

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

We know what we are doing - As a manufacturer, we have decades of experience in inspecting and repairing products for the area of lifting technology. We are happy to share this knowledge with our clients and offer seminars at our training centre in Wuppertal to become a "competent person" for the inspection of Yale and Pfaff-silberblau hoisting equipment according DGUV Vorschrift 54 (BGVD8)

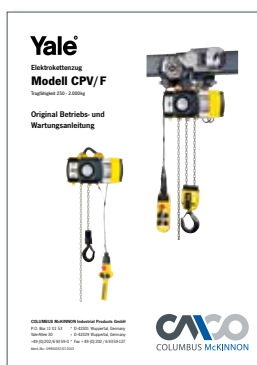
The centres offer not only product training but also seminars providing up-to-date insider information and a consolidated knowledge in the usage of rope, lifting and lashing practices.

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



INFO

As required all training seminars can also be held at other locations.



Certified security

You are in safe hands - Every unit is supplied with operating instructions, CE declaration of conformity resp. manufactures 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.



Die Wurzeln des Explosionsschutzes liegen im Bergbau, denn dort sind die Bergleute von den schlagenden Wettern bedroht, damit wird das unter Tage austretende Grubengas (Methangas) beschrieben. Hierbei reagiert der feine Kohlenstaub mit der Luft zu einem explosiven Gemisch (Schlagwetterexplosion).

Explosive atmospheres may however occur in other branches of industry too, for example in the chemical or petrochemical industries. Nicht nur elektrische Betriebsmittel, sondern auch nicht elektrische Betriebsmittel müssen so ausgelegt sein, dass sie keinen wirksamen Zündquellen bilden können.

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. In this way 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, currently the aim is to harmonise approval conditions and regulations regarding conformity at an 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.

Der Explosionsschutz elektrischer und nicht-elektrischer Maschinen ist eine wichtige Vorsorgemaßnahme zur Sicherheit von Personen und Produktions-, Lager- und Distributionseinrichtungen aller Art, wenn dort explosionsfähige Gemische aus brennbaren Gasen oder Stäuben und Luft entstehen können.

ATEX

Examples of explosion hazards in different industries:

Offshore industry



Chemical industry



Energy supply



Shipbuilding



Waste disposal and recycling companies



Gas supply company



Metal processing companies



Wood processing companies



Paint shops



Agriculture



Food and feed industry



Pharmaceutical industry



Refineries



ATEX

With 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.

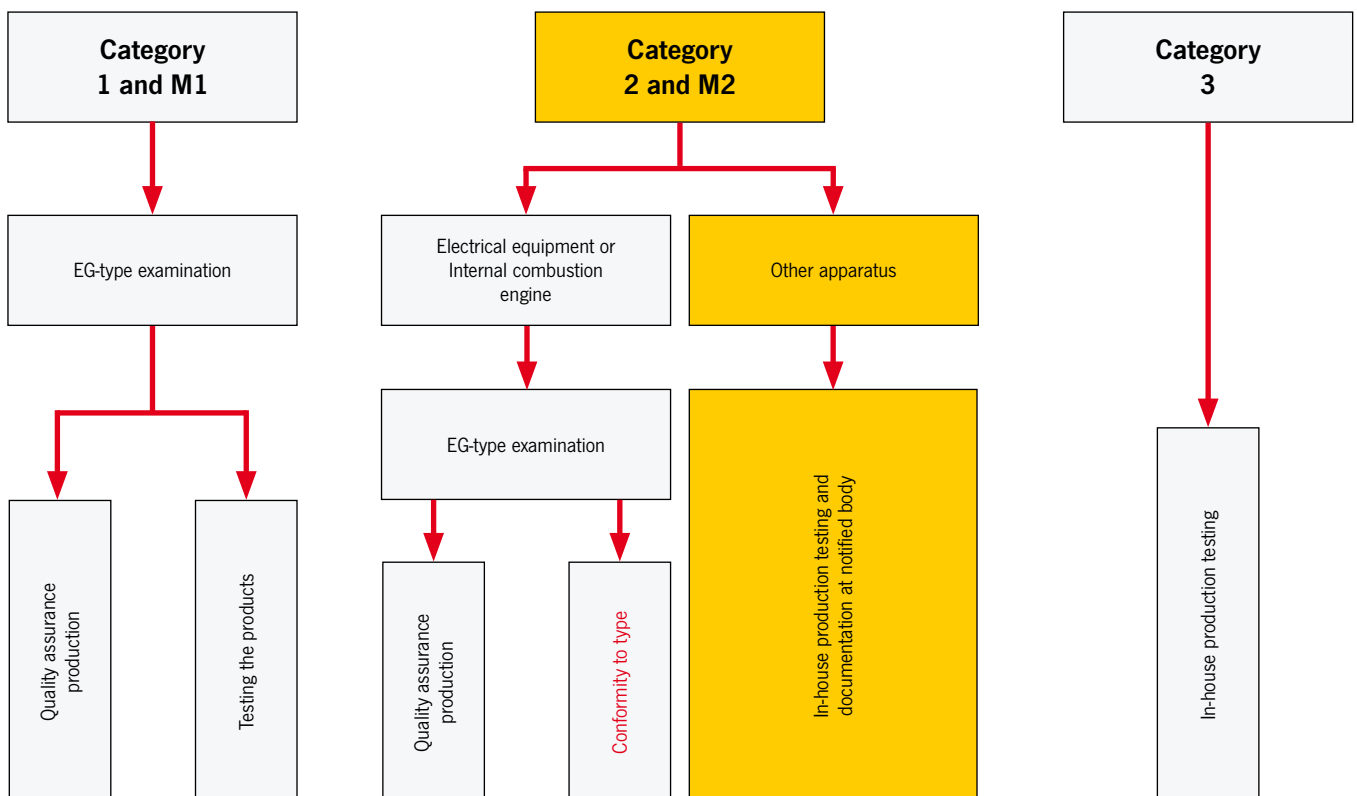
This safety concept is applicable both for manufacturing electrical and non-electrical apparatus and for operating this apparatus in the respective industrial plants. The legislators of the individual member countries implement these directives in equivalent statutory regulations.

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. Inter alia, the user must assess 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 thus simplify the free global movement of goods. There is already extensive agreement as to classes and requirements between the European ATEX directives and the IECEX regulations. This means that ATEX could one day be superseded.

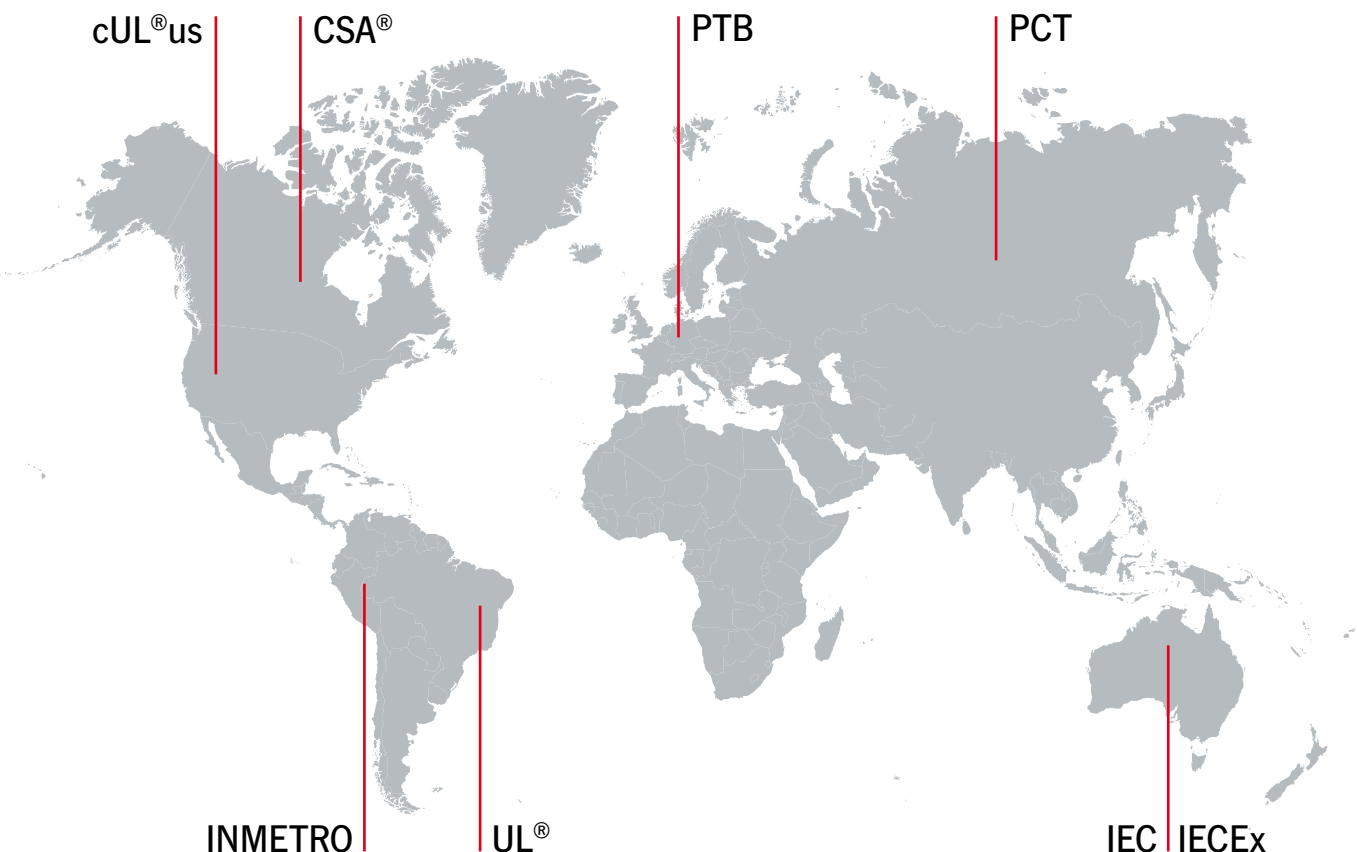
IECEX is of great importance outside Europe. A total of 26 countries have acceded to IECEX and there are 34 recognised IECEX certification bodies (ExCB) and 36 recognised test laboratories (ExTLs) around the world. In countries which recognise IECEX, apparatus with the corresponding certification can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

Im Moment jedoch wird IECEX noch in den meisten Fällen nur für elektrische Betriebsmittel angewendet.

