# The SH wire rope hoist

01.2021

*Partner of Experts*

STAHL CraneSystems®

# The SH wire rope hoist

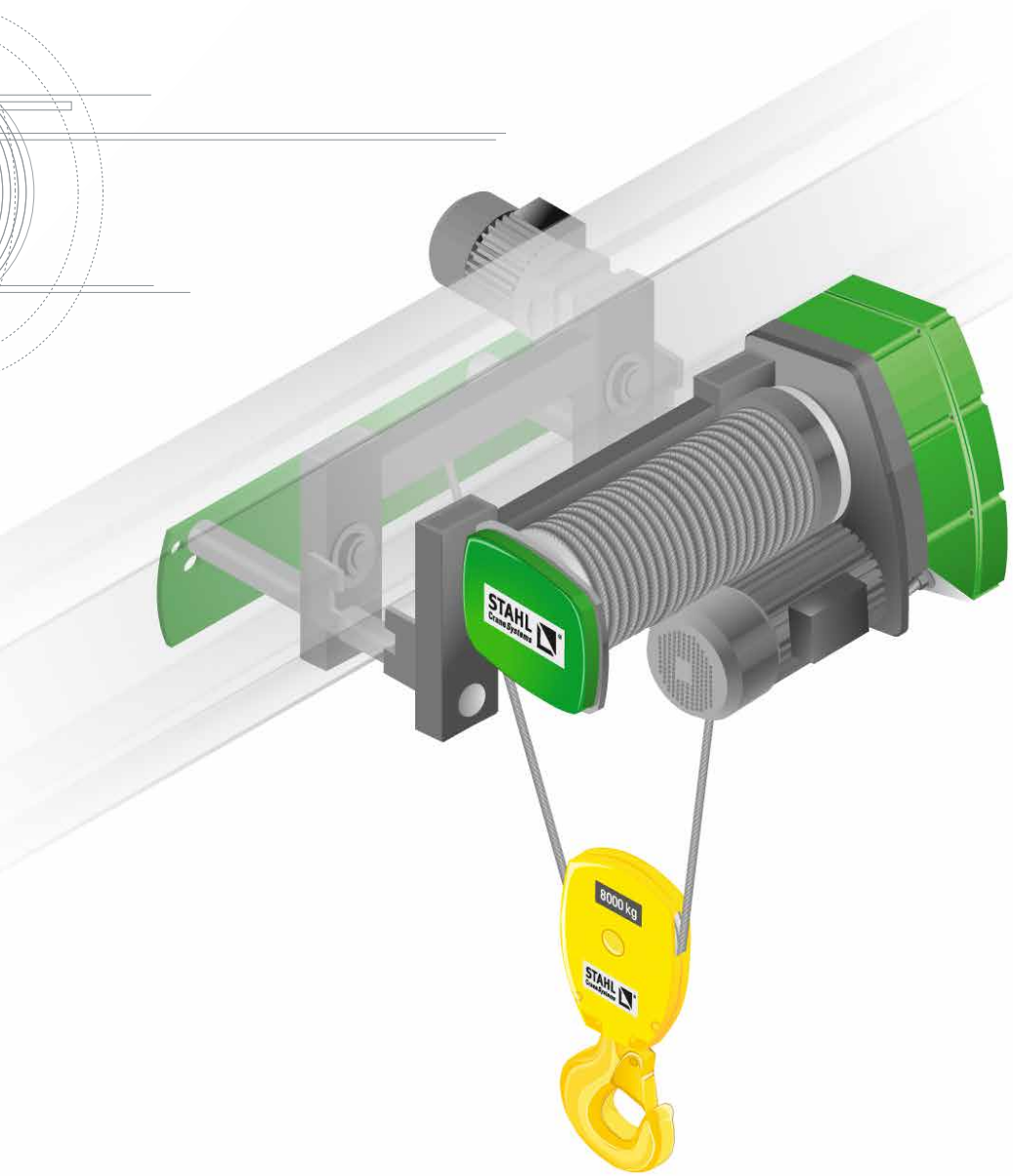
The SH wire rope hoist portfolio is known around the world as a premier offering in advanced lifting and crane technology. With a compact design, high-performance features, and field-proven, low-maintenance components, the SH is a go-to wire rope hoist for end-users, crane builders, and system manufacturers, globally.

Standard and custom precision-manufactured components can be combined to provide the ideal specialised solution for many applications. Due to its modular design, the SH can be tailored to your exact requirements and needs. The SH portfolio is available in capacities ranging from 500 kg to 32,000 kg in five frame sizes with 27 load capacity variants. These wire rope hoists can be used for stationary hoisting or together with a trolley for use in standard and custom cranes as well as system manufacturing.

If applications require explosion protection or use in outdoor or harsh environments, we bring decades of experience as one of the leading manufacturers of explosion-proof technology. For areas where explosion protection is needed, the SH wire rope hoist can be designed to meet ATEX/IECEx Zone 1, Zone 2, Zone 21 or Zone 22 as well as NEC and CEC Class I Division 1 and Class I Division 2 requirements. Hoists can also be designed to meet INMETRO, KOSHA, and TC RU standards. The SH is also available with IP66 protection required for outdoor use or if the hoist is exposed to water jets. If protection from condensation or extreme cold is required, the SH can be modified to meet those needs. A leader in lifting and crane technology, we will provide the exact SH wire rope hoist for your application.

**The facts**

- 5 frame sizes, 27 load capacity variants
- Stationary design or different trolleys for cranes and systems manufacture
- Standard high-quality safety components for increased safety at work
- Largely maintenance-free, low wear and long service life according to FEM/ISO standards
- Equipped as standard with two hoisting and travel speeds
- Very smooth starting and braking characteristics
- U-shape makes for compact dimensions
- Optionally available in explosion-protected design in compliance with ATEX/IECEx, NEC, CEC, INMETRO, KOSHA, and TC RU certifications




KE monorail trolleys with SH series wire rope hoists are available in standard version for load capacities up to 16,000 kg.

**STAHL CraneSystems® & Magnetek®: Best-in-class performance. Industry-leading control.**

With the SH wire rope hoist, intel ligence comes standard. The SH combines the high-performance and reliability you expect from a STAHL CraneSystems wire rope hoist with industry-leading design and control features Magnetek provides.

