



# SXF WIRE ROPE HOIST



# A FIT-FOR-FUNCTION AND SAFETY SOLUTION

The SXF Wire Rope Hoist is STAHL CraneSystems newly designed hoist, designed for loads up to 10 tons. Ideal for applications like maintenance and standard lifting needs, it ensures efficiency and reliability without the complexities of advanced process hoists. We have redesigned several technical features in our design, adding the Dynamic Lift System (DLS) and a new simpler frame design that results in easier installation.

- **Meeting Application Demands:** Tailored for standard lifting applications for everyday tasks, reducing operational complications and minimizing maintenance variations.
- **Economical Choice for Standard Material Flow:** Focuses on essential features for general load moving, reducing costs while maintaining the quality expected from the STAHL CraneSystems brand.
- **Versatile Applications:** Suitable for maintenance tasks or basic load moving, the SXF series ensures reliable performance, enhancing operational efficiency and productivity.



# SXF ENGINEERING



THE SXF WIRE ROPE HOIST IS SPECIFICALLY TAILORED FOR INDOOR, MAINTENANCE, AND GENERAL LOADING APPLICATIONS. IT PRIORITIZES EASE OF USE AND STRAIGHTFORWARD OPERATION WITHOUT COMPROMISING PERFORMANCE. WE HAVE SIGNIFICANTLY INCREASED THE LIFT SPEED AND OFFER THE HOIST IN THE MOST POPULAR CAPACITIES, ENSURING IT MEETS INDUSTRY STANDARDS WHILE BEING ACCESSIBLE TO A BROADER RANGE OF USERS.

## SMOOTH OPERATION AND ENHANCED SAFETY WITH DYNAMIC LIFT SYSTEM (DLS)

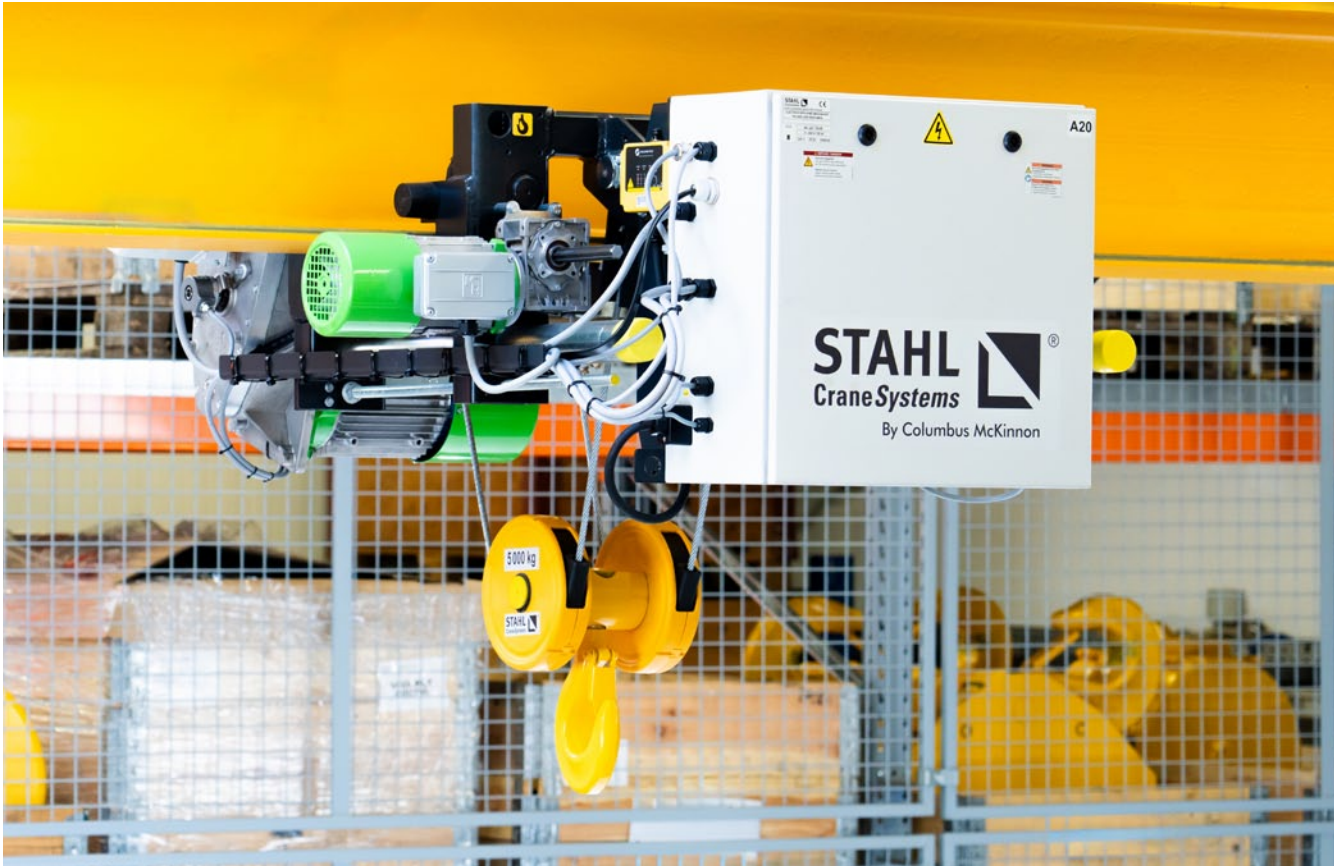
The SXF hoist delivers nearly double the lift speed compared to industry standards at empty hook conditions. Incorporating the Magnetek Variable Frequency Drive (VFD), it ensures smooth, jerk-free operation. The VFD aids in gradual starts and stops, minimizing mechanical stress, increasing component life, and enhancing overall safety. The Dynamic Lift System (DLS) automatically adapts to load weight by optimizing lifting speed for the most efficient operations. These features make the SXF hoist safer and more reliable for various applications.

