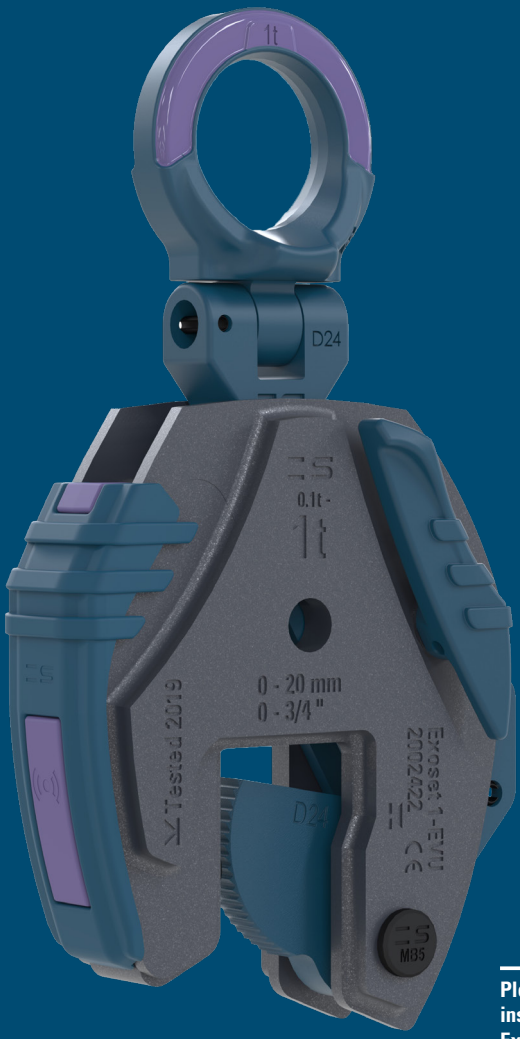
SpanSet®

02

EXOSET® EVU CLAMPS INSTRUCTION MANUAL

Height Safety
Lifting
Load Control
Safety Management



Please be sure to read this instruction manual before using Exoset EVU Safety Lifting Clamps

Contents

Welcome

Congratulations on purchasing the SpanSet Exoset safety lifting clamps. You have made an excellent choice. The Exoset safety lifting clamps are extremely reliable, ergonomic and very easy to operate.

We support you before and after purchase: with services, inspections, and a comprehensive training program as well as personal advice for your practical requirements.
And, you can rely on that.

The working environment in which this equipment is used always carries risks. In order to guarantee safety, it is absolutely necessary that every user adhere to the supplied instructions. Keep the manual with the certificates and maintenance reports so that everyone can find them. Only use the Exoset safety lifting clamps if all conditions are met.

2.Notes on safety

Please be sure to read this instruction manual before using the Exoset safety lifting clamps!

If you use Safety lifting clamps the wrong way, it creates a serious danger because the objects being lifted may fall. Before using the Exoset clamps be sure to read and understand this instruction manual. Always use the clamps according the instructions given in the Instruction manual.

Please make sure that the Instruction manual for Exoset safety lifting clamps have been read by or explained to all workers and company managers.

The Exoset clamps should only be used after confirming that everyone who will work with the Exoset clamps has completely understood all of the needed information relevant safety information and the precautions that must be taken.

We offer different training program to unsure that everyone who will work with the Exoset clamps has completely understood all of the needed relevant safety information and the precautions that must be taken before using safety lifting clamps. Please check our website www.spanset.com or contact your local SpanSet partner.

The precautions used in this manual have been divided into “Instruction/Caution” and “Danger/Prohibited”.

We do not provide compensation nor offer any guarantee against accidents caused by failing to follow the directions or due to performing prohibited actions as described in thius Instruction manual

To make the manual as comprehensible as possible for everyone, the instructions are provided with clear illustrations. In addition a distinction is made between warnings for dangerous situations (Danger!) and instructions in a general sense (Attention!/Instruction!).
SpanSet is not liable for damage or accidents caused by incorrect or improper use of the Exoset clamps.

3. Safety precausions

3.1 Description of symbols

INSTRUCTION/ CAUTION

This symbol indicates that a certain attention must be given or action must be taken. Details of the needed action are in the description or drawing. When this attention is neglected the dangeous situation will exist and injuries of you or your co-worker and/or damage might occur.

DANGER/ PROHIBITED

This symbol indicates that a certain attention must be given or action must be taken. Details of the needed action are in the description or drawing. When this attention is neglected the dangeous situation will exist and serious injuries of you or your co-worker or death are likely to occur.

3.2 General safety precausions

INSTRUCTION

Read, understand and follow up instructions on safety label.

INSTRUCTION

Read and understand the instruction manual.

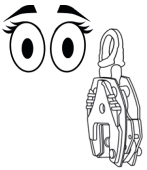
INSTRUCTION

Be professionally trained in the correct use of the Exoset clamps. For our training program, please check our website www.spanset.com or contact your local SpanSet partner.

3.3 Clamp safety precautions before hoisting

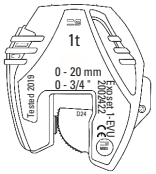
INSTRUCTION

Be sure to inspect the clamps before starting operation each day and also carry out periodic inspections.



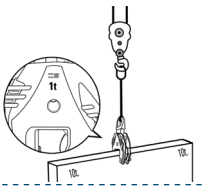
CAUTION

Check the model, WLL, and effective thickness marked on the clamps. Make sure that the weight and thickness of the load does not exceeds the WLL and jaw aperture rated on the clamp.



DANGER

Do not use clamps which are not suitable for the operation being performed.

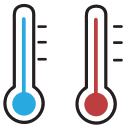


DANGER

Do not use deformed, cracked, not-functioning or worn clamps.

INSTRUCTION

Our clamps may be used with temperatures that lie between -40 °C. -40 °F) and +100 °C (212 °F). If you want to lift materials with temperatures that exeeds the allowed temperature range, please check our website www.spanset.com or contact your SpanSet partner.



INSTRUCTION

Our standard safety lifting clamps are suitable to lift steel plates and constructions with an maximum surface hardness of 37HRC (1200N/mm2) or 360 HV. If you want to lift harder steel materials we advice to use our camsegment and pivot for very hard materials. These are suitable to lift materials with a hardness up to 47 HRC or 473 HV.

DANGER

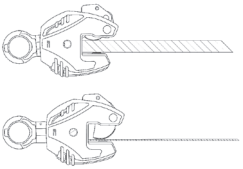
Plates or constructions with tempered members that have an angle of more than 6° or more can not be lifted with these clamps.
Pivot and camsegment may not be placed on sloping or conical surfaces.

DANGER

Do not lift fragile or brittle materials. Load can break!

INSTRUCTION

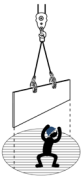
The thickness of the object to be lifted must be within the specified range of the clamp you intend to use.



3.4 Clamps in use precautions

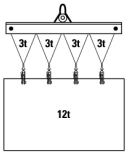
PROHIBITED

While objects are being lifted, transported or turned over, everyone must stay clear of the falling and swinging range of the objects being lifted.



CAUTION

The vertical safety lifting clamps may be applied per piece, per set or multiple clamps at the same time. It is very important that when more than 1 clamp is used , the load is divided equally, so that each clamp receives an equal part of the load.

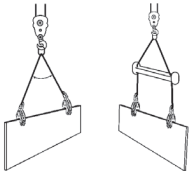


DANGER

For each lift only one plate may be lifted or transported at the time.

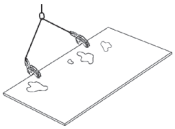
DANGER

Check the total weight of the load and find its center of gravity. Clamps must be placed is such manner that the load is lifted in a balanced way.
Do not lift loads higher than necessary.



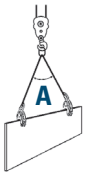
DANGER

Do not use clamps if there is any material, such as oil, paint, scales, rust, etc., in the clamping area on the object to be lifted.



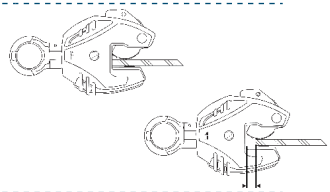
DANGER

The clamp lifting angle and the sling width angles should be within the specified angle for each model. Do not leave suspended loads unattended.



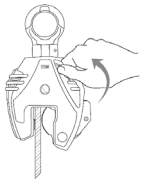
DANGER

Insert the object to be lifted completely into the jaw of the clamp.



INSTRUCTION

If you are using a clamp with a locking device, be sure to lock the locking handle.

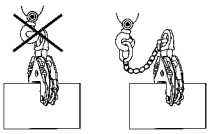


INSTRUCTION

Do not throw clamps or drag them across the ground.

DANGER

When the crane hook is too large and/or too heavy, use a chain. This will, when setting the load down, prevent the clamp from descending too far, allowing the clamp to open under the weight of the hook.



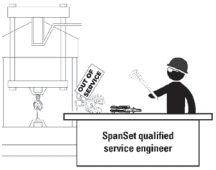
PROHIBITED

Do not use a clamp as a lifting point. Never use clamps to lift people in any way.

3.5 Inspection, maintenance and storage precautions

INSTRUCTION

Inspection, maintenance and repairs should only be made by a qualified person, please check our website www.spanset.com or contact your local SpanSet partner.



INSTRUCTION

For each Exoset Safety Lifting clamp there is a Service and repair manual available. This manual provides clear instructions about how to inspect, maintain and test the Exoset clamps. A training program is available. Please check our website www.spanset.com or contact your local SpanSet partner.

INSTRUCTION

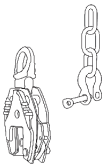
Use only SpanSet Exoset genuine parts. Parts are marked with the SpanSet logo or traceability code. When you any doubts regarding the originality of the parts please contact us!

INSTRUCTION

Store and label clamps that must be repaired. This prevents that the clamps can be used by mistake.

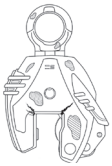
CAUTION

When performing maintenance, or making inspections or repairs, be sure to detach any object that the clamps are attached to.



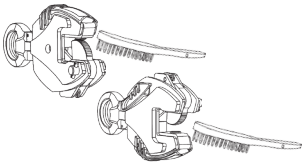
CAUTION

If any abnormal conditions are seen in the clamps during maintenance and inspection, do not keep using them. Repair them immediately or discard them.



CAUTION

Remove any paint, dirt, etc. from the movable sections, the camsegment and pivot.

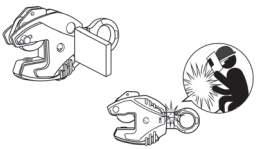


INSTRUCTION

Be sure to lubricate the sliding sections of the clamps such as the rotating sections (around shafts) and the guide grooves like the slot for the hoisting eye shaft.

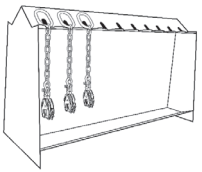
PROHIBITED

Never modify or weld on the clamps



INSTRUCTION

Be sure to store the clamps indoors. Clamps must be stored in open position. The camsegment and pivot should not be in contact with each other.



