The SHW 8 winch

08.2021



Partner of Experts

STAHL CraneSystems®

The SHW 8 winch

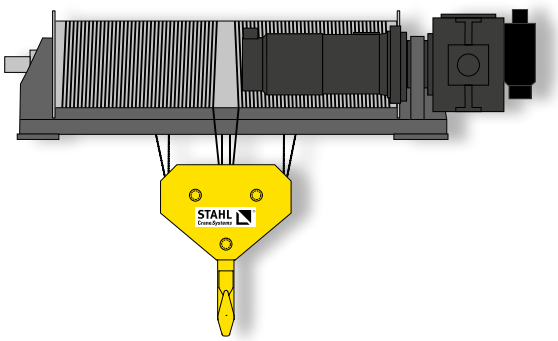
The SHW 8 winch program is based on the tried-and-tested SH wire rope hoist program and is designed for the high-load bracket up to 250,000 kg. Its strong hoist motors and robust, low-maintenance design make it ideal for tough everyday use. To enable a variety of different economical solutions, there are three motors up to 38 kW with two speeds in a ratio of 1:6 available for the SHW 8 winch. For higher ease of use, there are six hoist motors with up to 200 kW and stepless speed control available. All travel drives are equipped as standard with soft start. On request, the SHW 8 winch can come with high-performance frequency inverters or with individually adapted speeds.

Various models and trolley variants for the SHW 8 winch open up numerous possibilities of use. Individually adapted to your specific requirements as stationary hoisting or towing equipment, for use with trolley or for systems building.

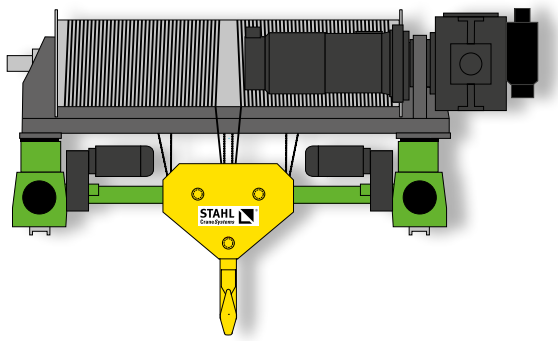
The winch programme is also available in explosion-proof design for Zone 1, Zone 2, Zone 21 or Zone 22.

The facts

- Series components of the SH series proven thousands of times over
- Modular design
- 3 hoist motors up to 38 kW with two speeds in a ratio of 1:6
- 6 hoist motors up to 200 kW and stepless speed control
- All travel drives with soft start
- Overload cut-off device is already pre-set during manufacture
- Compact headroom thanks to innovative design of the rope drive



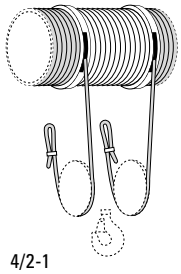
Stationary
The SHW 8 winch can be used as stationary hoisting or towing equipment, for example in systems building. Depending on the application, the rope lead-off angle, the attachment of the hoist and the end position of the hoist motor can be varied.

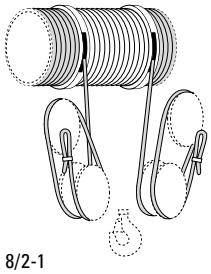


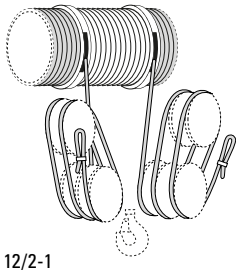
OE double rail crab
The OE double rail crab is intended for use on double girder overhead travelling cranes. Its extremely compact construction makes very low approach and headroom dimensions possible, thus enabling full use of the available space. The double rail crab is available with various track gauges for the complete load capacity range and automatically compensates for any unevenness of the cross travel runway.

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 and with trolleys.