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 gesetzlich gefordert in der EU	IECEX auf freiwilliger Basis in der EU
Prüfung und Konformität nicht-elektrischer Geräte	Gerätekategorie 2* und 3 <ul style="list-style-type: none"> interne Fertigungskontrolle EU-Konformitätserklärung CE-Kennzeichnung *Dokumentation hinterlegt bei benannter Stelle	Geräteschutzniveau (EPL a, b, c) noch nicht geklärt, aber voraussichtl. ähnlich wie bei den elektrischen Geräten Normen: ISO 80079-36 und -37
Zertifikate	Bescheinigung mit Hinterlegungsnummer von benannter Stelle	IECEX Online Datenbank
Reparaturwerkstätten	wird national geregelt (keine EU-zertifizierten Werkstätten)	Certified Service Facilities
Servicepersonal	wird national geregelt (keine EU-zertifiziertes Personal)	Certified Competent Employees

International testing authorities



Explosionsfähige Atmosphären können überall dort auftreten, wo sich brennbare Gase, Dämpfe, Nebel oder Stäube bilden können. Hierbei handelt es sich um ein Gemisch, das beim Zusammentreffen mit dem Sauerstoff der Luft eine chemische Reaktion eingeht, die schon beim kleinsten Funken (z.B. eine heiße Oberfläche) eine Explosion auslösen kann.



Es gilt also, eine Zündung zu vermeiden oder eine Auswirkung einer Explosion auf ein unbedenkliches Maß zu minimieren. Hierfür müssen



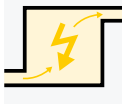
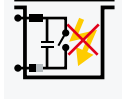


alle Betriebsmittel, die in explosionsgefährdeten Bereichen eingesetzt werden, nach den anzuwendenden Vorschriften und Normen konstruiert, produziert und entsprechend gekennzeichnet werden. Die Einteilung der Geräte in Gruppen und Kategorien nach ATEX Richtlinie bzw. EPL (Equipment Protection Level) nach IECEx Standards ergibt sich aus deren Einsatzbereichen oder dem Sicherheitsmaß der Schutzmaßnahmen und der Häufigkeit des Auftretens einer explosionsfähigen Atmosphäre.

Hierbei muss der Hersteller das entsprechende Produkt unter den ungünstigsten Bedingungen testen, um potenzielle Zündquellen auszuschließen. In Bereichen wo eine explosive Atmosphäre auftreten kann dürfen grundsätzlich nur ex-geschützte Betriebsmittel eingesetzt werden.

Diese Betriebsmittel, sowohl elektrisch als auch nicht-elektrisch, werden nach den entsprechenden Normenreihen DIN EN IEC 60079 und DIN EN ISO 80079 in verschiedenen Zündschutzarten ausgeführt. Welche Zündschutzart vom Hersteller ausgewählt wird, hängt von der Art und Funktion des Gerätes ab. Alle genormten Zündschutzarten innerhalb einer Kategorie sind gleichwertig.

Der Hersteller bestätigt in der zur technischen Dokumentation zugehörigen EU Konformitätserklärung, dass das Produkt mit den ATEX Richtlinien übereinstimmt.

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

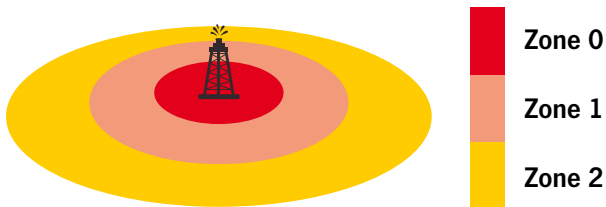
In this respect he must for example assess the potential danger and explosion risk, ensure that the working environment has been designed for safety and classify the hazardous areas into zones in accordance with the directives for safe operation of the apparatus which has been classified into categories.

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

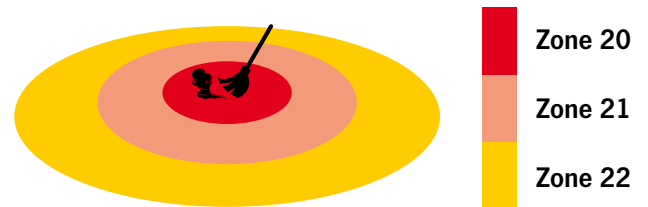
Naturally further issues are defined in directive 1999/92/EC in order to implement explosion protection effectively. After a system has been commissioned in due form it must be monitored and maintained so that the safe condition of the system is ensured and all dangers can be excluded. The plant's expert 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 productspecific 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

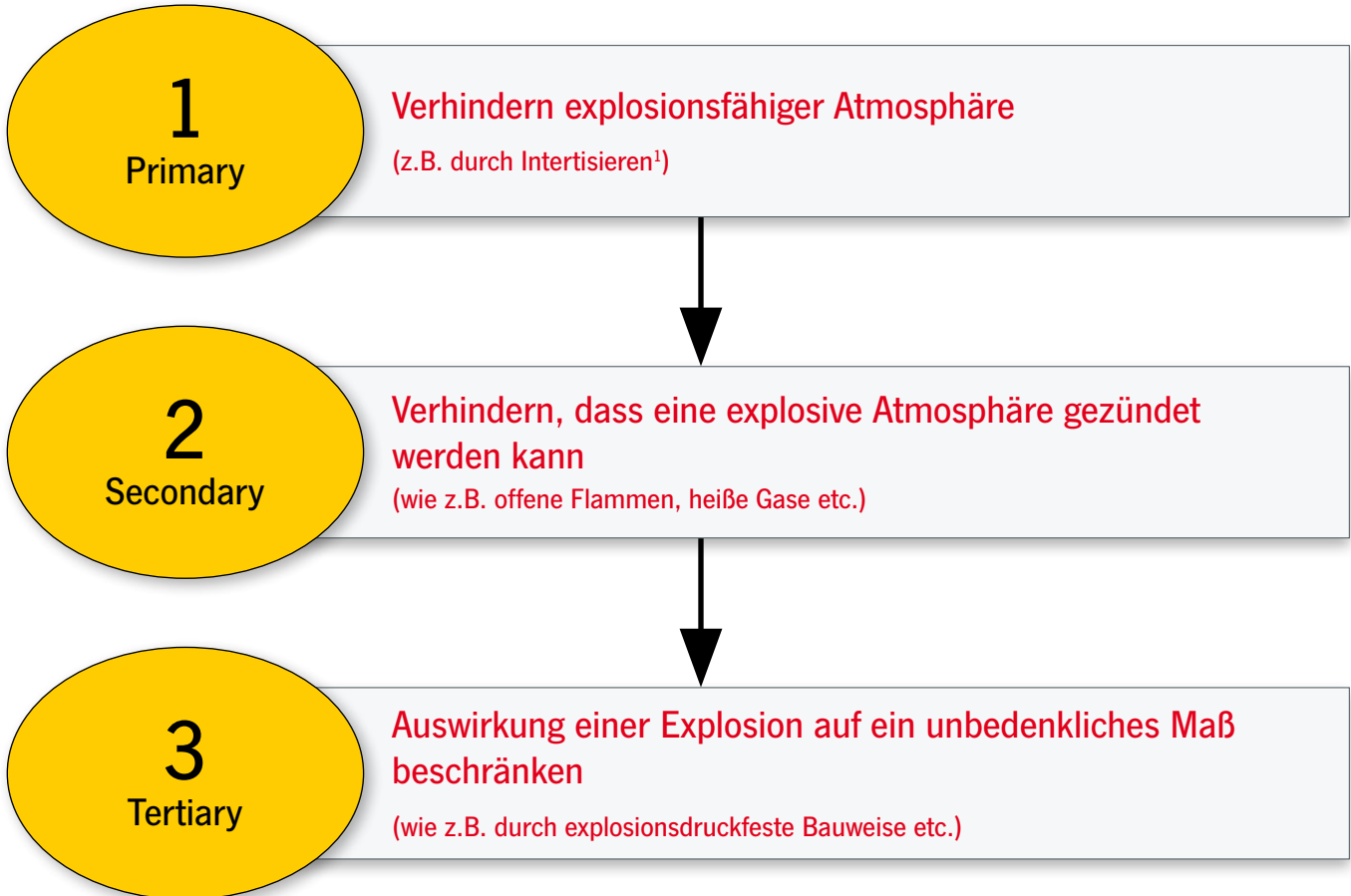


Dust



Prinzip des integrierten Explosionsschutzes

Explosionsschutzmaßnahmen sind in einer bestimmte Reihenfolge zu treffen.



¹ Inertisierung von Stoffen

Die Inertisierung von Stoffen bezeichnet deren Umwandlung oder Bearbeitung zu reaktionsträgen (inerten) Stoffen. Inerte Stoffe sind beispielsweise Edelgase, Glas und Porzellan. In der Deponietechnik wird die Inertisierung u.a. bei der Unschädlichmachung von gefährlichen Abfallstoffen angewandt. So werden z. B. schwermetallhaltige, radioaktive oder anderweitig schädliche Stoffe oftmals durch verglasen inertisiert, um sie endlagern zu können.

Inertisierung von Räumen

Die Inertisierung von Räumen bezeichnet den Vorgang, durch Zugabe von inerten Gasen oder Dämpfen den Luftsauerstoff oder reaktions- bzw. explosionsfähige Gase oder Gasgemische aus Räumen zu verdrängen. Bei der Inertisierung zum Brand- und Explosionsschutz (Beispiel Industrie: Chemikalienlager oder Produktionsanlagen) wird der Luftsauerstoff durch Zugabe von Inertgas (beispielsweise Argon, Stickstoff, Kohlendioxid) verdrängt, damit explosionsfähige Atmosphäre vermieden wird. Beim Brandschutz nennt man dies auch „Aktive Brandvermeidung durch Permanent-Inertisierung“.



Geräte für explosionsgefährdete Bereiche werden in der Richtlinie 2014/34/EU in Gruppen, Kategorien und Temperaturklassen eingeteilt. Dieses ist erforderlich, da nicht für jede Anwendung und für jede Gefährdungsstufe dieselben Anforderungen an die Betriebsmittel gestellt werden müssen.

