

Yale



ATEX 


COLUMBUS McKINNON



Yale is the leading brand for standard manual hoisting equipment in Europe. As early as 1877, Yale produced the first spur-gear hand chain hoist incorporating the Weston screw-and-disc type load brake – a design principle which is still used today. In 1936, hoist manufacture started in Velbert with the production of the world renowned PUL-LIFT®.

The product range as well as all new and further developments of Yale in the individual product sectors constantly raise the benchmark for quality, reliability and safety.

The comprehensive range of products includes hoists, cranes, load hoisting tackles and crane weighers, balancers, textile lifting and lashing equipment, material handling equipment and load moving systems, hydraulic tools, bolting technology as well as workshop equipment.

The prominently yellow products, which are delivered ready for operation, are used world-wide for the most varied industrial and commercial applications.

www.yale.de



Pfaff-silberblau – the name of this company with its long-standing tradition and history of more than 140 years has become the synonym for power, dynamics and safety.

Material handling equipment as well as rope winches and rack and pinion jacks of the Pfaff-silberblau brand are used wherever high loads need to be lifted, turned or moved in an environment with demanding safety requirements.

In logistics, industrial production or outdoor applications, the innovative products and application-specific designs provide the solution to numerous lifting applications – as standard products, tailor made solutions or as complete systems.

www.pfaff-silberblau.de



The brand Yale has already been a successful partner within the international corporate network of Columbus McKinnon Corporation for more than ten years. Since 2008, the brand Pfaff-silberblau has extended the portfolio of products and services of the company.

Today, the two trademarks of Yale and Pfaff-silberblau are combined under the name of Columbus McKinnon. This enables us to offer a comprehensive product pallet for many challenging applications.

Experience, know-how and innovative strength combined with a far-reaching understanding of user requirements is the formula for success on which our portfolio of hoisting and material handling equipment products has been based for a long time.

Our tradition of close customer relationships and customer services as well as our constant striving for optimisation provide the basis for all new and further developments of the Yale and Pfaff-silberblau brands.

As a premium supplier of two leading brands, we have set ourselves the target of offering our customers high-quality hoisting and material handling equipment that is designed for moving, lifting, positioning and securing heavy loads both ergonomically and safely.



Columbus McKinnon Corporation is the World Leader for products and application know-how that supports customers with lifting, moving and positioning of loads.

The company group is the leading manufacturer and supplier of products and service in the area of materials handling, cranes and rigging attachments. With its 140 year tradition, the company concentrates on commercial and industrial application, by which safety and security are always at the forefront.

Columbus McKinnon Corporation

Corporate Headquarters
205 Crosspoint Parkway
Getzville, New York 14068
www.cmworks.com



Training

As a manufacturer, we have many years of experience in the testing and repair of products in the field of lifting technology. We would like to pass this knowledge on to our customers and offer seminars in our training center in Wuppertal to become a "Qualified Person" according to DGUV regulation 54 for winches, lifting and pulling devices.

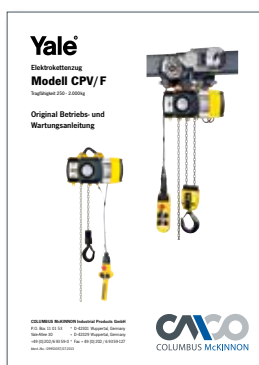
The centres offer not only product training but also seminars providing up-to-date insider information and a consolidated knowledge in the usage of rope, lifting and lashing practices.

Modern communication technologies, hands-on experience and well designed training documentation guarantees quick and lasting training success.



INFO

If required, training seminars can be held at other locations.



Certified security

You are in safe hands - Every unit is supplied with operating instructions, CE declaration of conformity resp. manufacturers works test certificate, which confirms the perfect tested status of the product.

Additional documentation, e.g. spare parts manuals or maintenance and repair instructions are available on request or at our homepage.

www.yale.de

Offering advice

Our qualified personnel are there for you around the globe at all our locations, as well as specialised dealers who provide competent know-how and service.

Business hours:

Monday - Thursday 08:00 a.m. - 04:30 p.m.

Friday 08:00 a.m. - 03:30 p.m.

Shipping:

Monday - Thursday 06:30 a.m. - 04:30 p.m.

Friday 06:30 a.m. - 03:00 p.m.



EN ISO 9001

Columbus McKinnon Industrial Products GmbH manufactures world wide according to uniform, controlled standards of EN ISO 9001. This is a guarantee for our business partners that given standards in design and development, manufacturing, assembly and service are complied with.



Certified since November 1991



Special documentation

Additional inspections with test report 2.2 resp. inspection certificate 3.1.B according to EN 10204, GOST R certificates or specific pre-shipment inspections e.g. by DNV or GL can be carried out at cost on request.



The roots of explosion protection lie in the mining industry where the miners are in danger from firedamp, which describes the methane gas escaping underground. The fine coal dust reacts with the air creating an explosive mixture (firedamp explosion).

Explosive atmospheres may however occur in other branches of industry too, for example in the chemical or petrochemical industries. Not only electrical equipment, but also non-electrical equipment must be designed in a way that they cannot form effective ignition sources.

In order to avoid serious injuries and damage to material and the environment, safety regulations, laws, decrees and standards have been established in most states. Hence a high degree of safety has developed in explosion protection across the world. As the physical laws regarding the occurrence of explosions and the measures taken to prevent them are based on similar principles everywhere, the aim is to harmonise approval conditions and regulations regarding conformity on international level.

This brochure merely outlines the European explosion protection directives which however, correspond largely to the international IECEx regulations. It cannot take the place of an intensive analysis of national legal principles and standards, though.

The explosion protection of electrical and non-electrical machines is an important prevention measure for the safety of persons and production, storage and distribution facilities of all kinds, wherever mixtures of flammable gases or dusts and air occur.

Chemical industry



Energy supply



Shipbuilding



ATEX

Examples of explosion hazards in different industries:

Offshore industry



Waste disposal and recycling companies



Gas supply companies



Metal processing companies



Wood processing companies



Paint shops



Agriculture



Food and feed industry



Pharmaceutical industry



Refineries



ATEX

By defining the ATEX product directive 2014/34/EU (ATEX 95) and the ATEX user directive 1999/92/EC (ATEX 137) the European Community has established the basis for uniform European explosion protection.

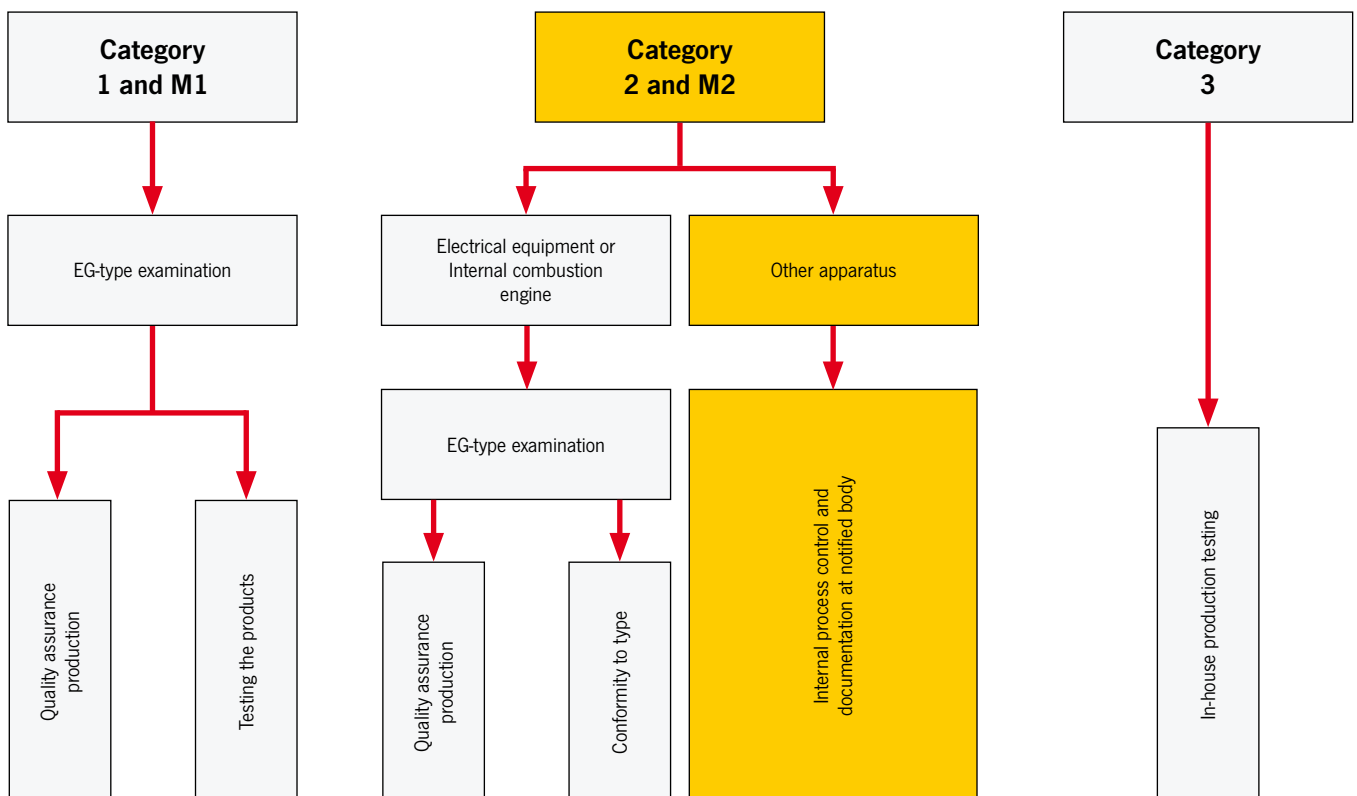
This safety concept is applicable both for manufacturing electrical and non-electrical apparatus and for operating this apparatus in the respective industrial plants. The legislators of the individual member countries implement these directives in equivalent statutory regulations.

In Germany for example these are the Explosion Protection Ordinance ExVO (implementation of directive 2014/34/EU), the Industrial Safety Ordinance (implementation of directive 1999/92/EC) and the Technical Regulations for Industrial Safety (TRBS), the regulations issued by the Employers' Liability Insurance Associations (e.g. BGR 104, BGR 109 and BGR 132), the Employers' Liability Insurance Association information sheets (e.g. BGI 740) and the regulations issued by the VDI (Association of German Engineers) (e.g. 2263 and 3673).

ATEX directive 2014/34/EU defines the properties required by apparatus for safe use in explosive areas.

This includes classification into equipment groups and categories, the respective conformity assessment procedures to be followed, manufacturers' responsibility including EU conformity marking, basic safety requirements for the development and manufacture of explosion-protected equipment and recognised quality management measures to be implemented during production.

ATEX directive 99/92/EC defines the obligations of users and employers for employees' protection in explosive areas. Furthermore, the user must assess the risk and classify the potentially explosive areas into corresponding zones so that the apparatus required by directive 2014/34/EU can be used in safety.



IECEX

The international IECEX scheme also aims to assess conformity and certify apparatus, systems and services for use in explosive areas. The IECEX system, introduced in 1996, supports the standardisation of norms and the issuing of certificates of conformity (CoC) unrelated to specific countries or regions, in order to simplify the free global movement of goods. There is an extensive agreement as to classes and requirements between the European ATEX directives and the IECEX regulations.

IECEX is of great importance outside Europe. A total of 26 countries have acceded to IECEX and there are 34 recognised IECEX certification bodies (ExCB) and 36 recognised test laboratories (ExTLs) around the world. In countries which recognise IECEX, apparatus with the corresponding certification can be commissioned without further testing.

