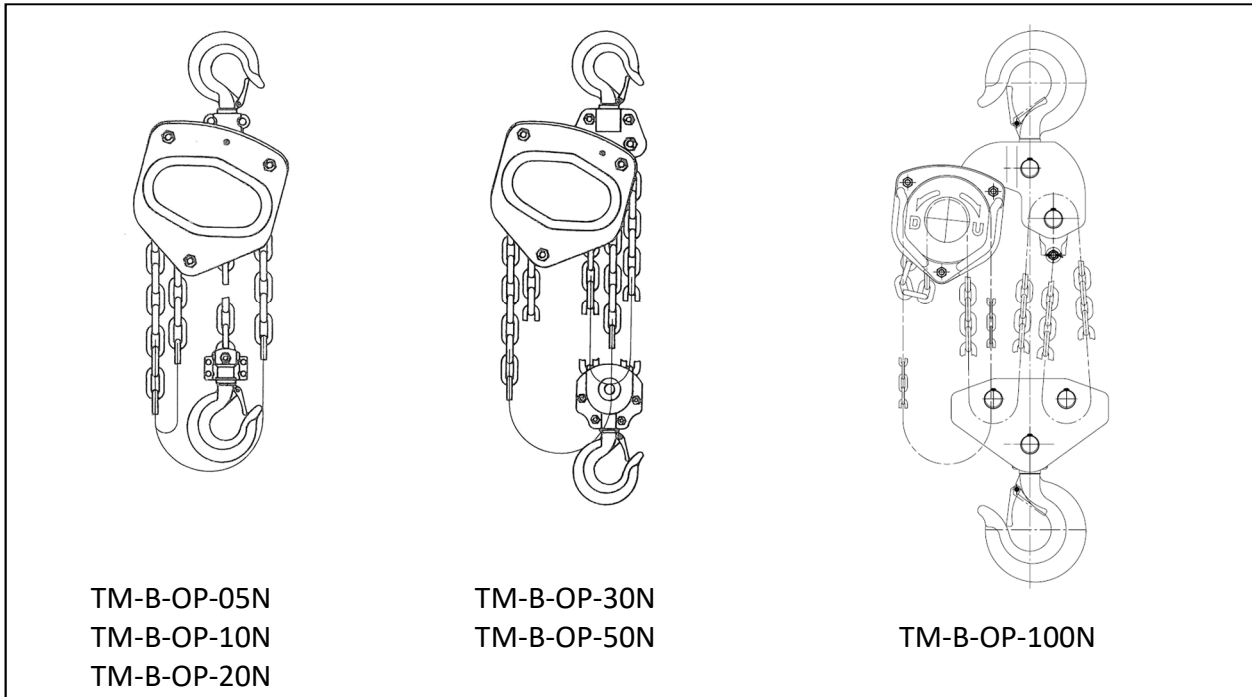


Original in compliance with machinery directive 42/2006/EC



TM-chain blocks are in accordance with the EC machine directions 2006/42/EC and are prototype tested by the German Authority TÜV-Rheinland.

Read this manual before using the TM-chain blocks.
This manual includes very important information concerning safety and operation.

IMPRINT

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SIGN LEGEND



Attention!

Failure to observe these instructions will result in serious physical injury, possibly leading to death



Note

Helpful advice on operating the chain blocks and additional information

#

Marking of changes to previous edition

(Due to extensive changes, individual ones are not marked separately in this edition)

1 DESCRIPTION AND INTENDED USE

TM-chain blocks from THIELE are manually operated portable devices for hoisting and moving loads.

Essential features are:

- overload protection by integrated slipping clutch
- double pawl braking system
- load chain according to EN 818-7, grade T, galvanized

TM-chain blocks may only be used:

- within the permissible working load limits
- within the permissible temperature limits
- by instructed and authorised persons
- with existing and undamaged safety devices
- with suitable lifting points and loads
- with suitable and approved hoistings means and lashing equipment

2 SAFETY NOTES



Risk of injury!
Never walk or stay under lifted loads!
Only use chain blocks free from defects!



Failure to observe the safety instructions or improper assembly, use or maintenance can result in death, serious injury or damage to property!

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

Working under influence of drugs, alcohol (even remaining alcohol) or interfering medications is strictly forbidden!



