

LH 25 S/E HYDRAULIC BREAKER OPERATING MANUAL

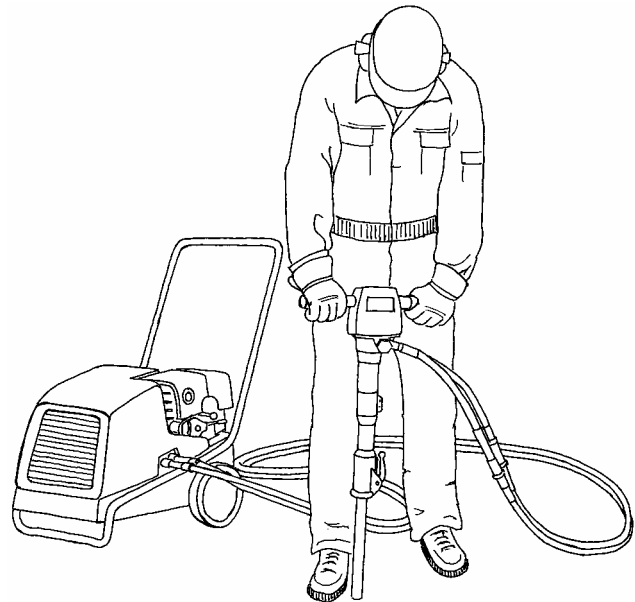
Serial Nos. 252000-

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- ***Introduction and Description***
- ***Technical Data***
- ***Operation***
- ***Recommended Hydraulic Oil***
- ***Safety Precautions***
- ***Connection to Hydraulic Power Source***
- ***Maintenance***
- ***Repair/Service Check-Up***
- ***Tools and Accessories***
- ***Hoses***
- ***Spare Parts List***
- ***EC Declaration of Conformity***
- ***Warranty Conditions***

Dealer:



BREAKERS A/S Anker Engelundsvej 3, 9200 Aalborg SV, Denmark

Tel.: +45 98 181722 Fax: +45 98 188922 info@lifontools.com www.lifontools.com

GB

Introduction and Description

This manual is intended to provide operation and service information necessary for safe and efficient use of the LIFTON LH 25 S/E hydraulic breaker.

Operation or service other than in accordance with the instructions given may subject the breaker and connected power station to conditions beyond the design capability, which may result in system failure or personal injury.

1. Before attempting to use the breaker, carefully read the entire operating manual and warranty conditions.

Special attention should be paid to the section "Safety Precautions".

2. Read the operating manual for the hydraulic power source to be used.

3. Make sure that the power source is correctly sized for the breaker.

The LH 25 is an efficient and sturdy hydraulic breaker for the breaking of reinforced concrete, asphalt concrete and heavy brickwork.

The LH 25 breaker is available in a standard version (LH 25 S) and an ergonomic version (LH 25 E) provided with torsion dampened handles which reduce the vibration level to a minimum and protect the operator from injuring his hands and arms.

The LH 25 requires an oil flow of 18-30 l.p.m. and then works at a pressure of 105-125 bar (see the below table on T-connections for correct working pressure at different flow). For connection see the section "Connection to hydraulic powerpack".

Safety trigger is standard on the LIFTON breakers LH 18, LH 21, LH 25 and LH 35.

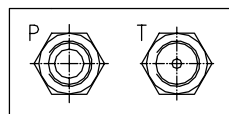
Year of manufacture: See the ID-tag.

T-Connection

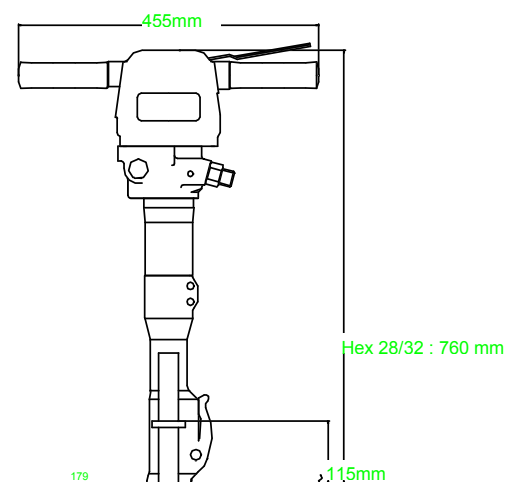
Oil Flow	Orifice	1/2" BSP	3/4" JIC
18-22 l.p.m.	3.4 mm	1818020	1818019
23-26 l.p.m.	4.2 mm	1818013	1818012
27-30 l.p.m.	None	1805711	1815135

P-Connection

1/2" BSP	3/4" JIC
1805711	1815135



861



Technical Data LIFTON LH 25 S/E

LH 25 S: Weight without hoses and tool	25.2 kg
LH 25 S: Service weight (incl. 0.4 m tail-hose and moil point)	30.6 kg
LH 25 E: Weight without hoses and tool	25.6 kg
LH 25 E: Service weight (incl. 0.4 m tail-hose and moil point)	31.0 kg
Steel size (standard)	Hex 32x160 mm
Oil flow range	18-30 l.p.m.
Working pressure	105-125 bar
Max. back pressure in return line (measured at breaker).....	15 bar
Hydraulic oil working temperature	30-70°C
Accumulator charging pressure (Nitrogen).....	50 bar
Pressure relief valve setting (max.)	160 bar
Blow frequency	19-31 Hz (1140-1860 1/min.)
Impact energy (ISO 2787).....	110 Joule
Connections P and T	Standard ½" BSP (alternatively ¾" JIC)
LH 25 S: Vibration level (ISO 8662-5).....	$a = 11.4 \text{ m/s}^2$ (H/A) or $L_A = 141 \text{ dB(H/A)}$
LH 25 E: Vibration level (ISO 8662-5).....	$a = 9.0 \text{ m/s}^2$ (H/A) or $L_A = 139 \text{ dB(H/A)}$
LH 25 S/E: Sound pressure level 1 m (ISO 11203)	$L_{PA} = 97 \text{ dB}$
LH 25 S/E: Measured sound power level (2000/14/EC)	$L_{WA} = 108 \text{ dB}$
Guaranteed sound power level (2000/14/EC)	$L_{WA} = 112 \text{ dB}$
Required cooling capacity (in case of alternative power source)	Approx. 2 kW

Operation

Starting

1. Check that the tool is in good order and pressed fully home in the nose part.
2. Check that the latch is locked, so that the tool does not fall out.
3. Remove the protective caps from the quick-release couplings.
4. Clean the quick-release couplings if needed and connect the tail-hoses to the extension hoses of the power source (see manual).
5. Place the breaker at a right angle on the material to be broken and activate the trigger lever.
6. Do not take too big "bites" to ensure breaking in 10-20 seconds. Use just enough feed force to have the breaker run regularly.

