

**OPERATION MANUAL
HIGH FREQUENCY POKER VIBRATOR
WITH INTEGRATED INVERTER
LHF/HS-ER**



LIEVERS HOLLAND

Groot Mijdrechtstraat 68 – 3641 RW

Postbus 103 - 3640 AC

Mijdrecht (NL)

Tel.: 0031 – (0)297-231900 / Fax: 0031 – (0)297-231909

E-mail: info@lieversholland.nl / Internet: www.lieversholland.nl

CONTENT

1. PREFACE	3
2. SAFETY	4
2.1. SAFETY ASPECTS	4
2.2. SAFETY PRECAUTIONS	4
2.3. REST RISK	5
3. TECHNICAL SPECIFICATIONS	6
4. USE	7
4.1. INTENDED USE	7
4.2. GENERAL	7
4.3. TECHNICAL DATA	7
5. MAINTENANCE	9
5.1. MAINTENANCE	9
5.2. CLEANING AND MAINTENANCE OF THE POKER VIBRATOR	9
5.3. CHANGING THE TIP OF THE POKER HEAD	9
5.4. MAINTENANCE OF THE INVERTER	10
6. REPAIRS	10
7. DISMANTLING, DISPOSAL	10
8. PART LISTS	12
9. DECLARATION OF CONFORMITY	15

© Bouwmachinefabriek Lievers B.V. NL 2016.

All rights are reserved. Reprints, copies, adaptations for new editions and publications in any form or through any media, including abstract forms are not permitted unless written permissions is first obtained from Bouwmachinefabriek Lievers B.V.

Bouwmachinefabriek Lievers B.V. may not be held responsible for any guarantees or liabilities for the contents of this publication and points to, in this case, all implied securities for suitability of merchantability or any other purposes. Bouwmachinefabriek Lievers B.V. further retains the right to revise this publication and to alter the contents over certain periods of time, without the obligation to report such alterations and changes first.

1. Preface

This manual has been written to help you operate and maintain the poker vibrator LHF/HS-ER safely. This manual is intended for dealers and operators of these types of poker vibrators and contains useful instructions for use, maintenance and repair. These instructions need to be respected and followed.

Warranty provisions

All damage to parts of the poker vibrator, occurring within 12 months after date of purchase as a consequence of material, production or construction defects, will be replaced by the manufacturer as soon as possible.

The manufacturer declines all responsibility for unsafe situations, accidents and damage caused by:

- Ignoring safety and using instructions as described on the machine or the instruction manual.
- Incompetent or incorrect maintenance (e.g. irregular cleaning of the ventilation slots and cleaning with a high pressure cleaner or by a water jet under high pressure)
- Connecting the poker vibrator to the wrong voltage.
- Storing the machine in a damp place.
- Assembling or dismantling of the poker vibrator by unqualified personnel (employees who are unfamiliar with the content of this instruction manual)
- Other use than the prescribed use.
- Exchange of the machine carried out by other than manufacturer. This also includes assembling of non-original parts.

Guarantee certificate

Poker vibrator type LHF/HS-ER- no. _____

Date of purchase: _____

Ces de Wit

Mr. C.M. de Wit

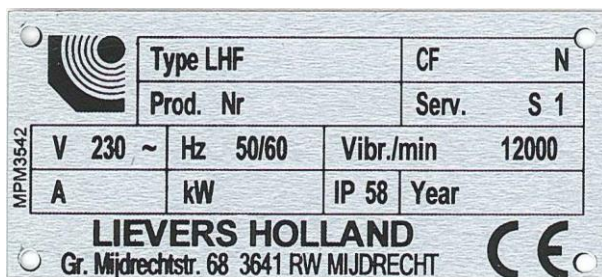


Figure 1: example rating plate LHF/HS-ER

The rating plate can be found on the switch cover.

2. Safety

Explanation of the used safety symbols :



Figure 2: safety symbols

- 1) Read the instruction manual.
- 2) Safety glasses, safety helmet and ear protection compulsory.
- 3) Vibration reducing glove with GELFÔM compulsory.
- 4) Safety shoes with extra protection compulsory.
- 5) Before opening remove the plug.
- 6) Dangerous electric voltage.
- 7) Be careful.