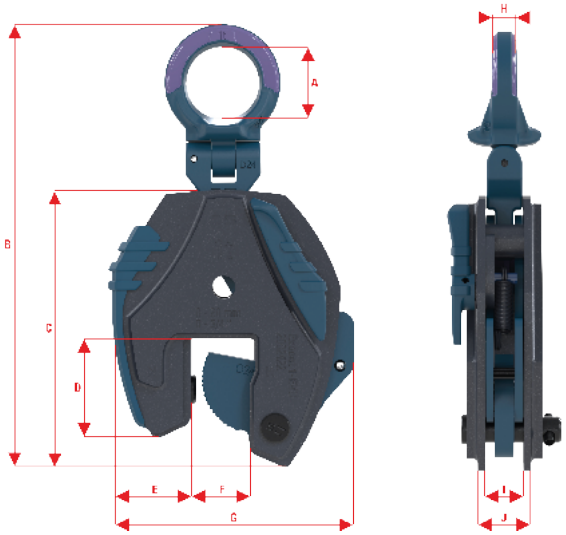

1t
0–20mm
0–3/4"

4. Dimensions and specifications (Metric)

4.1 Specification table (Metric)

Model	WLL (t)	Order number	Jaw aperture (mm)	Dimensions (mm)										Product weight (kg)
				A	B	C	D	E	F	G	H	I	J	
0,5-EVU	0,5	2002421	0-16	39	226	134	40	41	22	114	13	20	28	1.9
1-EVU	1	2002422	0-20	39	237	145	52	44	28	127	13	20	28	2.1
2-EVU	2	2002423	0-35	68	375	209	76	61	48	192	18	32	44	7.6
3-EVU	3	2002424	0-40	73	446	262	101	71	55	299	22	42	58	14.8
5-EVU	5	2002425	0-40	73	446	262	101	71	55	299	22	42	62	16.0
6-EVU	6	2002426	0-50	80	549	327	131	97	59	284	37	42	62	24
For very hard materials - with universal hoisting eye														
0,5-EVU H	0,5	2012561	0-16	39	226	134	40	41	22	114	13	20	28	1.9
1-EVU H	1	2012562	0-20	39	237	145	52	44	28	127	13	20	28	2.1
2-EVU H	2	2012563	0-35	68	375	209	76	61	48	192	18	32	44	7.6
3-EVU H	3	2012564	0-40	73	446	262	101	71	52	299	22	42	58	14.8
5-EVU H	5	2012565	0-40	73	446	262	101	71	52	299	22	42	62	16.0.
6-EVU H	6	2012565	0-50	80	549	327	131	97	59	284	37	42	62	24
For stainless steel - with universal hoisting eye														
0,5-EVU S	0,5	2012567	0-16	39	226	134	40	41	22	114	13	20	28	1.9
1-EVU S	1	2012568	0-20	39	237	145	52	44	28	127	13	20	28	2.1
2-EVU S	2	2012569	0-35	68	375	209	76	61	48	192	18	32	44	7.6
3-EVU S	3	2012570	0-40	73	446	262	101	71	52	299	22	42	58	14.8
5-EVU S	5	2012571	0-40	73	446	262	101	71	52	299	22	42	62	16.0.
6-EVU S	6	2012572	0-50	80	549	327	131	97	59	284	37	42	62	24

4.2 Dimensions



Dimensions and specifications (Imperial)

4.3 Specification table (Imperial)

Model	WLL (t)	Order number	Jaw aperture (in.)	Dimensions (in.)										Product weight (lbs.)
				A	B	C	D	E	F	G	H	I	J	
0,5-EVU	0,5	2002421	0-0,63	1.54	8.91	5.29	1.59	1.63	0.88	4.49	0.53	0.80	1.12	4.19
1-EVU	1	2002422	0-0,75	1.54	9.35	5.73	2.06	1.74	1.12	5	0.53	0.80	1.12	5.29
2-EVU	2	2002423	0-1,38	2.68	14.78	8.24	2.99	2.43	1.90	7.58	0.71	1.27	1.74	18.3
3-EVU	3	2002424	0-1,56	2.89	17.56	10.34	4.01	2.80	2.17	9.30	0.90	1.65	2.28	32.6
5-EVU	5	2002425	0-1,56	2.89	17.56	10.34	4.01	2.80	2.17	9.30	0.90	1.65	2.44	35.3
6-EVU	6	2002426	0-2,00	3.15	21.64	12.89	5.19	3.84	2.32	11.18	1.46	1.65	2.44	52.9
For very hard materials - with universal hoisting eye														
0,5-EVU H	0,5	2012561	0-0,63	1.54	8.91	5.29	1.59	1.63	0.88	4.49	0.53	0.80	1.12	4.19
1-EVU H	1	2012562	0-0,75	1.54	9.35	5.73	2.06	1.74	1.12	5	0.53	0.80	1.12	5.29
2-EVU H	2	2012563	0-1,38	2.68	14.78	8.24	2.99	2.43	1.90	7.58	0.71	1.27	1.74	18.3
3-EVU H	3	2012564	0-1,56	2.89	17.56	10.34	4.01	2.80	2.17	9.30	0.90	1.65	2.29	32.6
5-EVU H	5	2012565	0-1,56	2.89	17.56	10.34	4.01	2.80	2.17	9.30	0.90	1.65	2.44	35.3
6-EVU H	6	2012565	0-2,00	3.15	21.64	12.89	5.19	3.84	2.32	11.18	1.46	1.65	2.44	52.9
For stainless steel - with universal hoisting eye														
0,5-EVU S	0.5	2012567	0-0,63	1.54	8.91	5.29	1.59	1.63	0.88	4.49	0.53	0.80	1.12	4.19
1-EVU S	1	2012568	0-0,75	1.54	9.35	5.73	2.06	1.74	1.12	5	0.53	0.80	1.12	5.29
2-EVU S	2	2012569	0-1,38	2.68	14.78	8.24	2.99	2.43	1.90	7.58	0.71	1.27	1.74	18.3
3-EVU S	3	2012570	0-1,56	2.89	17.56	10.34	4.01	2.80	2.17	9.30	0.90	1.65	2.29	32.6
5-EVU S	5	2012571	0-1,56	2.89	17.56	10.34	4.01	2.80	2.17	9.30	0.90	1.65	2.44	35.3
6-EVU S	6	2012572	0-2,00	3.15	21.64	12.89	5.19	3.84	2.32	11.18	1.46	1.65	2.44	52.9

4.4 Clamps for hard materials and stainless steel

Hard materials

Stainless steel

Long life and wear indicator

4.5 Part description

Part No.	Description	Sub. No.	Part name	Q'ty
1000	Body complete			1
2000	Hoisting eye complete	2100	Hoisting eye	1
		2200	Hoisting eye fork	1
		2300	Hoisting eye shaft	1
		2400	Hoisting eye spring pin	1
3000	Camsegment complete			1
4000	Latch complete	4000	Latch assembly	1
		4100	Latch	1
		4400	Latch spring pin	1
		4600	Latch ring	1
5000	Spring for latch complete	5100	Spring for latch	1
6000	Camsegment shaft complete	6100	Camsegment shaft	1
		6200	Camsegment shaft spring pin	1
7000	Hoisting eye shaft complete	7100	Hoisting eye shaft	1
8000	Pivot complete	8100	Pivot	1
		8200	Disk	1
		8300	Screw	1
9000	Grip complete	9100	Grip main body	1
		9200	Grip colour body	1
		9300	Grip screw	2


2000
7000
9000
6000
1000
4000
5000
8000
3000
HB4

5. Construction and operating mechanism

5.1 Gripping force - clamping by friction or penetration

Exoset safety lifting clamps are fitted with a built-in safety mechanism, which consists of a locking device, a tension spring and a latch. Once the latch has been operated, the safety mechanism provides constant pre-tensioning of the camsegment on the load, thereby ensuring that the clamp does not slip when lifting force is applied. When a load is being lifted the clamping force on the camsegment is increases proportional by the weight of the load. The safety system also ensures that the clamp will not work itself loose from the plate as the load is being lowered.

According EN 13155 and ASME B30.20 BTH-1 the clamping force and the safety factor, to prevent the load from slipping, shall be at least 2 times the load to be held.

Calculation

The maximum obtainable force to hold a load is called holding force.
This force is determined by;

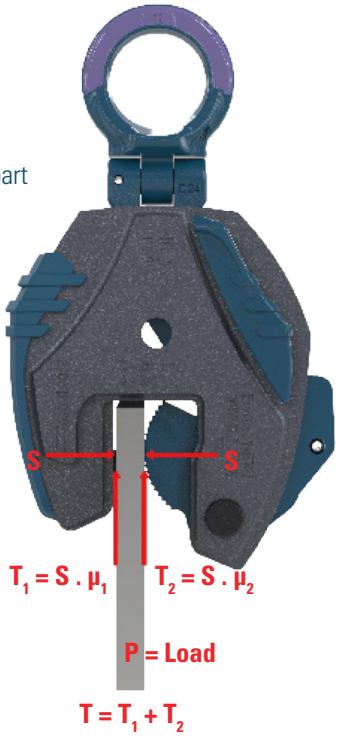
$T = S. (\mu_1 + \mu_2)$

With

S = clamping force of the clamp
μ_1 = friction coefficient between the load and one clamping part
μ_2 = friction coefficient between the load and the other clamping part
P = Work piece (N)

The holding force is determined by calculation. The calculation shall be done for the most unfavourable gripping range.

$S \geq 2 \times P$ (load)(N)

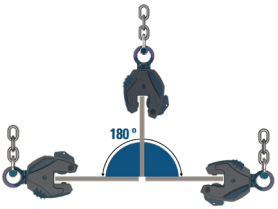
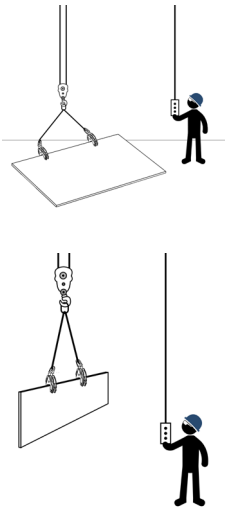
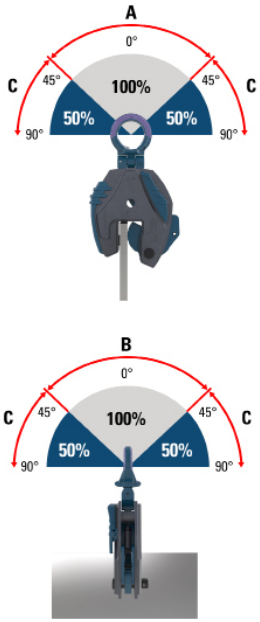
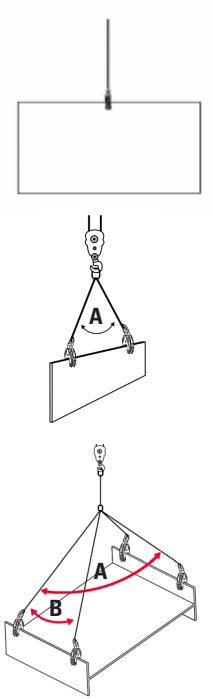


Acceptance criteria

The holding force T holding the load shall be at least 2 times the load to be held.

5.2 Load angles

All Exoset vertical safety lifting clamps are fitted with a universal hoisting eye that can move in all directions. This universal hoisting eye enables the user to place and lift the load in any directions.

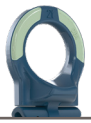
Load angles	Clamp position	Lifting operation
		**Lifting operation** All Exoset universal vertical safety lifting clamps are fitted with a locking device for both open- and closed positions, which ensures complete safety. The universal hoisting eye allows the clamp to place and lift the load from any direction, or with a multiple leg sling without side-loading the clamp.
Load diagram A and B 		**Lifting operation** Exoset universal vertical safety lifting clamps are suitable for the lifting, turning (180°), moving and vertical transfer of sheet materials and plates. Plates can also be turned from horizontal to vertical and back down to horizontal (180°). DANGER Do not exceed the load angles as mentioned in the load diagrams

5.3 Load indicator - improved safety

With the current lifting clamps, the maximum allowed load "WLL" indicated on the body of the clamp is difficult to read after some time of use. As a result, it is difficult for the user to determine the maximum allowed load. The result is that the lifting clamps can be used for loads that are too heavy so that the lifting clamp can break and accidents occur.

We added a maximum WLL indicator, located where it is clearly visible on the hoisting eye and the grip. This indicator makes it easy for the user to recognize the maximum load for which the lifting clamp can be used.

By executing the hoisting eye and grip with recessed surfaces, it is possible to indicate for which maximum load the safety lifting clamp is suitable. In the pictures you can see 2 surfaces this means that the lifting clamp is suitable for lifting a load of 2 tons.