Stopping

1. Release the trigger lever.
2. Stop the power source (see operating manual).
3. Disconnect the hoses and fit the protective caps to the quick-release couplings.



IMPORTANT

1. Make sure that the breaker is supplied with correct flow and pressure according to the technical data.
2. Avoid free blows (the piston does not hit the tool), as this will lead to unnecessary heating of the oil and in the long run damage both seals and breaker.

Recommended Hydraulic Oil

To protect the environment, LIFTON recommends the use of biodegradable oil.

Viscosity (ideal).....	20-40 cSt
Viscosity (allowable).....	15-1000 cSt
Viscosity index	Min. 100

Standard mineral or synthetic oil can be used.

When the tool works continuously, the oil temperature will steady at a certain level called the oil working temperature. This will, depending on the nature of the job and the cooling capacity of the system, be 20-40°C above the air temperature. At working temperature, the oil viscosity must be within the ideal area. The tool may not be operated, if the oil viscosity is not within the allowable area, or if the temperature is not within $\pm 20^{\circ} \rightarrow +70^{\circ} \text{C}$. The viscosity index expresses the dependence of the viscosity on the temperature. That is the reason why a high viscosity index is preferable, so that the oil can be used within a wide temperature interval.

Applicable oil types

TYPE OF OIL	-20°C	-10°C	0°C	10°C	20°C	30°C	40°C	50°C	60°C	70°C	Viscosity at 40°C
BP Biohyd 32	Permitted						Recommended				36.0 cSt
BP Biohyd 46	Permitted					Recommended					44.0 cSt
BP Biohyd SE 46	Permitted					Recommended					46.0 cSt
BP Biohyd SE 68	Permitted		Recommended								72.2 cSt
CASTROL Biotech HTG 32	Permitted						Recommended				36.8 cSt
MOBIL EAL 224 H	Permitted		Recommended							36.0 cSt	
Q8 Holbein 46	Permitted					Recommended					48.4 cSt
SHELL Naturelle HF	Permitted						Recommended				35.0 cSt
STATOIL M 32-68	Permitted					Recommended					47.4 cSt
SHELL Tellus oil T46	Permitted						Recommended				46.0 cSt
ESSO Univis N46	Permitted		Recommended								45.7 cSt
TEXACO Rando oil HDZ46	Permitted						Recommended				51.0 cSt
MOBIL DTE 15	Permitted						Recommended				44.9 cSt

430



Permitted oil temperature



Recommended oil temperature

Safety Precautions

The design of the LIFTON breakers guarantees maximum operator safety, and the noise and vibration level has been kept as low as possible. However, wrong use of the breaker might cause serious injuries, and therefore the following precautions must be taken:

1. Do not use the breaker longer than prescribed in your local environmental working regulations. The noise load from extensive daily use may result in hearing defects, just like vibrations might lead to the “white fingers” disease.
2. Always use protective earplugs, goggles, gloves, shoes and hard hat.



3. Working in some materials can generate dust which can adversely affect the health of the operator. When working in dust generating environments an approved dust mask shall be worn.
4. The operator should be attentive to falling material when breaking upwards or horizontally, and he should always be aware of his own risk of slipping or falling down.
5. Note that the outside of the breaker itself might be over 30°C warmer than the air temperature. So always wear protective clothing including gloves.

6. Do not lean against the breaker in order not to lose foothold, if the tool should break by accident or suddenly penetrate the material to be broken.
7. Always disconnect the hydraulic circuit before changing tool, dismantling hoses or servicing the breaker.
8. Fine jets of hydraulic oil at high pressure can penetrate the skin. Do not use your fingers to check for hydraulic oil leaks. Do not put your face close to suspected leaks. Hold a piece of cardboard close to suspected leaks and then inspect the cardboard for signs of hydraulic oil. If hydraulic oil penetrates your skin, get medical help quickly.
9. Never leave the breaker connected to the power source.

Connection to Hydraulic Power Source

- **Oil supply:** If the oil supply of the power source exceeds the flow prescribed, the engine r.p.m. must be reduced, until correct oil flow is achieved (LIFTON test equipment, order No. 1801154 can be used).
- **Oil flow divider:** If the oil flow cannot be adjusted by lowering the r.p.m., an oil flow divider must be installed. This will secure the breaker the correct oil flow and lead excess oil back to the tank (or to the operating valve block).
- **Pressure relief valve:** To protect the breaker against too high a pressure, the pressure relief valve of the power source must be set in accordance with the technical data. If that is not possible, connection can be made by installing a separate pressure relief valve. In case of doubt, contact your dealer.
- **Hoses:** For connection use high-pressure hoses (inside diameter ½") which, as a minimum, are designed for a working pressure of 140 bar. We recommend the use of double wire-braided hoses that better stand outside wear. The breaker socket "P" is oil inlet (pump), and the socket "T" is oil outlet (tank).
- **Quick-release couplings:** LIFTON uses Flat-Face quick-release couplings which are durable and very easy to clean. They are always fitted so that the male part gives oil and the female part receives oil.
- **Back pressure:** The back pressure (return line pressure) of the breaker should be as low as possible and may not exceed max. back pressure (see technical data) measured at the breaker in order to avoid functional disturbances.
- **Filter:** The power source must be fitted with a return line oil filter with a filter rating of 10-25µ.
- **Oil cooler:** Oil coolers must be able to stand a pressure of min. 10 bar and should be provided with a by-pass valve opening at a pressure of 2 bar in case of pulsations in the return line.

Maintenance

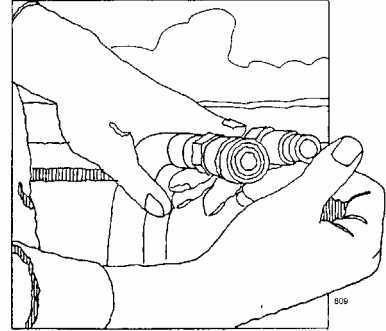
The daily maintenance of the breaker and the quick-release couplings is confined to cleaning after use.