ENSURE, THAT ALL SYMBOLS ON THE MACHINE, CAN ALWAYS BE CLEARLY READ.

2.1 Safety aspects

The following safety aspects apply to the machine:

- Machine is equipped with PRCD (30mA) for personal protection against hazardous electrical shocks.
- Safety symbols are present on the poker vibrators LHF/HS-ER inverter.

2.2 Safety precautions

- Before operating the machine, make sure to have read this manual carefully. If you have any questions, do not hesitate to contact the supplier.
- Ensure that you are qualified (familiar with the contents of this manual), to operate and carry out light maintenance work to the machine.
- Regular maintenance of the machine improves safe operation.
- On working areas, take notice and follow general and local safety regulations. Before starting your work, make sure that you are informed about all safety regulations and instructions.
- In case the value of acceleration $> 2,5 \text{ ms}^2$, then wearing anti vibration gloves is obligated.
- When operating the poker vibrator wear ear protection, safety glasses, a safety helmet, protective (anti-vibration) gloves and protective clothing.
- Wear safety shoes with extra protection (steel caps and anti-slip soles).
- Be careful when lifting and carrying the poker vibrator. Do not bend forwards when picking up the machine, but bend your knees.

- Make sure that the working area is lightened well.
- Do not pull the plug out of the wall socket or extension lead by its lead.
- Check the feeder cable's outer casing and if in use extension lead's outer casing before you connect the machine to the electrical mains. The outer casing may not be damaged. Replace the cable if you cannot read the marks on the outer casing anymore.
- Do not use the machine in an explosion endangered area.
- Regularly check the connections of the supply-cable to the switch.
- Ensure that the wall socket and possible connections between the extension leads are protected against dampness.
- The PRCD will automatically switch off the machine, when the electrical power cuts off. This prevents the machine from starting suddenly when the electrical power comes on again.
- Check the machine's cable-connections before you connect the machine to the electrical mains. The cables must be properly connected.
- After use, place the poker vibrator on a stable and dry surface.
- When the poker vibrator is not being used for longer period, then it must be stored in a dry and clean area.
- When cleaning the poker vibrator, ensure that no water or cleaning detergent gets into the poker vibrator.
- Disconnect the electrical supply to the poker vibrator, before you start to clean or maintain the poker vibrator.

2.3 Rest risk

The manufacturer aimed for the best balance in functionality, safety and operation possibilities of the LHF/HS-ER.

Please take notice of the following rest: **for prolonged working with LHF/HS-ER poker vibrators it is obligated to wear anti vibration gloves.**

Well instructed operators with a correct working attitude concerning safe operating are well capable of working safely with the LHF/HS-ER poker vibrator.

3. Technical specifications

LHF/HS-ER	36mm short	36mm long	50mm short	50mm long	57mm short	57mm long	65mm
Voltage	230V/50Hz	230V/50Hz	230V/50Hz	230V/50Hz	230V/50Hz	230V/50Hz	230V/50Hz
Current consumpt.	2,0 A	2,2 A	2,8 A	3,6 A	4,2 A	4,7 A	5,2 A
Vibr./Min.	12.000	12.000	12.000	12.000	12.000	12.000	12.000
Bottle length	280mm	310mm	320mm	370mm	340mm	390mm	400mm
Compaction diameter	Ø35cm	Ø45cm	Ø55cm	Ø65cm	Ø75cm	Ø85cm	Ø100cm
Sound press Level ISO 6081 At operator's place	70 db(A)	72db(A)	75db(A)	77db(A)	79db(A)	82db(A)	85db(A)
**Value of acceleration	< 2,5 m/s ²	< 2,5 m/s ²	< 2,5 m/s ²	< 2,5 m/s ²	< 2,5 m/s ²	< 2,5 m/s ²	< 2,5 m/s ²
Comfort. exposure (max) per day	8hr 32hr	8hr 32h	8hr 32h	8hr 32h	8hr 32h	8hr 32h	8hr 32h

Table 1: technical specifications LHF/HS-ER

** The weighted effective value of acceleration, determined according to ISO 5349

Use of anti-vibration gloves obligated with value > 2,5 m/s².