Equipment category and equipment protection level (EPL)

According to EU directive 2014/34/EU (ATEX)		According to IEC and CENELEC	Sufficient safety	
Gerätegruppe	Geräteklasse	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

Die Zündtemperatur ist die niedrigste Temperatur einer erhitzten Oberfläche, an der die Entzündung eines Gas/Luft- bzw. Dampf/Luft-Gemisches eintritt. Anders ausgedrückt stellt sie den untersten Temperaturwert dar, bei dem eine heiße Oberfläche die entsprechende explosionsfähige Atmosphäre zünden kann.

Daher muss die maximale Oberflächentemperatur eines Betriebsmittels stets kleiner sein, als die Zündtemperatur des Gas/Luft- bzw. Dampf/Luft-Gemisches.

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



Stäube lassen sich nicht so feingliedrig zuordnen, wie die chemisch definierten Gase und Dämpfe. Deshalb werden die Stäube nach ihrer Art und deren Leitfähigkeit unterteilt. In der EN ISO IEC 80079-20-2 wird das Prüfverfahren zur Bestimmung des spezifischen elektrischen Widerstandes von Stäuben beschrieben.

Stäube werden entsprechend ihres Widerstandes in 3 Untergruppen aufgeteilt:

IIIA brennbare Flusen

IIIB nicht leitfähig brennbare Stäube

mit einem spezifischen elektrischen Widerstand $> 10^3 \Omega$

IIIC leitfähig brennbare Stäube

mit einem spezifischen elektrischen Widerstand $< 10^3 \Omega$

Die Mindestzündenergie von brennbaren Stäuben wird nach IEC 61241-2-3 bestimmt.

Zünd- und Glimmtemperatur bei Stäuben:



Kategorie	Substanz	T _{zünd} [°C]	T _{glimm} [°C]
Stäube von Naturprodukten	Holz	≥ 410	≥ 200
	Braunkohle	≥ 380	≥ 225
	Milchpulver	≥ 440	≥ 240
	Papier	≥ 540	≥ 300
Stäube von chemisch-technischen Produkten	Petrolkoks	≥ 690	≥ 280
	Schwefel	≥ 280	≥ 280
Metallstäube	Aluminium	≥ 530	≥ 280
	Eisen	≥ 310	≥ 300

Safety characteristics of dusts

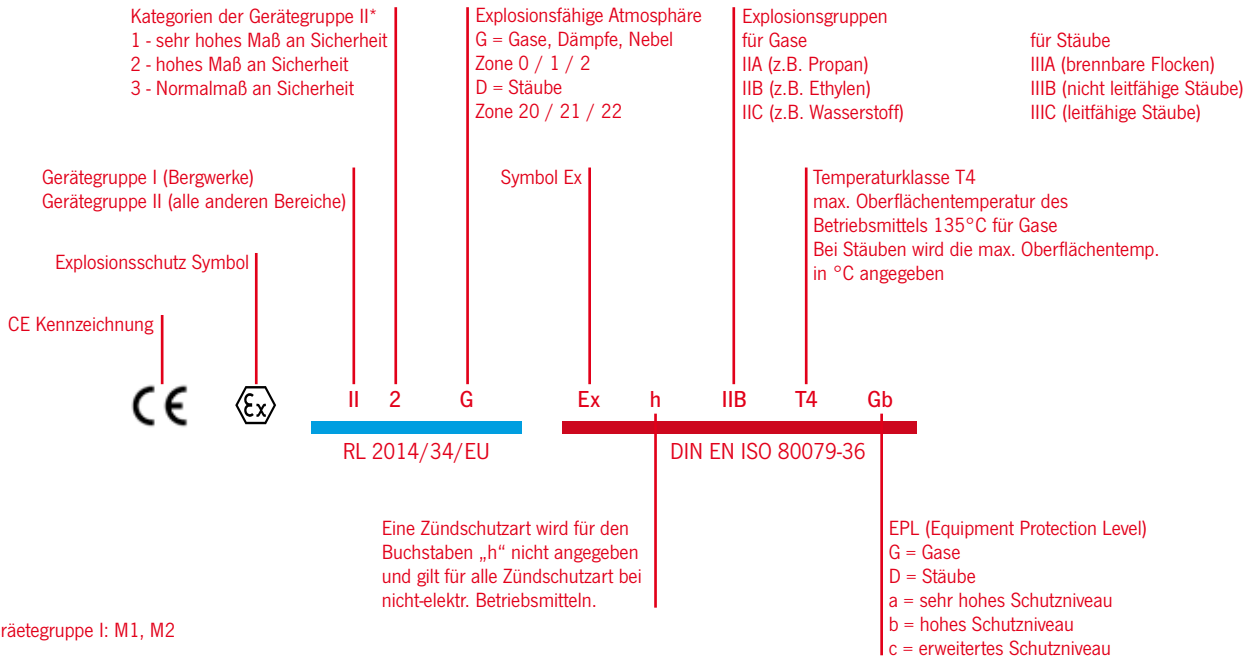
Characteristic	Definition/description	Remarks
Particle size	Dust with a particle size larger than 400 µm is not considered to be ignitable. Dust particles are ignitable when they measure less than 20 µm up to 400 µm.	Due to abrasion, the transportation and processing of coarse dust result in the formation 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 a 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 the acceptable surface temperatures safety clearances have to be adhered to.

Durch die aktuelle Normenreihe ist auch eine neue Kennzeichnung bei den nicht-elektrischen Geräten notwendig, diese gestaltet sich wie folgt:

Non-electrical equipment

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

Kennzeichnungsschlüssel



Type label



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

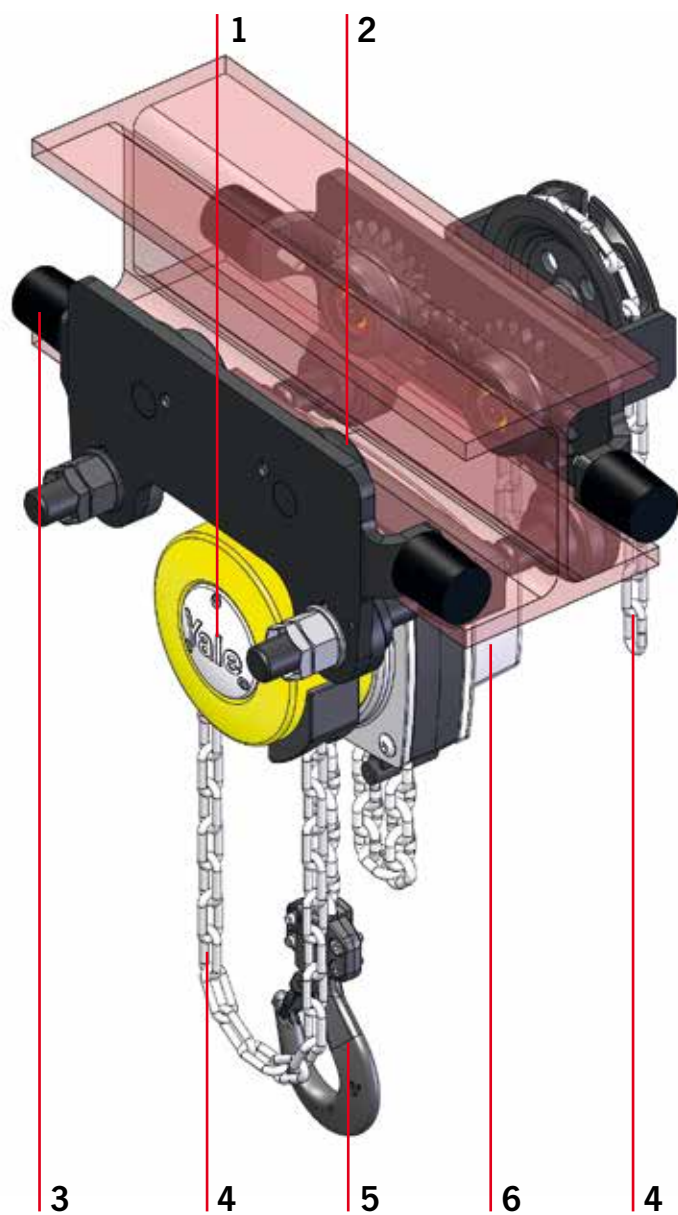
Ex group	Temperature classes					
	T1	T2	T3	T4	T5	T6
	Ignition temperature range of the mixtures					
	> 450 °C	> 300 ≤ 450 °C	> 200 ≤ 300 °C	>135 ≤ 200 °C	>100 ≤ 135 °C	>85 ≤ 100 °C
	Permissible max. surface temperature of the equipment					
	450 °C	300 °C	200 °C	135 °C	100 °C	85 °C
IIA	Acetone	Ethanol	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 der Hebe- und Fahrtechnik gibt es nicht-elektrische Komponenten und Teile, die in einer explosionsfähigen Atmosphäre eine Explosion auslösen können.

Columbus McKinnon Industrial Products GmbH bietet daher nicht-elektrische Betriebsmittel, die speziell für den Einsatz in gas- und staubexplosionsgefährdeten Bereich ausgelegt sind. Dieses erfolgt nach den aktuell gültigen Richtlinien und Normen.

Die entsprechenden Produkte für das ATEX Programm sind entsprechend der Konformitätsbewertung für die Kategorie 2 und 3 bzw. M2 anhand der Zündgefahrenbewertung bewertet worden und die entsprechenden Unterlagen sind beim TÜV Rheinland hinterlegt. Eine entsprechende Bescheinigung kann zu Lieferung mitgeliefert werden.



1 Lastdruckbremse



Verwendete Zündschutzart konstruktive Sicherheit „c“. Zur Absenkung der Temperatur (heiße Oberfläche) wird zusätzlich bei der Baureihe Yalelift 360 eine Kühlnabe eingesetzt. Dadurch wird die entstehende Temperatur besser abgeleitet.

2 / 3 Laufrollen u. Puffer



Die Zündschutzart aller Laufrollen ist konstruktive Sicherheit „c“. Ab der Ausführung **Medium** sind sie aus Bronze.

Bei **Basic** sind die Laufrollen MKS (Mikro Korrosionsschutz System) beschichtet. Zudem sind alle Fahrwerke mit Puffern ausgerüstet, um beim Anschlagen gegen die Endpunkte mechanisch erzeugte Funken zu vermeiden.

