TRANSLATION OF THE ORIGINAL OPERATING INSTRUCTIONS
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Operating and assembly instructions for chains, chain slings and components for slings NORM 8 (grade 8) and ENORM 10 (grade 10)

General principles regarding the utilisation of lifting accessories and their components:
The operating instructions are to be stored together with the certificate and the EC declaration of conformity.
The falling of loads, caused by the failure and / or incorrect utilisation and handling of lifting equipment or its individual parts constitutes a direct risk to the life or health of the people who are present in the danger zone of lifting processes.
These operating instructions contain information with regard to the safe utilisation and handling of the lifting accessories and their components. Before using the lifting equipment, the assigned persons are to be briefed with regard to handling and utilisation by a qualified person.
The following principles apply:

- The Working Load Limit (WLL) (see label) of the lifting equipment must correspond to the load. The lifting equipment may not be used if the label is missing or is illegible.
- No danger areas (e.g. crushing points, cutting points, trapping or impact points) may occur that may hinder or endanger the person carrying out the slinging process and / or the transport.
- The base material and the constructive design of the load must be able to hold the applied forces without deformation.
- Stress that leads to a non-uniform load distribution, e.g. which is caused as a result of an off-centre introduction of force must be taken into account when selecting the lifting accessories and their components.
- In the event that extreme stress or strong dynamic strain (shock influences) may occur, this must be taken into account when selecting the lifting equipment and the working Load Limit (WLL).
- The lifting equipment may not be used for the transportation of persons. No persons are ever permitted to remain present in the danger area of a suspended load.
- The lifting equipment may not come into contact with acids and other aggressive agents. Attention must also be paid to the fact that acid fumes may occur in certain production processes.
- Never make unauthorized amendments to the lifting equipment (e.g. grinding, welding, bending, and attachment of parts)!
- The lifting equipment may not be exposed to any forbidden manipulation of temperature.
- Only original replacement parts may be used.
- The relevant additional regulations must be observed when transporting hazardous substances.
- Lifting accessories and their components must be stored in such a manner that they are protected against being damaged and do not cause any danger.
- If damaged, the lifting equipment must be immediately taken out of circulation and must undergo maintenance work.
- When ready to be discarded, lifting accessories and their components are to be correctly disposed of. Attention: Any substances present that are hazardous to the environment (e.g. greases and oils) are to be disposed of separately.

Attention: In the event of violation, the operating permission will become void.

1. Working Load Limit and temperature use

Table 1 ENORM 10 (grade 10) Working Load Limit (WLL) in t according to EN 818 and PAS 1061

Nominal size	Single-leg	Two-leg		3- + 4-leg		Endless chain sling choke hitch	Endless chain sling		Endless chain sling	
[mm]		0°-45°	45°-60°	0°-45°	45°-60°		0°-45°	45°-60°	0°-45°	45°-60°
6	1.4	2	1.4	3	2.12	2.24	1.6	1.12	2.3	1.7
8	2.5	3.55	2.5	5.3	3.75	4	2.8	2	4.2	3
10	4	5.6	4	8.4	6	6.3	4.25	3.2	6.7	4.75
13	6.7	9.5	6.7	14	10	10.6	7.5	5.3	11.2	8
16	10	14	10	21.2	15	16	11.2	8	17	11.8
18	12.5	18	12.5	26.5	19	20	14	10	21.2	15
22	19	26.5	19	40	28	30	21.2	15	31.5	22.4
26	26.5	37	26.5	56	40	42.4	29	21.2	45	32
Factor symmetrical	1	1.4	1	2.1	1.5	1.6	1.1 (1.4)*	0.8 (1)*	1.7 (2.1)*	1.2 (1.5)*

In case of an asymmetrical load distribution, the working load limit applicable to the 2- to 4- leg sling types is the same as for single leg sling.

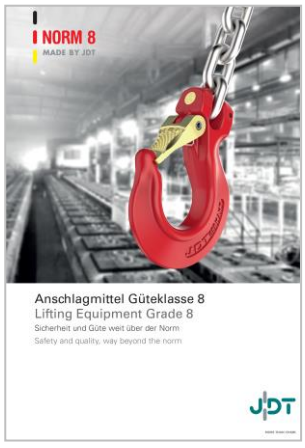
*In the event of appropriate usage – not with choke hitch/no sharp edges etc. – the values of the respective chain sling will apply.

