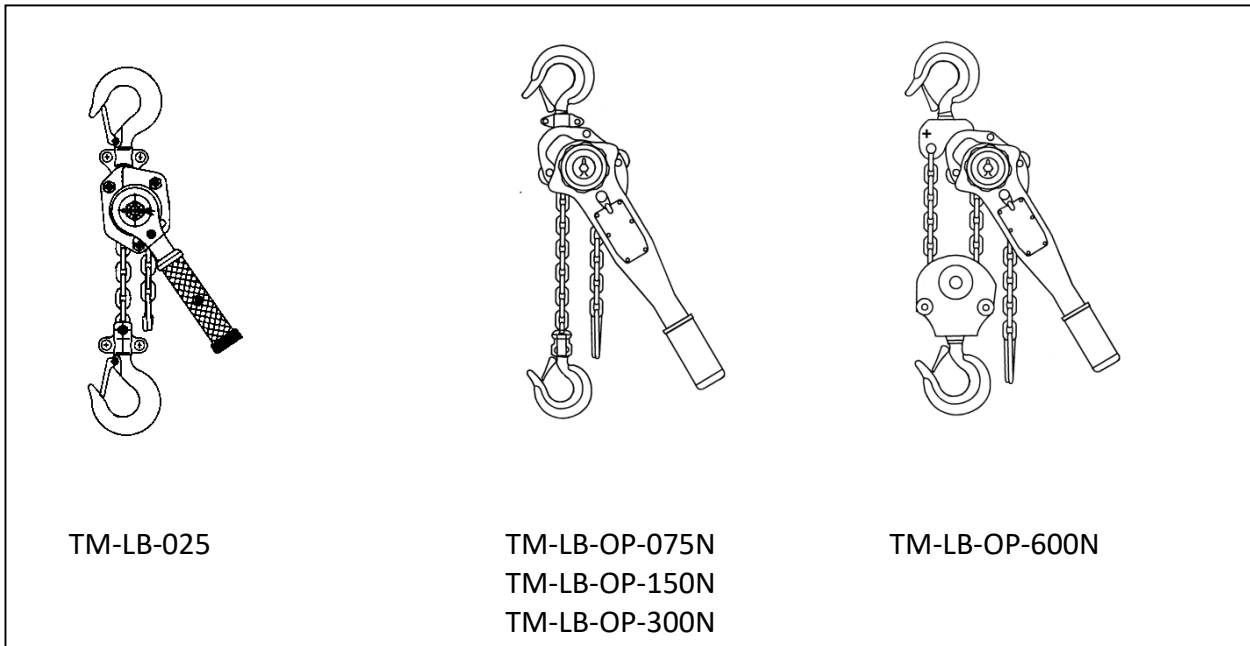


Original in compliance with machinery directive 2006/42/EC



TM-lever hoists 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-lever hoists.
This manual includes very important information concerning safety and operation.

IMPINT

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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 lever hoists 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-lever hoists from THIELE are manually operated portable devices for pulling, hoisting and moving loads.

They can also be used as lashing equipment in the sense of standard EN 12195-3. The maximum lashing capacity (LC) is limited to the working load limit (WLL) for use as a multi-purpose lever hoist.

Essential features are:

- overload protection by integrated slipping clutch (except TM-LB-025)
- double pawl braking system
- load chain according to EN 818-7, grade T, galvanized

TM-lever hoists may only be used:

- within the permissible working load limits and lashing capacities
- 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 lever hoists 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, lever hoists 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 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 lever hoists 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 lever hoists to loads exceeding the specified working load limits or lashing capacities.

- The load chain must not touch any components or be guided over edges during operation.

- If using two lever hoists for one load, select each lever hoist 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 lever hoists 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 the operating lever only - never with an additional extension piece.

- 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 lever hoists or lifting/lashing 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 lever hoist in the suspension hook is not permitted.**

- Do not use lever hoists in connection with welding processes.



- Structural modifications, attachments or conversions are not permitted.
- Worn, bent or damaged lever hoists 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 lever hoists with a twisted, stretched or damaged load chain.**
- Do not remove or cover warning labels located on the device.
- Do not clean the lever hoists with water or with high pressure cleaner.
- Do not use lever hoists 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.



- **Lever hoists 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, lever hoists 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.
- If using lever hoists for lashing please observe the safety regulations of standard EN 12195-3 or VDI-sheets 2700.
- After modifications, conversions or extensions, the declaration of conformity loses its validity.