- **As a rule, chain blocks are not permitted for the transportation of persons!**
- Operators, fitters, and maintenance personnel must in particular observe the operating instructions, documentations DGUV V 1, DGUV V 52, DGUV R 109-017 and DGUV I 209-013 issued by the German Employers' Liability Insurance Association, as well as standard specification DIN 685-5.
- In the Federal Republic of Germany, the Operational Safety Ordinance („Betriebssicherheitsverordnung“, BetrSichV) has to be implemented and the Technical Rule for Industrial Safety („Technische Regel für Betriebssicherheit“) 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 chain blocks 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 10.



- **When performing work make sure to wear your personal protective equipment!**
- Assembly and removal as well as inspection and maintenance must exclusively be carried out by skilled and authorized persons.



- **Operators must carry out a visual inspection and, if necessary, a functional test of the safety equipment before each use.**

- Never expose chain blocks to loads exceeding the specified working load limits.
- The load chain must not touch any components or be guided over edges during operation.
- If using two chain blocks for one load, select each chain block having a working load limit equal to or more than the load.
- Make sure the load and lifting points can take the forces to be applied without suffering deformation.
- For lifting, the chain blocks must be positioned vertically above the centres of gravity of the loads. Angular pull is not permissible.
- 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.
- Use only hand power to work.
- Make sure no one including you (operator) is in the way of the moving load (hazard area).



- **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.
- Do not use force when mounting/positioning chain blocks or lifting means.
- Safety elements must not be operationally loaded.
- Do not tip-load a hook.
- Hooks must have well-functioning safety latches.
- Do ensure the load is fully supported in the throat of the hooks and the safety latches are engaged.
- Avoid impacts, e.g. due to abruptly lifting loads with load chain in slack condition.



- **The load chains must not encircle the loads or other components.**
- **The operational rotation of the load in the hook or the rotation of the chain block in the suspension hook is not permitted.**
- Do not use chain blocks in connection with welding processes.
- Structural modifications, attachments or conversions are not permitted.

- Worn, bent or damaged chain blocks must not be put into operation.
- Moving parts and the load chain must be lubricated regularly. The brake linings inside the housing must be kept free of lubricant and dirt.



- **Never operate chain blocks with a twisted, stretched or damaged load chain.**
- Do not remove or cover warning labels located on the device.
- Do not clean the chain blocks with water or with high pressure cleaner.
- Do not use chain blocks to lift dangerous goods such as molten or radioactive materials.
- The brake must be examined for icing in the event of operating temperatures below 3 °C.
- When dealing with long hook paths (> 3m) the brake linings may overheat when constantly lowering. Ensure that cooling pauses are taken.



- **Chain blocks are to be taken out of operation if unusual noises occur, the load chain jumps or jams.**
- After use or when not ready for use, chain blocks must be secured against unauthorised and unpermitted use.
- In the event of doubts about the use, inspection, maintenance or similar things contact your safety officer or the manufacturer.
- After modifications, conversions or extensions, the declaration of conformity loses its validity.

3 COMMISSIONING

Prior to using the chain blocks for the first time make sure that

- the components 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,
- the documentation is safely kept in an orderly manner,
- the load chain is lubricated prior to first use,
- visibility and functional testing are carried out and documented,
- inspection deadlines and the qualified persons for examinations are determined,
- the chain blocks are provided with a test seal and the next inspection date.

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

After hanging the chain block, position the lower end of the hand chain at a height of 500 – 1000 mm from the floor. In order to complete this task, you may have to shorten the hand chain by laterally bending the non-welded connecting link open, shortening the hand chain respectively and bending the connecting link closed.

Normal chain links are not suitable for use as a connecting link.

4 OPERATION

4.1 General

Before using the chain blocks, observe the marking and select the correct size according to the load to be lifted.

Prior to each use, the chain blocks must be visually checked for damage or incorrect functioning.



In order to check the load brake for each new lifting operation, raise the load a little first and stop again before lifting the load completely. In order to operate the brake mechanism, it is necessary to apply a minimum load. (See table for technical data)

Use chain blocks only in the temperature range from -10 °C to +50 °C.

Position the chain block between centre of gravity of the load and the suspension point.

Ensure the hooks are seated correctly and the safety latches are engaged.

Also make sure that the load chain is not twisted or has knots or damages.

4.2 Lifting the load

Pulling the hand chain in the direction of the "U" = ‚Up‘.