Reeving without lateral hook movement

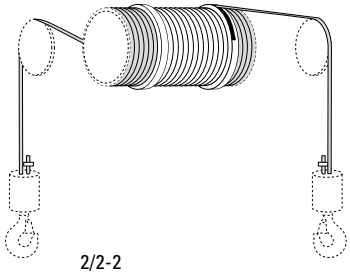

4/2-1

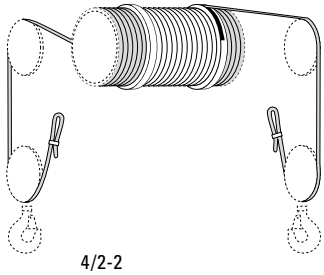

8/2-1


12/2-1

Double-grooved rope drum
The design with double-grooved rope drum (right/left-hand thread) is used for many lifting and towing tasks where a multipoint load attachment is required and no lateral hook movement during lifting and lowering is desired.

Optional reeving with multipoint load attachment


2/2-2


4/2-2

■ Standard
□ Option

S.W.L. to* [kg]	Reeving	Stationary	OE double rail crab
25,000	4/2-1	■	■
32,000	4/2-1	■	■
40,000	4/2-1	■	■
50,000	8/2-1	■	■
63,000	8/2-1, 12/2-1	■	■
80,000	8/2-1, 12/2-1	■	■
100,000	12/2-1	■	■
125,000	12/2-1	■	■
160,000	12/2-1	■	■

*S.W.L. up to 250,000 kg with reeving of 16/2-1 available on request.

The technology

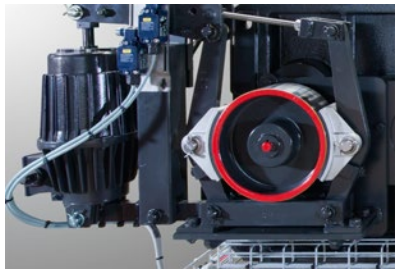
It is a reassuring feeling to know what convincing technology is inside every SHW 8 winch. The largely maintenance-free components of the modular winch from proven series components are matched to each other optimally. They guarantee constant performance, high efficiency and long service life. Flexible drive technology, the high-performance gear unit with versatile ratios and standard safety components or many additional options increase safety at the workplace.

1 Hoist motor



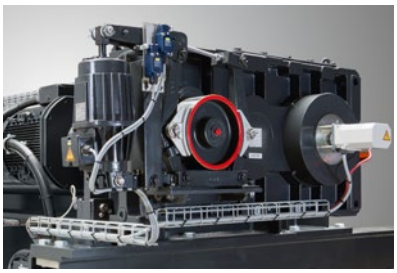
- Pole-changing or frequency-controlled three-phase motors
- Classification according to FEM/ISO standards, high duty cycle and high switching rate
- IP55 protection, thermal class F
- Good motor cooling, maintenance-friendly
- Temperature control by thermistor

2 Brake



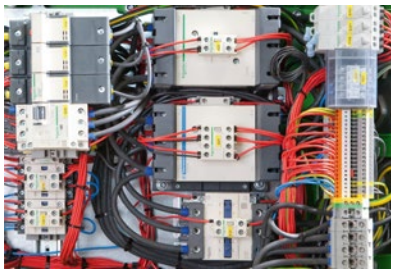
- Low-maintenance, asbestos-free double-shoe brake; no readjustment necessary
- Long service life thanks to over-dimensioned brake
- Brake easily accessible for inspection from outside
- Motor management ensures low wear
- IP65 protection

3 Hoist gear



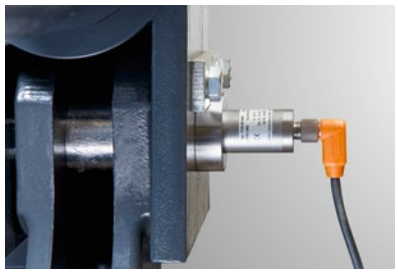
- Versatile gear ratios for individual speeds
- Long service life through oil lubrication, with minimum maintenance
- Hardened and ground gears

