

COMPOSANT+[®]

Crane components
for standards cranes



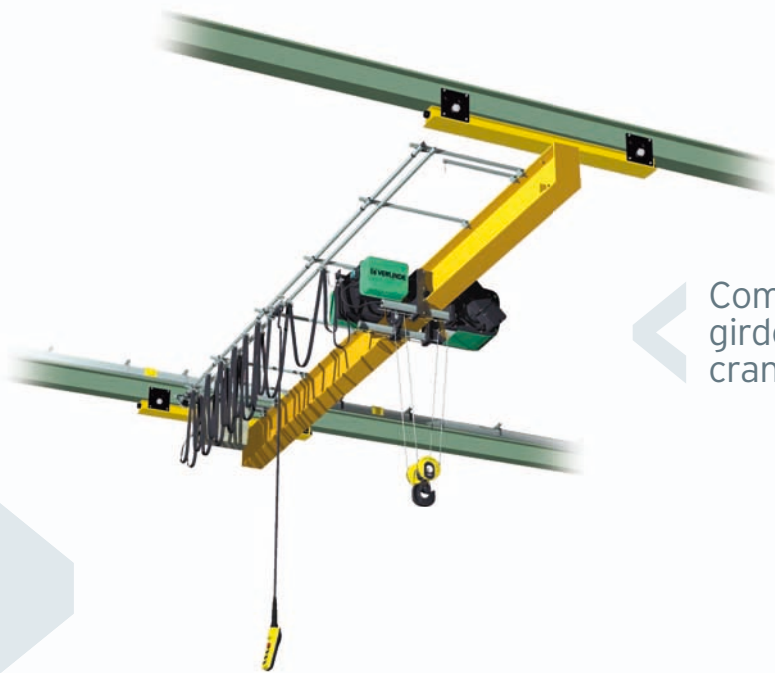
www.verlinde.com

 **VERLINDE**[®]
LIFTING EQUIPMENT

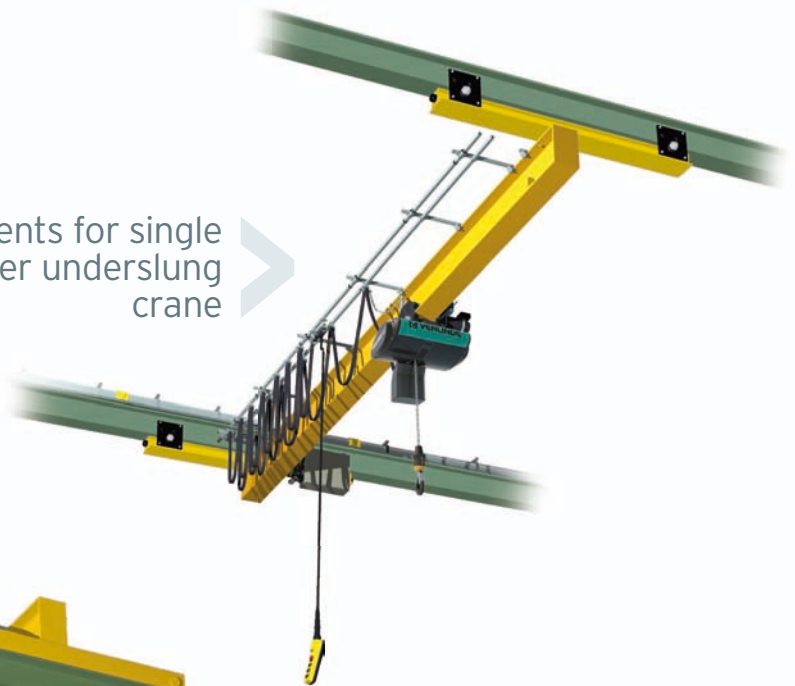
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COMPOSANT

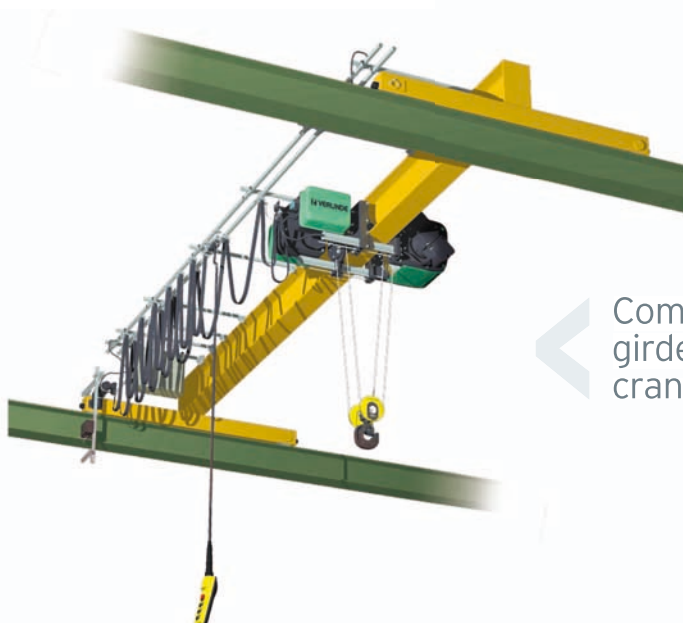
Complete range of components
for standard cranes for load
from 125 to 250 000 kg



