ATEX

Offshore And Subsea Products

OzBlok

Australia

Lifting & Hoisting Equipment

OFFSHORE AND SUBSEA PRODUCTS

Technical basis

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Lifting & Hoisting Equipment

In Directive 94/9/EC, equipment for areas with an explosion hazard is assigned to groups, categories and temperature classes. This is necessary as the requirements for equipment need not be the same for every application and for every hazard classification.

group I **Equipment group I** (mines, firedamp and combustible dusts)

Category M1	Category M2
Very high level of protection: Equipment must feature integrated explosion protection measures	High level of protection: Protection measures must ensure the required level of safety during normal operation also under arduous conditions and in particular heavy handling and under changing ambient conditions
The equipment must continue to operate in an explosive atmosphere even in the event of rare faults	It must be possible to switch off the equipment if an explosive atmosphere occurs

group II

Equipment group II (explosive atmospheres caused by mixtures of gas/air or dust/air, vapours or mists)

Category	Zone G[Gas]	Zone D[Dust]	Equipment safety	Explosive atmosphere
1	0	20	Equipment which ensures a very high level of safety. In the event of rare equipment faults.	Intended for use in areas in which explosive atmospheres caused by mixtures of air and gases, vapours or mists or by air/dust mixtures are present continuously, for long periods or frequently.
2	1	21	Equipment which ensuresa high level of safety. If equipment faults are to be expected.	Intended for use in areas in which explosive atmospheres caused by mixtures of air and gases, vapours or mists or by air/dust mixtures are likely to occur occasionally.
3	2	22	Equipment which ensures a normal level of safety. For normal operation	Intended for use in areas in which explosive atmospheres caused by gases, vapours or mists or whirled up dust are unlikely to occur or, if they do occur, are likely to do so only infrequently and for a short period.

Temperature classes

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The ignition temperature is the lowest temperature of a heated surface at which the gas/air or vapour/air mixture ignites. In other words, it represents the lowest temperature value at which a hot surface is capable of igniting the corresponding explosive atmosphere. Thus the highest surface temperature of any equipment must always be less than the ignition temperature of the gas/air or vapour/air mixture.

Temperature classes

Temperature classes	Permissible max. surface temperature of the equipment	Ignition temperature range of the mixtures
T1	450° C	>450° C
T2	300° C	>300 ··· ≤ 450° C
T3	200° C	>300 ··· ≤ 300° C
T4	135° C	>135 ··· ≤ 200° C
T5	100° C	>100 ··· ≤ 135° C
T6	85° C	> 85 ··· ≤ 100° C

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Explosion groups

Equipment of group II, for appropriate use in explosive gas atmospheres may also be classified by the type of explosive area.

Explosion groups

Explosion group of the explosive atmosphere	Equipment with marking of the explosion group which may be used in these atmospheres	Maximum experimental safe gap
IIA	IIA, IIB, IIC	>0.9 mm
IIB	IIA, IIB	≤0.9 – ≥0.5 mm
IIC	IIC	<0.5 mm
	(IEC60079-12)	(MIC)

This classification is based on the Maximum Experimental Safe Gap (MESG) and the Minimum Ignition Current (MIC) of the gas mixture (see IEC 60079-12) or the explosion groups can also be used for classification of the equipment based on their inflammability.

Marking key

Example: Ⓔx | II | 2 | GD | c | IIC | T4 | IIIC | T135°C

Explosion proof identification

Equipment group
II=Surface industries

Classify
1=Extremely high security
2=Extremely high Safety
3=Conventional safety

Ex atmosphere
G=Gas
D=Dust

Protection type
p=Pressurized shell
d=Fire proof shell
e=Safe
nA=No-spark
i=Security of this certificate
c=Design safety
b=Ignition source monitoring
k=Liquid immersion

Gas Explosion Group
IIA=Atmospheric environment containing propane or gas or steam of equal risk
IIB=Atmospheric environment containing ethylene or gas or steam of equal risk
IIC=Atmospheric environment containing acetylene, hydrogen or gas or steam of equal risk

Temperature grade
T1=max.450℃
T2=max.300℃
T3=max.200℃
T4=max.135℃
T5=max.100℃
T6=max.85℃

Groups of dust
IIIA=Flammable fly floc
IIIB=Non-conductive dust
IIIC=Conductive dust

Temperature grade

LJ-A Beam Clamp

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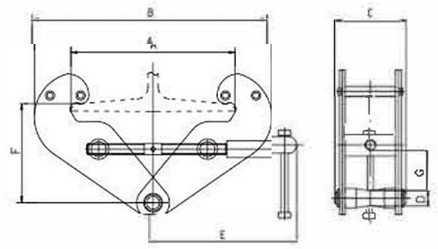

1. It is flexible to use, easy to assemble and disassemble, convenient for lifting, pulling work or semi-permanent anchor point in the track.

2. The product is equipped with an adjustable screw, can be easily adjusted to the corresponding beam width and locked.

3. Anti-corrosion coating is optional.

Model			LJ-1A	LJ-2A	LJ-3A	LJ-5A	LJ-10A
Capacity	t		1	2	3	5	10
Beam range	mm		75-230	75-230	80-320	90-320	90-320
Dimensions mm	Amax		284	284	365	365	356
	B	a	180	180	220	220	250
		b	375	375	498	498	514
	B		80	90	117	127	139
	C		4	6	8	10	12
	E		220	220	271	271	280
	F	a	102	102	168	168	172
		b	160	160	240	240	242
	G		29	28	60	57	55
净重 Net weight	kg		4	5	9	11	18

ST Stainless Steel Push Trolley

The plain trolley adopts stainless steel design to ensure that it meets the standard strength requirements. The product is corrosion resistant, anti-oxidation, and has the characteristics of high temperature resistance and low temperature resistance. Beautiful surface finish, without surface treatment, easy maintenance

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Notes: