission systems – wherever mobility is important. Worldwide!

Top service – Assembly on site in a container facility.

Everything from a single source – Wampfler also supplies optimum cables.

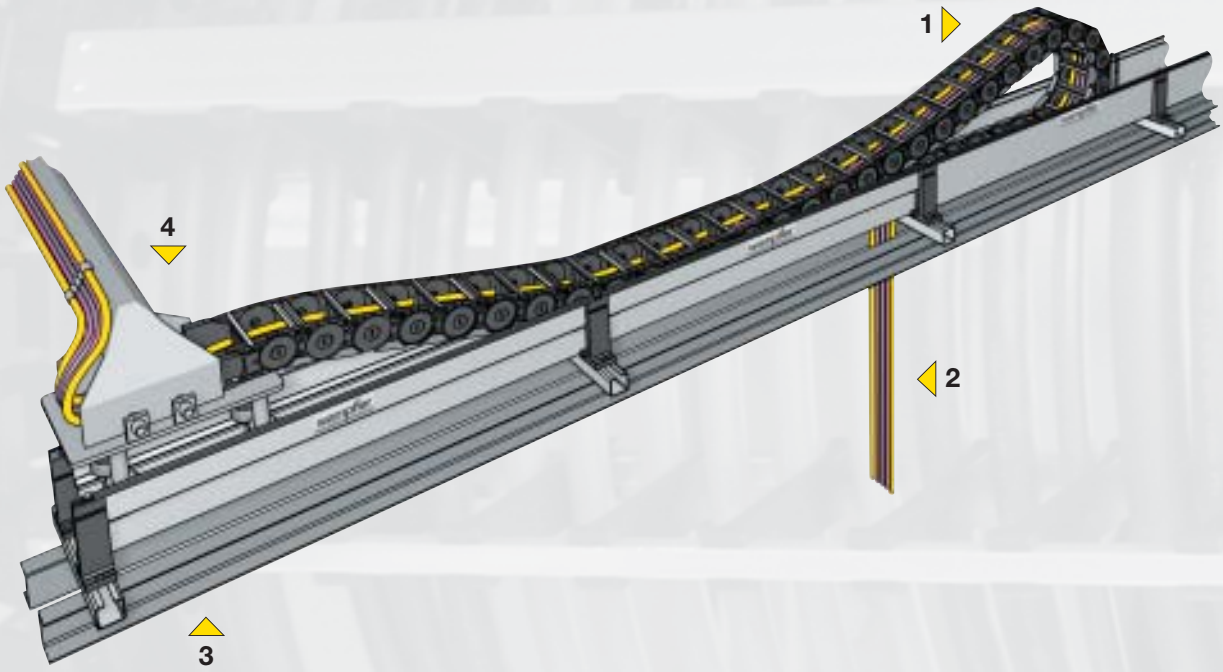
Wampfler **Cobra** energy guiding chain on a port crane.

Some like it wet – In this car wash, for example.

A portal robot equipped with a **Cobra** chain permits reliable, efficient picking, placing and positioning.

# Five lines – Thousands of possibilities!

Five product lines – one philosophy: meeting all application requirements and customer requests with a highly flexible and modular system!




**1** Energy guiding chain
**2** Cables with strain reliefs
**3** Guiding system
**4** Driver unit

**Installation principles (A1 – A8)**
Exemplified versatile. Wampfler energy guiding chains for all applications.

## Mamba

Hinge-free and continuously extruded energy guiding profile. Easy cable assembly by open cross-section of profile.

Noiseless and vibration-free by means of hinge-free pitch. Ideal solution for standardized applications.

## Viper

Plastic mono-link chain with locking yoke. Low-noise design for especially quiet operation and minimal vibration. Special plastic materials

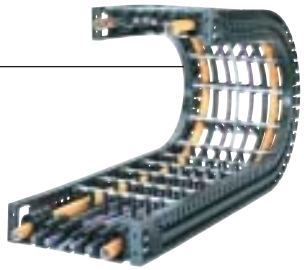
available for low or high temperatures or for use in explosion-protected areas. Available for travel distances of up to 100 m.

## Cobra

Duo-link chain with aluminum frame stays for optimum design as a function of customer-specific require-

ments. Especially high torsional rigidity. Also available with wear-resistant skids to permit maximum travel speed.