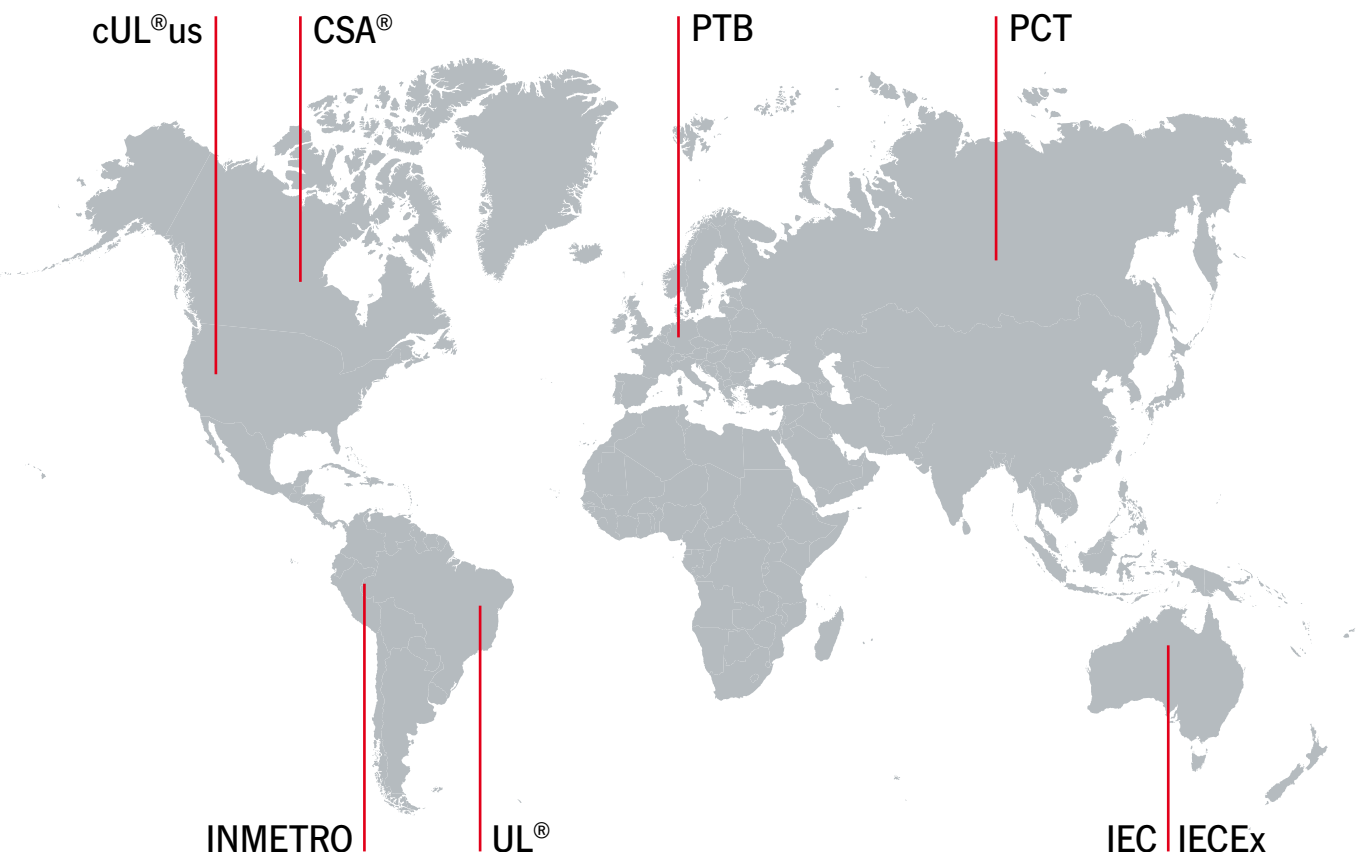
At present, however, IECEX is still used in most cases only for electrical equipment.

You will find further information on the IECEX system and its provisions including regulations, handbooks and procedures at: www.iecex.com

ATEX and IECEX in comparison

System	ATEX legally required in the EU	IECEX on a voluntary basis in the EU
Inspection and conformity of non-electrical equipment	Equipment category 2* and 3 <ul style="list-style-type: none"> • Internal process control • EU Declaration of Conformity • CE marking *Documentation deposited at notified body	Equipment protection level (EPL a, b, c) not yet clarified, in all probability similar to electrical devices Standard: ISO 80079-36 and -37
Certificate	Certificate with deposit number of the notified body	IECEX Online Database
Repair workshops	is regulated nationally (no EU-certified workshops)	Certified Service Facilities
Service personal	is regulated nationally (no EU-certified personnel)	Certified Competent Employees

International testing authorities



Explosive atmospheres can occur wherever flammable gases, vapours, mist or dust can be generated. This is a mixture which, when it encounters the oxygen in the air, undergoes a reaction which can trigger an explosion at the slightest spark (e.g. a hot surface).



It is therefore important to avoid ignition or to minimize the effects of an explosion to a safe level. Therefore, all equipment which will be used

in potentially explosive atmospheres must be designed, produced and marked in accordance with the applicable regulations and standards.



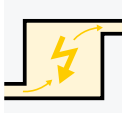
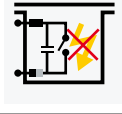
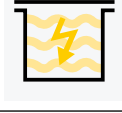

The classification of the devices into groups and categories according to the ATEX directive or EPL according to IECEx standards results from their areas of application or the degree of safety of the protective measures and the frequency of occurrence of an explosive atmosphere.

The manufacturer must test the product under the most unfavorable conditions in order to eliminate potential ignition sources. In areas where an explosive atmosphere may occur, only explosion-proof equipment may be used.

This equipment, both electrical and non-electrical, is designed in accordance with the corresponding standard series DIN EN IEC 60079 and DIN EN ISO 80079 in various types of protection. The ignition protection type selected by the manufacturer depends on the type and function of the device. All standardized ignition protection types within a category are equivalent.

The manufacturer confirm that the product complies with the ATEX directives. The EU makes the declaration of conformity accompanying the technical documentation.

Types of protection for non-electrical equipment in explosive atmospheres

Type of protection	Symbol new	Diagram	Main application	Standard
basic methods and requirements				ISO 80079-36 EN ISO 80079-36
constructional safety „c“	h		couplings, pumps, gear drives, chain drives, belt drives old marking according to EN 13463-5: c	ISO 80079-37 EN ISO 80079-37
control of ignition sources „b“	h		pumps, belt drives old marking according to EN 13463-6: b	ISO 80079-37 EN ISO 80079-37
liquid immersion „k“	h		submerged pumps, gears old marking according to EN 13463-8: k	ISO 80079-37 EN ISO 80079-37
flameproof enclosures „d“	h		brakes, couplings old marking according to EN 13463-3: d	IEC 60079-1 EN 60079-1
protection by enclosure „t“	h		equipment for explosive dust atmospheres	IEC 60079-31 EN 60079-31
pressurized enclosure „p“	h		pumps	IEC 60079-2 EN 60079-2

ATEX directive 1999/92/EC defines users' obligations for the protection of employees working in potentially explosive atmospheres. The user is obliged to establish technical and organisational measures to prevent explosions occurring.

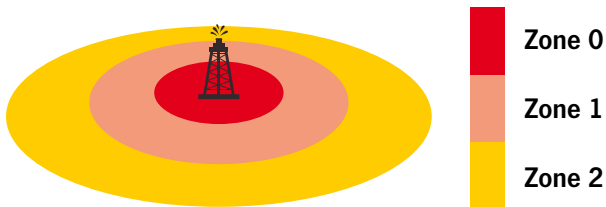
In this respect he must for example assess the potential danger and explosion risk, ensure that the working environment has been designed for safety and classify the hazardous areas into zones in accordance with the directives for safe operation of the apparatus which has been classified into categories.

In addition, he is obliged to issue and maintain an explosion protection document.

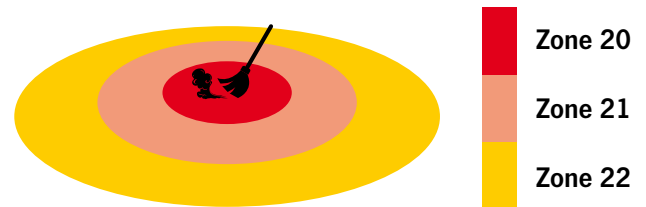
Naturally further issues are defined in directive 1999/92/EC in order to implement explosion protection effectively. After a system has been commissioned in due form it must be monitored and maintained so that the safe condition of the system is ensured and all dangers can be excluded. The plant's expert has product-specific documents (rating plate, operating instructions, EC prototype test certificate, declaration of conformity, etc.) and universally valid documents (legal ordinances, industrial safety ordinance, technical regulations TRBS, norms and standards, etc.) at his disposal.

The full product-specific documentation must be managed and retained throughout the period of use of the apparatus and placed at the disposal of the experts entrusted with maintenance work.

Gases, mists and vapors

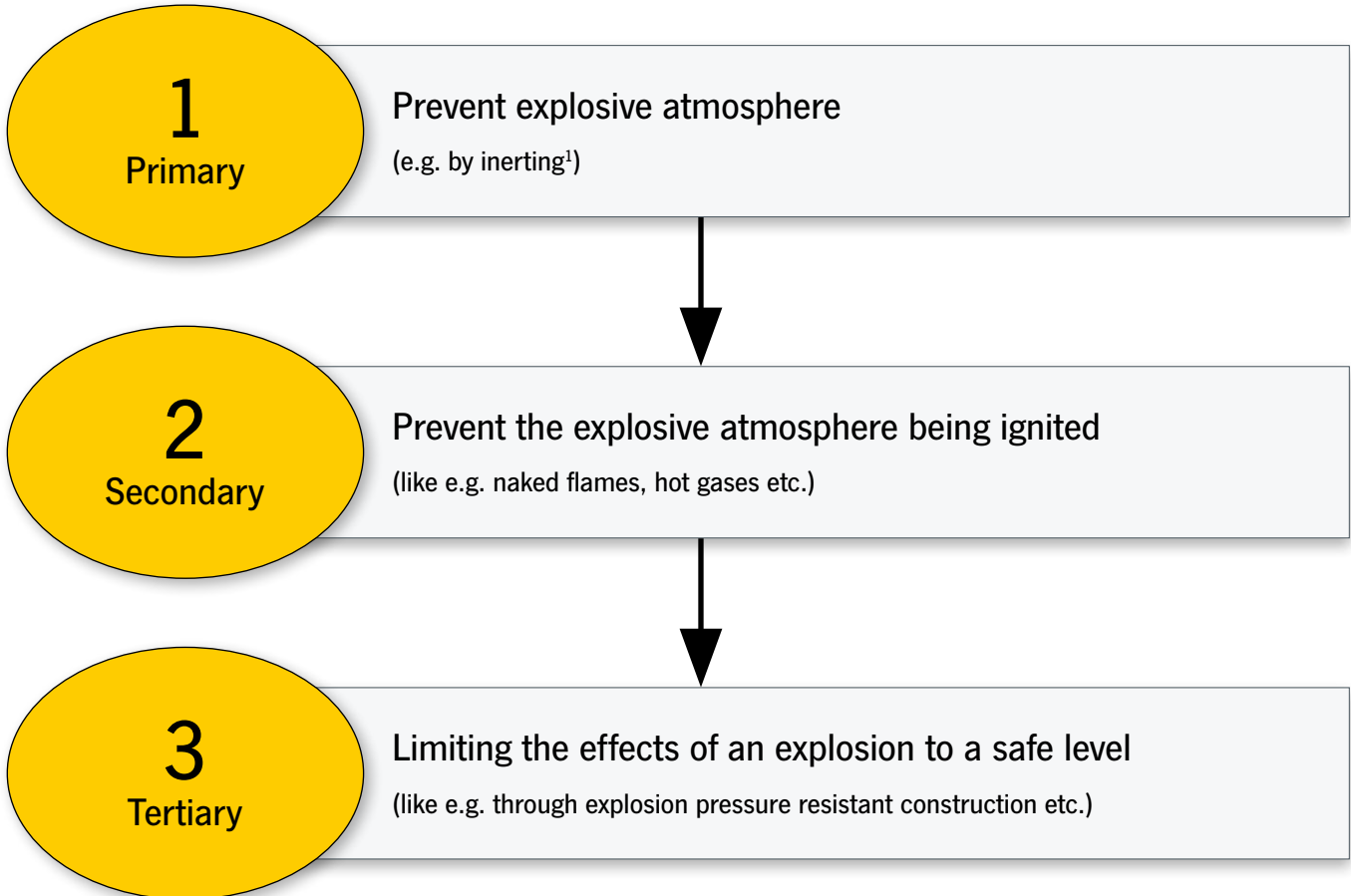


Dust



Principle of integrated explosion protection

Explosion protection measures have to be taken in a certain order.