4. Use

4.1 Intended use

Poker vibrators LHF/HS-ER are machines with a vibrating, steel bottle, for compacting concrete.

4.2. General

CAREFUL: READ THE GENERAL- AND SPECIFIC SAFETY-INSTRUCTIONS BEFORE YOU SWITCH ON THE POKER VIBRATOR.

NOTE:

- Start-up, service and repairs have to be executed only by qualified employees (in compliance with CE-machinery directives). Improper installation of the vibrators can cause a defective inverter and/or deadly injuries to the operator. Follow the listed instructions and the local and national safety regulations carefully.
- Ensure that the power supply or mains have a good grounding to have a proper working of the safety system of the PRCD.
- After disconnecting from the input mains, the DC-circuit and the capacitors are still under voltage. The discharging time can be longer than 3 minutes.

Switching on the poker-vibrator, compacting the concrete and switching off the poker vibrator.

- 1) Ensure that the poker vibrator's diameter corresponds with the consistency of the concrete.
- 2) Ensure that the supplied voltage of the mains or power supply corresponds with the poker vibrator's technical data.
- 3) Take care that the inverter box is placed on a dry surface.
- 4) Put the power plug of the LHF/HS-ER in the socket of the mains.
- 5) Push the green switch "ON" button on the PRCD. The power indication lights up.
- 6) For security push the "0" / "TEST" button for one time to see if the PRCD works properly. If so, switch it on again. If not, have it checked by an authorized technician.
- 7) Place the poker-vibrator in the direct vicinity of where you are going to compact concrete.
- 8) Stick the vibrating poker bottle for min. 75% into the concrete and allow the vibrator to vibrate for 3-4 seconds in one place in the concrete by activating the "start-stop" switch in the hand grip, before moving it to the next spot. Repeat this procedure every 50 cm (depending on the concrete's consistency).

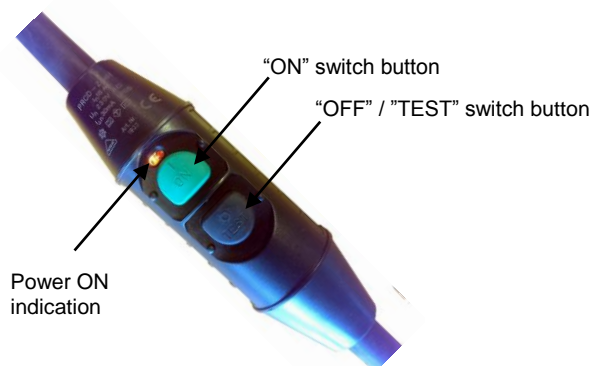


Fig. 3: power ON/OFF position of the poker vibrator

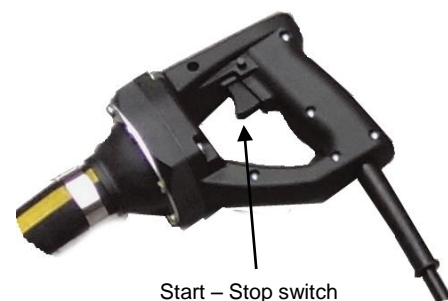


Fig. 4: start - stop switch position

Careful: Stop the poker vibrator when the poker head is out of the concrete. The built-in electric motor unit needs to be cooled in the concrete and if this is not done the pokerhead can be severely damaged.
Therefore: **Out of the concrete, poker vibrator OUT**