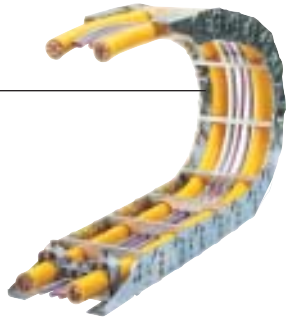
## Racer



Advantages of Mamba and Cobra combined. Hinge-free and continuously extruded sidebands in combination

with rigid aluminum frame stays. For tough requirements in terms of load, smoothness, pollution and quietness.

## Boa

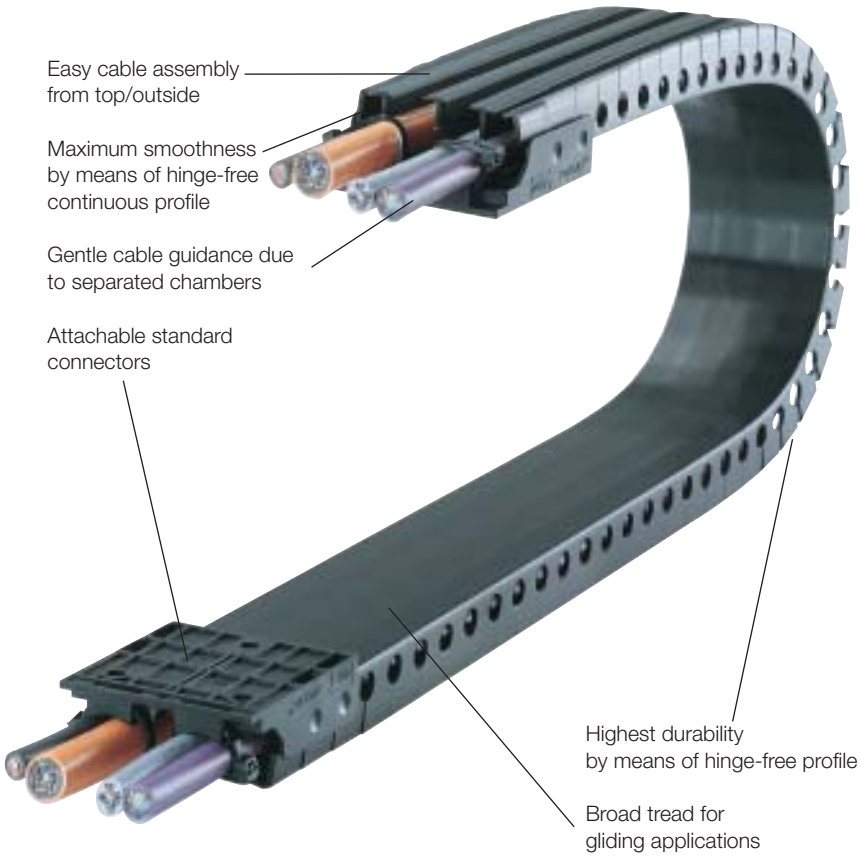


Duo-link chain of galvanized or stainless steel for operation in harsh industrial environments. Suitable for applications that call for long

travel distances without support. Self-supporting guides permit especially long travel distances with no difficulty.

# Program *Mamba*

**Main applications:**
- Small to medium-sized bridge cranes
- Optical systems
- Common machinery
- Rack feeder
- Applications with high degree of pollution
- Door drives
- Handling systems
- Refrigeration systems
- Standardized applications with fixed cable packages




**Standard Specifications**[1]

| | |
|---|---|
| Travel distance $L_S$ | 40 m |
| Travel speed | 10 m/s for self-supporting chains |
| Acceleration | 20 m/s² for self-supporting chains |
| Ambient temperature | -30° C ... 60° C (permanent) |
| Max. temperature | 80° C (intermittent) |
| Use in explosion-protected areas | not possible |
| acc. to ATEX-RL 94/9/EG | |
| Use in food industry | not possible |
| Use in dust-free rooms | possible |
| Chemical resistance | resistant against fats and oils |
| Not resistant against | halogens, hydrocarbons, ether |
| Labs-compliant | yes |
| UV-resistant | yes |
| Cable allocation | Mamba 20: flat cables, Mamba 22: round cables |