4.3 Lowering the load

Pulling the hand chain in the direction of the „D“ = ‚Down‘.

You may need a little more force to release the brake.

4.4 After use

Remove foreign objects or dirt from the load chain and the chain block. Check the load chain, hook and safety latches to ensure that the chain block can be used again. Store chain blocks in a dry, clean place.

4.5 Slipping clutch

The slipping clutch is set at the factory to approximately 1.6 times the working load limit and is exclusively for overload protection of the chain block.


It may not be operationally used or actuated.

The slipping clutch must only be set by the manufacturer or authorized competent persons.

Repeated checks of the slipping clutch adjustment at short intervals (e.g. after rental) impair the functionality and are therefore not permissible.



5 CHAIN ASSEMBLY

- 
1. Clean the load chain that is to be assembled as well as the parts of the chain block that come into contact with the load chain.
 2. Insert the first load chain link in an upright position (vertical to the sprocket) **between the chain guide and the sprocket. Ensure that the welding seams of the following vertical load chain links point outwards in a radial manner.** Rotate the hand wheel so that the second load chain link can be horizontally assumed by the following pocket of the sprocket.
 3. Continue with the rotary movements until sufficient load chain links protrude from the other side of the housing in order to perform the further steps.
 4. Pay attention to the correct positioning of both load chain strands in terms of the chain guide rollers.



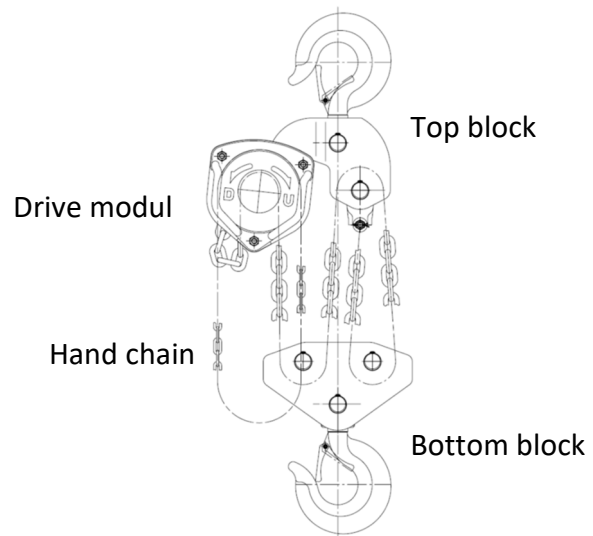
During operation, the housing orients itself according to the load. Neither of the load chain strands may then come into contact with the housing bolts under load.

The load chain may not run above the guide roller under any circumstances!

5. When dealing with a single-strand design, insert the load chain end of the load chain strand (see note at the end of the page) into the console of the hook attachment and fasten it with the chain bolt. Secure chain bolt with new self-locking nuts.
6. When dealing with a twin-strand design, insert the load chain end of the load chain strand (see note at the end of the page) above the bottom block sprocket. In doing so, pay attention to the correct alignment of the inlet to the chain drive sprocket so that the chain strand is not twisted.
7. When dealing with the TM-B-OP-100, insert the load chain end of the of the load chain strand (see note at the end of the page) via the sprockets of the bottom and top block according to the reeving diagram illustrated below. In doing so, pay attention to the correct alignment of the inlets to the chain drive sprocket so that the load chain strands are not twisted.
8. Fasten the loose load chain to the load chain end fitting fixed to the housing. In the event of a twin-strand reeving the loose load chain end coming out of the bottom block will be fixed by a bolt to the upper hook suspension. Pay attention that the load chain strands are not twisted. If necessary, shorten the load chain by removing a link. Secure the chain bolt with a new splint.
9. Perform a functional test using a low load. Check that the load chain strands are not twisted, that the load chain is not touching the housing bolts and that it flawlessly glides into the chain guide.

NOTE: When looking at the type plate, the downward load chain strand is always to the right of the sprocket axle or rotation axis of the hand sprocket.

Reeving scheme of TM-B-OP-100N:



For load chain mounting make sure that the welds of the upright load chain links in the sprockets of the drive module and top block face outwardly!