In case of long-term storage, the striking piston must be protected against corrosion. That is done by pressing it (through the chisel bushing) to its upper position by means of a tool placed up-side-down. As the quick-release couplings are blocked when disassembled, the striking piston must be pressed upwards with the hoses mounted but the powerpack unactivated..

Check the hoses regularly for damages and replace them if necessary (for safety reasons).

Clean the quick-release couplings before use.

The tools must be sharp to give maximum breaking power and operator comfort.



Repair/Service Check-Up

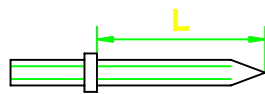
The breaker may be repaired/serviced by an authorized LIFTON workshop only

Yearly service check-up:

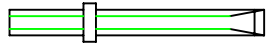
- The accumulator is checked and re-charged (⚠ dismantling involves a safety risk)
- Moving parts, chisel bushing, seals and bolts are checked and replaced if necessary
- The function of the breaker is checked

Tools and Accessories

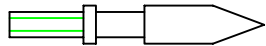
Moil point or chisel are used for the breaking of concrete and rock. Asphalt chisel or digging spade are used for breaking jobs in light concrete, brickwork, asphalt and frozen soil.



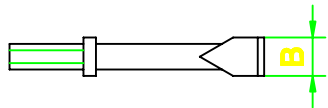
Moil point L: 460 mm 5321601



Chisel L: 460 mm 5321602

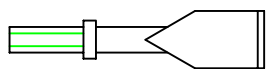


Frost chisel L: 445 mm 5321604

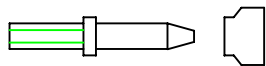


5" asphalt chisel LxB: 270x130 mm 5321607

3" asphalt chisel LxB: 380x 75 mm 5321606



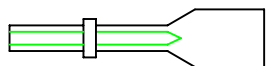
5" digging spade LxB: 280x130 mm 5321608



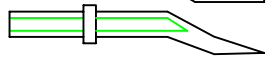
Tamper rod L: 200 mm 5321609

Tamper base ø: 125 mm 5250810

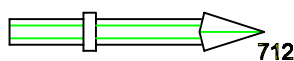
Tamper base LxB: 175x175 mm 5250814



Curved clay spade L: 405 mm 5321613



Heavy duty burster L: 380 mm 5321622

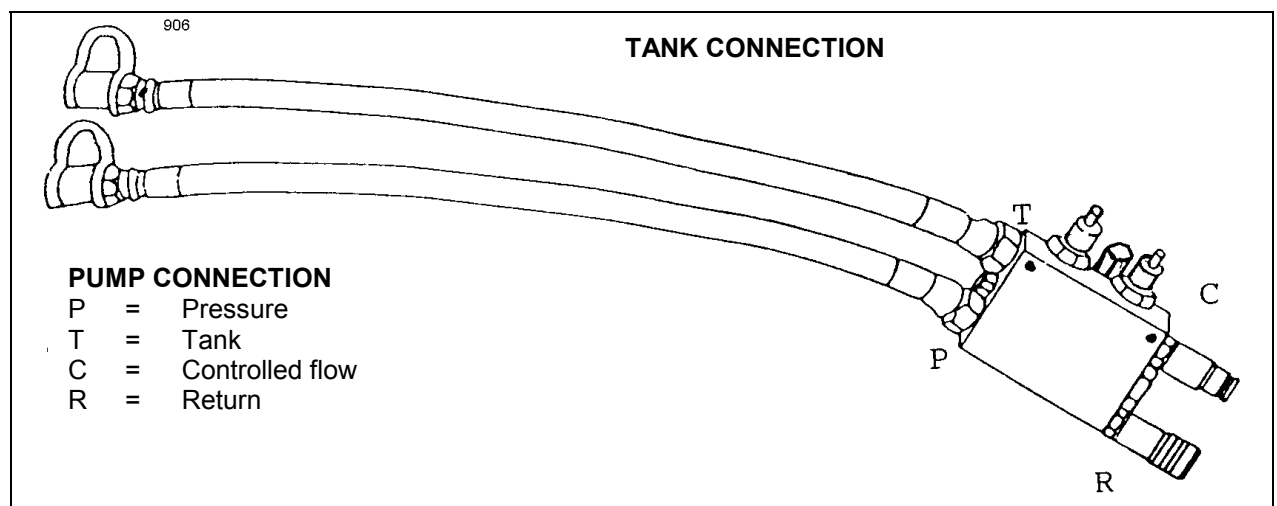


The dimensions stated are only intended as a guide.
Special tools upon request.