4 Control and motor management

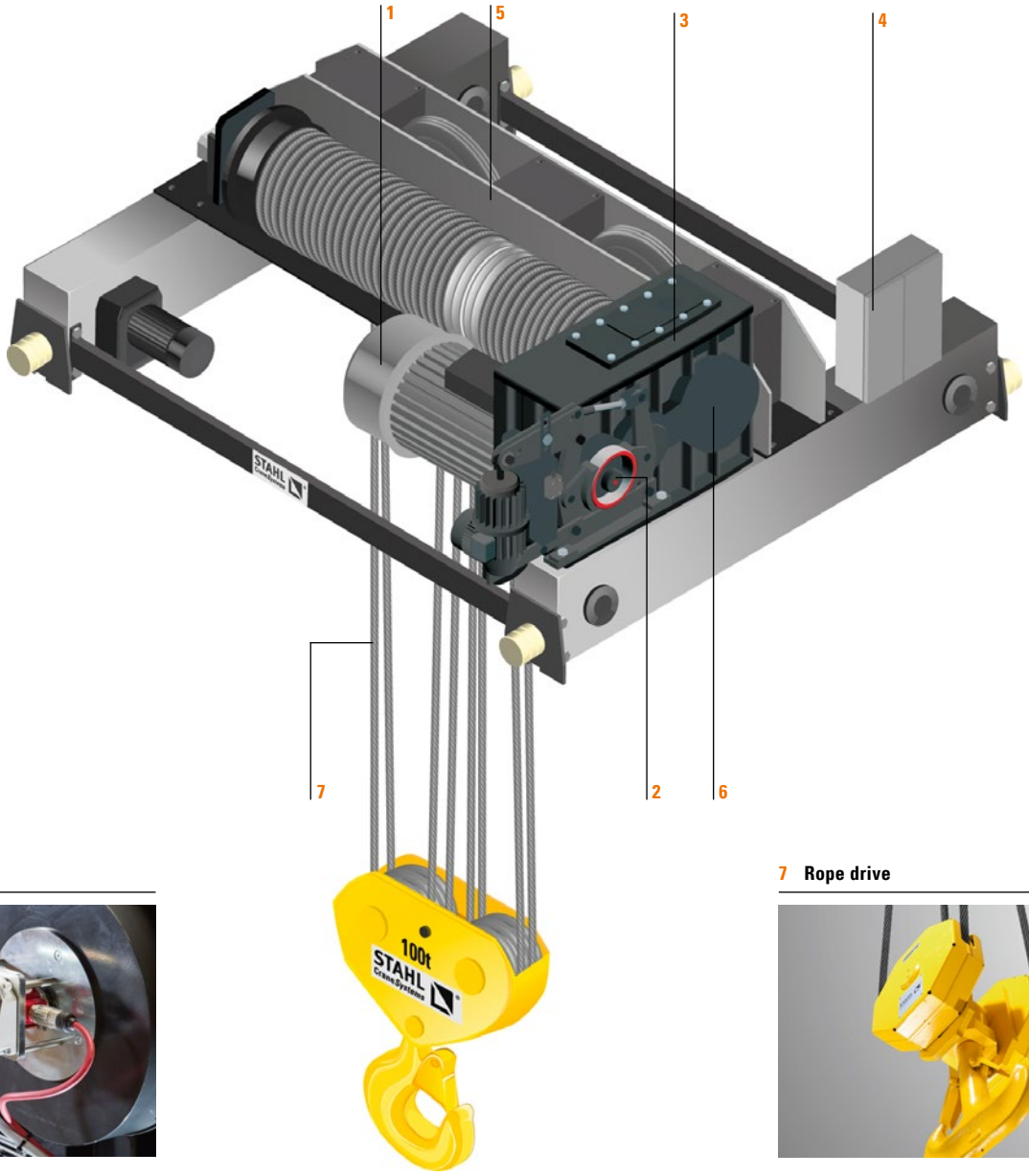


- Condition monitoring as standard
- Load reduction by suppression of jog mode
- All common control voltages available
- High degree of safety thanks to over-dimensioned contactors
- Monitoring of the motor temperature of the hoist motor and travel motor

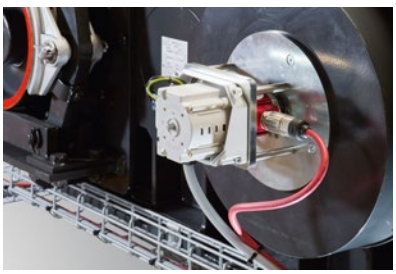
5 Overload cut-off device



- Permanent electronic monitoring of the suspended loads
- Limitation of the maximum load by load measurement at the rope anchorage in the case of multiple reeving or at the gearbox
- Pre-set overload cut-off device at the rotatably mounted gearbox or at the rope anchorage, depending on size



6 Gear-type limit switch



- Standard emergency hoist limit switch in highest and lowest hook position
- Switch can be equipped optionally with up to eight switching elements. This allows, for example, further holding positions and the operational limit stop in lowest hook position to be realised.

