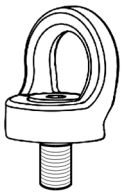
OPERATING INSTRUCTIONS

LIFTING POINTS „XKE-POINTS“

TWN 1884

Original in compliance with machinery directive 2006/42/EC



1 DESCRIPTION AND INDENTED USE

THIELE screw-type lifting points “XKE-Points” are intended to securely connect components/loads with slings, e.g. with chain slings according to EN 818-4 or with lashings according to EN 12195.

They are intended for installation in steel, aluminium or non-ferrous component constructions.

The “XKE-Points” meet EC Machinery Directive 2006/42/EC requirements and feature a safety factor of at least 4 based on the working load limit (WLL).

The „XKE-Points“ are marked with the CE symbol. They are also marked with the working load limit in tons, the thread size, manufacturers mark “H4” and traceability code.

The „XKE-Points“ are designed to withstand 20 000 dynamic load changes under maximum load conditions. In the event of higher loads (e.g. multi-shift/automatic operation) the working load limit must be reduced.

The „XKE-Points“ must exclusively be used

- within the limits of their permissible working load limit,
- within the temperature limits prescribed,
- with suitable screws (see screw data) and fitted directly to the component.

The working load limits depending on the number of legs and inclination angles are shown in the table in chapter 4.2.

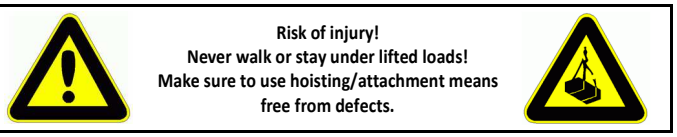
The lifting points are normally not intended for the transportation of persons.

The occasional turning and rotating of loads is permitted. The permanent turning and rotating of loads is not permitted.

Using the lifting points exclusively for lashing the lashing capacity (LC) is calculated by doubling the working load limit.

An alternating use for lifting and lashing is not allowed.

2 SAFETY NOTES



- Operators, fitters, and maintenance personnel must in particular observe the operating instructions also from the used sling chain assemblies, documentations DGUV V 1, DGUV R 109-017 and DGUV I 209-013 issued by the German Employers’ Liability Insurance Association (DGUV), as well as the operating instructions of the loads concerning advise for lifting.
- In the Federal Republic of Germany, the Operational Safety Ordinance (BetrSichV) has to be implemented and the Technical Rule for Industrial Safety TRBS 1201, in particular annex 1, chapter 2 "Special regulations for the use of working equipment for lifting loads" must be observed.
- Outside the Federal Republic of Germany the specific provisions issued locally in the country where the items are used must also be observed.
- The directions given in these operating instructions and specified documentations relating to safety, assembly, operation, inspection, and maintenance must be made available to the respective persons.
- Make sure these operating instructions are available in a place near the product during the time the equipment is used. Please contact the manufacturer if replacements are needed. See also chapter 11.
- When performing work make sure to wear your personal protective equipment!
- **Improper assembly and use may cause personal injury and/or damage to property.**
- Assembly and removal as well as inspection and maintenance must exclusively be carried out by skilled and authorized persons.
- **Before each use, check that the upper parts of the lifting points can be turned easily and that the turning movement does not occur in the screw connection!**
- **Operators must carry out a visual inspection and, if necessary, a functional test of the safety equipment before each use.**
- Never install more than one fastener to a lifting point.
- Structural changes are impermissible (e.g. welding, bending).
- Never use worn-out, bent or damaged lifting points.
- Only lift loads the mass of which is less than or equal to the working load limit of the lifting points.
- Do not use force when mounting/positioning the lifting points.
- Only lift loads that are freely movable and not attached or fastened.
- Do not start lifting before you have made sure the load has been correctly attached.
- Make sure no one including you (operator) is in the way of the moving load (hazard area).
- During lifting/hoisting make sure your hands or other body parts do not come into contact with hoisting means. Only remove hoisting means manually (use your hands).
- Avoid impacts, e.g. due to abruptly lifting loads with chain in slack condition.
- Never move a suspended load over persons.
- Never cause suspended loads to swing.
- Always monitor a suspended load.
- Put the load only down in flat places/sites where it can be safely deposited.
- Take care for sufficient place for the personnel to move when choosing the route of transportation and storage location. Danger to life and risk of injury by crushing hazards!
- In the event of doubts about the use, inspection, maintenance or similar things contact your safety officer or the manufacturer.