For design reasons, at the bottom block this can only be achieved by a deflector roll.

i In the case of multi-strand versions, it can happen that all load chain strands are twisted after the chain block has been fitted correctly. This is due to the way the chain block has been stored. Before further use of the chain block, turn the bottom block around the horizontal axis (perpendicular to the chain wheel axis) until all load chain strands are no longer twisted.

The load chain must not be twisted between its two attachment ends!

6 INSPECTIONS

6.1 General

Inspections and maintenance must be arranged by the owner!

Inspection deadlines shall be determined by the owner!

Inspections by a competent person must be carried out regularly and at least annually, more often in case of heavy use. For each chain block, documentation must be kept in which all inspections and maintenance activities are to be listed.

The chain blocks must be recertified after 4 years in operation latest.

Recertification must also be carried out after repairs, which may only be carried out by an authorised service centre. In this case, contact the service address.

Take chain blocks out of service immediately in the event of the following defects:

- illegible or missing markings
- deformation, stretching or breakage of chains or components
- cuts, notches, cracks, tears, crushes
- heating above the permissible temperature range
- severe corrosion
- missing or defective safety devices

6.2 Normal use

Observe for damage or unusual noises that indicate a potential problem. Do not operate a chain block if the load chain cannot move freely. Check for clicking noises, jamming or incorrect operation. The clicking sound of the pawls on the ratchet wheel during lifting is normal.

If the load chain jams, jumps or makes excessive noise, inspect it.

Also make sure that the hand chain can move freely, is not jammed and has no damage.

If problems continue, send the chain block to the service address for inspection or repair.

Do not put chain blocks into operation until all defects have been eliminated.



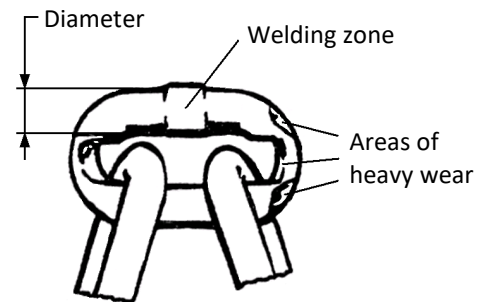
6.3 Load chain

Check **ALL** load chain links in regard to bending, corroding, locking, stretching, bending and especially to any wear.

The load chain should be taken out of service if the pitch has increased by more than 3 % or the average wire diameter reduced by more than 10 %.

If necessary, lubricate the load chain.

A failure of the load chain can occur if the load chain is not clean and lubricated. If the load chain is dirty and unlubricated, this can lead to premature wear and subsequent chain failure.



Lubricate the load chain, e.g. with a mineral oil in accordance with DIN 51502 CLP 220 or with a dry lubricant, e.g. Unimoly C 220 spray in the event of a dusty or dirty environment.



Cleaning (e.g. before testing) must not be carried out by processes that can cause hydrogen embrittlement (e.g. pickling or dipping in acid solutions).

6.4 Hooks

Check hooks for wear and any damage. Take hooks out of service if the hook opening has widened by more than 10 % or the shank height in the hook bottom reduced by more than 5 % compared to a new hook.

If a safety latch no longer cuts in at the tip of the hook due to a widening of the hook, the entire chain block has been massively overloaded and must be disposed of.

The use of load-bearing components of such a chain block as spare parts is not permitted.

Check that the hooks rotate freely and easily without obstruction.

Check the function of the safety latches.

6.5 Slipping clutch

If a chain block is used as intended, the slipping clutch is not set or adjusted. It can only be replaced as a complete unit and must be subsequently examined by expert staff once installed.

7 MAINTENANCE AND REPAIR

7.1 General

Maintenance work may only be carried out by competent persons.

A necessary repair can be only made by an authorized service centre. In such a case, please contact the service address.

7.2 Replacement of the load chain

Unload the chain block and loosen the chain bolt on the hook tackle or suspension console in the event of a twin-strand reeving as well as on the chain end fitting. Allow the used load chain to run through the chain block in the lifting or lowering device and, if necessary, pull the load chain through the top and bottom block. Assemble the new load chain according to the information provided in Chapter 5.

7.3 Replacement of the load hook / hook tackle (single-strand)

The hook tackle can only be replaced as a unit. Unload the chain block and open the nut belonging to the chain bolt. Pull the chain bolt out of the hook tackle console. Insert the load chain end into the console of the new hook tackle and push a new chain bolt into the drill hole of the console and through the last load chain link. Secure the chain bolt with a new self-locking nut.

