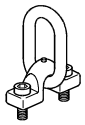

TWN 0121/1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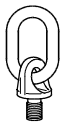
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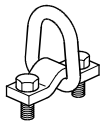
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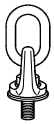
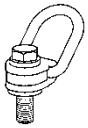

TWN 1120


TWN 1830


TWN 1890


TWN 0121 #

WARNING

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

Do not use a lifting point screw type before reading these operating instructions.

1. ABOUT THIS INSTRUCTION

These operating instructions describe in particular how lifting points, screw type according to TWN 0121 #, TWN 0121/1, TWN 0122, TWN 0123, TWN 0127, TWN 1120, TWN 1830 and TWN 1890 (TWN = THIELE Shop Standard) are to be safely used for lifting purposes.
The instructions apply analogously to components of identical design.
To comply with these instructions is essential to help avoiding hazards and increases the reliability and service life of the lifting points.

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

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

CAUTION **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

WARNING

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

The working load limit (WLL) must not be exceeded!

Lifting points screw type 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.
- 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.
- Structural changes are impermissible (e.g. welding, bending).

SAFETY INSTRUCTIONS

- **Operators must carry out a visual inspection and, if necessary, a functional test of the safety equipment before each use.**
- Never use worn-out, bent or damaged lifting points.
- Only lift loads that do not exceed the working load limit of the lifting points screw type.
- In case of using a 3- or 4-leg chain sling assembly never allow for sling# angles of less than 30° and in excess of 75°.
- Do not use force when mounting/positioning the attachment components.
- The load must resist and tolerate the forces to be applied without suffering deformation.
- Only lift loads that are freely movable and not attached or fastened.
- Do not bend the ring.
- Never install more than one connecting component to a ring.
- 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 screw-type are exclusively intended for attachment to steel, aluminum or non-ferrous metal structures and components.

Sling chains according to ASTM A 906/A 906 M may be used.

These operating instructions show the safety use of THIELE lifting points of the following executions:

- TWN 0121 # Lifting points, rotatable, with slide bearing
- TWN 0121/1 Lifting points, rotatable, with slide bearing
- TWN 0122 Lifting points
- TWN 0123 Lifting points
- TWN 0127 Lifting points MDB
- TWN 1120 TITAN Lifting points, rotatable, with slide bearing
- TWN 1830 X-TREME Lifting points, rotatable, with ball bearing
- TWN 1890 Lifting points XS-Point, rotatable

THIELE lifting points meet EG Machinery Directive 2006/42/EG requirements and feature a safety factor of at least 4 based on working load limit.

They are signed with the working load limit in tons or the nominal chain size, manufacturer's mark and traceability code.

TWN 1830 are additionally marked on the bottom part with the date of manufacture in the form "*mm.yy*" (*mm* = month, *yy* = year). Example: "1220" = production in December 2020

THIELE lifting 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.

Lifting 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,
- by trained and authorized persons.

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

⚠ WARNING

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.

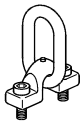
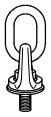
Dispose of the packing in an environmentally compatible way according to local rule.

5. TECHNICAL DATA

5.1 All types without TWN 1830

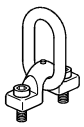
Tables include only article numbers of standard and not customized parts.