3 COMMISSIONING

Prior to using the lever hoists 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 lever hoists are provided with a test seal and the next inspection date.

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

4 OPERATION

4.1 General

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

Prior to each use, the lever hoists 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 lever hoists only in the temperature range from -10 °C to +50 °C.

Position the lever hoist 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 Freewheel

After the lever hoist has been fully unloaded by operating the lowering function, the load chain can be easily and quickly adjusted to the required length by moving the selector lever to the neutral middle position "N" = ,Neutral'.

Turn the hand wheel counterclockwise to disengage the brake. The load chain can now be pulled freely in either direction.

Because the TM-LB-025 doesn't have a hand wheel please proceed as follows:

Unload the load chain, move the selector lever to position "DN" = ,Down/Lower' and release the brake by operating the hand lever, then move the selector lever to the neutral middle position "FREE" = ,Free'. The chain can now be pulled freely.

4.3 Lifting the load

Set selector lever to "UP" = ,Up/Lifting' position.

Turn hand wheel clockwise to take up tension in the chain.

Perform pump movements on the hand lever in order to lift the load.

4.4 Lowering the load

Move the selector lever of the hand lever to the "DN" = ,Down/Lower' position and perform pumping movements on the hand lever to slowly lower the load.

When the lever hoist is unloaded by removing or reducing the load or when the hook is being pulled tight against the body, the brake remains engaged. Release the brake by jerky, in case of heavy tension abrupt, counterclockwise movements of the lever.

4.5 After Use

Remove foreign objects or dirt from the load chain and the lever hoist.

Check the load chain, hook and safety latches to ensure that the lever hoist can be used again.

Store lever hoists in a dry, clean place.

4.6 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 lever hoists. 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 lever hoist that come into contact with the load chain.
2. Switch the selector lever to "N" or, when dealing with the TM-LB-25, to "FREE".
3. Insert the first load chain link in an upright position (vertical to the sprocket) **between the chain guide (TM-LB-25: chain guide rollers) 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.
4. 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.
5. Pay attention to the correct positioning of both load chain strands in terms of the housing bolts. **During operation, the housings orient themselves according to the load (see title image). Neither of the load chain strands may then come into contact with the housing bolts under load.**



TM-LB-25: The chain may not run above the guide roller under any circumstances!

6. When dealing with a single-strand design, insert the load chain end of the load strand (see note at the end of this chapter) into the console of the hook attachment and fasten it with the chain bolt. Secure chain bolt with new self-locking nuts.
7. When dealing with a twin-strand design, insert the load chain end of the load strand (see note at the end of this chapter) 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.
8. Fasten the load chain end fitting to the loose chain end. Secure the chain bolt with a new splint. Pay attention that the end fitting is positioned transverse to the housing in order to prevent the chain from being pulled out. If necessary, shorten the load chain by removing a link. When dealing with the TM-LB-25, the end fitting consists only of a spring ring.
9. When dealing with the twin-strand design, the load chain end that comes out of the bottom block is fastened to the upper hook suspension with a bolt. Ensure that the load chain strands are not twisted. Secure the chain bolt with a new splint.
10. Perform a functional test using a low load. Check that the chain strands are not twisted, that the chain is not touching the housing bolt, that it flawlessly glides into the chain guide and that the end fitting can support itself on the housing in the event of a blockage.

i In the case of the 2-strand version, it can happen that both strands of the load chain are twisted after the lever hoist has been suspended, even though the chain has been mounted correctly. The reason for this is the way the hoist has been stored. Before further use of the lever hoist, turn the bottom block around the horizontal axis (perpendicular to the chain wheel axis) until both chain strands are no longer twisted.

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

NOTE: *When looking at the type plate, the load strand directed downwards is always to the left of the sprocket axle or the axle of rotation of the handwheel.*

6 INSPECTIONS

6.1 General

Inspections and maintenance must be arranged for 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 lever hoist, documentation must be kept in which all inspections and maintenance activities are to be listed.

The lever hoists 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 lever hoists 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 lever hoist 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.

If problems continue, send the lever hoist to the service address for inspection or repair.



Do not put lever hoists into operation until all defects have been eliminated.