THIELE will not be responsible for damage caused through non-observance of the instructions, rules, standards and notes indicated!

Working under the influence of drugs, medications impairing the sense and/or alcohol is strictly forbidden!

3 COMMISSIONING

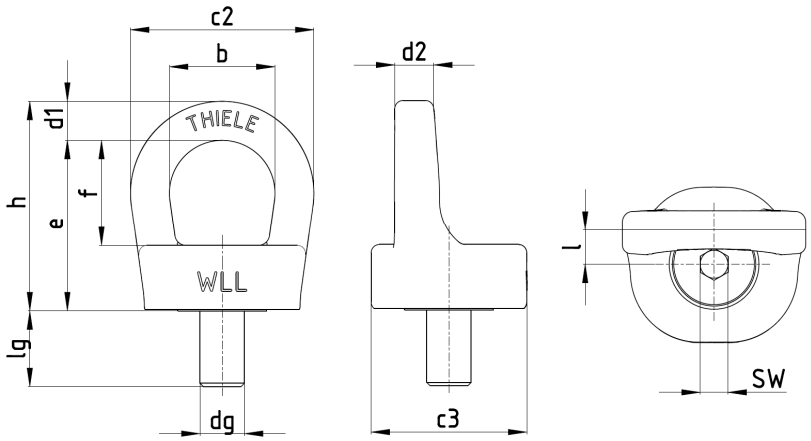
Prior to using the lifting points for the first time make sure that

- the lifting points comply with the order and have not been damaged,
- test certificate, statement of compliance, and operating instructions are at hand,
- markings correspond with what is specified in the documentation,
- inspection deadlines and the qualified persons for examinations are determined,
- visibility and functional testing are carried out and documented,
- documentations are safely kept in an orderly manner.

Dispose of the packing in an environmentally compatible way according to local rules.

4 TECHNICAL DATA

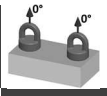
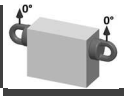
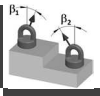
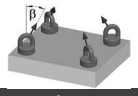
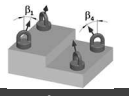
4.1 Dimensions



Thread size	Working load limit (WLL)	Article no.	Dimensions [mm]											Tightening torque [1]	Mass
dg [mm]	[t]		b	c2	c3	e	f	h	lg	d1	d2	l	SW	[Nm]	[kg]
M 8	0,3	F38005	26	45	37	40	26	50	16	9,5	9,5	8	6	13	0,18
M 10	0,5	F38006	26	45	37	40	26	50	16	9,5	9,5	8	6	25	0,18
M 12	1,0	F38007	30	51	43	47	30	57	18	11	11	10	8	40	0,29
M 16	1,7	F38010	38	66	56	62	38	76	27	14	14	13	10	90	0,66
M 20	2,6	F38020	42	74	61	70	42	86	33	16	16	15	12	170	0,99
M 24	3,5	F38030	51	85	65	82	51	99	39	17	18	16	14	280	1,34
M 30	6,0	F38040	62	104	82	97	62	118	45	21	22	20	19	550	2,29
M 36	8,0	F38050	75	131	92	116	75	144	55	28	28	25	19	900	4,18
M 42	11,5	F38060	95	173	122	142	95	181	64	39	39	33	22	1 400	8,89
M 45	13,0	F38070	95	173	122	142	95	181	74	39	39	33	24	1 600	9,12
M 48	14,5	F38080	95	173	122	142	95	181	74	39	39	33	27	1 900	9,21

