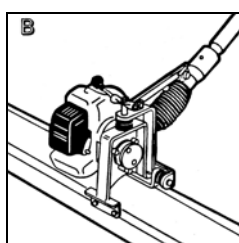
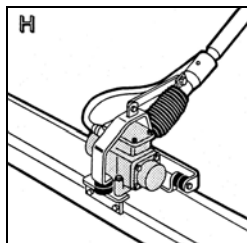
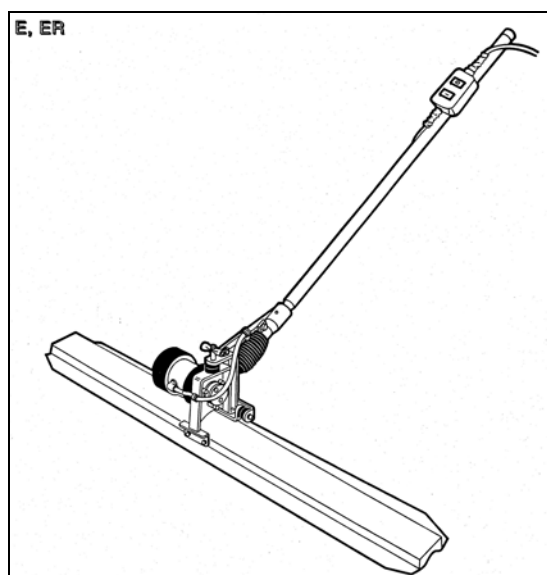


## OPERATION MANUAL AND PART LIST

### BULLFLOAT HAL > 01/06



### **Lievers B.V. Holland**

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3640 AC Mijdrecht

tel: +31 (0)297-231900

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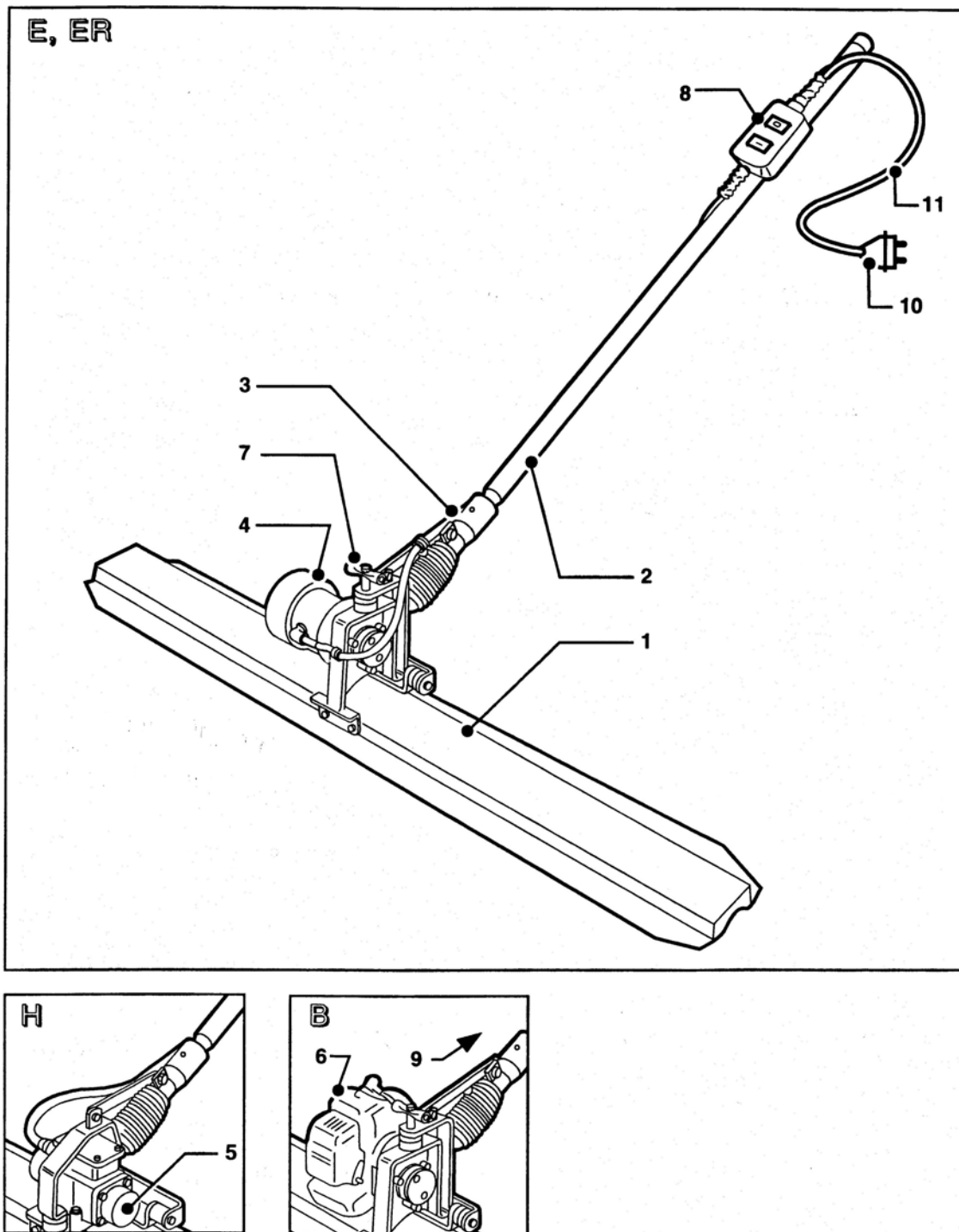