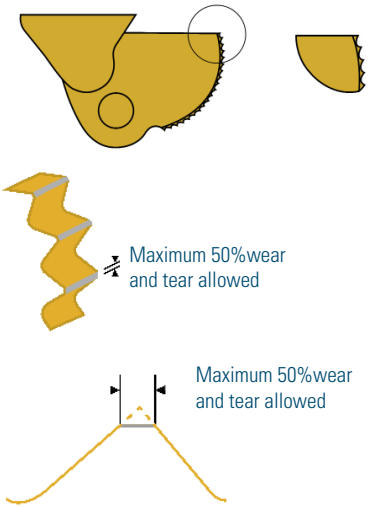
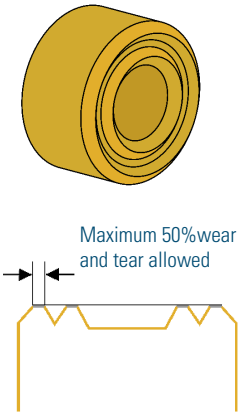
	Colour	Model	WLL (t)	Jaw (mm)	The use and criteria
Load WLL Indicator - colour code	500 kg	0,5 - EVU	0,5	0-16	
	1000 kg	1 - EVU	1	0-20	
	2000 kg	2 - EVU	2	0-35	
	3000 kg	3 - EVU	3	0-40	
Load WLL Indicator - colour	5000 kg	5 - EVU	5	0-40	
	6000 kg	6 - EVU	6	0-50	

5.4 Wear and tear indicator

All Exoset vertical lifting clamps can be fitted with a very special designed camsegment and pivot. The camsegment and pivot are equipped with a very hard, tough and durable "gold" coloured layer.

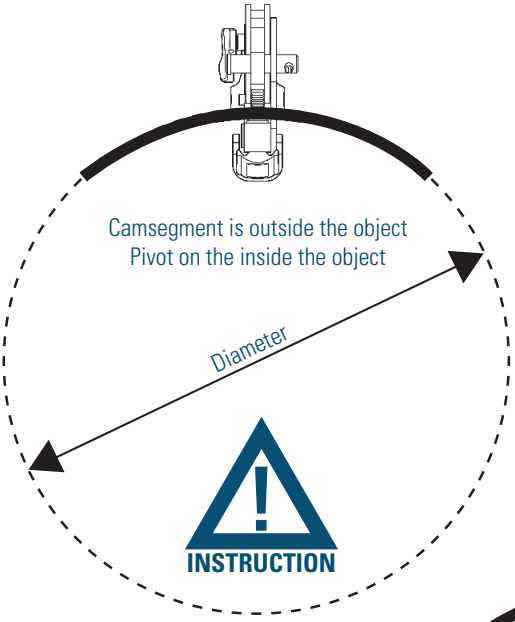
This "gold" layer has two functions:

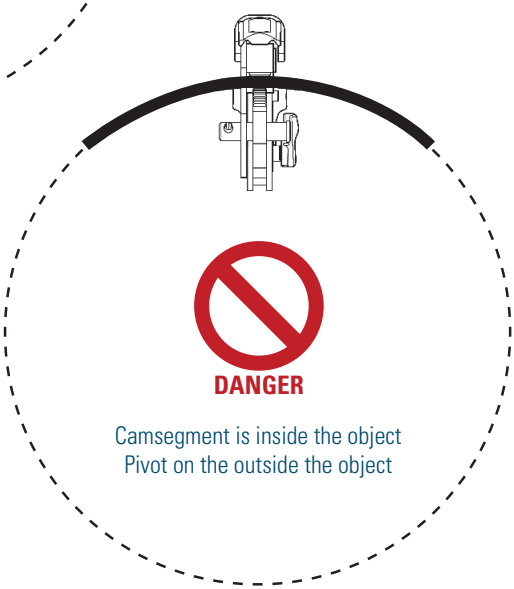
- The "gold" coloured layer ensures an extensive lifetime or the camsegment and pivot.
- Wear and tear indicator; as 50% of the "gold" coloured layer is worn off and vanished the parts have to be replaced.

	Part	The use and criteria
Wear and tear indicator pivot		Functions "golden" wear and tear indicator **Extensive lifetime** The "golden layer" has a hardness of 2000HV and provides an extensive life time of the camsegment and pivot. **Wear and tear indicator** When 50% of the "gold" coloured layer is worn off the parts have to be replaced.  Long life and wear indicator
Wear and tear indicator camsegment		Functions "golden" wear and tear indicator **Extensive lifetime** The "golden layer" has a hardness of 2000HV and provides an extensive life time of the camsegment and pivot. **Wear and tear indicator** When 50% of the "gold" coloured layer is worn off the parts have to be replaced.

5.5 Minimum diameter of steel constructions that can be safely lifted

Model	0.5 - EVU	1- EVU	2- EVU	3- EVU	5 - EVU	6 - EVU
Minimum inside diameter (mm)	Ø 500 160	Ø 500 160	Ø600 400	Ø600 600	Ø600 600	Ø750 600
Maximum material thickness (mm)	16	20	30	40	40	50





6. Certificates, tests and performance according regulations

6.1 According regulations

The lifting clamp shall be designed to withstand a static load of two times the working load limit (WLL) without permanent deformation.

The lifting clamp shall be designed to withstand a static load of three times the working load limit (WLL) without releasing the load, even if permanent deformation occurs.

6.2 Exoset safety lifting clamps are the only lifting clamps in the world who are certified by DNV-GL.

DNV-GL Type Approval – ST – 0378

European Norm EN 13155

USA Norm ASME B30.20, Design category C, Service class 4

USA Norm ASME BTH -1

Australian Norm 4991

CE European Machine Directive 2006/42/EC.

6.3 Safety factor Exoset vertical Safety Lifting Clamps

Test load (proof-load): Each clamp is individually tested on 2.0 times the WLL

Breaking load : minimum of 6 times the WLL or more.

Safety factor : minimum of 6 times the WLL or more.

6. Certificates, tests and performance according regulations

6.4 Materials used and mechanical characteristics

Body

Material	Yield point	Tensile strenght	Elongation
N-a-xtra steel	700 or more	770 or more	14 or more

Due to the use of the highest quality steels our Exoset safety lifting clamps have excellent impact properties and are therefore suitable of using in areas with temperatures as low as -40° C (-40°F) and as high as 100°C (212°F).

Camsegment and pivot

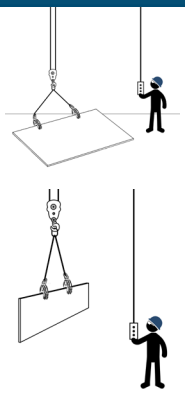
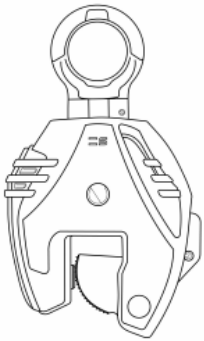
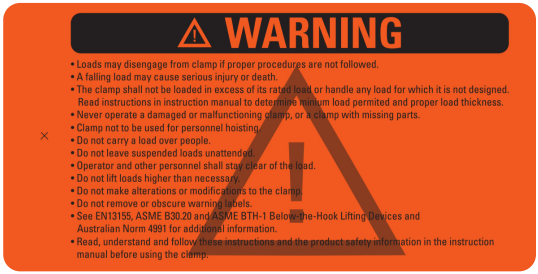
Material	Suitable for surface hardness		Tensile strength
	HRC	HV10	(N/mm$^{2)}$
Standard	37	364	1200
Very hard materials	47	480	1550
Stainless steel	37	364	1200
Long life tooth-edge hardness		2000	1200

7. Operation manual for Exoset vertical safety lifting clamps

The intention of this manual is to give you the information needed to operate our Exoset vertical lifting clamps safely and to prevent possible accidents.
It is utmost important that the clamps are used in the correct way and that the right type of clamp is used for the hoist to be performed.
If the clamps are used in the wrong way, it creates a serious danger because the objects being lifted may fall, other objects may be seriously damaged, people may be injured or even die.

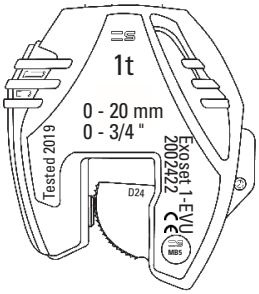
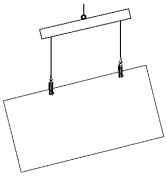
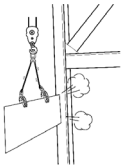
Before using the Exoset clamps, be sure to read this instruction manual carefully and always use the clamps according to the instructions given. Training is available please check our website www.spanset.com or contact your local SpanSet partner.

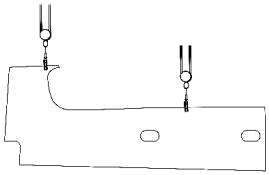
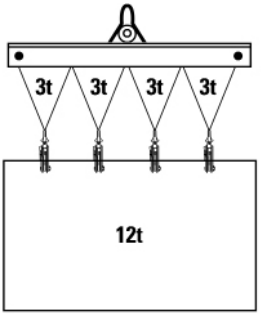
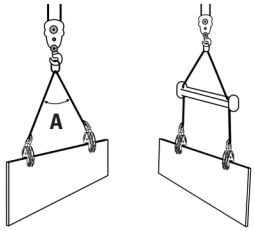
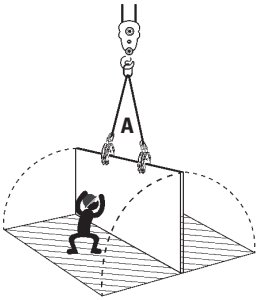
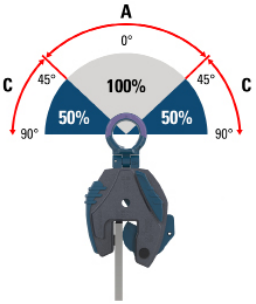
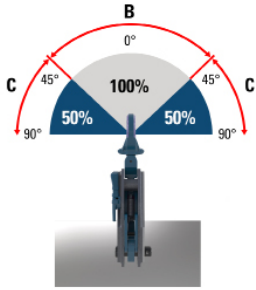
7.1 Clamp selection

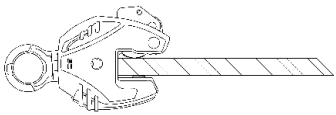
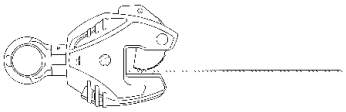
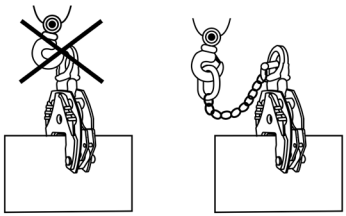
Job details	Clamp selection	Criteria and requirements used for the right clamp for the right job
		**Lifting operation** Clamp should be suitable for the lifting, turning (180°) and vertical transport of steel plates. **Clamp** Plate thickness and load (t) must be within the jaw aperture and WLL of the clamp. **Model** Exoset EVU vertical Safety Lifting Clamp.
		Read, understand and follow up instructions on safety label.

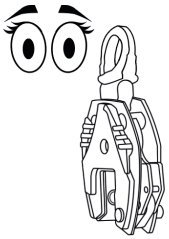
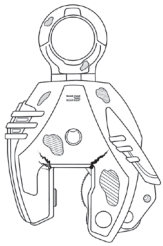
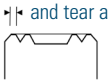
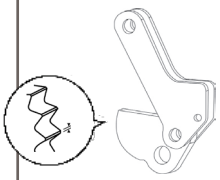
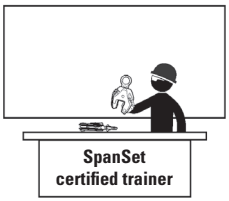
7.2 Items to be checked before starting the job.

Before starting operation, be sure to inspect the clamps that will be used and the requirements of the job, as well as the following items.

Item to be checked	Action	Precautions
INSTRUCTION **Check:** **• Model** **• WLL** **• Jaw aperture** **• Last inspection, maintenance and certification date**	If there is no marking on the clamp or if the marking is not clearly readable **Do not use the clamp.** If it is unclear if the clamp is inspected according to regulations **Do not use the clamp.** If the weight and/or thickness of the load exceeds the WLL and/ or the jaw aperture rated on the clamp **Do not use the clamp.**	If there is no marking on a clamp, or if it can't be read, do not leave the clamp on the job site. 
When calculating the weight of the load, take the following into consideration effects of an unbalanced load. **Effects of an unbalanced load.**  **The load impact if the load hits something.**  **Minimum load permitted** Minimum weight of the load must be 10% of the WLL of the clamp in case of a load surface hardness of maximum 364HV.	Check the model, WLL, and effective thickness marked on the clamps. If the weight and/or thickness of the load does exceeds the WLL and/or jaw aperture rated on the clamp, replace the clamps with models suitable for the load to be lifted. **DANGER**	If the weight and/or thickness of the load exceeds the WLL and/ or jaw aperture the clamps may break or the object may fall out of the clamps. If a load hits an object the clamp is subject to an impact load which might cause an extra force on the clamp. This extra force may cause the clamps to break or the object may fall out of the clamps. If the object is lighter than the minimum permitted load, the force created by the weight of the object, that helps the clamp hold the steel plate, will be insufficient. This insufficient force may cause the load being lifted to slip or fall.

