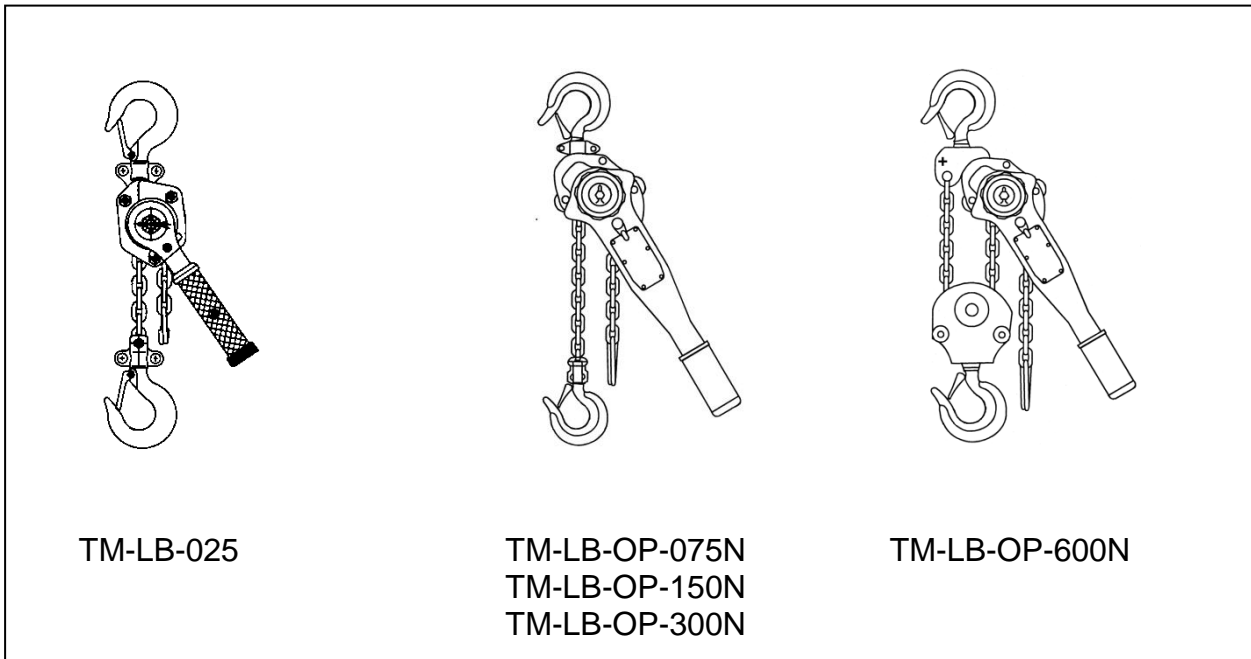


MANUAL

TM - Lever Blocks

Original operating instructions in keeping with the EC Machinery Directive



Marking of changes to prior edition



TM - Lever Blocks are in accordance with the EC machine directions 2006/42/EG and are prototype tested by a German Authority (TÜV Rheinland/GS)

Read this manual before using the TM – Lever Block.
This manual includes very important information concerning safety and operation.

Warning

TM – Lever Blocks are not intended for lifting, carrying or transporting of persons and thus must not used for this purpose!
Death or injury can occur from improper use or maintenance.

1 General features

TM – Lever Blocks are ideal for construction, mining, transport, marine and general industries.

TM – Lever Blocks are approved for safe lashing of goods on trucks and trailers. The lashing with TM – Lever Blocks is in accordance with EN 12195-3 (direct and diagonal lashing).

Significant characteristics are:

- Overload protection (except TM-LB-025)
- Double pawl breaking system
- Hoist chain acc. to EN 818-7, grade T, el. galv. + yellow chrom.

2 Safety Notes

The subsequent safety information provides an overview of the general methods of action in order to safely operate TM lever blocks.

Death or injury can occur from improper use or maintenance.

The under mentioned list is not necessarily limited.

