

The following operating instructions must always be followed to avoid the risk of personal injury or property damage.

Do not use a lifting point "XKE-Point" before reading these operating instructions.

1. ABOUT THIS INSTRUCTION

These operating instructions describe in particular how screw type lifting points "XKE-Points" according to TWN 1884 (TWN = THIELE Shop Standard) are to be safely used for lifting purposes. To comply with these instructions is essential to help avoiding hazards and increases the reliability and service life of the lifting points.



DANGER! Indicates a hazardous situation, which, if not avoided, will result in death or serious injury.



WARNING! Indicates a hazardous situation, which, if not avoided, could result in death or serious injury.



CAUTION! Indicates a hazardous situation, which, if not avoided, could result in minor or moderate injury.

NOTICE

NOTICE! Is used to address practices not related to physical injury.

SAFETY INSTRUCTIONS

SAFETY INSTRUCTIONS signs indicate specific safety-related instructions or procedures.

Definitions

Working Load Limit (WLL)

The maximum load, which a lifting point is designed to support.



NOTICE

Read ASME B30.9 for sling inspection criteria.
Read ASME B30.26 "Rigging Hardware",
Chapters 26-0, 26-1, 26-4.

2. BASIC SAFETY REQUIREMENTS



To prevent the risk of injury never walk or stay under lifted loads!

The working load limit must not be exceeded!

Lifting points as well as lifting and attachment means to be used must be free from defects!

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

SAFETY INSTRUCTIONS

- Operators, fitters and maintenance personnel must in particular observe the operating instructions of the used sling assembly. The operating instructions for the load, if it contains instructions for lifting, must also be observed.
- The specific safety and operating regulations and standards issued locally in the country where the items are used must 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 persons operating and using the lifting points.
- These operating instructions must be 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 12.
- During operation work, wear your personal protective equipment!
- **Improper assembly and use may cause personal injury and/or damage to property.**
- Assembly and removal as well as inspections and maintenance must exclusively be carried out by skilled, qualified, trained and authorized persons only.
- **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.**

**SAFETY
INSTRUCTIONS**

- Never install more than one connecting component to a ring.
- Structural changes are impermissible (e.g. welding, bending).
- Never use worn-out, bent or damaged lifting points.
- Only lift loads that do not exceed the working load limit of the lifting points.
- In case of using a 3- or 4-leg chain sling, never allow for sling[#] angles of less than 30° and in excess of 75°.
- Do not use force when mounting/positioning the attachment components.
- 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 and balanced.
- **No one including you (operator) must be in the way of the moving load (hazard area).**
- During lifting your hands or other body parts must not come into contact with lifting means. Only remove lifting 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.
- Assume 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 or concerns about the proper and safe use, inspection, maintenance or similar things contact your safety officer or the manufacturer.

THIELE is not responsible for damage caused by non-observance of the instructions, rules, standards and notes indicated!

As a rule, lifting points are not permitted for the transportation of persons.

3. DESCRIPTION AND INTENDED USE

THIELE lifting points “XKE-Points” are intended to securely connect components/loads with slings, e.g. with chain slings according to ASTM A 906/A 906 M.

They are intended for installation to steel, aluminum or non-ferrous metal component structures.

THIELE lifting points “XKE-Points” meet EC Machinery Directive 2006/42/EC requirements and feature a safety factor of at least 4 based on working load limit.

They are signed with the nominal working load limit in tons, the thread size, manufacturer’s mark “H4” and traceability code.

THIELE lifting points “XKE-Point” 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 and fitted directly to the component.

The working load limits depending on the number of legs and sling[#] angles are shown in the table in chapter 5.2.

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

The occasional turning and rotating of loads is permitted.

The permanent turning and rotating of loads is not permitted.

An alternating use for lifting and lashing is not allowed.

4. COMMISSIONING

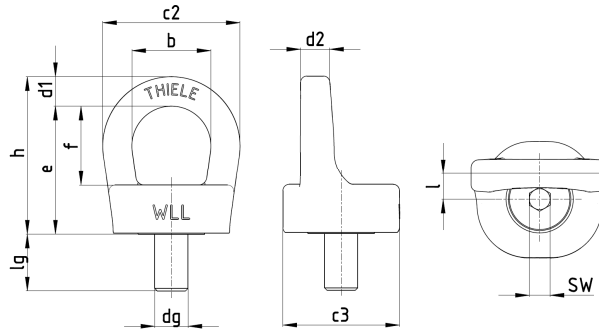
Prior to using the components for the first time assure that

- the components comply with the order and have not been damaged,
- test certificates 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 testings are carried out and documented,
- documentation is safely kept in an orderly manner.