4 Handkette



Verwendete Zündschutzart konstruktive Sicherheit „c“. Bei allen Flaschenzügen und Haspelfahrwerken sind die verwendeten Handketten aus Edelstahl. Dies gilt für **Basic**, **Medium** und **High**.

5 Unterflasche u. Traghaken



Verwendete Zündschutzart konstruktive Sicherheit „c“. Ab **Medium** sind alle Unterflaschen verkupfert. Dies gilt auch für die entsprechenden Traghaken. Unterflaschen und Traghaken sind bei **Basic** MKS Beschichtet.

6 Getriebe



Die Zündschutzart der Getriebe ist konstruktive Sicherheit „c“ bei allen manuellen Hebezeugen ist das Getriebe ausreichend gefettet. Bei dem Modell OMEGA ATEX und allen Druckluftkettenzügen läuft das Getriebe in Öl, somit kommt hier noch die Flüssigkeitskapselung "k" hinzu. Durch die Schmierung (Fett oder Öl) wird eine Funkenbildung im Getriebe vermieden.

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

Zahnstangenwandwinde ZWW-L-EX

Hand pallet truck, stainless steel version model HU 20-115 VATP ATEX PROLINE

ANMERKUNG: Die tatsächlich gemessenen maximalen Oberflächentemperaturen sind den entsprechenden Betriebsanleitungen bzw. den Typenschildern zu entnehmen! Dies gilt nur bei Einsatz der Geräte bei Stäuben.



	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
			Auf Anfrage	



INFO

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

BASIC

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

MEDIUM

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

HIGH

- Stainless steel load and hand chain
- Load and top hook copper-plated
- Trolley equipped with buffers and bronze trolley wheels
- Brake with cooling element (only for Yalelift range)
- Conductive load rollers (only hand pallet truck)



Pneumatic chain hoist model CPA ATEX

Capacity 125 - 980 kg

Pneumatic chain hoists are characterized by high durability in a great number of industrial applications. The robust housing allows an easy transport.

Features

- Working pressures 5-7 bar
- Rotating piston motor with 100% duty rating and an unlimited number of starts for continuous operation.
- Integrated limit switches for highest and lowest hook position as standard.
- Self-adjusting automatic disc brake
- Extremely sensitive control with emergency-stop for a precise positioning of the load.
- Air release for brake as standard for models CPA 2-31, CPA 5-17 and CPA 10-9

Options

- Manual and powered trolleys with shackle to fit top hook suspended pneumatic chain hoists.
- All models available with push or geared trolley.
- Models CPA 2-31 and CPA 5-17 also available for operation in hazardous areas, category 2 (Zone 1/21).
- Models CPA 2-31, CPA 5-17 and CPA 10-9 also available with chain control.
- Maintenance unit for main air supply pipe (pressure regulator, manometer, lubricator and support).
- Chain container

Applications

Automobile and aircraft industries, shipyards, on ships and docks. Foundries, on-/offshore, paint factories and paint shops, refineries, oil depots, galvanizing. Printing, textile and food industries, pulp, paper and cement mills. Glass and ceramic industries, wood working industries, chemical industries, heat treatment and power plants etc.

INFO

Also suitable for operation with nitrogen.

MEDIUM (Zone 1), only possible for model CPA ATEX 2-31 and CPA ATEX 5-17.

To ensure faultless operation the compressed air supply must be filtered and oiled!

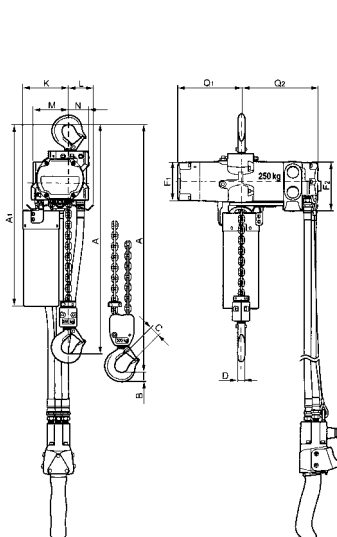
Technical data model CPA ATEX BASIC II 3G Ex h IIA T4 Gc / II 3D Ex h IIIA T135°C Dc

Model	EAN-No. 4025092*	Capacity in kg/ number of chain falls	Lifting speed with rated load ¹ m/min.	Lifting speed without load ¹ m/min.	Lowering speed with rated load ¹ m/min.	Air consumption with rated load ¹ m ³ /min.	Hoist motor kW	Weight at 3 m lift kg
CPA ATEX 1-13	N08501007	125/1	13,1	17,1	11,3	0,9	0,4	15,4
CPA ATEX 2-10	N08501008	250/1	9,8	17,1	13,7	0,9	0,4	15,4
CPA ATEX 5-5	N08501010	500/2	4,6	7,9	6,7	0,9	0,4	17,2
CPA ATEX 10-9	N08501012	980/2	8,5	16,2	14,9	1,27	1,33	27,7

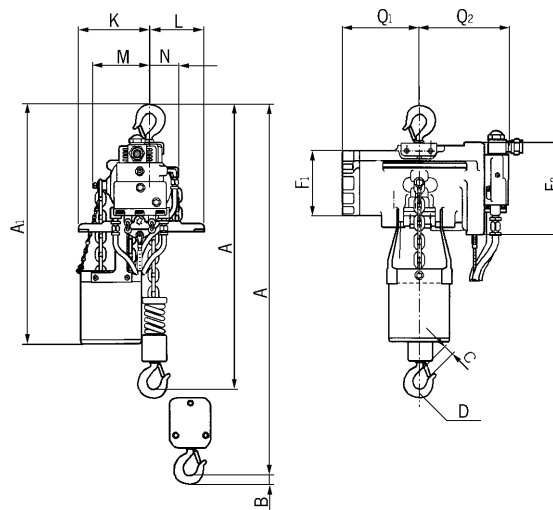
¹ Values for 6.3 bar (flow pressure) and 2 m control drop. Speeds will be reduced in case of longer control length.
 Model CPA 1-13, CPA 2-10 and CPA 5-5 max. hose length 12 m, air supply 3/8" NPT
 Model CPA 2-31, CPA 5-17 and CPA 10-9 max. hose length 20 m, air supply 1/2" NPT.

Dimensions model CPA ATEX

Model	CPA ATEX 1-13	CPA ATEX 2-10	CPA ATEX 5-5	CPA ATEX 10-9
A, mm	292	292	324	457
A1, mm	410	410	410	508
B, mm	21	21	14	27
C, mm	20	20	24	28
D, mm	16	16	14	28
F1, mm	90	90	90	130
F2, mm	120	120	120	180
K, mm	103	103	103	165
L, mm	57	57	57	83
M, mm	120	120	120	135
N, mm	50	50	50	25
Q1, mm	142	142	142	162
Q2, mm	183	183	183	181



CPA ATEX 1-13 / 2-10 / 5-5



CPA ATEX 10-9



Image shows
BASIC design

Image shows
MEDIUM design
incl. rope control

Options

- Trolley for suspension hook version or integrated trolleys for all three designs (BASIC, MEDIUM, HIGH).
- Rope control
- Limit switch
- Chain container
- **Wartungseinheit, bestehend aus Druckregler, Manometer, Öler und Halter.**
- Mobile maintenance unit
- **Additional coating (see page 48)**

Pneumatic chain hoist with suspension hook or with integrated trolley model CPA ATEX

Capacity 2000 - 10000 kg

With 100% duty rating and an unlimited number of starts the model CPA is suitable for heavy duty applications. It is insusceptible to contamination, humidity and aggressive mediums from the outside.

The hoists are composed of three main components which makes service easy and inexpensive.

Features

- Working pressures 4-6 bar.
- Robust rotating piston motor has an adjustable spring pressure brake that holds the load secure even in the event of an air failure.
- The standard, oil bath lubricated planetary gearbox is particularly smooth running and enables a low overall height.
- High starting torque due to switching valves in the motor body.
- Low noise emission due to large dimension silencer.
- Sensitive control by means of 2 resp. 4 button pendant control with emergency stop.
- The assembly of component parts result in a low overall height (up to 3000 kg only one chain fall).
- The 5-pocket load chain sheave, manufactured from wear resistant case hardening steel, is matched perfectly to the load chain to guarantee smooth and precise chain motion.
- Drop forged suspension and load hooks are made from non-aging, high tensile steel and fitted with robust safety latches.
- The standard case hardened and zinc-plated link chain is matched perfectly to the load chain to guarantee smooth and precise chain motion.
All requirements of national and international standards and regulations are fulfilled.
- Copper-coated suspension and load hooks for MEDIUM design or higher.
- Stainless steel load chain for HIGH design.

Technical data model CPA 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	Lifting speed with rated load ¹ m/min	Lifting speed without load ¹ m/min	Lowering speed with rated load ¹ m/min	Hoist motor kW	Weight ² suspension hook kg	Weight ² push trolley kg	Weight ² geared trolley kg	Weight ² pneumatic trolley kg
CPA ATEX 20-8	N08505001	2.000/1	7,4	9,9	11,0	2,6	121	184	188	199
CPA ATEX 30-6	N08505002	3.000/1	6,0	9,9	13,0	3,2	121	184	188	199
CPA ATEX 50-3	N08505004	5.000/2	3,4	5,0	6,0	3,0	140	202	206	218
CPA ATEX 60-3	192069175	6.000/2	3,0	5,0	6,5	3,2	140	202	206	218
CPA ATEX 75-2	N08505005	7.500/3	2,0	3,3	4,3	3,2	-	-	-	-
CPA ATEX 100-3	N08505006	10.000/4	3,4	5,0	6,0	2 x 3,0	-	-	-	-

Technical data model CPA 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	Lifting speed with rated load ¹ m/min	Lifting speed without load ¹ m/min	Lowering speed with rated load ¹ m/min	Hoist motor kW	Weight ² suspension hook kg	Weight ² push trolley kg	Weight ² geared trolley kg	Weight ² pneumatic trolley kg
CPA ATEX 20-8	N08505023	2.000/1	7,4	9,9	11,0	2,6	121	184	188	199
CPA ATEX 30-6	N08505024	3.000/1	6,0	9,9	13,0	3,2	121	184	188	199
CPA ATEX 50-3	N08505026	5.000/2	3,4	5,0	6,0	3,0	140	202	206	218
CPA ATEX 60-3	192069176	6.000/2	3,0	5,0	6,5	3,2	140	202	206	218
CPA ATEX 75-2	N08505027	7.500/3	2,0	3,3	4,3	3,2	-	-	-	-
CPA ATEX 100-3	N08505028	10.000/4	3,4	5,0	6,0	2 x 3,0	-	-	-	-

¹ Values for 6 bar (flow pressure), air consumption with rated load 4.7 m³/min. For CPA 100-2: 9.4 m³/min.