Table 1

Type	Article No.	WLL [lbs]	WLL [t]	Usable thread Length [mm]	Screw data / Suspension link [mm]	Tightening Torque [Nm]
TWN 0121 #	F350100 #	4 500	2.0	M20 x 30	M20 x 50 DIN 7984 8.8 2)	350 1)
TWN 0121/1	F35000	2 500	1.12	M16 x 25	M16 x 40 DIN 7984 8.8 2)	170 1)
	F35010	4 500	2.0	M20 x 30	M20 x 50 DIN 7984 8.8 2)	350 1)
	F35020	7 100	3.15	M24 x 36	M24 x 60 DIN 7984 8.8 2)	600 1)
	F35030	12 000	5.3	M30 x 50	M30 x 80 DIN 6912 10.9 2)	1 200 1)
	F35070	7 100	3.15	M16 x 25	M16 x 45 DIN 7984 10.9 2)	170 1)
	F35075	12 000	5.3	M20 x 36	M20 x 60 DIN 7984 10.9 2)	350 1)
TWN 0122	F35080	18 100	8.0	M30 x 50	M30 x 80 DIN 6912 10.9 2)	950 1)
	F35095	34 200	15.0	M36 x 53	M36 x 90 DIN 6912 10.9 2)	1 900 1)
	F35098	47 700	21.2	M42 x 67	M42 x 100 sim. DIN7984 10.9 Spec.2)	2 100 1)
	F35101	55 100	25.0	M45 x 67	M45 x 110 sim. DIN7984 10.9 Spec.2)	2 400 1)
	F35102	72 300	31.5	M56 x 88	M56 x 135 sim. DIN7984 10.9 Spec.2)	3 200 1)
	F35285	79 400	36.0	M56 x 88	M56 x 135 sim. DIN7984 10.9 Spec.2)	3 200 1)
	F34110	2 500	1.12	M16 x 30	B16 x 70 x 35	hand-screwed
	F34115	2 500	1.12	M16 x 30	A16 x 110 x 60	
TWN 0123	F34120	4 500	2.0	M20 x 38	B16 x 70 x 35	
	F34121	4 500	2.0	M20 x 38	A16 x 110 x 60	
	F34130	7 100	3.15	M24 x 35	B18 x 85 x 40	
	F34131	7 100	3.15	M24 x 45	A18 x 110 x 60	
TWN 0127	F35157	7 100	3.15	M20 x 38	M20 x 50 ISO 4017 10.9 2)	350
	F35158	12 000	5.3	M24 x 35	M24 x 50 ISO 4017 10.9 2)	600
	F34405	700	0.3	M8 x 18	M8 x 35 12.9	hand-screwed by open-ended spanner
	F34390	1 000	0.45	M10 x 18	M10 x 35 12.9	
TWN 1120	F34395	1 300	0.6	M12 x 23	M12 x 40 12.9	
	F34400	3 100	1.4	M16 x 28	M16 x 45 10.9	
	F34410	5 500	2.5	M20 x 32	M20 x 50 10.9	
	F34420	7 700	3.5	M24 x 40	M24 x 60 10.9	
	F34430	15 000	6.7	M30 x 52	M30 x 80 12.9	
	F34440	18 100	8.0	M36 x 66	M36 x 100 12.9	
	F352398	660	0.3	M8 x 17	M8 x 45 ISO 4017 10.9 2)	40
	F35243	1 400	0.63	M10 x 17	M10 x 45 ISO 4017 12.9 2)	80
TWN 1890	F35244	2 100	1.0	M12 x 22	M12 x 50 ISO 4017 12.9 2)	130
	F35245	3 800	1.7	M16 x 30	M16 x 70 ISO 4017 10.9 2)	180
	F35246	5 500	2.5	M20 x 38	M20 x 80 ISO 4017 10.9 2)	350
	F35247	8 800	4.0	M24 x 40	M24 x 90 ISO 4017 12.9 2)	500
	F35249	13 200	6.0	M30 x 44	M30 x 100 ISO 4017 10.9 2)	500
	F35250	18 100	8.0	M36 x 64	M36 x 120 ISO 4017 12.9 2)	750
	F35251	22 600	10.0	M42 x 74	M42 x 140 ISO 4017 10.9 2)	950

1) for tapped holes in steel
2) additional technical THIELE-specification must be observed