7 Rope drive

- Designed for high safety and long life
- Flexible, galvanised special rope with rope safety factor > 4
- Standard version with 2 ropes, no lateral hook movement
- Wear-resistant return sheaves, rope-friendly rope drum grooves thanks to fine machining
- Robust hook block with low headroom in spites of large hook dimensions

The options

Although they are already first-class in their standard design, you have the possibility to make your SHW 8 winch even safer, more economical and more convenient with a range of mechanical, electrical and electronic options. With the add-ons, you improve the performance of the wire rope hoist and adapt it individually to your requirements.

Manual venting of the hoist brake



- The brake air device for manual release of the hoist brake and to lower the load in the event of a power failure

Second hoist brake



- For hoist motors up to 63 kW and 50 Hz additional double-shoe brake according to DIN 15435 with external brake spring
- For hoist motors from 78 kW and 50 Hz, additional single-disc spring-loaded brake

Overwind protection



- Proximity switch at each drum end
- Prevention of rope climbing
- Automatic cut-off

SMC multi-controller



- Permanent load monitoring even when the hoist is stationary
- Overload protection through ALC automatic load control
- Load spectrum recorder for load-related runtime summation
- Monitoring of the motor temperature of the hoist motor and travel motor
- Operating data acquisition, e.g. operating hours, load spectrum, motor switching operations and load cycles
- Data exchange with a PC possible

Frequency inverters from Magnetek



- Soft starting and braking
- Highly reduced load swing
- Fast, precise positioning of the load, hardly no corrective switching
- The reduced dynamic load prolongs the service life of the hoist motor and gearbox and protects the entire system
- Worldwide approvals for all frequency inverters

Radio remote control units from Magnetek



- Implemented and installed in separate panel boxes
- Simple parametrisation and operation
- Standard speed range 1:10 optionally up to 1:30
- PLC-compatible to higher-level systems (optional)
- All common international mains voltages are covered

		Standard	Options
Ambient temperature		–20 °C to +40 °C	–40 °C to +80 °C
Protection according to IEC/EN 60529		IP55	IP66
Paint	Colour	Black grey RAL 7021	in all other colours according to RAL chart
	D.F.T.	60 µm to 80 µm	120 µm to 320 µm
	Finish/Powder coating	Polyurethane top coat	Epoxy resin basis (240/320 µm)
Control units		–	Control pendant
			Radio remote control in joystick version with load display or pushbutton version with/without load display
Controls		Hoist motor connection is wired in motor terminal box	Complete control with transformer and crane switch contactor
			Crane builder control without transformer and without crane switch contactor
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	per DIN EN 12385	bright or galvanised	–
	Safety factor	usually ≥ 4.0	Special ropes and increased safety factor
Rope drive		Hook block, rope deflection, rope suspensions and wire rope with reevings 4/2-1, 8/2-1, 12/2-1 additionally 2/2-2, 4/2-2	Dual load hooks
			Additional hook blocks and/or return sheaves, reeving 16/2-1
Limit switches	Emergency hoist limit switches (rear-type limit switches)	for highest and lowest hook position and a hoist limit switch for highest hook position	with additional switching elements for further hook holding positions
	Travel limit switches	–	for up to four switching functions – Pre- and limit stops in both directions of travel, distancing
Overload cut-off		SLE evaluation device	SMC multi-controller
	Signallers	–	Horn, flashing light
	Visualisation	–	SLD large-format load display, display in radio transmitter, readable on PC
	Data exchange	–	RS 232, RS 485, CAN
Temperature control hoist/travel motor		Thermistor, including thermistor relay	–
Mechanical protection		–	Cover plates and heat shields Overwind protection
		Buffers on all trolleys	Runway end stops
Hoist brake		Single-disc spring-loaded brake with asbestos-free brake pads	Manual venting of the brakes, or drive redundancy through Twin Drive Concept
			Second hoist brake
			Air monitoring
			Wear monitoring

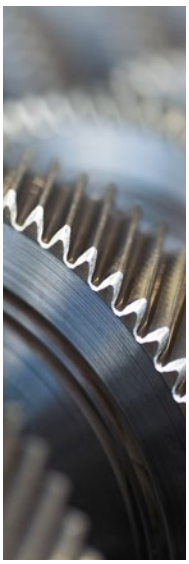
The engineering

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.