Figure 1 View of the most important components

- 1. Aluminium profile
- 2. Operating handle
- 3. Pitch control
- 4. Drive unit 230V/50 Hz
- 5. Drive unit 42V/200 Hz
- 6. Petrol engine
- 7. Grip
- 8. On/Off-switch
- 9. Gashrottle
- 10. Plug
- 11. Cable

## GENERAL SAFETY-ASPECTS

All Lievers equipment have been tested in accordance with the strict international safety standards. This section contains general advice and apply to several machines mentioned in this paragraph.

- Ensure that you are qualified (familiar with the contents of this manual), to operate and carry out light maintenance-work to the machine when you are operating the machine for the first time.
- Wear safety shoes with extra protection (steel caps and anti-slip soles)
- Wear a safety helmet, safety glasses, working gloves, which do not conduct electricity and protective clothing.
- Ensure, that all symbols on the machine, can always be clearly read.
- Do not leave any tools or parts lying around on the work floor, as this can cause accidents.
- Watch where you are going, the ground can be slippery.
- Take care that you do not injure yourself on objects, such as scaffolding and reinforcement materials, which can be found directly or indirectly in the working area.
- Be careful when lifting and carrying the Bullfloat. Do not bend forwards when picking up the apparatus, but bend your knees. Ensure that the working area is within your reach, so that you do not have to bend forward.
- When cleaning the machine, ensure that no water or cleaning detergents get into the motorhousing.
- When the machine is not being used for longer periods of time, then it must be stored in a dry and clean area.
- Do not only pay attention to your own safety, but also to that of your colleagues.

Regular maintenance of the machine promotes safe operation.

### **The following safety-aspects specifically apply to those Lievers products which are equipped with an electrical drive unit.**

- Place the wires between the electrical source and the work place in such a way, that they cannot be damaged and your colleagues cannot trip over them.
- Do not use the machine in an explosion endangered area.
- Check that the electrical source complies with the local valid regulations. Use earthed extension leads, when it is necessary to use extension leads.
- Use an electrical source which is provided with an earth leakage switch or attach a safety transformer between the electrical mains and the machine.
- Ensure that the wall socket and possible connections between the extension leads are protected against dampness.
- Do not pull the plug out of the wall socket or extension lead by its lead.
- Regularly check the connections of the supply-cable to the switch.

## HAL Operation manual

- Check the feeder cable's outercasing and if in use extension lead's outercasing before you connect the machine to the electrical mains. The outercasing may not be damaged. Replace the cable if you cannot read the marks on the outercasing anymore.
- Check the machine's cable-connections before you connect the machine to the electrical mains. The cables must be properly connected.
- Switch off the machine, when the electrical power cuts off. This prevents the machine from starting suddenly when the electrical power comes on again.
- Disconnect the electrical supply to the machine, before you start to clean or maintain the machine.
- Ensure that the ventilation slots of the machine are free from dirt and moisture.