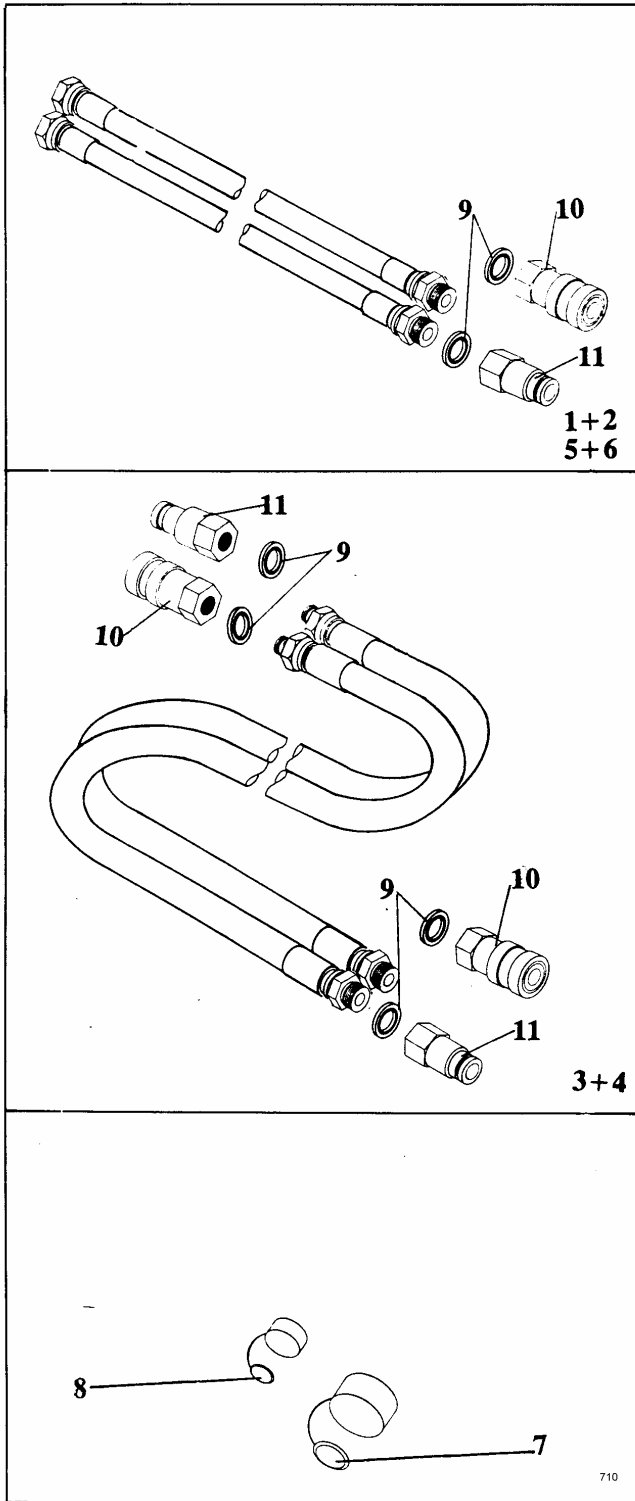
Oil flow divider type 20-25

Max. inlet flow 60 l.p.m.

Standard setting: 20 l.p.m./150 bar (adjustable)



Hoses



- 1 0.4 m 1/2" tail-hose set
1801083
- 2 1.3 m 1/2" tail-hose set
1801092
- 3 7.0 m 1/2" Twin extension hose
1801087
- 4 12.0 m 1/2" Twin extension hose
1801089
- 5 5.0 m 3/8" Twin extension hose
for direct mounting
1801090
- 6 7.0 m 1/2" Twin extension hose
for direct mounting
1801082
- 7 Protective cap for 1805133
1805733
- 8 Protective cap for 1805134
1805732
- 9 1/2" seal ring
1805714
- 10 1/2" Flat-Face quick-release coupling
female
1805133
- 11 1/2" Flat-Face quick-release coupling
male
1805134

134 Pos.	22-10-2003 Part No.	Serial-No. 252000- Description	Quantity
Fig 1	Impact assy		
1	1820101	Accumulator body	1
2	1820088	Valve housing	1
3	1820065	Cylinder	1
4	1820211	Striking piston	1
5	1814102	Accumulator cover	1
6	1814052	Diaphragm	1
8	1813103	Charging screw	1
9	1817720	Screw M10x30	4
10	1814723	Screw M10x35	4
11	1814709	Seal ring $\varnothing 8,7/\varnothing 13 \times 1$	1
12	1820269	Spool	1
15	1820266	Guide socket	1
16	1820267	Spool socket	1
17	1813710	Protective cap M24x1.5	1
18	1820702	O-Ring $\varnothing 24 \times 1.5$	1
19	1820703	O-Ring $\varnothing 18 \times 2$	4
20	1820704	O-Ring $\varnothing 30 \times 2$	1
21	1820705	O-Ring $\varnothing 32 \times 2$	1
22	1820762	O-Ring $\varnothing 25.12 \times 1.78$	1
24	1820740	Locking ring	1
25	1820176	Seal $\varnothing 32/\varnothing 40 \times 6$	1
26	1820708	Seal $\varnothing 32/\varnothing 45 \times 7/10$	1
27	1805714	Seal ring 1/2"	2
28	1818020	T-connection BSP $\varnothing 3.4$ Re other threads and flow areas see the section "Introduction and Description"	1
28 a	1805711	Adaptor 08-08 Re other threads and flow areas see the section "Introduction and Description"	1
29	1814732	Seeger spring ring	2
30	1820700	Shim PS 8x14x0.5	1
31	1820108	Trigger spool	1
32	1820136	Trigger rod	1
33	1814120	Packing gland	1
34	1820137	Spring	1
35	1814700	O-Ring $\varnothing 8.3 \times 2.4$	1
36	1814702	O-Ring $\varnothing 16.3 \times 2.4$	1
37	1805503	Seal $\varnothing 8/\varnothing 14 \times 3.5/5$	1

Subject to alterations without further notice

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Spare Parts List LIFTON LH 25 S/E Breaker

Page 2 of 7

134 Pos.	22-10-2003 Part No.	Serial-No. 252000- Description	Quantity
38	1814701	Back-up ring	1
39	1814712	Seeger spring ring	1
40	1814733	Fitting 02 KRG	6
41	1813141	Fitting 04 KRG	3
42	1813709	Protective cap 1/2" For 1/2" BSP	2
42 a	1813721	Protective cap 3/4" For 3/4" JIC	2
44	1817757	O-Ring ø6x2	2
45	1807737	Loctite 245 50 ml	
49	6100084	O-Ring ø8x2	1
50	1815735	Back-up washer	4
51	1820115	Screw	1
52	1820717	Ball f/check valve	1
53	1820718	Seal ring ø9/ø14x1	1
54	1820725	O-Ring ø82x1.5	1
55	1820726	O-Ring ø16x1.5	1
56	1814749	O-Ring ø13x1.5	1
58	1820167	Back-up washer ø32.7/45x2.5	1
59	1820727	Locking ring	1
60	1820089	Seal kit	1
61	1820053	Trigger valve complete Incl. pos. 29-39	1
62	1820050	Accumulator complete	1

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134 Pos.	22-10-2003 Part No.	Serial-No. 252000- Description	Quantity
Fig 2	S-handle		
	1820045	S-handle w/cover	
100	1820203	Bracket f/standard handle	1
101	1820204	Handle standard	2
102	1820135	Rubber handle	1
103	1820134	Rubber handle	1
104	1820238	Trigger lever standard	1
106	1815733	Roll pin ø8x40	1
107	1820041	Top cover	1
108	1815722	Screw M10x20	4
109	1815131	Nab	2
110	1815113	Spacer f/handle	4
111	1820207	Nylon guide	1
112	1803044	Label	1
115	1820741	Slotted pin ø6x22	1
116	1820236	Safety trigger	1
117	1820747	Washer nylon ø21/ø37x3	2
118	1820237	Lock plate	1
119	1820152	Spring	1