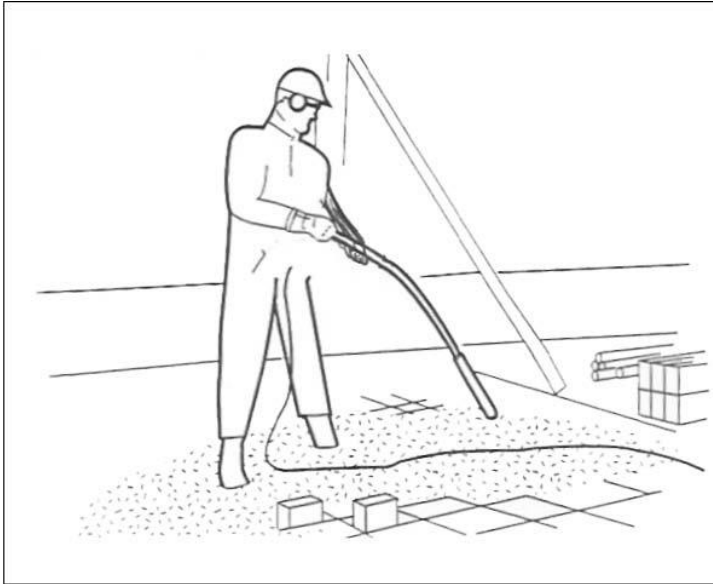


Fig. 4: Operation procedure during concrete compaction

When work is done

Push the “0” switch button on the PRCD and pull the supply-cable’s plug out of the socket.
Clean the poker-vibrator and inverter-unit as prescribed in chapter 5 “maintenance”.
After use, place the complete poker vibrator on a dry and stable surface.

Application examples

The distance between two vibration places and the vibration time in one place, depend on the thickness of the concrete layer and the composition of the concrete.

The following points are for guidance.

Floors:

- 1) Stick the poker vibrator slowly into the concrete (vibration time approx. 3 to 4 seconds).
- 2) Pull the poker vibrator slowly out of the concrete and repeat procedure **1** each 50cm.

Low walls:

- 1) Pour concrete to approx. 75 cm.
- 2) Lower the poker-vibrator into the formwork.
- 3) Pull the poker vibrator slowly out of the concrete and move it to the next spot.
- 4) Now ready for the following pour of approx. 75cm. of concrete.

4.3. Technical data converter

Input voltage	: 230 Volt \pm 15%--50/60 Hz. 1 ph. (min.200V / max. 260V) : 115 Volt \pm 15%--50/60 Hz 1 ph. (min.100V / max. 130V) If the poker vibrator is connected to uncontrolled motor generators, it can be destroyed because of inadmissible high overvoltage !!!!!
Output voltage	: 230 Volt \pm 10%--200 Hz. 3 ph.
Capacity	: 1,5 kVA max.
Output current	: 5.5 Amp.
Cable length	: 20 meter
Housing	: Aluminium
Protection	: IP 65.The electronic components are covered with a special resin, to protect against moisture, shock and vibrations.
Weight	: approx. 2 Kg. without cable.

The Lievers poker vibrator is tested before delivery.

For questions of Information, please contact your dealer or:

LIEVERS HOLLAND
Tel: 0297-231900
Fax: 0297-231909
E-mail: info@lieversholland.nl
www.lieversholland.com

5. Maintenance

5.1 Maintenance

Although the poker-vibrator type LHF/HS-ER has few moving parts, regular maintenance promotes a long and trouble-free life.

WARNING: DO NOT CLEAN THE POKER VIBRATOR WITH A HIGH PRESSURE CLEANER. DISCONNECT THE ELECTRICAL SUPPLY TO THE POKER VIBRATOR BEFORE YOU CARRY OUT ANY MAINTENANCE.

5.2 Cleaning and servicing of the hand held poker vibrator

During concrete compaction the poker vibrator, hand grip, PRCD and supply cable will become dirty. Periodical maintenance is vital to the safe and efficient operation of the poker vibrator. It is, therefore, highly recommended to clean the poker vibrator daily with water and a cleaning detergent which does not affect material of the poker vibrator. The hand grip should be cleaned with a damp cloth.

When storing the poker vibrator make sure that the operation hose does not kink, in order to prevent cuts and cracks to the rubber hose.

If the poker vibrator is to be stored for a long period of time, it should be put on an appropriate stand and left to hang.

TIP: IN CASE OF FAILURE OR BREAK DOWN OF THE POKER VIBRATOR, WE ADVISE YOU TO SEND THE MACHINE TO AN AUTHORISED LIEVERS SERVICE-STATION.

WARNING: WE STRONGLY ADVISE YOU NOT TO CARRY OUT REPAIRS TO THE POKER-VIBRATOR BY YOURSELF, WITHOUT BEING INSTRUCTED BY THE MANUFACTURER OR DEALER (READ WARRANTY-PROVISIONS).