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

5. TECHNICAL DATA

5.1 Dimensions



Thread size dg [mm]	Nominal Working load limit (WLL)		Article no.	Dimensions [mm]											Tightening torque ¹⁾ [Nm]	Mass [kg]
	[t]	[lbs] #		b	c2	c3	e	f	h	lg	d1	d2	l	SW		
M 8	0,3	700	F38005	26	45	37	40	26	50	16	9,5	9,5	8	6	13	0,18
M 10	0,5	1 100	F38006	26	45	37	40	26	50	16	9,5	9,5	8	6	25	0,18
M 12	1,0	2 200	F38007	30	51	43	47	30	57	18	11	11	10	8	40	0,29
M 16	1,7	3 700	F38010	38	66	56	62	38	76	27	14	14	13	10	90	0,66
M 20	2,6	5 700	F38020	42	74	61	70	42	86	33	16	16	15	12	170	0,99
M 24	3,5	7 700	F38030	51	85	65	82	51	99	39	17	18	16	14	280	1,34
M 30	6,0	13 200	F38040	62	104	82	97	62	118	45	21	22	20	19	550	2,29
M 36	8,0	17 600	F38050	75	131	92	116	75	144	55	28	28	25	19	900	4,18
M 42	11,5 #	25 400	F38060	95	173	122	142	95	181	64	39	39	33	22	1 400	8,89
M 45	13,0 #	28 700	F38070	95	173	122	142	95	181	74	39	39	33	24	1 600	9,12
M 48	14,5 #	32 000	F38080	95	173	122	142	95	181	74	39	39	33	27	1 900	9,21

1) See chapter 5.2

5.2 Load table for different number of legs/lifting points and sling angles

Attachment type	1-Leg		2-Legs		2-Legs			2-Legs		3-/4-Legs			3-/4-Legs
	Number of legs	Sling angle α	Number of legs	Sling angle α	Number of legs	Sling angle α	Number of legs	Sling angle α	Number of legs	Sling angle α	Number of legs	Sling angle α	Number of legs
Thread [mm]	Nom. WLL [lbs]	$\alpha=90^\circ \pm 5^\circ$	$\alpha=90^\circ \pm 5^\circ$	$\alpha=90^\circ \pm 5^\circ$	$\alpha=90^\circ \pm 5^\circ$	$30^\circ \leq \alpha < 45^\circ$	$45^\circ \leq \alpha < 60^\circ$	$60^\circ \leq \alpha < 75^\circ$	asym. ²⁾	$30^\circ \leq \alpha < 45^\circ$	$45^\circ \leq \alpha < 60^\circ$	$60^\circ \leq \alpha < 75^\circ$	asym. ²⁾
MAXIMUM TOTAL LOAD [lbs] # 3)													
M 8	700	700	1 300	700	1 300	700	900	1 100	700	1 000	1 400	1 700	700
M 10	1 100	1 100	2 200	1 100	2 200	1 100	1 600	1 900	1 100	1 700	2 300	2 900	1 100
M 12	2 200	2 200	4 400	2 200	4 400	2 200	3 100	3 800	2 200	3 300	4 700	5 700	2 200
M 16	3 700	3 700	7 500	3 700	7 500	3 700	5 300	6 500	3 700	5 600	8 000	9 700	3 700
M 20	5 700	5 700	11 500	5 700	11 500	5 700	8 100	9 900	5 700	8 600	12 200	14 900	5 700
M 24	7 700	7 700	15 400	7 700	15 400	7 700	10 900	13 400	7 700	11 600	16 400	20 000	7 700
M 30	13 200	13 200	26 500	13 200	26 500	13 200	18 700	22 900	13 200	19 800	28 100	34 400	13 200
M 36	17 600	17 600	35 300	17 600	35 300	17 600	24 900	30 500	17 600	26 500	37 400	45 800	17 600
M 42	25 400	25 400	50 700	25 400	50 700	25 400	35 900	43 900	25 400	38 000	53 800	65 900	25 400
M 45	28 700	28 700	57 300	28 700	57 300	28 700	40 500	49 600	28 700	43 000	60 800	74 500	28 700
M 48	32 000	32 000	63 900	32 000	63 900	32 000	45 200	55 400	32 000	48 000	67 800	83 100	32 000

2) Reduced working load limits according to DIN 685-5 (DIN = German institute for standardization) #

3) Without consideration of the used chain sling #

6. ASSEMBLY AND REMOVAL

6.1 Preparations

All components to be installed or used must be in perfect condition and the relevant working load limits of all parts must accommodate the respective load to be handled.

The mounting location for each lifting point has to ensure that

- the load can take the forces including safety factors safely to be applied without suffering deformation,
- the lifting point can be assembled flush,
- no areas of danger are created (crushing point, shearing point),
- lifting and moving is not restrained by overhang,
- used lifting means (e.g. hooks) are freely movable and will not be bended,
- incorrect use is avoided,
- the sling cannot be damaged, for example by sharp edges,
- lifting point can be used easily.