¹ Inerting substances

Inerting substances means their transformation or processing into slow-reacting (inert) substances. Inert substances are, for example, inert gases, glass and porcelain. In refuse dump systems, inerting is used, for example, to render hazardous waste substances harmless. Substances containing heavy metal, which are radioactive or otherwise detrimental, are, for example, often glazed in order to make it possible to finally dispose of them.

Inerting rooms

Inerting rooms means to displace the oxygen contents in the air or potentially reactive or explosive gases or gas mixtures in rooms by adding inert gases or vapours. When inerting as a protection against fire and explosion (industry example: chemicals storage or production facilities), the oxygen contents in the air are displaced by adding inert gas (e.g. argon, nitrogen, carbon dioxide) in order to prevent an explosive atmosphere. In fire protection, this is also called “active fire prevention by permanent inerting”.



Equipment for potentially explosive atmospheres is divided into groups, categories and temperature classes in Directive 2014/34/EU. This is necessary because the same requirements do not have to be placed on equipment for every application and for every hazard level.

Equipment category and equipment protection level (EPL)

According to EU directive 2014/34/EU (ATEX)		According to IEC and CENELEC	Sufficient safety	
Equipment group	Equipment category	EPL		
Mines susceptible to firedamp				
I	M1	Ma	during rare malfunctions	
I	M2	Mb	until de-energizing of the equipment	
Explosive gas atmosphere				
II	1G	Ga	Zone 0	during rare malfunctions
II	2G	Gb	Zone 1	during expected malfunctions
II	3G	Gc	Zone 2	in normal operation
Explosive dust atmosphere				
II	1D	Da	Zone 20	during rare malfunctions
II	2D	Db	Zone 21	during expected malfunctions
II	3D	Dc	Zone 22	in normal operation

Groups

IEC/CENELEC/NEC 505/NEC 506		NEC 500	
Group I		Mines susceptible to firedamp	
	Methan		--
Group II		Explosive gas atmosphere	
Subdivisions		typisches Gas	Class I
IIA	propane	propane	Class I, Group D
IIB	ethylene	ethylene	Class I, Group C
IIC	hydrogen	hydrogen	Class I, Group B
	acetylene	acetylene	Class I, Group A
Group III		Explosive dust atmosphere	
Subdivisions		Typical dust	Subdivisions
IIIA	combustible flyings	fibers/flyings	Class III
IIIB	non-conductive dust	non-conductive dust	Class II, Group G
IIIC	conductive dust	carbonaceous dust	Class II, Group F
		combustible metal dust	Class II, Group E

The ignition temperature is the lowest temperature of a heated surface at which the ignition of a gas/air or vapour/air mixture occurs. In other words, it is the lowest temperature at which a hot surface can ignite the corresponding explosive atmosphere.

The maximum surface temperature of the equipment must therefore always be lower than the ignition temperature of the gas/air or vapour/air mixture.

Temperature classification

Maximum surface temperature	Gas temperature classes		Maximum surface temperature	Gas temperature classes	
	Equipment marking			Equipment marking	
	NEC 500	CENELEC/IEC/NEC 505		NEC 500	CENELEC/IEC/NEC 505
450°C	T1	T1	200°C	T3	T3
300°C	T2	T2	180°C	T3A	
280°C	T2A		165°C	T3B	
260°C	T2B		160°C	T3C	
230°C	T2C		135°C	T4	T4
215°C	T2D	120°C	T4A		
Dust: indication of the max. surface temperature in °C.			100°C	T5	T5
			85°C	T6	T6



Dust cannot be classified as finely as the chemically defined gases and vapours. Therefore, dusts are classified according to their type and conductivity. EN ISO IEC 80079-20-2 describes the test method for determining the specific electrical resistance of dusts.

Dusts are divided into 3 subgroups according to their resistance:

IIIA combustible flyings

IIIB non-conductive combustible dust

with a specific electrical resistance $> 10^3 \Omega$

IIIC conductive combustible dust

with a specific electrical resistance $< 10^3 \Omega$

The minimum ignition energy of combustible dusts is determined according to IEC 61241-2-3.

Ignition and glow temperature of dusts:



Category	Substance	T _{zünd} [°C]	T _{glimm} [°C]
Dusts from natural products	Wood	≥ 410	≥ 200
	Coal	≥ 380	≥ 225
	Milk powder	≥ 440	≥ 240
	Paper	≥ 540	≥ 300
Dusts from chemical-technical products	Petroleum coke	≥ 690	≥ 280
	Sulfur	≥ 280	≥ 280
Metal dusts	Aluminium	≥ 530	≥ 280
	Iron	≥ 310	≥ 300

Safety characteristics of dusts

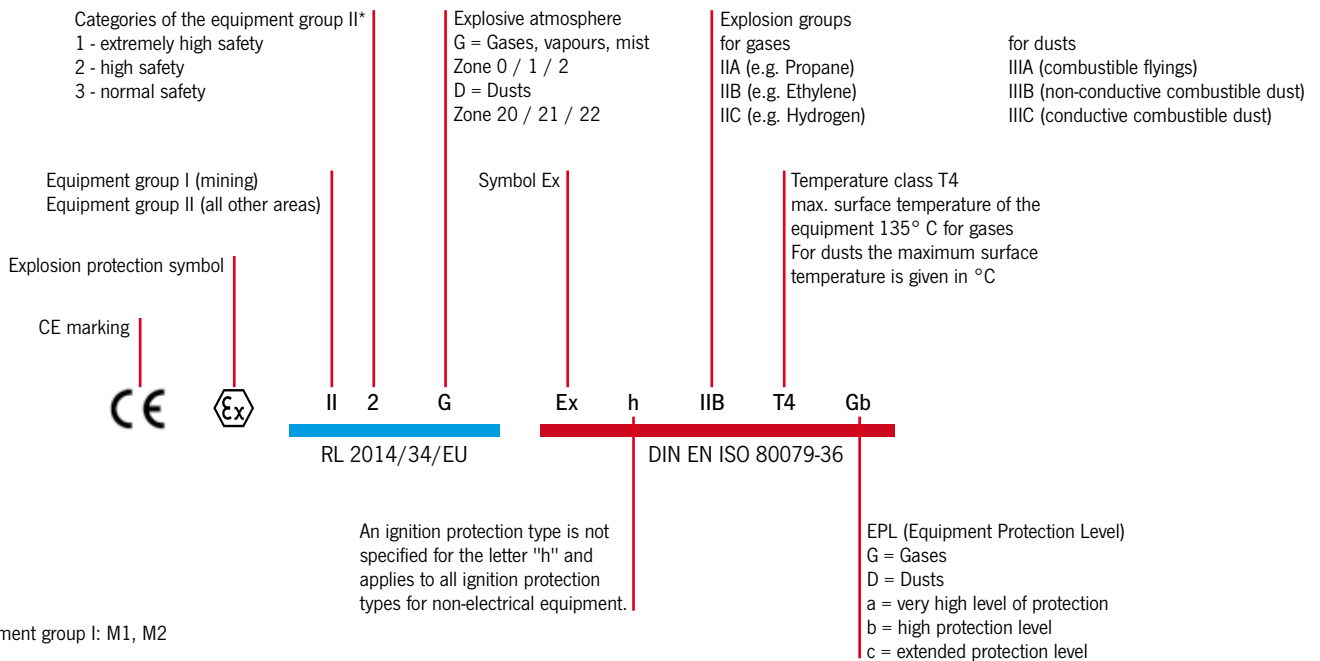
Characteristic	Definition/description	Remarks
Particle size	Dust with a particle size larger than 400 µm is not considered to be ignitable. Dust particles are ignitable when they measure less than 20 µm up to 400 µm.	Due to abrasion, the transportation and processing of coarse dust result in the formation of fine dust.
Explosion limits	For most dust/air mixtures of combustible substances the lower explosion limit is approx. 20... 60 g/m ³ air and the upper explosion limit approx. 2... 6 kg/m ³ air.	In this case allocation of particle size, density, humidity as well as the ignition point is decisive.
Maximum explosion pressure	In enclosed containers of simple design, combustible dust can reach explosion pressures of 8... 10 bar.	For light metal dusts the explosion pressure can exceed this value.
KSt value	This is a classification value which expresses the shattering effect of the combustion. Numerically, it is equal to the value of the maximum rate of explosion pressure rise during the explosion of a dust/air mixture in a 1 m ³ vessel.	This value is the basis for calculating explosion pressure relief surfaces.
Moisture	The moisture of dust is a significant factor for its ignition and explosion behaviour. Currently it is only known that a higher moisture content requires a higher ignition energy and impedes the formation of dust swirls.	
Minimum ignition energy E _{min}	Lowest energy of an electrical spark which is sufficient to effect ignition of the critical (most easily ignitable explosive) dust/air mixture under defined framework conditions.	Not every spark is ignitable. The decisive factor is whether sufficient energy is introduced into the dust/air mixture to initiate a self-sustaining combustion of the entire mixture.
Ignition temperature T _{zünd}	The lowest temperature of a hot inner wall (e. g. furnace) on which the dust/air mixture is ignited after brief contact. The surface temperature must not exceed 2/3 of the ignition temperature in °C of the relevant dust/air mixture, e. g. starch/milk powder/gelatine: Ignition temperature 390 °C x 2/3 = 260 °C max. permissible surface temperature $T_{\max} \leq \frac{2}{3} T_{\text{zünd}}$	
Smouldering temperature T _{glimm}	The lowest temperature of a hot surface on which ignition occurs in a dust layer with a thickness of 5 mm. On surfaces where a dangerous deposit of ignitable dust is not effectively prevented, the surface temperature must not exceed the ignition temperature reduced by 75 K of the respective dust. With layer thicknesses over 5 mm, a further reduction of the temperature of the surface is necessary: e. g. wood, grinding dust Ignition temperature 290 °C - 75 °C = 215 °C max. permissible surface temperature $T_{\max} \leq T_{\text{glimm}} - 75 \text{ K}$	The smouldering temperature is usually well below the calculated ignition temperature of a dust cloud. The smouldering temperature decreases almost linearly with an increase in the layer thickness. For acceptable surface temperatures safety clearances have to be adhered to.

As a result of the current series of standards, a new marking is also required for non-electrical equipment, which is structured as follows:

Non-electrical equipment

Labeling new							
Gases		II 2 G	Ex	h	IIB	T4	Gb
Vapours		II 2 D	Ex	h	IIIB	T135°C	Db
Labeling old							
Gases		II 2 G		c k	IIB	T4	
Vapours		II 2 D		c k	IIB	T135°C	

Identification key





Type label

Yalelift 360

COLUMBUS McKINNON
 Industrial Products GmbH
 Yale-Allee 30
 42329 Wuppertal/Germany
 www.cmco.eu

Stirnradflaschenzug / Hand chain hoist / Palan manuel á chaîne

W.L.L.  

