

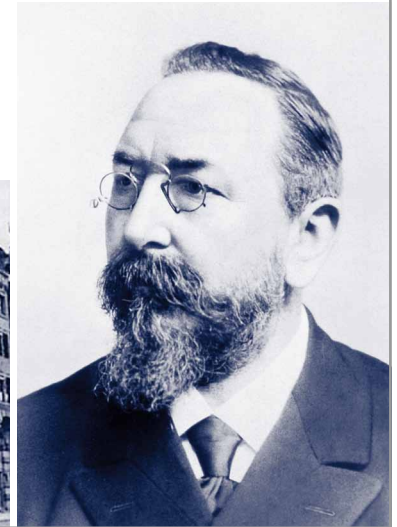


Figures, dates, facts

- › Volume of production (31.12.2012)
 - Chain hoists 10,800 units
 - Wire rope hoists 6,100 units
 - Travel drives 15,200 units
 - End carriages 6,100 units
- › Number of employees (31.12.2012)
 - Germany 557
 - Apprentices 27
 - Global 693
- › Premises
 - Overall area 50,000 m²
 - Production area 20,000 m²

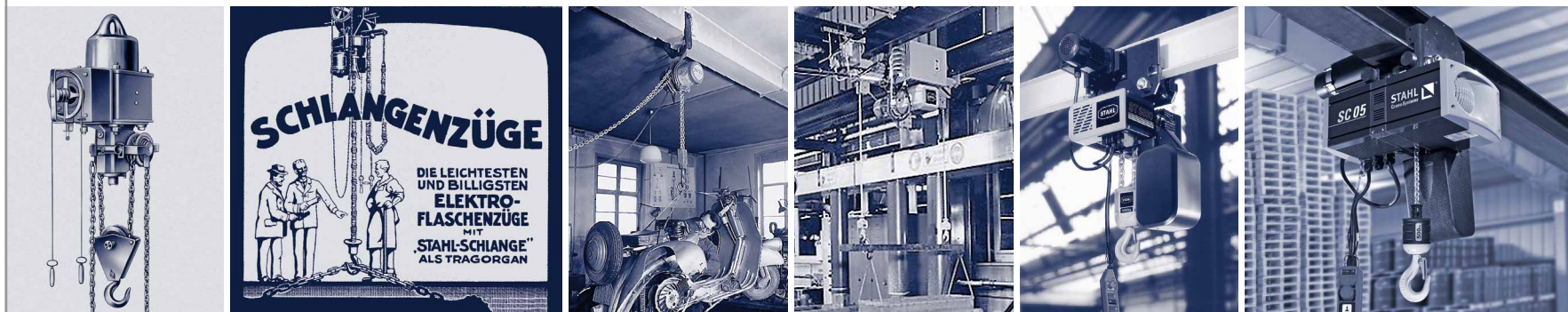
The founding years

- 1876 Company established by Rafael Stahl and Gustav Weineck
- 1880 Establishment of circular spring needle knitting machine factory
- 1890 Sons Karl and Rafael Stahl enter the company
- 1898 The material handling era begins



Evolution of chain hoists

- 1903 First electric pulley block
- 1919 The STAHL snake: innovative polydirectionally flexible thread chain
- 1950 The Elektus: first portable electric miniature chain hoist in the world
- 1982 Introduction of T chain hoist
- 1997 The new generation: ST chain hoist series
- 2013 Introduction of new SC chain hoist



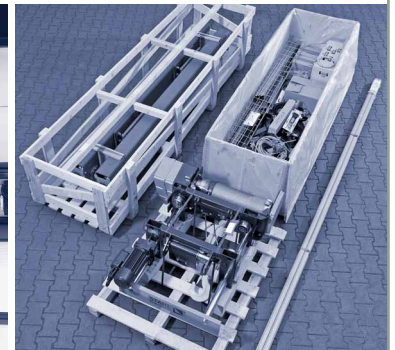
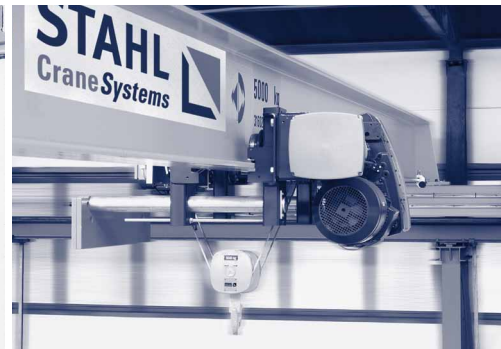
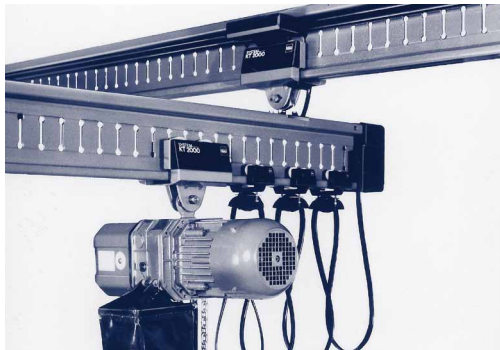
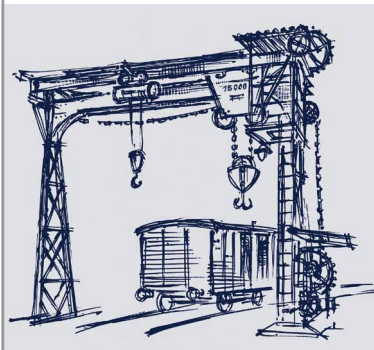


Evolution of wire rope hoists

- 1922 Development of SS electric hoist with wire rope and drum
- 1952 Series production of C-type electric wire rope hoists
- 1960 1960 N-type electric wire rope hoists supersede the C-type series
- 1978 Introduction of AS wire rope hoist series
- 1998 The new generation: SH wire rope hoist series
- 2004 Market launch of SHW 8 winch
- 2010 Introduction of AS7 twin hoists with S.W.L. up to 125t
- 2011 Market launch of SW standard winch
- 2013 AS series expanded by ASR7

Evolution of crane technology

- 1898 First large electric portal crane
- 1964 First complete standardised crane programme
- 1984 Introduction of KT 2000 small crane system
- 1991 Innovative process technology doubles capacity
- 2006 Innovative crane technology dispensing with moving cables
- 2009 New concept – CraneKits for crane builders



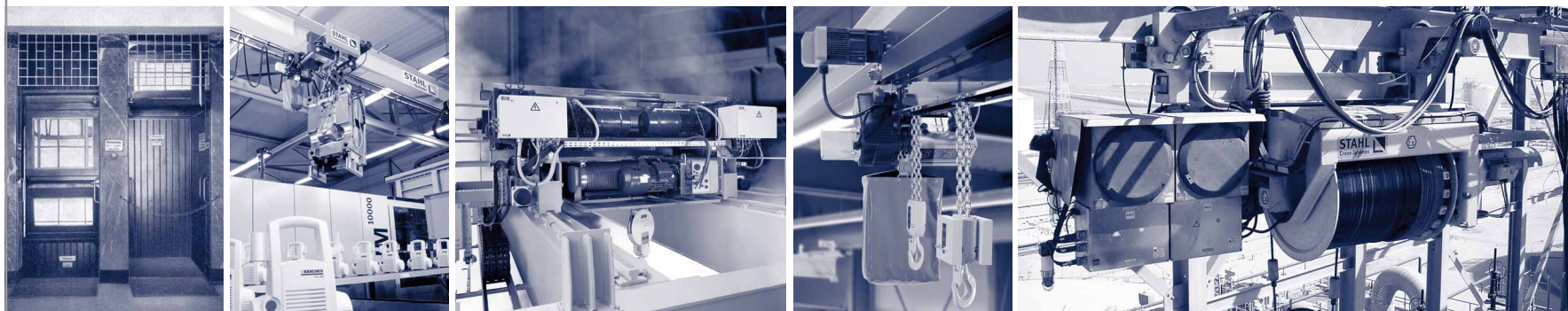


Evolution of explosion protection division

- 1926 Development of explosion-protected hoists, crane components and control technology begins
- 1935 Manufacture of explosion-protected crane systems for the chemical industry up to a safe working load of 100,000 kg
- 1953 First explosion-protected flameproof enclosed electric wire rope hoist in the world
- 2003 ATEX product directive 94/9/EC is implemented for the whole product range without exception
- 2009 Largest portfolio of explosion-protected lifting technology, drive technology and control technology in the world
- 2010 IECEx certified products introduced

Evolution of customised solutions

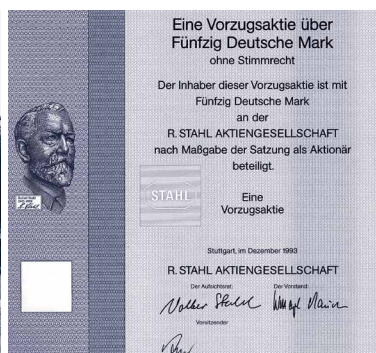
- 1908 World's highest paternoster lift in Stuttgart
- 1956 Europe's fastest lift in the Hannover Fair tower
- 2004 World's first extra-short headroom trolley; headroom reduced by 60 %
- 2007 TDC Twin Drive Concept
- 2008 STD variable dual chain hoist
- 2008 Off-standard hoists for all fields of LNG engineering (gas liquefaction plant)



R.STAHL Fördertechnik becomes STAHL CraneSystems

- 1954 R.STAHL Explosion Protection becomes independent company division along with Material Handling
- 1979 Global orientation begins with first subsidiary in the USA
- 1993 R.STAHL GmbH & Co. incorporated as a joint stock company
- 2005 Ownership of the Material Handling Division is transferred to Konecranes Plc, Finland.