Components for single
girder underslung
crane

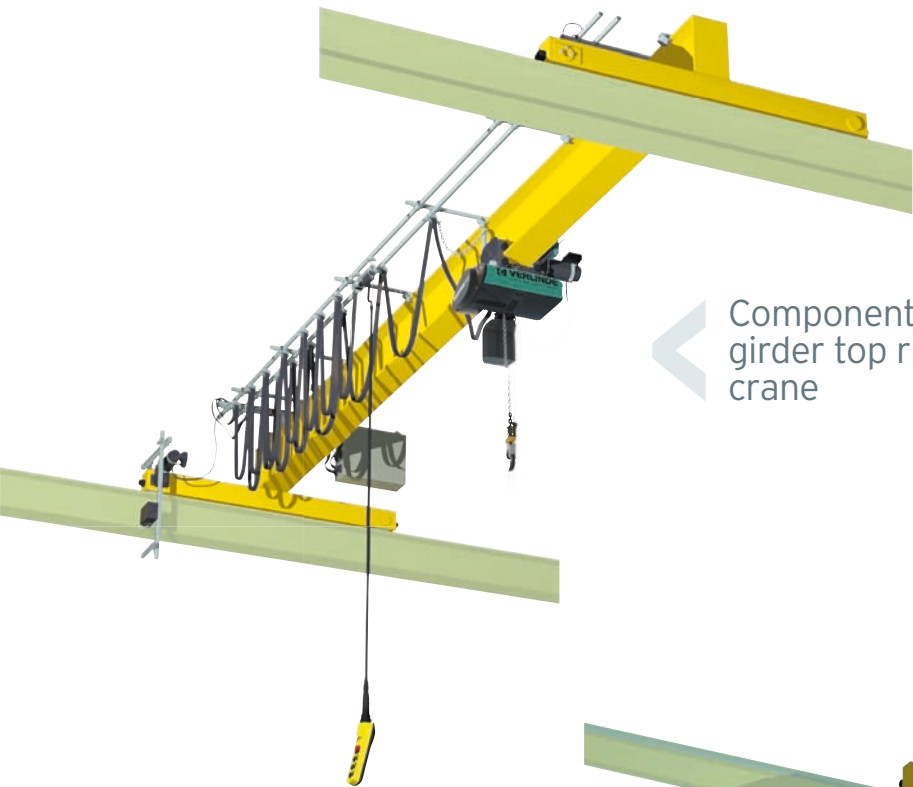


Components for single
girder underslung
crane



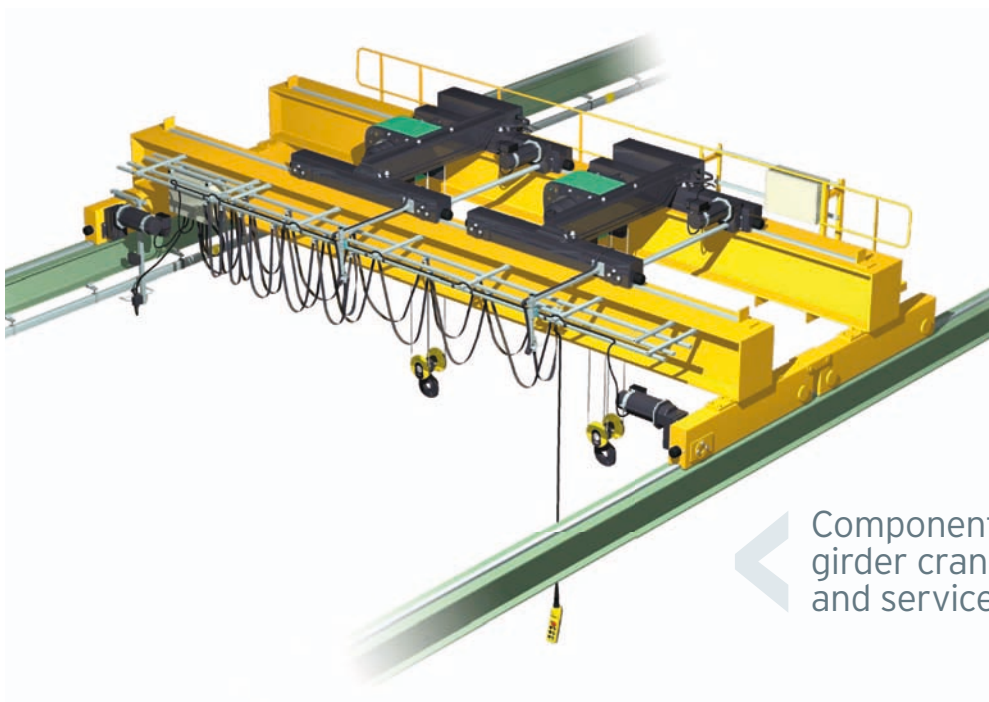
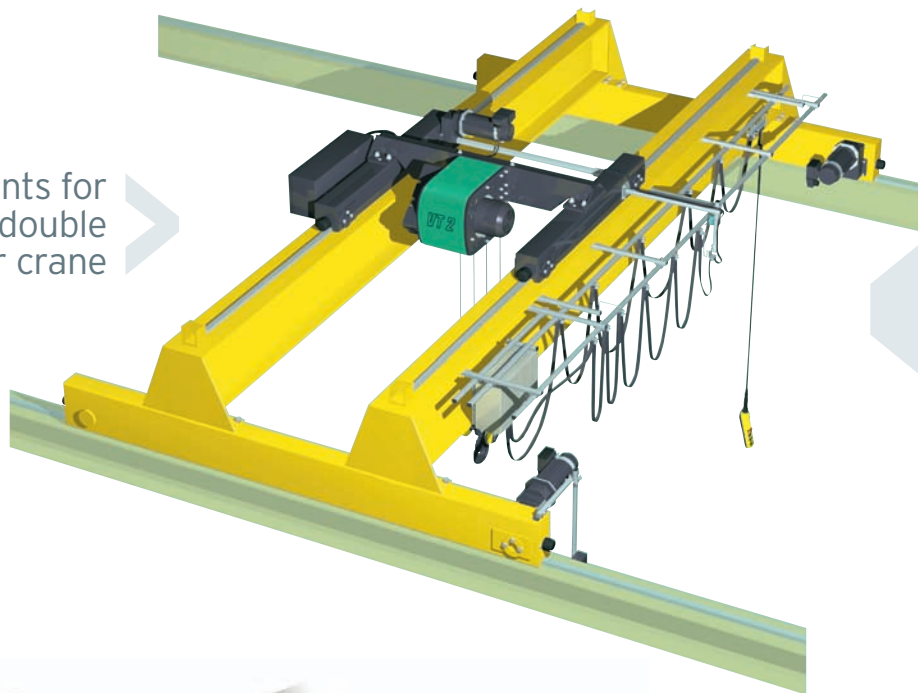
Components for single
girder top running
crane





Components for single girder top running crane

Components for double girder crane



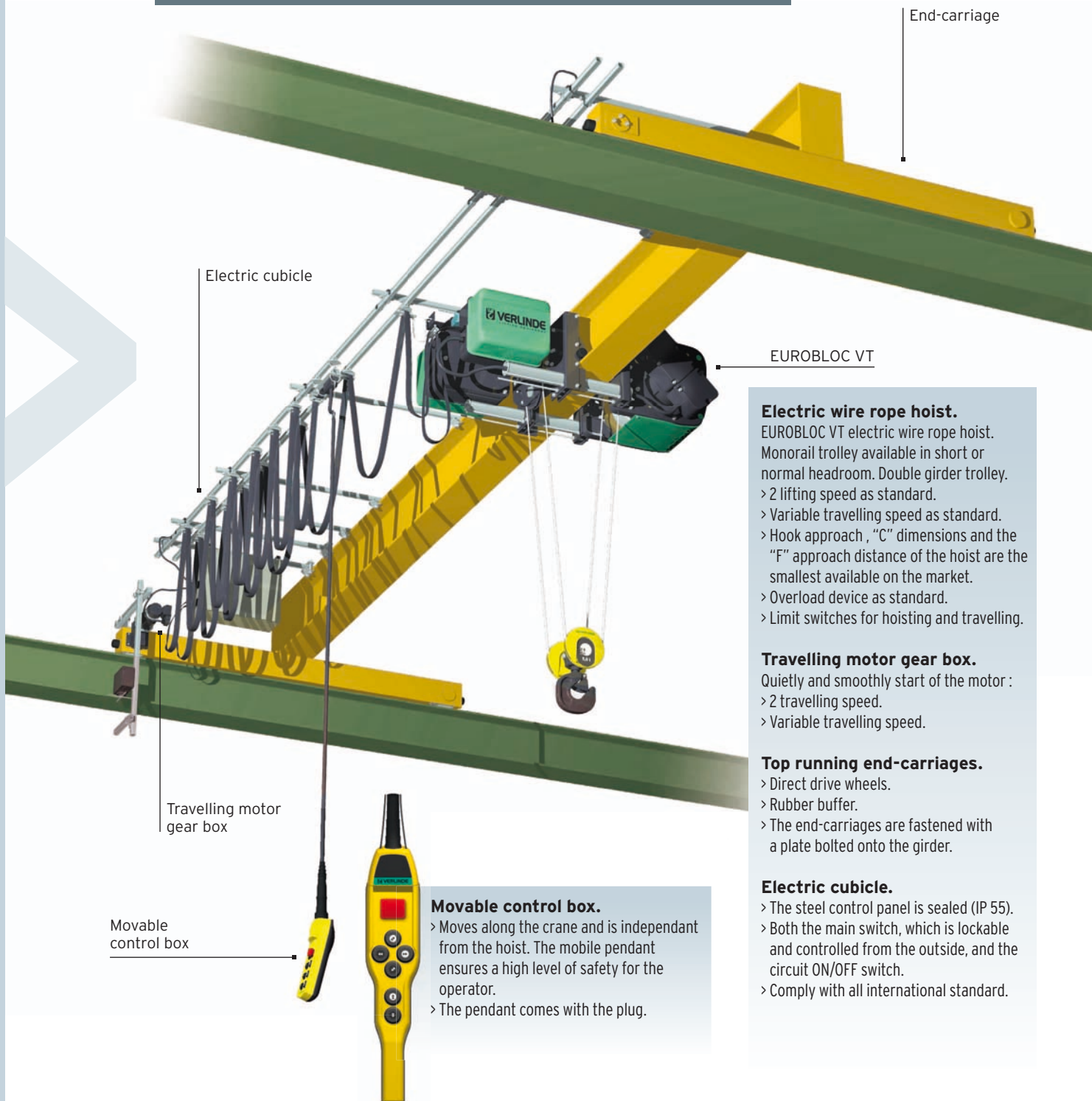
Components for double girder crane with twin hoists and service deck



COMPOSANT

Complete range of components
for standard cranes for load
from 125 to 250 000 kg

➤ Components for single girder top running crane
with power feeding line along the girder



EUROBLOC VT

Electric wire rope hoist.

- EUROBLOC VT electric wire rope hoist. Monorail trolley available in short or normal headroom. Double girder trolley.
- > 2 lifting speed as standard.
- > Variable travelling speed as standard.
- > Hook approach, "C" dimensions and the "F" approach distance of the hoist are the smallest available on the market.
- > Overload device as standard.
- > Limit switches for hoisting and travelling.