5.3 Changing the tip of the poker head

- 1) Lock the rear part of the pokerhead in a vice.
- 2) Grind or file away the welding point where the rear part joints the front part. Loosen the screw thread by tapping on the tip of the with a hammer.
- 3) Unscrew the tip by means of a hook spanner (available from the producer).
- 4) By locking the pokerhead in the vice vertically, you prevent the lubricating oil from running out of the pokerhead.
- 5) Before the new tip is installed, the screw thread of the tip, needs to be winded with at least 8 windings of teflon tape.
- 6) Now tighten the tip by means of the hook spanner and secure it by providing the tip with a welding point of approx. 5mm. diam.

CAREFUL: REFILL OIL IF DURING THE ABOVE DESCRIBED PROCEDURE OIL HAS RUN OUT OF THE POKERHEAD. THIS OIL IS AVAILABLE FROM THE SUPPLIER OR DEALER. (SPECIAL OIL Ø36MM-15cc/Ø50MM-20cc/Ø57MM-25cc/Ø65MM-30cc).

5.4. Maintenance of the inverter

High grade electronic components are built in the alloy housing. A layer of special resin-coating prevents failure or destruction caused by water or condensation, it however does not protect the components against penetrating water, caused by inadmissible cleaning by means of a high pressure cleaner.

WARNING: DO NOT CLEAN THE ELECTRONIC INVERTER WITH A HIGH PRESSURE CLEANER.

Repairs

Spare parts

It is not strictly necessary to keep spare parts on stock. However, if you want to keep certain spares on stock then please contact the manufacturer/dealer for advice.

When ordering parts please state the following information:

- Type of poker vibrator.
- Year of construction.
- Order number plus description of the part.
- The required quantity.
- The dispatch address and dispatch mode.

TIP: WHEN ORDERING PARTS, FILL IN THE ORDER FORM ACCURATELY. LIEVERS HOLLAND DECLINES ALL RESPONSIBILITY FOR THE SUPPLY OF INCORRECT SPARES DUE TO INCOMPLETE OR UNCLEAR REQUESTS.

Contact details Lievers Holland:

P.O. Box 103
3640 AC Mijdrecht
Tel: +31 (0)297-231900
Fax: +31 (0)297-231909
E-mail: info@lieversholland.nl
Internet: www.lieversholland.nl

7.Dismantling, disposal

National and local regulations concerning dismantling and disposal of materials need to be obeyed.