Table 2 NORM 8 (grade 8) Working Load Limit (WLL) in t according to EN 818

Nominal size	Single-leg	Two-leg		3- + 4-leg		Endless chain sling choke hitch	Endless chain sling		Endless chain sling	
[mm]		0°-45°	45°-60°	0°-45°	45°-60°		0°-45°	45°-60°	0°-45°	45°-60°
6	1.12	1.6	1.12	2.36	1.7	1.8	1.25	0.9	1.9	1.32
7	1.5	2.12	1.5	3.15	2.24	2.5	1.7	1.25	2.65	1.8
8	2	2.8	2	4.25	3	3.15	2.24	1.6	3.35	2.36
10	3.15	4.25	3.15	6.7	4.75	5	3.35	2.5	5.3	3.75
13	5.3	7.5	5.3	11.2	8	8.5	5.83	4.25	9	6.3
16	8	11.2	8	17	11.8	12.5	9	6.3	13.2	9.5
18	10	14	10	21.2	15	16	11.2	8	17	11.8
20	12.5	17	12.5	26.5	19	20	14	10	21.2	15
22	15	21.2	15	31.5	22.4	23.6	17	11.8	25	18
26	21.2	30	21.2	45	31.5	33.5	23.6	17	35.5	25
28	25	33.5	25	50	37.5	40	26.5	20	42.5	30
32	31.5	45	31.5	67	47.5	50	35.5	25	53	37.5
36	40	56	40	85	60	63	45	31.5	67	47.5
40	50	71	50	106	75	80	56	40	85	60
45	63	90	63	132	95	100	71	50	106	75
50	80	112	80	168	120	128	88	64	136	96
Factor symmetrical	1	1.4	1	2.1	1.5	1.6	1.1 (1.4)*	0.8 (1)*	1.7 (2.1)*	1.2 (1.5)*

In case of an asymmetrical load distribution, the working load limit applicable to the 2- to 4- leg sling types is the same as for single leg sling.

*In the event of appropriate usage – not with choke hitch/no sharp edges etc. – the values of the respective chain sling will apply.



In each individual case special attention has to be paid to the maximum temperature which the components for slings are exposed to. The influence of higher temperatures on the working load limit (WLL) of various grades of lifting equipment is stated in Table 3. After cooling down to a temperature beneath 200°C, one can again work with WLL of 100 % for both grade 8 and grade 10 chain slings. If NORM 8 or ENORM 10 slings are exposed to temperatures above 400 °C, slings must be discarded. It is not permitted to use these slings again.

Table 3

Temperature range in °C	WLL NORM 8 (grade 8) in %	WLL ENORM 10 (grade 10) in %
minus 40°C – plus 200°C	100	100
plus 200°C – plus 300°C	90	90
plus 300°C – plus 400°C	75	75

Notice: grade 8 and 10 lifting equipment may not be used at temperatures above 400°C.

2. Assembly of the lifting accessories

When assembling chain slings, special attention must be given to the nominal size and grade. Every finished assembled piece of slinging equipment must be labelled in accordance with the European Machinery Directive.

2.1 Assembly of the clevis head assembly system

The JDT components are coordinated to one another with regard to the nominal size and are labelled with the respective nominal size.
- Introduce the chain into the respective clevis head.
- Insert the bolt and secure with the locking pin. Use the locking pin only once.

2.2 Assembly of the coupling assembly system

Contrary to the JDT clevis head assembly system, the components of the coupling assembly system can be confound!
Ensure correct nominal size and labelling during assembly.
The arrangement of the individual parts should only be carried out by qualified person (expert).
- Assemble the master link with marking tag.
- Install the halves of the coupling into the master link / terminal link respectively and into the chain.
- Bolts and sleeves serve as a safety element and connection element of both halves of the coupling.
- Push the bolt through the sleeve by hitting lightly with the hammer until completely driven in.

2.3 Assembly of the shortening elements

See separate assembly instructions

3. Utilisation of the sling chains

The regulations of DGUV Regel 109-017 / respective country-specific directives are to be observed when sling chains are used.

3.1 Bringing into service – before the first time use

Before the lifting equipment is used for the first time, it has to be ensured that:
- The lifting equipment exactly corresponds to the order;
- The testing certificates are present (acceptance test certificate, declaration of conformity, etc.);
- The labeling and working load limit (WLL) details on the lifting equipment correspond to the details on the test certificates (see Tables 1 and 2).

3.2 Handling of the load

Before each use, the lifting equipment has to be inspected for evident defects or characteristics of wear. Proceed according to the maintenance guidelines in the event that damage is observed (see Point 5).
- The weight of the load must be known.
- The centre of gravity of the load must be known.
- Chain slings are always to be deployed with a straight leg. They are not permitted to be twisted and must not display kinks or knots.
- Lifting hooks must be secured with a latch.
- The chains may not be pulled over sharp (radius ≤ chain diameter) edges if they are not protected. Edge protection must be provided in such a case or the working load limit (WLL) is to be reduced by 20 %.

3.3 Multi-leg chain slings

An angle of inclination between 6° and 60° must be present. When being used in a choke hitch, the working load limit (WLL) is to be reduced to 80 %.
Generally, chain slings should only be used for their intended purpose. However, cases occur in reality where not all individual legs are used at the same time. In such cases, the working load limit is to be reduced according to Table 4:

Table 4

Type of chain sling	Number of individual legs used	Usage factor compared to the stated Working Load Limit (Table 1 and 2)
Two leg	1	1/2
three- / four leg	2	2/3
three- / four leg	1	1/3

Individual legs that are not being used should be hung back into the master link in order to avoid danger caused by the chain swinging or by unintended hooking during the lifting process.
When dealing with asymmetrical loads, the factors according to Table 1 or 2 respectively are to be taken into account.

4. Storage of lifting equipment

Lifting equipment not in use should be stored on a frame that is intended for this purpose. After usage, the equipment should not be left lying on the floor as it can be damaged there.
The lifting equipment is to be protected against corrosion in the event that it is not expected to be used in the near future.
In the event that chain slings with hooks remain on the crane hook without a load, the hooks are to be hung into the master link.

5. Inspection and maintenance

On a regular basis before being used, lifting equipment is to be closely inspected with regard to correct utilisation and faultless condition (e.g. bolt fit, absence of strong corrosion and deformation, etc.), for example by the person carrying out the slinging process. Defective lifting equipment may not be used. It has to be tested at least once a year by a qualified person whilst taking the relevant standards (EN 818-6) and trade association regulations (e.g. 109-017 [formerly DGUV Regel 100-500]) into account. Every three years lifting equipment must be tested by a qualified person using a proper testing device in order to check that the product is free of cracks. JDT recommends a magnetic particle inspection up to a coating thickness of 50 µm.
The user must observe the results of the risk assessment in accordance with the occupational safety directives. The re-testing period is shortened in the event that the products are exposed to critical operating conditions. Inspection records are to be kept.
The testing coefficient (EC-Machinery Directive 2006/42/EC Point 4.4.1) is defined according to the standards DIN EN 818 ff. / PAS 1061 and / or DIN EN 1677 ff.

In the event that the following defects occur, the lifting equipment is to be taken out of circulation immediately and sent for maintenance:

- Labelling concerning working load limit or proof of identity of the lifting equipment is illegible or is missing.
- Deformation of master links, chain or components for slings (Figure 1).
- Inadmissible wear or elongation of individual chain links is present for example, in the event that the nominal dimension of the inner length has been exceeded by 5 %, which meet an outside elongation of 3 % (Figure 2).
- Reduction of the mean chain link thickness at any point of >10 % (Figure 3).
- Clear length differences in the chain legs when dealing with multi-leg chain slings.
- Signs of a widening on the hooks, meaning for example noticeable increase of the hook aperture. The increase of the hook aperture may not be above 10 % of the nominal value (catalogue dimension “m” figure 4) or the hook safety latch may not be released (Figure 5).
- Wear (reduction in thickness) on the hook base of ≥5 % (catalogue dimension “h” figure 4).
- Damage such as: cuts, indents, grooves, linear cracks, excessive corrosion, discolouration caused by the impact of heat, bent or twisted chain links or other faults.
- Reduction in bolt diameter of 10% compared to its nominal dimension (catalogue).