Item to be checked	Action	Precautions
Check and make sure that the load is equally devided over the clamps  	Check the WLL markings on the clamps. If the total weight of the load exceeds the combined WLL of the clamps, replace the clamps with suitable clamps 	In more-point lifting, the load distribution on each clamp should be considered to be the same as that in one-point lifting. The total load devided by the number of clamps should be used to select the correct clamps
 	Load diagram  	Exoset vertical safety lifting clamps are suitable for a lifting angle A of max 90°. If lifting angle A is exceeded the WLL of the clamps must be reduced with 50%. Exoset vertical safety lifting clamps are suitable for a lifting angle B of max 90°. If lifting angle B is exceeded the WLL of the clamps must be reduced with 50%. If the change in speed is too large when turning over an object it produces an impact force on the load. Make sure to work in a smooth and controlled way.

Item to be checked	Action	Precautions
Lifting a steel plate or construction that is thicker than the specified aperture is prohibited. 	Use clamps that have a jaw aperture suitable for the thickness of the object to be lifted. If the object to be lifted is thicker than the specified thickness. it may be impossible to remove the clamps after finishing lifting.	Select the clamp model suitable for the load to be lifted.
Do not lift an object whose thickness is less than the minimum specified thickness 	Use clamps that have a jaw aperture suitable for the thickness of the object to be lifted. DANGER • **Check WLL** • **Check jaw aperture**	If the object to be lifted is too thin. There is a danger that the load slips out of the clamp. Select the clamp model suitable for the load to be lifted.
	When a crane hook is too large and/ or too heavy use a chain. This chain will, when setting down the load, prevent the hoisting eye to descend and by that forcing the clamp to open under the weight of the hook. DANGER	Use a chain or sling between clamp and cranehook

Item to be checked	Action	Precautions
Perform a visual inspection on the clamp. Pay special attention on the teeth of the camsegment and pivot, these parts have to be inspected on wear and tear. **INSTRUCTION** Visual inspection Check the operation of the clamp, body, latch, spring, lifting eye and shafts. Wear and tear As 50% of one teeth is damaged or worn the camsegment and pivot have to be replaced.	When abnormal conditions are encountered. do not use the clamps.  Disassemble and inspect the clamp, and replace any defect parts. or send the clamp back to the athorized SpanSet partner. Do not use clamps that have cracks, deformation or wear. 	 Maximum 50%wear and tear allowed    Maximum 50%wear and tear allowed
Workers who operate safety lifting clamps must be trained for the type of job to be performed. SpanSet has a complete program of trainings available. Check www.spanset.com or contact your SpanSet partner **INSTRUCTION** **A training program is available. Please check our website www.spanset.com or contact your local SpanSet partner.**	 **SpanSet certified trainer**	

7.3 Compatibility table for connecting fittings

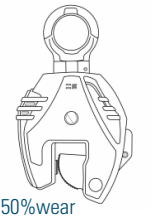
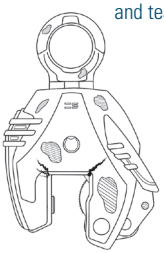
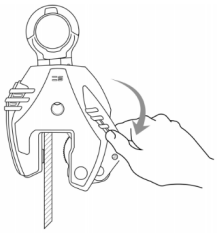
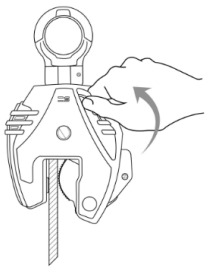
Exoset clamp	Exoset shackle	Exoset hook	XO Chain hook	Joker hook
				
0,5 - EVU	CH8SAS-P301A1	CHKHSC-P101A1	CHKHLC-P101A1	ASH 1T
1 - EVU	CH8SAS-P301A1	CHKHSC-P101A1	CHKHLC-P101A1	ASH 1T
2 - EVU	CH8SAS-P303A1	CHKHSC-P103A1	CHKHLC-P103A1	ASH 2T
3 - EVU	CH8SAS-P304A1	CHKHSC-P104A1	CHKHLC-P104A1	ASH 3T
5 - EVU	CH8SAS-P306A1	CHKHSC-P105A1	CHKHLC-P105A1	ASH 5T
6 - EVU	CH8SAS-P306A1	CHKHSC-P105A1	CHKHLC-P105A1	ASH 6T

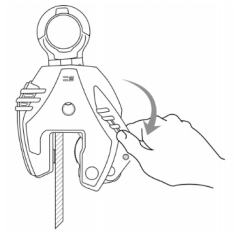
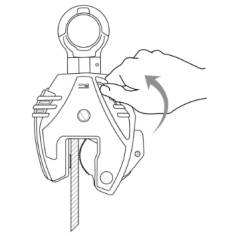
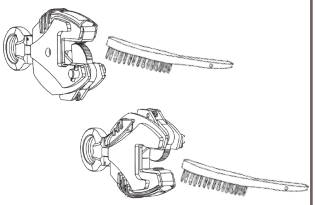
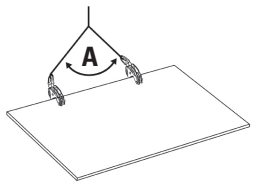
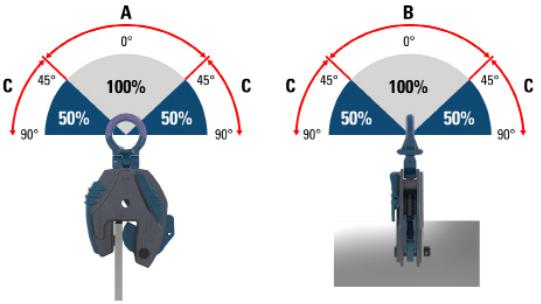
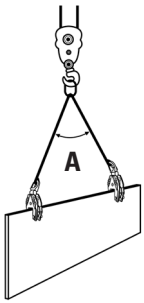
7.4 Compatibility table for connecting slings

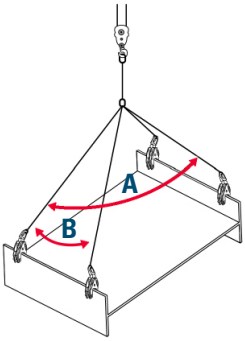
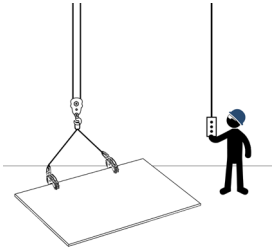
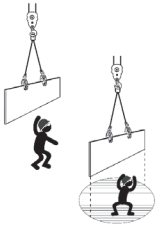
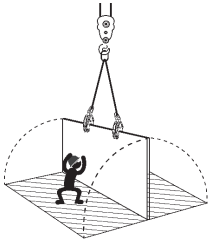
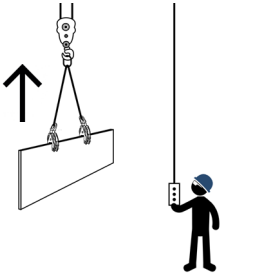
Exoset clamp	Exoset chain	SpanSet 1-leg RS sling	SpanSet 2-leg RS sling	SpanSet 4-leg RS sling
				
0,5 - EVU	CHKHLC-P101A1	D062796	D062861	D062885
1 - EVU	CKHHLC-P101A1	D062796	D062861	D062885
2 - EVU	CHKHLC-P103A1	D062820	D062863	D062886
3 - EVU	CHKHLC-P104A1	D062821	D062871	D062887
5 - EVU	CHKHLC-P105A1	D062823	D062872	D062889
6 - EVU	CHKHLC-P105A1	D062824	D062873	D062890

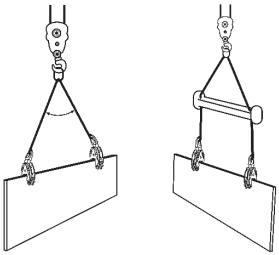
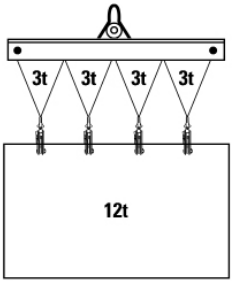
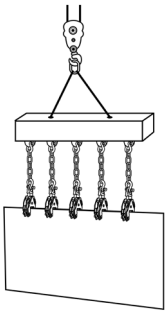
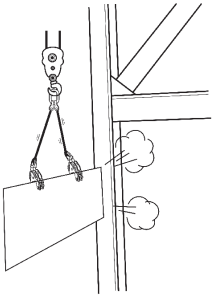
8. Clamp operation procedure

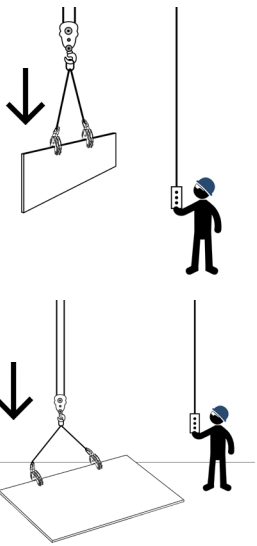
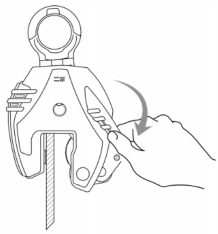
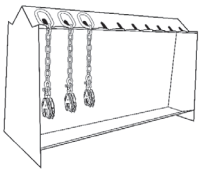
Exoset EVU vertical clamps are suitable for lifting, turning (180°) and vertical transport of steel plates and constructions.

Job procedure	Item to be checked	Illustrated description
Exoset safety lifting clamp for vertical lifting	Determine if the selected clamps are suitable for the job. Determine the number of clamps. Check the weight and thickness of the load to be lifted.	
↓		
Visual inspection Check pivot and camsegment on wear and tear.	If the wear and tear of the camsegment and pivot exceeds the allowed values, the parts need replacement. The teeth must be sharp and free of dirt.	Maximum 50%wear and tear allowed  Maximum 50%wear and tear allowed
↓		
Operation of the clamp	No damage, cracks or deformation should be visible. The clamp must open and close smoothly. When operation of the clamp is heavy take the clamp out of operation.	
↓		

Job procedure	Item to be checked	Illustrated description
Attaching clamp	Open the clamp by pulling the safety latch downwards Place the clamp securely on the plate so that the load is positioned against the jaw of the clamp.	
↓	Now close the clamp by pulling the safety latch upwards. The clamp is now closed and is connected with the load due to the pretention. The clamp is now ready for lift-off	
	CAUTION **Check and make sure that the gripping area is free of grease, oil, water, scale, ice, moisture, coatings or dirt.**	
Check the load angles	Check the load angles of the chains, wire rope slings and hoisting eye. The load can now be turned and transported in vertical position.	
	CAUTION Load diagram A and B 	

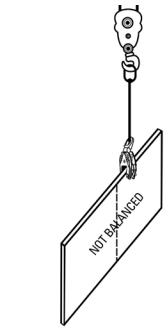
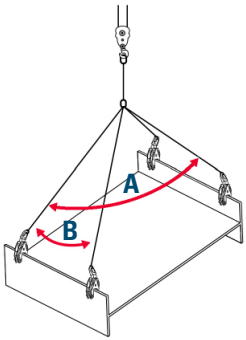
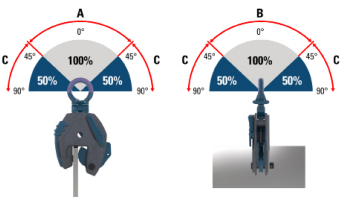
Job procedure	Item to be checked	Illustrated description
Check the load angles		
↓		
The load can now be turned and/or transported in vertical position.	**DANGER** • Never lift over people's head! • When objects are lifted, transported or turned over, everyone must stay clear of the falling or swinging range of the load being lifted.	
↓	 	