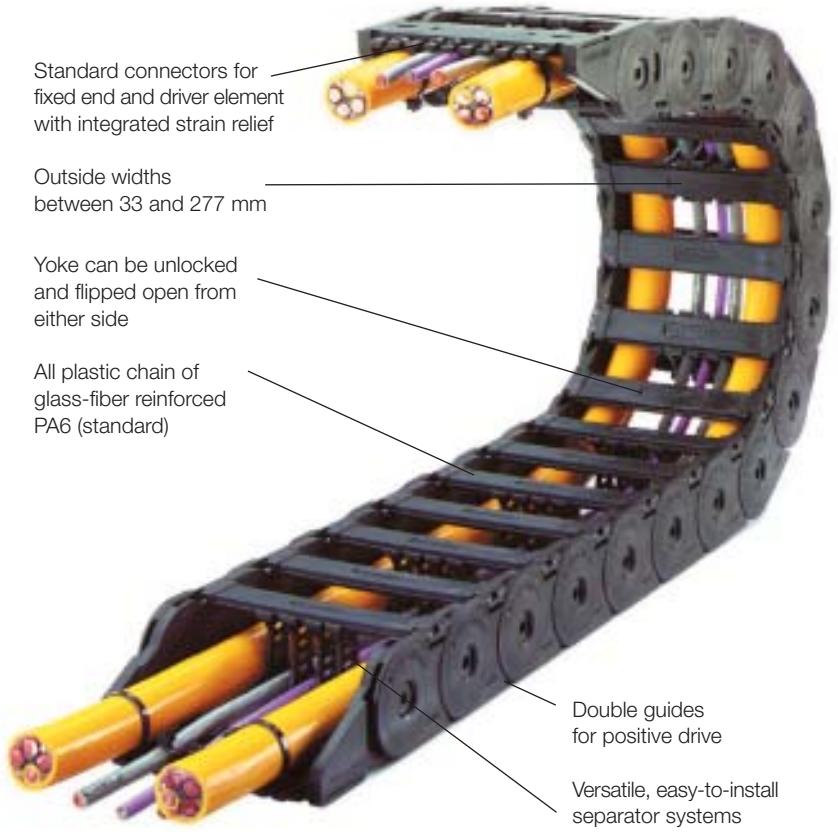
| **Dimensions** | Outside width $B_K$ (mm) | For cable type | Max. amount of cables | Preferred cable allocation Ø (mm) | Bending radius KR (mm) |
|---|---|---|---|---|---|
| **Mamba 20** | 49 | flat | 4 | 12 x 1,5 and 4 x 6 | 100 - 200[3] |
| | | | | 12 x 1,5 and 4 x 16[2] | |
| **Mamba 22** | 72 | round | 4 | Ø 5 -17 | 75/100/150/200 |

[1] The application data may vary depending on important parameters (chain type, cable weight, environmental conditions, duty cycles).
[2] Other cable allocations are possible and must be engineered together with Wampfler.
[3] The bending radius varies depending on cable weight and will not be determined by the profile.

# Program *Viper*

**Main applications**

- Small to medium-sized bridge cranes, for interior and exterior use
- Automated storage and retrieval systems
- Transfer cars
- Sliding door systems
- Irrigation systems
- Carousels
- Telescopic booms
- Material handling




**Standard Specifications**[1]

| | |
|---|---|
| Travel distance $L_S$ | 80 m; 200 m with rolling carriage |
| Travel speed | 10 m/s for self-supporting chains, else 200 m/min |
| Acceleration | 30 m/s² for self-supporting chains |
| Ambient temperature | -20 °C...+ 70 °C (permanent) |
| Max. temperature | 90 °C (intermittent) |
| Use in explosion-protected areas | possible with special plastics |
| acc. to ATEX-RL 94/9/EG | |
| Use in food industry | possible |
| Chemical resistance | resistant against fats and oils |
| Not resistant against | acidic liquids like salt acid, lactic acid, |
| | acetic acid, chromate and chlorine |
| Labs-compliant | yes |
| UV-resistant | yes |
| Cable allocation | exclusively round cables, max. Ø 32 mm |