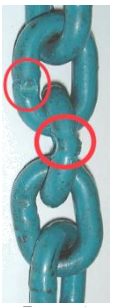


Figure 1

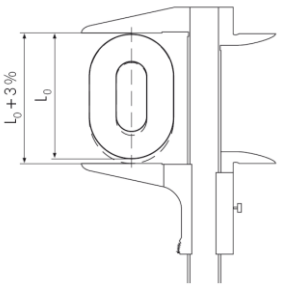
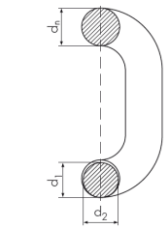


Figure 2



$$d_m = \frac{d_1 + d_2}{2} \geq 0.9 * d$$

Figure 3

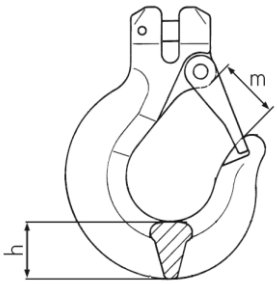


Figure 4

Figure 5

6. Maintenance

The maintenance must be carried out by an expert. Chains and components that are ready to be discarded must be replaced. The entire chain leg is to be replaced even if only one chain link das to be discarded. The maintenance of welded sling chains may only be carried out by the manufacturer. In the event that bolts have to be replace, only new original bolts and safety elements may be used.

7. Documentation

Records of regular testing (Point 5) and maintenance (Point 6) are to be documented.
JDT offers professional support with this work as well as the >sBase< PC program that electronically captures and manages the lifting equipment.

8. Conformity Declaration

EG-Konformitätserklärung
EC Conformity Declaration
Déclaration de conformité CE
EG-Conformiteitsverklaring
Declaración de conformidad CEE
Dichiarazione di conformità CE
EY-yhdenmukaisuustodistus
EF-Overensstemmelseserklæring
EG-Konformitetsförklaring

Im Sinne der EG Richtlinie Maschinen 2006/42 EG und weiter ergänzender Richtlinien.
As defined by the EC Guideline Machines 2006/42 EC and other complementary guidelines.
Dans le sens des directives CE Machines 2006/42 CE et des directives complémentaires.
Overeenkomstig de EG-richtlijn Machines 2006/42 EG en verdere aanvullende richtlijnen.
Conforme a la Directiva CE de Máquinas 2006/42 CE y otras Directivas suplementarias.
Ai sensi della direttiva CE sulle macchine 2006/42 CE e altre direttive integrative.
Koneista annetun EY-direktiivin 2006/42 EY ja muiden lisädirektiivien tarkoittamassa mielessä.
I overensstemmelse med EF-retningslinie maskiner 2006/42 EF og videre supplerende retningslinier.
I enlighet med EG:s Maskindirektiv 2006/42 EG samt vidare kompletterande direktiv.

Der Unterzeichnende, bevollmächtigt von der
The undersigned, empowered by
Le soussigné, mandataire de
De ondergetekende, gemachtigde van de firma
El suscrito, autorizado por la
Il sottoscritto, delegato dalla
Allekirjoittanut, yhtiön
Den undertegnede, befuldmægtiget af
förklarar undertecknad, bemyndigad av

J. D. Theile GmbH & Co. KG, Postfach 18 29, D-58213 Schwerte

erklärt, daß das (die) umseitig bezeichnete(n) Anschlagmittel in der von uns in Verkehr gebrachten Ausführung bei bestimmungsgemäßer Benutzung mit den grundliegenden Sicherheits- und Gesundheitsanforderungen übereinstimmen.

declares that sling gear, listed overleaf, conform in its marketed design with the requisite basic safety and health requirement, provided they are used in accordance with their intended purpose.

déclare que le matériel de levage décrit au verso et employé conformément aux prescriptions, dans l'exécution mise en circulation par nos soins, est conforme aux exigences fondamentales de sécurité et de santé.