1. Only trained persons should use the lever block.
2. In addition to the operating instructions, operators must be aware of and have been appropriately trained with regard to the relevant accident prevention regulations "Load-carrying devices used with lifting equipment", BGR 500. Only authorized persons in accordance with BGR 500, Chapter 2.8 may be assigned to perform assembly and dismantling work.
3. Check whether the suspension points are able to assume the forces to be applied.
4. Structural modifications, attachments or conversions are not permitted.
5. Do not use a lever block showing wear or damages.
6. Inspect the lever block periodically.
7. Replace worn and damaged parts (also check safety latches on the hooks).
8. Lubricate the lever block periodically. Ensure hook safety latches are fitted and are functioning correctly.
9. Do not use any connectors to join load chain.
10. Do not lift loads greater than the load capacity of the lever block (pls. refer to "Technical Details").
11. If using two lever blocks for one load, select two lever blocks having the rated load capacity equal to or more than the load.
12. Loads must be attached in accordance with BGI 556 – "Government safety association information for load attachment personnel".
13. Do not use the chain as a sling / loop.
14. Lift or pull the load with the chain and hooks in the same plane.
15. The operational rotation of the load in the hook or the rotation of the lever block in the suspension hook is not permitted.
16. Ensure chain and hooks are not twisted or have kinks, nicks or cracks.
17. Do ensure the load is fully supported in the throat of the hook.
18. Do not support any load with the tip of the hook.
19. Protect the chain over sharp corners.
20. During operations always observe the load.
21. Ensure area is clear of people and obstruction.
22. Do not lift any load over people.
23. Always begin lifting slowly.

24. Do not support the load jerky.
25. Do not swing the load.
26. Do not leave a lifted load unattended.
27. Do not make any welding processes at the lifted load.
28. Do not use the lever block in connection with welding processes.
29. Do not use the lever block in case of uncommon noise, jumping, jamming or overloaded chain.
30. Use the operating lever only - never with an additional extension piece.
31. After using make sure that the lever block is secured to prevent unauthorized use.
32. Do not remove or cover warning labels located on the device.
33. Do not clean the lever block with water or with high pressure cleaner.
34. Do not use lever blocks to lift dangerous goods such as molten or radioactive materials.
35. Application Temperature: -10 °C up to +50 °C
36. The brake must be examined for icing in the event of operating temperatures below 3 °C.
37. The brake pads may overheat when constantly lowering when dealing with long hook paths (> 3m). Ensure that cooling pauses are taken.
38. Storage temperature: 0 °C up to +40 °C
39. Observe national regulations that may not be stated here.

If using the lever block as lashing / tensioner please observe the safety regulations of EN 12195-3.

3 Pre – installation inspections

Prior to commissioning (first use) the user should observe any applicable local or other provisions relating to the specific operation of the chain block.

Read safe use instructions first and any labels supplied with or attached to the TM – Lever Block. Avoid unsafe use.

The following points have to be observed:

- Visually inspect block to ensure there are no obvious defects.
- Ensure that a functional and visual inspection is performed by an expert.
- In case of a used lever block check service history and any damage.
- Lubricate load chain prior first use. See Chapter 6 for lubricant information.
- Ensure that testing intervals and the next testing date is determined A notification regarding the next test must be attached to the lever block.
- Dispose packing in accordance to local regulations.

4 Operating instructions

On order to check the load brake raise the load first and stop again before lifting the load completely. Position the block between load and suspension point. Ensure hooks are seated correctly and the safety latches are engaged.

Also make sure that chains and hooks are not twisted or have kinks, nicks or cracks.

Freewheel:

Chain can be quickly adjusted to the correct length by positioning the selector lever (50) to “N” (neutral). Turn the hand wheel (27) counter clockwise to disengage brake. Chain can now be pulled freely in either direction. Because TM-LB-025 doesn't have a hand

wheel please proceed as follows: disengage the chain lever in "DN" position and release the brake by rotating the lever. Afterwards set the lever to "FREE". The chain can now be pulled freely.