500 kg



Serien Nr./Ser. No./No. de serie **G18089014**

Bj./Mfg. year/Fab. **2019**

Hubhöhe/Lift/Levée **3 m**

Lastkette/Load chain/Chaîne de levage **5 x 15 T**

Ex-Schutz/Explosion Proof/Explosion Protection

 **II 2 G Ex h IIB T4 Gb**
 **II 2 D Ex h IIIB T88°C Db**

ATEX (RL 2014/34/EU)
DIN EN ISO 80079-36

Explosion groups and temperature classes of some gases and vapours (selection)

Classification of combustible gases, vapours, mists

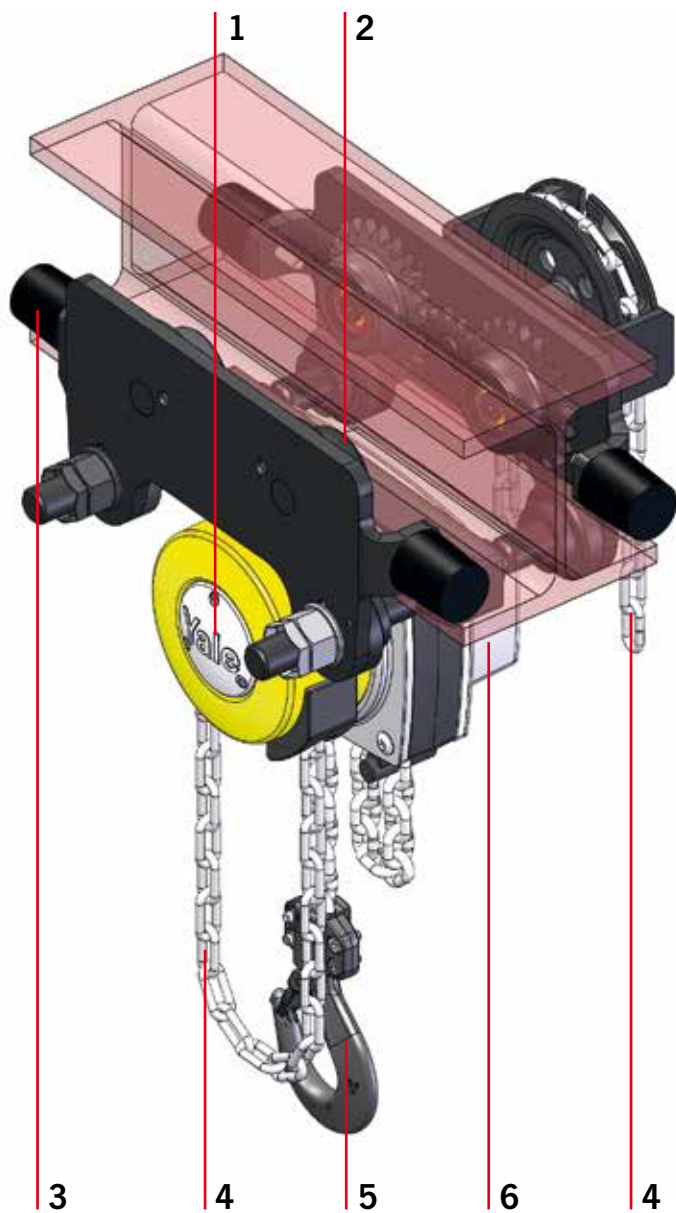
Ex group	Temperature classes					
	T1	T2	T3	T4	T5	T6
	Ignition temperature range of the mixtures					
	> 450 °C	> 300 ≤ 450 °C	> 200 ≤ 300 °C	>135 ≤ 200 °C	>100 ≤ 135 °C	>85 ≤ 100 °C
	Permissible max. surface temperature of the equipment					
	450 °C	300 °C	200 °C	135 °C	100 °C	85 °C
IIA	Acetone	Ethanol	Petrol (general)	Acetaldehyde		
	Ammonium	i-Amyl acetate	Diesel fuels			
	Benzene (pure)	n-Butane	Aircraft fuels			
	Acetic acid	n-Butanol	Fuel oil DIN 51603			
	Ethane	Cyclohexan	n-Hexane			
	Ethyl acetate	Acetic anhydride				
	Ethyl chloride					
	Carbon monoxide					
	Methane					
	Methanol					
	Methyl chloride					
	Naphthalene					
	Phenol					
	Propane					
Toluene						
IIB	City gas	Ethylene	Ethylene glycol	Ethyl ether		
		Ethylene oxide	Hydrogen sulfide			
IIC	Hydrogen	Acetylene				Carbon disulphide



In lifting and driving technology there are non-electrical components and parts that can cause an explosion in a potentially explosive atmosphere.

Columbus McKinnon Industrial Products GmbH therefore offers non-electrical equipment that is specially designed for the use in potentially explosive gas and dust atmospheres. This is done in accordance with the currently valid guidelines and standards.

All Atex products have been classified according to the ignition hazard assessment for categories 2 and 3 or M2 and the corresponding documentation is deposited with TÜV Rheinland. A corresponding certificate can be supplied upon customer request.



1 Load brake system



To reduce the temperature (hot surface) a cooling hub is additionally used on the Yalelift 360 series. This allows the temperature to be better dissipated. This is not necessary for all other models.

2 / 3 Trolley wheels and buffers



From the **Medium** version upwards, they are made of solid bronze.

Basic trolley wheels are MKS coated (micro corrosion protection system). In addition, all trolleys are fitted with buffers to prevent mechanically generated sparks when hitting the end points.

4 Hand chain



The hand chains used on all hand chain hoists and geared trolleys are made of stainless steel. This applies to **Basic, Medium and High**.

INFO

The protection type is constructive safety "c".

5 Bottom block and top hook



All bottom blocks from **Medium** upwards are copper plated. This also applies to the corresponding top hooks. The bottom blocks and top hooks are MKS coated on **Basic**.

6 Gearbox



For all manual hoists, the gearbox is sufficiently greased. On the OMEGA ATEX model and all air pressure chain hoists, the gear parts run in oil, so the liquid encapsulation "k" is added here. Lubrication (grease or oil) prevents sparking in the gear unit.

Design

Protection classification

Pneumatic chain hoist model CPA ATEX 1-13 / 2-10 / 5-5 / 10-9

Pneumatic chain hoist model CPA ATEX 20-8 bis 100-3

Hand chain hoist model Yalelift 360 ATEX

Hand chain hoist with integrated push or geared type trolley model Yalelift 360 IT ATEX

Hand chain hoist with integrated push or geared type trolley (low headroom) model Yalelift 360 LH ATEX

Push and geared trolley model HTP/G ATEX





Ratchet lever hoist model CD85 ATEX

Ratchet lever hoist model UNOplus-A ATEX

Wall-mounted rack and pinion jacks model ZWW-L ATEX

NOTE: The measured maximum surface temperatures can be taken from the corresponding operating instructions or the name plate! This only applies when using the units in dusty conditions.



	BASIC	MEDIUM	HIGH	MINING
	 II 3 G Ex h IIA T4 Gc II 3 D Ex h IIIA T135°C Dc	 II 2 G Ex h IIB T4 Gb II 2 D Ex h IIIB T135°C Db	 II 2 G Ex h IIC T4 Gb II 2 D Ex h IIIC T135°C Db	 I M2 Ex h Mb
			on request	
	see page 46			



INFO

Due to the use of stainless steel load chains for the HIGH design a reduction of the load capacity is necessary. Please do refer to the table "technical data" for appropriate values.

BASIC

- Load chain galvanic zinc-plated, stainless steel hand chain
- Trolleys with buffers
- Brake with cooling element (Yalelift range only)

MEDIUM

- Load chain galvanic zinc-plated, stainless steel hand chain
- Top and load hook copper-plated
- Trolleys equipped with buffers and bronze trolley wheels
- Brake with cooling element (Yalelift range only)

HIGH

- Stainless steel load and hand chain
- Load and top hook copper-plated
- Trolleys equipped with buffers and bronze trolley wheels
- Brake with cooling element (Yalelift range only)



*Patented!
Rotating
hand chain
guide!*

Abbildung zeigt
MEDIUM Ausführung

Hand chain hoist model Yalelift 360 ATEX

Capacity 500 - 20000 kg

The hand chain hoist model Yalelift 360 ATEX once again proves its worth in an environment that far exceeds the requirements of a classical hand chain hoist. On the basis of the European Directive 2014/34/EU this model series has been further developed for the use in potentially explosive atmospheres (ATEX zones).

Features

- The enclosed robust stamped steel housing protects all internal components even in the toughest conditions.
- The extremely low headroom allows maximum use of the lifting height.
- The revolutionary 360° rotating hand chain guide allows the operator to work from virtually any position, in confined spaces or above the load. The Yalelift can even be operated from the side of the load which also makes it possible to use the hoist for horizontal pulling or tensioning. Due to the additional flexibility, the operator is no longer forced to work in the danger zone near the load.
- The brake system is extremely quiet and guarantees operational safety and improved serviceability due to omission of the vulnerable ratchet pawls. All parts are made of high quality materials, additionally zinc-plated or yellow-chromated to increase corrosion prevention.
- Chain guide and gearbox are almost totally enclosed. Even under the toughest conditions the internal gearbox remains protected.
- The hardened load sheave with four precision machined pockets ensures accurate movement of the load chain.
- The surface protected zinc-plated alloy steel load chains fulfil all requirements of current national and international standards and regulations. They are matched perfectly to the load chain sheave and guarantee smooth and precise chain motion.
- Drop forged load and suspension hooks that yield under overload instead of breaking, are made of high tensile steel. The hooks are fitted with robust safety latches and rotate 360°.
- Explosion protected version with spark resistant coating.
- Copper-coated suspension and load hooks for MEDIUM design or higher.
- Stainless steel load chain for HIGH design.

Options

- Adjustable overload protection device
- Chain container
- Additional coating (see page 48)

INFO

Easy modification from Yalelift 360 ATEX to Yalelift IT ATEX is possible.

Technical data model Yalelift 360 ATEX BASIC II 3G Ex h IIA T4 Gc / II 3D Ex h IIIA T135°C Dc

Model	Item-No.	Capacity in kg/ number of chain falls	Chain dimensions d x p mm	Load chain grade	Lift per 1 m hand chain overhaul mm	Handle pull at WLL daN	Weight at standard lift (3 m) kg
YL ATEX 500	N04705021	500/1	5x15	T	30	21	9
YL ATEX 1000	N04705022	1.000/1	6x18	T	49	30	13
YL ATEX 2000	N04705023	2.000/1	8x24	T	71	32	20
YL ATEX 3000	N04705024	3.000/1	10x30	V	87	38	29
YL ATEX 5000	N04705025	5.000/2	10x30	T	174	34	38
YL ATEX 10000	N04705026	10.000/3	10x30	V	261	44	71
YL ATEX 20000	N04705027	20.000/6	10x30	V	522	2x44	196

Technical data model Yalelift 360 ATEX MEDIUM II 2G Ex h IIB T4 Gb / II 2D Ex h IIIB T135°C Db

Model	Item-No.	Capacity in kg/ number of chain falls	Chain dimensions d x p mm	Load chain grade	Lift per 1 m hand chain overhaul mm	Handle pull at WLL daN	Weight at standard lift (3 m) kg
YL ATEX 500	N04705007	500/1	5x15	T	30	21	9
YL ATEX 1000	N04705008	1.000/1	6x18	T	49	30	13
YL ATEX 2000	N04705009	2.000/1	8x24	T	71	32	20
YL ATEX 3000	N04705010	3.000/1	10x30	V	87	38	29
YL ATEX 5000	N04705011	5.000/2	10x30	T	174	34	38
YL ATEX 10000	N04705012	10.000/3	10x30	V	261	44	71
YL ATEX 20000	N04705013	20.000/6	10x30	V	522	2x44	196

Technical data model Yalelift 360 ATEX HIGH II 2G Ex h IIC T4 Gb / II 2D Ex h IIIC T135°C Db

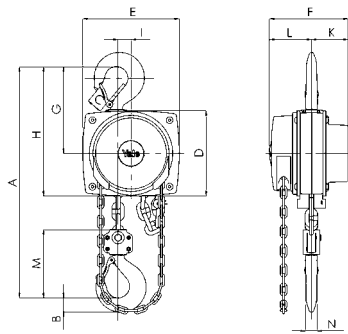
Model	Item-No.	Capacity ¹ in kg/ number of chain falls	Chain dimensions d x p mm	Load chain grade	Lift per 1 m hand chain overhaul mm	Handle pull at WLL daN	Weight at standard lift (3 m) kg
YL ATEX 500	N04705035	500/1	5x15	S	30	21	9
YL ATEX 1000	N04705036	900/1	6x18	S	49	30	13
YL ATEX 2000	N04705037	1.500/1	8x24	S	71	32	20
YL ATEX 3000	N04705038	2.500/1	10x30	S	87	38	29
YL ATEX 5000	N04705039	5.000/2	10x30	S	174	34	38
YL ATEX 10000	N04705040	7.500/3	10x30	S	261	44	71
YL ATEX 20000	N04705041	15.000/6	10x30	S	522	2x44	196

¹ Models in HIGH design are already labelled with reduced capacities when delivered.