## EASY SETUP AND MAINTENANCE WITH REDESIGNED STRUCTURE

The SXF hoist features a simplified setup. This design allows customers to easily perform the installation. The reduced maintenance is based on the new structure and the traditional STAHL CraneSystems quality. This clever and straightforward solution requires less training and ensures easy use.

## SIMPLE AND EFFECTIVE

Easy to use and safe to operate, even for workers who only occasionally perform lifting tasks.

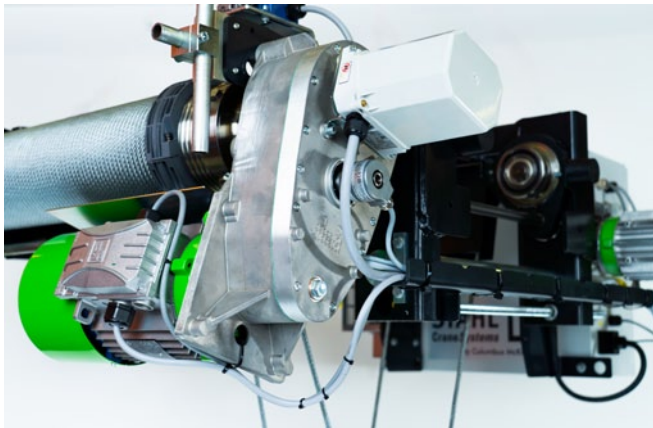
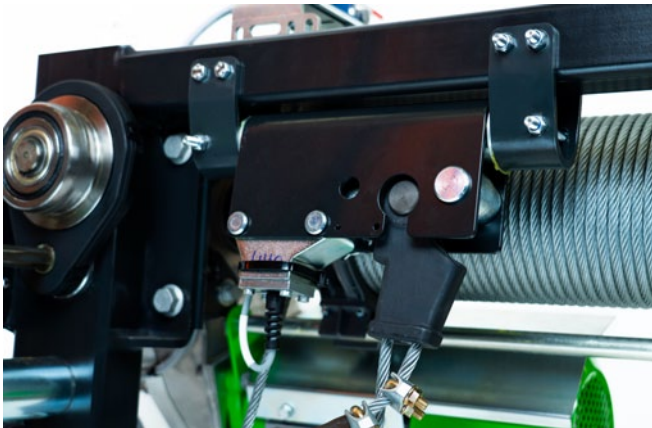