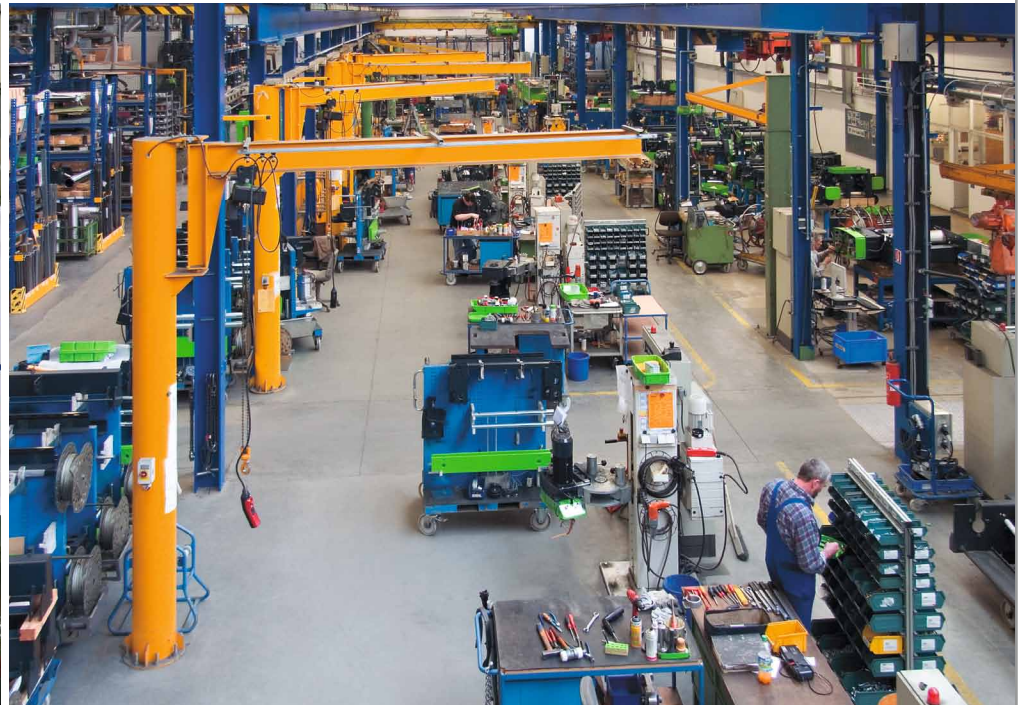
The premium brand STAHL CraneSystems comes into being