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134 Pos.	22-10-2003 Part No.	Serial-No. 252000- Description	Quantity
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Fig 3 E-handle (rubber)

	1820038	E-handle w/cover	
100	1820072	Frame incl. damping element	1
102	1820057	Trigger lever	1
103	1820131	Trigger pawl	1
104	1820135	Rubber handle	1
105	1820134	Rubber handle	1
106	1820147	Pin latch right	1
107	1820148	Pin latch left	1
108	1820711	Pin f/pawl $\varnothing 6 \times 30$	1
109	1820712	Roll pin $\varnothing 6 \times 24$	1
110	1820059	Top cover complete	1
111	1815722	Screw M10x20	4
112	1815131	Nab	2
113	1815113	Spacer f/handle	4
114	1820066	Thrust pad w/screw	1
116	1820722	Nut M8	1
117	1820735	Nut cap M8-HEX13 black	1

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134 Pos.	22-10-2003 Part No.	Serial-No. 252000- Description	Quantity
Fig 4	E-handle (spring)		
	1820098	E-handle w/cover	
	1821003	E-handle w/o cover Incl. pos. 1-20/25/26	
1	1820305	Frame	1
2	1820304	Handle rod	1
3	1820306	Bottom plate	1
4	1820307	Spring guide	4
5	1820763	Roll pin \varnothing 6x12	2
6	1820308	Spring guide	4
7	1820309	Nylon guide	8
8	7000469	Washer \varnothing 8	4
9	2005003	Screw M8x16	4
10	1820147	Pin latch right	1
11	1820148	Pin latch left	1
12	1820131	Trigger pawl	1
13	1820711	Pin f/pawl \varnothing 6x30	1
15	1820057	Trigger lever	1
16	1820712	Roll pin \varnothing 6x24	1
17	1820066	Thrust pad w/screw	1
19	1820722	Nut M8	1
20	1820735	Nut cap M8-HEX13 black	1
21	1820059	Top cover complete	1
22	1815722	Screw M10x20	4
23	1815131	Nab	2
24	1815113	Spacer f/handle	4
25	1820135	Rubber handle	1
26	1820134	Rubber handle	1

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134 Pos.	22-10-2003 Part No.	Serial-No. 252000- Description	Quantity
Fig 5	5	Nose part HEX 28x152	
	1820029	Nose part 28x152 complete	
80	1820195	Nose part HEX 28/32	1
81	1820217	Bushing HEX 28x152	1
82	1820219	Chisel bellows HEX 28	1
83	1820145	Latch	1
84	1802075	Spring	1
85	1802073	Lock pin	1
86	1814724	Screw M10x55	2
87	1815730	Roll pin \varnothing 16x50	1
88	1815731	Roll pin \varnothing 10x50	1
89	1820737	Locking ring 64x2	1
90	1807737	Loctite 245 50 ml	
91	1807738	Loctite 648 (275) 50 ml	
Fig 5	5	Nose part HEX 28x160	
	1820078	Nose part 28x160 complete	
80	1820195	Nose part HEX 28/32	1
81	1820218	Bushing HEX 28x160	1
82	1820219	Chisel bellows HEX 28	1
83	1820145	Latch	1
84	1802075	Spring	1
85	1802073	Lock pin	1
86	1814724	Screw M10x55	2
87	1815730	Roll pin \varnothing 16x50	1
88	1815731	Roll pin \varnothing 10x50	1
89	1820737	Locking ring 64x2	1
90	1807737	Loctite 245 50 ml	
91	1807738	Loctite 648 (275) 50 ml	

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134 Pos.	22-10-2003 Part No.	Serial-No. 252000- Description	Quantity
Fig 5	Nose part HEX 32x152		
	1820034	Nose part 32x152 complete	
80	1820195	Nose part HEX 28/32	1
81	1820212	Bushing HEX 32x152	1
82	1820192	Chisel bellows HEX 32	1
83	1820145	Latch	1
84	1802075	Spring	1
85	1802073	Lock pin	1
86	1814724	Screw M10x55	2
87	1815730	Roll pin \varnothing 16x50	1
88	1815731	Roll pin \varnothing 10x50	1
89	1820737	Locking ring 64x2	1
90	1807737	Loctite 245 50 ml	
91	1807738	Loctite 648 (275) 50 ml	
Fig 5	Nose part HEX 32x160		
	1820027	Nose part 32x160 complete	
80	1820195	Nose part HEX 28/32	1
81	1820194	Bushing HEX 32x160	1
82	1820192	Chisel bellows HEX 32	1
83	1820145	Latch	1
84	1802075	Spring	1
85	1802073	Lock pin	1
86	1814724	Screw M10x55	2
87	1815730	Roll pin \varnothing 16x50	1
88	1815731	Roll pin \varnothing 10x50	1
89	1820737	Locking ring 64x2	1
90	1807737	Loctite 245 50 ml	
91	1807738	Loctite 648 (275) 50 ml	