GENERAL FEATURES

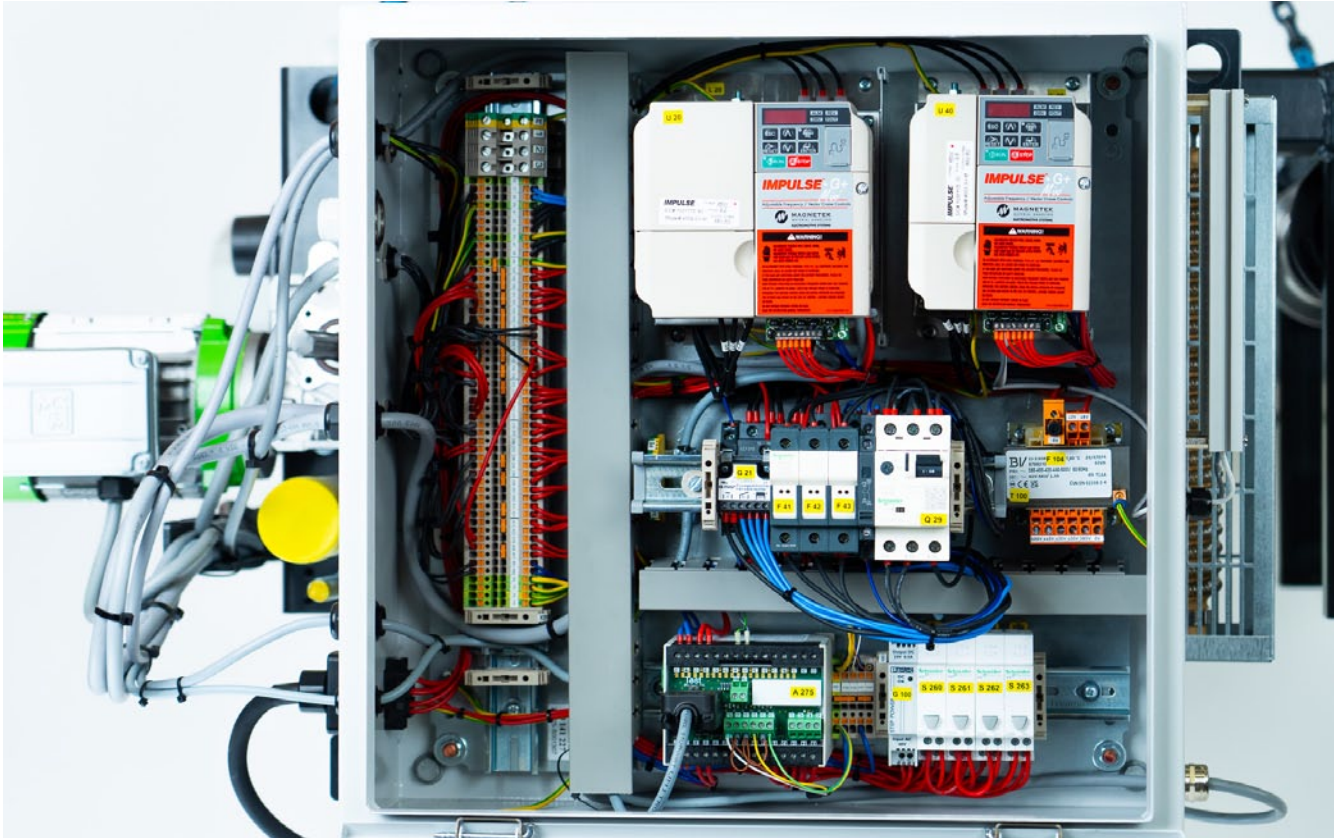
TYPE OVERVIEW SXF											
Execution	Reeving - load [kg]	Hoist type	ISO (FEM 9.661) Rope drive	ISO (FEM 9.511) Mechanism	Lifting speed 50 Hz 100% [m/min]	Lifting speed DLS with ultra-lift up tp 10% of rated power (150 Hz) [m/min]	Power [kW]		Motor type	Duty ratio in %	Hook block
	4/1						4pole		Inverter	Pole number	
							50 Hz	60 Hz		4	
Standard	2000	SXF4005	M5	M4/5*	3	9	2.6		4HM3-MG	40	H164-4
	3200	SXF4008									
	4000	SXF4010									
	5000	SXF4012									
	6300	SXF5016	M5	M4/5*	2.7	8.1	4.5		4HM5-MG	40	H229-4
	8000	SXF5020									
	10000	SXF5025									

\* New classification



The built-in overload protection is already adjusted to these different safe working load capacities.

DYNAMIC LIFT SYSTEM (DLS)