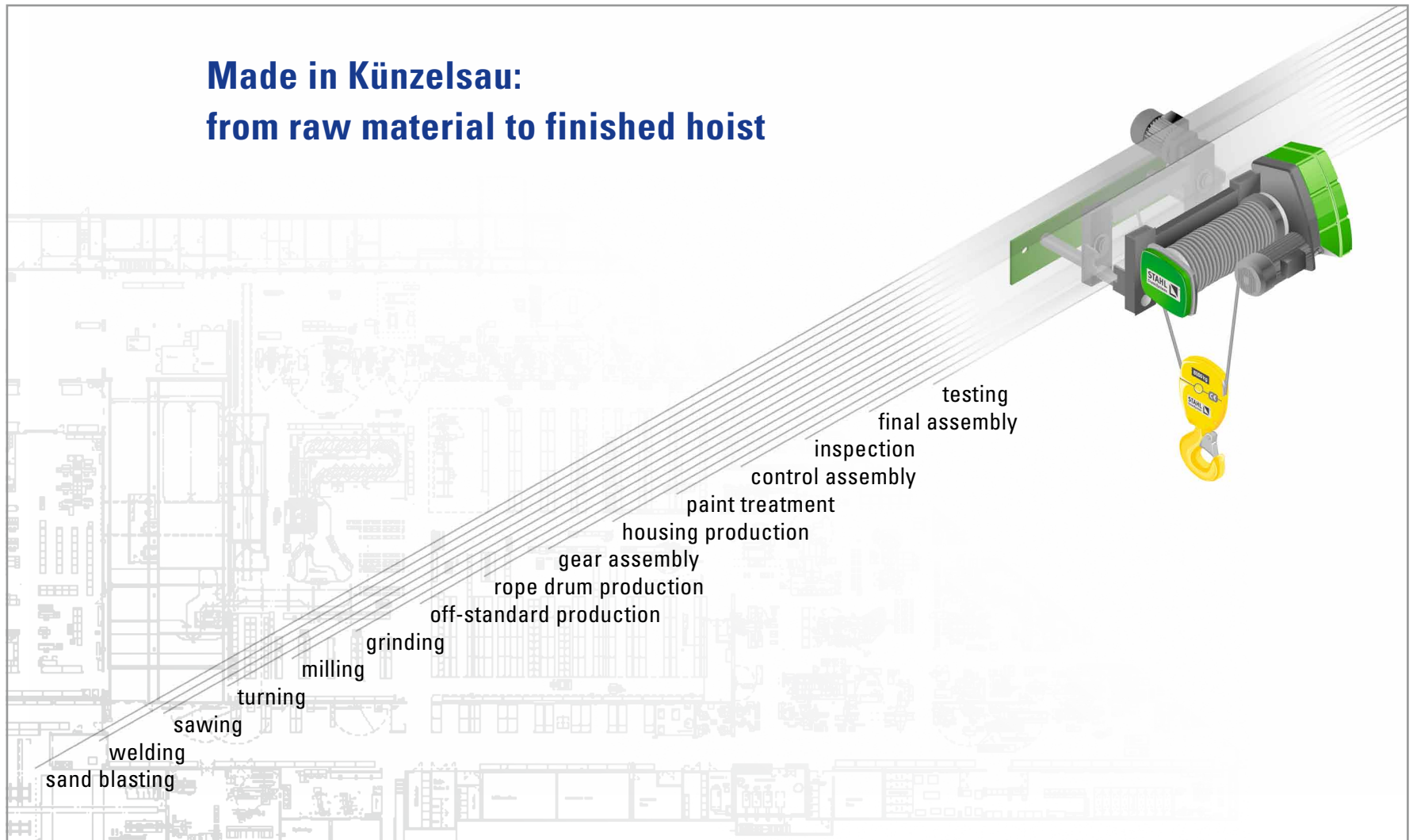


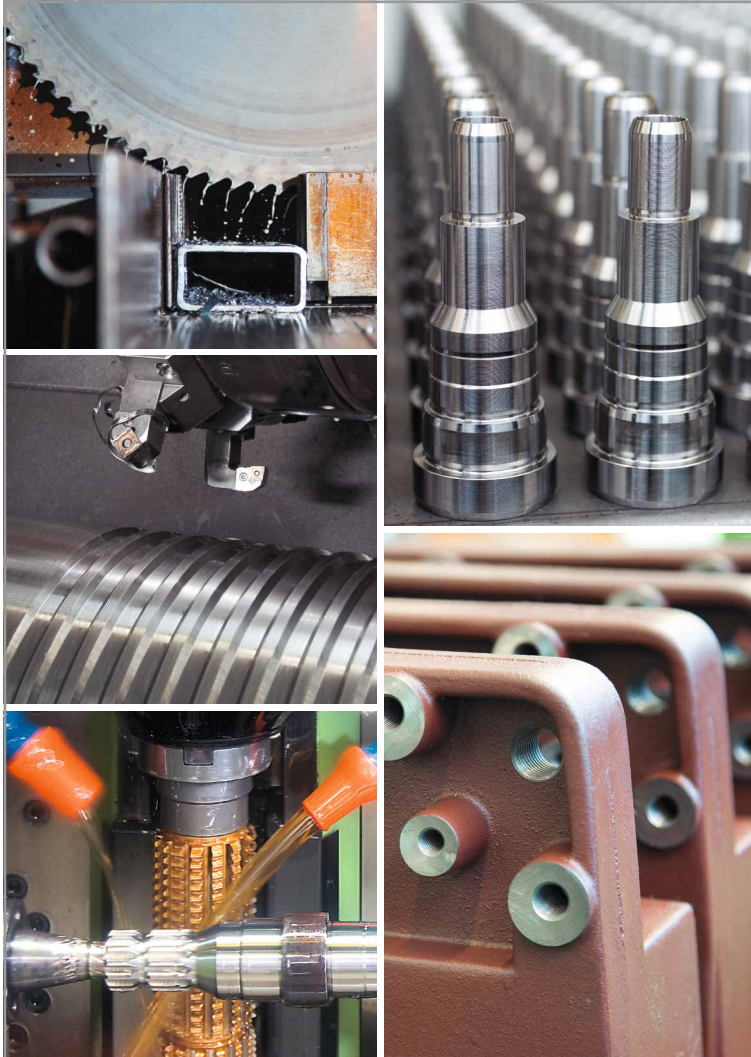
Production plant

- Künzelsau, Germany



Made in Künzelsau: from raw material to finished hoist



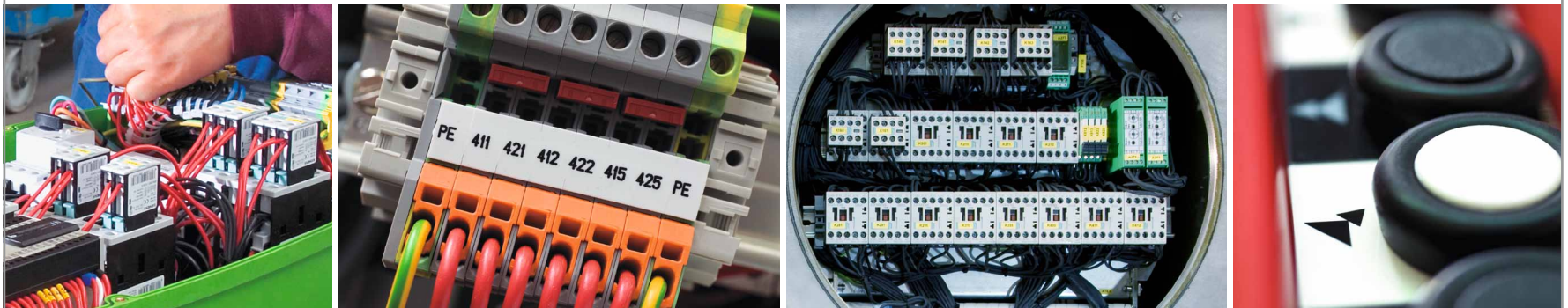


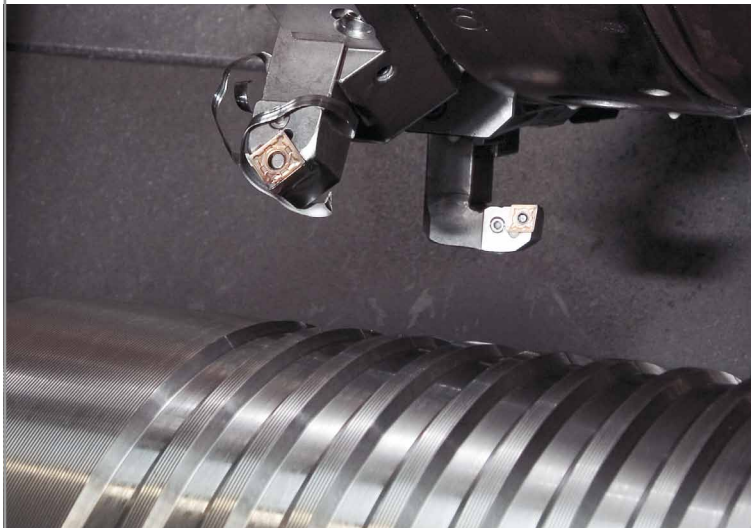
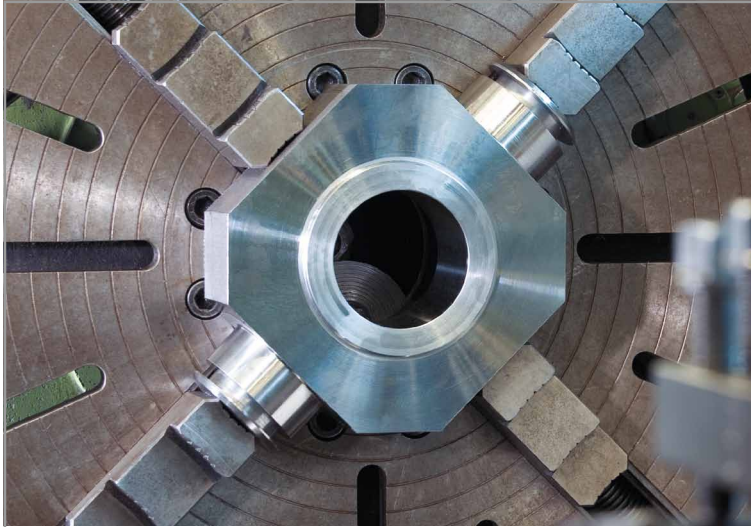
Manufacture of mechanical components

- Metalworking shop and sand-blasting equipment
- Welding robot
- Long material store and sawing shop
- Turning shop
- Gear milling shop
- Housing manufacture
- Rope drum production
- Gear assembly
- Paint shop

Manufacture of electrical components

- Wiring and connecting up standard and off-standard controls
- Assembling Ex controls
- Assembling and connecting control pendants





Off-standard production

- Production of small batches and off-standard parts
- Production of particularly large parts, e.g. rope drums, wheels and rope guides up to 800 mm in diameter and 5,700 mm in length
- Implementing customised solutions



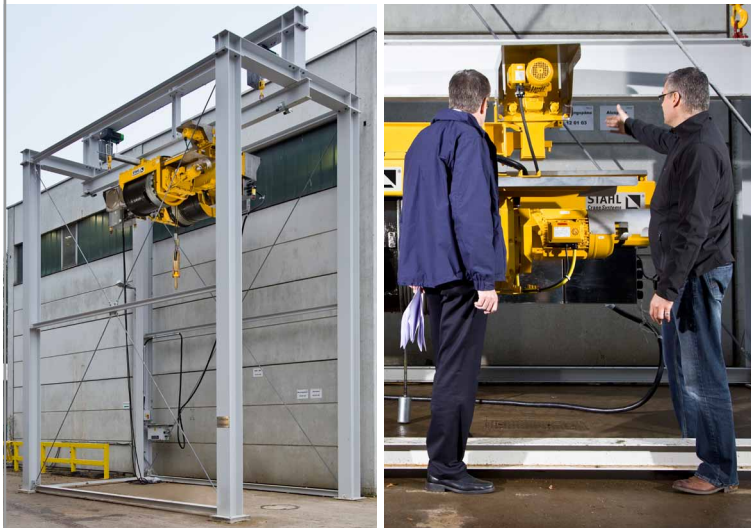
Measuring and testing

- Measuring gearwheels, pinion shafts and other parts
- Every first unit of a series is subject to program-controlled measurement
- 100 % of ATEX and IECEx parts are inspected
- Each hoist is subjected to the appropriate test load on the test rig and all functions are tested before delivery



Assembly

- Over 10 assembly positions
- All standard and off-standard hoists are completed, including Operator self-inspection, by the fitter
- Ex and frequency inverter hoists are prepared electrically before being transferred to the electrics position



Test rigs

- Every ready assembled hoist is tested
- Two test rigs (max. 10 t and 16 t load)
- Load containers are filled with water
- Setting and testing 10 % above rated load
- Ex testing only by specially tested personnel



CERTIFICATE

The Certification Body
of TÜV SÜD Management Service GmbH
certifies that



STAHL CraneSystems GmbH
Daimlerstraße 6
D-74653 Künzelsau

Including the sites and scope of application
see enclosure

has established and applies
a Quality Management System.

An audit was performed, Report No. **70025219**
Proof has been furnished that the requirements
according to

ISO 9001:2008

are fulfilled. The certificate is valid until **2012-12-07**
Certificate Registration No. **12 100 20484 TMS**

M. Hergel

Munich, 2009-12-21

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QMS-TGA-ZM-07-92


TÜV SÜD Management Service GmbH • Zertifizierstelle • Ridlerstraße 65 • 80339 München • Germany

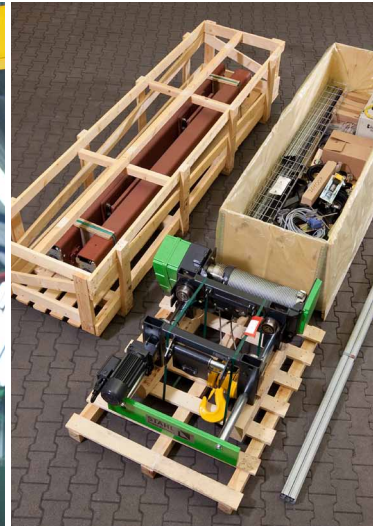
TÜV®

Quality management

- Quality assurance is a basic principle in production
- A dedicated continuous improvement process team constantly improves production process
- Tested processes – certified by TÜV (Technical Supervisory Authority) to ISO 9001: 2008
- High level of safety awareness thanks to Employers' Liability Insurance Associations, PTB (Federal Physico-Technical Institute) and DMT
- World-wide product approvals

Product portfolio

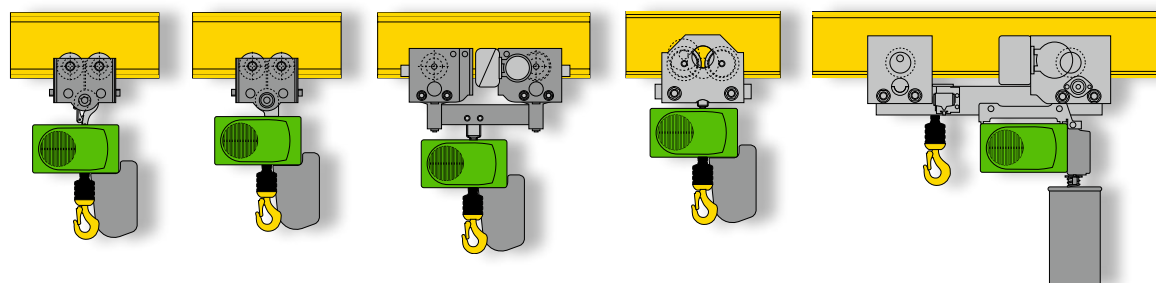
- Most comprehensive product portfolio in the world
- World market leader for -protected hoists
- Specialist for off-standard manufacture





SC chain hoists

- Innovative chain hoist programme for Safe working loads from 63 kg to 2,500 kg
- Robust high-tenside powder-coated aluminium body
- Patented 5-pocket chain sprocket
- Chain guide of die cast aluminium
- Integrated hoist limit switch
- Extended temperature range from -20°C to $+50^{\circ}\text{C}$



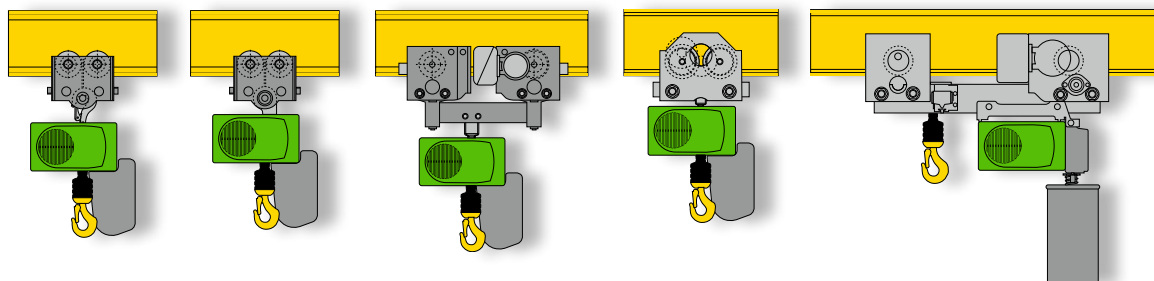


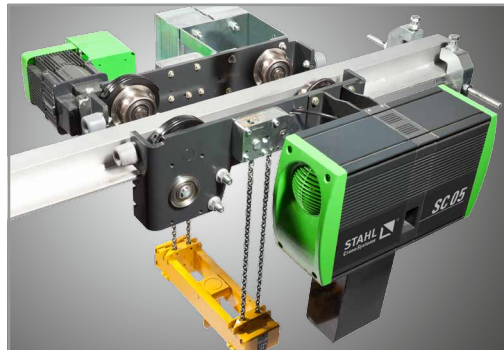
SC chain hoists

■ Standard
□ Option

Type	Load capacity up to [kg]	Stationary	Push trolley	Electric trolley	Articulated trolley	Short headroom trolley	Extra short headroom trolley	Dual chain hoists
SC 02	320	■	■	■	■	■		
SC 05	630	■	■	■	■	■	■	■
SC 10	2,500	■	■	■	■	■	□	□
SC 16*	3,200	■	■	■	■	■	■	■
SC 25*	5,000	■	■	■	■	■	■	■