Warning:

When under load, the freewheel position may not be selected under any circumstances! After loosening the nut that fixes the hand wheel in place, e.g. in the event of inspections, it must be tightened hand-tight. In doing so, it must be ensured that the load brake is slightly tightened, e.g. by loading the lever block with a light load.

Lifting load:

Ensure that area is clear of people and obstructions. Set selector lever to "UP" position. Turn hand wheel clockwise to take up tension in the chain. Perform pump movements on the hand lever in order to hoist the load.

Important Notice:

In order to operate the brake mechanism, it is necessary to apply a minimum load.
(See table for technical data)

Lowering load:

Ensure that area is clear of people and obstructions. Move the switch lever of the hand lever into the "DN" position and perform pump movements on the hand lever in order to slowly lower the load. The brake remains closed when unloading the lever block by removing the load or when tightening the hook against the housing. Release the brake by performing jerking lowering movements, or sudden lowering movements when dealing with severe tension, on the lever.

After use:

Remove any dirt from the chain and lever block, inspect hooks, latches and chain to ensure they are still operational. Store the lever block in a dry and clean storage area.

Slip clutch:

The slipping clutch is set to approx. 1.6 x WLL at the factory and exclusively serves to provide lever block overload protection. It may not be operationally used or actuated. Slip clutch must only be set by the manufacturer or authorized competent persons. Repeated inspections of the slip clutch setting at short intervals (after it has been rented out) are not permissible.

5 Load chain mounting

1. Clean the chain that is to be assembled as well as the parts of the lever block that come into contact with the chain.
2. Switch the selector lever to "N" or, when dealing with the TM-LB-25, to "FREE".
3. Insert the first 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 chain links point outwards in a radial manner.** Rotate the hand wheel so that the second chain link can be horizontally assumed by the following pocket of the sprocket.
4. Continue with the rotary movements until sufficient 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 chain strands in terms of the housing bolts. **During operation, the housings orient themselves according to the load (see title image). Neither of the 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 chain end of the load strand 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 chain end of the load strand 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 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 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 chain end that comes out of the bottom block is fastened to the upper hook suspension with a bolt. Ensure that the 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.

6 Inspection and tests

Prior to use the operating personnel or maintenance staff must visually check the lever block for damage or incorrect functioning.

Operation:

Check for visual and / or abnormal noises. Do not use the block in case of a jamming of the chain. Listen for the ratchet clicking and pay attention to any jamming or malfunction. The clicking sound of the pawl on the ratchet is normal during the raising of the load. If jammed or jumping, the chain must be inspected/checked. If any problem is permanent return the block to the service address mentioned.

Do not operate the block until all problems are solved.

Load Chain:

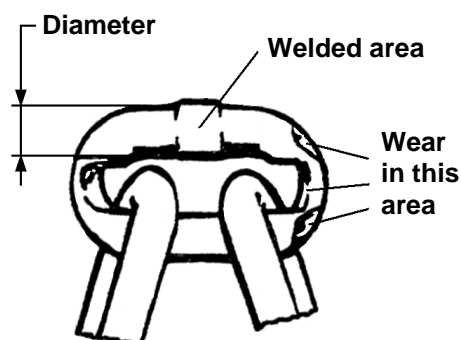
Check all chain links in regard to bending, corroding, locking, stretching, bending and especially to any wear. The chain should be taken out of service if the pitch has increased by more than 3 % or the average wire diameter reduced by more than 10 %.

If necessary lubricate the chain. A failure of the load chain can occur if the chain is not clean and lubricated.

If the chain is dirty and unlubricated, this can lead to premature wear and subsequent chain failure.

Lubricate the 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.



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 the safety latch does not fit to the hook, replace the hook because of overloading. Check whether the hooks swivel smoothly. Check the safety latch.

Slipping clutch:

If the device 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.

Transmission:

The transmission is maintenance-free.