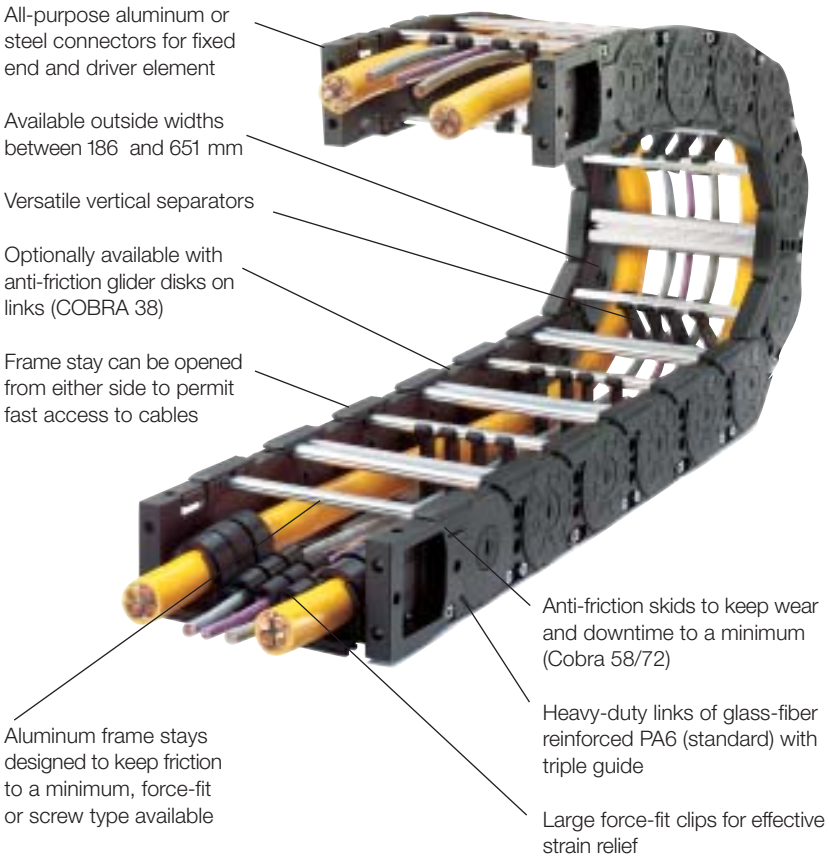
| **Dimensions** | Outside width $B_K$ (mm) | Inside height (mm) | Bending radius KR preference line (mm) | Max. self-supporting length $L_D$ (mm) | Max. additional load (kg/m) |
|---|---|---|---|---|---|
| **Viper 20** | 33... 78 | 20 | 50/75/100/125 | 2.000 | 2 |
| **Viper 26** | 76...148 | 26 | 65/95/125/150/200 | 2.800 | 4 |
| **Viper 38** | 72...172 | 38 | 80/100/125/160/200 | 3.800 | 7 |
| **Viper 44** | 102... 277 | 44 | 100/120/140/200/250 | 4.600 | 10 |

[1] The application data may vary depending on important parameters (chain type, cable weight, environmental conditions, duty cycles).

# Programm *Cobra*

**Main applications**

- Medium-size to large bridge cranes
- Container cranes and RTGs
- Automated storage and retrieval systems
- Vertical people movers
- Compost plants
- Woodworking machinery
- Washing systems/car washes
- Water-treatment plants
- Transport of fluid media (molding sand, hydraulic oil, compressed air)