Every SH wire rope hoist can be equipped with Magnetek inverters, giving you a one-of-a-kind-intelligent option for your lifting applications. Known throughout the industry for their userfriend ly controls and extensive built-in safety features, Magnetek inverters keep your hoist up and running with the precision and accuracy you expect for al l your lifting needs.

The SH is also available with Magnetek rad io remote controls that incorporate the latest electronic technology in a lightweight, ergonomic design for ease of use. Whether you need a pushbut ton control or joystick controller, our Magnetek radio remote controls can be customised to almost any application.

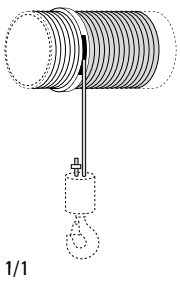
Together, STAHL CraneSystems and Magnetek provide intelligent technology for all of your lifting and positioning needs.

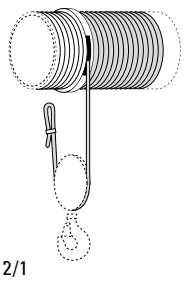
# The models and trolley options

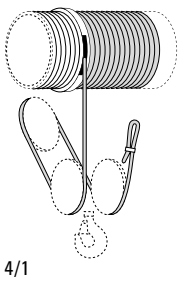
The SH wire rope hoist is available with a variety of rope drum and trolley options, providing flexibility and versatility in any application. Systems can be tailored to your specific requirements as stationary hoisting or towing equipment, for use with a trolley, or for systems manufacturing. Trolleys are equipped with two travel speeds as standard. Other speeds, as well as variable frequency drives, are available as options. Compact construction and extremely short approach dimensions help make optimum use of a restricted space.

**Single-grooved rope drum**
The model with single-grooved rope drum is used for stationary hoisting or towing equipment or combined with various trolley options.

**Standard reeving**

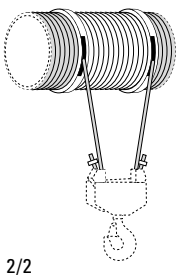

1/1

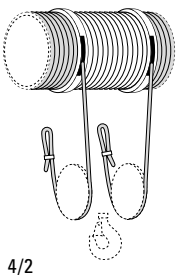

2/1

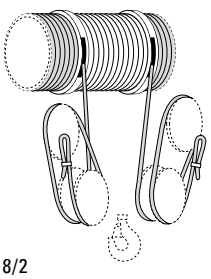

4/1

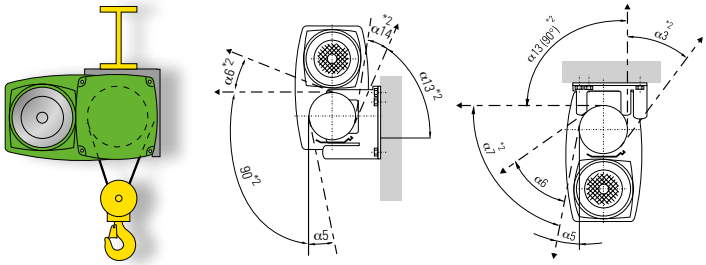
**Double-grooved rope drum**
If true vertical lift is required, we recommend this model with double-grooved rope drum (right-/left-hand thread). This version can be used both in stationary form or with trolleys.

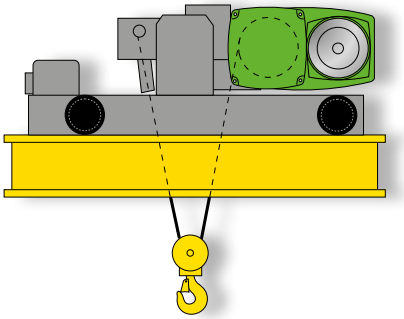
**True vertical lift**


2/2


4/2

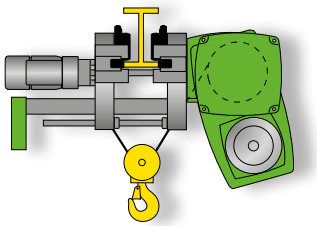

8/2

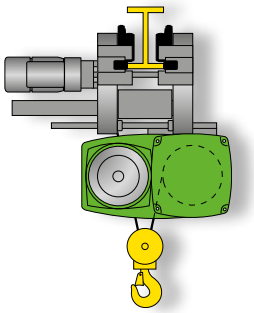


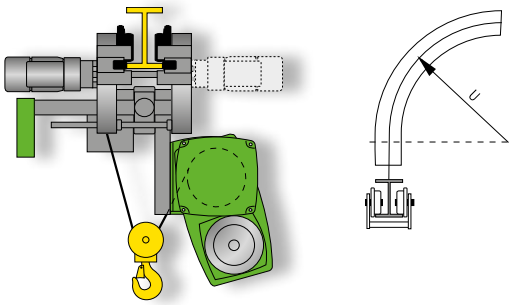



**Stationary model**
The SH wire rope hoist can be used as stationary hoisting or towing equipment, for example in systems manufacturing. Depending on the application, the rope lead-off angle, the attachment of the hoist, and the mounting position of the hoist motor can be varied.

**OE double rail trolley**
The OE double rail trolley is intended for use on double-girder overhead travelling cranes. Compact construction allows for low approach and headroom dimensions where space is limited. The double rail trolley is available with various track gauges for the full load capacity range and automatically compensates for any unevenness of the cross travel runway.








**KE monorail trolley**
The KE monorail trolley is used on monorail runways and single-girder overhead travelling cranes. The extremely low headroom of the trolley makes long hook paths possible even in areas with low ceilings.

**UE monorail trolley**
The overall width of the UE monorail trolley is minimal and specially designed for narrow clearances. It is used on monorail runways and single-girder overhead travelling cranes.

**DKE articulated trolley**
The DKE articulated trolley is available for frequent travel around bends and narrow radii. Depending on radius of bend, runway flange width, or application, it is equipped with one or two travel motors. The DKE articulated trolley is designed for load capacities up to 10,000 kg.