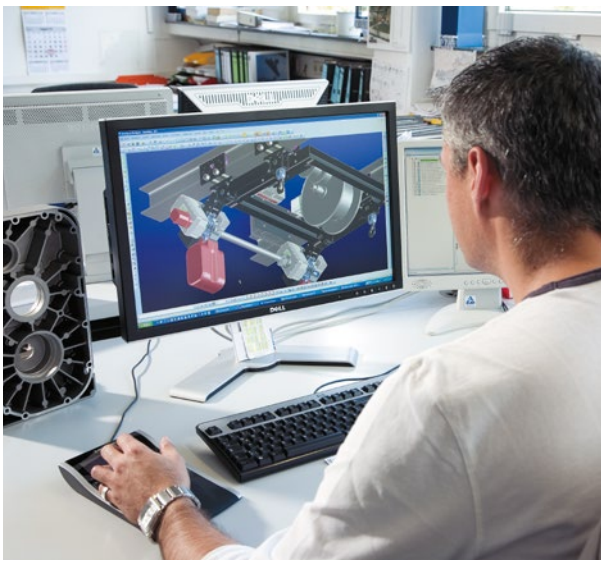
Our expertise and knowledge gained from over 140 years of experience with crane technology give us the flexibility to quickly develop and produce the optimal solution for your project. On request, all off-standard winches and custom solutions are available in explosion-proof design for Zone 1, Zone 2, Zone 21 and Zone 22.

The facts

- Perfectly matched to your project
- More than 140 years of experience and know-how in every hoist
- Short development time
- Economical due to modular system
- Perfected through use of tried-and-tested standard components
- High quality and reliability thanks to in-house production
- All custom solutions optionally available in explosion-proof design according to ATEX and IECEx







Example 1 **Power station cranes with two SHW 8 winches**

Two power station cranes from STAHL CraneSystems, each with a lifting capacity of 80 tonnes, are used by an Icelandic energy company for installation and maintenance of 47.5 MW hydropower turbines. Working in tandem mode, which is realised via mechanical coupling of the cranes and trolleys, the cranes are able to lift the hydropower turbines with a total lifting capacity of 160 tonnes and transport them out of the shaft for maintenance work. The cranes have a span of 13.8 m and a lifting height of 27 m.
The SHW 8 winch from STAHL CraneSystems, which also has a lifting capacity of 80 tonnes, is used as main hoist. The cranes also have several auxiliary hoists. The hoists are mounted stationary on a compact, specially designed trolley for very short hook approach dimensions. The control equipment, overload protection, double brake, total load system and floodlights meet the high quality and reliability requirements of the crane system. High-quality frequency inverters, which are operated with a joystick controller, enable precise and smooth crane movements for precise placement of the turbines. All cables are flame-retardant and halogen-free. The trolleys and both sides of the crane bridge are equipped with maintenance platforms to allow technicians quick and safe access to the crane components.

The facts

- Power station cranes in tandem mode for safe working loads up to 160 tonnes
- Span 13.8 m
- Lifting height 27 m
- Frequency controlled SHW 8 winches with many safety-enhancing options