**Standard Specifications**[1]

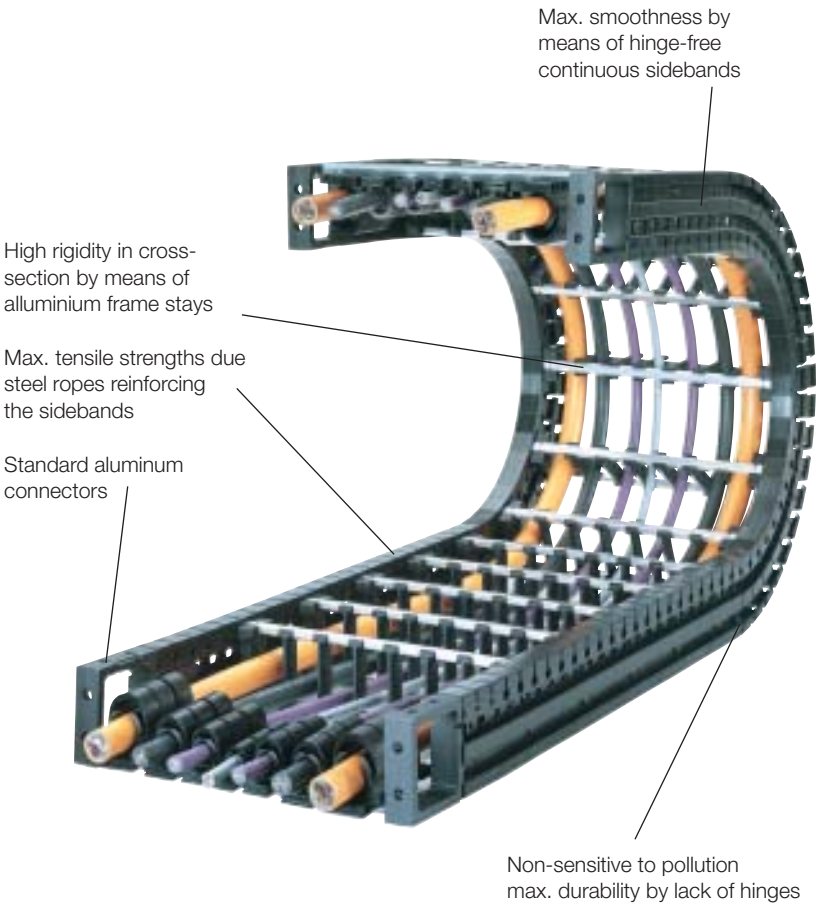
| | |
|---|---|
| Travel distance $L_S$ | 200 m; 500 m with rolling carriage |
| Travel speed | 20 m/s for self-supporting chains |
| | 300 m/min for long travel distance |
| Acceleration | 30 m/s² for self-supporting chains |
| Ambient temperature | -20° C ... 60° C (permanent) |
| Max. temperature | 95° C (intermittent) |
| Use in explosion-protected areas | possible with special plastics |
| acc. to ATEX-RL 94/9/EG | |
| Use in food industry | possible |
| Chemical resistance | resistant against fats and oils |
| Not resistant against | acidic liquids like salt acid, lactic acid, |
| | acetic acid, chromate and chlorine |
| Labs-compliant | yes |
| UV-resistant | yes |
| Cable allocation | exclusively round cables, max. Ø 56 mm |

| **Dimensions** | Outside width $B_K$ (mm) | Inside height (mm) | Bending radius KR preference line (mm) | Max. self-supporting length $L_D$ (mm) | Max. additional load (kg/m) |
|---|---|---|---|---|---|
| **Cobra 38** | 136... 436 | 38 | 75/115/145/175/220 | 3.600 | 20 |
| **Cobra 58** | 194... 544 | 58 | 140/170/200/260/320 | 4.700 | 30 |
| **Cobra 72** | 201... 851 | 72 | 180/220/260/300/340 | 5.700 | 40 |

[1] The application data may vary depending on important parameters (chain type, cable weight, environmental conditions, duty cycles).

# Program *Racer*

**Main applications::**
- Medium-size to large bridge cranes
- Container cranes
- Cement plants
- Washing plants
- Applications with high degrees of pollution
- Applications sensitive to noise or vibrations
- Refrigeration systems
- Hangar doors
- Applications with high duty cycles