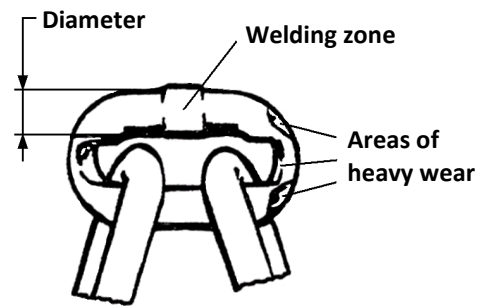
6.3 Load chain

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 lever hoist has been massively overloaded and must be disposed of.

The use of load-bearing components of such a lever hoist 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 lever hoist 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 lever hoist 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.

When dealing with the TM-LB-25, remove the spring ring on the chain end.

Allow the used load chain to run through the lever hoist 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 lever hoist 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 lever hoist 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.

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 Nut of the handwheel

After loosening the nut that fixes the handwheel, tighten it hand-tight.

Make sure that the brake is lightly applied, e.g. by putting a low load on the lever hoist.



7.7 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.

7.8 Disposal

Dispose of worn out lever hoists and accessories for scrapping in accordance with local regulations.

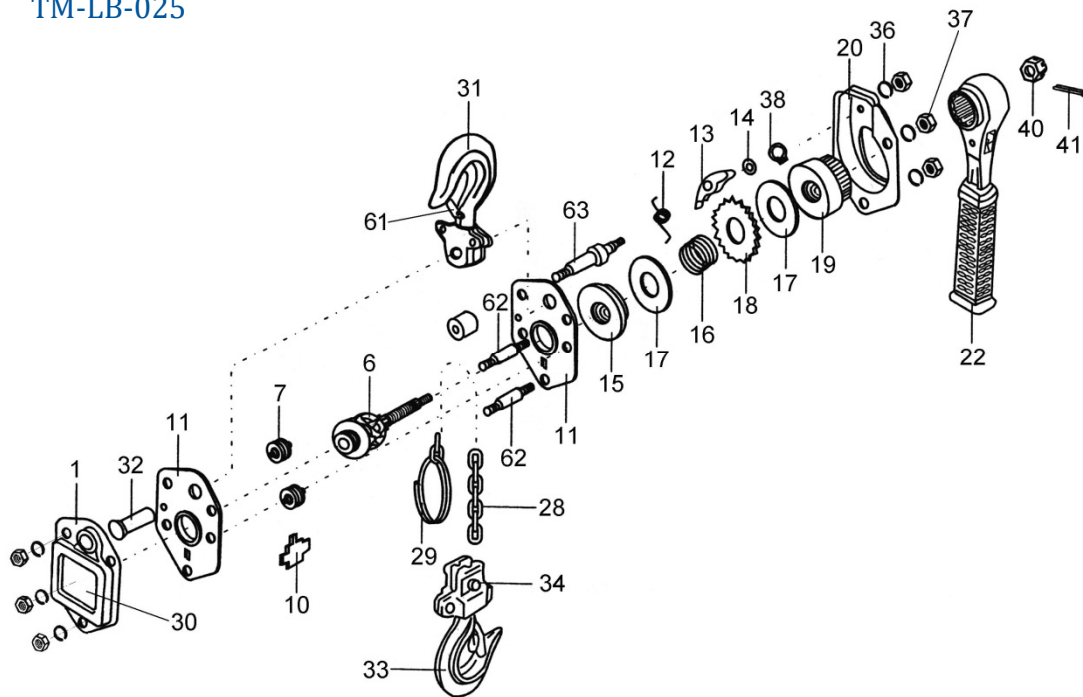
8 SPARE PARTS



Use only original THIELE spare parts!