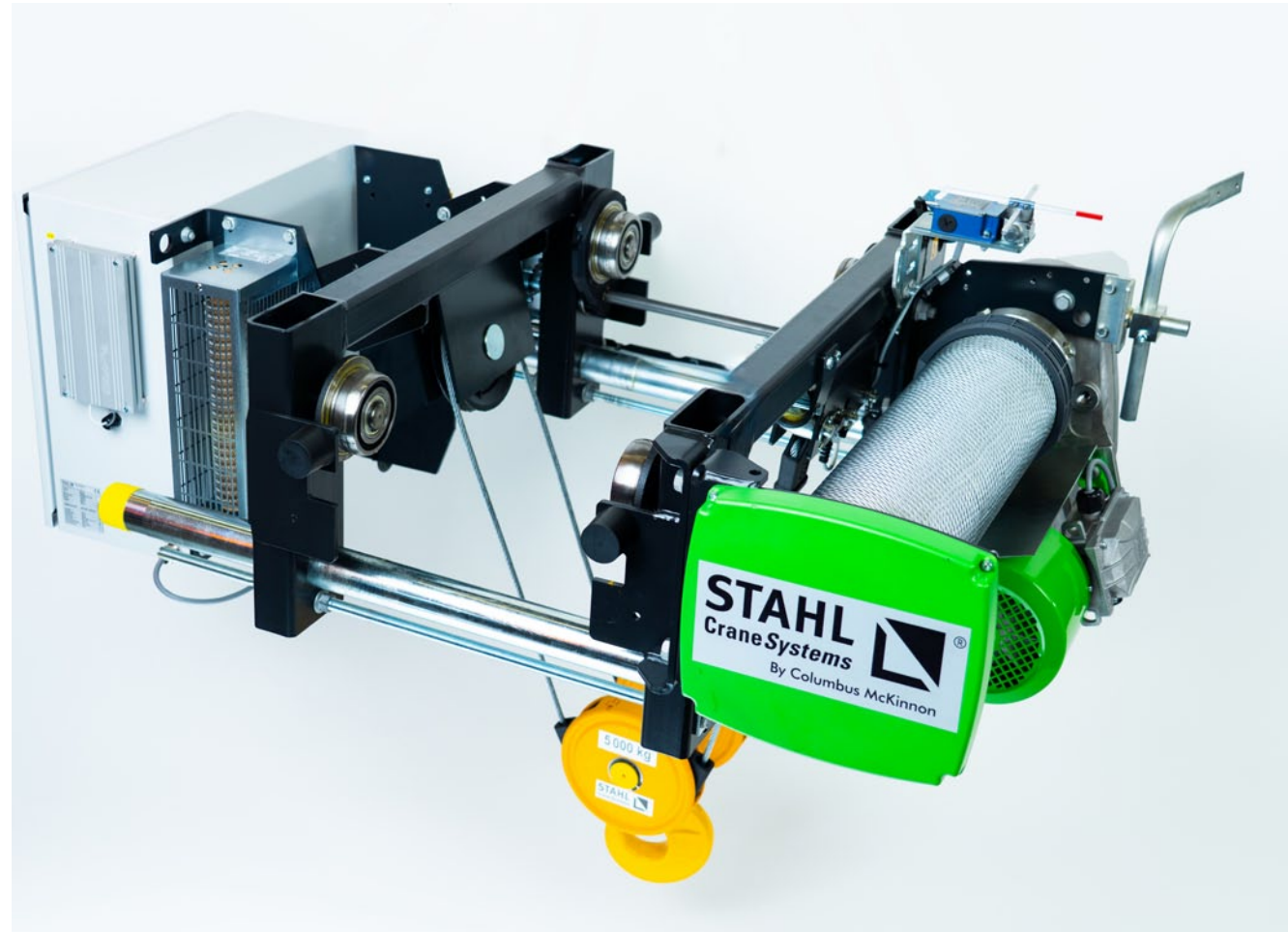
OUTSTANDING NO-LOAD SPEED

- **No-load speed:** An increase of 60-80% in no-load speed minimizes wasted time and enhances efficiency, allowing customers to work faster and better utilize their time when handling small loads.
- **5-Ton Range and below:** Lifting speed of 9 meters per minute, nearly double the industry standard of 4-5 meters per minute.
- **6.3 to 10-Ton Range:** Lifting speed of 8.1 meters per minute, significantly faster than the industry standard of 4-5 meters per minute.





# DYNAMIC LIFT SYSTEM (DLS)



## CONTINUOUSLY VARIABLE SPEED CONTROL

- **Enhanced Load Handling:** DLS Dynamic Lift System with Ultra-Lift ensures that higher loads are managed with greater precision and stability, reducing mechanical stress and improving operational accuracy.
- **Speed Control based on Load Weight:** The hoist's speed adjusts according to the actual load. For partial loads, the hoist speed decreases accordingly, following a full-load curve rather than a stepped curve. This ensures that higher loads result in reduced lifting speeds, preferred when positioning heavy loads. Our enhanced Ultra-Lift feature enables us to drive up to 300% of full load speed.
- **Stepless Speed and Load Monitoring:** Continuous variable speed control ensures precise and adaptive adjustments based on the load. The safety controller SMC4 continuously compares speed and load values, delivering a safe solution.

## FAST WHEN IT IS SAFE, SLOW WHEN IT IS NEEDED

- More efficient at slow speeds and safer at high speeds
- lifts more safely when fully loaded.
  - maintenance benefits, as the Variable Frequency Drive (VFD) reduces jarring effects, allowing smoother starts and stops, inducing less wear and tear on the crane system.

# NEW STRUCTURAL DESIGN



OPTIMIZED STRUCTURAL DESIGN WITH DRIVE-THROUGH SHAFT FOR EASIER SETUP, MAKING INSTALLATION MORE EFFICIENT AND USER-FRIENDLY.