² Weight for standard 3m lift. Other lifting heights on request.

Ab 12m werden Schnellentlüftungsventile verbaut. Max. mögliche Steuerleitung 20m.

INFO

Pneumatic chain hoist model CPA ATEX HIGH on request

To ensure faultless operation the compressed air supply must be filtered and oiled!

Where no maintenance unit can be installed permanently, it is recommended to work with a mobile maintenance unit.



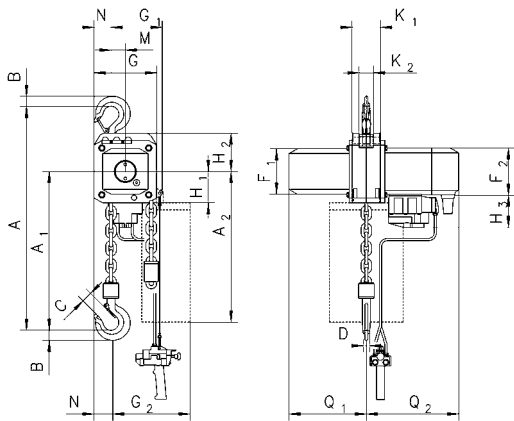
Technical data trolleys

Capacity kg	Size	Beam flange width b mm	Beam flange thickness t max. mm	Curve radius min. m	Pneumatic trolley travel speed m/min	Pneumatic trolley motor kW
2000 - 6000	A	98 - 180	27	2.0	18	0.55
2000 - 6000	B	180 - 300	27	1.8	18	0.55
7500 - 10000	B	125 - 310	40	1.8	-	-

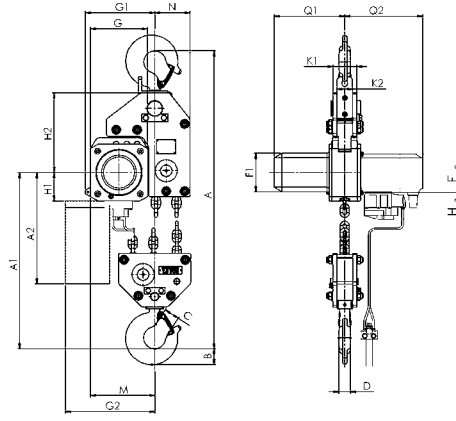
Flow pressure 6 bar, air consumption with rated load 0.75 m³/min.

Dimensions model CPA ATEX

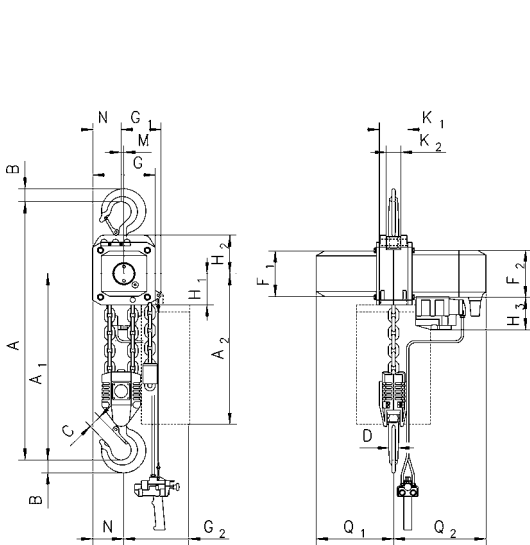
Model	CPA ATEX 20-8	CPA ATEX 30-6	CPA ATEX 50-3	CPA ATEX 60-3	CPA ATEX 75-2	CPA ATEX 100-3
A, mm	516	516	681	681	950	1.068
A1, mm	286	286	428	428	479	651
B, mm	35	35	45	49	60	60
C, mm	37	37	46	44	52	52
D, mm	24	24	30	30	40/45	40/45
F1, mm	160	160	160	160	160	160
F2, mm	165	165	165	165	165	165
G, mm	220	220	220	220	220	581
G1, mm	180	180	140	140	268	311
G2 (13 m), mm	258	258	218	218	-	-
G2 (21 m), mm	278	278	238	238	345	408
H1, mm	110	110	110	110	110	110
H2, mm	135	135	135	135	307	256
H3, mm	115	115	115	115	115	115
K1, mm	100	100	100	100	92	92
K2, mm	51	51	51	51	62	62
M, mm	50	50	9,6	9,6	139	181
N, mm	60	60	100	100	136	291
Q1, mm	272	272	272	272	272	272
Q2, mm	325	325	325	325	325	325



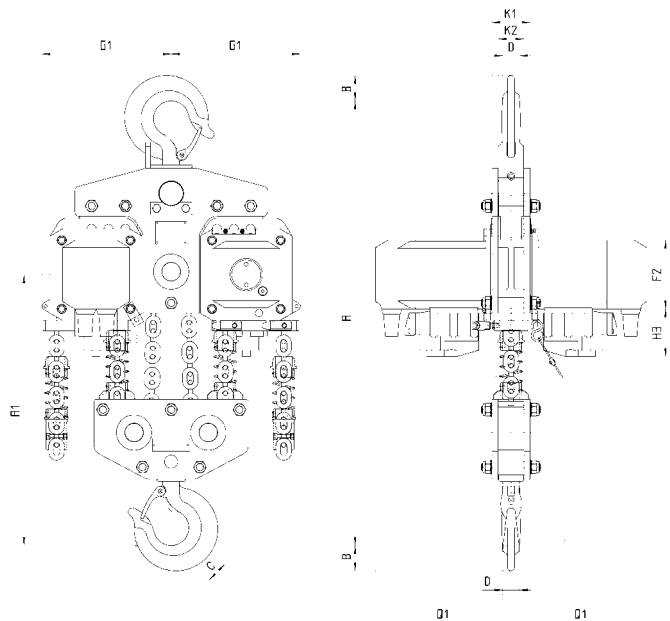
Model CPA ATEX with suspension hook, 2000 - 3000kg, single fall



Model CPA ATEX with suspension hook, 7500 kg, three fall



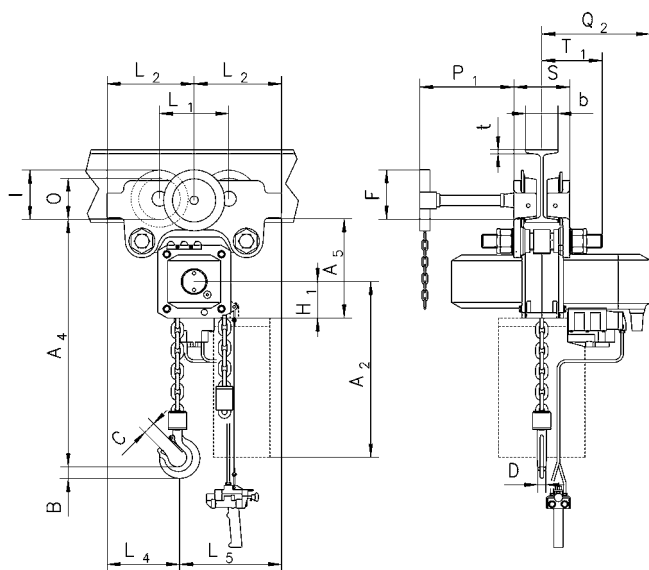
Model CPA ATEX with suspension hook, 4000 - 5000kg, double fall



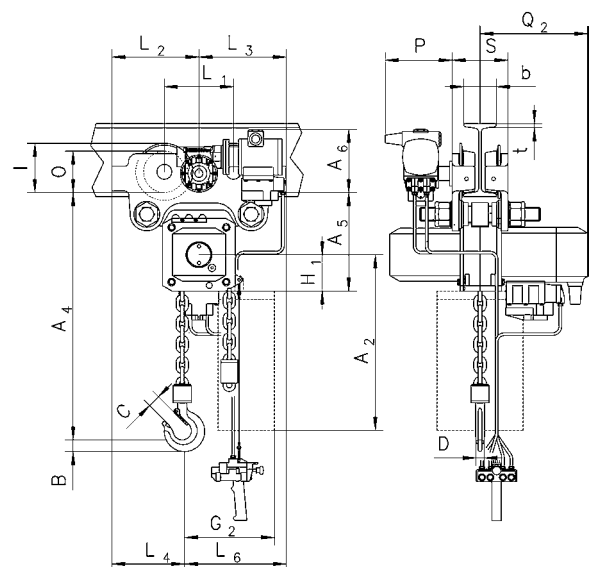
Model CPA ATEX with suspension hook, 10000 kg, four fall

Dimensions model CPA ATEX

Model	CPA ATEX 20-8	CPA ATEX 30-6	CPA ATEX 50-3	CPA ATEX 60-3	CPA ATEX 75-2	CPA ATEX 100-3
A2 (13 m), mm	430	430	430	430	-	-
A2 (21 m), mm	530	530	530	530	530	530
A4, mm	465	465	615	615	855	965
A5, mm	298	298	298	298	477	425
A6, mm	190	190	190	190	182	182
b, mm	A = 98 - 180/ B = 180 - 300	A = 98 - 180/ B = 180 - 300	A = 98 - 180/ B = 180 - 300	A = 98 - 180/ B = 180 - 300	125 - 310	125 - 310
F, mm	150	150	150	150	113	113
l, mm	142,5	142,5	142,5	142,5	130	130
L1, mm	209	209	209	209	200	200
L2, mm	262,5	262,5	262,5	262,5	215	215
L3, mm	265	265	265	265	265	265
L4, mm	213	213	253	253	291	291
L5, mm	312	312	272	272	-	-
L6, mm	315	315	275	275	-	-
O, mm	125	125	125	125	150	150
P, mm	208	208	208	208	208	208
P1, mm	284	284	284	284	284	284
S, mm	b + 70	b + 70	b + 70	b + 70	b + 98	b + 98
t, mm	27	27	27	27	40	40
T1 Größe A	182	182	182	182	-	-
T1 Größe B	242	242	242	242	270	270



Model CPA ATEX with integrated geared trolley



Model CPA ATEX with integrated pneumatic trolley



*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

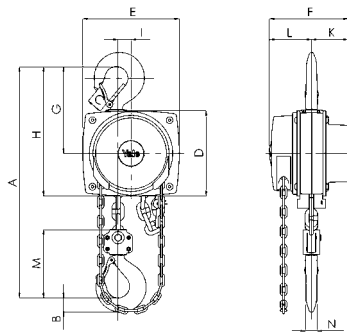
Model	Item-No.	Capacity ¹ in kg/ number of chain falls	Chain dimensions d x p mm	Load chain grade	Lift per 1 m hand chain overhaul mm	Handle pull at WLL daN	Weight at standard lift (3 m) kg
YL ATEX 500	N04705035	500/1	5x15	S	30	21	9
YL ATEX 1000	N04705036	900/1	6x18	S	49	30	13
YL ATEX 2000	N04705037	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.