■ Standard
□ Option

| Typ | Load Capacity up to [kg] | Stationary | OE Double Rail Trolley | Monorail Trolleys | | |
|---|---|---|---|---|---|---|
| | | | | KE | UE | DKE |
| **SH 3** | 3,200 | ■ | ■ | ■ | ■ | ■ |
| **SH 4** | 6,300 | ■ | ■ | ■ | ■ | ■ |
| **SH 5** | 10,000 | ■ | ■ | ■ | ■ | ■ |
| | 12,500 | ■ | ■ | ■ | ■ | □ |
| **SHR 6** | 16,000 | ■ | ■ | ■ | ■ | □ |
| **SH 6** | 25,000 | ■ | ■ | □ | ■ | □ |
| | 32,000 | ■ | ■ | □ | □ | □ |

# The technology

Advanced, reliable technology is built into every SH wire rope hoist. The nearly maintenance-free components of the modular wire rope hoist are designed to work together, providing optimal operation, high efficiency, and long service life. The standard safety components, including a geared limit switch, motor temperature control, overload device, and optional secondary brake, increase safety for the operator and your facility.

## 1 Rope and rope guide

- Highly flexible special rope with long service life
- Field-proven enclosed rope guide in spheroidal graphite cast iron has no temperature limitations
- The GJS material (previously designated GGG 40) is suitable for highest and lowest temperature ranges
- 360° rope tensioner prevents the formation of rope slack

## 2 Paint

- Standard paint treatment as per RAL 6018 yellow-green and RAL 7021 black grey
- High-quality primer and top coats for standard applications
- Off-standard paint treatment for outdoor use or corrosive ambient conditions
- Shade as per customer's requirement

## 3 Overload cut-off

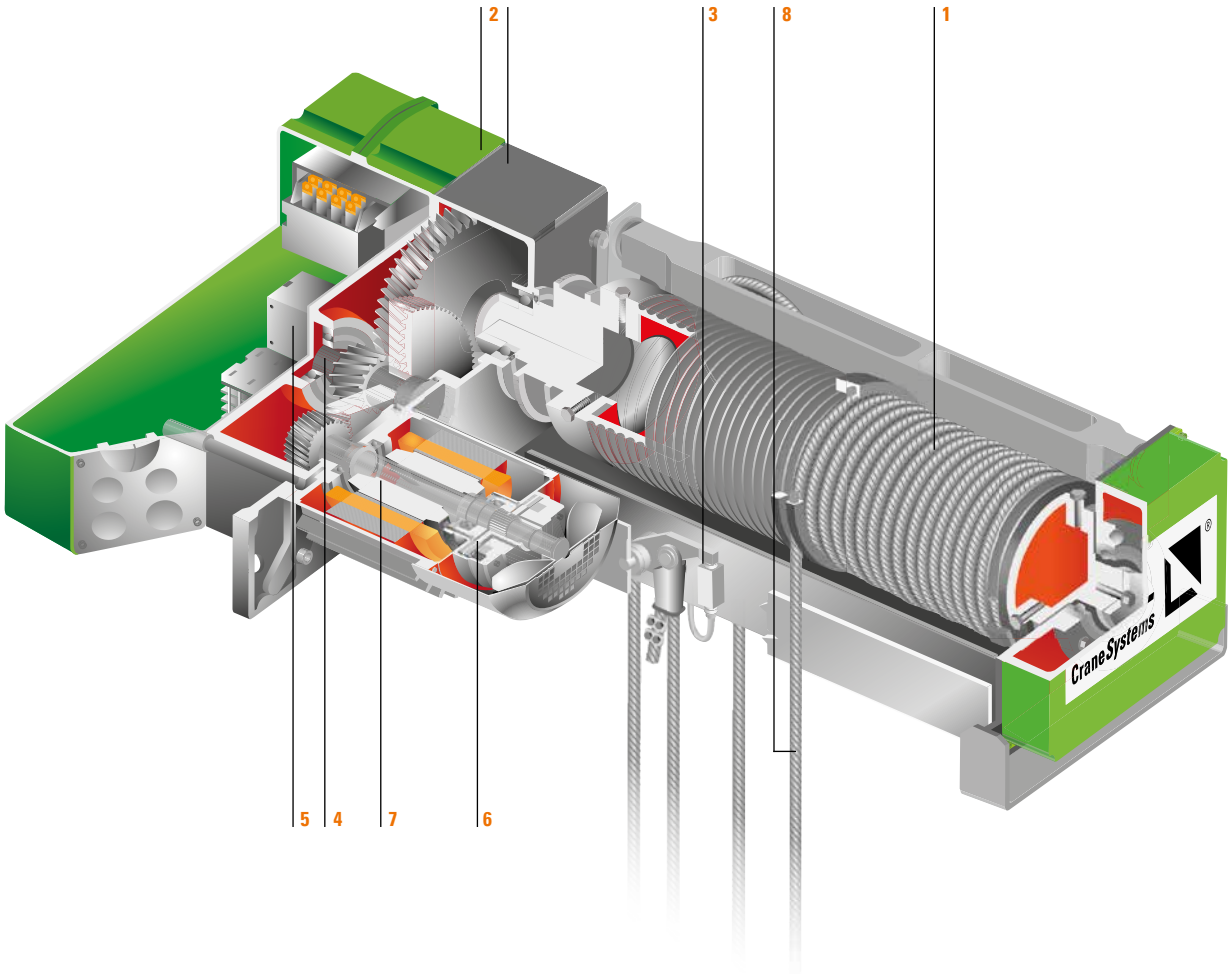
- Permanent electronic monitoring of suspended loads
- Limitation of the maximum load by load measurement at the rope anchorage possible in the case of multiple reeving

## 4 Hoist gear

- All gear stages with lifetime lubrication in oil bath
- Modern technology ensures quiet operation

## 5 SLE/SMC control and motor management

- Condition monitoring as standard
- Inching operation is suppressed to reduce stress on equipment
- All common control voltages available
- High degree of safety due to oversized contactors
- Temperature monitoring of the hoist motor and travel motor




## 6 Brake

- Low-maintenance, asbestos-free brake needs no adjustment
- Long service life thanks to oversized brake
- Brake easily accessible for inspection from outside
- Motor management ensures low wear
- IP65 protection, IP66 optional