Travelling motor gear box.

- Quietly and smoothly start of the motor :
- > 2 travelling speed.
- > Variable travelling speed.

Top running end-carriages.

- > Direct drive wheels.
- > Rubber buffer.
- > The end-carriages are fastened with a plate bolted onto the girder.

Electric cubicle.

- > The steel control panel is sealed (IP 55).
- > Both the main switch, which is lockable and controlled from the outside, and the circuit ON/OFF switch.
- > Comply with all international standard.

Movable control box.

- > Moves along the crane and is independent from the hoist. The mobile pendant ensures a high level of safety for the operator.
- > The pendant comes with the plug.

Movable control box

Travelling motor gear box

Electric cubicle

End-carriage



Components for single girder top running crane with cable chain power feeding line

Travelling motor gear box.

- Quietly and smoothly start of the motor :
- > 2 travelling speed.
- > Variable travelling speed.

Top running end-carriages.

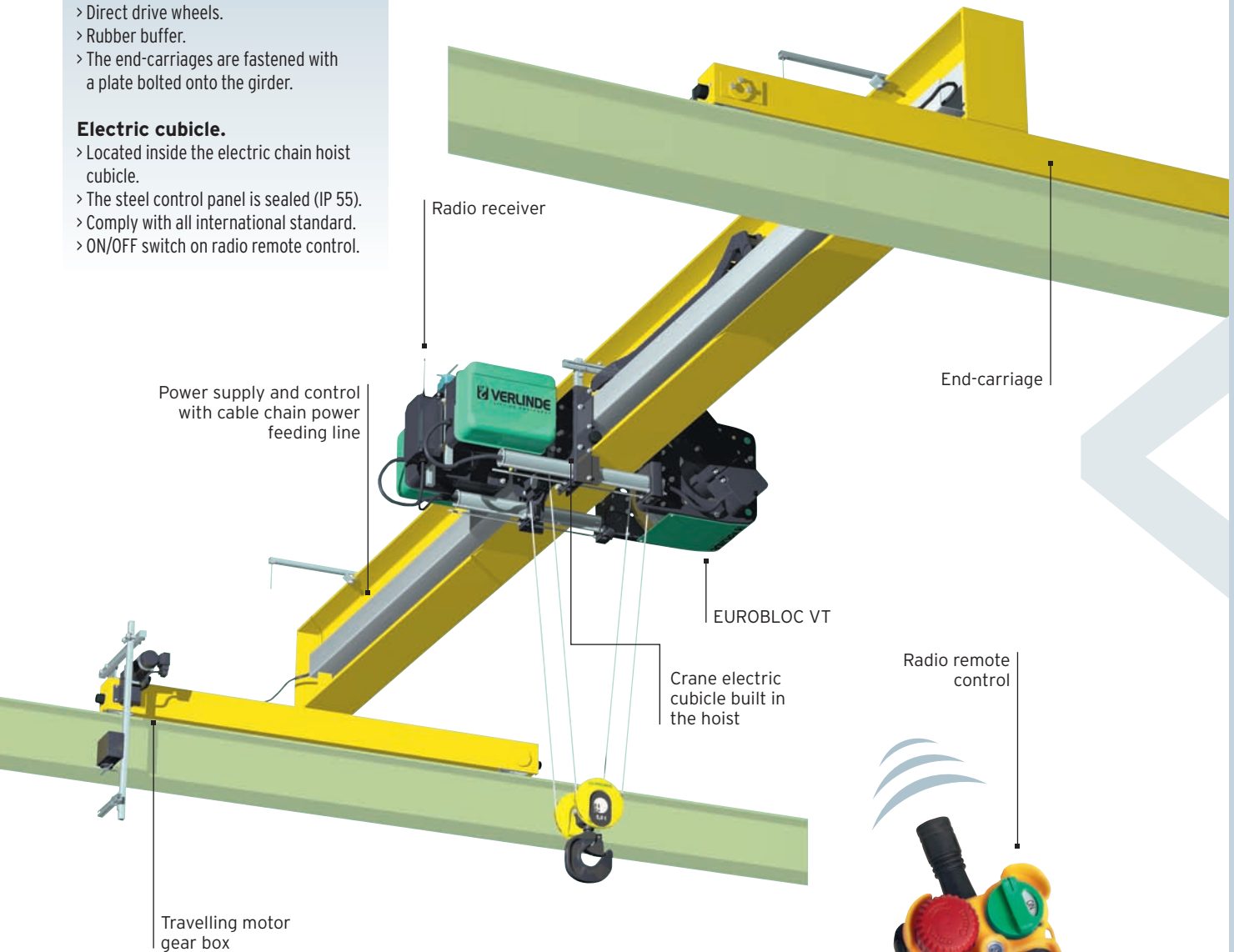
- > Direct drive wheels.
- > Rubber buffer.
- > The end-carriages are fastened with a plate bolted onto the girder.

Electric cubicle.

- > Located inside the electric chain hoist cubicle.
- > The steel control panel is sealed (IP 55).
- > Comply with all international standard.
- > ON/OFF switch on radio remote control.

Electric wire rope hoist.

- EUROBLOC VT electric wire rope hoist.
- Monorail trolley available in short or normal headroom. Double girder trolley.
- > 2 lifting speed as standard.
- > Variable travelling speed as standard.
- > Hook approach , "C" dimensions and the "F" approach distance of the hoist are the smallest available on the market.
- > Overload device as standard.
- > Limit switches for hoisting and travelling.



Options

- > MT 2 (Electronic control and recording status of the hoist and crane: SWP, time running, starts, overloads, temperature, load, brake, etc.).
- > Display with load indication on hoist, hook, control box or crane.
- > Twin hoists.

Radio remote control.

The MICROMOTE remote control systems have been specifically designed for use with EUROBLOC hoists and VERLINDE crane components.

Designed for the most demanding industrial environments, MICROMOTE remote control systems are easy to use, flexible and reliable.

MICROMOTE means improved operator productivity and safety during hoisting operations and savings made through increased productivity and a reduction in idle time.

Delivery as standard with horn on push button box.



EUROBLOC VT[®]

Electric wire rope hoist for load from 800 up to 80 000 kg



+ safety

Travelling. Variable travelling speed for precise positioning of loads.

Wire rope. in galvanized steel as a standard, high safety factor (factor 4,6 -FEM 2m).

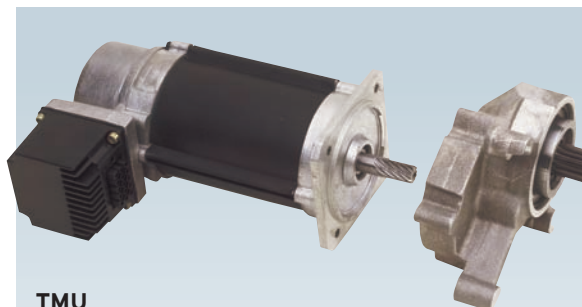
Electrical cubicle. The cover can be folded back so that you can store your tools for maintenance (the cover has two steel safety wires to prevent it from falling).

MT2. Electronic control of the recording of hoist solicitation status.

Electrical. Low voltage control for more safety.

Traverse wheels. The 4 steering wheels are fully streamlined for improved safety.

Hook and pulley block. Rotating hook and pulley block with safety latch.



TMU

The compact travel motor, which is especially designed for travelling in lifting equipment, is equipped with a variable speed system that is a standard equipment.

Maximum speed range is 2 to 32 m/min. IP 55 protection.

The motor is designed to ease any necessary maintenance:

- > "Intelligent" easy system for motor positioning and assembly onto the trolley.
- > The motor receives power from a single plug that can be unbound easily.

+ ergonomics

Hook and pulley block. Ergonomical hook (area to grab and hold).

Push button box. Made with tinted polypropylene, grounded, with double insulation, ergonomical (IP 65 protection). Optional load display available

Electrical cubicle. Located on the side of the hoist, easily accessible. The open/close system uses a quick closure method.

+ easy maintenance

Hoisting motor. Motor cooling increased by 30 % (tunnel effect)

Hoisting brake . The brake is tested for hoist longevity under normal use conditions.