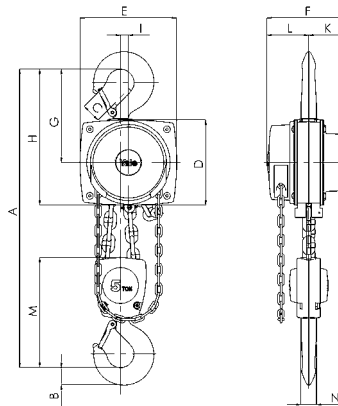


Dimensions model Yalelift 360 ATEX

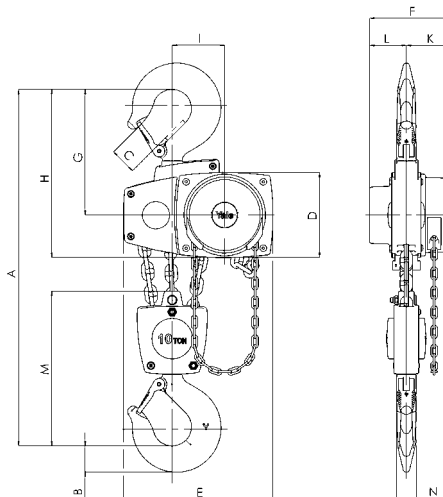
Model	YL ATEX 500	YL ATEX 1000	YL ATEX 2000	YL ATEX 3000	YL ATEX 5000	YL ATEX 10000	YL ATEX 20000
A min., mm	300	335	395	520	654	825	1.010
B, mm	17	22	30	38	45	68	85
C, mm	24	29	35	40	47	68	64
D, mm	133	156	182	220	220	220	303
E, mm	148	175	203	250	250	383	555
F, mm	148	167	194	219	219	219	250
G, mm	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



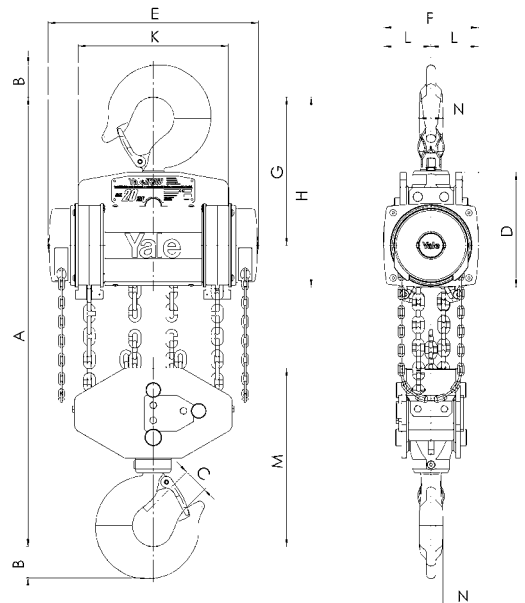
Model Yalelift 360 ATEX, 500 - 3000 kg, single fall



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	auf Anfrage	auf Anfrage
YLITG ATEX 20000	N04905047	20.000/6	B	180 - 310	40	5,0	auf Anfrage	auf Anfrage

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	auf Anfrage	auf Anfrage
YLITG ATEX 20000	N04905022	20.000/6	B	180 - 310	40	5,0	auf Anfrage	auf Anfrage

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	auf Anfrage	auf Anfrage
YLITG ATEX 20000	N04905071	15.000/6	B	180 - 310	40	5,0	auf Anfrage	auf Anfrage

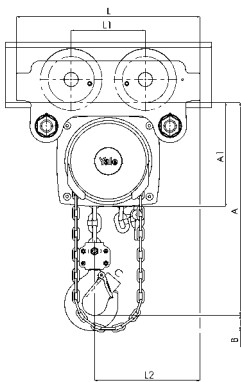
¹ Size B on request

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

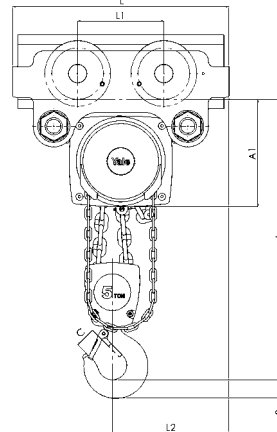
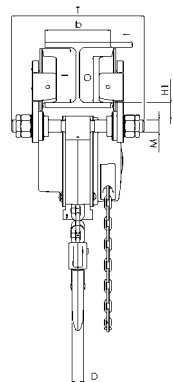
³ Models in HIGH design are already labelled with reduced capacities when delivered.

Dimensions model Yalelift IT ATEX

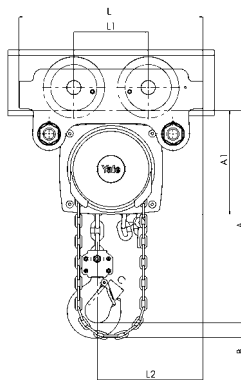
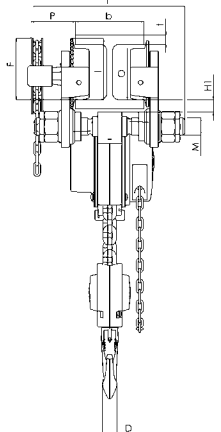
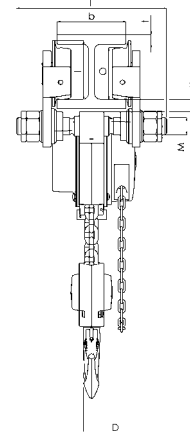
Model	YLIT ATEX 500	YLIT ATEX 1000	YLIT ATEX 2000	YLIT ATEX 3000	YLIT ATEX 5000	YLIT ATEX 10000
A min., mm	245	272	323	382	550	784
A1, mm	158	178	205,5	252	260,5	380
A2, mm	-	-	-	-	-	-
B, mm	17	22	30	38	45	68
C, mm	24	29	35	40	47	68
D, mm	14	19	22	30	37	50
F (Haspelfahrwerk), mm	92	92	91	107	149,5	113
H1, mm	24,5	24	23,5	32	30,5	55
I (Rollfahrwerk), mm	71,5	71,5	95,5	131	142,5	169
I (Haspelfahrwerk), 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 (Haspelfahrwerk), mm	108	110	112	112	117	158
T (Bereich A), mm	280	290	305	320	364	-
T (Bereich B), mm	400	410	425	440	484	540



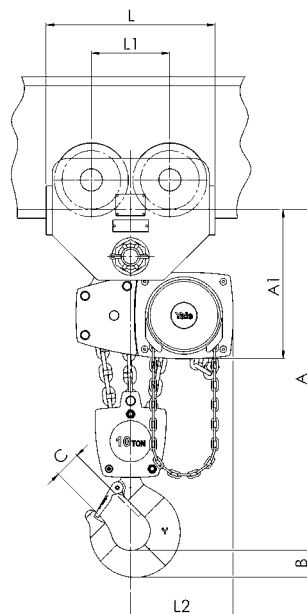
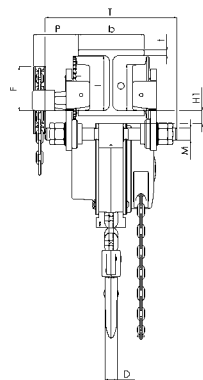
Model Yalelift ITP ATEX, 500 - 3000kg, single fall



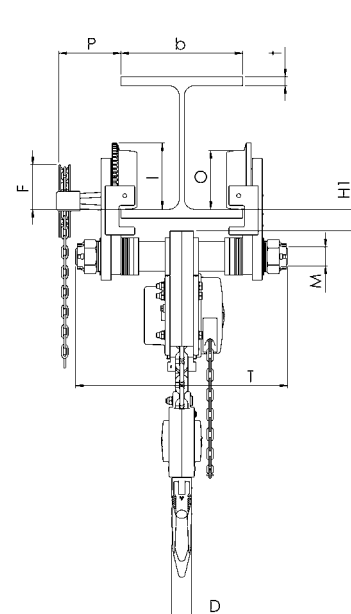
Model Yalelift ITP/ITG ATEX, 5000kg, double fall



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



Model Yalelift ITG ATEX, 10000kg, three fall





with extremely low headroom

Image shows HIGH design

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

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	auf Anfrage

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°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
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	auf Anfrage

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	auf Anfrage

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

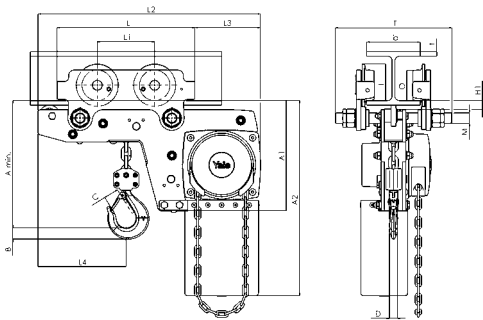
Yale hoists and trolleys are not designed for passenger elevation applications and must not be used for this purpose.

Copper-coated for MEDIUM design or higher!