Table 2

Type	Article no.	Nom. WLL [lbs]	LOAD TABLE for different applications of assembly [lbs]												
			1-Leg	2-Legs	1-Leg	2-Legs	2-Legs			2-Legs	3-/4-Legs			3-/4-Legs
			α=90°	α=90°	α=90°	α=90°	30°≤α<45°	45°≤α<60°	60°≤α<75°	dissym.[3]	30°≤α<45°	45°≤α<60°	60°≤α<75°	dissym.[3]
TWN 0121 #	F350100#	4 400	4 400	8 800	4 400	8 800	4 400	6 200	7 600	4 400	6 600	9 300	11 400	4 400
TWN 0121/1	F35000	2 500	2 500	5 000	2 500	5 000	2 500	3 500	4 300	2 500	3 700	5 300	6 500	2 500
	F35010	4 400	4 400	8 800	4 400	8 800	4 400	6 200	7 600	4 400	6 600	9 300	11 400	4 400
	F35020	6 900	6 900	13 800	6 900	13 800	6 900	9 800	12 000	6 900	10 300	14 600	17 900	6 900
	F35030	11 700	11 700	23 400	11 700	23 400	11 700	16 500	20 300	11 700	17 500	24 800	30 400	11 700
	F35070	6 900	6 900	13 800	6 900	13 800	6 900	9 800	12 000	6 900	10 300	14 600	17 900	6 900
TWN 0122	F35075	11 700	11 700	23 400	11 700	23 400	11 700	16 500	20 300	11 700	17 500	24 800	30 400	11 700
	F35080	17 600	17 600	35 200	17 600	35 200	17 600	24 900	30 500	17 600	26 400	37 300	45 700	17 600
	F35095	33 100	33 100	66 200	33 100	66 200	33 100	46 800	57 300	33 100	49 600	70 200	86 000	33 100
	F35098	46 700	46 700	99 400	46 700	99 400	46 700	66 000	80 900	46 700	70 000	99 100	121 300	46 700
	F35101	55 100	55 100	110 200	55 100	110 200	55 100	77 900	95 400	55 100	82 600	116 900	143 200	55 100
	F35102	69 500	69 500	139 000	69 500	139 000	69 500	98 300	120 400	69 500	104 200	147 400	180 600	69 500
	F35285	79 400	79 400	158 800	79 400	158 800	79 400	112 300	137 500	79 400	119 100	168 400	206 300	79 400
	F34110	2 500	2 500	5 000	2 500	5 000	2 500	3 500	4 300	2 500	3 700	5 300	6 500	2 500
TWN 0123	F34115	2 500	2 500	5 000	2 500	5 000	2 500	3 500	4 300	2 500	3 700	5 300	6 500	2 500
	F34120	4 400	4 400	8 800	4 400	8 800	4 400	6 200	7 600	4 400	6 600	9 300	11 400	4 400
	F34121	4 400	4 400	8 800	4 400	8 800	4 400	6 200	7 600	4 400	6 600	9 300	11 400	4 400
	F34130	6 900	6 900	13 800	6 900	13 800	6 900	9 800	12 000	6 900	10 300	14 600	17 900	6 900
	F34131	6 900	6 900	13 800	6 900	13 800	6 900	9 800	12 000	6 900	10 300	14 600	17 900	6 900
TWN 0127	F35157	6 900	6 900	13 800	6 900	13 800	6 900	9 800	12 000	6 900	10 300	14 600	17 900	6 900
	F35158	11 700	11 700	23 400	11 700	23 400	11 700	16 500	20 300	11 700	17 500	24 800	30 400	11 700
	F34405	650	650	1 300	650	1 300	650	900	1 100	650	1 000	1 400	1 700	650
TWN 1120	F34390	1 000	1 000	2 000	1 000	2 000	1 000	1 400	1 700	1 000	1 500	2 100	2 600	1 000
	F34395	1 300	1 300	2 600	1 300	2 600	1 300	1 800	2 300	1 300	1 900	2 800	3 400	1 300
	F34400	3 100	3 100	6 200	3 100	6 200	3 100	4 400	5 400	3 100	4 600	6 600	8 100	3 100
	F34410	5 500	5 500	11 000	5 500	11 000	5 500	7 800	9 500	5 500	8 200	11 700	14 300	5 500
	F34420	7 700	7 700	15 400	7 700	15 400	7 700	10 900	13 300	7 700	11 500	16 300	20 000	7 700
	F34430	14 800	14 800	29 600	14 800	29 600	14 800	20 900	25 600	14 800	22 200	31 400	38 400	14 800
	F34440	17 600	17 600	35 200	17 600	35 200	17 600	24 900	30 500	17 600	26 400	37 300	45 700	17 600
	F352398	660	660	1 300	660	1 300	660	930	1 100	660	1 000	1 400	1 700	660
	F35243	1 400	1 400	2 800	1 400	2 800	1 400	2 000	2 400	1 400	2 100	3 000	3 600	1 400
TWN 1890	F35244	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
	F35245	3 700	3 700	7 400	3 700	7 400	3 700	5 200	6 400	3 700	5 500	7 800	9 600	3 700
	F35246	5 500	5 500	11 000	5 500	11 000	5 500	7 800	9 500	5 500	8 200	11 700	14 300	5 500
	F35247	8 800	8 800	17 600	8 800	17 600	8 800	12 400	15 200	8 800	13 200	18 700	22 900	8 800
	F35249	13 200	13 200	26 400	13 200	26 400	13 200	18 700	22 900	13 200	19 800	28 000	34 300	13 200
	F35250	17 600	17 600	35 200	17 600	35 200	17 600	24 900	30 500	17 600	26 400	37 300	45 700	17 600
	F35251	22 000	22 000	44 000	22 000	44 000	22 000	31 100	38 100	22 000	33 000	46 700	57 200	22 000

3) reduced WLL according to DIN 685-5 (DIN = German institute for standardization)

5.2 Technical data for type TWN 1830

Tables include only article numbers of standard and not customized parts.