## 7 Motor

- Special-purpose motor for hoisting applications
- Classification according to FEM/ISO standards, high-duty-cycle and switching operation frequency motor
- IP55 protection, IP66 optional, thermal class F
- Motor outside rope drum, highly efficient motor cooling, maintenance-friendly
- Temperature control by PTC thermistors

## 8 Rope drive

- Optimised ratio of drum-to-sheave diameter ensures low wear on rope
- Flexible and long-lasting wire rope
- Wear-resistant return sheaves, fine machining provides rope-friendly grooves in rope drum
- Drum easily accessible for rope replacement
- Robust bottom hook block with low headroom in spite of large dimensioning of hook

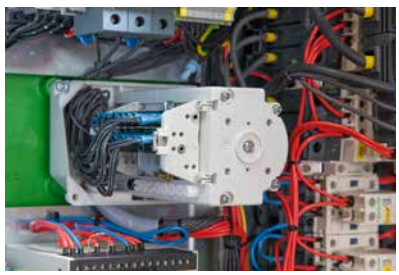
# The options

The SH wire rope hoist portfolio is available with a variety of options designed to increase the performance, safety, and versatility of the hoist, but also allow for customisation to meet exact application needs. With everything from custom control pendants and limit switches to load displays and brakes, the SH wire rope hoist can be designed for your needs. If you require a custom option not listed on the following pages, you can visit our website at www.stahlcranes.com, or contact us directly.

**Control pendant**

- Robust control pendant with EMERGENCY STOP palm button and control cable
- All switching elements for hoist, cross, and long travel are 2-step
- IP65 protection
- Additional buttons, such as horn activation, can be easily fitted

**Emergency hoist limit switch (gear limit switch)**



- As standard, the hoist is equipped with a geared limit switch for top and bottom hook position and an operational limit switch for top hook position
- As an option, up to eight switching elements can be fitted to the switch. This permits further stopping positions and operational limiting in bottom hook position

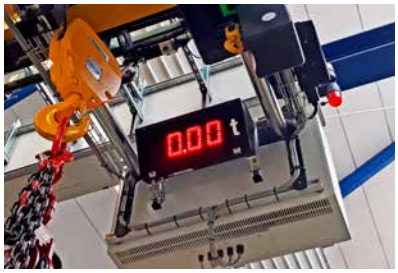
**SMC Multicontroller**

- Continuous load monitoring by overload cut-off even if hoist is idling
- Overload protection with ALC automatic load control
- Load spectrum memory for load-related operating time summation
- Operating data registration, e.g. operating hours, load spectrum, motor switching operations and load cycles
- Data exchange with PC possible

## Travel limit switch

- Optional travel limit switches on trolley for cross travel
- Limiting for both directions of travel
- Switchover from »fast/slow« (predisconnect)
- Switch contacts designed for control current
- IP66 protection

## Load display




- SLD four-digit 7-segment load display (STAHL Load Display), large format, luminous red
- Available with various interfaces including CAN
- Choice of 60, 100 or 150 mm digit height
- Combinable with the hoist's overload sensor and the SMC multicontroller available as an option, no additional fixtures or load attachment devices are required, the headroom of the hoist remains unchanged

## Signal transmitters

- Visual and acoustic signal transmitters such as horn and flashing light can be mounted on trolleys
- Signal transmitters can be activated by a button on the control pendant

## Manual release of hoist brake

- The brake release device permits the hoist brake to be released manually, allowing the load to be lowered during a loss of power
- As an option, every hoist can be equipped with this supplementary equipment to the standard brake

## Rope drum brake

- Redundant brake system provides increased safety
- Intercept and holding brake prevents the load falling even if the gear should break
- Control is effected by a speed sensor and safety device

# The radio remote control options

Our extensive portfolio of Magnetek-brand radio remote controls can be customised to meet the needs of almost any application. Our rugged pushbutton and joystick controllers provide equipment operators with better positioning for job visibility, safety, data feedback, and extended machine life. From traditional units to our most sophisticated systems, our product portfolio provides total radio control when combined with a variety of receivers. Magnetek radios are compliant with EN ISO 13849-1 PL d and are optionally available in explosion-protected design in compliance with ATEX/IECEx. Radios for tandem cranes are designed to EN 15011.

## Flex Wave

The Flex Wave offers secure and dependable communications, innovative performance, and advanced features that enhance safety and efficiency for your lifting and positioning applications. Transmitters are ergonomic and lightweight to provide comfort to operators and are constructed of industrial-strength nylon and fiberglass composite materials for long-lasting operation.

- Channel scanning schemes for anti-interference
- Zero G to prevent unintended equipment motion
- IP66 rating for indoor or outdoor environments
- Options for added protection and flexibility, such as a rubber boot or vinyl cover

## Flex Vue®

The Flex VUE includes a high-resolution, built-in colour display that keeps operators informed of system status and diagnostics at all times to maintain effective system functionality. With diagnostic information available at your fingertips, you can address issues more quickly, plan maintenance, and ultimately reduce downtime.

- Quick configuration to get you up and running fast
- Adjustable speed control for precise control of machine movement
- Nylon housing that withstands shock, water, heat, and harsh environments
- Compact and lightweight design to prevent operator fatigue

## MLTX2™

The MLTX2 is one of the most lightweight bellybox transmitters available today, designed to enhance operator comfort. Choose from a variety of levers, joysticks, and toggle switches to customise to your exact needs.

- Access code system for peace-of-mind, as the signal only operates the intended equipment
- Synthesised frequency generation to enhance reliable operation
- IP66 rating to withstand harsh, industrial environments
- Available with ATEX and IECEx approvals for Zone 0, Zone 1, and Zone 2 applications:
  · ATEX Approval: II 1 G Ex ia IIC T3/T4 Ga
  · IECEx Approval: Ex ia IIC T3/T4 Ga
- Optional graphic display and two-way feedback to keep you informed of system status at all times

| | | Standard | Optional |
|---|---|---|---|
| Ambient temperature | | –20 °C to +40 °C | –40 °C to +80 °C |
| Protection to IEC/EN 60529 | | IP55 | IP66 |
| Paint | Colour | Black-grey/yellow-green RAL 7021/6018 | All other colours from RAL colour chart |
| | D.F.T. | 60 µm to 80 µm | 120 µm to 320 µm |
| | Finish/Powder coating | Polyurethane topcoat | Epoxy-resin base (240/320 µm) |
| Control pendants | | – | Control pendant with/without load display |
| | | | Pushbutton or joystick radio remote control |
| Control | | Crane manufacturers' control without transformer and without crane switch contactor | Complete control with transformer and crane switch contactor |
| | | | Hoist motor connection wired into motor terminal box |
| Hoist motor control | | Pole-changing or frequency controlled, control range 2...100 % | Frequency controlled, control range 1...100 % |
| Travel motor control | 50 Hz | 5/20 m/min | 2.5/10 m/min or 8/32 m/min |
| | 60 Hz | 6.3/25 m/min | 3.2/12.5 m/min or 10/40 m/min |
| | 50/60 Hz | 2.5...25 m/min frequency controlled | 4.0...40 m/min frequency controlled |
| Motor supply voltage | 50 Hz | 380–415 V | All voltages possible |
| | 60 Hz | 440–480 V | |
| Rope | to DIN EN 12385 | Bright or galvanised | – |
| | Rope safety factor | Usually ≥ 4.0 | Off-standard ropes and higher rope safety factor |
| Rope drive | | Bottom hook block, rope return sheaves, rope suspension and wire rope with 1/1, 2/2-1, 2/1, 4/1, 4/2-1, 8/2-1, also 2/2-2, 4/2-2 | Ramshorn hook |
| | | | Additional bottom hook blocks and/or return sheaves, off-standard reevings |
| Limit switches | Emergency hoist limit switch (gear limit switch) | For top and bottom hook position and operational limit switch for top hook position | With additional switching elements for further stopping positions of hook |
| | Travel limit switch | – | For up to four switching functions – pre- and end limiting in both directions of travel, trolley distance protection |
| Overload cut-off | | SLE | SMC |
| | Signal transmitter | – | Horn, flashing light |
| | Visualisation | – | SLD large-format load display, display in control pendant, readable on PC |
| | Data exchange | – | RS 232, RS 485, CAN |
| Temperature control of travel motors | | PTC thermistors including tripping device | – |
| Mechanical safety devices | | Anti-derail device | Wheel arrester, anti lift-off |
| | | Buffers on all trolleys | Runway endstops |
| Hoist brake | | Electromagnetic disk brake with asbestos-free brake linings | Manual release of brakes or drive redundancy with Twin Drive Concept |
| | | | Rope drum brake |
| | | | Brake release monitoring |
| | | | Wear monitoring |

# The variable frequency drives

When it comes to intelligent lifting, Magnetek IMPULSE® drives continuously monitor many environmental and functional components of a hoist, such as motor temperature, end of travel and slow down limits, brake functionality, motor speed, and more. Variable frequency drives maintain safe functional thresholds, which decreases mechanical fatigue and increases reliability and uptime.

For hoist motion, the IMPULSE®·VG+ Series 4 drive provides reliable, user-friendly controls and industry-leading features to keep you working safely. IMPULSE·VG+ is available for monorail, double-girder, and base-mount hoists. The easy-to-use keypad provides five lines of 16 characters each and includes soft keys and upgraded parameter selection. The display makes navigation and reading diagnostics even easier.

For trolley motion, the IMPULSE®·G+ Mini drive allows for expanded speed adjustments, improved load control, high duty cycles, and increased crane life. The IMPULSE·G+ Mini's size permits the use of smaller control enclosures, reducing the overall cost of an installation. Hardware and software are designed and extensively tested specifically for the operating conditions seen in overhead material handling applications. IMPULSE·G+ Mini is available for traverse motions for monorail and double-girder hoists. It is also available for long travel on cranes.

**The facts**

- Programming various drive parameters
- Parameter backup (store and copy)
- Monitoring functions of the drive
- Reading of alpha-numeric fault diagnostic instructions
- Remote monitoring

**IMPULSE·VG+ standard and optional features**

| | | |
|---|---|---|
| | **Encoder feedback**<br>IMPULSE drives continuously monitor motor speed and load to ensure optimal performance and safe load control | **Phase loss detection**<br>Detects if incoming power phase is lost and maintains a safe state of the load |
| | **Slack rope detection**<br>Provides annunciation of slack cable condition to operators | **Slip compensation**<br>Automatically compensates for motor slip |
| | **Brake check at stop**<br>Tests that brakes can safely hold a load at the end of a run and the motor will maintain control of the load in case of brake failure | **Torque proving at start**<br>Determines if the motor can safely control a load before opening the brake to provide additional safety |
| | **Dynamic braking**<br>Dynamically decelerates motors without the use of brakes. Brakes would only be used for parking and emergency braking, reducing brake lining wear and tear | **Safe torque off**<br>Provides redundant hardware safety circuit that guarantees motor and brake power are removed when an E-STOP switch or safety controller opens drive input |
| | **Hook height measurement**<br>Incremental encoder signal determines hook height from a calibrated position | **Micro-Speed™**<br>Allows operators to scale motor speed, which is useful for load positioning |
| | **Short circuit protection**<br>Detects if a motor has a short circuit and can prevent additional failure of the control system | |

**IMPULSE·G+ Mini standard and optional features**

| | | |
|---|---|---|
| | **Safe operating windows™**<br>Reduce the possibility of programming unsafe parameters | **Quick stop™**<br>Reduces the possibility of crane collision |
| | **Motor thermal overload protection**<br>Reduces the possibility of motor damage | **Auto tuning**<br>Non-rotational auto tuning for performance-demanding applications |
| | **Micro-Speed™**<br>Allows operators to scale motor speed, which is useful for load positioning | **Safe torque off**<br>Provides redundant hardware safety circuit that guarantees motor and brake power are removed when an E-STOP switch or safety controller opens drive input |
| | **Sway control**<br>Greatly reduces the amount of unwanted sway when moving a load | **Safety**<br>EN 61800-5-2, EN 61508, SIL2 Hardware Base Block Circuit |

**IMPULSE·VG+**

**IMPULSE·G+ Mini**

# The engineering

Our experts bring innovation and customisation to redefine the lifting and transporting of loads for complex requirements, even in explosive areas. Building on the technology of our extensive product lines, we are focused on developing standard and custom lifting and crane technology, precision engineered to the highest levels of quality. Few other manufacturers can offer you a wider range of quality, cost-effective products, and customised solutions.