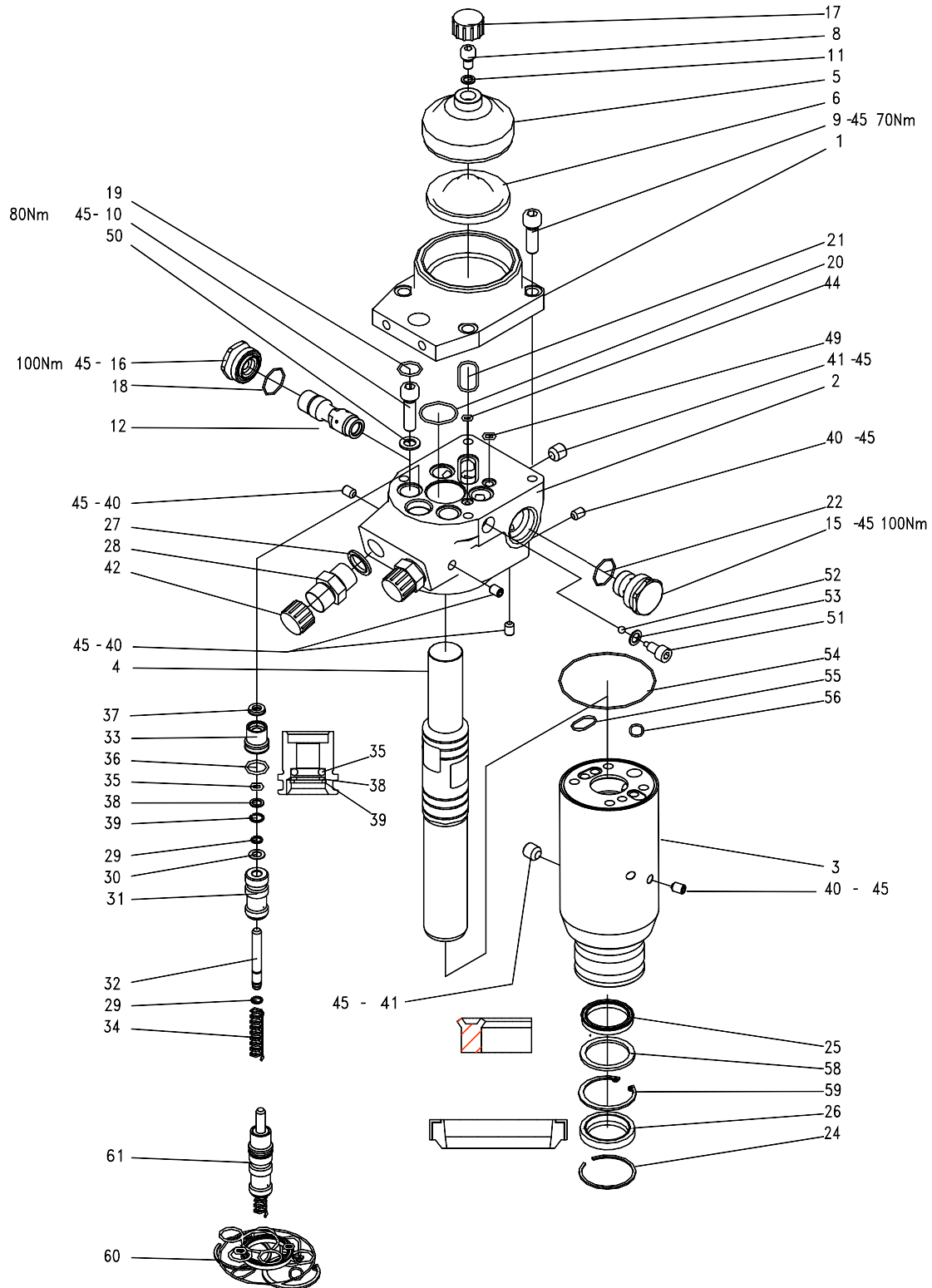
Subject to alterations without further notice

Breakers A/S * P.O. Box 7010 * DK-9200 Aalborg SV * Tel: +45 98 18 17 22 * Fax: + 45 98 18 89