Table 3

Nominal WLL [lbs]	Article no.	Suspension link [mm]	Thread d x G [mm]	Tightening torque [Nm]	WLL for each lifting point depending on alignment and sling# angle: β = ± 5°	5° < β ≤ 105°	5° < β ≤ 45°
					PREFERRED		REDUCED
					[lbs]	[lbs]	[lbs]
1 000	F34306	B13 x 55 x 33	M10 x 15	hand-screwed	2 000	1 300	1 000
1 300	F34307	B13 x 55 x 33	M12 x 18		2 600	1 700	1 300
3 100	F34300	B13 x 55 x 33	M16 x 20		6 200	3 700	3 100
5 500	F34310	B16 x 70 x 35	M20 x 25		11 700	6 200	5 500
7 700	F34320	B18 x 85 x 40	M24 x 30		15 400	8 800	7 700
11 700	F34330	B22 x 100 x 50	M30 x 40		22 000	13 900	11 700
17 600	F34340	B22 x 100 x 50	M36 x 50		33 100	20 900[1] 22 000[2]	17 600
22 000	F34350	B32 x 140 x 70	M42 x 60		39 700	28 700	22 000
27 600	F34353	B32 x 140 x 70	M45 x 65		44 100	33 100	27 600
27 600	F34355	B32 x 140 x 70	M48 x 68		44 100	35 300	27 600
27 600	F34361	B32 x 140 x 70	M52 x 78		44 100	35 300	27 600
37 500	F34360	B32 x 140 x 70	M56 x 78		61 700	48 500	37 500
37 500	F34363	B32 x 140 x 70	M64 x 96		61 700	48 500[1] 55 100[2]	37 500
69 400	F34380	B45 x 220 x 110	M72 x 108		110 200	88 200	69 400
77 200	F34383	B45 x 220 x 110	M80 x 120		110 200	105 800	77 200
88 200	F34385	B45 x 220 x 110	M90 x 135		110 200	110 200	88 200
88 200	F34388	B45 x 220 x 110	M100 x 150		110 200	110 200	88 200

1) until date of manufacture „1220“ (December 2020)
2) from date of manufacture „0121“ (January 2021)

Table 4

Type	Article no.	Nom. WLL [lbs]	LOAD TABLE for different number of legs/lifting points and sling angles α for PREFERRED alignment [lbs] 6) #											
			1-Leg α=90°	2-Legs α=90°	1-Leg α=90°	2-Legs α=90°	2-Legs 30°≤α<45°	2-Legs 45°≤α<60°	2-Legs 60°≤α<75°	2-Legs asym.3)	3-/4-Legs 30°≤α<45°	3-/4-Legs 45°≤α<60°	3-/4-Legs 60°≤α<75°	3-/4-Legs asym.3)
TWN 1830	F34306	1 000	2 000	4 000	1 300	2 600	1 300	1 900	2 300	1 300	2 000	2 800	3 400	1 300
	F34307	1 300	2 600	5 200	1 600	3 200	1 600	2 300	2 900	1 600	2 500	3 500	4 300	1 600
	F34300	3 100	6 200	12 400	3 700	7 400	3 700	5 300	6 500	3 700	5 600	8 000	9 700	3 700
	F34310	5 500	11 700	23 400	6 200	12 400	6 200	8 700	10 700	6 200	9 300	13 100	16 000	6 200
	F34320	7 700	15 400	30 800	8 800	17 600	8 800	12 500	15 300	8 800	13 200	18 700	22 900	8 800
	F34330	11 700	22 000	44 000	13 900	27 800	13 900	19 600	24 100	13 900	20 800	29 500	36 100	13 900
	F34340	17 600	33 000	66 000	20 900[4] 22 000[5]	41 800[4] 44 000[5]	20 900[4] 22 000[5]	29 600[4] 31 200[5]	36 300[4] 38 200[5]	20 900[4] 22 000[5]	31 400[4] 33 100[5]	44 400[4] 46 800[5]	54 400[4] 57 300[5]	20 900[4] 22 000[5]
	F34350	22 000	39 700	79 400	28 700	57 400	28 700	40 500	49 600	28 700	43 000	60 800	74 500	28 700
	F34353	27 500	44 100	88 200	33 100	66 200	33 100	46 800	57 300	33 100	49 600	70 200	85 900	33 100
	F34355	27 500	44 100	88 200	35 300	70 600	35 300	49 900	61 100	35 300	52 900	74 800	91 600	35 300
	F34361	27 500	44 100	88 200	35 300	70 600	35 300	49 900	61 100	35 300	52 900	74 800	91 600	35 300
	F34360	37 500	61 700	123 400	48 500	97 000	48 500	68 600	84 000	48 500	72 800	102 900	126 000	48 500
	F34363	37 500	61 700	123 400	48 500[4] 55 100[5]	97 000[4] 110 200[5]	48 500[4] 55 100[5]	68 600[4] 77 900[5]	84 000[4] 95 500[5]	48 500[4] 55 100[5]	72 800[4] 82 700[5]	102 900[4] 116 900[5]	126 000[4] 143 200[5]	48 500[4] 55 100[5]
	F34380	69 400	110 200	220 400	88 200	176 400	88 200	124 700	152 700	88 200	132 300	187 100	229 100	88 200
	F34383	77 100	110 200	220 400	105 800	211 600	105 800	149 700	183 300	105 800	158 700	224 500	274 900	105 800
	F34385	88 100	110 200	220 400	110 200	220 400	110 200	155 900	190 900	110 200	165 300	233 800	286 400	110 200
	F34388	88 100	110 200	220 400	110 200	220 400	110 200	155 900	190 900	110 200	165 300	233 800	286 400	110 200