### **The following safety-aspects specifically apply to those Lievers products which are equipped with a petrol-engine.**

- Do not use the Bullfloat with petrol-engine indoors or in poorly ventilated places, such as pits etc.
- Make sure that there is sufficient ventilation in spaces which are surrounded by walls. Never inhale exhaust gasses, they can damage your health and that of your colleagues.
- To avoid getting an electric shock, do not touch the high-tension cable or spark plug cap while the engine is running.
- Check for fuel leaks before running the machine.
- Do wear working-gloves, safety glasses and protecting clothing during refueling.
- Make sure that there is sufficient ventilation during refueling.
- Refueling of fuel is only allowed after the engine has been cooled off sufficiently.
- Refueling of fuel , while the engine is hot, might lead to a very dangerous situation.

### **It is strictly forbidden to refuel :**

- \* in the direct vicinity of open fire or other flammable materials,
- \* while smoking cigarettes etc.
- \* in explosion endangered spaces.

## Explanation of the used safety symbols

### HAL E/ER



### HAL B



- 1 Please read the instructionbook
- 2 Safety glasses, safety helmet and ear protection compulsory.
- 3 **Working gloves compulsory. (vibration Isolating work Glove with GELFÔM)**
- 4 Safety shoes with extra protection compulsory.
- 5 Before opening the motorhousing remove the plug from the mains/ Inflammable material
- 6 Dangerous electrical voltage/ Careful, DANGER!
- 7 Careful, DANGER!!

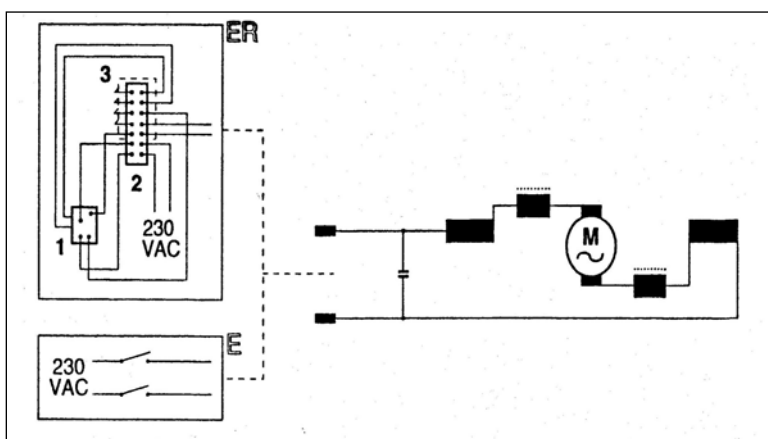
**TIP:** If the safety aspects are not clear to you, then please contact the manufacturer for further information: Lievers Holland. Telephone: + 31 297 231900; Telefax: + 31 297 231909

### TECHNICAL DATA HAL E, ER, H en B (Honda)

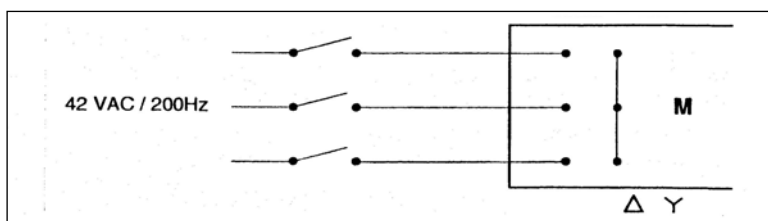
	HAL E, ER (230V/50-60Hz) *(115V/50-60Hz)	HAL H (42V/200Hz)	HAL B Honda (4-stroke petrol engine)
Voltage	230V/1-fase/50-60Hz	42V/3-fase/200Hz	-----
Capacity	350 Watt	200 Watt	0,81Kw (1,1 Hp)
Revolutions	8.500 rpm	6.000 rpm	9.000 rpm
Centr. force	1800 Newton	1500 Newton	1800 Newton
Mass	2.0m 15 Kg	2.0m 15 Kg	2.0m 15 Kg
Fuel	-----	-----	unleaded petrol (95)
Insulation	IP54, splash proof Double insulated	IP54, splash proof	-----
Sound press. level ISO6081	76dB(A) at operator's place	65dB(A)	80dB(A)
** Value of acceleration	2,46m/s <sup>2</sup>	2,7m/s <sup>2</sup>	3,89m/s <sup>2</sup>
Comfort.exposure	8,3hr Max 33hr a day	7hr Max 26hr a day	3,3hr Max 13,2hr a day
Execution	Portable	Portable	Portable

\* On request

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



Electrical diagram types E en ER



Electrical diagram types H

## **OPERATION INSTRUCTIONS**

This chapter describes the use of the complete range of HAL200 bullfloats.

TIP:For the location and description of the bullfloat's parts, which are mentioned in the text, we refer to the illustration figure 1 on the backside of the cover.

### **HOW TO ASSEMBLE THE HAL 200 BULLFLOAT.**

When delivered the bullfloat is not ready for use. You only have to carry out the following procedures.

- 1 Connect the switch ( an ON/OFF-switch, an electronic speed regulator, or a gashrottle), to the operating handle by means of the bracket and the butterfly nut. Now lock the bracket by tightening the butterfly nut.
- 2 Stick the operating handle into the shaft of the motorunit-frame. Make sure that the operating handle is locked in the proper way.

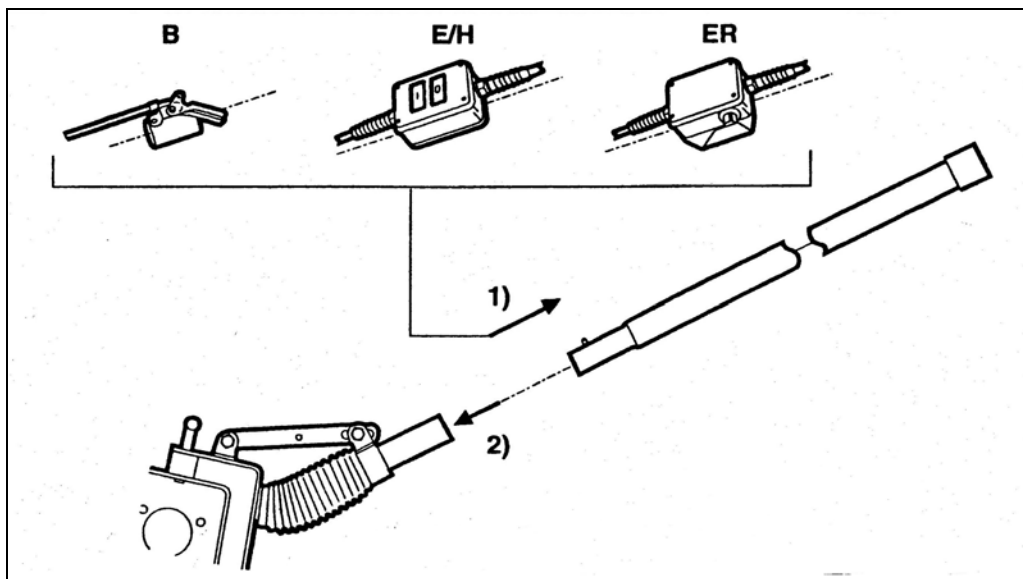
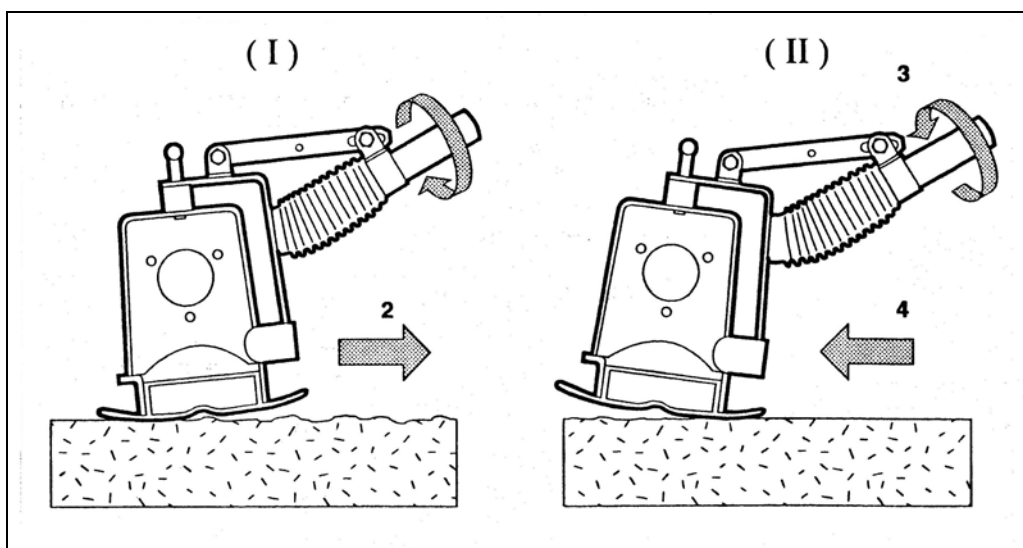


Figure 2 Assembly of the controls.