Example 2 Dam winch for S.W.L. of 100 tonnes

The Kishanganga hydroelectric power station in India is located more than 2,400 metres above sea level. A winch developed by STAHL CraneSystems engineers is used to lift and lower the 100 t sluice of the dammed Kishanganga River. The stationary SHW 8 winch with a load capacity of 2 x 60,000 kg is designed with two rope drums and a gearbox. For even distribution of the weight, the hoist is designed with a reeving of 2 x 12/2-1. The double symmetrical arrangement ensures absolute synchronisation of the two load hooks. In order to compensate tolerances between the components, the rope drums are flanged to the gearbox with special couplings. The gear motor is mounted vertically above one of the two rope drums. The hoist is equipped with an overload cut-off device for each of the two load hooks and placement of the load realised separately for each of the two hooks through slack rope cut-off. There are many additional components available for increased work safety. For example, both hook positions can be read on a display and the motor currents of the hoist motor are shown on ammeters. It is additionally protected by motor circuit-breakers and forced ventilation for 15-minute continuous operation with stopping control. Robust pole-changing technology enables operation when the mains voltage supply is unstable. In the event of a power failure, the hoist brake with integrated brake venting lowers the load with pauses. The SMC multicontroller determines the weight of the load continuously, and switches off the hoist movement immediately in the event of an overload. The multicontroller can also be used to record further data such as, for example, the load spectrum, the operating time, the full-load operating time and the motor switching operations and to read them out with the help of a PC.

The facts

- SHW 8 winch with lifting capacity of 2 x 60,000 kg
- For an ambient temperature of –25 °C to +40 °C
- Two rope drums with 2 x 12/2-1 reeving, length L4
- Lifting height of 21.5 m with rope length of 2 x 150 m
- Ropes implemented in 7-fold safety
- SMC multicontroller
- Motor circuit-breaker, brake venting, second safety brake, overload cut-off device, pole-changing technology, forced ventilation for continuous operation, heating
- Special weatherproof coating with polyurethane





Example 3 Inspection crane in hydroelectric power station

Due to extensive modernisation, a new crane system has been commissioned at a Swiss hydroelectric power station. An SHW 8 winch from STAHL CraneSystems with a lifting capacity of 85 tonnes and an additional auxiliary hoist, an SH wire rope hoist for a safe working load of 10 tonnes, work parallel to an existing winch. The two new hoists have a maximum lifting height of 40 metres. The system is operated with a special control system that enables particularly precise and fine control of the crane. The travelling and lifting speeds move in a range of a few millimetres per second. Initially the SHW 8 winch was used for assembly of the new hydroelectric power station and, until the end of the construction work, to deliver and remove building material to and from the excavation pit. Since the end of construction, the winch is used for inspection and overhaul work on the new 30 MW replacement turbine. During the short time in which the plant is disconnected from the grid and the heavy turbine is lifted, dismantled, inspected and finally reassembled, the lifting equipment must work perfectly and a replacement be available immediately in emergencies. This high availability is guaranteed by the hoisting and crane technology from STAHL CraneSystems.

The facts

- Crane system with one SHW 8 winch with a lifting capacity of 85 tonnes
- Special control for precise lifting and positioning
- Travel and lifting speeds of a few millimetres per second
- Highest availability through proven crane components