## DRIVE-THROUGH SHAFT DESIGN

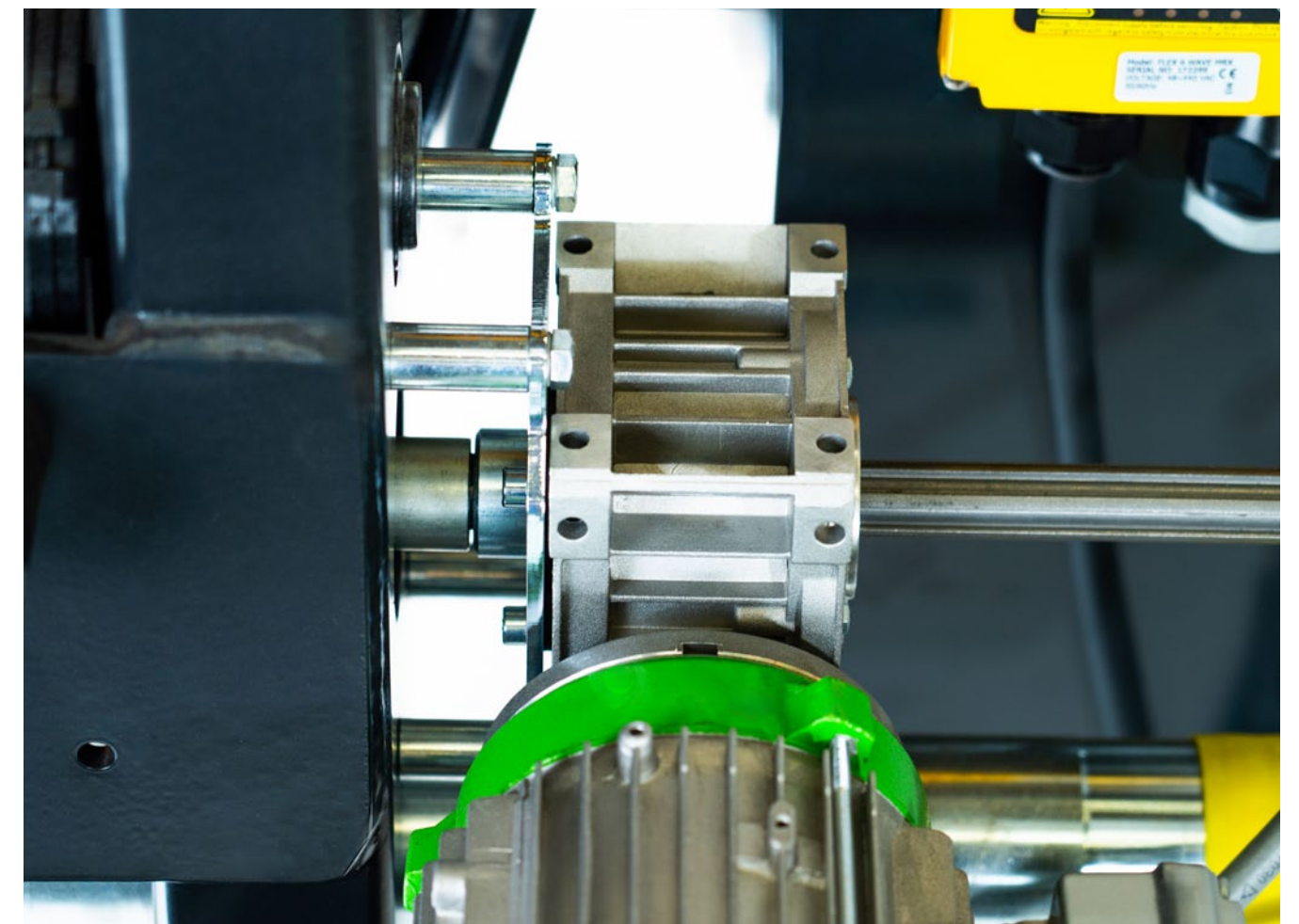
Supports both the left and right sides of the trolley, ensuring straight travel and reducing wear on the steel structure and trolley wheels, enhancing durability and longevity.

## SIMPLIFIED SHAFT LENGTH

Single shaft length that fits all flange widths from 90 to 500 mm. This change allows customers and distribution warehouses to inventory hoists without the need for custom-cut shafts on-site.