### **HOW TO ADJUST THE TROWEL BLADE ANGLE.**



Adjusting the blade pitch

Use position (1) when smoothing normal freshly poured concrete.

## HAL Operation manual

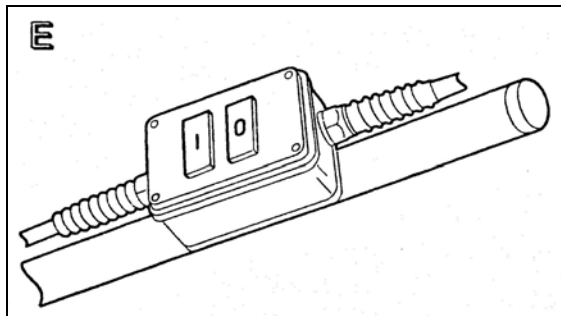
This section describes how to operate and use the bullfloat. In the text are numbers in brackets. These numbers are position numbers and they correspond to the numbers in the parts list of the corresponding figures.

**CAREFUL:** Read the safety aspects and instructions before you switch on the apparatus.

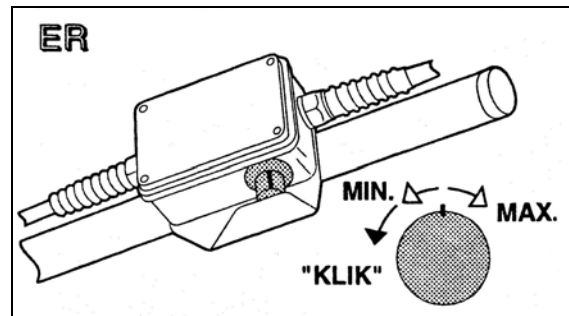
**CAREFUL:** Prevent the bullfloat of sinking into the concrete. After the motor has been switched on, immediately move the bullfloat backwards.

**TIP:** Before the bullfloat is brought into action, first compact the freshly poured concrete floor with a poker-vibrator while at the same time adjust the height of the floor by means of a laser device.

**TIP:** Pour concrete lanes of approx. 3 m. wide and approx. 15 m. long. You can finish this surface in one pass without any problem.



Type of switches.



### OPERATION OF THE BULLFLOAT , TYPE HAL200/E

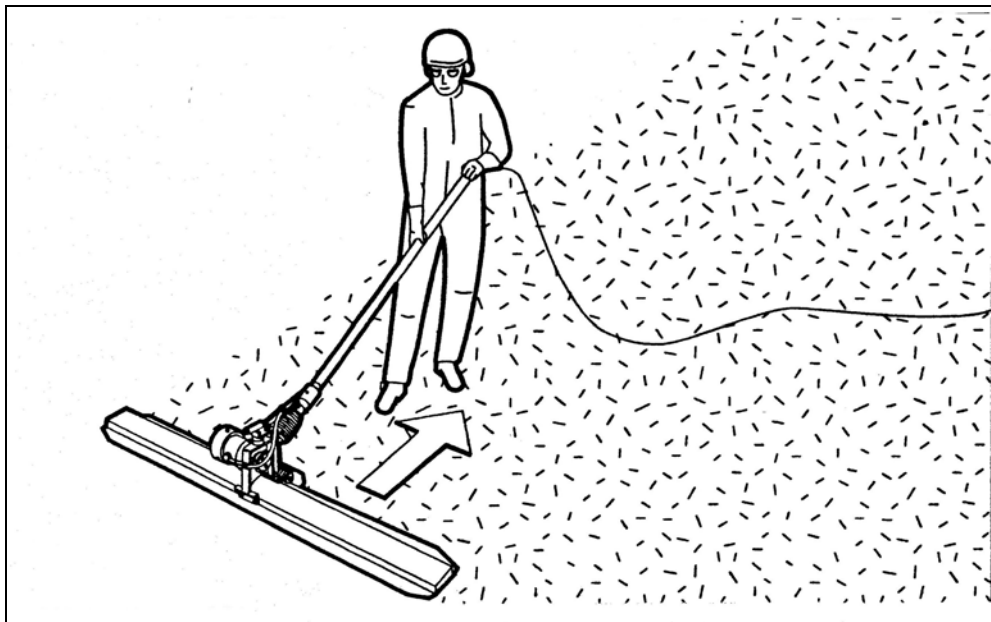
- 1 Check that the bullfloat is properly assembled and make sure that the switch is in the OFF position.
- 2 Place the bullfloat in the direct vicinity of where you are going to smoothen the surface of the concrete.
- 3 Push the plug of the vibrating -unit's feeder cable into the wall socket.
- 4 Place the bullfloat on the surface of the freshly poured concrete-floor.
- 5 Put the switch in the ON position.
- 6 Adjust the trowel blade angle.
- 7 Now start to smoothen the surface of the concrete-floor by moving the bullfloat backwards in a slow but steady motion.
- 8 After having finished one lane of concrete, switch off the bullfloat immediately.