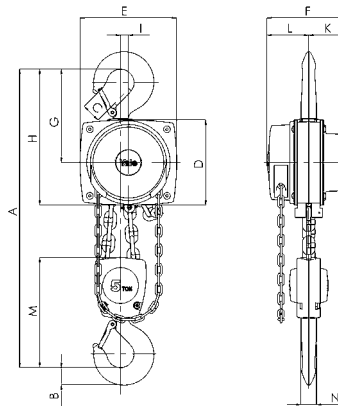


Dimensions model Yalelift 360 ATEX

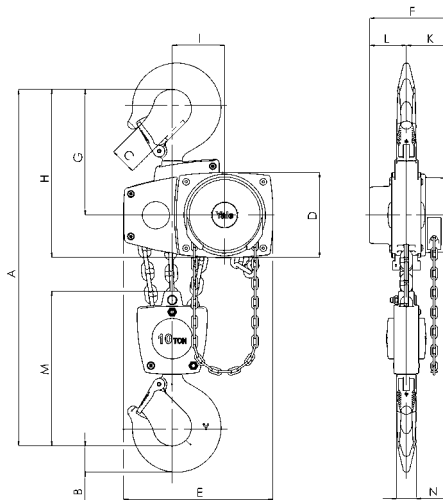
Model	YL ATEX 500	YL ATEX 1000	YL ATEX 2000	YL ATEX 3000	YL ATEX 5000	YL ATEX 10000	YL ATEX 20000
A min., mm	300	335	395	520	654	825	1.010
B, mm	17	22	30	38	45	68	85
C, mm	24	29	35	40	47	68	64
D, mm	133	156	182	220	220	220	303
E, mm	148	175	203	250	250	383	555
F, mm	148	167	194	219	219	219	250
G, mm	139	164	192	225	242	326	391
H, mm	206	242	283	335	352	436	501
I, mm	24	24	31	34	21	136	-
K, mm	61	70	83	95	95	95	396
L, mm	87	97	111	124	124	124	125
M, mm	110	125	156	178	285	401	471
N, mm	14	19	22	30	37	50	56



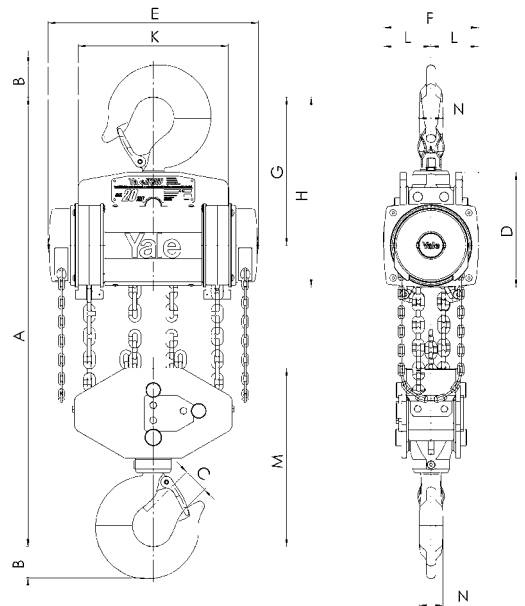
Model Yalelift 360 ATEX, 500 - 3000 kg, single fall



Model Yalelift 360 ATEX, 5000 kg, double fall



Model Yalelift 360 ATEX, 10000 kg, three fall



Model Yalelift 360 ATEX, 20000 kg, six fall





Image shows HIGH design

Hand chain hoist with integrated push or geared type trolley model Yalelift IT ATEX

Capacity 500 - 20000 kg

The combination of the Yalelift 360 with a low headroom manual trolley provides even more flexibility in the application of the Yalelift 360.

Features

- All units of this series up to a capacity of 3000 kg are provided with single chain fall and the min. headroom (Dim. A) has been further reduced. Ideal for applications with low ceilings and limited headroom.
- The proven and almost stepless adjustment system allows quick and easy assembly of the trolley.
- Trolleys up to 5t are offered for two beam ranges. Range A for a flange width up to 180 mm is standard and covers approx. 80 % of all requirements. Conversion to range B for beam width up to 300 mm can be easily accomplished.
- The trolley wheels (only for MEDIUM and HIGH design) are designed for a max. beam profile incline of 14 % (DIN 1025-1), excellent rolling features are guaranteed by prelubricated, encapsulated ball bearings.
- Anti-drop and anti-tilt devices as standard.
- Explosion protected version with spark resistant coating.
- Trolleys equipped with rubber buffers.
- Copper-coated load hooks for MEDIUM design or higher.
- Stainless steel load chain for HIGH design.

Options

- Adjustable overload protection device
- Chain container
- Beam locking device to secure the unloaded trolley in a fixed position on the beam (park position e.g. on ships).
- Additional coating (see page 48)

INFO

Yale hoists and trolleys are not designed for passenger elevation applications and must not be used for this purpose.

Technical data model Yalelift ITP ATEX BASIC with integrated push type trolley II 3G Ex h IIA T4 Gc / II 3D Ex h IIIA T135°C Dc

Model	Item-No.	Capacity in kg/ number of chain falls	Size ¹	Beam flange width b mm	Beam flange thickness t max. mm	Curve radius min. m	Weight ² kg	Weight ² with locking device kg
YLITP ATEX 500	N04905029	500/1	A	50 - 180	19	0,9	20	26
YLITP ATEX 1000	N04905030	1.000/1	A	50 - 180	19	0,9	27	35
YLITP ATEX 2000	N04905031	2.000/1	A	58 - 180	19	1,15	44	52

Technical data model Yalelift ITP ATEX MEDIUM with integrated push type trolley II 2G Ex h IIB T4 Gb / II 2D Ex h IIIB T135°C Db

Model	Item-No.	Capacity in kg/ number of chain falls	Size ¹	Beam flange width b mm	Beam flange thickness t max. mm	Curve radius min. m	Weight ² kg	Weight ² with locking device kg
YLITP ATEX 500	N04905005	500/1	A	50 - 180	19	0,9	20	26
YLITP ATEX 1000	N04905006	1.000/1	A	50 - 180	19	0,9	27	35
YLITP ATEX 2000	N04905007	2.000/1	A	58 - 180	19	1,15	44	52

Technical data model Yalelift ITP ATEX HIGH with integrated push type trolley II 2G Ex h IIC T4 Gb / II 2D Ex h IIIC T135°C Db

Model	Item-No.	Capacity in kg/ number of chain falls	Size ¹	Beam flange width b mm	Beam flange thickness t max. mm	Curve radius min. m	Weight ² kg	Weight ² with locking device kg
YLITP ATEX 500	N04905053	500/1	A	50 - 180	19	0,9	20	26
YLITP ATEX 1000	N04905054	900/1	A	50 - 180	19	0,9	27	35
YLITP ATEX 2000	N04905055	1.500/1	A	58 - 180	19	1,15	44	52

¹ Size B on request

² Weight for standard 3 m lift. Other lifting heights available.

³ Models in HIGH design are already labelled with reduced capacities when delivered.

Technical data model Yalelift ITG ATEX BASIC with integrated geared type trolley II 3G Ex h IIA T4 Gc / II 3D Ex h IIIA T135°C Dc

Model	Item-No.	Capacity in kg/ number of chain falls	Size ¹	Beam flange width b mm	Beam flange thickness t max. mm	Curve radius min. m	Weight ² kg	Weight ² with locking device kg
YLITG ATEX 500	N04905041	500/1	A	50 - 180	19	0,9	24	31
YLITG ATEX 1000	N04905042	1.000/1	A	50 - 180	19	0,9	32	40
YLITG ATEX 2000	N04905043	2.000/1	A	58 - 180	19	1,15	49	57
YLITG ATEX 3000	N04905044	3.000/1	A	74 - 180	27	1,5	82	91
YLITG ATEX 5000	N04905045	5.000/2	A	98 - 180	27	2,0	130	140
YLITG ATEX 10000	N04905046	10.000/3	B	125 - 310	40	1,8	on request	on request
YLITG ATEX 20000	N04905047	20.000/6	B	180 - 310	40	5,0	on request	on request

Technical data model Yalelift ITG ATEX MEDIUM with integrated geared type trolley II 2G Ex h IIB T4 Gb / II 2D Ex h IIIB T135°C Db

Model	Item-No.	Capacity in kg/ number of chain falls	Size ¹	Beam flange width b mm	Beam flange thickness t max. mm	Curve radius min. m	Weight ² kg	Weight ² with locking device kg
YLITG ATEX 500	N04905015	500/1	A	50 - 180	19	0,9	24	31
YLITG ATEX 1000	N04905016	1.000/1	A	50 - 180	19	0,9	32	40
YLITG ATEX 2000	N04905017	2.000/1	A	58 - 180	19	1,15	49	57
YLITG ATEX 3000	N04905018	3.000/1	A	74 - 180	27	1,5	82	91
YLITG ATEX 5000	N04905019	5.000/2	A	98 - 180	27	2,0	130	140
YLITG ATEX 10000	N04905020	10.000/3	B	125 - 310	40	1,8	on request	on request
YLITG ATEX 20000	N04905022	20.000/6	B	180 - 310	40	5,0	on request	on request

Technical data model Yalelift ITG ATEX HIGH with integrated geared type trolley II 2G Ex h IIC T4 Gb / II 2D Ex h IIIC T135°C Db

Model	Item-No.	Capacity ³ in kg/ number of chain falls	Size ¹	Beam flange width b mm	Beam flange thickness t max. mm	Curve radius min. m	Weight ² kg	Weight ² with locking device kg
YLITG ATEX 500	N04905065	500/1	A	50 - 180	19	0,9	24	31
YLITG ATEX 1000	N04905066	900/1	A	50 - 180	19	0,9	32	40
YLITG ATEX 2000	N04905067	1.500/1	A	58 - 180	19	1,15	49	57
YLITG ATEX 3000	N04905068	2.500/1	A	74 - 180	27	1,5	82	91
YLITG ATEX 5000	N04905069	5.000/2	A	98 - 180	27	2,0	130	140
YLITG ATEX 10000	N04905070	7.500/3	B	125 - 310	40	1,8	on request	on request
YLITG ATEX 20000	N04905071	15.000/6	B	180 - 310	40	5,0	on request	on request

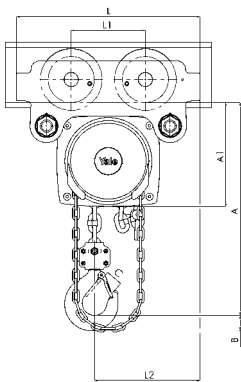
¹ Size B on request

² Weight for standard 3 m lift. Other lifting heights available.