8. Part lists

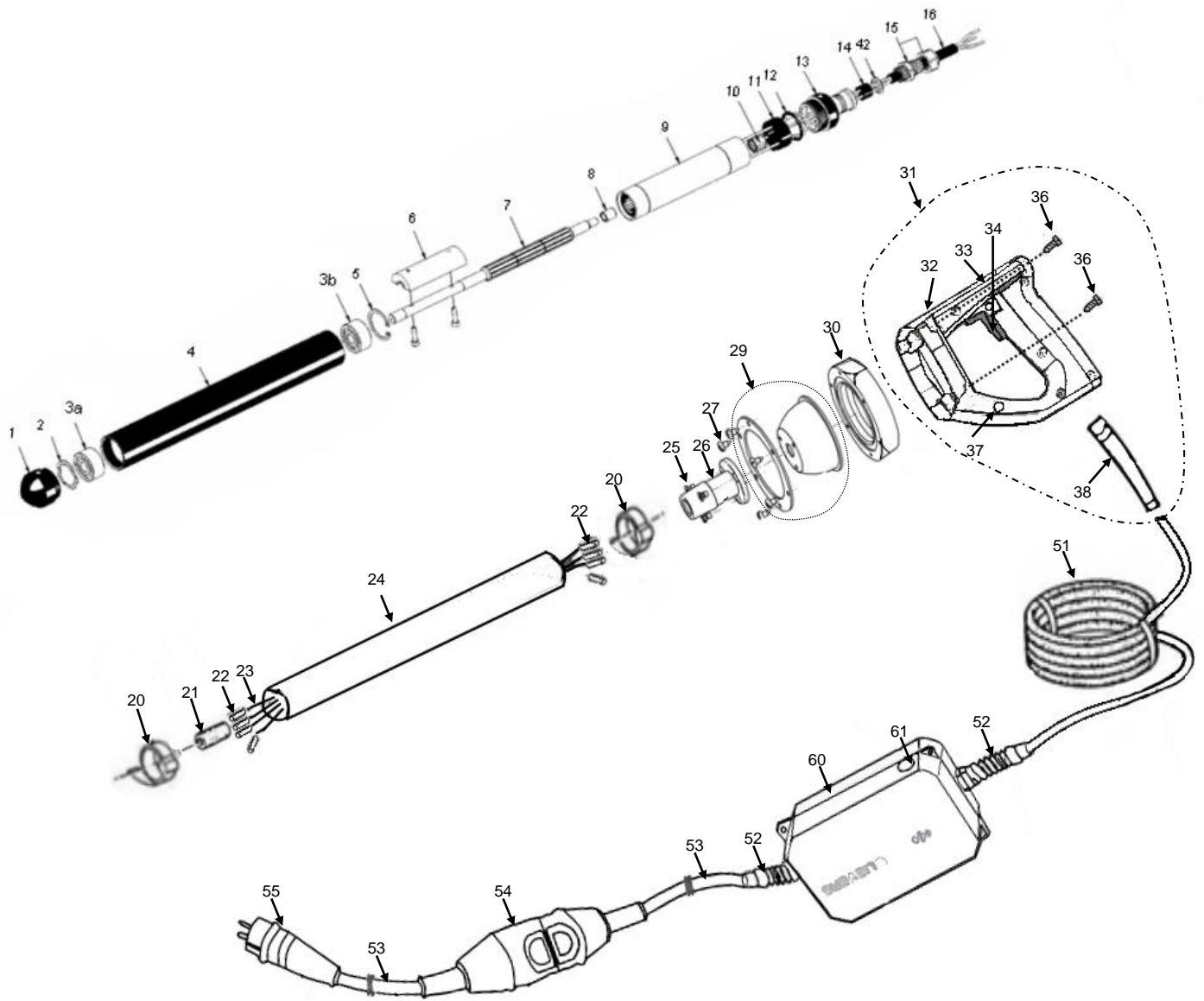


Figure 5: Exploded view LHF/HS-ER HD bottle

Pos	Part number				Quantity	Description
	Ø36	Ø50	Ø57	Ø65		
1	1300360011	1300500011	1300570011	1300650011	1	Steel tip
1a	1300360012	1300500012	1300570012	1300650012	1	Rubber tip
2	1300360020N	1300500020K	n.a.	n.a.	1	Spring saucer
2	n.a.	n.a.	1300570020N	1300650020N	2	Spring saucer
3a	1300360030	1300500030	1300570030	1300650030	1	Bearing
3b	1300360030	1300500030	1300570070	1300650070	1	Roller bearing
4	1300360040N	1300500040N	1300570040N	1300650040N	1	Motor housing
4a	n.a.	n.a.	1300570050	1300650050	1	Spacer
5	1300360070N	1300500070N	1300570070N	1300650070N	1	Retaining ring (in motor housing)
5a	n.a.	n.a.	1300570080	1300650080	1	Retaining ring rotor
6	1300360060REX	1300500060REX	1300570060REX	1300650060REX	1	Eccentric
7	1300360090RE	1300500090RE	1300570090RE	1300650090RE	1	Rotor
8	1300360100	1300500100	1300570100	1300650100	1	Bearing bushing
9	1300360114N	1300500114N	1300570114N	1300650114N	1	Stator 230 V / 200 Hz
10	1300360120	1300500120	1300570120	1300650120	1	Needle bearing
11	1300360130N	1300500130N	1300570130N	1300650130N	1	Intermediate ring
12	1300360125N	1300500125N	1300570125N	1300650125N	1	Ring / Trumpet
13	1300360140N	1300500140N	1300570140N	1300650140N	1	Trumpet
14	1300360150N	1300500150N	1300000150N	1300000150N	1	Rubber ring cable buckle
15	0435	0431	0431	0431	1	Cable buckle (steel)
16	1300360170N	13000000170N	13000000170N	13000000170N	1	Protection sleeve
17	1300360155N	13000000155N	13000000155N	13000000155N	1	Steel ring cable buckle
18	137000018	1370000018	1370000018	1370000018	4	Washer M4
19	0014GLGR	0014GLGR	0014GLGR	0014GLGR	1	Earth wire
20	13000210	13000211	13000211	13000211	2	Hose clamp