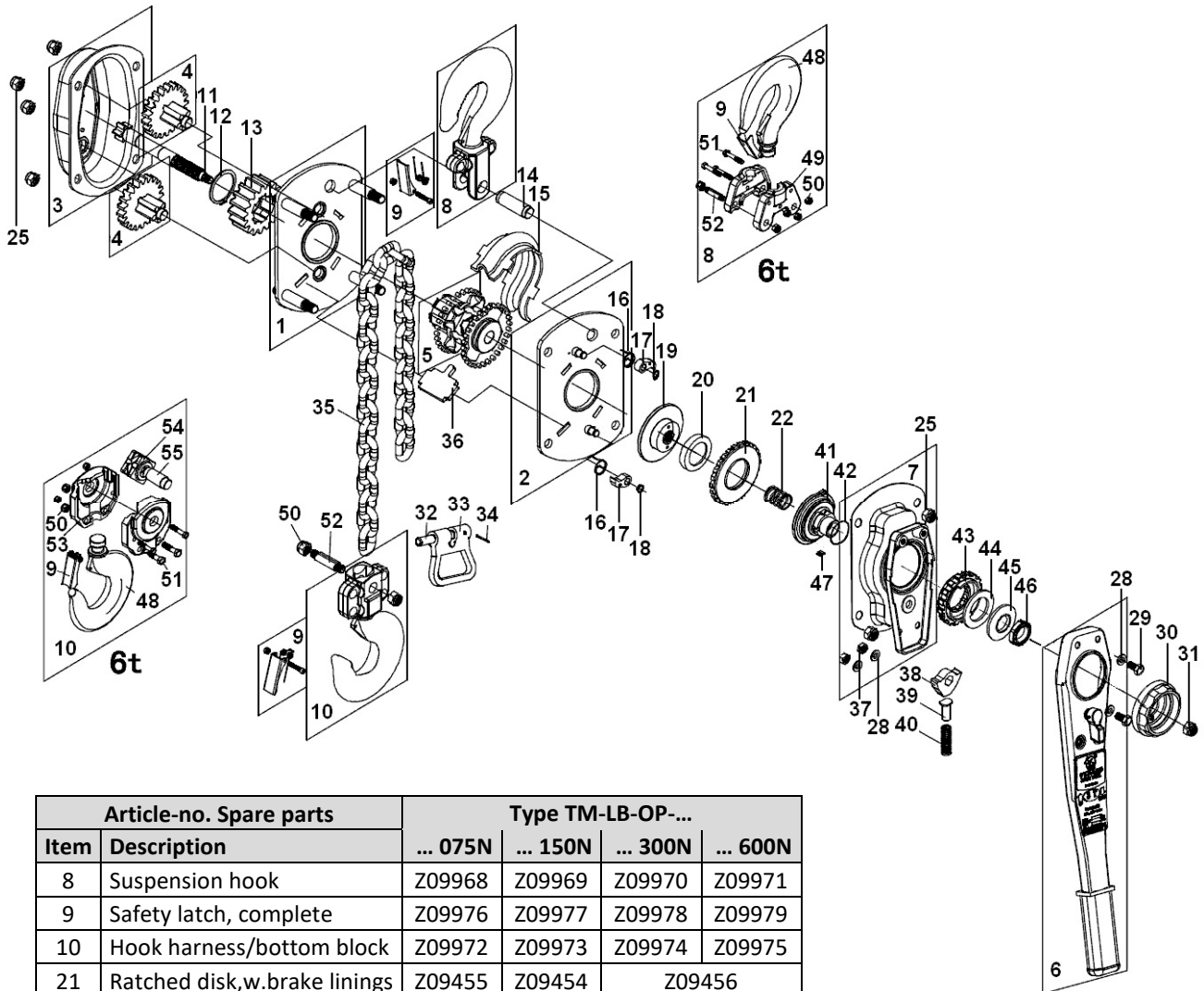
When ordering spare parts, please be sure to state the type, year of manufacture and serial number.

8.1 TM-LB-025



Item	Description	Item	Description	Item	Description
1	Housing cover	17	Brake lining	33	Hook harness
6	Sprocket	18	Ratchet wheel	34	Pin, hook harness
7	Guide roll	19	Thrust disk, brake	36	Washer
10	Scraper	20	Housing cover	37	Hex. Nut, self-locking
11	Housing plate	22	Lever	38	Safety ring
12	Pawl spring	28	Chain	40	Slotted nut
13	Pawl	29	Safeguard, chain end	41	Cotter pin
14	Washer	30	Name plate	61	Safety latch, complete
15	Brake hub	31	Suspension hook	62	Housing pin
16	Cormpr. spring	32	Pin, susp. hook	63	Housing pin