Our expertise and knowledge gained from over 140 years of experience with crane technology give us the flexibility to quickly develop and produce the optimal solution for your project. On request, all non-standard wire rope hoists and customised solutions are available in explosion-protected designs for Class I Division 2, Zone 1, Zone 2, Zone 21 and Zone 22.

**The facts**

- Perfectly matched to your project
- Every hoist is the result of over 140 years of experience and expertise
- Short development time
- Technically advanced due to the use of field-proven standard components
- Cost-effective due to modular system
- High quality and reliability ensured by in-house production
- All customised solutions are available as an option in explosion-protected designs, complying with ATEX, NEC, and IECEx

## Example 1 TDC Twin Drive Concept

The TDC Twin Drive Concept is the uncompromising solution for hoists complying with DIN EN 14492-2, Annex B. Hoists in TDC design are intended for transport of molten metals and for use in high-risk applications where acids, alkalis, or gases are present, or transport over gas and acid pipelines. Hoists are equipped as standard with two motor-gear units. Both motors are always synchronously controlled. The brakes mounted on the two motors are designed so that, in an emergency, each one is capable of braking or holding the load by itself. The two brakes are activated in tandem and act as operating and holding brakes. On twin drive concept hoists, all drives are monitored by STAHL CraneSystems condition monitoring systems.

### The facts

- TDC prevents the load from dropping even if the gear should break
- Continuous monitoring of brakes, drives, and load
- Two synchronously controlled hoist motors and brakes
- Two brakes with manual release for emergency lowering
- Robust, fully enclosed system
- Standard components used
- Operating and safety brake of the same construction
- Up to 60 % higher load capacity when not transporting molten metals

| Frame size | Reeving | S.W.L. up to max. [t] |
|---|---|---|
| **SH 50 TDC** | 4/1 | ≤8 |
| **SH 60 TDC** | 2/1; 4/2–1 | ≤8 |
| **SH 60 TDC** | 4/1; 8/2–1 | ≤16 |

Stationary and with trolley available.
Other variations available on request.

Unit with an SH wire rope hoist as auxiliary hoist

**Example 2** **Two SH wire rope hoists and a turntable**

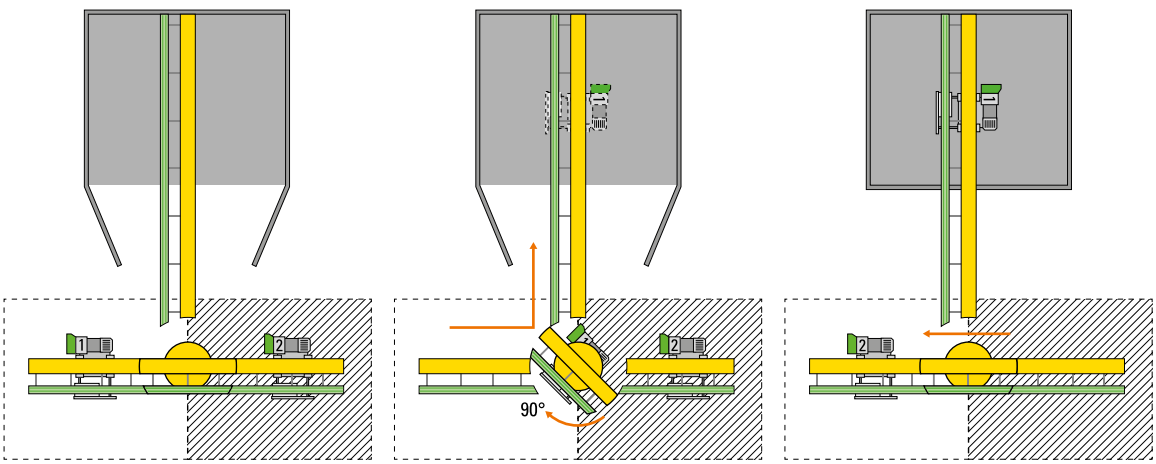
For the efficient loading of a system, STAHL CraneSystems engineers developed a customised solution in which two SH wire rope hoists travel into a system on electrically driven trolleys and are then automatically taken over by the system control. The workpieces are rotated and run in by the electrically driven turntable.

The intelligent control, the load limiting of the wire rope hoists, and the turntable are controlled by the condition monitoring system in combination with signal transmission via conductor lines. Overloading the conveyor system is prevented. If a wire rope hoist reaches its maximum load capacity, the load measurement on the second wire rope hoist comes into action and disconnects the hoisting motion. The hoisting motion is not released until the load has been set down and the hoist is unloaded. The two wire rope hoists and the turntable operate with standard radio remote controls.

After the hoist has been automatically taken over by the system control at a defined point, it can be moved within the system. The second wire rope hoist is now unloaded at the set-down point, then moved to the take-up point and loaded. The first wire rope hoist is released from the system by the radio remote control and moved to the set-down point via the turntable. It is not possible for the two wire rope hoists to travel onto the turntable at the same time.

**The facts**

- Electrically driven turntable
- Condition monitoring
- Radio remote control with integrated turntable control and handover to the machine
- Electrically rotating load hook
- Meets long service life requirements according to the classifications in FEM/ISO standards



**Example 3** **SH wire rope hoist and crane components in explosion-protected design for extremely low temperatures**

In winter, temperatures can fall to –50 °C in many regions of the world. This has an effect on explosion protection, electronics, mechanics, and the crane components' materials. STAHL CraneSystems has developed an off-standard solution especially for extremely low temperature ranges. All the components are drawn from the standard SH portfolio.

The hoisting gear and control of the wire rope hoist are in thermally insulated housings. As soon as external sensors measure temperatures below –15 °C, the explosion-protected space heater in the housing switches on. Space heaters in all motors reliably prevent icing up, condensation, and material embrittlement.

The crane system can be radio controlled. However, at temperatures below –20 °C, the control switches automatically from radio to manual operation. If temperatures drop below –40 °C, the crane switches off automatically. The catwalk along the crane bridge is equipped with a handrail on both sides for safe maintenance work in snow and ice. The platforms over the crane end carriages protect the travel drives and facilitate climbing onto the trolley.