21	n.a.	1300019	1300019	1300019	1	Cable buffer
22	1300017	1300017	1300017	1300017	8	Cable connector
23	0015	0015	0016	0016	4	Inner cable / meter
24	1300012	1300013	1300013	1300013	1	Rubber hose / meter
25	0289	0289	0289	0289	3	Bolt M 5x8 mm ELVZ
26	1300084	1300087	1300087	1300087	1	Hose connector
27	0288	0288	0288	0288	6	Screw ST 4.8 x 9.5 mm
29	1300086N	1300086N	1300086N	1300086N	1	Rubber vibration damper complete
30	137080002	137080002	137080002	137080002	1	Adapter ring
31	137080001	137080001	137080001	137080001	1	Hand grip complete (32 -42)
32	137080010	137080010	137080010	137080010	1	Hand grip top part
33	137080011	137080011	137080011	137080011	1	Hand grip lower part
34	137080012	137080012	137080012	137080012	1	Switch Start – Stop
35	137080013	137080013	137080013	137080013	2	Screw M3,5x6
36	0231	0231	0231	0231	4	Tapping screw 5 x 25mm
37	137080014	137080014	137080014	137080014	6	Tapping screw 3,2 x 25mm
38	1400013	1400013	1400013	1400013	1	Rubber cable grommet
39	137080015	137080015	137080015	137080015	1	Cable relief bracket
40	137080016	137080016	137080016	137080016	2	Tapping screw 3 x 12mm
41	137080017	137080017	137080017	137080017	2	Ring cable lug 0.5-1mm
42	137080018	137080018	137080018	137080018	1	Isolation sleeve 10cm
51	0019	0019	0019	0019	20	Eight core cable / per meter
52	0437	0437	0437	0437	2	Cable gland with protection spiral
53	0012	0012	0012	0012	2 x 0.75	Cable 3 x 1,5mm ² / per meter
54	13090	13090	13090	13090	1	PRCD (Residual Current Device)
55	0030	0030	0030	0030	1	Earthen contact plug 230V (F-type)
60	137080020ER	137080020ER	137080020ER	137080020ER	1	Inverter 230V (Pre-programmed)
61	137080021	137080021	137080021	137080021	1	Screw PG11