7.4 Replacement of the load hook / bottom block (twin-strand)

Unload the chain block and open the screw belonging to the bottom block console. Open one half of the bottom block console and remove the hook. Correctly insert the new hook complete with its retainer into the bottom block console. Close the bottom block console with its half. In doing so, ensure that the hook retainer and the sprocket bolts are located in the intended retainers.

Re-insert the screws and secure them with new self-locking nuts.



7.5 Replacement of the suspension hook

The housing must be opened in order to replace the suspension hook.
Therefore, this work should only be performed by an authorized expert.
In such a case, please contact the service address.

7.6 Gearbox

The gearbox is maintenance-free.



If the gearbox has been disassembled, make sure that it is sufficiently lubricated and that the two gear wheel stages (position 4) are positioned correctly. These are each marked on the side of the tothing (e.g. "S" or "O"), which are to be positioned in the same orientation according to a clock hand during assembly.

7.7 Disposal

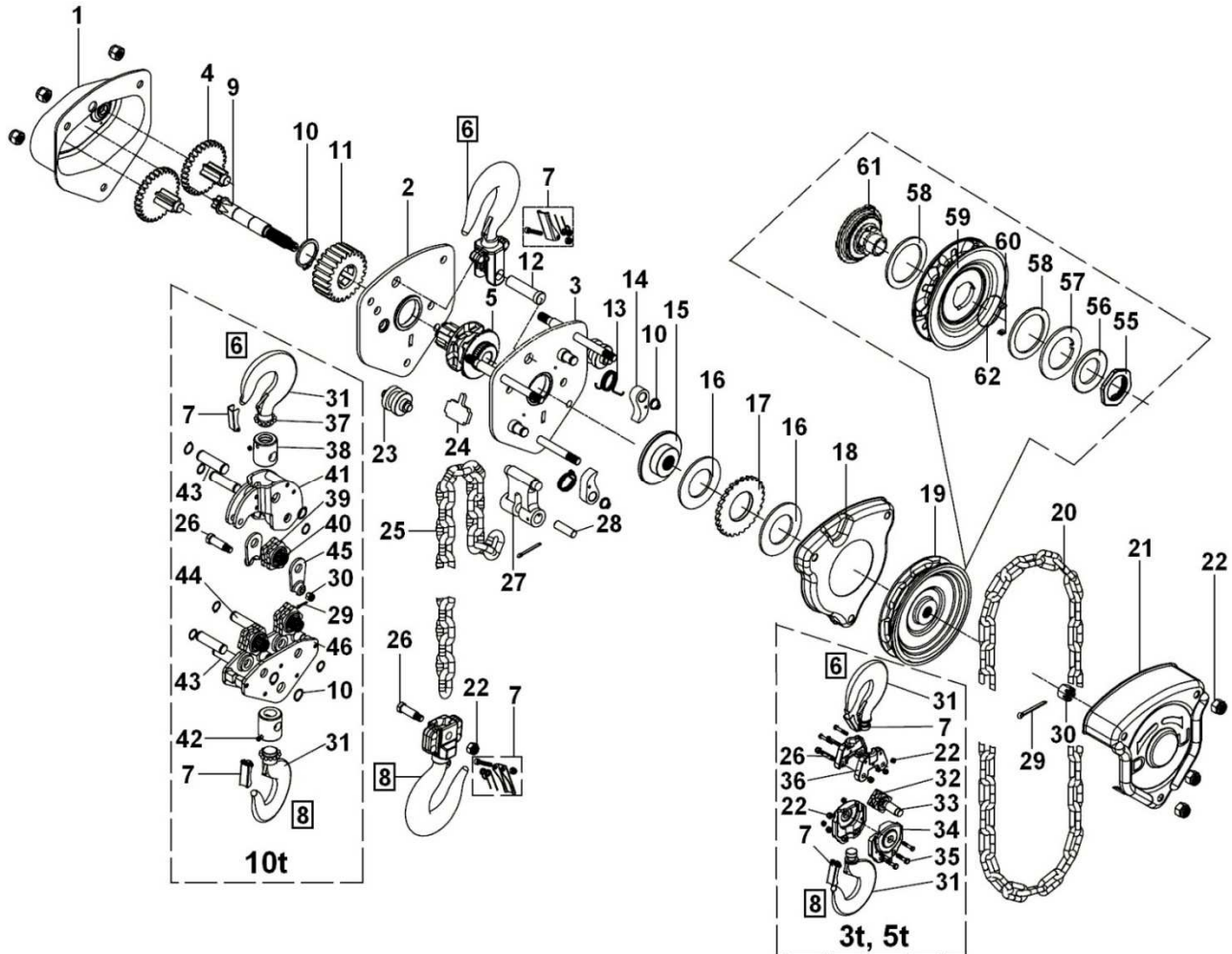
Dispose of worn out chain blocks and accessories for scrapping in accordance with local regulations.