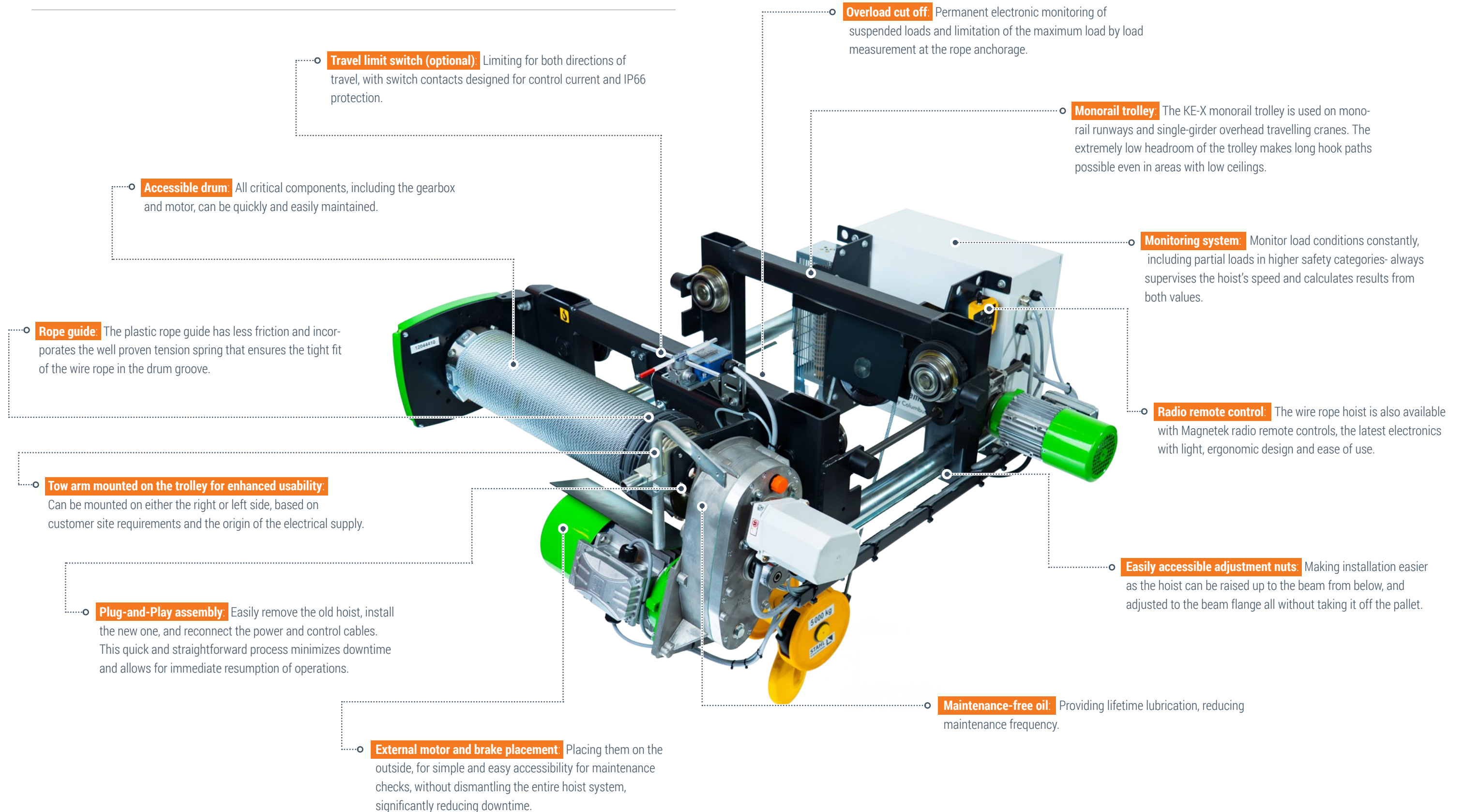
## ENHANCED CUSTOMIZATION AND SIMPLIFIED ON-FIELD ADJUSTMENTS:

- The need for technical knowledge and sophisticated adjustments is significantly reduced. Customers can now make typical adjustments easily, without requiring extra time, hardware, or additional parts.
- This setup enables easier stocking of the product, making it more accessible to a broader range of users.