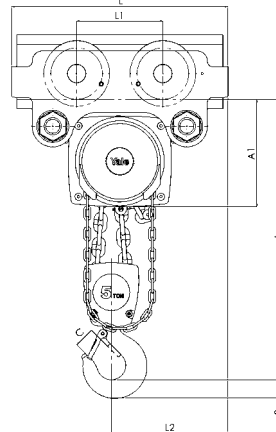
³ Models in HIGH design are already labelled with reduced capacities when delivered.

Dimensions model Yalelift IT ATEX

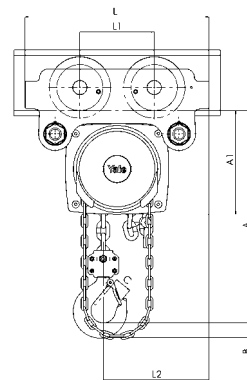
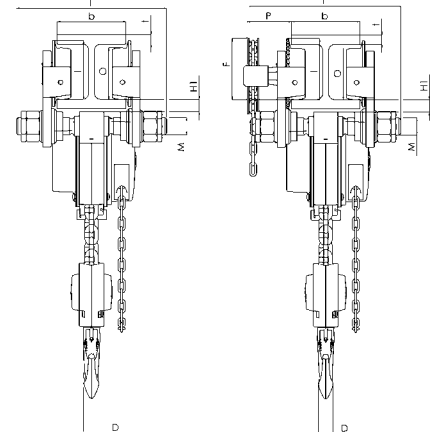
Model	YLIT ATEX 500	YLIT ATEX 1000	YLIT ATEX 2000	YLIT ATEX 3000	YLIT ATEX 5000	YLIT ATEX 10000
A min., mm	245	272	323	382	550	784
A1, mm	158	178	205,5	252	260,5	380
A2, mm	-	-	-	-	-	-
B, mm	17	22	30	38	45	68
C, mm	24	29	35	40	47	68
D, mm	14	19	22	30	37	50
F (Geared type trolley), mm	92	92	91	107	149,5	113
H1, mm	24,5	24	23,5	32	30,5	55
I (Push type trolley), mm	71,5	71,5	95,5	131	142,5	169
I (Geared type trolley), mm	76,5	76,5	98	132,5	148,5	169
L, mm	270	310	360	445	525	430
L1, mm	130	130	150	180	209	200
L2, mm	159	175	207	256	283	261
M, mm	M 18	M 22	M 27	M 30	M 42	M 48
O, mm	60	60	80	112	125	150
P (Geared type trolley), mm	108	110	112	112	117	158
T (Size A), mm	280	290	305	320	364	-
T (Size B), mm	400	410	425	440	484	540



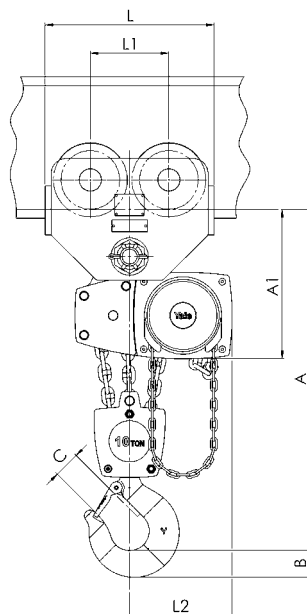
Model Yalelift ITP ATEX, 500 - 3000kg, single fall



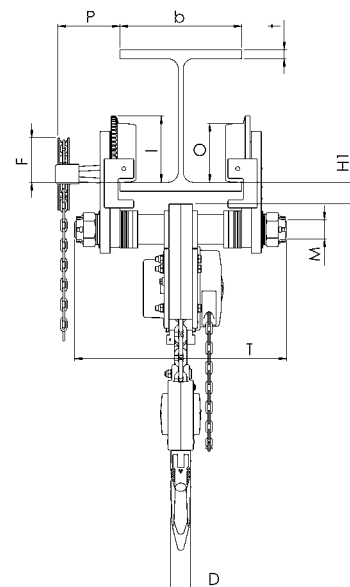
Model Yalelift ITP/ITG ATEX, 5000kg, double fall



Model Yalelift ITG ATEX, 500 - 3000kg, single fall



Model Yalelift ITG ATEX, 10000kg, three fall





Hand chain hoist with integrated push or geared type trolley (low headroom) model Yalelift LH ATEX

Capacity 500 - 10000 kg

The hand chain hoist model Yalelift LH with integrated low headroom manual trolley is the consequent further development of the Yalelift IT. Wherever an even smaller headroom is essential, the Yalelift LH is the ideal choice.

Features

- The specially developed chain reeving system and chain guide allow the bottom block to be pulled laterally to the hoist even further up and almost against the beam flange.
- The integrated design of the innovative Yalelift LH uses the same manual trolleys as incorporated in the Yalelift IT series.
- All models of the LH series up to 3000 kg capacity are provided with single chain fall.
- The proven and almost stepless adjustment system allows quick and easy assembly of the trolley.
- The trolleys up to 5 t are offered for two beam ranges. Range A for a flange width up to 180 mm is standard and covers approx. 80 % of all requirements. Conversion to range B for beam width up to 300 mm can be easily accomplished.
- The trolley wheels (only for MEDIUM and HIGH design) are designed for a max. beam profile incline of 14 % (DIN 1025-1), excellent rolling features are guaranteed by prelubricated, encapsulated ball bearings.
- The low headroom version of the Yalelift IT is adjustable to fit a wide range of beam profiles (e.g. INP, IPE, IPB).
- Anti-drop and anti-tilt devices as standard.
- Explosion protected version with spark resistant coating.
- Trolleys equipped with rubber buffers.
- Copper-coated load hooks for MEDIUM design or higher.
- Stainless steel load chain for HIGH design.

Options

- Adjustable overload protection device
- Chain container
- Beam locking device to secure the unloaded trolley in a fixed position on the beam (park position e.g. on ships).
- Additional coating (see page 48)

Technical data model Yalelift LHP ATEX BASIC with integrated push type trolley II 3G Ex h IIA T4 Gc / II 3D Ex h IIIA T135°C Dc

Model	Item-No.	Capacity in kg/ number of chain falls	Size ¹	Beam flange width b mm	Beam flange thickness t max. mm	Curve radius min. m	Weight ² kg	Weight ² with locking device kg
YLLHP ATEX 500	N05600134	500/1	A	60 - 180	19	0,9	27	33
YLLHP ATEX 1000	N05600135	1.000/1	A	70 - 180	19	0,9	35	43
YLLHP ATEX 2000	N05600136	2.000/1	A	82 - 180	19	1,15	61	69

Technical data model Yalelift LHP ATEX MEDIUM with integrated push type trolley II 2G Ex h IIB T4 Gb / II 2D Ex h IIIB T135°C Db

Model	Item-No.	Capacity in kg/ number of chain falls	Size ¹	Beam flange width b mm	Beam flange thickness t max. mm	Curve radius min. m	Weight ² kg	Weight ² with locking device kg
YLLHP ATEX 500	N05600123	500/1	A	60 - 180	19	0,9	27	33
YLLHP ATEX 1000	N05600124	1.000/1	A	70 - 180	19	0,9	35	43
YLLHP ATEX 2000	N05600125	2.000/1	A	82 - 180	19	1,15	61	69

Technical data model Yalelift LHP ATEX HIGH with integrated push type trolley II 2G Ex h IIC T4 Gb / II 2D Ex h IIIC T135°C Db

Model	Item-No.	Capacity ³ in kg/ number of chain falls	Size ¹	Beam flange width b mm	Beam flange thickness t max. mm	Curve radius min. m	Weight ² kg	Weight ² with locking device kg
YLLHP ATEX 500	N05600143	500/1	A	60 - 180	19	0,9	27	33
YLLHP ATEX 1000	N05600144	900/1	A	70 - 180	19	0,9	35	43
YLLHP ATEX 2000	N05600145	1.500/1	A	82 - 180	19	1,15	61	69

¹ Size B on request

² Weight for standard 3 m lift. Other lifting heights available.

³ Models in HIGH design are already labelled with reduced capacities when delivered.

Technical data model Yalelift LHG ATEX BASIC with integrated geared type trolley II 3G Ex h IIA T4 Gc / II 3D Ex h IIIA T135°C Dc

Model	Item-No.	Capacity in kg/ number of chain falls	Size ¹	Beam flange width b mm	Beam flange thickness t max. mm	Curve radius min. m	Weight ² kg	Weight ² with locking device kg
YLLHG ATEX 500	N05600137	500/1	A	60 - 180	19	0,9	31	38
YLLHG ATEX 1000	N05600138	1.000/1	A	70 - 180	19	0,9	40	48
YLLHG ATEX 2000	N05600139	2.000/1	A	82 - 180	19	1,15	65	73
YLLHG ATEX 3000	N05600140	3.000/1	A	100 - 180	19	1,5	112	121
YLLHG ATEX 5000	N05600141	5.000/2	A	110 - 180	27	2,0	157	167
YLLHG ATEX 10000	N05600142	10.000/3	B	180 - 310	40	1,8	232	on request

Technical data model Yalelift LHG ATEX MEDIUM with integrated geared type trolley II 2G Ex h IIB T4 Gb / II 2D Ex h IIIB T135°Db

Model	Item-No.	Capacity in kg/ number of chain falls	Size ¹	Beam flange width b mm	Beam flange thickness t max. mm	Curve radius min. m	Weight ² kg	Weight ² with locking device kg
YLLHG ATEX 500	N05600128	500/1	A	60 - 180	19	0,9	31	38
YLLHG ATEX 1000	N05600129	1.000/1	A	70 - 180	19	0,9	40	48
YLLHG ATEX 2000	N05600130	2.000/1	A	82 - 180	19	1,15	65	73
YLLHG ATEX 3000	N05600131	3.000/1	A	100 - 180	19	1,5	112	121
YLLHG ATEX 5000	N05600132	5.000/2	A	110 - 180	27	2,0	157	167
YLLHG ATEX 10000	N05600133	10.000/3	B	180 - 310	40	1,8	232	on request

Technical data model Yalelift LHG ATEX HIGH with integrated geared type trolley II 2G Ex h IIC T4 Gb / II 2D Ex h IIIC T135°C Db

Model	Item-No.	Capacity ³ in kg/ number of chain falls	Size ¹	Beam flange width b mm	Beam flange thickness t max. mm	Curve radius min. m	Weight ² kg	Weight ² with locking device kg
YLLHG ATEX 500	N05600146	500/1	A	60 - 180	19	0,9	31	38
YLLHG ATEX 1000	N05600147	900/1	A	70 - 180	19	0,9	40	48
YLLHG ATEX 2000	N05600148	1.500/1	A	82 - 180	19	1,15	65	73
YLLHG ATEX 3000	N05600149	2.500/1	A	100 - 180	19	1,5	112	121
YLLHG ATEX 5000	N05600150	5.000/2	A	110 - 180	27	2,0	157	167
YLLHG ATEX 10000	N05600151	7.500/3	B	180 - 310	40	1,8	232	on request

¹ Size B on request

² Weight for standard 3 m lift. Other lifting heights available.

³ Models in HIGH design are already labelled with reduced capacities when delivered.

INFO

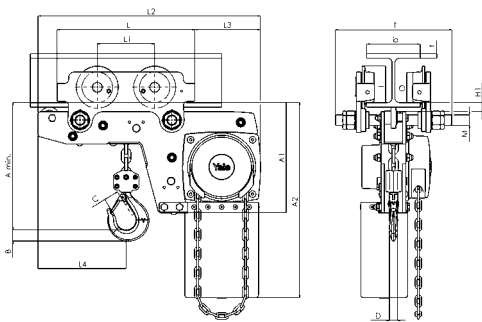
Yale hoists and trolleys are not designed for passenger elevation applications and must not be used for this purpose.

Copper coated for Medium and High!