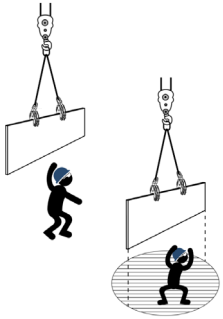
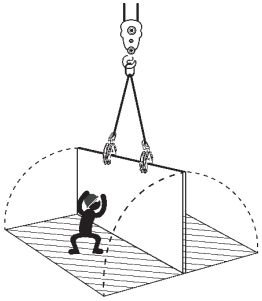
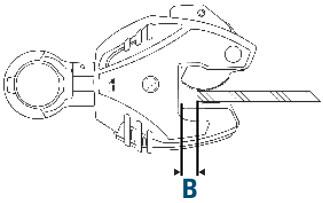
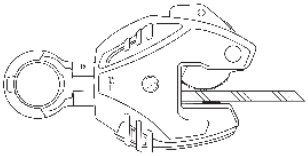
Job procedure	Item to be checked	Illustrated description
Make sure that the load is lifted from it's point of gravity.	**DANGER** • Make sure the load is balanced. • Make sure the load cannot hit something	
↓		
DANGER		
DANGER		

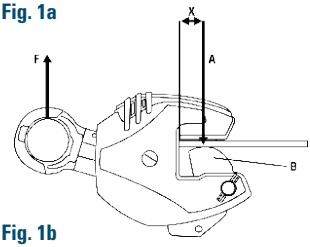
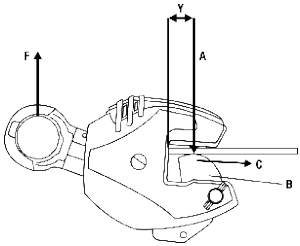
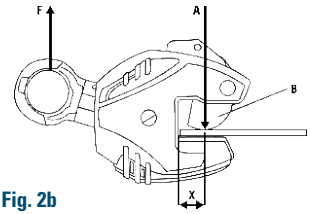
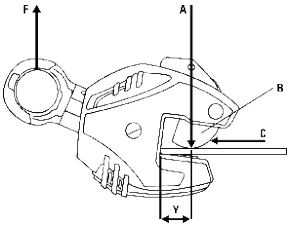
Job procedure	Item to be checked	Illustrated description
Load at destination	As soon as the load is transported to its destination lower the cran till there is no tention, from the chain or cable, on the hoisting eye.The hoisting eye can move freely.	
Remove the clamps	The safety latch can now be opened. The clamps can now be removed from the load. Clamps are now ready for use.	
Storing the clamps	Clamps must be stored in open position.	

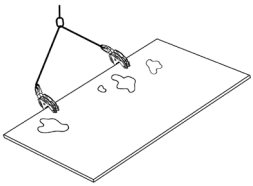
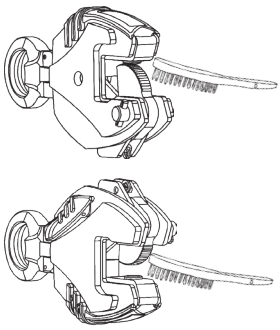
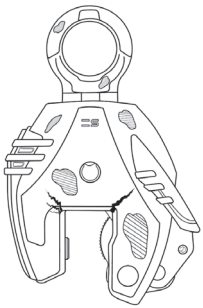
9. Precautions for use

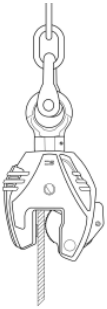
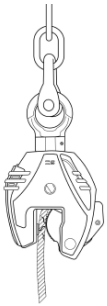
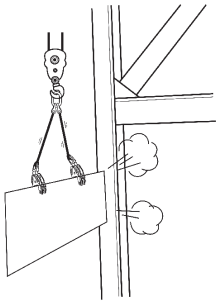
Most of the accidents involving clamps are due to the incorrect use of the clamps. Users of the clamps should be familiar with the correct methods for the use of lifting clamps so they can perform their work in a safe way.

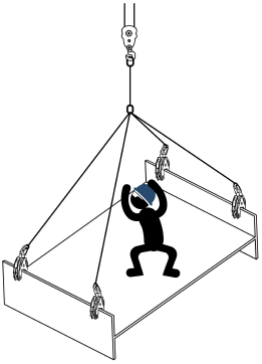
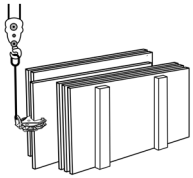
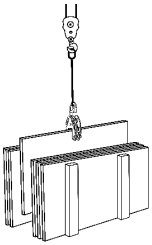
Method for attaching and checking the clamps	Reason	Precautions and action to take
	When an object is lifted at its center of gravity using single point lifting, the balance point might shift and the clamp can come off. Single point lifting can be dangerous.	**DANGER** **• The center of gravity needs to be determined to make sure the load lifted is in a stable position.** **• It is preferable to lift the load with at least 2 clamps. Clamps must be attached at positions so the load is in a balanced position.**
	When using 4-point lifting the maximum angle in the diagonal direction should be regarded as the lifting angle (A). Lifting angle B is as side loading.	Load diagram A and B CAUTION 

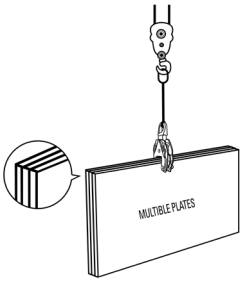
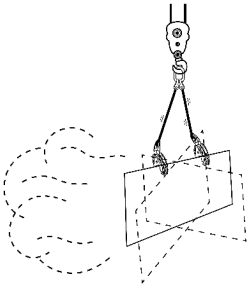
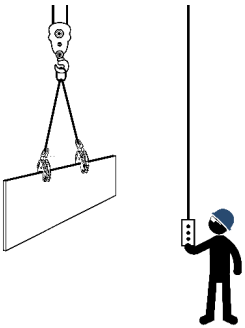
Method for attaching and checking the clamps	Reason	Precautions and action to take
 	Since the design of the clamps is such that the clamping force is reduced while an object is being turned over or set down, it is dangerous if anyone enters the falling or swinging range of the object being lifted.	Observe the Safety Regulations in each country strictly. **DANGER** **•Never lift over people's head!** **•When objects are lifted, transported or turned over, everyone must stay clear of the falling or swinging range of the load being lifted.**
 	If the object is not inserted completely into the jaw of the clamp, there is a danger that the clamp will come off. **DANGER** **Make sure the load is postitioned against the jaw of the clamp.**	Insert the object to be lifted completely into the jaw of the clamp.

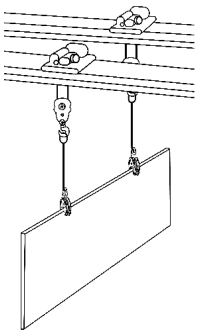
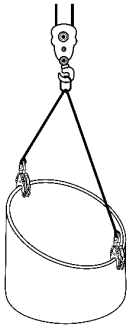
Method for attaching and checking the clamps	Reason	Precautions and action to take
Fig. 1a  **Fig. 1b**  	Fig. 1a shows the starting position of the lift; camsegment B is pressed against the plate at pressurepoint A, which lies at a distance x from the upperside of the jaw. Fig. 1b shows the position of the clamp when the lifting of the plate from its horizontal position has just been started. The plate will be pulled out of alignment with jaw of the clamp. The pressurepoint A has been shifted to a distance y from the upperside of the jaw (distance x is reduced than distance y) Because the camsegment is in contact with the plate, it should move in direction C, resulting in a smaller jaw aperature. The plate between the camsegment and pivot prevents this, which will result that the plate will be pressed more parallel to the pivot's surface.	Force similar to when you wring a wet towel strongly.
Fig. 2a  **Fig. 2b**  	Fig. 2a shows the starting position of the lift; camsegment B is pressed against the plate at pressurepoint A, which lies at a distance x from the upperside of the jaw. Fig. 2b shows the position of the clamp when the lifting of the plate from its horizontal position, has just been started. The plate will be pulled out of alignment with jaw of the clamp. The pressurepoint A has been shifted to a distance y from the upperside of the jaw (distance x is larger than distance y) Because the camsegment is in contact with the plate, it should move in direction C, resulting in a bigger jaw aperature. This is possible because the force applied on the camsegment by pulling on the hoisting eye is too small. When the plate is lifted in a more and more upright position, the camsegment will close, resulting in an increase of the distance from the plate's end until the upperside of the jaw (the other side of the plate slides over the pivot's surface). In this situation the distance from the plate's end towards the upperside of the jaw is bigger than when the lifting is started with the pivot in the upper position.	

Method for attaching and checking the clamps	Reason	Precautions and action to take
Oil, paint, rust, grease or dirt on the load that has to be lifted 	If contaminations such as rust or oil are on the camsegment and/or pivot these parts can become slippery and the load being lifted may fall out of the clamp. **DANGER** **Check and make sure that the gripping area is free of grease, oil, water, scale, ice, moisture, coatings or dirt.**	Wipe off any grease, oil before attaching the clamps
	If contaminants such as paint or oil are left on the pivot or camsegment of the clamp, these parts will be slippery and the object being lifted may fall out of the clamp.	
	The clamp main body and important parts can corrode and their strength and function can be reduced. Which can cause the clamp to corrode or crack	Inspect or repair them immediately or discard them.

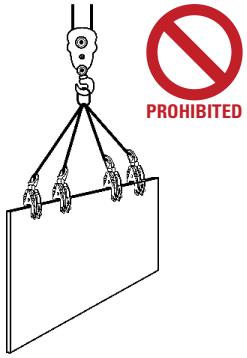
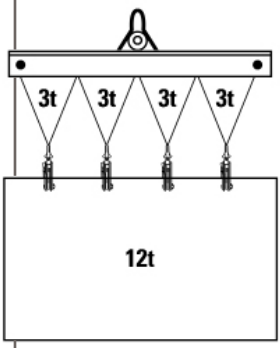
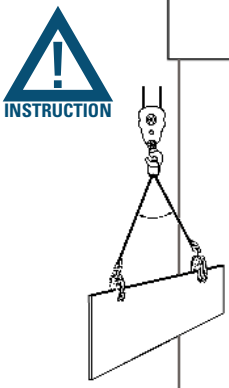
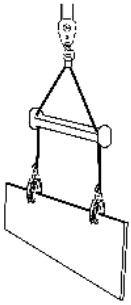
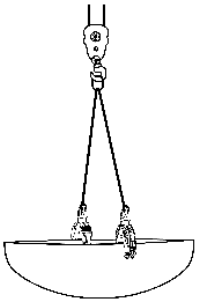
Method for attaching and checking the clamps	Reason	Precautions and action to take
Exoset vertical clamps are suitable of lifting objects with a surface hardness of 37 HRC. For harder materials please see our website www.spanset.com or contact your SpanSet partner. 	If an object is extremely hard, the teeth of the pivot and camsegment will not grip into the object securely. This can cause shifting or slipping. This type of lifting is very dangerous. **DANGER** **Do not use this type of clamp to lift loads of which the surface hardness exceeds 37 HRc (1200MPa).**	Approved materials for objects to be lifted: Steel products and nonferrous metal with a surface hardness in the range of HRC 0 - HRC 37, HV85 - HV364, 270 N/mm2 - 1200N/mm2. When you work with materials that are outside of the allowed hardness range use our clamps for hard materials. maximum hardness of 47 HRC, 473 HV, tensile strength 1550 N/mm^2 (for example Hardox 400 and 500).
	If the strength or hardness of an object is extremely low, the clamping force may break the object or the object may break from its own weight. This is dangerous. **DANGER** **Do not use this type of clamp to lift loads with a low tensile strength or which are brittle.**	
	If a load hits an object the clamp is subject to an impact load which might cause an extra force on the clamp. **DANGER**	

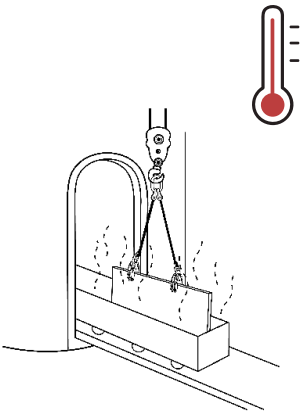
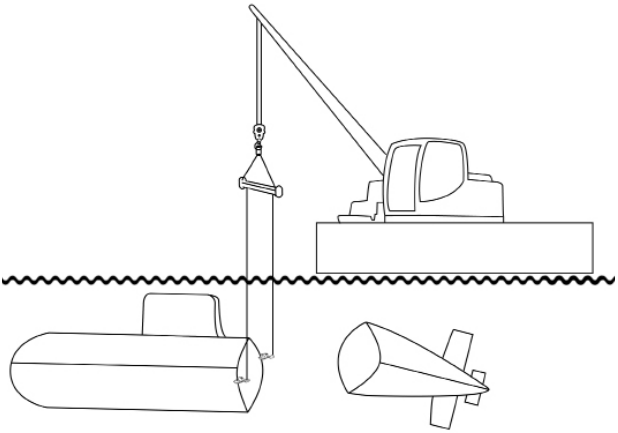
Method for attaching and checking the clamps	Reason	Precautions and action to take
	Company managers must not allow workers to be carried or lifted using a crane. **DANGER** **• No manriding** **• Never use clamps to lift people in any way!**	
If the direction of the load changes while pulling out. turning over or pulling down objects.  	When lifting a load from a stack of plates make sure the load is not stuck between other plates. This might cause overloading the clamps. Overloading may cause the clamps to break or it may cause the object being lifted to fall out of the clamp. **DANGER**	Do not lift multiple plates or lift plates stuck between other plates.