Steering motor-reducer. Steering reducer with one rail and a permanently lubricated connection.

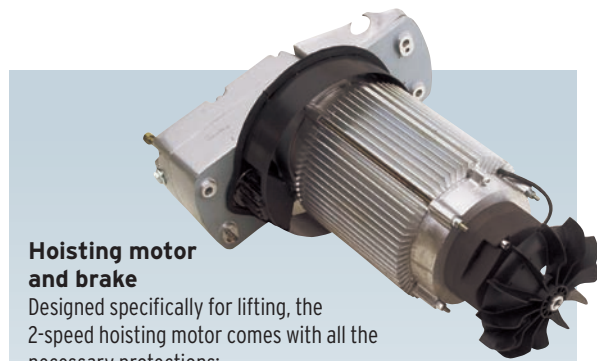
Drum. The drum has been completely covered for better protection.

Rope guide. Built "without spring" so that it can be more easily replaced during maintenance.

Electrical cubicle. The wires go in and out by means of steel plugs that can be unbound and that are built into the case.

MT2. Calculation of the SWP (Safe Working Period) Assembly is in modules, for easier management of spare parts for replacement.

Surface treatment. 2- component epoxy paint with 120 µ for greater protection.



Hoisting motor and brake

Designed specifically for lifting, the 2-speed hoisting motor comes with all the necessary protections:

- > Type IP 55 protection and F insulation class.
- > Bimetal sensor
- > Cooling fins enlarged significantly to encourage heat dissipation.

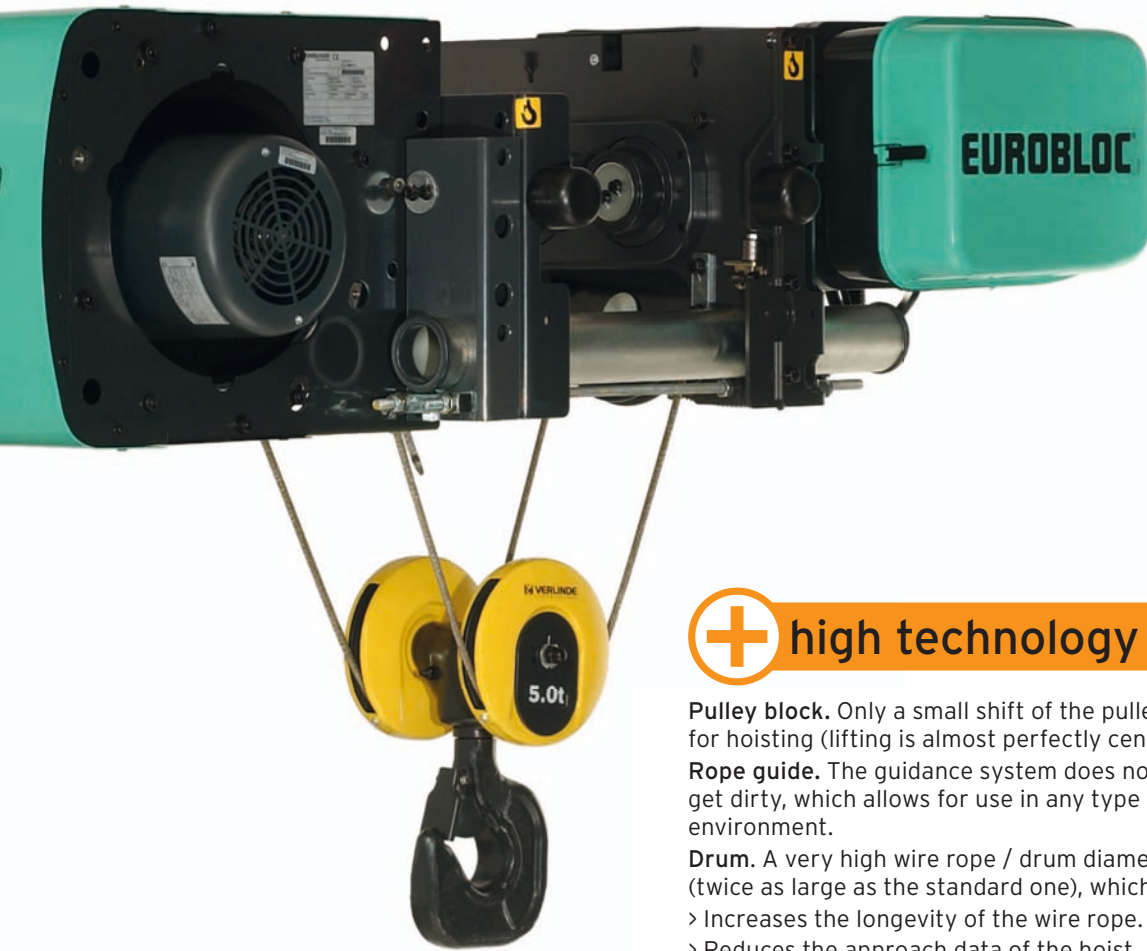


Hoisting drum

There is a special patent for drum assembly and drum rotation without ball bearings.

Advantage: this prevents grease and steel particles from falling into the motor.





+ high technology

Pulley block. Only a small shift of the pulley block for hoisting (lifting is almost perfectly centred).

Rope guide. The guidance system does not get dirty, which allows for use in any type of environment.

Drum. A very high wire rope / drum diameter ratio (twice as large as the standard one), which:

- > Increases the longevity of the wire rope.
- > Reduces the approach data of the hoist.
- > Reduces the "C" approach data of the hook.

Electrical case. Quite large, it is equipped with the speed variation module as a standard

Lifting gearbox. Direct impulse gearbox unit, helicoid toothed gears, permanently lubricated, detector to prevent pressure overload.

Optimal positioning of steering rollers. The 4 steering rollers equally share the load in order to optimise your tracks

+ savings

Hoisting motor. 60 % operating factor and tropicalised as a standard for greater longevity.

Travelling motor. Tropicalised as a standard for greater longevity.

Pulley block. The best "C" dimension on the market for optimal use of the size of your buildings and optimal use of work areas.

Travelling. Variable travelling speed to reduce wear on steering rollers.

Load limiter. As ordered by the directive on "Machines" (required equipment). All EUROBLOC VTs are equipped with a load limiter as a standard (safety measure in the event of hoist overload). For greater longevity.

Hook and pulley block. Doesn't take up much space, permanently lubricated rollers, pulleys are in GGG cast iron, very resistant. A high pulley/wire rope diameter ratio gives the wire rope greater longevity.



MT2

EUROBLOC VT can be equipped with the optional MONITOR 2 (Electronic control of the recording of the hoist's tractive effort states: SWP, time running, starts, overloads, temperature, load, brake, etc.).

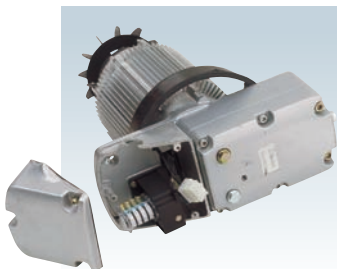
Rope guide

New rope guided system "very high performance" for difficult environments.



Gear limit switches

The limit switch with 4 cams can be accessed on the gear unit and is used for managing the upper and lower limit switches of the hook, switching from low to high speed, and for managing phase reversals.