LH 25 S/E hammer
 LH 25 S/E Breaker
 LH 25 S/E Hammer

Fig. 1

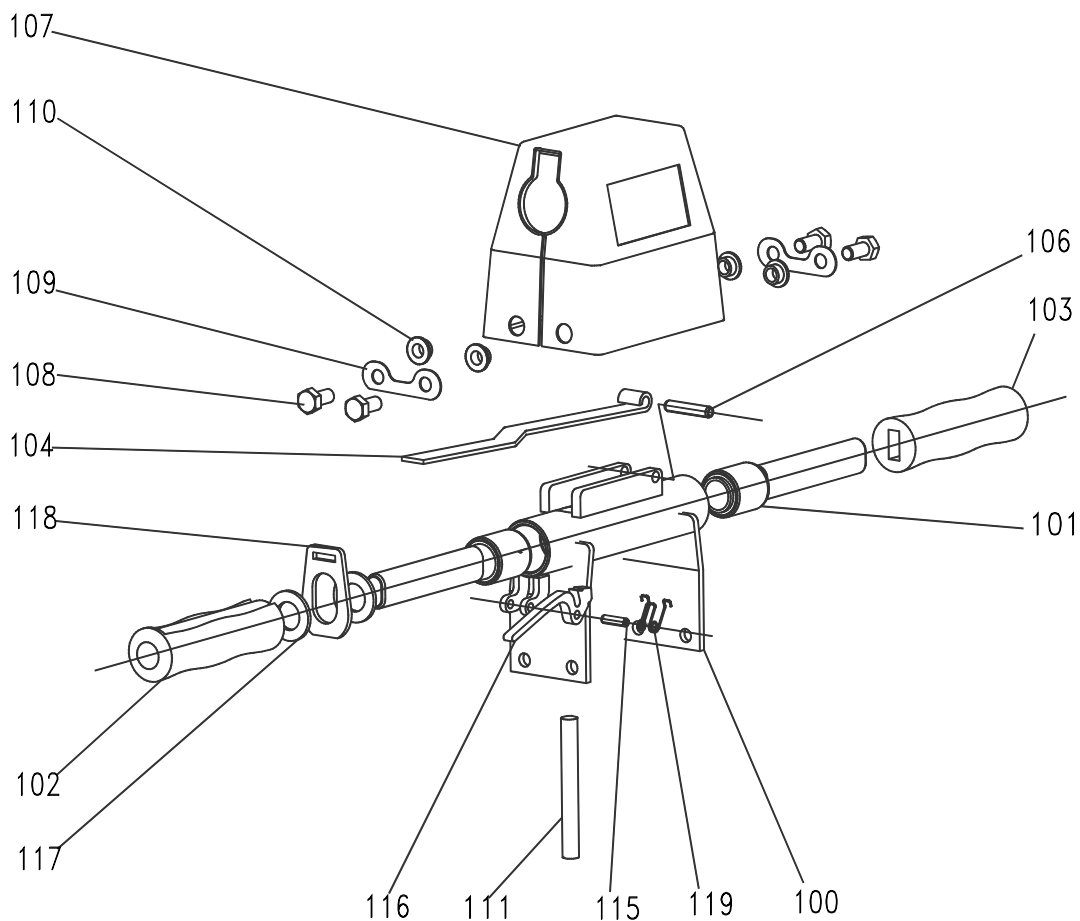
134 4-1801462



LH 25 S/E hammer
LH 25 S/E Breaker
LH 25 S/E Hammer

Fig. 2

134 2-1820045

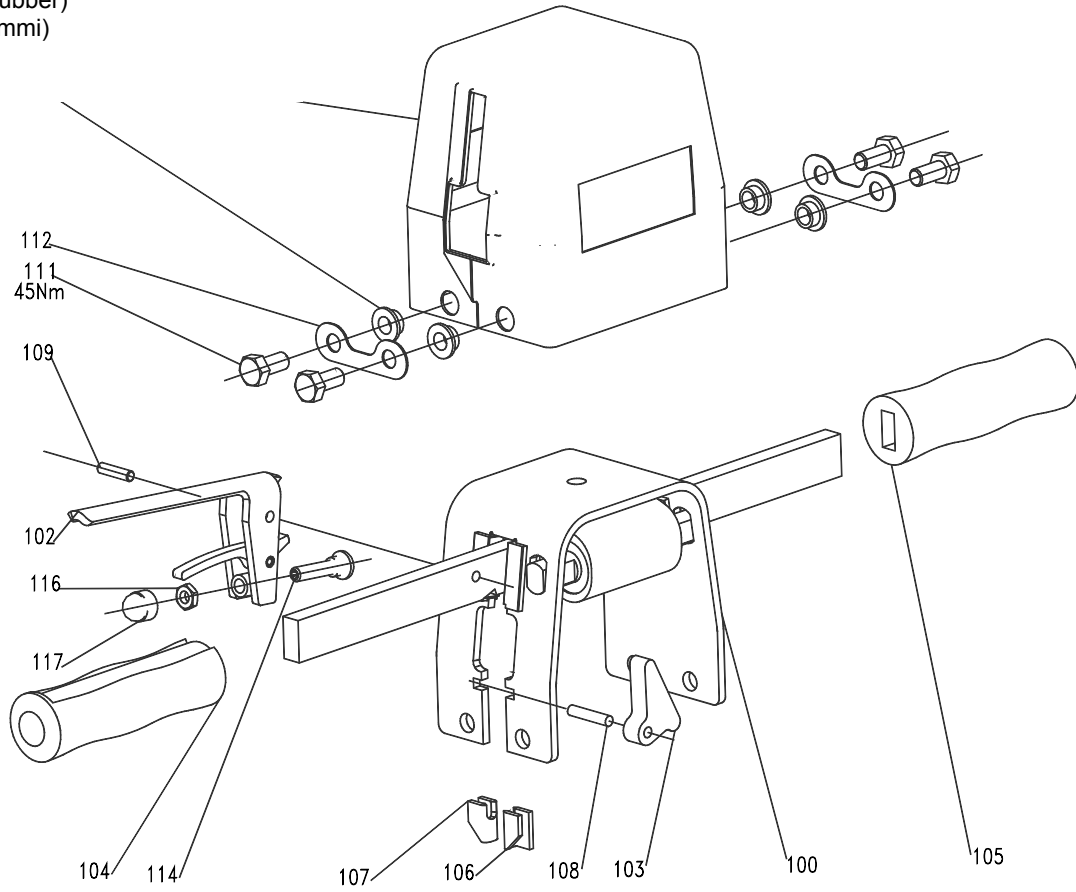


LH 25 S/E hammer
LH 25 S/E Breaker
LH 25 S/E Hammer

Fig. 3

134 3-1820038c

E-greb (gummi)
E-handle (rubber)
E-Griff (Gummi)