Table 3: Partlist LHF/HS-ER HD bottle

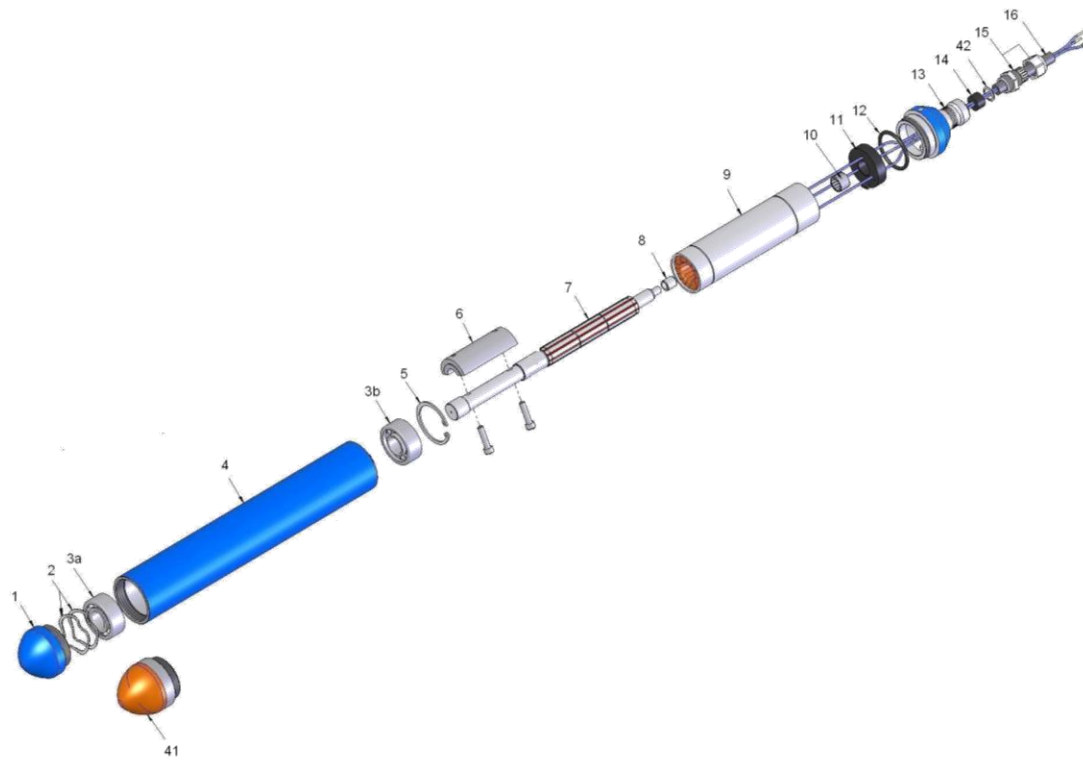


Figure 6: Exploded view LHF/HS-ER Short bottle

LHF / HS	Part number				
Pos.	Ø 36 Short	Ø 50 Short	Ø 57 Short	Quantity	Description
1	1300360011	1300500011	1300570011	1	Steel tip
2	1300360020N	1300500020K	n.v.t.	1	Spring soucer
2	n.v.t.	n.v.t.	1300570020N	2	Spring soucer
3a	1300360030K	1300500030K	1300570070K	1	Bearing
3b	1300360030K	1300500030K	1300570070K	1	Bearing
4	1300360040K	13005000040KN	1300570040K	1	Motorhousing
5	1300360070N	1300500070N	1300570070N	1	Retaining ring (in motorhousing)
6	1300360060KREX	1300500060KREX	1300570060KREX	1	Excentric
7	1300360090REK	1300500090REK	1300570090REK	1	Rotor
8	1300360100	1300500100	1300500100	1	Bearing bushing
9	1300360114K	1300500114KN	1300570114KN	1	Stator 230V
10	1300360120	1300500120	1300500120	1	Needle bearing
11	1300360130N	1300500130N	1300570130N	1	Ring /Trumpet
12	1300360125N	1300500125N	1300570125N	1	O-ring
13	1300360140N	1300500140N	1300570140N	1	Trumpet
14	1300360150N	1300000150N	1300000150N	1	Rubberring cable buckle
15	0435	0431	0431	1	Cable buckle
16	1300360170N	13000000170N	1300000170N	1	Protection sleeve
41	1300360012	1300500012	1300570012	1	Rubber tip
42	1300360155N	1300000155N	1300000155N	1	Steel ring cable buckle

Table 4: Parts list LHF/HS-ER Short bottle

9. Declaration of conformity

EC-DECLARATION OF CONFORMITY

EC-declaration of agreement for machinery

(Directive 2006/42/EC, Annexe II, under A)

Supplier: Bouwmachinefabriek Lievers B.V.
Address: Groot Mijdrechtstraat 68, 3641 RW Mijdrecht

Hereby declares that

The high frequency poker vibrator LHF/HS-ER:

1) complies with the regulations in the Machine Directive (directive 2006/42/EC) , the EMC-Directive (directive 2004/108/EC), Directive 2002/44/EC and Directive 2002/49/EC .

2) complies with the following harmonized standards: NEN-EN-60204-1 (2006), NEN-EN 12649, EN 60034-5 (2001), EN 50144-1 , EN 60034-1.

Mijdrecht, 5 December 2015

Supplier: Bouwmachinefabriek Lievers B.V.
Address: Groot Mijdrechtstraat 68, 3641 RW Mijdrecht



Name: C.M. de Wit
Position: Managing Director