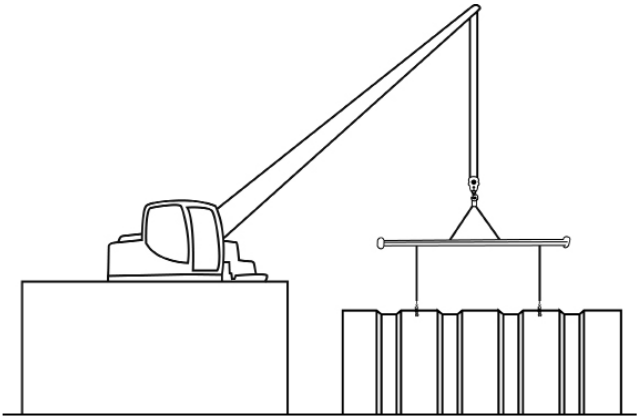
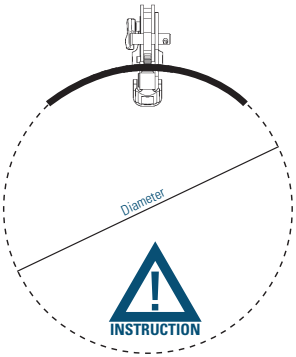
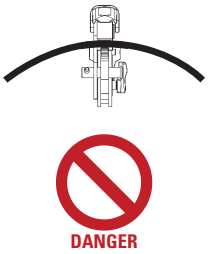
Method for attaching and checking the clamps	Reason	Precautions and action to take
	The clamping function is obtained by directly gripping both sides of the object between the teeth of the camsegment and the pivot. Therefore, when a number of objects are lifted one side of the objects may only be held by the friction force without them being gripped by the teeth. There is a danger that the objects may slip and fall even if there is even the slightest vibration or shock.	DANGER **• Lifting multiple plates at the same time is not allowed** **• Only lift one plate at the same time**
	Since the wind in high places is stronger than on the ground, the object being lifted may oscillate in the wind. swing, hit something or become unbalanced, which can cause the object to came loose from the clamp and fall. DANGER	Even if the wind on the ground is not very strong, pay special attention when working because an unexpectedly strong wind can be blowing.
	If reckless crane operations are performed. the object being lifted may slip or fall out of the clamps due to vibration or shock loading. SLOW AND CAREFULLY	When vertical lifting, transporting and turning of steel plates check clamp and sling for safety and operate the crane carefully.

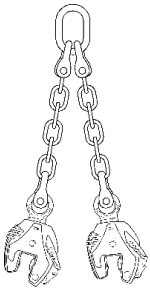
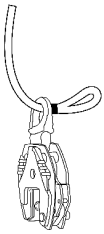
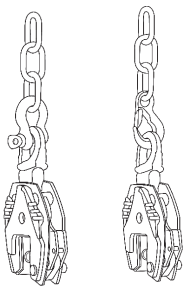
Method for attaching and checking the clamps	Reason	Precautions and action to take
	When two cranes are used at the same time, their operation will not be synchronised. The object might tilt and the clamps can come off and the object can swing dangerously or fall. DANGER	
	Make sure the object is lifted in stable position. There is always the danger that the object may slip due to swinging of the load and clamps may come off the object. INSTRUCTION	Make sure the radius of the object is within the range mentioned below.

Model	0.5 - EVU	1- EVU	2- EVU	3- EVU	5 - EVU	6 - EVU
Minimum inside diameter (mm)	Ø 500 160	Ø 500 160	Ø600 400	Ø600 600	Ø600 600	Ø750 600
Maximum material thickness (mm)	16	20	30	40	40	50

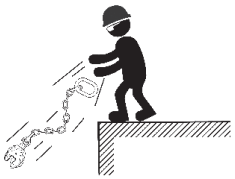
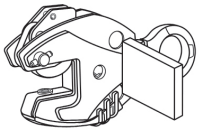
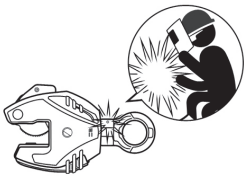
Method for attaching and checking the clamps	Reason	Precautions and action to take
	Since objects are not stable, there is always the danger that the object may slip due to swinging of the load and clamps may come off the object.	  
	Make sure the object is lifted in stable position. There is always the danger that the object may slip due to swinging of the load and clamps may come off the object.	

Method for attaching and checking the clamps	Reason	Precautions and action to take
	Due to softening of parts of the clamp a reduction in the strength or gripping function of the clamp can cause the clamp to deform or break. Then the load may fall.	If the clamp temperature exceeds +100°C/212°F. please check our website www.spanset.com or contact your SpanSet partner.
 When handling objects that will be lowered into or lifted out of the water or that are currently in the water (salt water or fresh), special attention is needed because the following items cannot be checked. • Change in the lifting load due to water. • Load of the objects being lifted duo the flow of water • Condition of the objects being lifted out of the water.		When objects being lifted with clamps are put into the water, for example in order to dam up a river, they may experience resistance or buoyancy due to the flow of water and an instantaneous no load condition may occur. Such work should never be performed with these clamps.

Method for attaching and checking the clamps	Reason	Precautions and action to take
 When pulling out steel plates that has been driven in the ground the clamps may be overloaded and there is a danger that the clamps may deform or break.		Use clamps suitable for the specific task. When transporting steel plates make sure that plate thickness and load (t) must be within the jaw aperture and WLL of the clamp.
	Since the shock resistance of the steel materials is greatly reduced at low temperatures, any reduction in the strength of the clamps can cause the clamps to break.	If the clamp temperature unavoidably drops below -40°C/104°F. please check our website www.spanset.com or contact your SpanSet partner.
	Camsegment is outside the object Pivot located on the inside the object 	Camsegment is inside the object Pivot located on the outside the object 

Method for attaching and chec-king the clamps	Reason	Precautions and action to take
 	Do not attach two clamps to a single chain or wire rope. If the chain slips, a greater than expected load will be applied to one of the clamps due to the tilt and shock loading of the objects being lifted. Then there is a danger that the chain, wire rope or clamps may be damaged and the objects may fall.	Use multi legged slings only with couplings and master link.  
 	When a chain sling or a wire rope is put directly into the hoisting eye, the chain sling or the wire rope can be damaged by the corner of the hoisting eye.	Use couplings, shackles or hooks when connecting clamps with a chain or wire rope. Refer to the compatibility for connecting fittings on page 24.  

Exoset clamp	Exoset shackle	Exoset hook	XO Chain hook	Joker hook
0,5 - EVU	CH8SAS-P301A1	CHKHSC-P101A1	CHKHLC-P101A1	ASH 1T
1 - EVU	CH8SAS-P301A1	CHKHSC-P101A1	CHKHLC-P101A1	ASH 1T
2 - EVU	CH8SAS-P303A1	CHKHSC-P103A1	CHKHLC-P103A1	ASH 2T
3 - EVU	CH8SAS-P304A1a	CHKHSC-P104A1	CHKHLC-P104A1	ASH 3T
5 - EVU	CH8SAS-P306A1	CHKHSC-P105A1	CHKHLC-P105A1	ASH 5T
6 - EVU	CH8SAS-P306A1	CHKHSC-P105A1	CHKHLC-P105A1	ASH 6T

Method for attaching and chec-king the clamps	Reason	Precautions and action to take
 	Mechanical shock can cause clamps and parts to break and/or malfunction.	
  	When a clamp is heated, the material qualities will change and it can become hard and fragile. This can cause the clamp to deform or break.	Do not weld or modify the Exoset safety clamps.

	Method for attaching and chec-king the clamps	Reason	Precautions and action to take
		If you do not register the clamps, we cannot perform inspections or give you information about their inspection. Poor clamp maintenance is after the reason that accidents occur.	Register the clamps at your SpanSet partner.

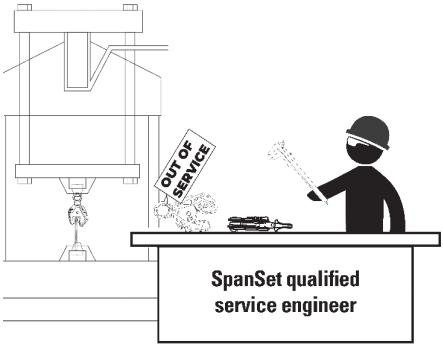
10 Inspection, maintenance and repair

After finishing work for the day, perform the required maintenance for the next round of work, according to the following procedures.

10.1 Precautions, inspection and maintenance

Maintenance and inspections should only be conducted by a qualified person, specified by the company which owns the clamps.

SpanSet issues a certificate of qualification to people who have completed an repair- and user training



If any abnormal conditions are seen in the clamps during maintenance or inspection, you must stop using the clamps immediately. The clamps must be repaired or discarded.

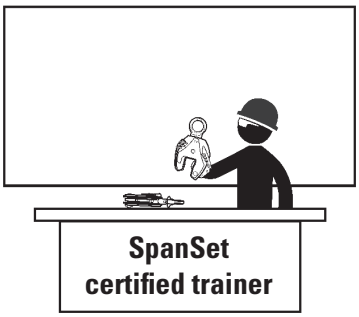
Products which have been determined to be unusable must have a label that says "OUT OF SERVICE" attached to them.

Do not use any parts that are not genuine SpanSet Exoset clamp parts.

We do not offer any compensation or accept any responsibility for accidents or problems that are due to the use of parts made by anyone else.

When performing maintenance, or making inspections or repairs, be sure to remove the clamps from any object they are attached to.

It is dangerous to perform maintenance or make inspections or repairs during operation. These practices should always be carried out in a safe place.



Inspection, maintenance and repair instruction video

Inspection, maintenance and repair instruction video

Watch the video on how to inspect, maintain and repair the Exoset clamps

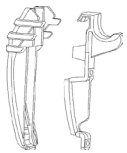
Maintenance procedure category A, B and C

For detaild information see the Exoset safety lifting clamps Service and Repair manual.
See our website www.spanset.com or visit your SpanSet partner.

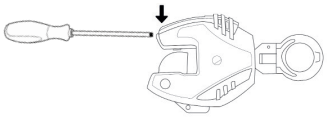
DISASSEMBLE CLAMP STEP 1 - 9

DISASSEMBLE CLAMP STEP 1

Grip: Part 9000



Step 1.

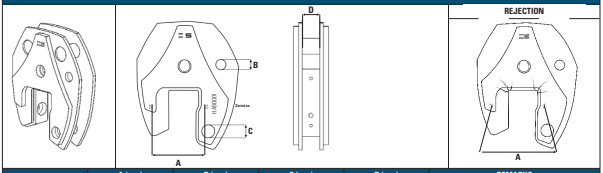


Step 2.

Dimensions parts

Allowed tolerances parts

Body Complete
1000



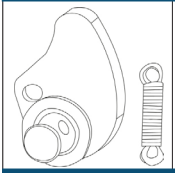
	A (mm)	B (mm)	C (mm)	D (mm)	REMARKS
0,5t-EVU	45.0 - 45.5	12.0 - 12.8	14.0 - 14.8	20.0 - 22.0	
1t-EVU	58.0 - 58.5	12.0 - 12.8	14.0 - 14.8	20.0 - 22.0	
2t-EVU	88.0 - 88.7	22.1 - 22.9	17.0 - 17.8	31.9 - 34.0	
3t-EVU	105.0 - 106.0	30.1 - 31.0	21.0 - 21.9	41.6 - 45.0	
5t-EVU	105.0 - 106.0	30.1 - 31.0	21.0 - 21.9	41.6 - 45.0	
6t-EVU	120.0 - 121.0	30.1 - 31.0	26.1 - 22.0	41.6 - 45.0	

If parts dimension are outside the in the table rementioned range the parts must be replaced!
Serial NO. and WLL must be readable.