**TIP:** If the processed concrete-surface is not smooth or level enough, repeat the procedures 5,6,7 and 8 .

- 9 Pull the feeder cable's plug of the bullfloat out of the wall socket.
- 10 After use, place the bullfloat on a dry and stable surface.

### OPERATION OF THE BULLFLOAT, HAL200/ER

- 1 Check that the bullfloat is properly assembled and that the switch is in the OFF position.
- 2 Put the plug of the drive-unit's feeder cable in the wall socket.
- 3 Place the bullfloat in the direct vicinity of where you are going to smoothen the surface of the concrete-floor.
- 4 Place the bullfloat on the surface of the freshly poured concrete, and turn the speed regulator slowly to the required revolutions.
- 5 Adjust the trowel blade angle.
- 6 Now start to smoothen the surface of the concrete floor by moving the bullfloat backwards in a slow but steady motion.
- 7 After having finished one lane of concrete, switch of the bullfloat immediately, by turning he speed regulator's knob to the position MINIMAL. You will hear a CLICK.



Worksituation during smoothing and compacting of the concrete floor.

Tip: if the processed concrete surface is not smooth or level enough, repeat the procedures 5,6,7 and 8

- 8 Pull the plug of the feeder cable out of the wall socket.
- 9 After use, place the bullfloat on a dry and stable surface.

### OPERATION OF THE BULLFLOAT, HAL200/H

CAREFUL: Make sure that the frequency-converter is running before connecting the bullfloat.

- 1 Check that the bullfloat is properly assembled and that the switch is in the OFF position.
- 2 Place the bullfloat in the direct vicinity of where you are going to smoothen the surface of the concrete-floor.
- 3 Insert the 42V.plug into the socket of the frequency-converter.
- 4 Switch-on the frequency-converter.
- 5 Place the bullfloat on the freshly poured concrete.
- 6 Put the switch in the ON position.(Position!)
- 7 Adjust the trowel blade angle.
- 8 Now start to smoothen the surface of the concrete by moving the bullfloat backwards in a slow and steady motion.
- 9 After having finished one lane of concrete put the switch in the 0 position.
- 10 Disconnect the plug from the frequency-converter.
- 11 After use, place the bullfloat on a dry and clean surface.



## Operation of the HAL bullfloat type B (petrol engine)

### WARNINGS

1. Do not run the engine in a closed area. Exhaust gas contains carbon monoxide, an odorless and deadly poison.
2. Gasoline is extremely flammable and can be explosive under certain conditions.
3. Do not smoke. Make sure the area is well ventilated and free from any source of flame or sparks.
4. Stop engine and allow the engine to cool off before refueling.
5. Do not fill the tank so the fuel level rises into the filler neck or level surface of the level gauge. If the tank is overfilled, heat may cause the fuel to expand and overflow through the vents in the tankcap. Wipe off any spilled gasoline immediately.
6. Keep the engine at least 1 mtr. away from buildings, obstructions and other burnable objects. To avoid getting an electric shock, do not touch the spark plug or spark plug lead during engine running. To avoid a serious burn, do not touch a hot engine muffler. Before you service or remove parts stop engine and allow the engine to cool.
7. Always remove the spark plug lead from spark plug when servicing the engine to prevent accidental starting.

Read the instruction manual of the petrol engine.