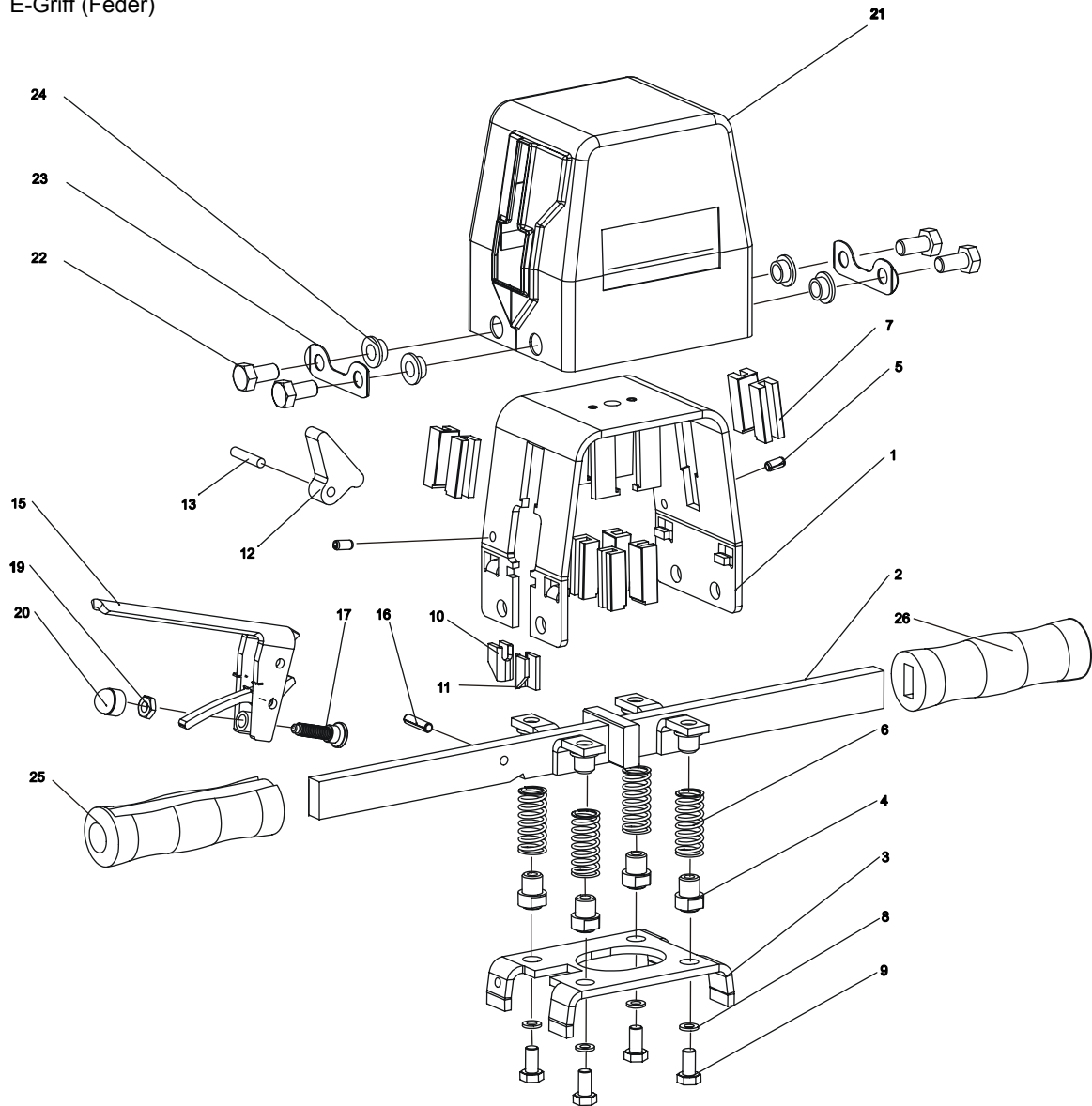


LH 25 S/E hammer
 LH 25 S/E Breaker
 LH 25 S/E Hammer

Fig. 4

134

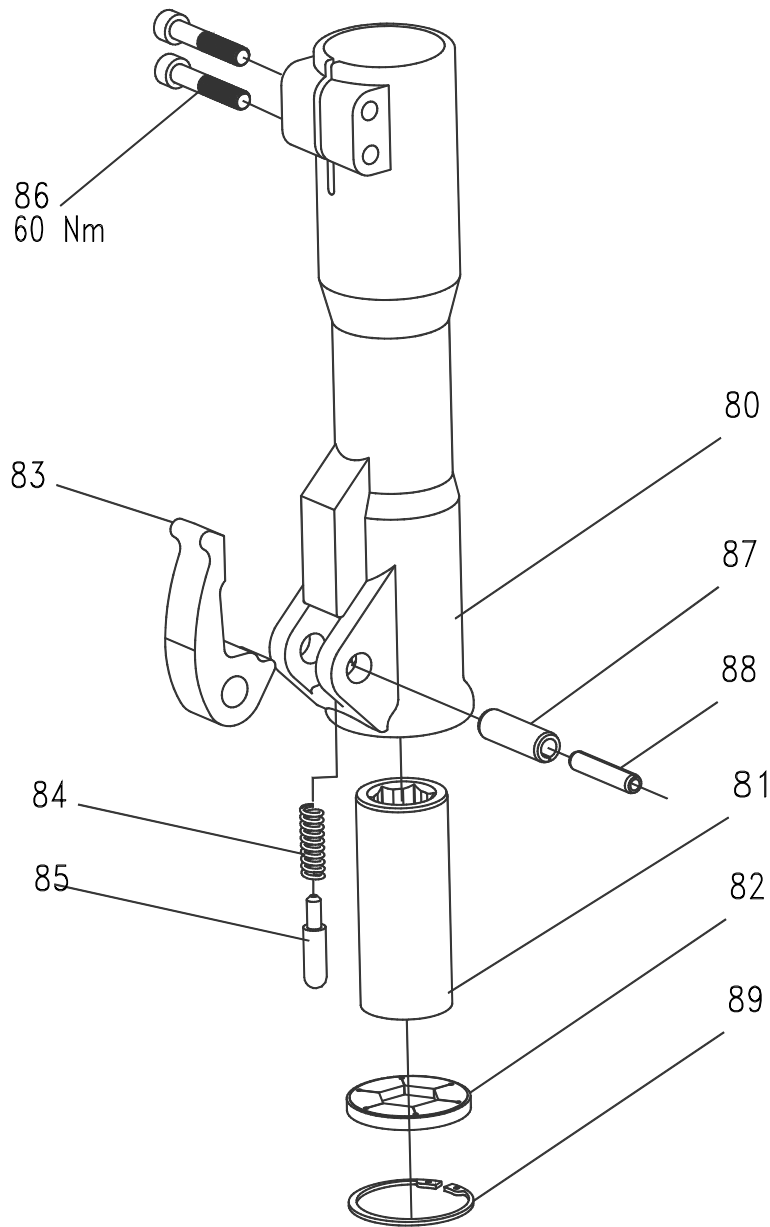
E-greb (fjeder)
 E-handle (spring)
 E-Griff (Feder)



LH 25 S/E hammer
LH 25 S/E Breaker
LH 25 S/E Hammer

Fig. 5

134 3-1820028



EC Declaration of Conformity

EC- Declaration of Conformity

Manufacturer:

Breakers A/S
Anker Engelundsvej 3
DK - 9200 Aalborg SV
DENMARK

Phone: +45 98 181722
Fax: +45 98 188922

hereby declares that

Machine: LIFTON LH 25 hydraulic breaker Serial No.: 252000-

was manufactured in conformity with the

Directive 98/37/EC and
Directive 2000/14/EC

The service weight of the machine is 30.6 kg.

Notified body No. 0404:

SMP Svensk maskinprovning AB
Fyrisborgsgatan 3
S - 754 50 Uppsala
Sweden

Measured sound power level: 108 dB

Guaranteed sound power level: 112 dB



Signature:

General Manager Nick Scarsella

Date: 10-2003

In accordance with the regulations of the Directive, Breakers A/S undertakes to keep up a technical dossier, which by request and at due notice can be placed at the disposal of competent national authorities for inspection for at least 10 years after the production date of the machine.

LIFTON WARRANTY CONDITIONS

The production of LIFTON hydraulic equipment is based on many years of experience and the use of high quality material, which enables the equipment to resist the mechanical and thermic stress occurring under normal working conditions.

Should, however, in spite of thorough testing procedures, defects in material or manufacture occur, these will be covered in accordance with ORGALIME S 2000/NL 92.

General Warranty Conditions

- From the delivery date there is a twelve-month warranty
- The warranty covers all functional disturbances caused by defects in material or manufacture
- When liable under the warranty, the factory is free to decide whether to offer repayment, replacement or repair
- Shipping costs are to be paid by the purchaser
- Any parts replaced are the property of the factory
- The factory assumes no liability for indirect damage and other costs such as loss of production
- Warranty claims will be considered only when reported to the dealer immediately upon discovery of the defect

The Warranty Does Not Cover

- Damage caused by faulty connection or improper handling
- Costs to cover repairs undertaken by a non-authorized LIFTON dealer
- Damage caused by imperfect maintenance, improper use or damage in transit
- Fair wear and tear
- Damage to hoses and quick-release couplings caused by wear or imperfect maintenance

The warranty ceases on change of ownership of the equipment and in case of repairs undertaken by a non-authorized LIFTON shop without the factory's express authorization.

NOTES