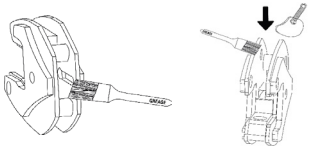
ASSEMBLE CLAMP

ASSEMBLE CLAMP STEP 1

Latch complete and spring: Part 4000

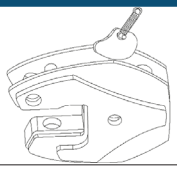


Step 1.

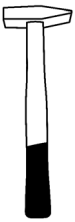
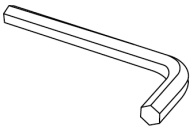
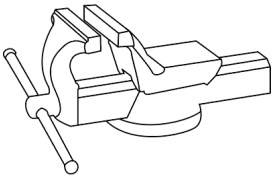
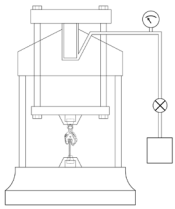
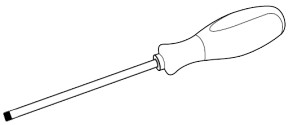
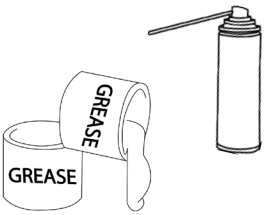
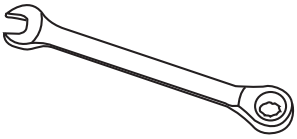
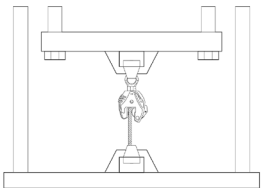


Step 2.

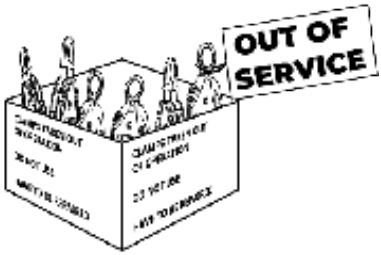
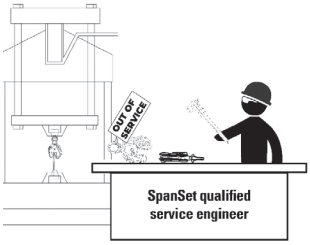
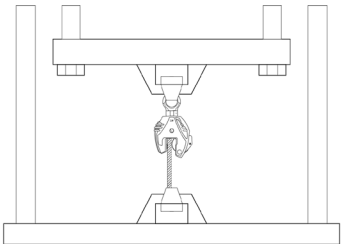
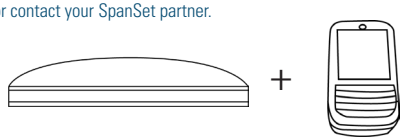
Step 3.



Category A, B and C

Tooling		
		
		
		
		

Maintenance procedure category A, B and C

	Action	
	A clamp removed from service for repair shall be tagged "Out of Service."	
	Only an Authorised SpanSet repair engineer shall perform maintenance, repairs and tests when required. These maintenance, repairs and tests must be done according the Service- and Repair manual.	
	Replacement parts shall be original SpanSet.	
	After adjustments and repairs have been made, the clamp shall not be returned to service until it has been inspected and tested	
	Dated records of repairs and replacements should be made. All Exoset Safety Lifting Clamps are RFID equipped.	**IDXPERT ®** For more information see www.spanset.com or contact your SpanSet partner. 

11. Inspection, maintenance and storage

CATEGORY A NORMAL SERVICE
0-18 operation hours per week

CATEGORY B HEAVY SERVICE
18-40 operation hours per week

CATEGORY C SEVERE SERVICE
40 or more operation hours per week

1. VISUAL EXAMINATION BY THE OPERATOR BEFORE AND DURING EACH LIFT MADE BY THE LIFTER

2. FREQUENT INSPECTION:
Visual examinations by the operator or other designated persons with records not required. Check for structural deformation, cracks, or excessive wear of any part of the Exoset Lifting Clamps.

3. PERIODIC INSPECTION AND MAINTENENCE
Complete inspection shall be performed and recorded by an Authorised Spanset repair engineer. All members, fasteners and parts shall be inspected for deformation, wear and corrosion. See Service- and repair manual for maximum allowed deformation. Spanset advises to replace the parts available in our Maintenance kit.

4. REVISION
Complete inspection, revision and testing shall be performed and recorded by an Authorised Spanset repair engineer. All members, fasteners and lifting parts shall be inspected for deformation, wear and corrosion. See Service- and repair manual for maximum allowed deformation. Spanset advises to replace the parts available in our Overhaul kit.

11. Inspection, maintenance and storage

CAT A NORMAL SERVICE

Years			1			2			3			4			5
Months	4	8	12	16	20	24	28	32	36	40	44	48	52	56	60
1	DAILY														
2	MONTHLY														
3															
4															

CAT B HEAVY SERVICE

Years				1				2				3				4				5
Months	3	6	9	12	15	18	21	24	27	30	33	36	39	42	45	48	51	54	57	60
1	DAILY																			
2	WEEKLY TO MONTHLY																			
3																				
4																				

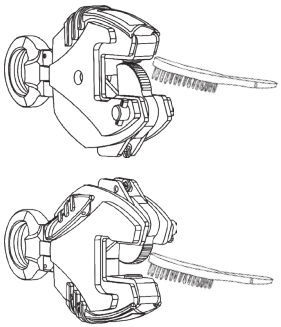
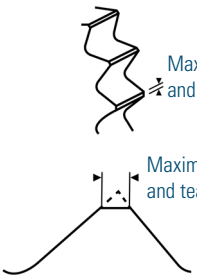
CAT C SEVERE SERVICE

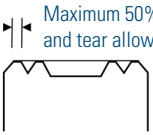
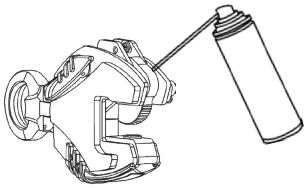
Years				1				2				3				4				5
Months	3	6	9	12	15	18	21	24	27	30	33	36	39	42	45	48	51	54	57	60
1	DAILY																			
2	DAILY TO WEEKLY																			
3																				
4																				

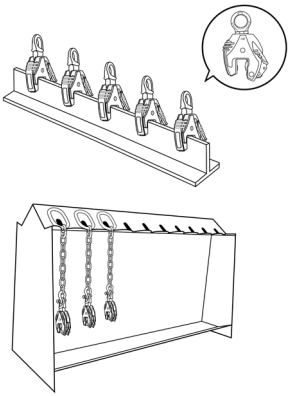
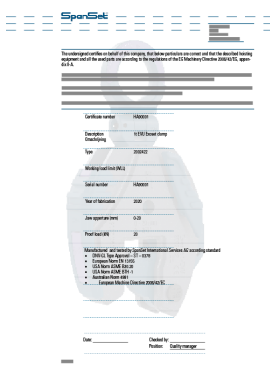
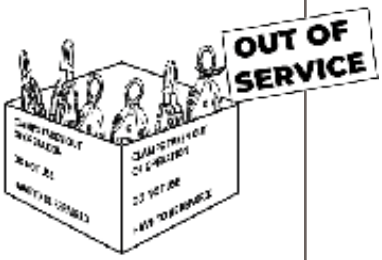
11. Inspection, maintenance and storage

After finishing work for the day, perform the required maintenance for the next round of work. according to the following procedures. Then store the clamps in an approved location.

Category A, B and C

Method for attaching and chec-king the clamps	Reason	Precautions and action to take
	Remove any paint and sludge using a cloth and wire brush. Remove dried paint using a wire brush.	If it cannot be removed, replace the camsegment and pivot.
For the maximum allowed wear and tear for all types of Exoset pivots and camsegments see below. 		
 Maximum 50%wear and tear allowed Maximum 50%wear and tear allowed	For all type Exoset camsegment the following wear and tear is allowed. As 50% of one teeth is damaged or worn the camsegment has to be replaced.	Replace camsegment 

Method for attaching and chec-king the clamps	Reason	Precautions and action to take
 	For all type Exoset pivots the following wear and tear is allowed. As 50% of one teeth is damaged or worn the pivot has to be replaced.	Replace pivot  
	Apply machine oil and wipe off any grease found on the camsegment and pivot. Lubricate all moving parts.	If any grease is left on the camsegment and pivot there is a danger that the object being lifted may slip
	The pivot and camsegment are very hard **INSTRUCTION** **Always store the clamps in open position!**	Make sure camsegment and pivot do not touch each other

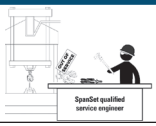
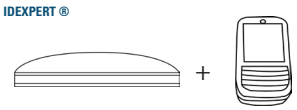
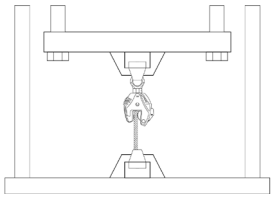
Method for attaching and chec-king the clamps	Reason	Precautions and action to take
	If clamps are left outdoors or in a place where the temperature varies a lot they may get rusty due to rain or condensation. Then they can no longer be counted on to function correctly.	Store clamps indoors in open position.
	If you do not register the clamps, we cannot perform inspections or give you information about their inspec-tion. Poor clamp maintenance is often the reason that accidents occur.	Register the SpanSet Exoset clamp at your SpanSet partner.
	When clamps are damaged or broken take them out of service.	Clamp must be removed from service. Store and label clamps that must be repaired. This prevents that the clamps can be used by mistake.

12. Testing and re-certifying

Testing and re-certifying

Prior to initial use repaired Exoset safety lifting clamps should be inspected and tested. Tests shall be done by a SpanSet Authorized repair engineer, or a designated person under the direction of a SpanSet Authorized repair engineer.

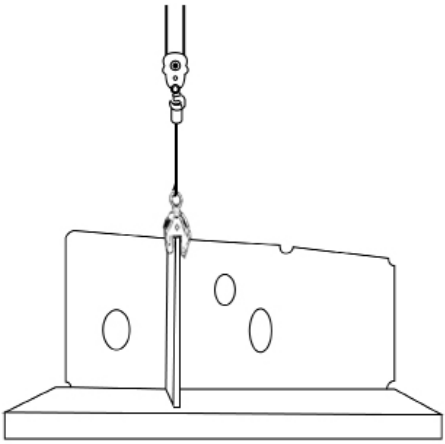
The load test shall consist of the following operations as a minimum requirement:

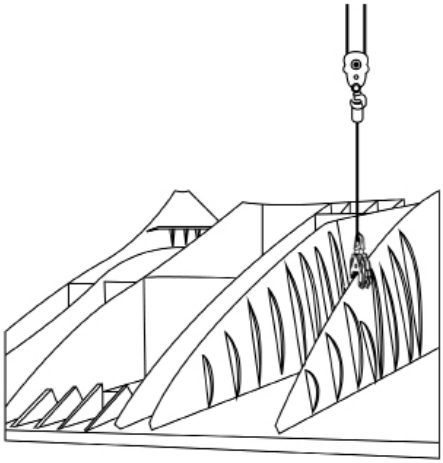
	Action	
1	Test load the Exoset safety lifting clamp according Spanset regulations, see table pre scripted test load below. Only an Authorised SpanSet repair engineer shall perform adjustments and tests when required.	
2	After the test load is released, visually inspect the clamp for deformation, cracks, or other defects	
3	Dated records of repairs and replacements should be made. All Exoset Safety Lifting Clamps are RFID equiped.	
	Test bench	