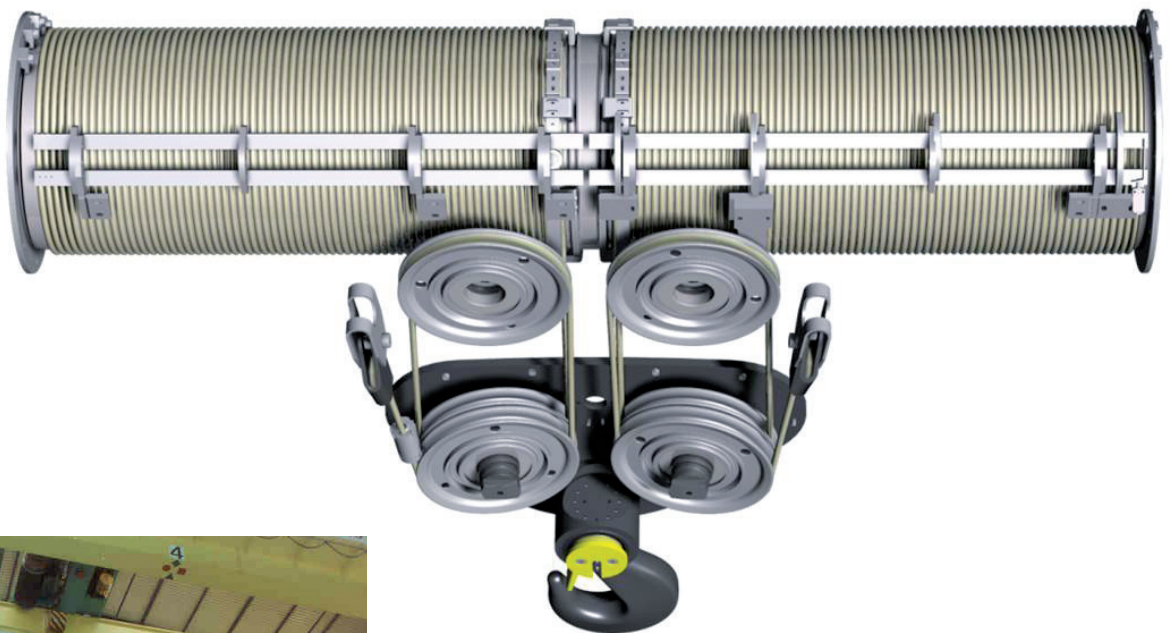
EUROBLOC

VT 9-10-11-12[®]

Electric wire rope hoists for loads from 10 000 up to 250 000 kg

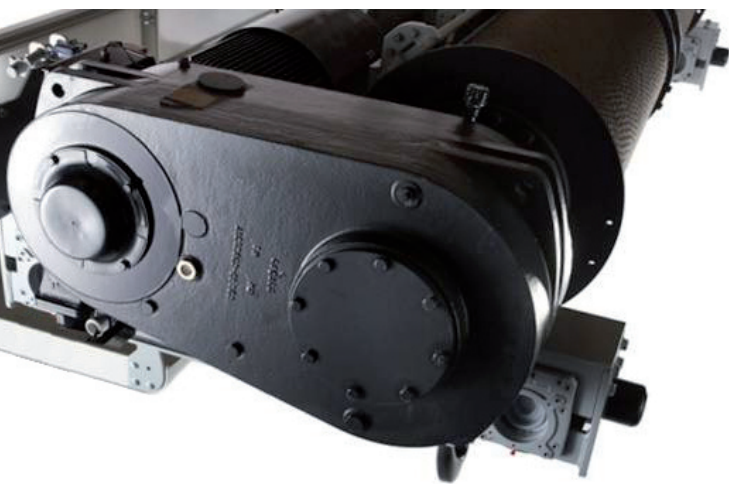
The EUROBLOC VT family has now been widened to include the VT9-10-11-12. This line of open winches offers technical solutions to meet your requirements for:

- > A greater hoist capacity (10 to 250 tons).
- > Lifting height (up to 103,6 m).
- > Utilisation group (ISO classification up to M6).
- > Hoist speed.
- > Speed control (speed variation).



Technical characteristics

- > High performance hoist motor.
- > Very high safety level of hoist brake.
- > Smart supervision of brake by the variator with slip or jamming detection feature.
- > Double safety system for end of travel lifting (limit switches with detection of top and bottom position together with a limit switch tripped by the rope lead-off).
- > Travel limit switch as standard.
- > Overload protection.
- > Winch supervision with Monitor system.
- > IP55 and IP66 components.
- > Hoist motor insulation class F/H, IP55 protection, thermal protection.
- > Epoxy paint (thickness 120µm).



Advantages

- > Rapid and variable hoisting speed (with closed loop variator).
- > Virtual vertical lift.
- > Large load capacities avoiding use of twinned hoists.
- > A standardised maintenance platform available as option.
- > Optimal positioning of rollers on trolley enable best distribution of load on bearing structures.
- > An innovative rope guide system reduces stress on the wire rope and lengthens life span.
- > The large diameter drum provides:
 - increased life span of hoist rope.
 - reduction in rail widths and approach distances to optimise the working area of the winch.

Options available

- > Service platform.
- > Double brakes.
- > Wire rope press roller.



EUROCHAIN VR[®]

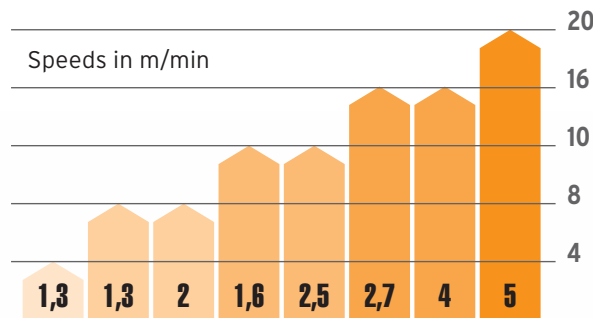
Electric chain hoist for loads from 63 up to 5 000 kg*

+ speed

Wide range of speeds.

25% quicker than the previous generation: 4/1,3; 8/1,3; 8/2; 10/1,6; 10/2,5; 16/2,7; 16/4; 20/5.

The lifting speed ranges have been considerably expanded to enable them to better meet your production constraints and increase productivity, performance, safety and usage on a daily basis.



+ power

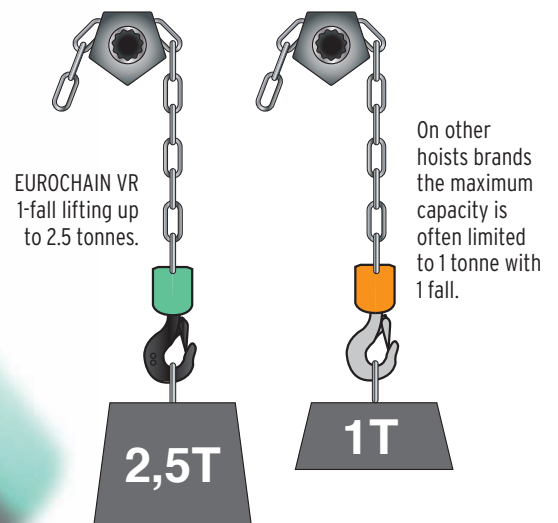
Lifting capacities.

The load spectra for each hoist body have been revised upwards to optimise your lifting equipment investment.

1-fall lifting up to 2.5 tonnes in FEM 2m.

This product advantage offers you the possibility of working at greater lifting heights, with the following benefits :

- > Reduction in chain bag dimensions, with a more compact lifting unit.
- > Reduction in maintenance costs (fewer lifting chains to be replaced if necessary during maintenance operations).
- > Elimination of lifting hook tip-over risks.
- > High lifting speeds preserved.



FEM user group up to 3m.

For intensive use of your hoist, up to 300 start-ups per hour !

+ savings

Maintenance operations are now simpler, quicker and more economical:

- > Easy access to the brake setting.
- > Easy access to the clutch setting.
- > Easy access to the fuse.
- > Access (workspace) and easy removal of the electric boards by removable plug.



safety

Clutch concept.

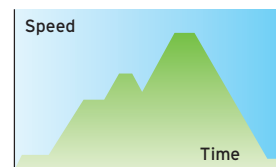
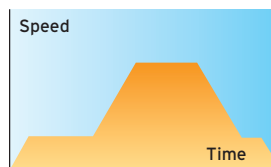
The clutch position in the reducer ensures the load is held by the brake regardless of the machine's daily operating conditions.

Options available

- > Gear limit switch.
- > Second brake on lifting motor.
- > Attachment by eyelet (perpendicular) to replace the upper hook.
- > Automatic closure lifting hook.
- > Travelling limit switch.
- > Short headroom trolley.
- > Trolley for curved track.
- > Dual-speed travelling trolley carriage (20 & 5 m/min).
- > Slow speed travelling trolley (3 to 10 m/min).
- > High speed travelling trolley.
- > Additional button on pendant unit.
- > Wall-mounted command.
- > Direct voltage hoist control to replace the low voltage.
- > Manual brake release.
- > Rain protection.
- > Reinforced protection.
- > Total protection for operation in Zone 22.
- > Reinforced tropic-proof protection.
- > Hoist available in a version that complies with CSA standards.