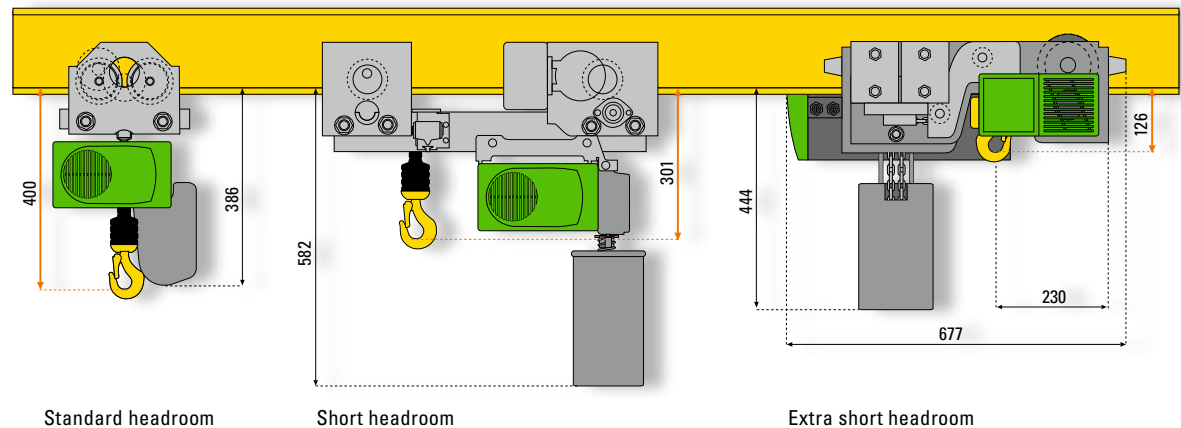
* The SC 16 and SC 25 chain hoists are still in preparation and will be available from the end of 2013.

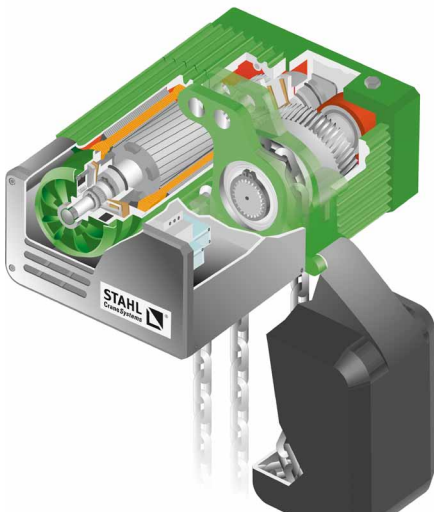




SCK chain hoist as [extra] short headroom trolley

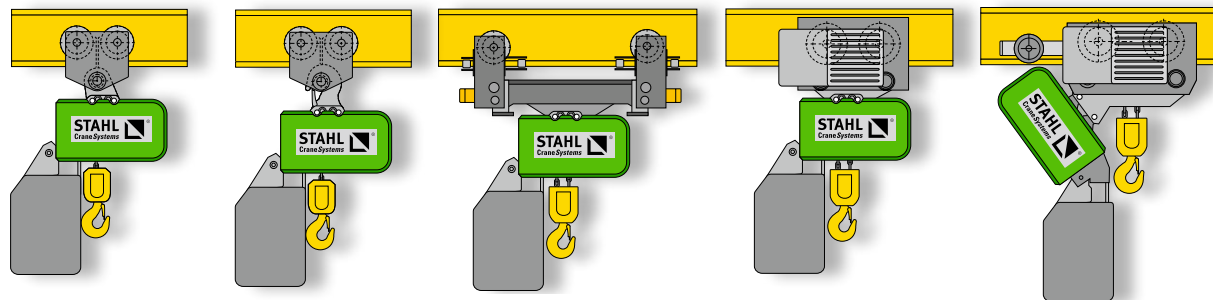
- Headroom reduced by 67% with maximum hook paths
- Low deadweight
- Patented chain drive with two separate chains running in sync, acting on one bottom hook block

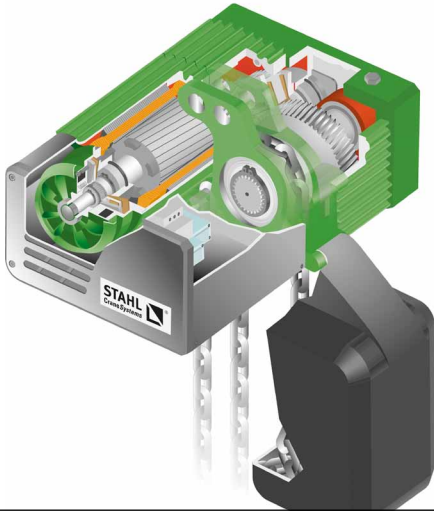




ST chain hoists

- Very high standard classification according to FEM
- Available fast thanks to modern Kanban manufacture
- Patented suspension directly on chain guide
- All chain hoists are available with two hoisting and two travel speeds
- All chain hoists are available in Ex -protected design (ATEX und IECEx)
- Safe working loads from 125 kg to 6,300 kg



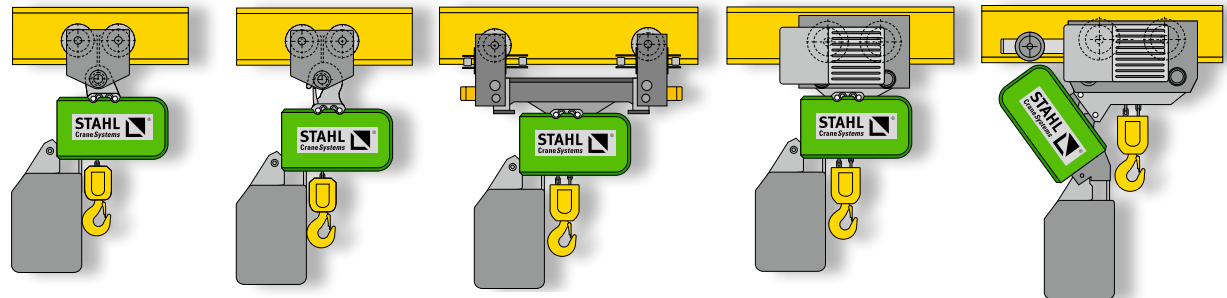


ST chain hoists

■ Standard
□ Option

Type	Load capacity up to [kg]	Stationary	Push trolley	Electric trolley	Articulated trolley	Short headroom trolley	Extra short headroom trolley	Dual chain hoists	
								STD	STD Vario
ST 05	125 – 630	■	■	■	■	■	■	■	□
ST 10	500 – 1,000	■	■	■	■	■	□	■	□
ST 20	1,000 – 2,000	■	■	■	■	■	□	□	□
ST 30	1,250 – 3,200	■	■	■	■	■	■	■	□
ST 50	2,500 – 5,000	■	■	■	■	■	■	■	□
ST 60	3,200 – 6,300	■	■*	■	■	■	□	■	□

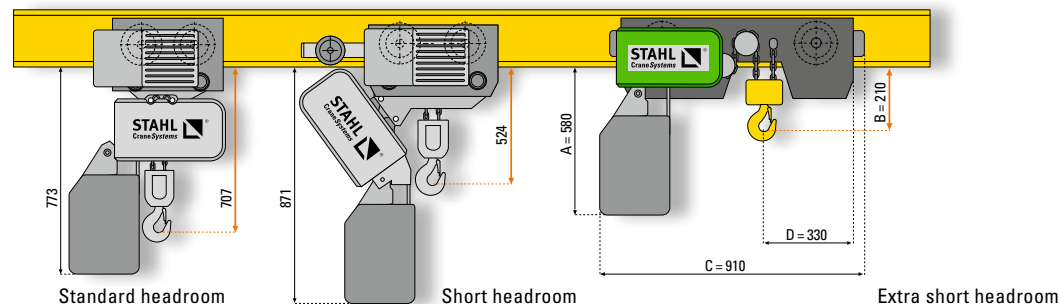
* The ST 60 is only available with 1/1 reeving in the standard programme.