**The facts**

- Wire rope hoist and crane components in explosion-protected design for Zone 1
- Certified to ATEX/IECEx standards
- Automatic cut-off at –40 °C, storage down to –50 °C when shut down
- Thermally insulated housings for hoisting gear and control
- Explosion-protected space heaters in all motors
- Brass rail sweeps clear snow from the rails
- Maintenance catwalk with railings on both sides

# The explosion-protected SH Ex wire rope hoist

STAHL CraneSystems is known internationally as a specialist and world market leader in explosion-protection technology.The safety of people and machines in areas subject to gas and dust explosion hazards is our top priority. Here we make no compromises. As a developer of numerous innovations in this field, we have significantly influenced crane technology for these applications. Our expertise is underlined by experience and knowledge from many decades, our own fundamental research and development, and approvals from the Federal Physico-Technical Institute (PTB) and other test institutes. Hoisting technology from STAHL CraneSystems ranks among the safest technology on the market in the chemical, petrochemical and pharmaceutical industries, the food processing industry, power supply, shipbuilding, and the offshore and natural gas liquefaction industries (LNG).

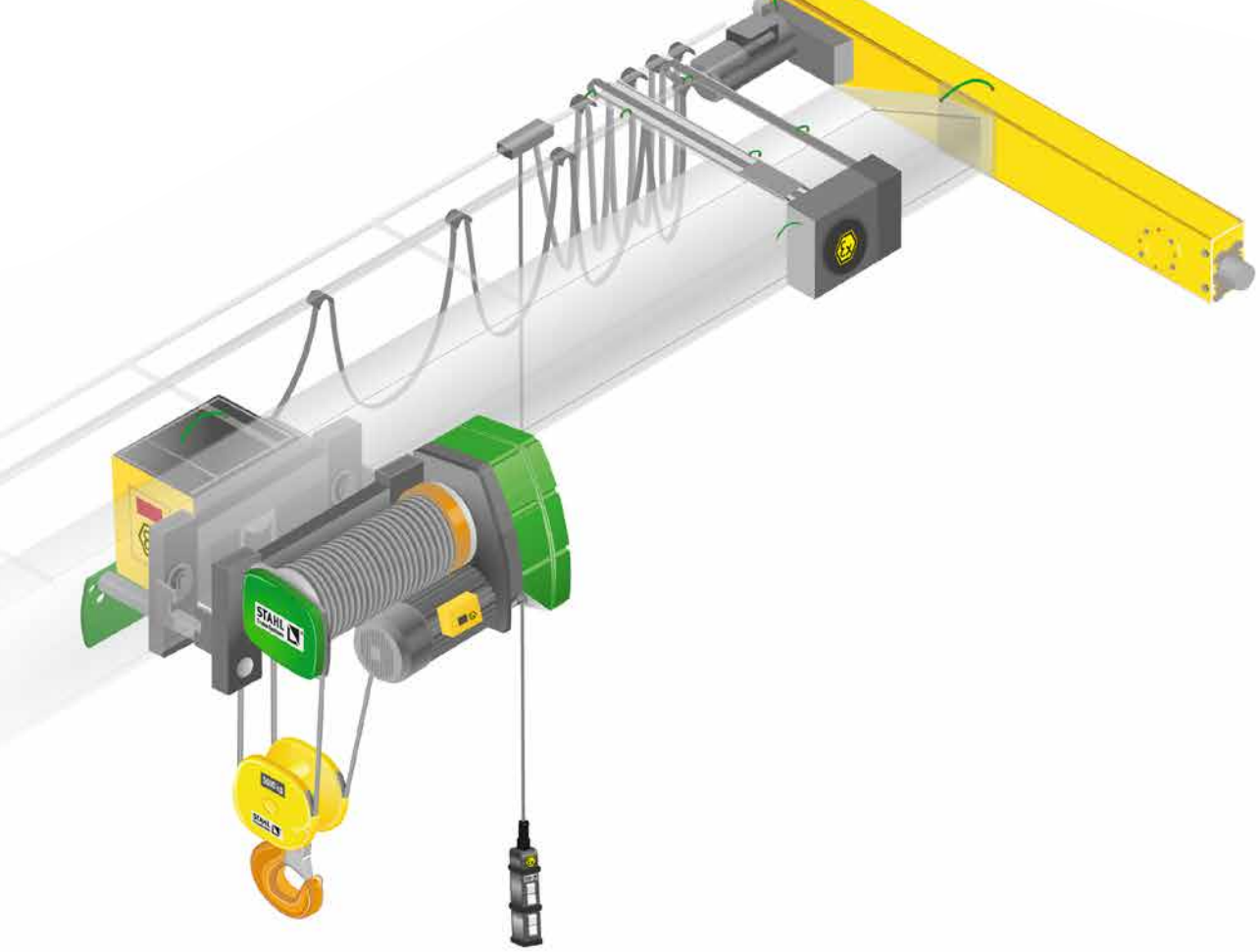
The SH Ex wire rope hoist portfolio is based on the modular, high-quality technology found in the SH wire rope hoist. All components of our explosion-protected hoists come from our own production, from the motor to controls. This ensures the complete, high-quality explosion protection that users, crane manufacturers, and system manufacturers all over the world have relied on for decades. This also helps ensure that strict ATEX directives and IECEx regulations on mechanical and electrical explosion protection are met.

**The facts**

- International specialist for explosion-protected technology
- All equipment available in explosion-protected design
- SH Ex is based on the SH wire rope hoist
- Design and manufacturing processes are certified to ATEX/IECEx standards. Certifications for NEC and CEC for exporting markets are also available
- The world's first complete and comprehensive wire rope hoist portfolio for Zone 1, Zone 2, Zone 21 and Zone 22, Class I Division 1, and Class I Division 2. See table below

→ For more information, visit www.stahlcranes.com or contact us for a copy of our brochure »Expertise in explosion protection«

| Use | Category | Protects against | Explosion protection class |
|---|---|---|---|
| **Zone 1** | Ex II 2 G | Gas | Ex db eb IIB T4 Gb or Ex db eb IIC T4 Gb |
| **Zone 2** | Ex II 3 G | Gas | Ex db eb ec IIB T3 (T4) Gc or Ex db eb ec IIC T3 (T4) Gc |
| **Zone 21** | Ex II 2 D | Dust | Ex tb IIIC T120 °C Db |
| **Zone 22** | Ex II 3 D | Dust | Ex tc IIIC T120 °C Dc |
| **Class I, Div 1** | NEC 500 | Gas | Class I, Zone 1, IIB T4<br>Class I, Division 1, Groups C and D, T4 |
| **Class I, Div 2** | NEC 500 | Gas | Class I, Zone 1, AEx db eb IIC T4 Gb<br>Class I, Division 2, Groups A, B, C, D, T4 |



The SH Ex wire rope hoist is available for gas explosion protection Zone 1 and Zone 2 and dust explosion protection Zone 21 and Zone 22. It meets the technical, normative, and practical requirements specified by ATEX and IECEx.