### MAINTENANCE AND REPAIR.

Although the bullfloat has few moving parts, regular maintenance promotes a long and trouble-free life.

**WARNING!:** Never use a high pressure cleaner to clean the bullfloat with an electrical- or petrol drive unit.

#### LUBRICATING THE BLADE PITCH CONTROL.

Lubricate the blade pitch control , after a long periode of storage , or at least twice a year with Texaco Multifak EP 2.

#### CLEANING AND SERVICING OF THE ELECTRICAL DRIVE UNIT.

**WARNING!:** Cut off the electrical supply to the bullfloat , before carrying out any maintenance activities to the bullfloat.

In order to achieve a maximum cooling effect the ventilation slots of the electrical drive unit must stay free from dirt and grease. Check them at the end of each working day. If necessary, clean the motor with a brush or a damp cloth.

#### CLEANING AND SERVICING OF THE PETROL ENGINE.

In order to achieve a maximum colling effect the ventilation openings must stay free from dirt or grease. Check them at the end of each working day. If necessary, clean them with a brush or a damp cloth. For a proper functioning of the carburator's control mechanism , it is necessary to check the carburator for concrete or dirt, each time after use. If necessary clean the control mechanism with a brush or a damp cloth.

## TROUBLE-SHOOTING

Problem: The bullfloat does not vibrate in the ON position.

Cause:

Fault in the electrical connections of the feeder cable.

Solution:

Check the electrical connections to the bullfloat, switch, plug and feeder cable for breakage.

Replace the faulty part(s).

Problem: The bullfloat does not get into the required number of revolutions.

Cause:

Extensive voltage drop, due to the feeder cable being too long (longer than 25 m)

Solution:

Move the electrical source closer to the working area.

Problem: The electrical motor rotates irregularly and makes a lot of noise.

Cause:

- 1 The bearings are worn out, and/or
- 2 an electrical defect in the stator, and/or
- 3 a break in the feeder cable.

Solution:

- 1 Replace the bearings, and/or
- 2 replace the stator, and/or
- 3 repair or replace the feeder cable.

Problem: The connected and running bullfloat rotates irregularly and does not get into the required revolutions.

Cause:

Insufficient current supply.

Solution:

Electrical supply via a safety transformer, check the distributed power from the safety transformer.

Electrical supply via electrical mains, check the plug connections for defects.

Use an extension lead of a maximum length of 25 m. with a cross section of 2.5mm<sup>2</sup>.

Problem: the electrical motor runs irregularly.

Cause:

The carbon brushes are worn out.

Solution:

Replace the carbon brushes. (replace every 6-12 months)

Problems solving for bullfloats with petrol engine: see the enclosed engine manual, provided by the engine supplier/producer.

Tip: if the problem you are facing is not mentioned in this list, please contact your supplier or contact Lievers B.V. Tel +31 (0)297 231900. Fax: +31 (0)297 231909.

## Warranty

Your new LIEVERS " HAL Bullfloat " is warranted to the original purchaser for a period of one-year ( 12 months ) from the original date of purchase.

The LIEVERS warranty is against defects in design, materials and workmanship.

The following are not covered under the LIEVERS warranty:

- Damage caused by abuse, misuse, dropping or other similar damage caused by or as a result of failure to follow assembly, operation or user maintenance instruction.
- Alterations, additions or repairs carried out by persons other than LIEVERS Products or their recognised agents.
- The ventilation slots are not cleaned regularly,
- Unqualified personnel (not familiar with the contents of this operation manual) have assembled or dismantled the HAL.
- The HAL has been stored in a damp environment.
- The HAL has been cleaned with a high pressure cleaner or by water jet under high pressure.
- The HAL has been connected to a wrong voltage.

## Guarantee-certificate

Bullfloat Type HAL, Nr.....  
Purchase date :.....

Manufacturer:  
Bouwmachinefabriek Lievers B.V.  
Address: Groot Mijdrechtstraat 68, Mijdrecht, The Netherlands.

## EC-Declaration

EC-Declaration of agreement for machinery  
(Directive 98/37/EC, Annexe II, under A)

Manufacturer:               Bouwmachinefabriek Lievers B.V.  
Address:                     Groot Mijdrechtstraat 68, Mijdrecht, The Netherlands

Hereby declares that:

The bullfloat type : HAL

complies with the regulations for the Machine Directive (No. 98/37/EC, as lastly modified).