3) Reduced WLL according to DIN 685-5 (DIN = German institute for standardization)
4) Until date of manufacture „1220“ (December 2020)
5) From date of manufacture „0121“ (January 2021)
6) 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

- 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 load can take the forces including safety factors safely to be applied without suffering deformation,
- lifting points cannot be damaged,
- lifting points 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!

Make sure the tapped hole is arranged at right angle to the attachment face on the component. The minimum depth of the thread „L“ of the component must at least be as follows: #

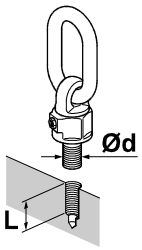
L = 1.0 x d for steel
(yield strength Re ≥ 235 N/mm²)

L = 1.25 x d for castings

L = 2.0 x d for aluminum

L = 2.5 x 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.
- In case of straight fittings, the nut has to be secured against unintentionally loosening.
- There has to be made a chamfer for each threaded hole:

Thread size [mm]	Chamfer [mm]
M8	$1.5^{+0.5}$ x 45°
M10, M12	$2.0^{+0.5}$ x 45°
M16, M20	$2.5^{+0.5}$ x 45°
M24, M30	$3.5^{+0.5}$ x 45°
M36 – M48	$4.0^{+0.5}$ x 45°
M52 – M100	$4.5^{+0.5}$ x 45°

TWN 0123, TWN 1120 and TWN 1830:

Use a suitable open-ended spanner or ring spanner to hand-tighten the lifting points. #

TWN 0121/1, TWN 0122, TWN 0127, TWN 1890:

Take care to tighten the screws by the right torque shown in the tables. As long as it is ensured there is no load turning for a singular use and the lifting point cannot be loosened a hand tightening of the lifting points by a suitable open-ended spanner or ring spanner is sufficient. An additional check is necessary in case of a repeated load lowering.

TWN 1830:

Take care not to exceed the tightening torque of 40 Nm for screws M10 and M12.

6.3 Removal

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

7. CONDITIONS OF USE

7.1 Turning and rotating loads

Type	Permitted use
TWN 0121/1	Turning allowed, rotating not allowed
TWN 0122	Turning allowed, rotating not allowed
TWN 0123	No turning and/or rotating allowed
TWN 0127	Turning allowed, rotating not allowed
TWN 1120	Turning allowed, rotating not allowed
TWN 1830	Turning and rotating allowed
TWN 1890	Turning allowed, rotating not allowed

This classification relates to occasionally turning or rotating loads.

WARNING

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

7.2 Normal use

The working load limit for different applications of assembly can be seen in the load tables, Table 3 and Table 4.

WARNING

The top part of the lifting point including attachment link must always be freely movable.

It must not rest on or be supported by other structural parts.

When attaching the components, make sure the position of the lifting point always enables forces to be exerted in longitudinal direction of the suspension link.

Make sure only the top parts of the lifting points turn into loading direction and not the firmly secured stationary portions.