6.2 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:

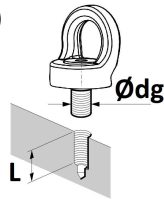
$L = 1.0 \times d$ for steel (yield stress $R_e \geq 235 \text{ N/mm}^2$)

$L = 1.25 \times d$ for castings

$L = 2.0 \times d$ for aluminum

$L = 2.5 \times d$ in aluminum-magnesium-alloys

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



- Make sure the threads of the lifting point and in the component are clean and dry.
- For lifting points have to remain on the component a usual fluid safety agent for screws 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.

6.3 Removal

Unload the lifting point and remove any lifting attachments connected to it. Turn the screw counterclockwise and remove the lifting point. Assure that no damage occurs during transport and storage.

7. CONDITIONS OF USE

! WARNING

Continuous or long-term turning or rotating is not allowed.

An alternating use for lifting and lashing is not allowed.

7.1 Normal use

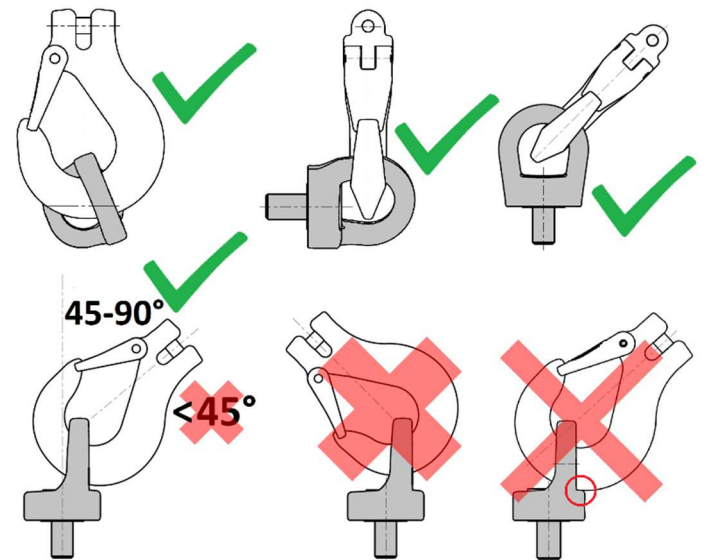
The working load limit for different applications of assembly can be seen in the load table, chapter 5.2.

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 sling assemblies may cause higher risk because only two opposite legs may carry the load. Check the working load limit of lifting points and chain sling assembly 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 tables shall only apply for short-term use at the temperatures indicated.

Temperature range	Remaining WLL
-20° C ≤ t ≤ 100° C - 4° F ≤ t ≤ 212° F	100 %
100° C < t ≤ 205° C 212° F ≤ t ≤ 400° F	85 %
205° C < t ≤ 250° C 400° F ≤ t ≤ 482° F	80 %
250° C < t ≤ 300° C 482° F ≤ t ≤ 572° F	75 %



If a lifting point has been exposed to temperatures exceeding the maximum value specified, it must not be used furthermore.

Use below -40° F / -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 also prohibited.

7.5 Especially hazardous conditions



The degree of danger when used in offshore applications, the lifting of hazardous loads, such as for example liquid metal or similar, risk potentials have to be assessed by a competent

person in the form of a risk analysis. Any additional rules and directives must be followed in this case.

8. INSPECTION, MAINTENANCE, DISPOSAL

8.1 General



Inspections and maintenance must be arranged by the owner!

Inspection deadlines shall be determined by the owner!

Visual inspections must be carried out and documented by competent and trained 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 is not a substitute for this examination.

The results of the inspection shall be kept in a file that has to be set up for each lifting point before first use. The register will show characteristic data as well as identity details.



Immediately stop using lifting points that show the following defects:

- missing or illegible identification/markings
- 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 and trained 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 must be scrapped in accordance with local regulations and provisions.

9. SPARE PARTS



Use only original spare parts.

Exclusively use original THIELE screws because these are made to meet special requirements e.g. concerning the impact toughness.

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. USE OF THIRD-PARTY SCREWS



If local circumstances dictate that screws have to be used different 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 notch impact energy of min. 36 J as a mean value of three samples tested at -4° F or at the lowest fitting temperature if this is below -4° F, 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.

11. STORAGE

Lifting points must to be properly stored in dry conditions at temperatures between 32° F and 104° F.

Do not store in a manner that cause mechanical damage.

12. THIELE OPERATING AND MOUNTING INSTRUCTIONS

NOTICE

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



13. PUBLISHING INFORMATION

Company	KWS Inc. (Distributor)	THIELE GmbH & Co. KG (Manufacturer)
Postal address	P.O. Box 470487 Tulsa, OK 74147 USA	Werkstrasse 3 58640 Iserlohn Germany
Phone number	+1 (539) 367 2274	+49 2371/947-0
Fax number	+1 (539) 367 2278	+49 2371/947-241
Email	sales@kwschain.com	info@thiele.de