The explosion-proof winch SHW 8 Ex

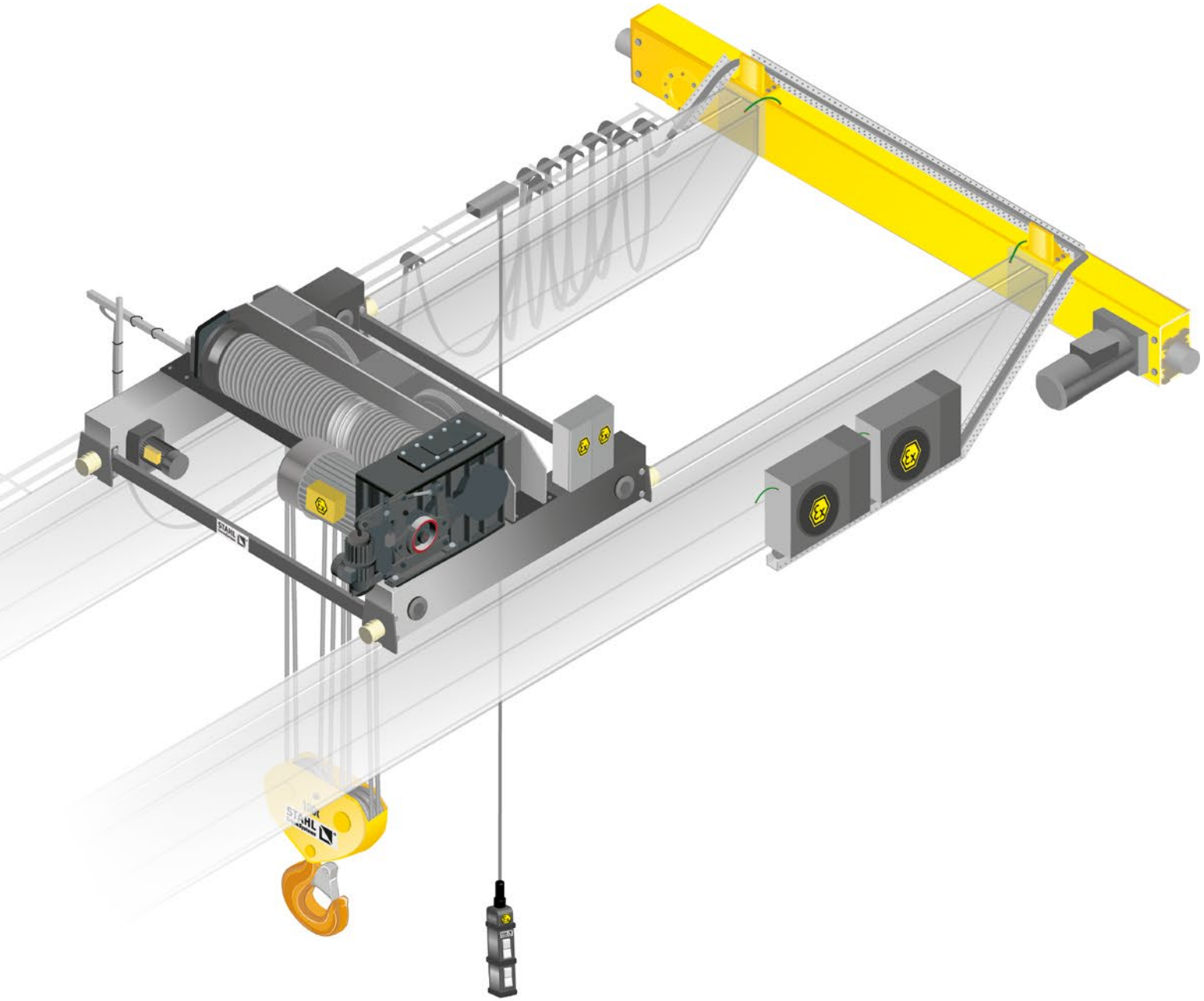
STAHL CraneSystems is known internationally as a specialist for explosion protection and considered one of the world market leaders in explosion protection technology. The safety of people and machines in potentially explosive gas and dust atmospheres is our top priority. We make no compromises here. As a developer of numerous innovations in this field, we have influenced the progress in crane technology perceptibly. Experience and know-how from many decades, our own fundamental research and development, approvals from the German national metrology institute PTB and other test institutes in many countries underline our expertise. Lifting technology from STAHL CraneSystems ranks among the safest technology available on the market for the chemical, petrochemical and pharmaceutical industries, the food processing industry as well as the power supply, shipbuilding, offshore and natural gas liquefaction (LNG) industries.

The SHW 8 Ex wire rope hoist programme is based without exception on the modular SH wire rope hoist range. All components of the explosion-proof winches – from motor and brake to controls and control pendant – are manufactured in-house. This ensures the complete, high-quality explosion protection on which users, crane manufacturers and system builders around the world have relied for decades. The strict ATEX directives and IECEx regulations for mechanical and electrical explosion protection are naturally fulfilled.

The facts

- International specialist for explosion protection technology
- The world's first complete, most extensive range of wire rope hoists for Zone 1, Zone 2, Zone 21 and Zone 22
- Based on the SH wire rope hoist
- All equipment available in explosion-proof design according to ATEX and IECEx

➔ You can find further information at www.stahlcranes.com or in our brochure »Expertise in explosion protection«, which we will gladly send to you by post.



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

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.

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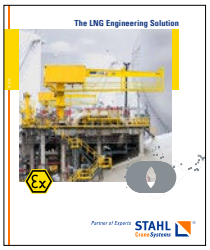












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