**Standard Specifications**[1]

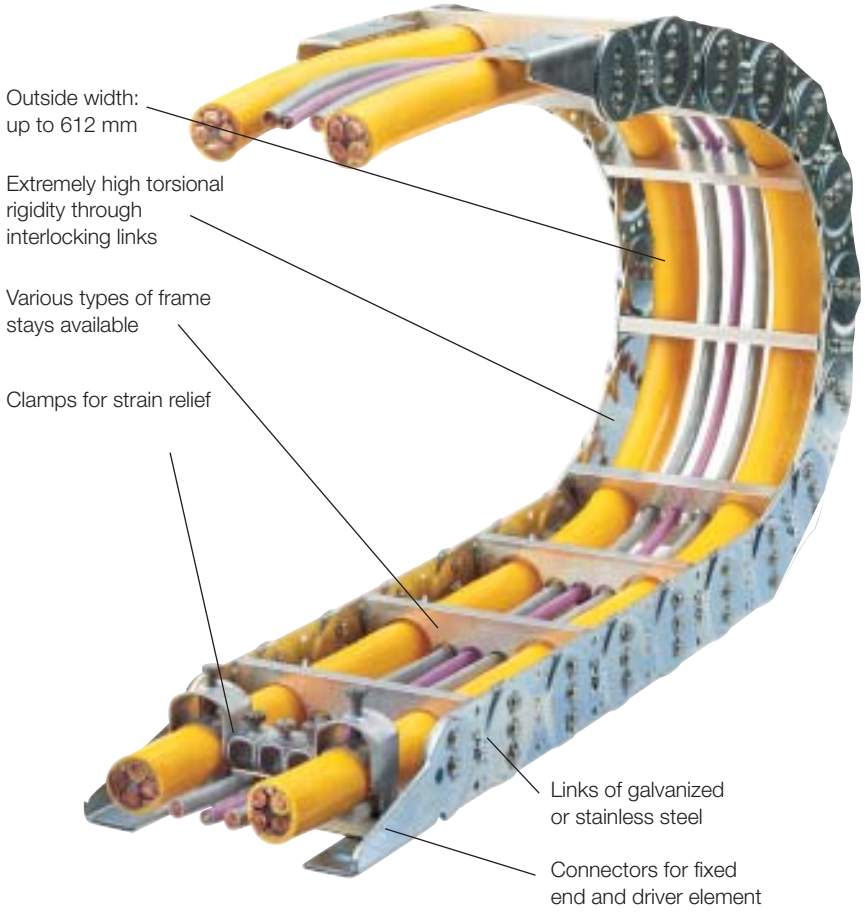
| | |
|---|---|
| Travel distance $L_S$ | 100 m; 300 m with rolling carriage |
| Travel speed | 10 m/s for self-supporting chains |
| | 300 m/min for long travel distance |
| Acceleration | 30 m/s² for self-supporting chains |
| Ambient temperature | -30° C ... 60° C (permanent) |
| Max. temperature | 80° C (intermittent) |
| Use in explosion-protected areas | not possible |
| acc. to ATEX-RL 94/9/EG | |
| Use in food industry | not possible |
| Use in dust-free rooms | possible |
| Chemical resistance | resistant against fats and oils |
| Not resistant against | halogens, hydrocarbons, ether |
| Labs-compliant | yes |
| UV-resistant | yes |
| Cable allocation | exclusively round cables, max. Ø 58 mm |

| **Dimensions** | Outside width $B_K$ (mm) | Inside height (mm) | Bending radius KR preference line (mm) | Max. self-supporting length $L_D$ (mm) | Max. additional load (kg/m) |
|---|---|---|---|---|---|
| **Racer 38** | 90... 552 | 38 | 100/120/150/190/250 | 2.500 | 5 |
| **Racer 58** | 122... 672 | 58 | 170/200/250/320/420 | 3.000 | 8 |
| **Racer 72** | 152... 682 | 72 | 180/250/300/370/460 | 3.700 | 12 |

[1] The application data may vary depending on important parameters (chain type, cable weight, environmental conditions, duty cycles).

# Program *Boa*

**Main applications:**
- Steel mill cranes
- Portal cranes in foundries and rolling mills
- Stacker-reclaimers
- Transfer cars in foundries and rolling mills
- Offshore installations
- Transport means in nuclear installations
- Transport of fluid media in chemical industry




**Standard Specifications**[1]

| | |
|---|---|
| Travel distance $L_S$ | 18 m self supporting; 33 m with support rollers; |
| | 200 m with rolling carriage |
| Travel speed | 90 m/min for self-supporting chains; 60 m/min with support rollers; |
| | 120 m/min with rolling carriage |
| Acceleration | 5 m/s² for self-supporting chains |
| Ambient temperature | -25° C ... 250° C permanent (aluminium cross bar) |
| | -25° C ... 400° C permanent (steel tube bar) |
| Use in explosion-protected areas | standard suitable for up to zone 0 |
| acc. to ATEX-RL 94/9/EG | |
| Use in food industry | possible |
| Chemical resistance | broadly very good, chains made of galvanized steel are not resistant |
| | against acids; chains made of stainless steel are resistant |
| Wear resistance | best on high-strength stainless steel chains |
| Corrosion protection | yes |
| Labs-compliant | yes |
| UV-resistant | yes |
| Cable allocation | exclusively round cables, max. Ø 65 mm |