Tests and maintenance work must be arranged by the user.

The block shall be checked through a authorized repair centre at least once a year. An inspection documentation must be prepared for each lever block and all inspection activities must be included in that service history.

The block must be re-certified after 4 years in operation latest.

Prior to re-certification a general repair must be made by an authorized repair centre.

7 Maintenance and repair

A necessary repair can be only made by an authorized service centre.

Please refer to the addresses mentioned under item no. 10.

Chain replacement:

Relieve the lever block of load 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 chain to run through the lever block in the lifting or lowering device and, if necessary, pull the chain through the top and bottom block. Assemble the new chain according to the information provided in Chapter 5.

Replacing the load hook / hook tackle (single-strand):

The hook tackle can only be replaced as a unit. Relieve the lever block of load and open the nut belonging to the chain bolt. Pull the chain bolt out of the hook tackle console. Insert the 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 chain link. Secure the chain bolt with a new self-locking nut.

Replacing the load hook / bottom block (twin-strand):

Relieve the lever block of load 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.

Replacing the suspension hook:

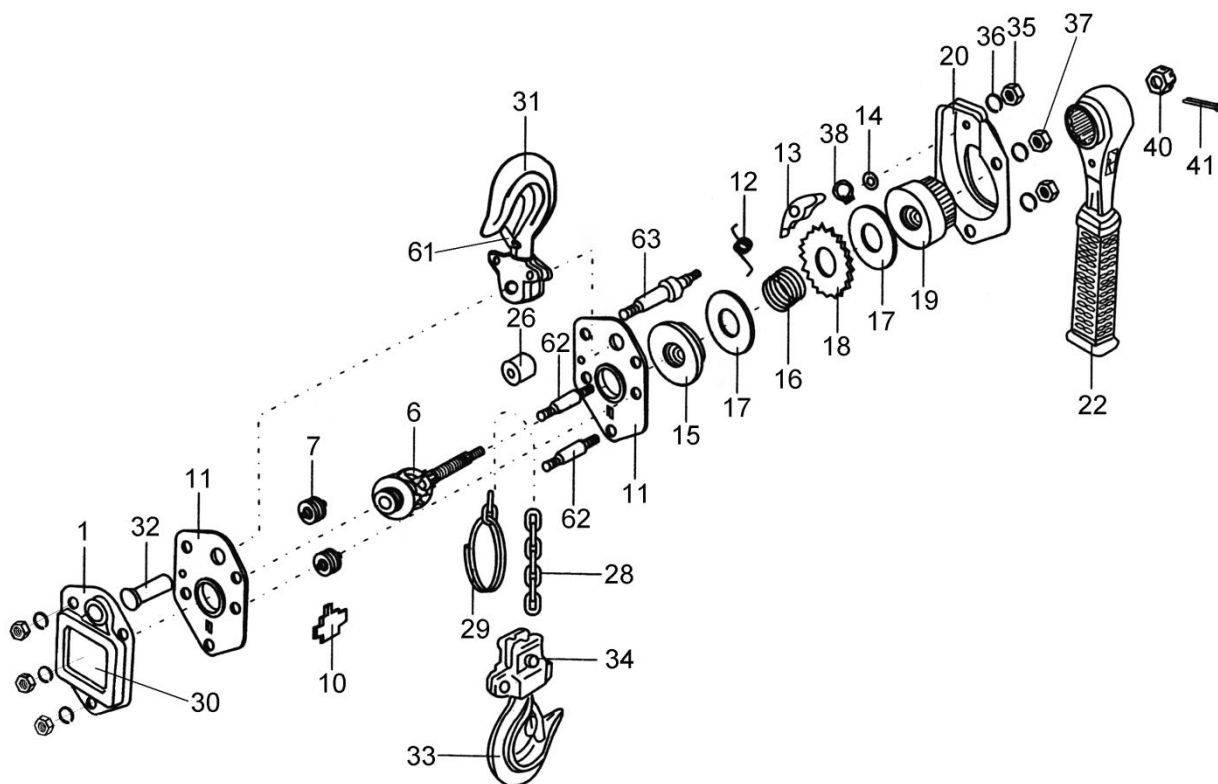
The housing must be opened in order to replace the suspension hook. Therefore, this work should only be performed by an authorized expert. In such a case, please contact a service address.