verklaart dat de op de achterzijde aangegeven aanslagmiddelen in de door ons in het verkeer gebrachte uitvoering bij doelmatig gebruik met de pricipiële eisen omtrent veiligheid en gezonderheid overeenstemmen.

declara que el/(los) dispositivo/(s) de suspensión mencionado/(s) al dorso en la forma lanzada al mercado concuerdan con los requiremientos básicos impuestos a la seguridad y a la salud bajo la condición de una aplicación de acuerdo con los fines previstos.

dichiara che il(i) dispositivo(i) di arresto definito(i) a tergo, nel modello da noi distribuito, se usato(i) nel modo dovuto risponde (rispondono) ai requisiti basilari di sicurezza e sanitari.

valtuuttamana vakuuttaa, että kääntöpuolella mainittu/tut kiinnitysväline/et myyntiin tuomassamme moudossa ja sitä/niitä asianmukaisesti käytettynä ovat perustavanlaatuisten turvallisuus- ja terveysvaatimusten kanssa yhdenmukaisia.

erklærer, at det (de) omstående anslagsmidel (-midler) i den udførelse, som vi har givet den ud, ved bestemmelsens benyttelse stemmer ovcrens med de grundlæggende sikkerheds- og sundhedskrav.

att det (de) på omstående sida uppförda anslagmedlet (-medlen) i det av oss sålda utförandet vid ändamålsenlig sanvändning överensstämmer med de grundläggande kraven beträffande säkerhet och hälsa.

EG-Richtlinien
EC Guidelines
Directives CE
EG-richtlijnen
Directivas CEE
Directive CE
EY-direktiivit
EF-retningslinier
EG-Direktiv

EG Richtlinien Maschinen geändert durch
EC Guideline for Machines amended by
Directives CE Machines modifiée en
EG-richtlijn machines gewijzigd door
Directiva CEE 'Maquinas' modificada por
Direttive CE sulle macchine cambiate con
Koneista annettu EY-direktiivi muutettu direktiiveillä
EF retningslinie maskiner forandret gennem
EG:s Maskindirektiv andrat genom

2006/42 EG

Harmonisierte Normen
Harmonized standards
Normes harmonisées
Overeenkomstige normen
Normas armonizadas
Norme armonizzate
Harmonisoidut standardit
Harmonerede normer
Harmoniserade standarder

EN ISO 12100

EN 818-1
EN 818-2
EN 818-3
EN 818-4
EN 818-5
EN 818-6
EN 818-7
EN 1677-1
EN 1677-2
EN 1677-3
EN 1677-4
EN 1677-5
EN 1677-6
EN 13889
EN 13155

Angewendete nationale Normen
Applied national standards
Normes nationales appliquées
Toegepaste nationale normen
Normas nacionales aplicadas
Norme nazionali applicate
Sovelletut kansalliset standardit
Brugte nationale normer
Nationella normer som tillämpats

DIN 685-2
DIN 685-3
DIN 685-4
DIN 685-5
DIN 5688-1
DIN 5688-3
DIN 5692
DIN 5687-1
PAS 1061
DIN 695
DIN 32891
DIN 766
DIN 764-1
DIN 764-2

Aberspach / Qualitätsmanager
Unterschrift

Dokumentationsverantwortlich: R. Aberspach in Fa. J.D.Theile, Letmather Str. 26-45, D-58239 Schwerte

Translation of the original operating instructions
In case of doubts or misunderstanding, the German version of the document is decisive.

UKCA Declaration of Conformity

The undersigned, empowered by

J.D. Theile GmbH & Co. KG, Postfach 18 29, D-58213 Schwerte, Germany

declares that sling gear, listed overleaf and marked with UKCA, conform in its marketed design with the requisite basic safety and health requirement, provided they are used in accordance with their intended purpose.

Applicable standards :

UK Guideline Supply of Machinery (Safety) regulation 2008

EN BS 818-1 – EN BS 818-7

EN BS 1677-1 – EN BS 1677-6

EN BS 12100

EN BS 13155

EN BS 13889

Schwerte, 2021-11-02

T. Muchowski, Managing Director