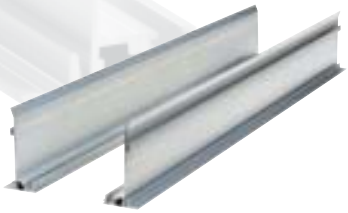
| **Dimensions** | Outside width $B_K$ (mm) | Inside height (mm) | Bending radius KR preference line (mm) | Max. self-supporting length $L_D$ (mm) | Max. additional load (kg/m) |
|---|---|---|---|---|---|
| **Boa 31** | 100...281 | 31 | 75/115/145/175/200/250 | 3.000 | 30 |
| **Boa 46** | 237...437 | 46 | 125/170/200/260/290 | 4.500 | 40 |
| **Boa 72** | 349...549 | 72 | 145/200/260/300/380 | 6.000 | 50 |
| **Boa 109** | 362...612 | 109 | 265/320/375/435/490 | 9.000 | 60 |

[1] The application data may vary depending on important parameters (chain type, cable weight, environmental conditions, duty cycles).

# The choice of preference!

The choice of the right channel makes it possible to make sure that the chain is always in exactly the right position, which permits optimum operation and minimum downtime. Wampfler offers a wide range of different channels, including standard and custom solutions.

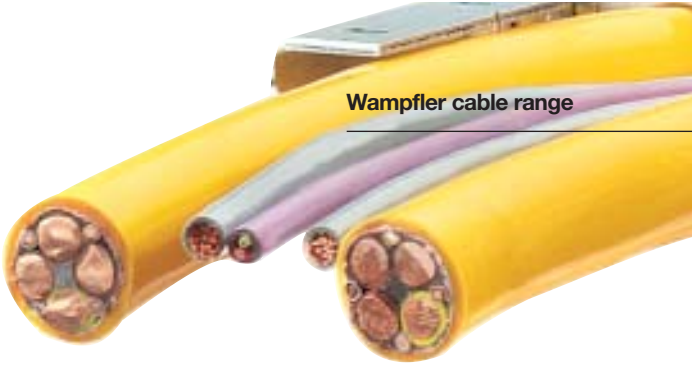
**Aluminum channels**
- Fast assembly, variable widths.
- Special stainless steel glider to prevent wear.
- Seawater resistant.
- Various installations possible.



**Steel channels**
(Galvanized or stainless steel)
- For use in aggressive operating environments.
- For steel chains that are not self-supporting.

**Rolling carriage**
Solutions for long travel distances for all chain types Viper, Cobra or Racer.
- reduction of driving forces by 90% by means of rolling friction
- self-guiding by means of flanged rollers
- no guiding channel required, only support tray mandatory
- for long durability

**Support tray**
(galvanized steel or stainless steel)
- for self-supporting chains and rolling carriage applications the use of a support tray is sufficient



# Single-source convenience!

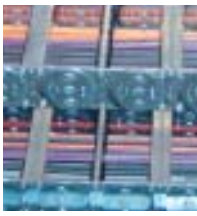
Wampfler delivers total solutions, including cables especially designed for our energy guiding chains.

Cables are the ”lifelines“ that permit safe, reliable transmission of energy and data. Wampfler’s ***LifeLine*** products cover the entire spectrum of potential applications. Of course, it goes without saying that our cables feature outstanding quality and comply with all international standards! The choice of the right cable can have a significant effect upon the overall service life of an energy guiding system. In addition, proper installation, the way the cables lie in the chain and the choice of the right strain relief means for the specific application are also factors that have to be taken into account to create a system the will deliver years of perfect performance.

Cables have to be able to take a lot of punishment – like ***LifeLine*** products!