An explosion-protected SH Ex wire rope hoist transports goods through a shaft over several storeys of a chemical plant. The single-girder overhead travelling crane with a load capacity of 5,000 kg is operated by radio remote control.

# The SH wire rope hoist in action

Experts in all countries immediately recognise hoist and crane components from STAHL CraneSystems. The SH wire rope hoist is in action all around the world in the most diverse applicants and solutions. Innovative down to the most minor detail and manufactured with the greatest care, the SH wire rope hoist continues to meet application needs due to its versatility, flexibility, and cost effectiveness. STAHL CraneSystems is represented on almost every continent by subsidiaries, sales, and crane manufacturing partners.

1

2

3

4

5

6

1 71 STAHL CraneSystems hoists operating in a new wagon factory in Belarus. Each double-girder overhead travelling crane is equipped with two SH 60 wire rope hoists with safe working loads of 16,000 kg and 20,000 kg. An additional SH 40 wire rope hoist with a safe working load of 5,000 kg acts as an auxiliary hoist.

2 A portal crane with two SH 6 Twin Drive Concept wire rope hoists and an AS 7 wire rope hoist with special monorail trolley as auxiliary hoist works in a wave test facility. All hoists are classified as ISO M6 according to FEM/ISO standards.

3 4 In Europe there is only one engine maintenance plant for the Rolls-Royce Trent engines, which are used in the Airbus models A 330, A 340, and A 380. It is one of the most up-to-date and progressive maintenance plants in the world, employing the highly efficient vertical strip process. Here, STAHL CraneSystems wire rope hoists of the SHF 3 to SHF 6 series are in use. The hoists have true vertical lift and extremely low load swing.

5 The crane operator operates the crane system over a paper machine with radio remote control. The paper reel weighing several tonnes must be rotated for it to be mounted in the machine's take-up fixture. It is lifted by two SH 6 wire rope hoists with independent load hooks. These can be adjusted on the common travel rail by an electric drive to the correct distance between hooks.

6 The crane system's maximum working load of 12,500 kg is distributed among four STAHL CraneSystems SH 30 wire rope hoists. Each wire rope hoist has a safe working load of 3,200 kg. The functions of the cranes, the two hoists, and the pallet grab are controlled by a joystick radio remote control.

# The industry-leading service and training

STAHL CraneSystems is committed to quality, right down to the smallest detail. Developed with care by our engineers and experts, our products are manufactured with care to the highest levels of performance and reliability. This high level of quality not only applies to the products we design, but also to the service we provide to our customers around the world.

Our global sales team works exclusively with capable, professional crane manufacturing partners to provide you with industry-leading service and training. When you purchase a full crane system or STAHL CraneSystems components, you can expect optimum support from our partners. Whether you need a consultation, installation of a new system, system testing, maintenance, modernisation, spare parts, or training, we are here, together with our crane building partners, to provide you with streamlined, expert support anywhere around the globe.

**Spare parts – available around the clock**

Our own subsidiaries and numerous partners around the world ensure a reliable supply of spare parts and expert assistance in your area. Even decades after a series has been discontinued, spare parts are available all over the world around the clock.

**Training courses**

We are dedicated to safety. With training courses, webinars, and online safety tools and information, we keep our regional crane manufacturing partners and end users educated on how to best use and service our products. This information covers all of our main product lines, providing practical and theoretical knowledge relevant to individual products and full crane systems.

For training materials or information on our full training offering, visit www.stahlcranes.com/en/support

**Factory service centre – on duty around the world**

To help support our customers, our factory service center is available to provide assistance and expertise to field technicians as well as crane and systems manufacturers – anytime, anywhere. With modern diagnostic tools and condition monitoring systems, we are here to support your service and maintenance needs. We will help ensure your system and operators stay safe. You can rely on us.

To reach our factory service center, contact customer.service@stahlcranes.com

**MarketingPortal plus – our online support**

At mpplus.stahlcranes.com you can view or download the information you need quickly and conveniently, including brochures, product information, technical documents, illustrations, and much more.

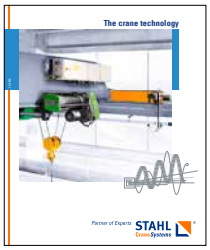
Argentina Australia Austria Belgium Brazil Canada Chile **China** Columbia Croatia Czech Republic
Denmark Ecuador Egypt Estonia Finland **France** Germany **Great Britain** Greece Hongkong Hungary **India** Indonesia

Ireland Israel Italy Jordan Latvia Lebanon Lithuania Malaysia Mexico
Netherlands Nigeria Norway Pakistan Peru Philippines Poland **Portugal** Rumania Russia

**Singapore** Slovakia Slovenia South Africa South Korea **Spain** Sweden Syria
Taiwan Thailand Turkey **UAE** Uruguay **USA** Venezuela Vietnam

Sales partners **Subsidiaries**

You can find this and other brochures at www.stahlcranes.com/download. We will gladly also send them to you by post.



Presented by

STAHL CraneSystems GmbH
Daimlerstr. 6, 74653 Künzelsau, Germany
Tel +49 7940 128-0, Fax +49 7940 55665
marketing.scs@stahlcranes.com
www.stahlcranes.com

COLUMBUS McKINNON CORPORATION

MEMBERS OF COLUMBUS MCKINNON

STAHL CraneSystems MAGNETEK

© 2020 Columbus McKinnon Corporation. All rights reserved.

All specifications and illustrations are non-binding.
Subject to modification, errors and printing errors excepted.
Printed in Germany 990 035 0 EN-01.21