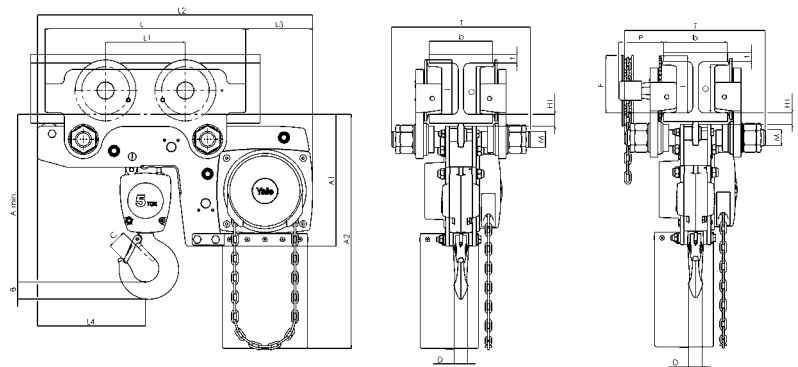


Dimensions model Yalelift LH ATEX

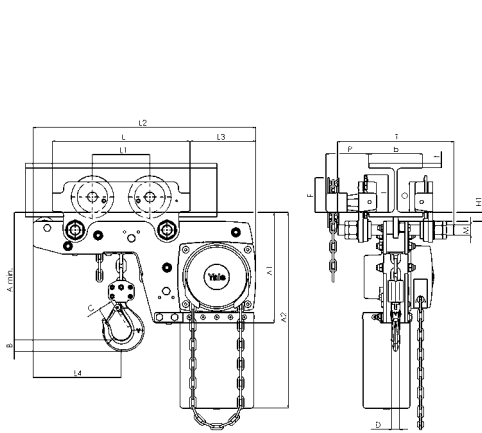
Model	YLLH ATEX 500	YLLH ATEX 1000	YLLH ATEX 2000	YLLH ATEX 3000	YLLH ATEX 5000	YLLH ATEX 10000
A min., mm	188	211	264	316	425	565
A1, mm	223	250	289	346	345	365
A2, mm	381	427	511	614	612	665
B, mm	17	22	30	38	45	68
C, mm	24	29	35	40	47	68
D, mm	14	19	22	30	37	50
F (Geared type trolley), mm	92	92	91	107	150	150
H1, mm	24	24	24	32	31	45
I (Push type trolley), mm	72	72	96	131	143	170
I (Geared type trolley), mm	77	77	98	133	149	170
L, mm	270	310	360	445	525	485
L1, mm	130	130	150	180	209	225
L2, mm	444	488	582	690	720	805
L3, mm	124	135	172	203	175	215
L4, mm	184	201	230	265	283	348
M, mm	M 18	M 22	M 27	M 30	M 42	M 48
O, mm	60	60	80	112	125	150
P (Geared type trolley), mm	108	110	112	112	117	165
T (Size A), mm	280	290	305	320	364	440
T (Size B), mm	400	410	425	440	484	540



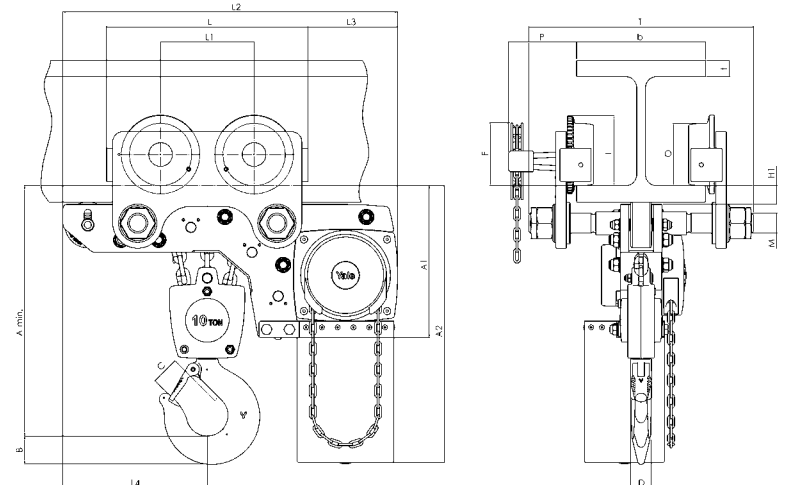
Model Yalelift LHP ATEX, 500 - 3000 kg, single fall



Model Yalelift LHP/LHG ATEX, 5000 kg, double fall



Model Yalelift LHG ATEX, 500 - 3000 kg, single fall



Model Yalelift LHG ATEX, 10000 kg, three fall



Ratchet lever hoist with roller chain C 85 ATEX

Capacity 750 - 3000 kg

Ratchet lever hoist with link chain D 85 ATEX

Capacity 750 - 10000 kg

Almost unlimited applications in maintenance, mining, construction, steel fabrication, shipbuilding and utility work. Ideal for moving and positioning heavy machines and securing heavy loads, simplifies setting pipes etc. in manholes and trenches.

Features

- Enclosed housing with housing cover, hand lever and bottom block made from high tensile white malleable cast iron for overall rugged construction.
- The graphite cast iron load sheave for the link chain has precision machined chain pockets for accurate fit and durability of the load chain.
- The roller chain sprocket is made from heat treated chromium-molybdenum steel with precision machined teeth to ensure smooth chain movement.
- Alloyed steel link chain in accordance with national and international standards and regulations.

INFO

Since 1936, more than 1 million units have been built in Velbert.

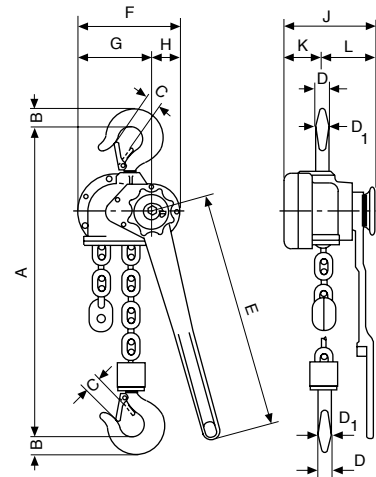
Yale hoists and trolleys are not designed for passenger elevation applications and must not be used for this purpose.

Technical data model C 85 ATEX MINING I M2 Ex h Mb

Model	Item-No.	Capacity in kg/ number of chain falls	Chain dimensions d x p mm	Load chain grade	Lift with one full lever turn mm	Handle pull at WLL daN	Weight at standard lift (1.5 m) kg
PUL-LIFT C 85 750	N01141295	750	1	5/8" x 3/8"	115	38	8,7
PUL-LIFT C 85 1500	N01141296	1.500	1	1" x 1/2"	45	31	17,0
PUL-LIFT C 85 3000	N01141297	3.000	1	1 1/4" x 5/8"	36	40	22,2

Dimensions model C 85 ATEX

Model	PUL-LIFT C 85 750	PUL-LIFT C 85 1500	PUL-LIFT C 85 3000
A min., mm	322	389	403
B, mm	21	27	35
C, mm	27	30	34
D, mm	15	20	25
D1, mm	17	23	25
E, mm	443	443	570
F, mm	112	189	197
G, mm	56	134	142
H, mm	56	55	55
J, mm	142	171	179
K, mm	39	72	76
L, mm	103	99	103



Technical data model D 85 ATEX MINING I M2 Ex h Mb

Model	Item-No.	Capacity in kg/ number of chain falls	Chain dimensions d x p mm	Load chain grade	Lift with one full lever turn mm	Handle pull at WLL daN	Weight at standard lift (1.5 m) kg
PUL-LIFT D 85 750	N01541291	750	1	6x18,5	111	38	8,2
PUL-LIFT D 85 1500	N01541292	1.500	1	9x27	45	31	16,3
PUL-LIFT D 85 3000	N01541293	3.000	1	11x31	33	40	19,6
PUL-LIFT D 85 6000	N01541294	6.000	2	11x31	17	42	32,9
PUL-LIFT D 85 10000	N01541511	10.000	3	11x31	11	37	60,0

Dimensions model D 85 ATEX

Model	PUL-LIFT D 85 750	PUL-LIFT D 85 1500	PUL-LIFT D 85 3000	PUL-LIFT D 85 6000	PUL-LIFT D 85 10000
A min., mm	322	389	403	532	805
B, mm	21	27	35	48	61
C, mm	27	30	34	46	54
D, mm	15	20	25	40	40
D1, mm	17	23	25	40	45
E, mm	443	443	570	570	570
F, mm	112	189	197	197	305
G, mm	56	134	142	142	163
H, mm	56	55	55	55	142
J, mm	142	171	179	218	218
K, mm	39	72	76	76	76
L, mm	103	99	103	142	142



Option:
Overload protection for C/D 85.



INFO

Yale hoists and trolleys are not designed for passenger elevation applications and must not be used for this purpose.

**Ratchet lever hoist
UNOplus-A ATEX
Capacity 750 - 6000 kg**

The UNOplus - Series A ratchet lever hoist is the result of further technical development of the UNOplus, which has proven itself over many years.

The versatile tool for lifting, pulling and securing of loads is characterised by its compact design, robust stamped steel construction and the smoothly running free chaining device. The further reduced weight optimizes operation, makes the application even more comfortable and the UNOplus - Series A to a convenient, versatile device.

Benefits & features

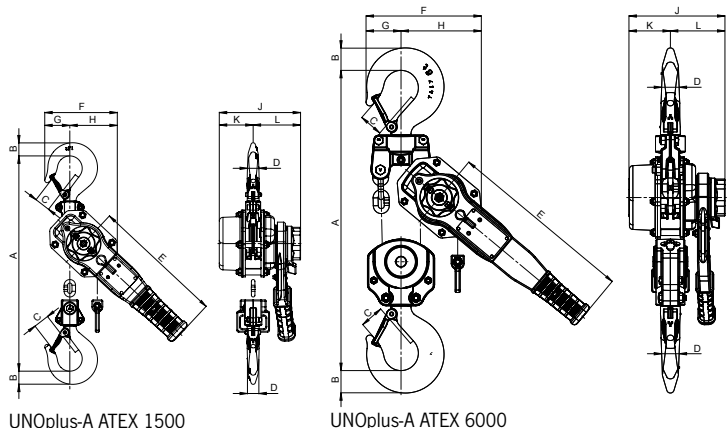
- Due to optimized gearing and improved bearings in the housing cover a minimum effort is required to operate the short hand lever.
- Impact resistant stamped steel frame and gear cover withstands repeated rigorous use.
- Closed load chain guide prevent accidentally slipping out.
- Increased corrosion protection through zinc-plated and yellow-chromated chain guide, chain stripper and parts of the brake.
- Guide, chain stripper and parts of the brake with corrosion-protected components.
- Alloyed steel link chain in accordance with national and international standards and regulations.
- Bolt on hooks with nyloc nuts simplify the inspection process. Hooks are forged, allowing them to yield under overload without breaking.

Technical data model UNOplus-A ATEX BASIC II 3G Ex h IIA T4 Gc / II 3D Ex h IIIA T135°C Dc / Mining I M2 Ex h Mb

Model	Item-No.	Capacity in kg/ number of chain falls	Chain dimensions d x p mm	Load chain grade	Lift with one full lever turn mm	Handle pull at WLL daN	Weight at standard lift (1.5m) kg
UNOplus-A ATEX 750	192049841	750/1	5,6 x 17,1	T	27	22	6,3
UNOplus-A ATEX 1500	192049940	1.500/1	7,1 x 21	T	22	35	9,2
UNOplus-A ATEX 3000	192050025	3.000/1	10 x 28	T	20	40	16,9
UNOplus-A ATEX 6000	192050579	6.000/2	10 x 28	T	10	43	28,6

Dimensions model UNOplus-A ATEX

Model	UNOplus-A ATEX 750	UNOplus-A ATEX 1500	UNOplus-A ATEX 3000	UNOplus-A ATEX 6000
A min., mm	312	375	445	563
B, mm	20	26	37	45
C, mm	27	31	40	47
D, mm	18	21	28	35
E, mm	267	267	376	376
F, mm	121	146	180	232
G, mm	40	51	57	71
H, mm	81	95	123	161
J, mm	144	164	193	193
K, mm	53	68	83	83
L, mm	91	96	110	110



Push and geared type trolley model HTP/G ATEX

Capacity 500 - 20000 kg

The trolley enables the exact positioning or easy traversing of large loads with either manual or powered hoisting equipment.