***LifeLine***-features:
- UV-stable
- EMC-tested
- Oil-resistant
- DESINA-compliant
- UL/CSA-compliant
- Silicone-free
- Flame-retardant
- Min. bending radius 7,5 ø
- Halogen-free (PUR)
- Resistant to cold (PUR)

***LifeLine*** cables are especially designed for use in Wampfler energy guiding chains. The robust jacket protects the conductors and permits exceptional stability. The individually chosen strandings of conductors vary as a function of the mechanical and electrical properties required for the specific application.



| | ***LifeLine*** | Jacket | Interior use | Exterior use | Tmax | Tmin |
|---|---|---|---|---|---|---|
| Control lines | ***3011*** | PVC | recommanded | with reservation | 80° C | -5° C |
| | ***3012*** | PUR | | recommanded | 90° C | -30° C |
| Power lines | ***3021*** | PVC | recommanded | with reservation | 80° C | -5° C |
| | ***3022*** | PUR | | recommanded | 90° C | -30° C |
| Control lines shielded | ***3032*** | PUR | recommanded | recommanded | 90° C | -30° C |
| Power lines shielded | ***3042*** | PUR | recommanded | recommanded | 90° C | -30° C |
| Data and bus lines shielded | ***3052*** | PUR | recommanded | recommanded | 90° C | -30° C |

# Custom services!

Wampfler is a customer-focused, market-driven company, which explains why our customers can count on us to meet their specific needs and requirements when it comes to service. With Wampfler, everything is possible, from initial design and development to long-term service contracts, and you can decide exactly what you want. The more complicated your system is and the greater your expectations in terms of service life and operational reliability, the more sense it makes to take advantage of our after-sales service. When it comes to service, you can count on Wampfler to perform!

**Design and development**
- Initial programming to define requirements.
- Determination of minimum energy guiding solution.
- Selection of optimum energy guiding system in cooperation with the customer as a function of all considerations, including cost, service life, operating parameters, installation and the site.

**Preliminary assembly**
- Preparation of cables.
- Assignment of cables to chains as a function of design drawings and EMC requirements.
- Installation of separators and frame stays.
- Securing of cable ends.
- Preparation of energy guiding system for transport by suitable means.

**Final assembly**
- Supervision of assembly on site or:
- Complete assembly by our trained specialists.
- Additional six-month guarantee on energy guiding system installed by Wampfler specialists.

**Service agreement**
- Inspections at regular intervals.
- Appropriate measures to ensure long-term availability.
- All services required on site in the event of an incident, including materials

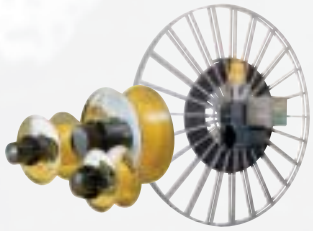
Wampfler's specialists provide complete support from initial programming and design to final assembly on site – worldwide!

Assembly: Precision work at breathtaking heights.

# Your Applications – our Solutions!

Energy guiding chains by Wampfler are but one component of the wide range of the Wampfler energy, data and media supply systems. The right solution for your application always ensues from the wholly specific application at hand. And many times, it is precisely the combination of several Wampfler systems that will render very convincing benefits.
You can find consulting and engineering competence in our companies and subsidiaries worldwide – just like our solutions!

**Festoon systems**
It's hard to imagine Wampfler cable trolleys not being used in virtually every industrial application: They're reliable and robust in an enormous variety of dimensions and designs.



**Cable reels**
Motorized reels and spring cable reels by Wampfler hold their own wherever energy, data and media have to cover the most diverse distances within a short amout of time – in all directions, fast and safe.

**Slip ring bodies**
Whenever things are really moving "in circles", the proven slip ring bodies by Wampfler ensure the flawless transfer of energy and data. Here, everything revolves around flexibility and reliablity!

**Conductor rails**
Whether they're enclosed conductor rails or expandable single-pole systems, the proven conductor rails by Wampfler reliably move people and material.

**Energy guiding chains**
The "Jack of all trades" when it comes to transferring energy, data and media. With their wide range, these energy guiding chains hold their own in industrial applications.

**Inductive Power Transfer IPT®**
The no-contact systems for transferring energy and data. For all tasks that depend on high speeds and absolute resistance to wear.

**www = wampfler world wide**


**Wampfler AG**
Rheinstrasse 27 + 33
79576 Weil am Rhein-Maerkt
Germany

Customer Support
Phone +49 (0) 76 21/66 22 22

Phone +49 (0) 76 21/6 62-0
Fax +49 (0) 76 21/6 62-144
info@wampfler.com
www.wampfler.com

wampfler

**solutions for a moving world**