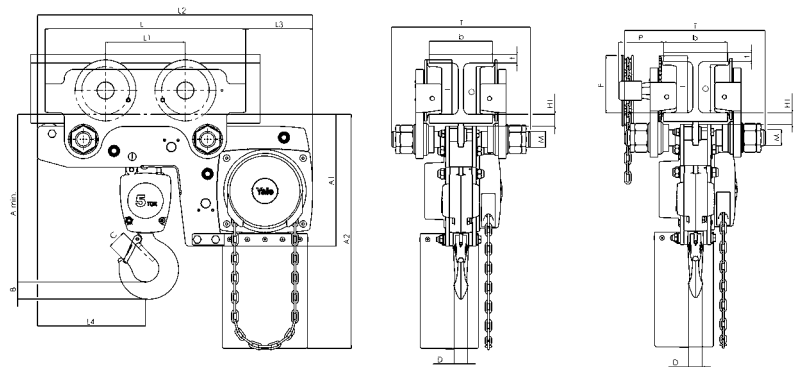


Dimensions model Yalelift LH ATEX

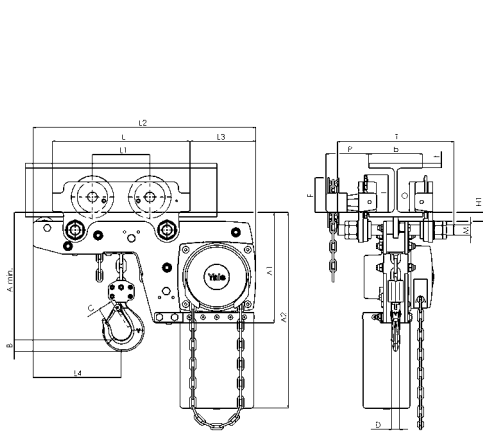
Model	YLLH ATEX 500	YLLH ATEX 1000	YLLH ATEX 2000	YLLH ATEX 3000	YLLH ATEX 5000	YLLH ATEX 10000
A min., mm	188	211	264	316	425	565
A1, mm	223	250	289	346	345	365
A2, mm	381	427	511	614	612	665
B, mm	17	22	30	38	45	68
C, mm	24	29	35	40	47	68
D, mm	14	19	22	30	37	50
F (Haspelfahrwerk), mm	92	92	91	107	150	150
H1, mm	24	24	24	32	31	45
I (Rollfahrwerk), mm	72	72	96	131	143	170
I (Haspelfahrwerk), 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	M18	M22	M27	M30	M42	M48
O, mm	60	60	80	112	125	150
P (Haspelfahrwerk), mm	108	110	112	112	117	165
T (Bereich A), mm	280	290	305	320	364	440
T (Bereich B), mm	400	410	425	440	484	540



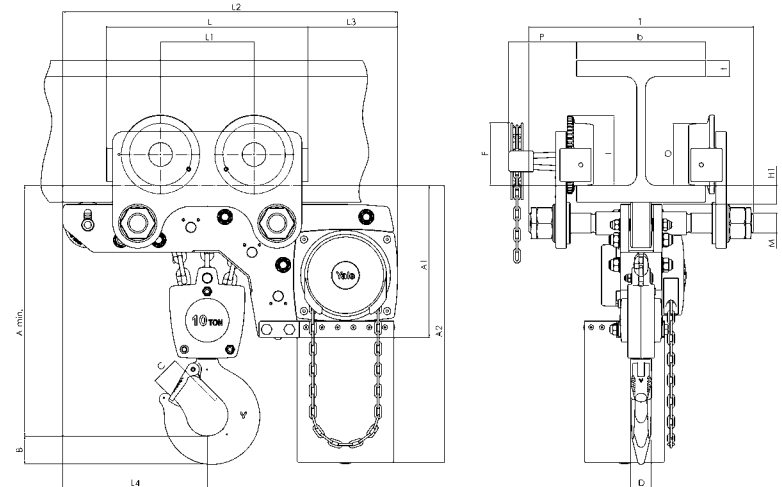
Model Yalelift LHP ATEX, 500 - 3000 kg, single fall



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, handlever 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. Verzinkte
- 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.

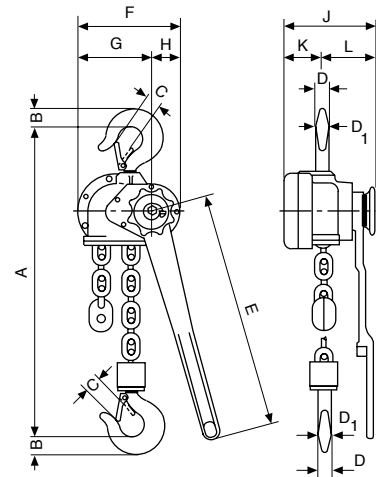
Yale hoists and trolleys are not designed for passenger elevation applications and must not be used for this purpose.

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
ZUGHUB C 85 750	N01141295	750	1	5/8" x 3/8"	115	38	8,7
ZUGHUB C 85 1500	N01141296	1.500	1	1" x 1/2"	45	31	17,0
ZUGHUB 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
ZUGHUB D 85 750	N01541291	750	1	6 x 18,5	111	38	8,2
ZUGHUB D 85 1500	N01541292	1.500	1	9 x 27	45	31	16,3
ZUGHUB D 85 3000	N01541293	3.000	1	11 x 31	33	40	19,6
ZUGHUB D 85 6000	N01541294	6.000	2	11 x 31	17	42	32,9
ZUGHUB D 85 10000	N01541511	10.000	3	11 x 31	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.



Image shows HIGH design

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

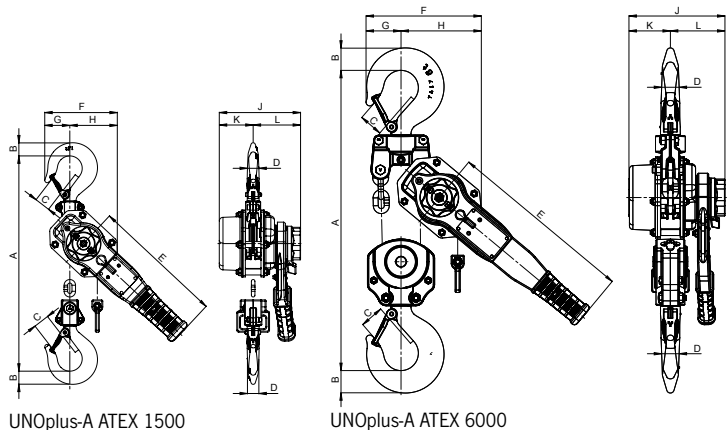
- Due to optimized gearing and improved bearings in the housing cover a minimum effort is required to operate the short hand lever.
- Impact resistant stamped steel frame and gear cover withstands repeated rigorous use
- Closed load chain guide prevent accidentally slipping out
- Increased corrosion 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 \(see page 48\)](#)



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

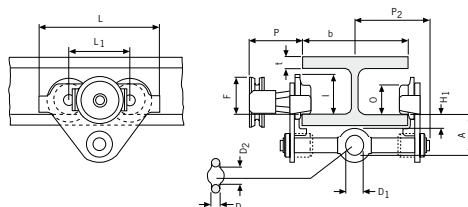
Yale hoists and trolleys are not designed for passenger elevation applications and must not be used for this purpose.

Dimensions model HTP ATEX

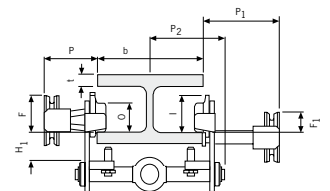
Model	HTP ATEX 500-A	HTP ATEX 1000-A	HTP ATEX 2000-A	HTP ATEX 3000-A	HTP ATEX 5000-A	HTP ATEX 500-B	HTP ATEX 1000-B	HTP ATEX 2000-B	HTP ATEX 3000-B	HTP ATEX 5000-B
A, mm	77	82,5	98,5	114	132,5	92	97,5	113,5	129	147,5
D, mm	16	17	22	26	33	16	17	22	26	33
D1, mm	25	30	40	48	60	25	30	40	48	60
D2, mm	30	35	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

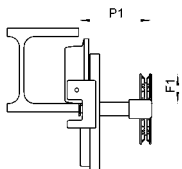
Model	HTG ATEX 500-A	HTG ATEX 1000-A	HTG ATEX 2000-A	HTG ATEX 3000-A	HTG ATEX 5000-A	HTG ATEX 500-B	HTG ATEX 1000-B	HTG ATEX 2000-B	HTG ATEX 3000-B	HTG ATEX 5000-B	HTG ATEX 8000-B	HTG ATEX 10000-B	HTG ATEX 15000-B	HTG ATEX 20000-B
A, mm	77	82,5	98,5	114	132,5	92	97,5	113,5	129	147,5	276	276	270	270
B, 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	-	-	-	-



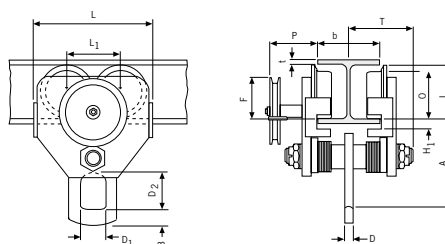
Model HTP/HTG ATEX 500 - 5000 kg



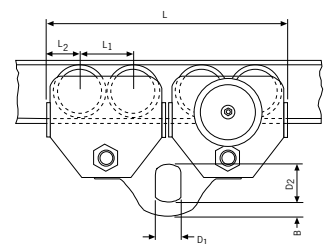
Model HTP/HTG ATEX 500 - 5000 kg, with locking device



Model HTG ATEX 10000 kg, locking device



Model HTG ATEX 10000 kg



Model HTG ATEX 20000 kg



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

Capacity 600 -1000 kg

The rack and pinion jack is suitable for lifting, lowering, pulling and pushing, for horizontal displacement, supporting, adjusting or fixing of heavy components or whole appliances and equipment in hazardous areas.

Features

- Carefully selected materials and a high-grade coating prevent the occurrence of mechanically caused sparks.
- No inadmissible heating of the surfaces due to the intelligent design of the individual parts.
- Equipotential bonding and limited surface area to avoid electrostatic charging.
- The grease-lubricated, self-locking worm gear is set into operation by rotations on the crank. It provides not only for easy movement of the load, but also for a reliable safety in every position.

Application areas

Plant construction, shipping, wastewater treatment plants, chemical industry and food industry.