Features

- The trolley wheels (only for HIGH design) are designed for a max. beam profile incline of 14% (DIN 1025-1), excellent rolling features due to prelubricated and encapsulated ball bearings.
- Adjustable to fit a wide range of beam widths and profiles (e. g. INP, IPE and IPB).
- Adjustments are made by rotating the clevis load bar which also ensures the centred positioning of the hoist in the clevis – no creeping to the left or the right.
- Explosion protected version with spark resistant coating.
- Trolleys equipped with rubber buffers.
- Stainless steel hand chain for model HTG.

Option

- Locking device to secure the trolley in position on the beam (park position e.g. on ships).
- Additional coating (see page 48)



Image shows HIGH design

Technical data model HTP ATEX BASIC II 3G Ex h IIA T4 Gc / II 3D Ex h IIIA T135°C Dc

Model	Item-No.	Capacity kg	Size	Beam flange width b mm	Beam flange thickness t max. mm	Curve radius min. m	Hand effort at WLL daN	Weight kg	Weight with locking device kg
HTP ATEX 500	N05100054	500	A	50 - 220	25	0,9	–	8,0	14,5
HTP ATEX 1000	N05100055	1.000	A	50 - 220	25	0,9	–	9,0	17,0
HTP ATEX 2000	N05100056	2.000	A	66 - 220	25	1,15	–	16,0	24,0
HTP ATEX 500	N05100057	500	B	160 - 300	40	0,9	–	10,6	17,1
HTP ATEX 1000	N05100058	1.000	B	160 - 300	40	0,9	–	12,0	20,0
HTP ATEX 2000	N05100059	2.000	B	160 - 300	40	1,15	–	19,3	27,3

Technical data model HTP ATEX HIGH II 2G Ex h IIC T4 Gb / II 2D Ex h IIIC T135°C Db

Model	Item-No.	Capacity kg	Size	Beam flange width b mm	Beam flange thickness t max. mm	Curve radius min. m	Hand effort at WLL daN	Weight kg	Weight with locking device kg
HTP ATEX 500	N05100049	500	A	50 - 220	25	0,9	–	8,0	14,5
HTP ATEX 1000	N05100050	1.000	A	50 - 220	25	0,9	–	9,0	17,0
HTP ATEX 2000	N05100051	2.000	A	66 - 220	25	1,15	–	16,0	24,0
HTP ATEX 500	N05100064	500	B	160 - 300	40	0,9	–	10,6	17,1
HTP ATEX 1000	N05100065	1.000	B	160 - 300	40	0,9	–	12,0	20,0
HTP ATEX 2000	N05100066	2.000	B	160 - 300	40	1,15	–	19,3	27,3

Technical data model HTG ATEX BASIC II 3G Ex h IIA T4 Gc / II 3D Ex h IIIA T135°C Dc

Model	Item-No.	Capacity kg	Size	Beam flange width b mm	Beam flange thickness t max. mm	Curve radius min. m	Hand effort at WLL daN	Weight* kg	Weight* with locking device kg
HTG ATEX 500	N05300101	500	A	50 - 220	25	0,9	3	9,7	16,2
HTG ATEX 1000	N05300102	1.000	A	50 - 220	25	0,9	6	11,2	19,2
HTG ATEX 2000	N05300103	2.000	A	66 - 220	25	1,15	7	18,0	26,0
HTG ATEX 3000	N05300104	3.000	A	74 - 220	25	1,4	7	35,4	44,6
HTG ATEX 5000	N05300105	5.000	A	90 - 220	25	1,8	9	51,8	62,3
HTG ATEX 500	N05300106	500	B	160 - 300	40	0,9	3	12,6	19,1
HTG ATEX 1000	N05300107	1.000	B	160 - 300	40	0,9	6	14,1	22,1
HTG ATEX 2000	N05300108	2.000	B	160 - 300	40	1,15	7	21,3	29,3
HTG ATEX 3000	N05300109	3.000	B	160 - 300	40	1,4	7	39,2	48,4
HTG ATEX 5000	N05300110	5.000	B	180 - 300	40	1,8	9	56,0	66,5
HTG ATEX 8000	N05300111	8.000	B	125 - 310	40	1,8	14	104,0	-
HTG ATEX 10000	N05300112	10.000	B	125 - 310	40	1,8	14	104,0	-
HTG ATEX 20000	N05300114	20.000	B	125 - 310	40	5,0	29	230,0	-

Technical data model HTG ATEX HIGH II 2G Ex h IIC T4 Gb / II 2D Ex h IIIC T135°C Db

Model	Item-No.	Capacity kg	Size	Beam flange width b mm	Beam flange thickness t max. mm	Curve radius min. m	Hand effort at WLL daN	Weight ¹ kg	Weight ¹ with locking device kg
HTG ATEX 500	N05300085	500	A	50 - 220	25	0,9	3	9,7	16,2
HTG ATEX 1000	N05300086	1.000	A	50 - 220	25	0,9	6	11,2	19,2
HTG ATEX 2000	N05300087	2.000	A	66 - 220	25	1,15	7	18,0	26,0
HTG ATEX 3000	N05300088	3.000	A	74 - 220	25	1,4	7	35,4	44,6
HTG ATEX 5000	N05300089	5.000	A	90 - 220	25	1,8	9	51,8	62,3
HTG ATEX 500	N05300115	500	B	160 - 300	40	0,9	3	12,6	19,1
HTG ATEX 1000	N05300116	1.000	B	160 - 300	40	0,9	6	14,1	22,1
HTG ATEX 2000	N05300117	2.000	B	160 - 300	40	1,15	7	21,3	29,3
HTG ATEX 3000	N05300118	3.000	B	160 - 300	40	1,4	7	39,2	48,4
HTG ATEX 5000	N05300119	5.000	B	180 - 300	40	1,8	9	56,0	66,5
HTG ATEX 8000	N05300090	8.000	B	125 - 310	40	1,8	14	104,0	-
HTG ATEX 10000	N05300091	10.000	B	125 - 310	40	1,8	14	104,0	-
HTG ATEX 20000	N05300093	20.000	B	125 - 310	40	5,0	29	230,0	-

¹Weight HTG without hand chain

INFO

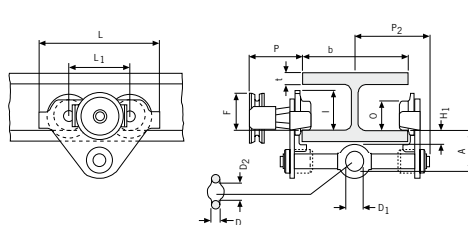
Yale hoists and trolleys are not designed for passenger elevation applications and must not be used for this purpose.

Dimensions model HTP ATEX

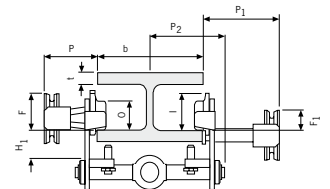
Model	HTP ATEX 500-A	HTP ATEX 1000-A	HTP ATEX 2000-A	HTP ATEX 3000-A	HTP ATEX 5000-A	HTP ATEX 500-B	HTP ATEX 1000-B	HTP ATEX 2000-B	HTP ATEX 3000-B	HTP ATEX 5000-B
A, mm	77	82,5	98,5	114	132,5	92	97,5	113,5	129	147,5
D, mm	16	17	22	26	33	16	17	22	26	33
D1, mm	25	30	40	48	60	25	30	40	48	60
D2, mm	30	35	47	58	70	30	35	47	58	70
F1, mm	46	46	46	46	45,5	46	46	46	46	45,5
H1, mm	30,5	30,5	30,5	30	30	45,5	45,5	45,5	45	45
l (HTP ATEX), mm	71,5	71,5	95,5	131	142,5	71,5	71,5	95,5	131	142,5
L, mm	260	260	310	390	450	260	260	310	390	450
L1, mm	130	130	150	180	209	130	130	150	180	209
O, mm	60	60	80	112	125	60	60	80	112	125
P1, mm	168	168	168	168	168	168	168	168	168	168
P2, mm	146	150	155	160	167,5	187	187	189,5	191,5	191,5
L3, mm	346	346	396	476	556	346	346	396	476	556

Dimensions model HTG ATEX

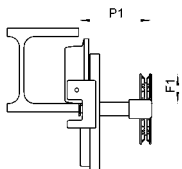
Model	HTG ATEX 500-A	HTG ATEX 1000-A	HTG ATEX 2000-A	HTG ATEX 3000-A	HTG ATEX 5000-A	HTG ATEX 500-B	HTG ATEX 1000-B	HTG ATEX 2000-B	HTG ATEX 3000-B	HTG ATEX 5000-B	HTG ATEX 8000-B	HTG ATEX 10000-B	HTG ATEX 15000-B	HTG ATEX 20000-B
A, mm	77	82,5	98,5	114	132,5	92	97,5	113,5	129	147,5	276	276	270	270
B, mm	-	-	-	-	-	-	-	-	-	-	52	52	70	70
D, mm	16	17	22	26	33	16	17	22	26	33	30	30	35	35
D1, mm	25	30	40	48	60	25	30	40	48	60	80	80	110	110
D2, mm	30	35	47	58	70	30	35	47	58	70	114	114	155	155
F (HTG ATEX), mm	91,5	91,5	90,5	107,5	149,5	91,5	91,5	90,5	107,5	149,5	113	113	113	113
F1, mm	46	46	46	46	45,5	46	46	46	46	45,5	77	77	-	-
H1, mm	30,5	30,5	30,5	30	30	45,5	45,5	45,5	45	45	45	45	45	45
l (HTG ATEX), mm	76,5	76,5	98	132,5	148,5	76,5	76,5	98	132,5	148,5	170	170	170	170
L, mm	260	260	310	390	450	260	260	310	390	450	430	430	870	870
L1, mm	130	130	150	180	209	130	130	150	180	209	200	200	200	200
L2, mm	-	-	-	-	-	-	-	-	-	-	-	-	115	115
O, mm	60	60	80	112	125	60	60	80	112	125	150	150	150	150
P (HTG ATEX), mm	110	110	110	110	110	110	110	110	110	110	163	163	163	163
P1, mm	168	168	168	168	168	168	168	168	168	168	193	193	-	-
P2, mm	146	150	155	160	167,5	187	187	189,5	191,5	191,5	-	-	-	-
T, mm	-	-	-	-	-	-	-	-	-	-	270	270	270	270
L3, mm	346	346	396	476	556	346	346	396	476	556	536	536	976	976
P3, mm	194	194	194	195	195	194	194	194	195	195	-	-	-	-



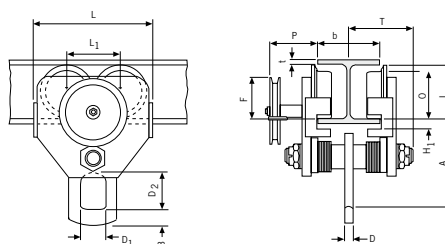
Model HTP/HTG ATEX 500 - 5000 kg



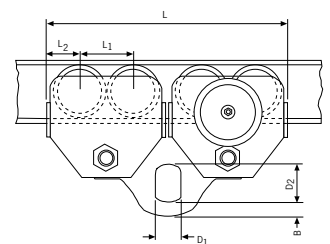
Model HTP/HTG ATEX 500 - 5000 kg, with locking device



Model HTG ATEX 10000 kg, locking device



Model HTG ATEX 10000 kg



Model HTG ATEX 20000 kg