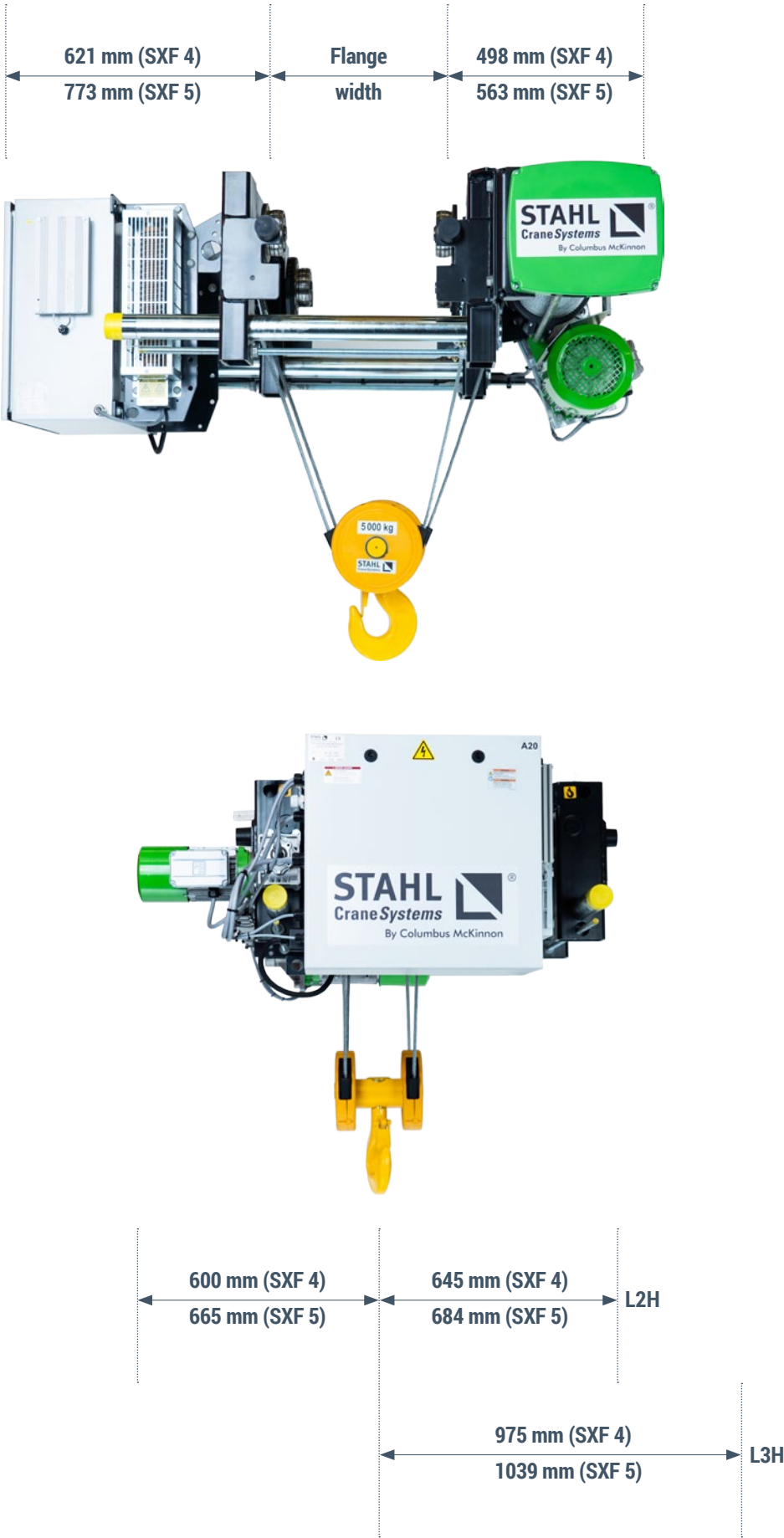
# NEW STRUCTURAL DESIGN

EASY MAINTENANCE - ENSURING MINIMAL DOWNTIME AND LOWER MAINTENANCE COSTS.





# NEW STRUCTURAL DESIGN



# COMPACT SIZE AND WEIGHT



## OPTIMIZED FRAME SIZE FOR EASY HANDLING

- Compact and Lightweight Design- Lightest weight in its class:** Our new hoist trolley series is significantly lighter than previous models, making it one of the lightest options on the market. The 10-ton trolley unit's weight has been reduced down to 540 kilograms (depending on options).
- Smaller Frame Design:** The size of the outer dimensions and space requirements are critical considerations in the industry.
  - Single Size Load Bars:** Resulting in a more compact design for standard beam sizes, the load bars remain within the overall hoist dimensions, including the control cabinet.
  - Lightweight Gear Box:** There is no need for counter-weight plates on the opposite side, allowing the control cabinet to be integrated into the trolley frame.
  - New Worm Gear Travel Motor:** Enhancing the compactness of the design.

- Optimized Vertical and Horizontal Travel:**
  - Compact Trolley Design and Vertical Hook Approach:** ensuring excellent vertical hook accessibility, with competitive C-dimensions size for long time, our design ensures maintenance ease, access to critical points are not compromised.
  - Maximized Hook Position:** Resulting in increased working area below the hoist while ensuring compliance with relevant rules, standards, and regulations.
  - Compact Gearbox:** The optimized design creates a slim side profile that improves the lateral approach of the crane or trolley in monorail applications. Our design conforms to ASME, FEM, and DIN ISO standards.
  - Improved lifting height:** to 7.5 meters and to 12 meters respectively.

**MARKET-LEADING COMPACT DESIGN**

Our compact and lightweight design maximizes usable space, while the lower weight reduces maintenance burdens. Additionally, the increased travel dimensions enhance overall efficiency and handling.



# SAFETY- BRAKE SYSTEM



## SAFETY BRAKE SYSTEM

- **Super Safe Braking System:** The brake system integrates with our Variable Frequency Drive (VFD) to provide smooth, jerk-free operation, resulting in less mechanical stress on the entire system and contributing to a longer operational life.
- **Holding and Safety Brake:** Designed to engage only in cases of power loss or emergency stop, ensuring the hoist remains stationary during unexpected events. This greatly reduces wear and tear on the brake linings, as they are not used during regular operation.
- **stepless control mechanism:** While many competitors have similar braking systems, most use stepped approaches. Our stepless approach of hoisting speeds stand out in the market. The brake system's integration with VFD technology provides a seamless and efficient lifting experience and real-time monitoring enhances both active and passive safety features.

## ADVANCED SAFETY FEATURES

Combining speed and load monitoring in a stepless manner, the brake system continuously adjusts to provide optimal safety and efficiency. An encoder monitors both direction and overspeed of the load to ensure full control at all times. All safety-related functions and features have been updated and improved in accordance with applicable standards for lifting equipment to EN 14492-2, EN 15011 and EN 13001-2. The SMC 4 also provides integrated reliable speed monitoring in accordance with EN standards. Therefore, Performance Level PL c to DIN EN ISO 13849-1 is attained.