[Extra] short headroom trolley STK

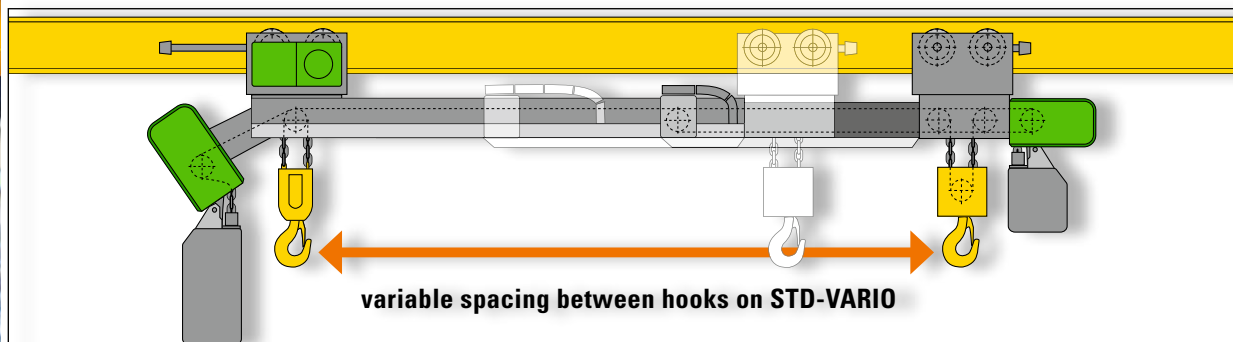
- Hook height can be utilised to the maximum
- Offset chain drive with patented chain guide for smooth, vibration-free lifting of loads
- Trolleys deliberately designed without projecting edges
- Safe, cost-effective and maintenance-friendly thanks to the use of field-proven standard components
- Safe working loads from 500 kg to 5,000 kg





STD and STD-VARIO dual chain hoist

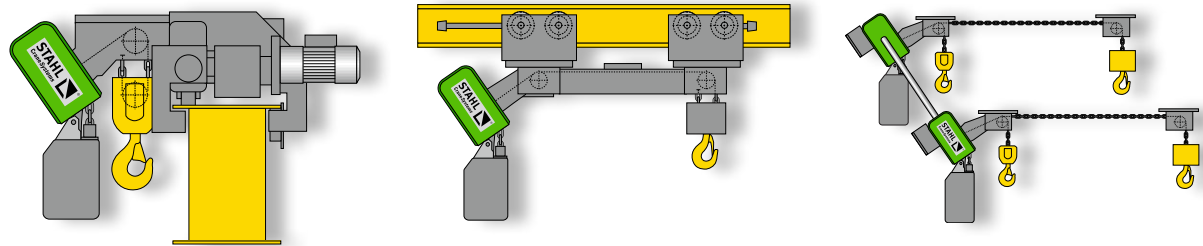
- Safe attachment of load
- No waste of available space
- Simple power supply
- Absolutely synchronous operation
- The load hooks cannot be displaced accidentally during lifting or travelling
- Safe working loads from 2 x 3,200 kg to 2 x 2,300 kg






Off-standard chain hoist solutions

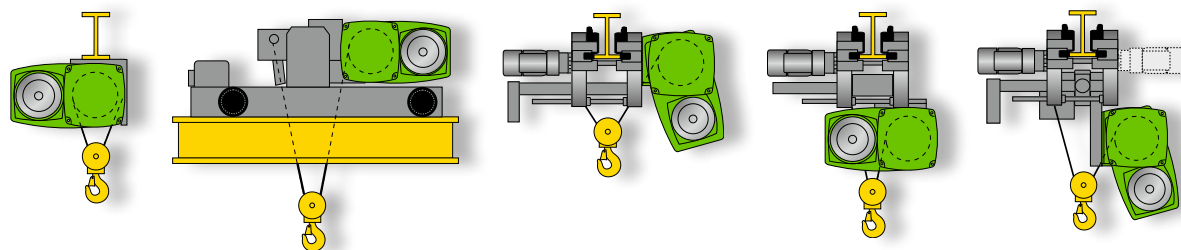
- Off-standard solutions for
 - wind power stations
 - extreme safety (redundant designs)
 - big-bag handling
- Synchronous lifting for four-point load take-up by coupling chain hoists together





SH wire rope hoists

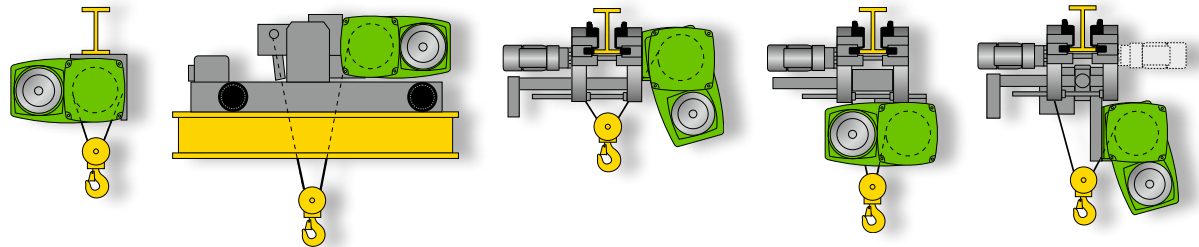
- Very high standard classification according to FEM
- Two hoisting and travel speeds as standard
- U-shape makes for short overall length
- Electronic motor and brake management guarantees long service life and safe operation
- -protected design as an option (ATEX and IECEx)
- Safe working loads from 3,200 kg to 25,000 kg




SH wire rope hoists

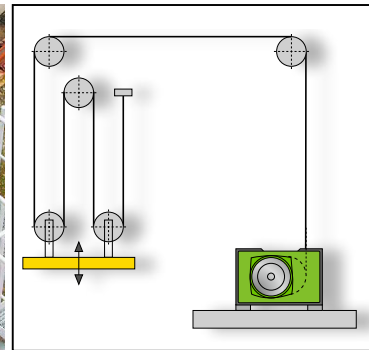
■ Standard
□ Option

Type	Load capacity up to [kg]	Stationary	OE double rail crab	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	■	■	□	■	□



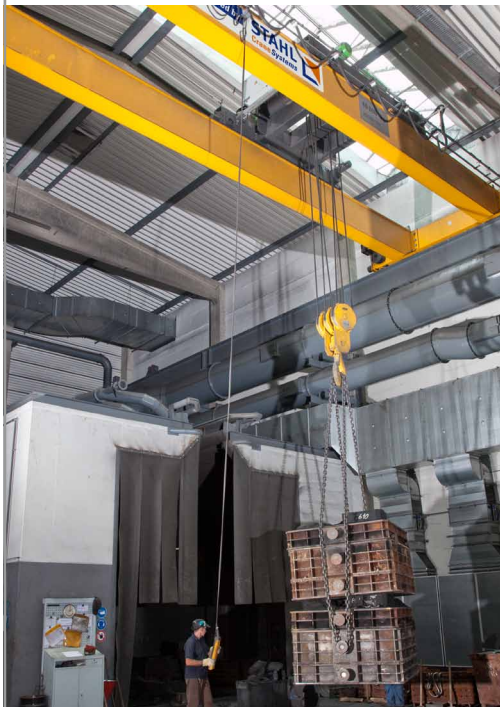
AS 7 wire rope hoists

- Available for use as stationary equipment and with crabs
- Innovative drive technology of cylindrical rotor motor with monodisc magnetic brake
- Optimum construction for installing in material handling systems
- Maintenance-friendly, lifetime lubrication in oil bath
- -protected design as an option (ATEX and IECEx)
- Safe working loads from 6,300 kg to 125,000 kg



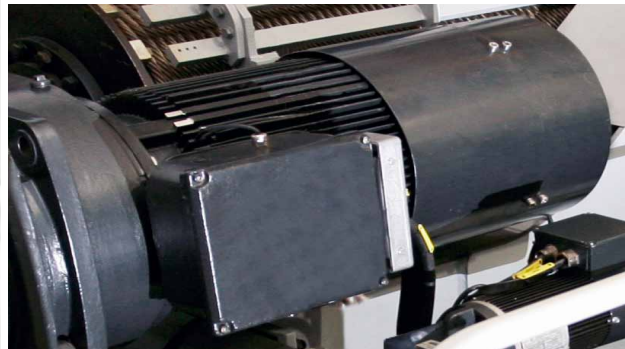
AS 7 wire rope hoist as twin hoist

- Higher S.W.L. and greater lifting height
- Precise positioning of load
- The load is lifted and lowered without lateral movement thanks to the simultaneously counter-rotating rope guides
- Safe working loads from 25,000 kg to 125,000 kg




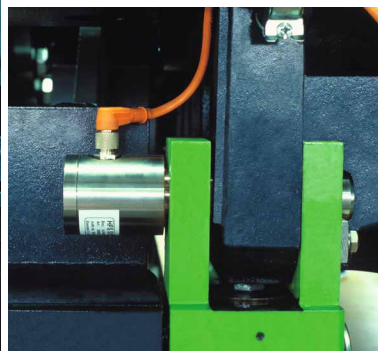
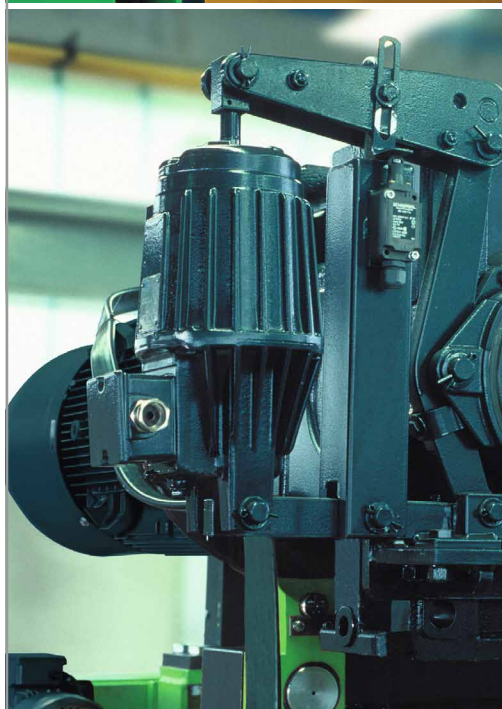
SW winch

- Four frame sizes, SW6, SW10, SW16 and SW25
- Four FEM classifications available
- Compact construction and short approach dimensions
- Powerful hoist motors for great lifting heights
- Equipped as standard with a condition monitoring unit
- Slightly angled return sheaves
- Optionally available in ESR version (extended speed range)
- Safe working loads up to 250t