1) See chapter 5.2

4.2 Working load limit (WLL) depending on number of legs (lifting points) and inclination angle

Attachment type											
Number of legs		1-Leg	2-Leg	1-Leg	2-Leg	2-Leg		2-Leg	3-/4-Leg		3-/4-Leg
Inclination angle β		0° ±5°	0° ±5°	0° ±5°	0° ±5°	0°- 45°	45°- 60°	asym.[2]	0°- 45°	45°- 60°	asym.[2]
WLL [t]	Thread [mm]	MAXIMUM TOTAL LOAD [t] [3]									
0,3	M 8	0,3	0,6	0,3	0,6	0,4	0,3	0,3	0,6	0,45	0,3
0,5	M 10	0,5	1,0	0,5	1,0	0,7	0,5	0,5	1,0	0,75	0,5
1,0	M 12	1,0	2,0	1,0	2,0	1,4	1,0	1,0	2,1	1,5	1,0
1,7	M 16	1,7	3,4	1,7	3,4	2,4	1,7	1,7	3,6	2,5	1,7
2,6	M 20	2,6	5,2	2,6	5,2	3,6	2,6	2,6	5,5	3,9	2,6
3,5	M 24	3,5	7,0	3,5	7,0	4,9	3,5	3,5	7,4	5,2	3,5
6,0	M 30	6,0	12,0	6,0	12,0	8,4	6,0	6,0	12,7	9,0	6,0
8,0	M 36	8,0	16,0	8,0	16,0	11,3	8,0	8,0	16,9	12,0	8,0
11,5	M 42	11,5	23,0	11,5	23,0	16,2	11,5	11,5	24,3	17,2	11,5
13,0	M 45	13,0	26,0	13,0	26,0	18,3	13,0	13,0	27,5	19,5	13,0
14,5	M 48	14,5	29,0	14,5	29,0	20,5	14,5	14,5	30,7	21,7	14,5

2) Reduced working load limits according to DIN 685-5

3) Without consideration of further lifting means

5 ASSEMBLY AND REMOVAL

5.1 Preparations

The mounting location for each lifting point must ensure that

- the load can take the forces safely to be applied without suffering deformation,
- the lifting point can be assembled flush,
- no areas of danger are created (crushing point, shearing point),
- transportation is not restrained by overhang,
- deflections of sling components are avoided,
- incorrect use is avoided,
- the sling cannot be damaged, for example by sharp edges,
- the lifting point can be used easily.

5.2 Assembly

The useful depth of the thread must enable the lifting points to be safely screwed in. Use only the delivered screws!

The threaded hole must be perpendicular to the screw-on surface in the load. The depth of the thread "L" of the component must be at least as follows:

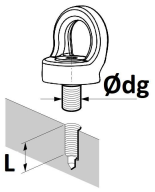
L = 1,0 x dg for steel (yield stress $R_e \geq 235$ N/mm²)

L = 1,25 x dg for castings

L = 2,0 x dg for aluminium

L = 2,5 x dg in aluminium-magnesium-alloys

(L = depth of thread; dg = thread diameter)



- Make sure the threads of the lifting point and in the component are clean and dry.
- If lifting points should remain on the component a thread locker has to be used.
- For through-boltings, the nut must be secured against loosening.
- **Single lifting operation WITHOUT turning or rotating:**
  Hand-tighten the screws with a suitable spanner for screws with hexagon socket according to DIN.
  It must be ensured that the screws of the lifting points cannot loosen by themselves.
- **Lifting WITH turning or rotating as well as multiple lifting operations:**
  Tighten the screws to the tightening torques specified in the technical data.
  However, repeated lowering of the load to the ground requires a new check!
- Lifting points that remain on the loads should be tightened to the tightening torques specified in the technical data.
- Chamfers on the threaded holes are not required.