Variable speed electric travelling.

The variable speed travelling combined with the high lifting speeds enables flexible and quick working in complete safety for the operator.



Load wheel, electric limit switch.

A new patented concept, the 5-pockets lifting nut has 5 intermediate teeth for perfect control over the lifting chain.

This innovation enables better guidance for the chain and avoids any risk of jamming. Increased operating safety and reduced maintenance costs.

The lifting hook's maximum up and down positions are secured by the electric limit switch located under the chain guidance system.

The switches are activated alternately by the lifting hook's upper cone and the slack fall stop.



*Load capacity from 3200 to 10.000 kg by EUROCHAIN VL, technical characteristics differs from VR range.



EUROLIFT *BH*[®]

Electric belt hoist for load from 500 up to 5 000 kg

+ safety

Travelling. 2 traveling speeds (20/5 m/min or 10/2,5 m/min for BH2) for more accurate positioning of your loads

Belt. Excellent ability to withstand attack by acids, immune to solvents, rot-proof and fire retardant.

Electrical cubicle. 48 V control. The cover is equipped with two anti-drop type steel safety cables (BH2) or hinges (BH5).

Belt guide. high safety feature against side pulling and twisting effects during hoisting movement.

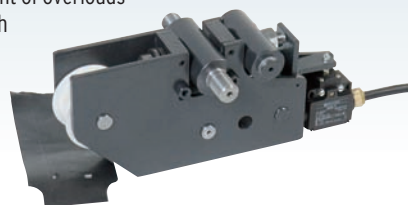
Gear box

3 steps helical gear, life-lubricated (semi-fluid grease), comprising O-ring seals and lip seal at shaft end (BH2).



Overload limiter

The hoist has a load limiter as standard equipment, preventing hoisting in the event of overloads (in compliance with the European "MACHINES" Directive).



+ ergonomics

Push button box. With in-depth colored polypropylene with double insulation and ergonomic design (IP 65 protection).

Lifting motor

2-speed motor, electromagnetic brake featuring automatic wear compensation. IP 55 protection. Class F insulation.



Lifting belt

High strength polyester belt. Flame-retardant with good dimensional stability and excellent ability to maintain its strength after immersion in boiling water.

Excellent ability to withstand attack by acids.

Immune to attack by solvents. Rot-proof.

BH5: Dynema belt (this belt has the same characteristics as those of the BH2, with a greater safety factor).



+ savings

Lifting motor. High operating factor ensuring longer service life.

Hook block. Small "C" dimensions and hook "approaches", enabling you to design your building to optimum size and make maximum use of the available working space.

Travel. Travelling motor with IP 55 protection and type F insulation, ensuring maximum service life.

Electric cubicle

> 48V low voltage control.

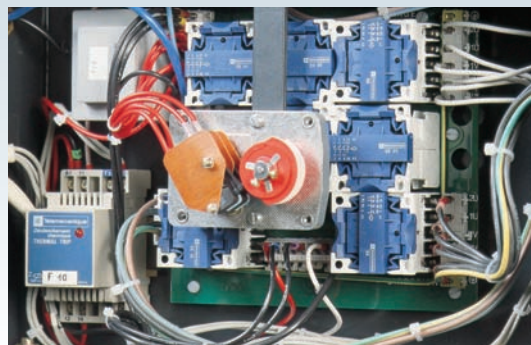
> Printed circuit for standard voltage.

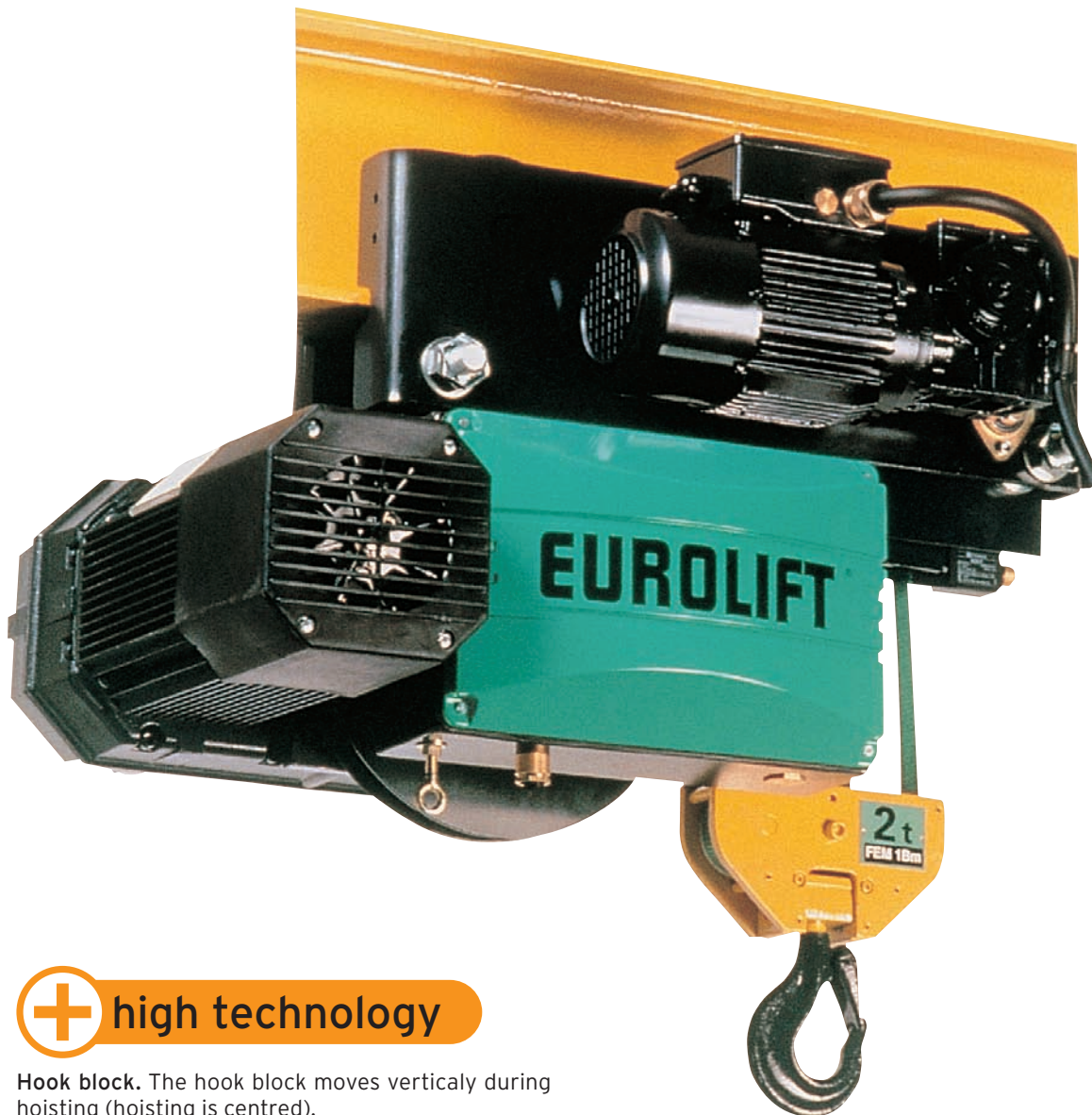
> NFE 52070 standard.

> Upper and lower limit switches.

> Hoisting motor protected by thermal sensors.

> IP 65-protected low voltage control push button box.





+ high technology

Hook block. The hook block moves vertically during hoisting (hoisting is centred).

Belt guide. No fouling of the guide system, whether used in any type of environment.

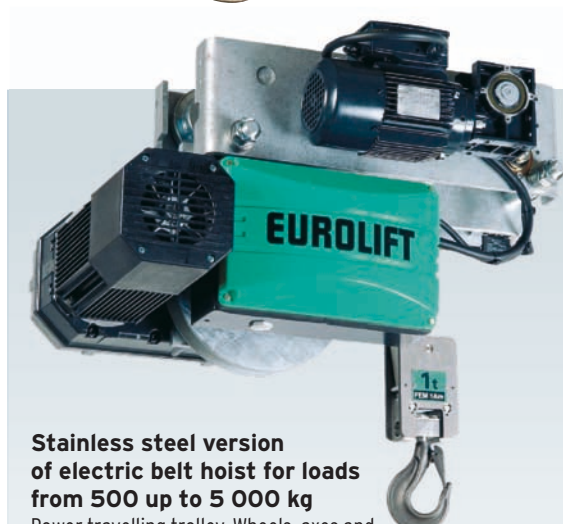
Drum. The very high ratio of the belt diameter/drum extends the service life of the belt.