SHW 8 winch

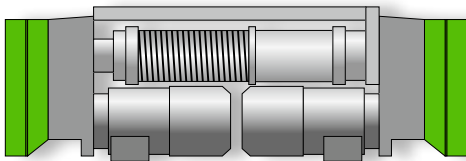
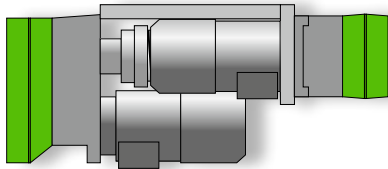
- Hoist motor, travel motor, hoist limit switch, endcarriages, galvanised wire ropes are from the reliable SH programme
- Wide-reaching off-standard equipment available
- Plug connections for electrical components permit speedy assembly and simple maintenance
- Modular mechanical construction
- -protected design as an option (ATEX and IECEx)
- Customized engineering solutions
- Safe working loads up to 160t





TDC twin drive concept

- Uncompromising safety for transporting molten metals
- Two synchronously controlled hoist motors and brakes
- Continuous monitoring of brakes, drives and loads
- Double gear and brake safety
- Long service life thanks to robust, completely enclosed system
- Smooth emergency braking
- Friction linings are not permanently compressed, thus no danger of them bonding
- Up to 60 % higher lifting capacity when not transporting molten metals
- Two manual release brakes for emergency lowering
- Load cannot drop even if gear breaks




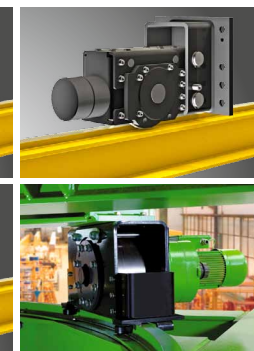
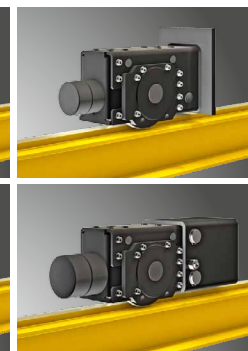
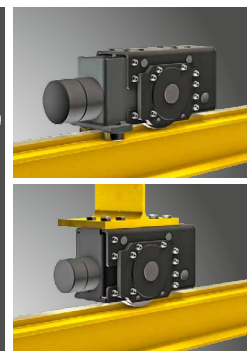
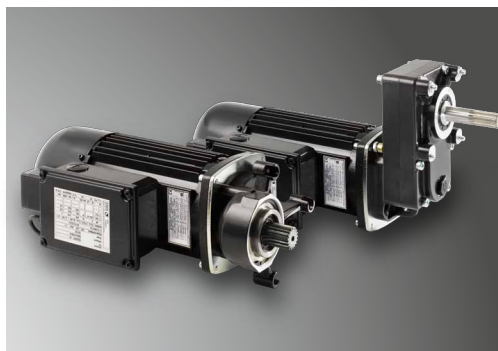
Off-standard wire rope hoist solutions

- Planning in cooperation with our customers
- More than 100 years' experience and expertise in hoist technology
- Superlative quality thanks to certified processes




Drive technology components

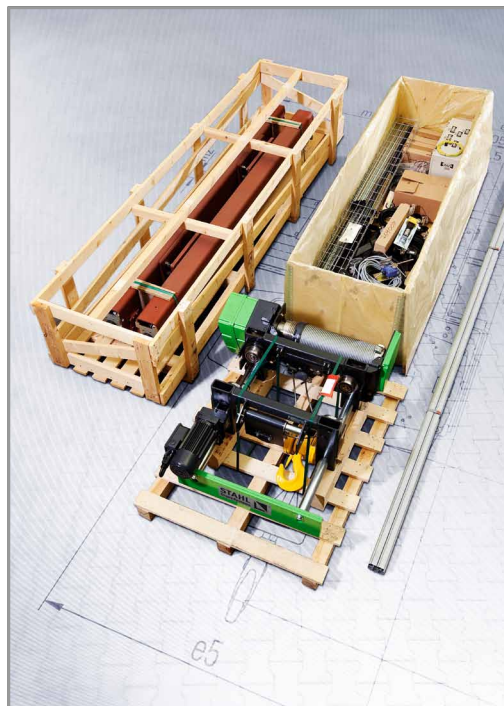
- Optimised endcarriages for single girder overhead travelling cranes, double girder overhead travelling cranes and single girder suspension cranes
- Versatile crane travel drives with two speeds as standard (with frequency inverter as an option)
- Wheel blocks for universal use
- -protected design as an option (ATEX und IECEx)




Control technology components

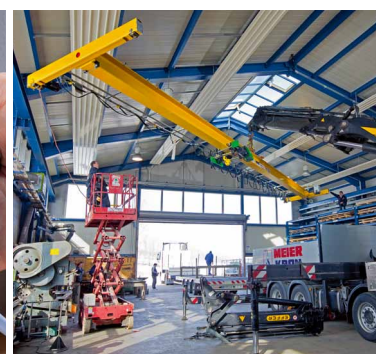
- Crane and cross travel limit switches
- Radio remote controls with pushbutton or joystick transmitters
- Load display with large character LEDs
- Frequency inverters for stepless speed control
- Crane anti-collision device with light barriers
- Load monitoring and service life calculation (SMC)
- -protected design in compliance with ATEX as an option





CraneKits

- Simple configuration and uncomplicated ordering procedure thanks to the new »CraneGuide« software
- All components are preassembled, wired and carefully packed
- Plug and play
- -protected design as an option (ATEX and IECEx)




-Competence

- Decades of experience
- Own research and development and production
- Approvals from Federal Physico-Technical Institute (PTB) and many international testing authorities
- Products comply with EC product directive 94/9/EC (ATEX 95)
- Compliant with product directive IECEx

Physikalisch-Technische Bundesanstalt
Braunschweig und Berlin



EG-Baumusterprüfbescheinigung

- (1)  EG-Baumusterprüfbescheinigung
- (2) Geräte und Schutzsysteme zur bestimmungsgemäßen Verwendung in explosionsgefährdeten Bereichen - Richtlinie 94/9/EG
- (3) EG-Baumusterprüfbescheinigungsnummer
- PTB 06 ATEX 1058
- (4) Gerät: Gerätekasten Typ GK-A...ex
- (5) Hersteller: STAHL CraneSystems GmbH
- (6) Anschrift: Daimlerstr. 6, 74653 Künzelsau, Deutschland
- (7) Die Bauart dieses Gerätes sowie die verschiedenen zulässigen Ausführungen sind in der Anlage und den dem beigefügten Unterlagen zu dieser Baumusterprüfbescheinigung festgelegt.
- (8) Die Physikalisch-Technische Bundesanstalt bescheinigt als benannte Stelle Nr. 0102 nach Artikel 9 der Richtlinie des Rates der Europäischen Gemeinschaften vom 23. März 1994 (94/9/EG) die Erfüllung der grundlegenden Sicherheits- und Gesundheitsanforderungen für die Konzeption und den Bau von Geräten und Schutzsystemen zur bestimmungsgemäßen Verwendung in explosionsgefährdeten Bereichen gemäß Anhang II der Richtlinie.
- Die Ergebnisse der Prüfung sind in dem vertraulichen Prüfbericht PTB Ex Ex 06-16318 festgehalten.
- (9) Die grundlegenden Sicherheits- und Gesundheitsanforderungen werden erfüllt durch Übereinstimmung mit
- EN 60079-0:2004 EN 60079-1:2004 EN 60079-7:2003
prEN 61241-0:200X EN 61241-1:2004
- (10) Falls das Zeichen „X“ hinter der Bescheinigungsnummer steht, wird auf besondere Bedingungen für die sichere Anwendung des Gerätes in der Anlage zu dieser Bescheinigung hingewiesen.
- (11) Diese EG-Baumusterprüfbescheinigung bezieht sich nur auf Konzeption und Prüfung des festgelegten Gerätes gemäß Richtlinie 94/9/EG. Weitere Anforderungen dieser Richtlinie gelten für die Herstellung und den Inverkehrbringen dieses Gerätes. Diese Anforderungen werden nicht durch diese Bescheinigung abgedeckt.
- (12) Die Kennzeichnung des Gerätes muß die folgenden Angaben enthalten:
-  II 2 G Ex de IIC T4/T5/T8
 II 2 D Ex d A21 IP66 T80°C/T95°C/T130°C

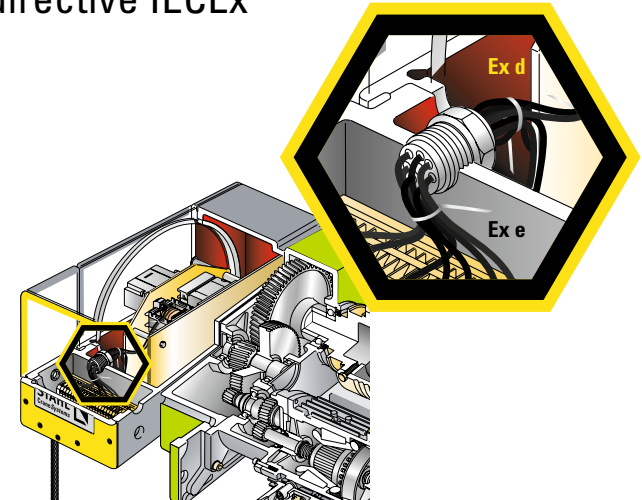
Zertifizierungsstelle Explosionsschutz
im Auftrag

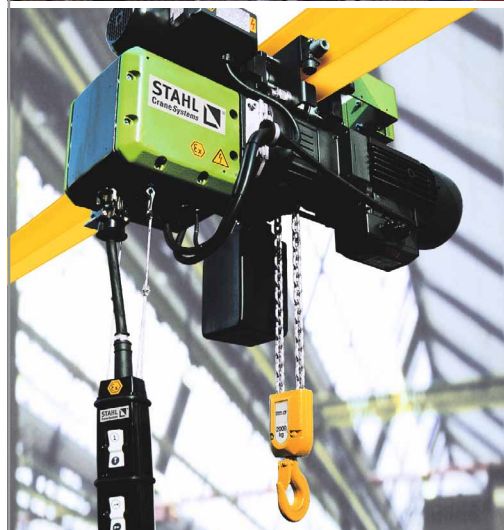
Braunschweig, 19. Oktober 2005


Dr.-Ing. U. Klausmeyer
Direktor und Professor

Seite 1/3

EG-Baumusterprüfbescheinigungen ohne Unterschrift und ohne Siegel haben keine Gültigkeit.
Diese EG-Baumusterprüfbescheinigung darf nur ungetriggert weiterverkauft werden.
Ausgabe oder Anzeigepflicht bedürfen der Genehmigung der Physikalisch-Technischen Bundesanstalt.