Technical data model ZWW-L ATEX MEDIUM

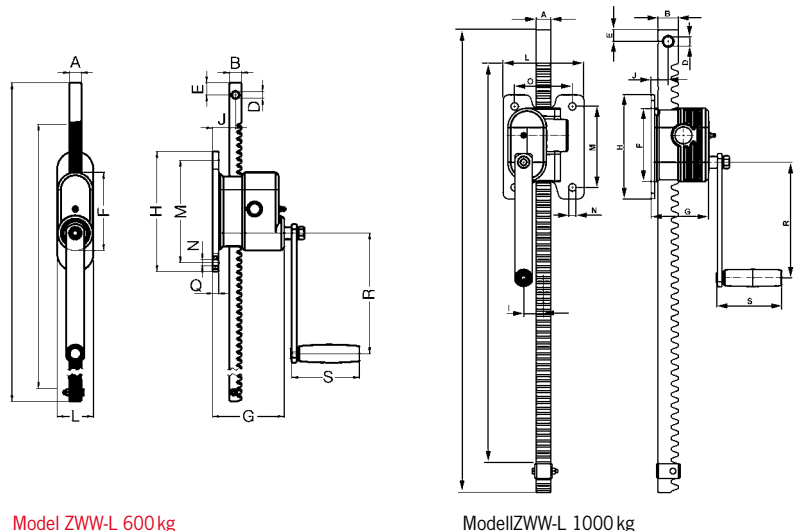
Model	Item-No.	Capacity kg	Rack length mm	Lift mm	Weight kg
ZWW-L ATEX 600/800 ¹	192069185	600	1.000	800	7,0
ZWW-L ATEX 1000/600 ²	192069187	1.000	800	600	8,9

¹ II 2G Ex h IIB T4 Gc / II 2D Ex h IIIB T135°C Dc

² II 2G Ex h IIB T4 Gc / II 2D Ex h IIIB T200°C Dc

Dimensions model Yalelift 360 ATEX

Model	ZWW-L 600	ZWW-L 1000
A, mm	20	25
B, mm	25	35
C, mm	-	-
Ø D, mm	13	16,5
E, mm	20	20
F, mm	130	127
G, mm	119	98
H, mm	200	180
I, mm	-	34,5
J, mm	35	29,5
K, mm	-	-
L, mm	60	140
M, mm	170	140
Ø N, mm	11	13
O, mm	-	100
P, mm	-	-
Q, mm	10	-
R, mm	250	200
S, mm	110	110
T, mm	-	-
U, mm	-	-
X, mm	-	-
Ø Z, mm	-	-



Model ZWW-L 600 kg

Model ZWW-L 1000 kg

**Hand pallet truck,
stainless steel version
model HU 20-115 VATP ATEX
PROLINE**

Capacity 2000 kg

The hand pallet truck is designed for the use in explosive environments (zone 1 and 2).

Features

- Ergonomic safety control handle for one-hand operation of lifting, driving and lowering.
- Low maintenance high performance hydraulic pump with hard chromium plated piston and pressure relief valve. Hydraulic unit made of V4A-316 stainless steel.
- Frame, adjustable connecting rods, bolts and the torsion tube are made of high quality V4A-316 stainless steel.
- Steering angle of 105 degree to each side for easy handling in confined spaces.
- Conductive steering rollers (antistatic).



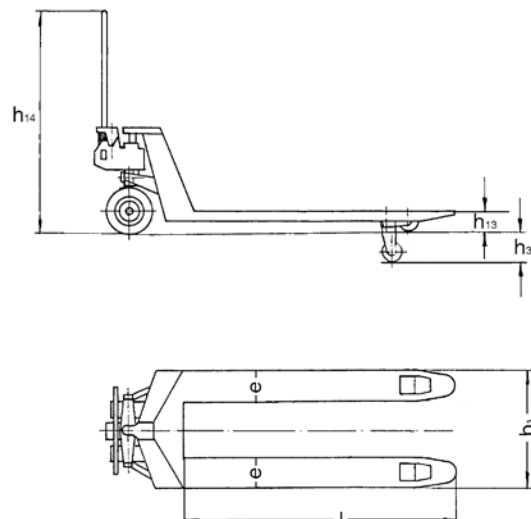
INFO

Before the use in explosive environments the operator has to create an explosion protection document acc. to the machinery directive 1999/92/EG!

**Technical data model
HU 20-115 VATP ATEX PL
HIGH II 2G Ex h IIC T6 Gb / II 2D Ex h IIIC T 85°C Db**

Model	HU 20-115 VATP ATEX PL
Art.-No.	040054147
Capacity, kg	2.000
Weight, kg	86
Tyre type ¹	VG/PA
Steering rollers, mm	200 x 50
Load rollers, mm	82 x 70
Stroke h3, mm	115
Height of control handle h14, mm	1.200
Fork height lowered h13, mm	85
Fork width e, mm	160
Fork length l, mm	1.150
Outside dimension of forks b1, mm	540

¹ PA... Polyamide, VG... Solid rubber



Korrosionsschutzklassen nach Normenreihe DIN EN ISO 12944¹

Korrosivitäts-Kategorie, Korrosionsbelastung	Korrosivität	Korrosivitäts-Schutzdauer (Klasse)	Schutzdauer ² in Jahren	Sollschichtdicke μm	Beispiele typischer Umgebungen
C1 unbedeutend	sehr gering wenig aggressiv innen	kurz mittel lang	bis zu 7 7 bis 15 15 bis 25	70 70 70	Nur Innerräume: gedämmte Gebäude (60% rel. F.)
C2 gering	gering mäßig aggressiv außen/innen	kurz mittel lang	bis zu 7 7 bis 15 15 bis 25	80 120 160	geringe verunreinigte Atmosphäre, trockenes Klima, z.B. ländliche Bereiche
C3 mäßig	mäßig wenig aggressiv außen/innen	kurz mittel lang	bis zu 7 7 bis 15 15 bis 25	120 160 200	Stadt- und Industrie-Atmosphäre mit mäßiger SO ₂ -Belastung oder gemäßigtes Klima
C4 stark	hoch mäßig aggressiv außen/innen	kurz mittel lang	bis zu 7 7 bis 15 15 bis 25	160 200 240-280	Industrie- und Küsten-Atmosphäre mit mäßiger Salzbelastung
C5-I (Industrie) sehr stark	sehr hoch aggressiv außen/innen	kurz mittel lang	bis zu 7 7 bis 15 15 bis 25	200 240-280 320	Industrie-Atmosphäre mit hoher relativer Luftfeuchte und aggressiver Atmosphäre
C5-M (Meer) sehr stark	sehr hoch maritim außen/innen	kurz mittel lang	bis zu 7 7 bis 15 15 bis 25	200 240-280 320	Küsten- und Offshorebereiche mit hoher Salzbelastung

¹ Die Normenreihe DIN EN ISO 12944 bezieht sich auf Stahlbauten bzw. auf Bauwerke, deren Bauteile aus unlegiertem oder niedriglegiertem Stahl von mindestens 3 mm Dicke bestehen und die entsprechend einem Tragsicherheitsnachweises ausgelegt sind. Daher können die angegebenen Kategorien bzw. Schichtdicken nur eine Anlehnung an diese Normreihe sein.

² Die Schutzdauer ist keine Gewährleistungszeit.

INFO

Wir weisen ausdrücklich darauf hin, dass an allen außenbeweglichen Teilen ein Abrieb erfolgt und sich somit die Schickdicke schon nach kürzester Zeit reduziert, sodass es an diesen Stellen zu einer Grundmetallkorrosion kommen kann.

Zusätzliche Beschichtungen

Angelehnt an die entsprechenden Daten aus der dargestellten Tabelle nach DIN EN ISO 12944 können die unten aufgeführten Modelle mit einer zusätzlichen Beschichtung ausgestattet werden, um den bereits vorhandenen Korrosionsschutz zu erhöhen. Die Geräte können somit sinnvoll in den angegebenen Umgebungen gemäß der Korrosivitäts-Kategorien eingesetzt werden.

Pos.	Modell	Art der Beschichtung	Standard-Schickdicke μm	Einsatz in Korrosivitäts-Kategorie bei Standard-Schichtdicke	mögliche Schickdicke μm	Einsatz in Korrosivitäts-Kategorie bei erhöhter Schichtdicke
1	CPA ATEX (ab 2.000kg)	nasslackiert	80 - 90	C3	250	C4
2	CPA ATEX (ab 2.000kg) mit integr. Fahrwerk	nasslackiert	Hubwerk: 80 - 90 Fahrwerk: 90 - 100	C3	Hubwerk: 250 Fahrwerk: 250	C4
3	Yalelift 360 ATEX	MKS ¹	12 - 20	C4	200	C5
4	Yalelift ITP/G ATEX	MKS ¹	Hubwerk: 12 - 20 Fahrwerk: 12 - 20	C4	Hubwerk: 200 Fahrwerk: 240	C5
5	Yalelift LHP/G ATEX	MKS ¹	Hubwerk: 12 - 20 Fahrwerk: 12 - 20	C4	Hubwerk: 200 Fahrwerk: 240	C5
6	HTP/G ATEX	MKS ¹	12 - 20	C4	240	C5
7	CD85 ATEX	nasslackiert	-	C3	200	C4

¹ Bei der MKS Beschichtung (Mikro-Korrosionsschutz-System) handelt es sich um eine Beschichtung aus Zink- und Aluminiumlamellen, die das Gerät primär vor Korrosion schützen. Schon durch extrem dünne Schichten - typischerweise besteht ein System aus Base- und Topcoat - lassen sich hohe Schutzwirkungen gegen Grundmetallkorrosion (Rotrost) erreichen.



*Application-oriented
winch solutions on request!*

**Electric winch model
BETA-EX**

Electric winches of the series BETA-EX are designed according to the EU Directives 2014/34/EU and MRL 2006/42/EG. The models are usable in any place, where the risk of ignition of explosive atmosphere exists (mixture of air, gases, fumes and dust/air-mixture, respectively)



**Manual winch with load pressure brake
model OMEGA-EX 1000**

The hand winch OMEGA-EX is a complete new construction and was developed especially for the high safety requirements in potentially explosive atmospheres. All components of the OMEGA-EX are designed to avoid effectively an inadmissible heating of the surfaces.



**Sheave block-EX
model DSRBX S**

for rope guidance, equipped with ball bearings, incl. earthing screw and copper-coated sheave.





*Electric chain hoists
in explosion proof version on request!*

COLUMBUS McKINNON Industrial Products GmbH

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