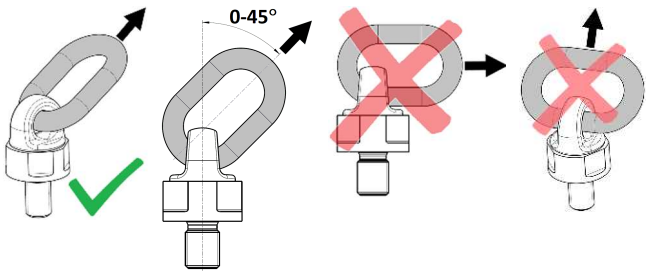
Using 4-leg chain sling assemblies may cause higher risk because only two opposite legs may carry the load. Check the working load limit of lifting points and chain sling assembly carefully and chose if necessary bigger sizes.

TWN 1830:

WARNING

The lifting point must not be used for a permanent or prolonged turning of the load.

Take care for the usage of the preferred alignment shown below:



WARNING

If used, a load reduction acc. to Table 4 must be observed.

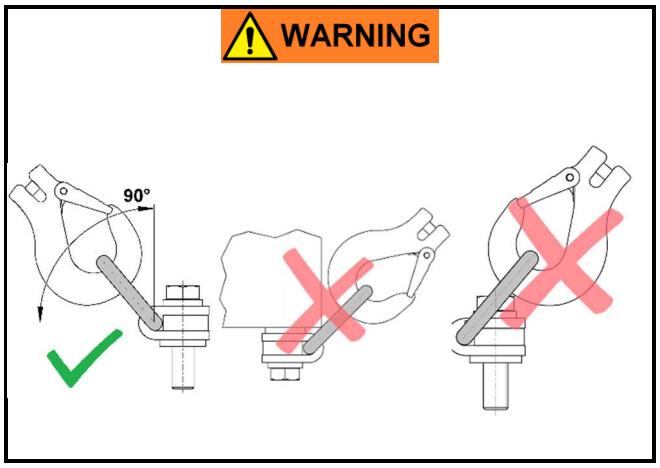
Please note that the values for the working load limits as a function of number of legs and sling# angle given in Table 4 base on the preferred alignment.

The use of nominal sizes from M52 up to manufacturing date "0423" (April 2023) is only permitted above 0° C, from manufacturing date "0523" (May 2023) this restriction does not apply. #

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.

TWN 1890:

WARNING



7.3 Use in through holes

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

- Rotating or turning the load is not permitted.
- The strength class of the nuts must be 10 or higher.
- 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.

7.4 Influence of temperature

WARNING

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 [1)]	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 %

1) other temperature ranges only after consultation with the manufacturer

DANGER

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

7.5 Environmental influence

WARNING

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.

7.6 Especially hazardous conditions

CAUTION

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

WARNING

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.

WARNING

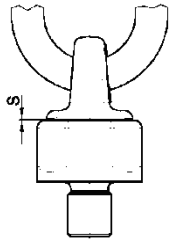
Immediately stop using lifting points that show the following defects:

- missing or illegible identification/marking,
- deformation, elongation or fractures,
- cuts, notches, cracks, incipient cracks, pinching,
- no freely rotating or turning possible,
- heating beyond permissible limits,
- severe corrosion,
- wear exceeding 10 %, for example in the ring diameter,
- defect screws.

TWN 1830:

Take out of service if gap size „s“ exceeds values in table below.

Max. gap size „s“ for TWN 1830	
Thread size	s [mm]
M10 – M20	1.5
M24	2.0
M30	2.5
M36	3.0
M42 – M64	3.5
M72 – M100	4.0



8.2 Inspection service

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

8.3 Maintenance

DANGER

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.

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

WARNING

Use only original spare parts.

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

Type	WLL [lbs]	Article No.	Screw data
TWN 0127	6 900	Z07742	M20 x 50 ISO 4017 10.9
	11 700	Z09017	M24 x 50 ISO 4017 10.9
TWN 1890	660	Z12173	M8 x 45 ISO 4017 10.9
	1 400	Z10836	M10 x 45 ISO 4017 12.9
	2 200	Z10795	M12 x 50 ISO 4017 12.9
	3 700	Z09544	M16 x 70 ISO 4017 10.9
	5 500	Z08692	M20 x 80 ISO 4017 10.9
	8 800	Z09809	M24 x 90 ISO 4017 12.9
	13 200	Z07810	M30 x 100 ISO 4017 12.9
	17 600	Z07828	M36 x 120 ISO 4017 12.9
	22 000	Z10136	M42 x 140 ISO 4017 10.9

10. USE OF THIRD-PARTY SCREWS

WARNING

If local circumstances dictate that screws have to be used different from those supplied with the installation or listed in Table 1 and Table 2, 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

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