Electrical cubicle. Generously dimensioned, comprising all electrical components as standard.



Hook block

Possibility of stainless steel hook block and hook.



Stainless steel version of electric belt hoist for loads from 500 up to 5 000 kg

Power travelling trolley. Wheels, axes and diverter sheaves undergo anti-corrosion treatment to improve protection against external sources of aggression. The side plates of the trolley and spreader and the plates of the structure are hot dipped galvanised. The side plates of the drum and the drum support are hot dipped galvanised. Hook block. Hook, lower cross head and bearing are in stainless steel, for applications in environments with a high level of relative humidity.

Gear box. The gear box mounting is hot dipped galvanised for anti-corrosion protection.



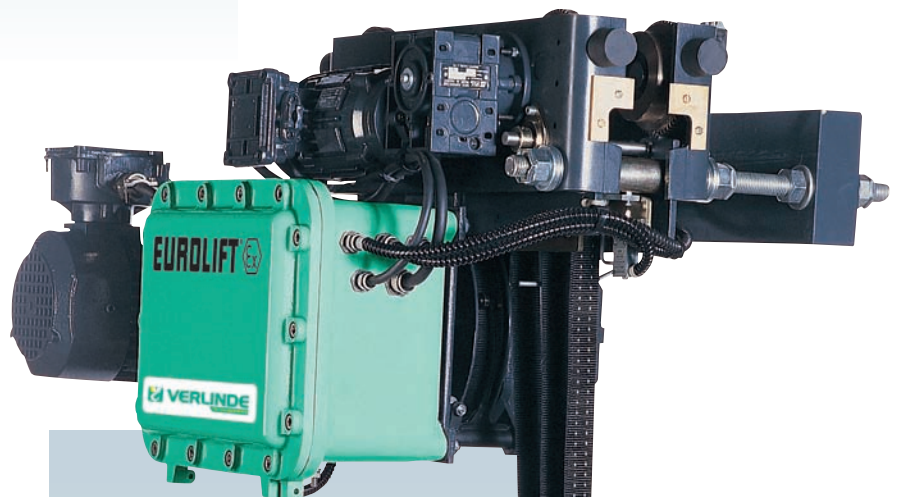
Electric explosion and sparkproof hoists



EUROBLOC VT

Electric wire rope hoist

- > Hook approach, "C" dimensions and the "F" approach distance of the hoist are the smallest available on the market.
- > 2 hoisting speed.
- > Variable travelling speed.
- > Hoist available in short or normal headroom trolley and double girder trolley.
- > Overload device.
- > 4 step gear limit switches.
- > Electric wire rope hoist available in explosion proof and spark proof version. Manufactured according to Atex directive.



EUROLIFT BH

Electric belt hoist

- > Specially designed for food and chemical industry...
- > Electric trolleys fixed to hoist.
- > Electric trolleys with short headroom as standard.
- > High resistance polyester belt, Fire retardant, maintains its strength after immersion in boiling water.
- > Gear limit switches.
- > Electric belt hoist available in explosion proof and spark proof version. Manufactured according to Atex directive.



EUROCHAIN VL

Electric chain hoist

- > Compact and high performance hoist.
- > Large range of hoisting speed available.
- > Electric trolleys fixed to hoist.
- > Hoist available in short or normal headroom.
- > Galvanized load chain.
- > Torque limiter.
- > Electric chain hoist available in explosion proof and spark proof version. Manufactured according to ATEX directive.



VARIATOR®

Travel and lift speed control system for hoists and travelling cranes



VARIATOR speed control systems offer greater operating precision and flexibility for your lifting equipment.

► Technical characteristics

VARIATOR speed control systems have been specially designed to be used with EUROBLOCK and EUROCHAIN hoisting tackles and VERLINDE crane components. VARIATOR systems offer, with a single product, a reliable and comprehensive speed control solution (variable speed drive together with its dedicated software, brake management, main breaker, electronic surveillance system, ...) coupled with easy installation and operation.

Why should you vary the speed of your hoisting equipment ?

► Varying the speed enables the operator to move his load with greater accuracy and flexibility. VARIATOR enables the speed to be adapted to suit the load and the user's know-how of the hoisting system and production process.

► Product advantages

- Reduces the pendulum effect and can even cancel it (ESP option).
- Increases the mechanical life span of suspended cranes and the electrical life span of lift and trolley motors.
- Increases productivity of your hoist station.
- Reduces energy consumption and the size of supply lines.
- Reduces maintenance costs.
- Optimal utilisation of work space
- Smaller investments and faster return on investment.

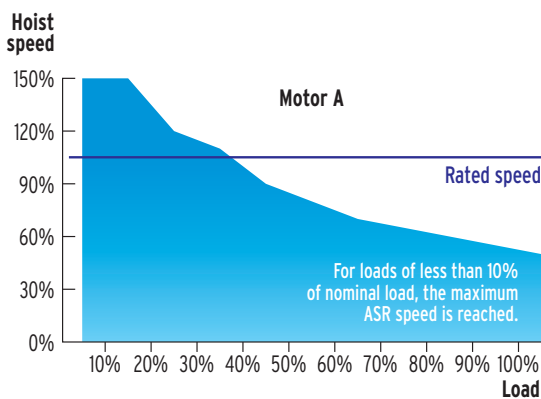


VARIATOR ASR® & ESR®

This recent feature allows lift speed and motor torque to be dissociated: speed - for the reduction of cycle time to enhance hoist station productivity when running empty, and motor torque - for lifting when loaded to ensure precision travel with a maximum power margin.

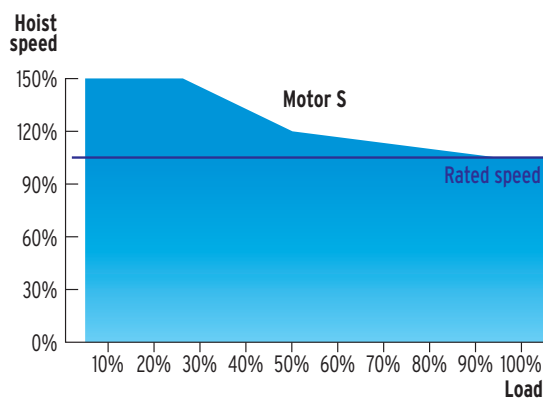
ASR® (Adapted Speed Range)

This option enables hoist speed to be automatically adapted to the hook suspended load.



ESR® (Extended Speed Range)

This option allows reduction of cycle time (faster return speed for empty returns) therefore of FEM group duty.



Basic principle of operation

For most applications with type A (ASR) motors (up to 35% of nominal load), you can use the hoist at its rated speed, even above.

Product advantages

- > Up to 50% energy savings
- > Speed depending on load obtained automatically.
- > Productivity and safety enhancement.
- > Enhancement of load travel accuracy.
- > Best return on investment.
- > Optimal use of work space and of approach data of hook.
- > Increased motor life span.
- > Use of low amperage for crane power supply to reduce the cost of investment in power-feeding systems.
- > Depending on standards and local tax systems, grants can be obtained within the framework of energy saving policies.

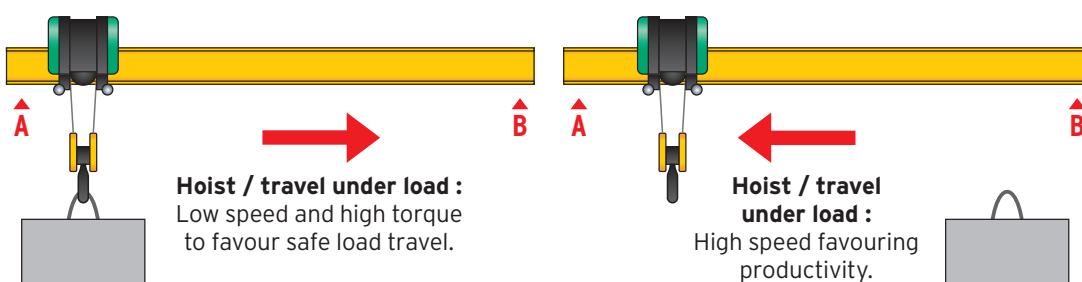
Basic working principle

Type S (ESR) motors can be operated at full speed at up to 40% of the rated load, the max. motor speed remaining at 3000 rpm.