-Chain hoists

- Mature electronics, drive technology for the most stringent requirements, innovative components and field-proven robust standard components
- The world's first and only complete programme for Zone 1, Zone 21 and Zone 22 from 125 kg to 6,300 kg

Use	Category	Protection against	Explosion-protection class
Zone 1	Ex II 2 G	Gas	Ex de IIB T4 or Ex de IIC T4
Zone 21	Ex II 2 D	Dust	Ex tD A21 IP 66 T 120 °C
Zone 22	Ex II 3 D	Dust	Ex tD A22 IP 66 T 120 °C



-Wire rope hoists

- Condition monitoring devices in explosion-protected design ensure safe operation
- Electronic motor and brake management guarantees long service life
- Most extensive explosion-protected wire rope hoist programme for Zone 1, Zone 2, Zone 21 and Zone 22 from 500 kg to 160,000 kg

Use	Category	Protection against	Explosion-protection class
Zone 1	Ex II 2 G	Gas	Ex de IIB T4 or Ex de IIC T4
Zone 2	Ex II 3 G	Gas	Ex de nA IIB T3 (T4) or Ex de nA IIC T3 (T4)
Zone 21	Ex II 2 D	Dust	Ex tD A21 IP 66 T 120 °C
Zone 22	Ex II 3 D	Dust	Ex tD A22 IP 66 T 120 °C

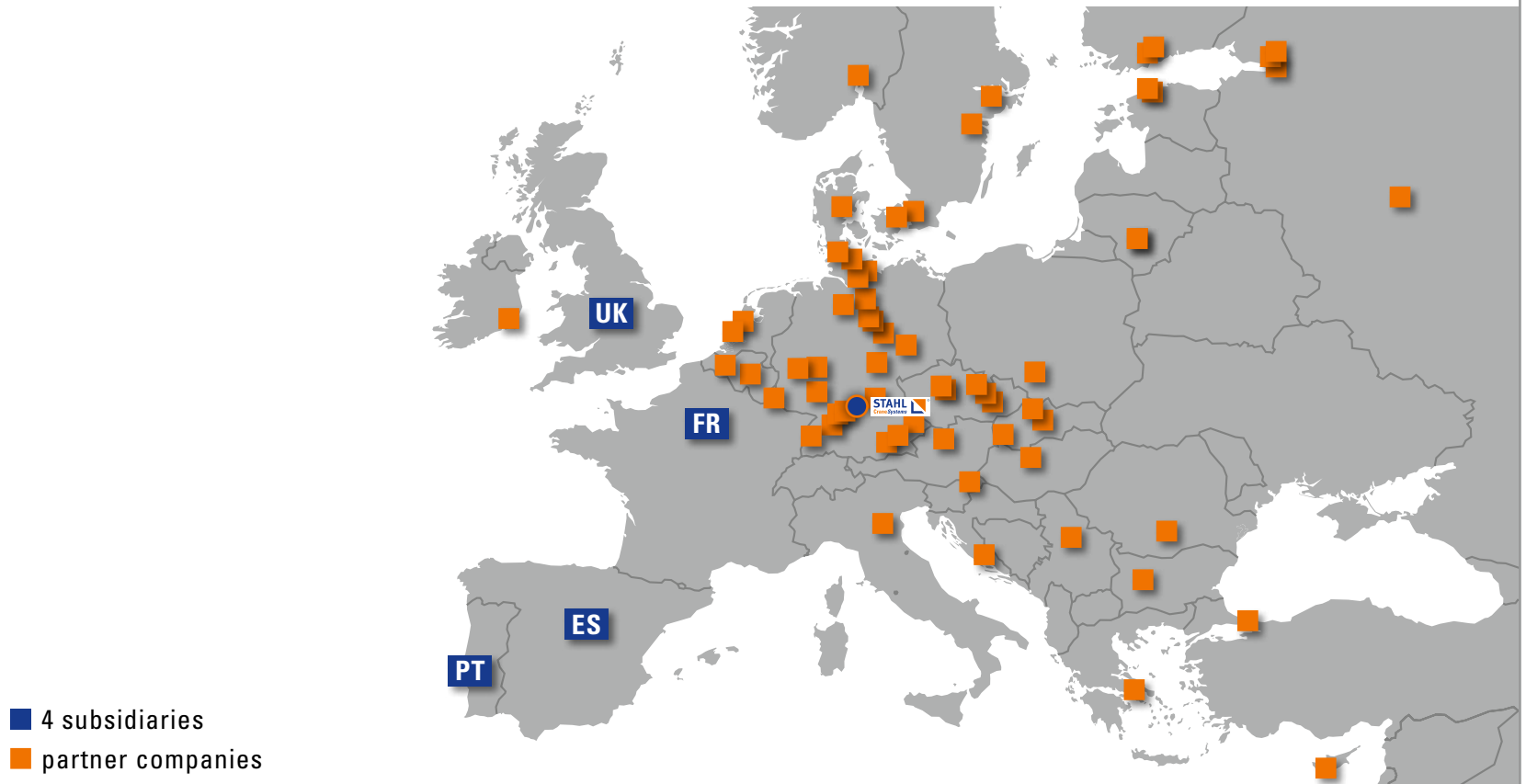


-Crane components and electrics

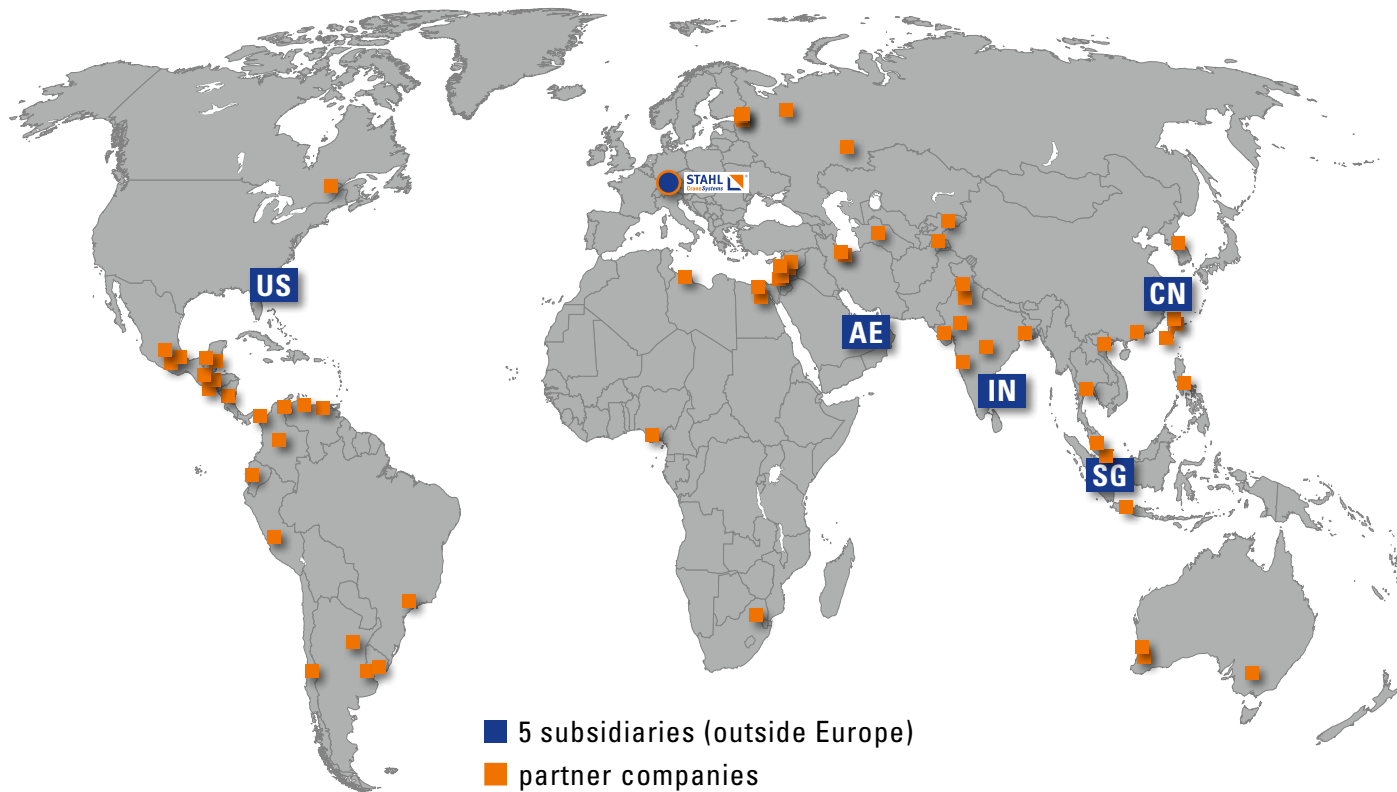
- Field-proven, robust standard components and pioneering high-grade quality modules
- Explosion-protected crane endcarriages
- Explosion-protected drive technology
- Explosion-protected electrics