Dispose:

Nearly all parts are made of steel and should be scrapped in accordance to local regulations.

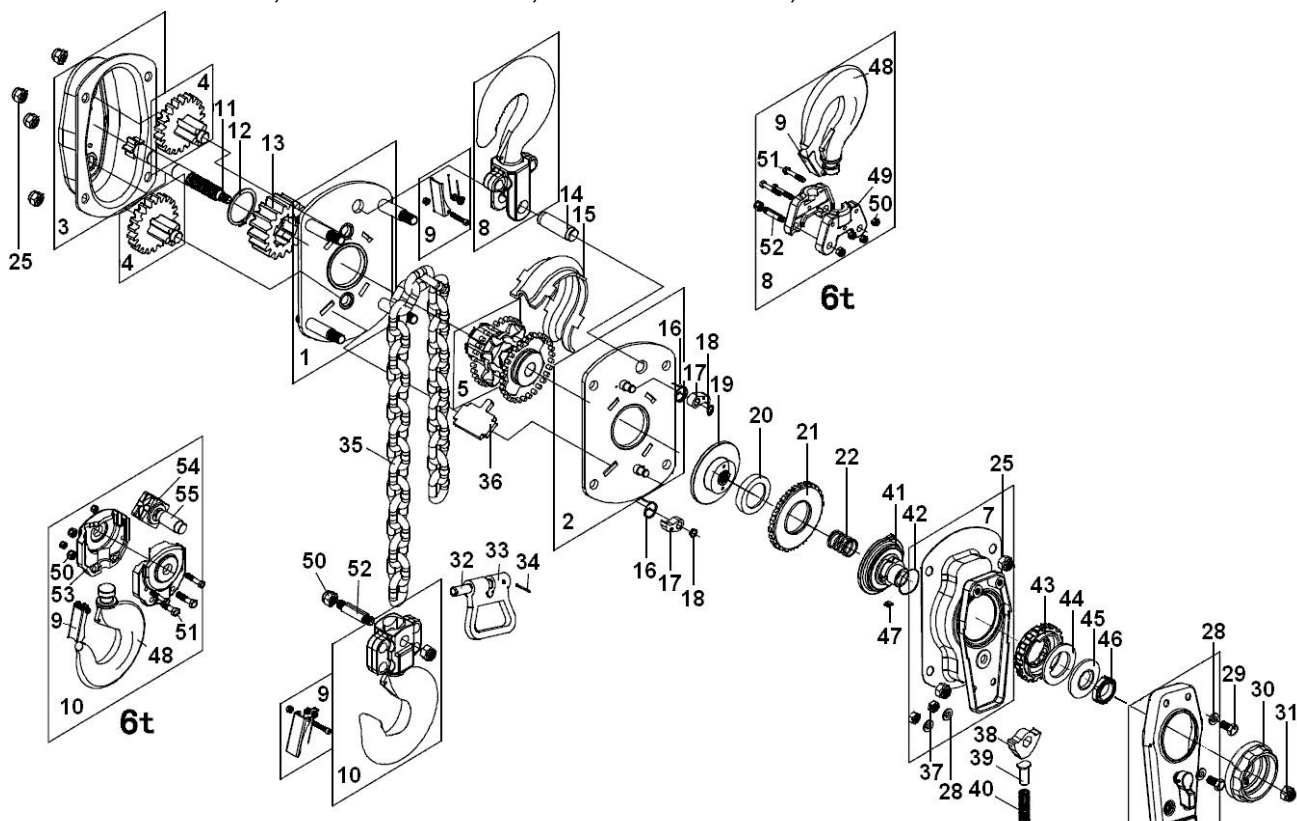
8 Spare parts

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	Washer
12	Pawl spring	28	Chain	40	Slotted nut
13	Pawl	29	Safeguard, chain end	41	Cotter pin
14	Circlip	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