6 USE IF DIFFERENT SCREWS

If local circumstances dictate that different screws must be used from those supplied with the installation or listed in chapter 9, the operator must ensure that

- these fasteners conform to the specified diameter and strength class,
- they can achieve the minimum required screw-in depth,
- they are 100 % crack tested,
- each bolt has a proven notched impact energy of min. 36 J as a mean value of three samples tested at -20 °C or at the lowest fitting temperature, if this is below -20 °C, and that none of the samples fall below 25 J,
- written confirmation of the crack test and impact energy results is enclosed with the technical documentation.

7 CONDITIONS OF USE

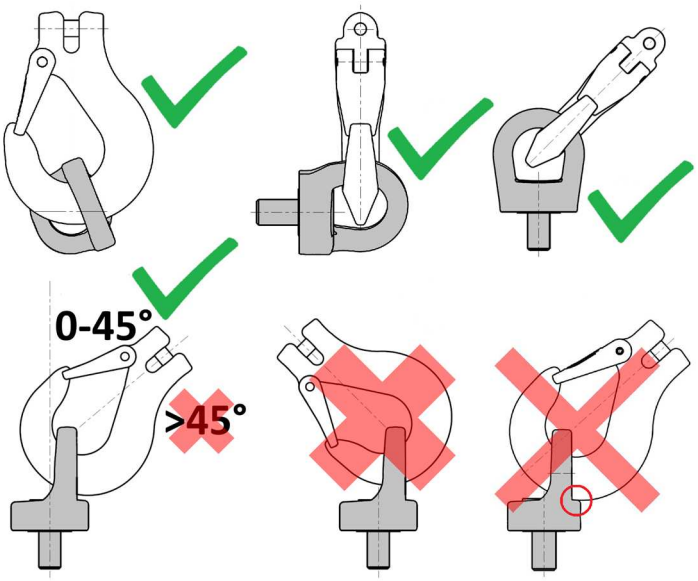
7.1 Normal use

The force must be applied in the longitudinal direction of the attached component (e.g. hook).

The attached component (e.g. hook) must always be able to move freely. Supporting the component at the lifting point is not permissible.

Using 4-leg chain slings may cause higher risk because only 2 opposite legs carrying the load. Check the working load limit of lifting points and chain sling carefully and chose if necessary bigger sizes.

The following illustrations show typical applications and foreseeable misuse:



7.2 Use in through holes

If lifting points are fastened by means of nuts in holes (e.g. of metal sheets), the following conditions must be observed:

- Turning or rotating the load is not permitted.
- The strength class of the nuts must be 10 or higher (thread size M12: class 12).
- The chamfer at the end of the screw thread must protrude from the nut.
- It must be ensured that the component to be lifted is suitable to withstand the force to be applied safely and without deformation, including the corresponding safety factors.
- Suitable action must be taken to ensure that the nut cannot loosen unintentionally, e.g. suitable torque or threadlocker.

7.3 Influence of temperature

The permissible working load limit of the lifting points reduces at elevated temperatures. The reduced working load limit figures shown in the following table shall only apply for short-term use at the temperatures indicated.

Temperature range	Remaining working load limit (WLL)
-20 °C ≤ t ≤ 100 °C	100 %
100 °C < t ≤ 200 °C	85 %
200 °C < t ≤ 250 °C	80 %
250 °C < t ≤ 300 °C	75 %

If a lifting point has been exposed to temperatures exceeding the maximum values specified, it must no longer be used.

Use below -40 °C is generally not permitted.

Take care for a loss of lubricant depending on several fitting positions and higher temperatures. A higher wear may occur. Shorten the inspection interval for that case.

7.4 Environmental influence

Lifting points must not be used in environments where acids, aggressive or corrosive chemicals or their fumes are present.

Hot-dip galvanizing or a galvanic treatment is prohibited as well.

8 INSPECTIONS, MAINTENANCE AND DISPOSAL

8.1 General

Inspections and maintenance must be arranged for by the owner!