At 20% of the load, the rated speed is the equivalent of 150% of listed speed. With nominal load, the rated speed is the equivalent of the listed speed.

Product advantages

- > Maximum ESR speed, 1.5 times greater than standard speed.
- > Productivity enhancement.
- > Enhancement of load travel accuracy.
- > Optimal use of work space and approach data of hook.



ESP[®]

Automatic load swinging (pendulum) correction system

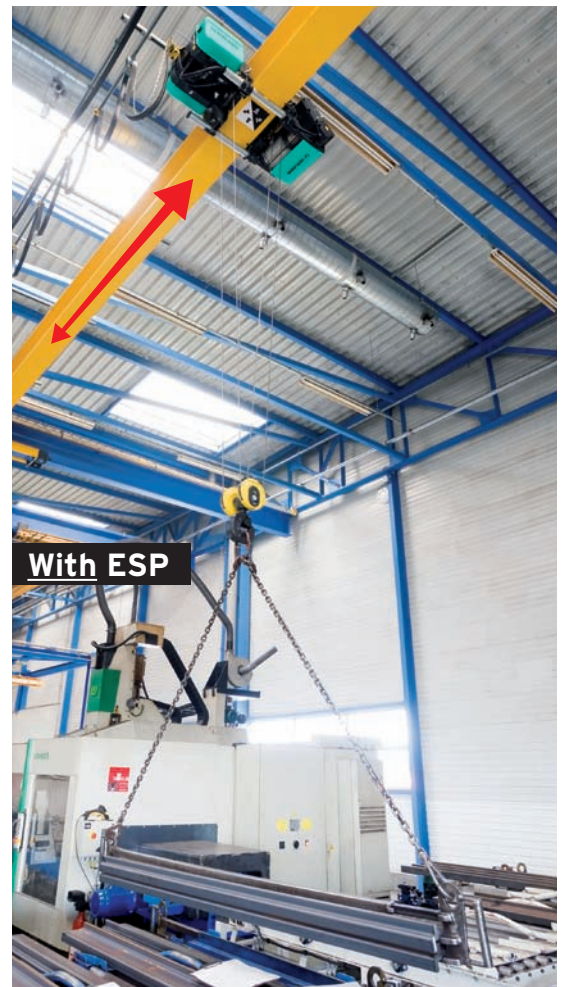
The effects of the swinging of loads (pendulum effect) travelling under a suspended crane were traditionally reduced if the operator had enough experience to manage load inertia movement during travel.

Basic working principle

The principle of the control of load swinging is based on the calculation of swing movement time and lifting height. ESP calculates and automatically corrects the to-and-fro movements of the hook suspended load.

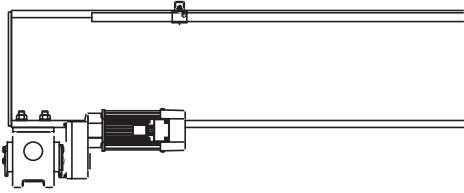
Product advantages

- › Easy parameterization of over length slinging from the control interface.
- › Increased productivity of the hoist station.
- › ESP allows the user to make use of the whole of the work space; swing correction is achieved throughout load travel whatever the height and position of the load.
- › Enhanced safety for the user personnel of the hoist station.
The operator can concentrate on the load to be shifted and not on the movements of the travelling crane.
- › Reduction of maintenance coats (reduction of the effects of mechanical stress on the structure and electrical stress on the motors)

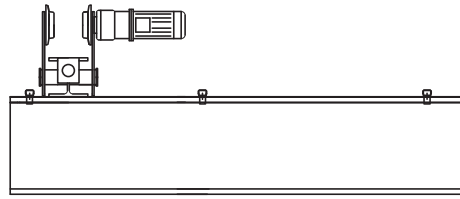


End-carriage joint plates

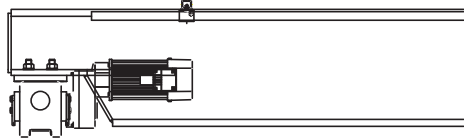
Top running single and double girder "TOP CONNECTION"



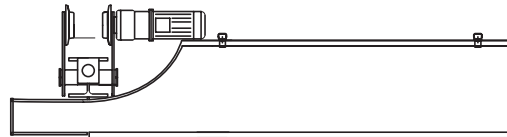
Underlung single girder "TOP CONNECTION"



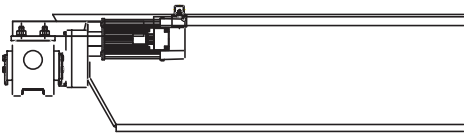
Top running single and double girder "MEDIUM CONNECTION"



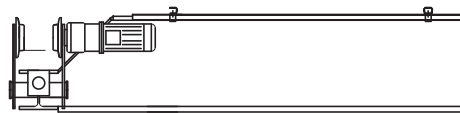
Underlung single girder "MEDIUM CONNECTION"



Top running single and double girder "LOW CONNECTION"



Underlung single girder "LOW CONNECTION"



Standards and hoisting regulations



CE directive. Since 129 December 2009, the European Machinery Directive (2006/42/EC) applies to the sale and assembly of all new machines marketed from 2010. The new decree is complementary to the former Directive, made up of 600 standards issued in 1995. That directive obliges that machine constructors ensure that their machinery complies with certain regulations, standards, national legislations and technical specifications.

F.E.M. European lifting equipment association.

S.W.P. Safe Working Period. A Safe Working Period is calculated for each electrical hoist unit according to the average operating time of the hoisting equipment, load capacity and class of application.

After this period, a general service carried out by the constructor is necessary.

Class of operation. According to FEM classification, two fundamental criteria must be taken into account : the type of duty and the class of duty (according to average daily operation time average load).

ISO standard. Classes of operation can also be defined according to ISO grouping (1Am =M4, 2m =M5, 3m =M6, etc.).

Type of duty.

> **Light service.** Equipment rarely subject to maximum load and frequently to very little load.

> **Medium service.** Equipment rarely subject to maximum load and frequently to very little load.

> **Heavy service.** Equipment frequently subject to maximum load and frequently to medium load.

> **Very heavy service.** Equipment frequently subject to maximum or near maximum load.

| Average daily operating time (hours) | | | ≤ 0,5 | | ≤ 1 | | ≤ 2 | | ≤ 4 | | ≤ 8 | | ≤ 16 | | |
|--------------------------------------|---|----|------------|-----|------|-----|------|-----|------|-----|------|----|------|----|----|
| Class of duty | | | V0,25 | T2 | V0,5 | T3 | V1 | T4 | V2 | T5 | V3 | T6 | V4 | T7 | |
| Type of service | 1 | L1 | Light | | | | | 1Bm | M3 | 1Am | M4 | 2m | M5 | V4 | M6 |
| | 2 | L2 | Medium | | | 1Bm | M3 | 1Am | M4 | 2m | M5 | 3m | M6 | | |
| | 3 | L3 | Heavy | 1Bm | M3 | 1Am | M4 | 2m | M5 | 3m | M6 | | | | |
| | 4 | L4 | Very heavy | 1Am | M4 | 2m | M5 | 3m | M6 | | | | | | |
| Group | | | | | | | 1Bm | M3 | 1Am | M4 | 2m | M5 | 3m | M6 | |
| Duty factor* | | | | | | | 25 % | | 30 % | | 40 % | | 50 % | | |
| Number of star starts per hour | | | | | | | 150 | | 180 | | 240 | | 300 | | |

■ FEM 9511 standards classification. ■ ISO standards classification.

* Duty factor in % = $\frac{\text{Hoisting time} + \text{lowering time}}{\text{Hoisting time} + \text{idle time} + \text{lowering time} + \text{idle time}} \times 100$



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- A comprehensive range of 30 groups of lifting equipment from 60 to 250,000 kg.
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Abroad:

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References

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