# SAFETY- ROPE DRIVE

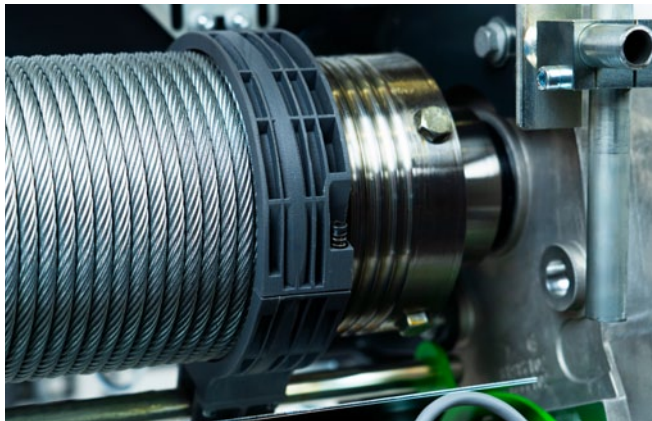


## ENHANCED ROPE GUIDE ELEMENTS

- **Finger Guards and Advanced Rope Drive System:** Our design uses guiding elements that prevent fingers from being pulled into the bottom hook block or caught in the running rope. These elements also allow for different rope angles, protecting both the rope and the user's fingers.
- **Extended Rope Life:** The rope is safeguarded within the sheave, minimizing contact with hard surfaces and reducing the accumulation of dust. This design supports wire rope lifetime.

## MARKET LEADING- ENHANCED SAFETY

Overall, our finger protection system offers enhanced safety, optimizes the rope route, minimizes dirt accumulation, and results in lower maintenance costs due to reduced rope damage.





# FEATURES & FUNCTIONS OF SMC4

THE SMC 4 MULTICONTROLLER IS AN ELECTRONIC CONTROL AND MONITORING DEVICE THAT PROVIDES INCREASED SAFETY FOR HOISTS WITH POLE-CHANGING OR FREQUENCY-CONTROLLED DRIVES. BY PERMANENTLY MONITORING THE CONDITION OF THE HOIST, THE SMC 4 CONTRIBUTES TO SAFE OPERATION AND PROPER HOIST USE.



## ■ Load Spectrum Recorder

Logs the hoist's use and runtime. Taking into account the load capacity, operating time, and lifting speed, the recorded data is used to calculate the hoist's full load hours and remaining service life.

## ■ Load-Dependent Lifting Speed: DLS (Dynamic Lifting System)

When the hoist is lifting a partial load (not full capacity), the Dynamic Load System feature will increase the hoist's speed up to 300 % for more efficient and economical operation. Using a frequency converter to reduce the hoisting speed enables precise positioning and allows the load to be set down gently.

## ■ Automatic Load Control (ALC+)

To prevent load spikes when attaching and lifting loads, automatic load control (ALC) is implemented via the SMC 4. Slow speed is maintained by the hoist drive control until the load has been lifted from ground. The response is adapted to the respective application with multiple dynamic steps.

## ■ Load Monitoring with Overload Cut-off

With dynamic overload protection, load sensors monitor lifting and lowering operations as well as the status of suspended loads. The SMC 4 detects any overloading of the hoist, evaluates the data and responds if the maximum permitted load is exceeded. The load is then safely lowered.

## ■ Operating Data Acquisition

Using a PC, all operating data can be accessed, evaluated, archived, and used with the configuration app for networked systems and production processes.

## ■ The hoist and travel motors are equipped

with PTC thermistor sensors for temperature monitoring as standard.

## ■ IMPULSE® · G+ Mini - Frequency Inverters from Magnetek

A frequency inverter is always advantageous when productivity is to be supplemented by an advanced ultra-lift. With the Dynamic Load System, when the hoist is not at full capacity, the speed can be safely increased to improve productivity and efficiency. Reducing the lifting speed, in turn, allows the load to be set down gently and positioned precisely. By means of a frequency converter, the SMC 4 Multicontroller provides a range of important safety capabilities, including functional safe shutdown in case of overload, speed monitoring, improved ALC automatic load control, brake and temperature monitoring, motor management, and slack rope cut-off. It also enables control and monitoring of the hoist speed with communication via the serial Modbus interface.

# SXF OPTIONS AND FEATURES



Customize STAHL CraneSystems SXF series hoists to meet specific needs without delays or complications.

## ■ Easy-connect Plug and Play for our STAHL CraneSystems CraneKits.

■ **Radio Ready:** can order without a built-in radio and easily add it later. The hoist control is designed to upgrade with radio remote control any time.

■ **Flange Range Width** always adjusted to customer specifications, ensuring a precise fit. Also, customers can easily change flange settings without modifying parts.

■ **Trolley Motor Brake:** the trolley motor is always supplied with a brake as standard, ensuring safety and convenience.

## ■ Radio Remote Control

Magnetek's robust radio transmitters with either pushbuttons or master switch/joystick controls ensure operator comfort and ergonomic operation.





Columbus McKinnon has a history of over 150 years and is a world leader in lifting and intelligent motion control technology. The innovative portfolio of high-quality brands, including STAHL CraneSystems, Magnetek, Pfaff-silberblau, Duff-Norton, Yale, Dorner, CM and montratec addresses the needs of our customers by enhancing safety and promoting growth and efficiency. Experience, expertise and innovation combined with a deep understanding of user needs are the formula for success that has long underpinned our portfolio of hoists, material handling equipment and lifting accessories. Columbus McKinnon is a global organization headquartered in Charlotte, USA (North Carolina). Its global presence includes offices and manufacturing facilities in North America, Latin America, Europe, Africa and Asia.



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