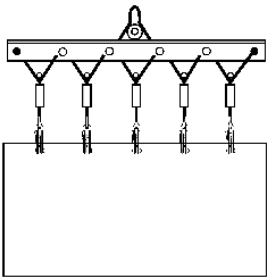
Prescripted test load

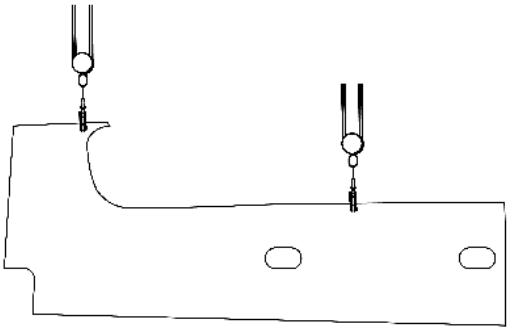
	WLL (t)	Test load (t)
0,5t-EVU	0.5	1
1t-EVU	1	2
2t-EVU	2	4
3t-EVU	3	6
5t-EVU	5	10
6t-EVU	6	12

13. Examples of use - ship yard

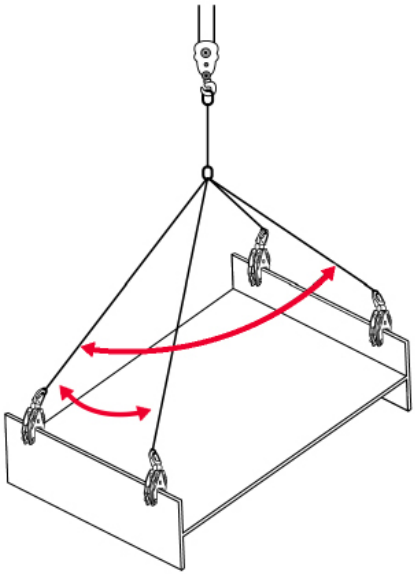


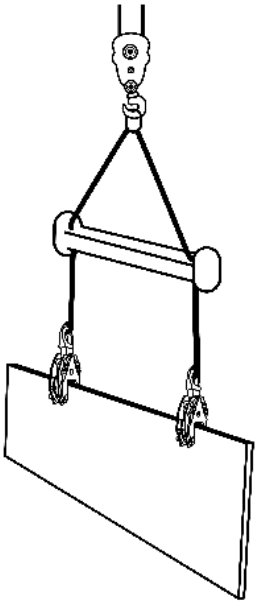


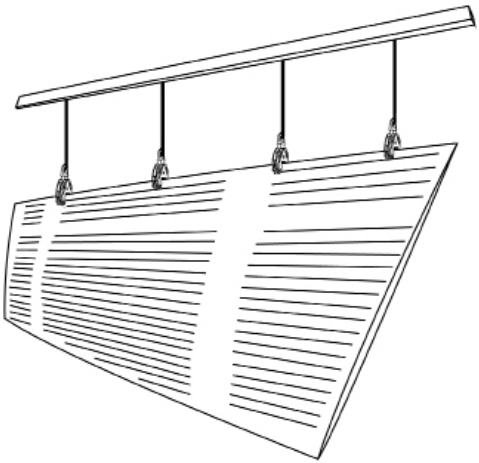


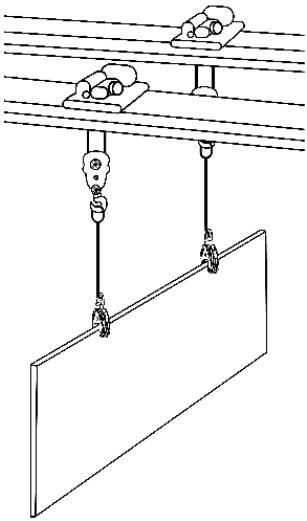


13. Examples of use - sheet metal contractor

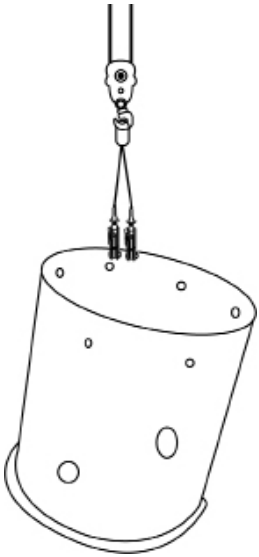


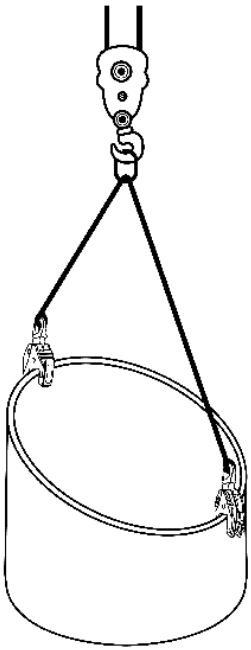


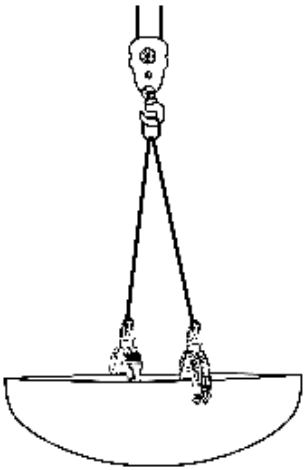




13. Examples of use - tank and vessel production







14. Maintenance- and overhaul kits

Ordering numbers

	Model	WLL (t)	Order number clamp	Order number Maintenance kit	Order number Overhaul kit	Order number grip	Order number hoisting eye
	0,5-EVU	0.5	2002421	2011063	2011069	2011075	2012526
	1-EVU	1	2002422	2011064	2011070	2011076	2012525
	2-EVU	2	2002423	2011065	2011071	2011077	2012527
	3-EVU	3	2002424	2011066	2011072	2011078	2012528
	5-EVU	5	2002425	2011067	2011073	2011079	2012529
	6-EVU	6	2002426	2011068	2011074	2011080	2012530
	For very hard materials - with universal hoisting eye						
	0,5-EVU H	0.5	2012561	2016902	2016915	2011075	2012526
	1-EVU H	1	2012562	2016903	2016916	2011076	2012525
	2-EVU H	2	2012563	2016904	2016917	2011077	2012527
	3-EVU H	3	2012564	2016905	2016918	2011078	2012528
	5-EVU H	5	2012565	2016906	2016919	2011079	2012529
	6-EVU H	6	2012565	2016907	2016920	2011080	2012530
	For stainless steel - with universal hoisting eye						
	0,5-EVU S	0.5	2012567	2016908	2016921	2011075	2012526
	1-EVU S	1	2012568	2016909	2016922	2011076	2012525
	2-EVU S	2	2012569	2016910	2016923	2011077	2012527
	3-EVU S	3	2012570	2016911	2016924	2011078	2012528
	5-EVU S	5	2012571	2016912	2016925	2011079	2012529
	6-EVU S	6	2012572	2016913	2016926	2011080	2012530

Maintenance kit

Overhaul kit

Descr.	Body complete	Hoisting eye complete	Camsegment complete	Latch complete	Spring for latch complete	Camsegment shaft complete	Hoisting eye shaft complete	Pivot complete	Grip complete
Part no.	1000	2000	3000	4000	5000	6000	7000	8000	9000

Optimum availability of spare parts and kits

The modular design of an Exoset Safety Lifting Clamp allows a quick and accurate inspection of the Exoset clamp as well as a cost-effective replacement of parts. Maintenance- and Overhaul kits are available for al Exoset clamps.

SpanSet®

15. IDXpert

IDXpert Net provides you with a robust asset management and tracking system

- Utilises the latest RFID technology to automate the routine inspection process of your equipment.
- Allows online access to your certificates and inspection records wherever you are via a secure web portal
- Uniquely identifies all items of equipment with RFID tags to reduce inspection times
- Provides an audit facility via a hand held device to check the inspection status of equipment

Examples of Equipment that can be benefit from IDXpert Net management

- Exoset safety lifting clamps
- Working at Height personal protective equipment
- Fall arrest blocks
- Working at height hardware and connectors
- Synthetic lifting slings
- Chain slings and wire ropes
- Hoists, shackles and lifting accessories
- Cranes
- Fork Lift Trucks

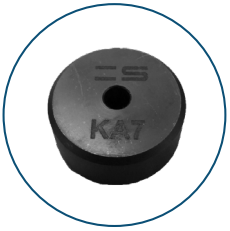
Most SpanSet products are equipped with IDXpert transponders, for example Exoset safety clamps and lifting slings. Other products can also be retrofitted with an IDXpert transponder. There are different tag options for different applications. For more information, see www.spanset.com.

Traceability

The body and all load-bearing parts of an Exoset safety lifting clamp are permanently marked with SpanSet short logo, serial number, batch code, test date and/or year of manufacture. Identification points such as clamp type, load capacity, jaw width (in mm and inches) are firmly stamped on the body of an Exoset safety lifting clamp.

Camsegment shaft

Hoisting eye shaft



Pivot

16. Training programs

Sales Training:

Target group:	Sales & Service engineers, Distributors
Objective:	General introduction SpanSet followed by an extensive product training on how to use the clamps and applications areas
Training:	Presentation explaining the clamps, by using practical examples and questions
Duration:	90 -120 minutes, max. of 10 persons per session
Trainer:	SpanSet certified trainer
Location:	SpanSet office, onsite or at distributor's office

User Training:

Target group:	Shop floor workers and safety employees
Objective:	Safe working with lifting clamps. Using the right clamp, in the right way, at the right place
Training:	Presentation explaining the clamps, by using practical examples and questions
Duration:	90 -120 minutes, max. of 15 persons per session
Trainer:	SpanSet certified trainer
Location:	Onsite at customer's premises

Repair Training:

Target group:	Service engineers or SpanSet authorised dealers
Objective:	Obtain qualification as SpanSet certified repair station
Training:	Inspection, disassembling and assembling clamps Inspecting tolerances by using SpanSet repair manual Test of total procedure: inspection, disas-sembling, assembling antesting General applications of Exoset safety lifting clamps
Duration:	Full day training: 8:30- 16:30 Maximum of 3 persons per training
Trainer:	SpanSet certified trainer
Location:	SpanSet World wide

Certificats

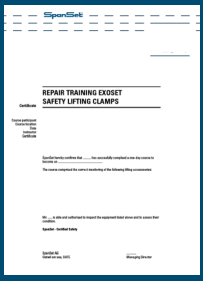
SALES TRAINING EXOSET SAFETY LIFTING CLAMPS


SALES TRAINING EXOSET
SAFETY LIFTING CLAMPS

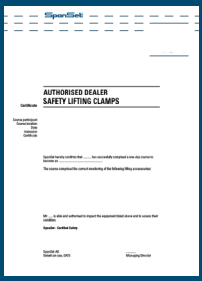
USER TRAINING EXOSET SAFETY LIFTING CLAMPS


USER TRAINING EXOSET
SAFETY LIFTING CLAMPS

REPAIR TRAINING EXOSET SAFETY LIFTING CLAMPS


REPAIR TRAINING EXOSET
SAFETY LIFTING CLAMPS

AUTHORISED DEALER SAFETY LIFTING CLAMPS


AUTHORISED DEALER
SAFETY LIFTING CLAMPS

Afterword

We have prepared this instruction manual hoping that you will be able to use our Exoset clamps correctly and routinely for a long time. We want to improve the safety and efficiency of your operations. The safe use of lifting equipment is ensured by using correct working procedures. selecting clamp types appropriate to the sling work. and maintaining the lifting equipment correctly. The details in this manual are intended for users performing standard sling work. However. since these details may be different from the optimum conditions at your work site (depending on the working details). please contact us if you have any doubts about the details in the manual or if you find any errors in our descriptions.

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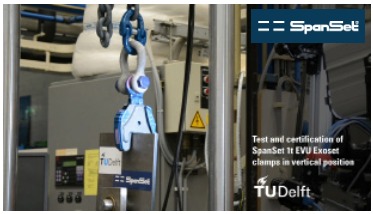
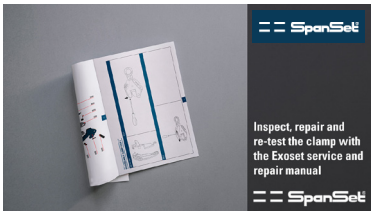
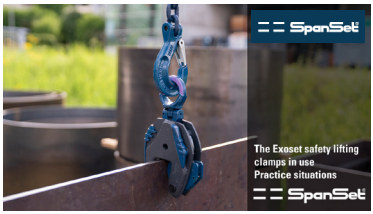
More from SpanSet



Watch the videos of testing the clamps on www.spanset.com





Watch the videos of repair and practice situations of the clamps on www.spanset.com

www.spanset.com

SpanSet certified safety

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