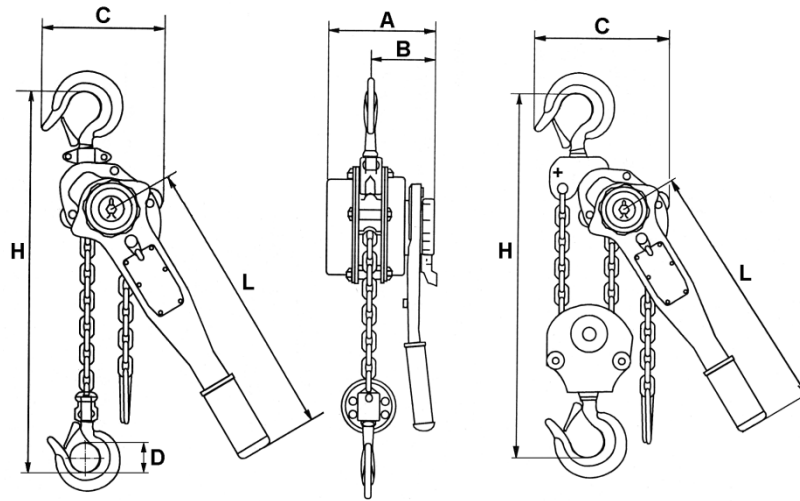
8.2 TM-LB-OP-075N, TM-LB-OP-150N, TM-LB-OP-300N, TM-LB-OP-600N



Article-no. Spare parts		Type TM-LB-OP-...			
Item	Description	... 075N	... 150N	... 300N	... 600N
8	Suspension hook	Z09968	Z09969	Z09970	Z09971
9	Safety latch, complete	Z09976	Z09977	Z09978	Z09979
10	Hook harness/bottom block	Z09972	Z09973	Z09974	Z09975
21	Ratched disk,w.brake linings	Z09455	Z09454	Z09456	
35	Chain (sold by meter)	F09027	F09047	F09057	

Item	Description	Item	Description	Item	Description
1	Housing plate, gear side	18	Circlip	39	Thrust pin, change lever
2	Housing plate, lever side	19	Brake hub	40	Comp. spring, change lever
3	Gearbox cover	20	Bushing	41	Thrust disk, brake
4	Gearwheel stage	21	Ratched disk,w.brake linings	42	Spring washer, slip clutch
5	Sprocket	22	Compression spring	43	Ratchet wheel, slip clutch
6	Lever	25	Hex. Nut	44	Thrust disk, slip clutch
7	Housing cover, lever side	28	Washer	45	Cup spring, slip clutch
8	Suspension hook	29	Hex. Bolt	46	Hex. nut, slip clutch
9	Safety latch, complete	30	Handwheel	47	Pawl, slip clutch
10	Hook harness/bottom block	31	Hex. nut, self locking	48	Hook
11	Drive shaft	32	Pin, chain end fixture	49	Bracket, suspension hook
12	Circlip	33	Chain end fixture	50	Hex. nut
13	Gearwheel	34	Cotter pin	51	Hex. bolt
14	Pin, suspension hook	35	Chain	52	Pin, hook harness
15	Chain guide	36	Scraper	53	Bracket, bottom block
16	Pawl spring	37	Hex. Nut	54	Sprocket, bottom block
17	Pawl	38	Toggle, change lever	55	Pin, bottom block

9 TECHNICAL DATA



Model/Type ▶	TM-LB-025	TM-LB-OP-075N	TM-LB-OP-150N	TM-LB-OP-300N	TM-LB-OP-600N
Working Load Limit (WLL) [t]	0,25	0,75	1,5	3	6
Lashing Capacity (LC) [daN]	-	750	1 500	3 000	6 000
Standard lift [m]	1,0	1,5	1,5	1,5	1,5
Number of falls	1	1	1	1	2
Nominal chain size [mm]	4 x 12 T	6 x 18 T	8 x 24 T	10 x 30 T	10 x 30 T
Effort required to crank lever at full load [N]	250	220	420	460	470
Min. load for brake activation [kg]	25	75	150	300	600
Dimensions [mm]	A	92	148	172	200
	B	72	90	98	115
	C	85	136	160	180
	D	30	30	35	40
Min. distance between the hooks [mm]	H	230	325	380	480
Length of the lever handle [mm]	L	160	260	300	350
Mass [kg]	2,0	7,0	11	21	31
Extra mass per meter for extra lift [kg/m]	0,41	0,92	1,6	2,4	4,8

10 SERVICE ADDRESS

THIELE GmbH & Co. KG, P.O. Box 8040, 58618 Iserlohn, Tel. +49(0)2371/947-0

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



11 WARRANTY

TM-lever hoists 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 lever hoists in an orderly and dry manner at temperatures between 0 °C and +40 °C.