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

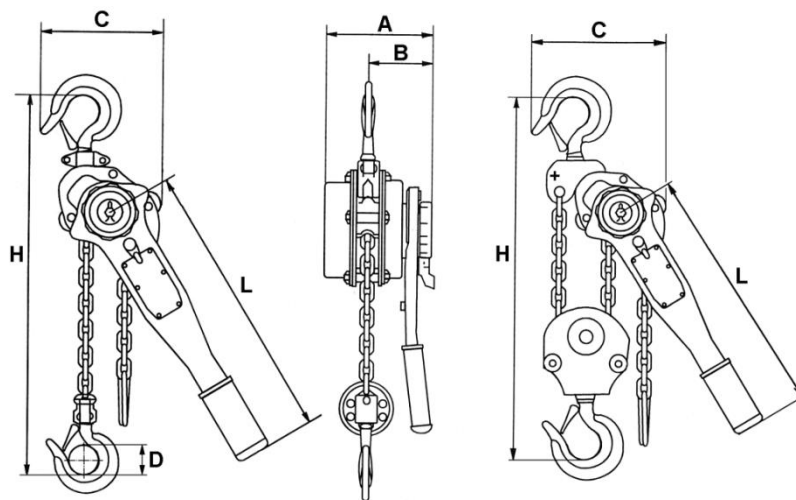


Article-no. spare parts		Type TM-LB-OP-...			
Item	Description	...075N	...150N	...300N	...600N
8	Suspension hook	Z09968	Z09969	Z09970	Z09971
9	Safety latch, complete	Z09976	Z09977	Z09978	Z09979
10	Hook harness/bottom block	Z09972	Z09973	Z09974	Z09975
21	Ratched disk,w.brake linings	Z09455	Z09454	Z09456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

When ordering spare parts please indicate the model and serial no. of the block.

9 Technical details



Model/Type ►		TM-LB-025	TM-LB-OP-075N	TM-LB-OP-150N	TM-LB-OP-300N	TM-LB-OP-600N
Capacity (WLL) [t]		0,25	0,75	1,5	3	6
Lashing capacity (LC) [daN]		-	750	1500	3000	6000
Standard lift [m]		1,0	1,5	1,5	1,5	1,5
Number of falls		1	1	1	1	2
Chain-Ø [mm]		4	6	8	10	10
Effort required to crank lever at full load [N]		250	220 [#]	420 [#]	460 [#]	470 [#]
Min. load for brake activation [kg]		5	30	38	50	55
Max. force transmission until the activation of the overload protection [t]		-	1,44	2,88	5,76	11,52
Measurements [mm]	A	92	148	172	200	200
	B	72	90	98	115	115
	C	85	136	160	180	235
	D	30	30	35	40	50
Min. distance between hooks [mm]	H	230	325	380	480	620
Lengths of the lever handle [mm]	L	160	260 [#]	300 [#]	350 [#]	350 [#]
Net weight [kg]		1,8	6,2 [#]	11	18,5 [#]	29,4 [#]
Packing dim. L x B x H [cm]		23 x 8 x 11	38 x 13 x 17	48 x 14 x 20	56 x 19 x 23	56 x 20 x 23
Extra weight per meter of extra lift [kg/m]		0,41	0,92	1,6	2,4	4,8

10 Service address

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

11 Warranty

For TM - Lever Blocks, a one-year warranty is granted from the date of purchase for defective materials or executions. Wear parts as well as parts that have been overloaded and incorrectly used are excluded from the warranty.

In the event of a justified complaint, the girder clamp will be repaired or replaced.

12 Documentation

TM – Lever Blocks will be supplied with this manual and with an acceptance test certificate and with a declaration of conformity.

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