8 SPARE PARTS



Use only original THIELE spare parts!

When ordering spare parts, be sure to state the type, year of manufacture and serial number.



Item	Description	Item	Description	Item	Description
1	Gearbox cover	19	Hand chain wheel	37	Ball bearing, hook
2	Housing plate, gear side	20	Hand chain	38	Hook nut
3	Housing plate, handwheel	21	Housing cover, handwheel	39	Sprocket, top/block
4	Gearwheel stage	22	Hex. nut, self-locking	40	Needle bearing, sprocket
5	Sprocket, complete	23	Guide roll	41	Bracket, hook suspension
6	Suspension hook	24	Scraper	42	Bolt
7	Safety latch, complete	25	Chain	43	Hook pin
8	Hook	26	Pin	44	Sprocket pin
9	Drive shaft	27	Chain end fitting	45	Suspension plate
10	Safety ring	28	Pin, chain end fitting	46	Bracket, bottom block
11	Gearwheel	29	Cotter pin	55	Hex. nut, slip clutch
12	Pin	30	Slotted nut	56	Cup spring, slip clutch
13	Pawl spring	31	Hook, 2-strand	57	Thrust disk, slip clutch
14	Pawl	32	Sprocket, bottom block	58	Friction lining
15	Brake hub	33	Pin, bottom block	59	Hand chain wheel
16	Brake lining	34	Bracket, bottom block	60	Pawl, slip clutch
17	Ratchet disk	35	Hex. Bolt	61	Thrust disk, brake
18	Housing cover, inside	36	Bracket, susp. hook	62	Circlip, slip clutch

Article-no. Spare parts

Item	Description	TM-B-OP-05N	TM-B-OP-10N	TM-B-OP-20N	TM-B-OP-30N	TM-B-OP-50N
6	Suspension hook	Z09939	Z09940	Z09941	Z09942	Z09943
7	Safety latch, complete	Z09944	Z09945	Z09946	Z09947	Z09948
8	Hook	Z09949	Z09950	Z09951	Z09952	Z09953
16	Brake lining	Z06934	Z06935	Z06936	Z06937	Z06938
17	Ratchet disk	Z06928	Z06929	Z06930	Z06931	Z06932
25	Chain (sold by meter)	F09027		F09047		F09057

For spare parts for the TM-B-OP-100N, please contact the service address.

9 TECHNICAL DATA

Model/Type ►	TM-B-OP-05N	TM-B-OP-10N	TM-B-OP-20N	TM-B-OP-30N	TM-B-OP-50N	TM-B-OP-100N
Working Load Limit (WLL) [t]	0,5	1	2	3	5	10
Standard lift [m]	2,5	2,5	3	3	3	3
Pull force at hand chain with full capacity [N]	230	360	430	440	470	480
Min. load for brake activation [kg]	50	100	200	300	500	1 000
Min. distance between the hooks [mm]	270	317	414	465	636	798
Nominal chain size [mm]	6 x 18 T	6 x 18 T	8 x 24 T	8 x 24 T	10 x 30 T	10 x 30 T
Mass [kg]	11	13	20	27	46	83
Extra mass per meter for extra lift [kg/m]	0,9	1	1,2	2,4	4,6	9,2

10 SERVICE ADDRESS

THIELE GmbH & Co. KG, P.O. Box 8040, 58618 Iserlohn, Germany

Tel.: +49(0)2371/947-0

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



11 WARRANTY

TM-chain blocks are guaranteed for 1 year from the date of purchase against defective materials or workmanship. Wear parts, overloaded or incorrectly used parts are excluded from the warranty.

12 STORAGE

Store chain blocks in an orderly and dry manner at temperatures between 0 °C and +40 °C.