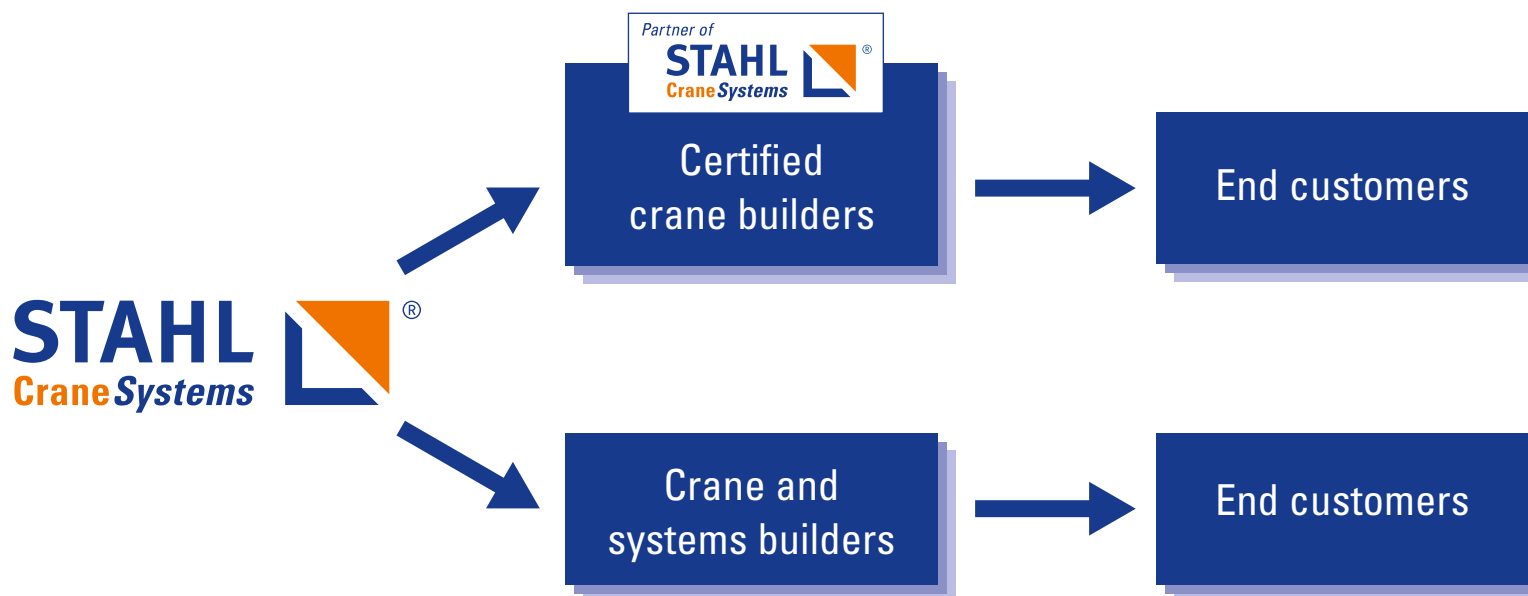
European sales organisation



Global sales organisation (without Europe)



Uniform sales concept throughout the world



Certified partners all over the world



International project management Support on hoisting technology for EPC contractors all around the world



Engineering contractors we work with



Clients we serve





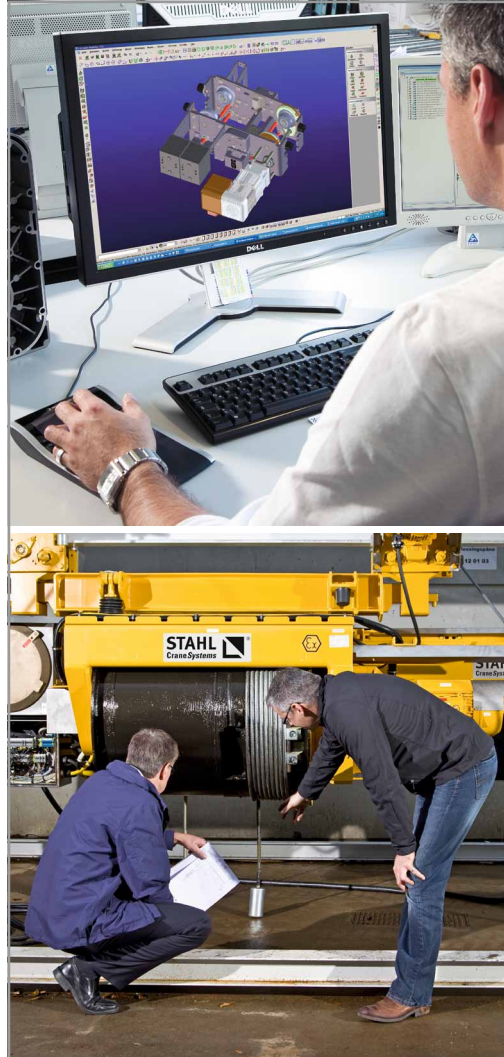
Original Parts

- Service network with 10 branch offices and over 100 partners around the world
 - Supply of original parts – even decades after the series has been discontinued
 - Stand-by service
 - Just-in-time service
- Hoists and spare parts service – fast spare parts delivery from central warehouse and local partners, over 10 warehouse locations in Europe and several locations around the world



Training courses and seminars

- Own training centre at company headquarters in Künzelsau
- On request, training on your premises
- Modern training methods including testing learning achievement
- Training courses for both current series and previous models
- Crane operator training
- Fork-lift truck operator training
- Seminars for beginners and advanced learners
- Customised content of training courses



Engineering

- Development of individual customised and special solutions
- Short development time
- Cost-effective thanks to construction kit system
- Use of well-tried standard components
- High quality and reliability thanks to in-house manufacture
- All customised solutions optionally in explosion-protected version in compliance with ATEX and IECEx



Customer service

- Service exclusively for crane manufacturers and general contractors
- In action across the world
- Decades of experience and expertise
- Use of state-of-the-art diagnostic equipment and condition monitoring systems
- Online service for crane and plant manufacturers



JOHN DEERE



Mercedes-Benz

NEOPLAN

Vehicle manufacturing



Technip

GEA



 **CHIYODA**

 **TOYO ENGINEERING CORPORATION**


THE LINDE GROUP


WOODSIDE
AUSTRALIAN ENERGY

Oil/gas



ABB

RWE

SIEMENS

TVA

REpower
Systems

Power station construction



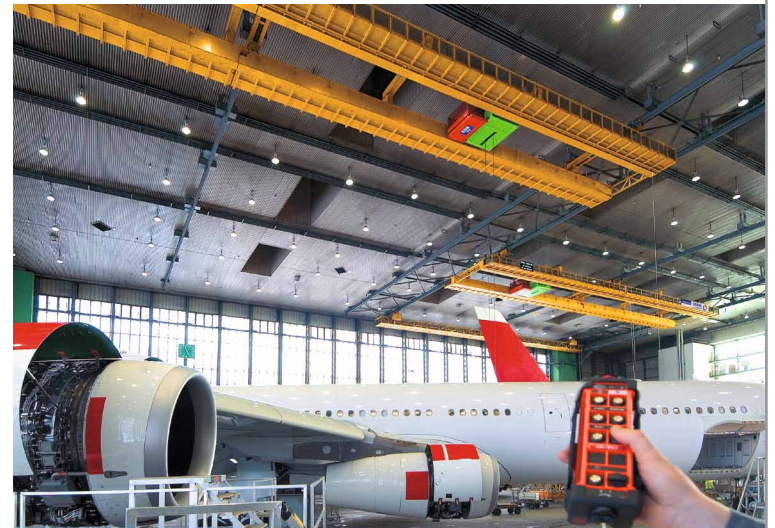
SR Technics 

AIR FRANCE




NOELL
POWER WITH CARE

Transport/logistics





WACKER



Bayer



degussa.

creating essentials



PETROBRAS



The Chemical Company

Chemical industry



ZAPF



degussa.

creating essentials

Steel and concrete industries



sappi



GMUND

m-real

STORAENSO

Paper-making industry





EISENMANN

ARBURG

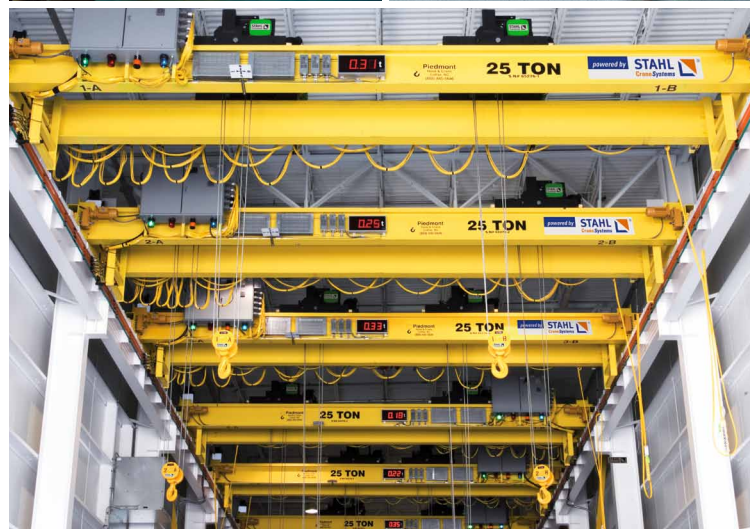


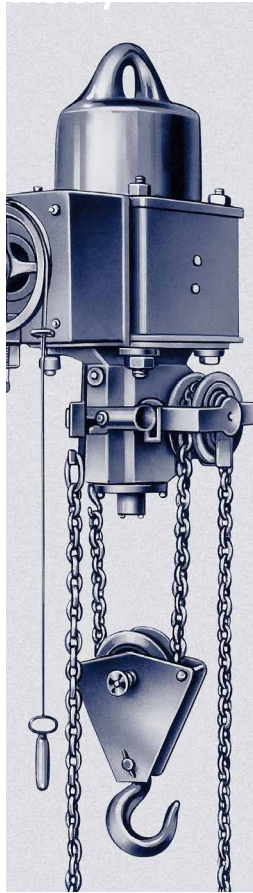
BOSCH

Buderus

HEIDELBERG

Other manufacturers





Thank you for your attention!