Inspection deadlines shall be determined by the owner!

Inspections must be carried out and documented by competent persons regularly but at least once a year, or more frequently if the lifting points are in heavy-duty service. After three years at the latest they must additionally be examined for cracks. A load test shall never be considered a substitute for this examination.

The results of the inspection shall be entered into a register (DGUV I 209-062 or DGUV I 209-063) to be prepared when a lifting point is firstly used. The register will show characteristic data of the lifting points and other components as well as identity details.

Immediately stop using lifting points that show the following defects:

- missing or illegible identification/marking
- deformation, elongation or fractures
- cuts, notches, cracks, incipient cracks, pinching
- limited rotatability (dry or stuck ball bearing)
- heating beyond permissible limits
- severe corrosion
- defect screw or thread

8.2 Inspection service

THIELE offers inspection, maintenance and repair services for lifting points performed by trained and competent personnel.

8.3 Maintenance

Maintenance and repair work must only be performed by competent persons.

Minor notches and cracks at suspension links may be eliminated by careful grinding observing the maximum cross section reduction requirement of 10 % and avoid making more severe cuts or scores.

Regreasing of the ball bearing is not intended. Replace lifting points with recognisably dry ball bearings.

All maintenance and repair activities are to be documented.

8.4 Disposal

All components and accessories of steel taken out of service are to be scrapped in line with local regulations and provisions.

9 SPARE PARTS

Only use original THIELE spare parts. Exclusively use original THIELE screws, because these are made to meet special requirements.

Thread size	Article no.	Screw data
M 8	Z11727	DIN 7991 M8 x 30 10.9
M 10	Z11728	DIN 7991 M10 x 30 10.9
M 12	Z11681	DIN 7991 M12 x 35 12.9
M 16	Z10869	DIN 7991 M16 x 50 10.9
M 20	Z11200	DIN 7991 M20 x 60 10.9
M 24	Z11199	DIN 7991 M24 x 70 10.9
M 30	Z11722	DIN 7991 M30 x 80 10.9
M 36	Z11747	DIN 7991 M36 x 100 10.9
M 42	Z11804	DIN 7991 M42 x 110 10.9
M 45	Z11805	DIN 7991 M45 x 120 10.9
M 48	Z11806	DIN 7991 M48 x 120 10.9

10 STORAGE

Lifting points have to be stored in dry locations at temperatures ranging between 0 °C and +40 °C.

11 THIELE OPERATING AND MOUNTING INSTRUCTIONS

Current operating and mounting instructions are available as a PDF download on the homepage.

12 IMPRINT

THIELE GmbH & Co. KG
Werkstrasse 3
58640 Iserlohn, Germany
Tel.: +49(0)2371/947-0
Email: info@thiele.de

13 DECLARATION OF CONFORMITIY

EC-DECLARATION OF CONFORMITY

acc. to Machinery Directive 2006/42/EG, Annex II A for a machine

THIELE GmbH & Co. KG herewith declares as manufacturer that the products

Lifting points „XKE-Points“, TWN 1884

are placed on the market in the form of a complete machine by THIELE together with the relevant test certificate and are in compliance with the applicable provisions of the CE Machinery Directive 2006/42/CE.

The following harmonized standards have been observed:

- EN ISO 12100 Safety of machinery - General principles for design - Risk assessment and risk reduction
- EN 1677-1 Components for slings - Safety- Part 1: Forged steel components, Grade 8

Other standards and specifications have also been observed as follows:

- GS-HM 36 DGUV- Principles for the testing and certification of lifting points, Status 09/2021 (DGUV = German Employers’ Liability Insurance Association)

This declaration/statement is not meant to warrant any product properties. Safety notes and instructions pertinent to the products must be observed.

Responsible for the documentation
Rene Völz
(Head of QA an EP)
Tel.: +49(0)2371/947-541

Iserlohn 31st March 2023
Dr. Michael Hartmann
(Managing director)