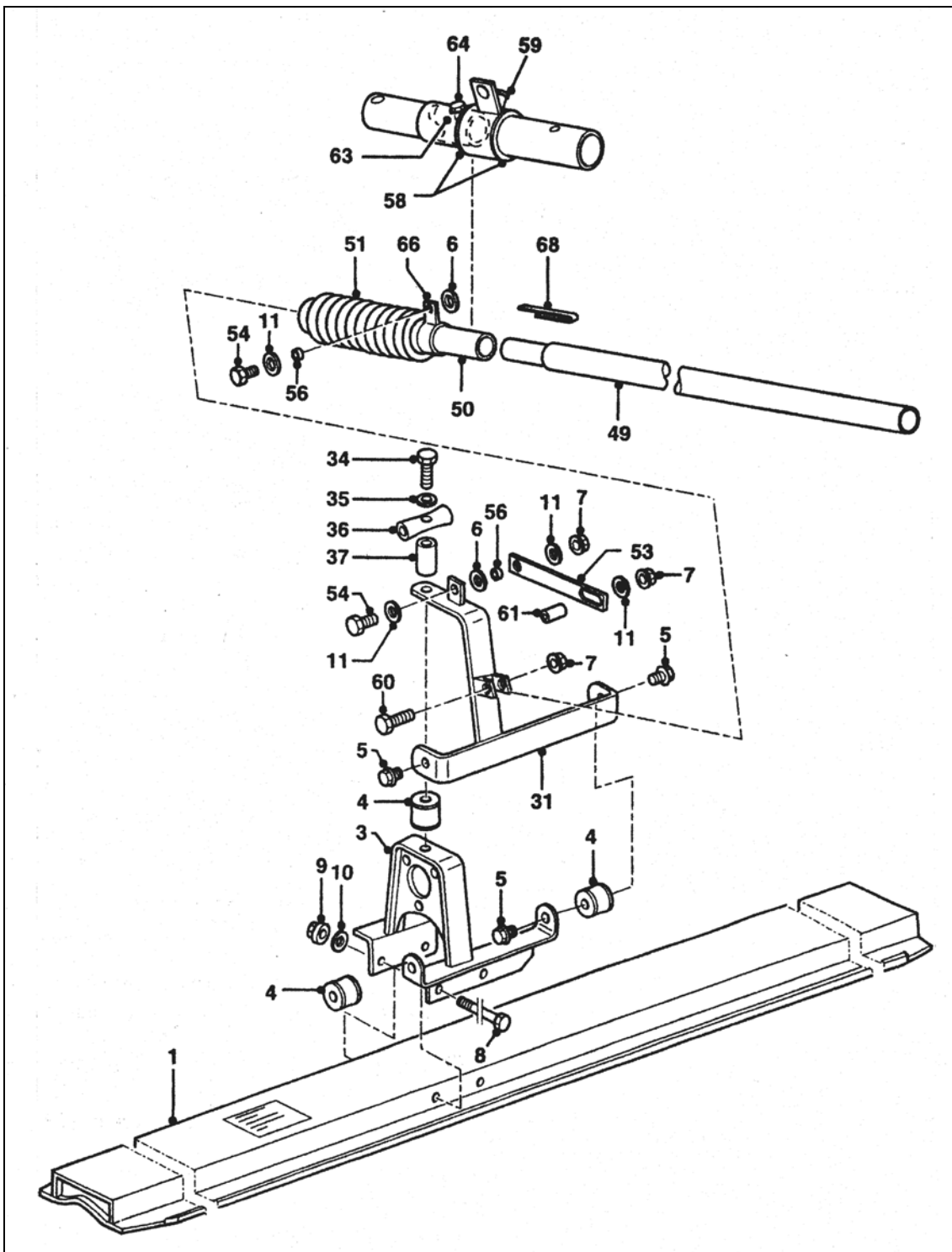
Complies with the following harmonized standards:  
NEN – EN 292 – 1 (1994), NEN – EN 292 – 2 (1996), NEN – EN 60335 – 1 (1995),  
NEN – EN 55014 (1994), NEN – EN 60204-1 (1996), NEN – EN 50144 2 11 (1996)

Done at Mijdrecht, 1 january 2004



Name: Dhr. J.F. Lievers  
Function: Director.

### HAL type E, ER en B frame (only)

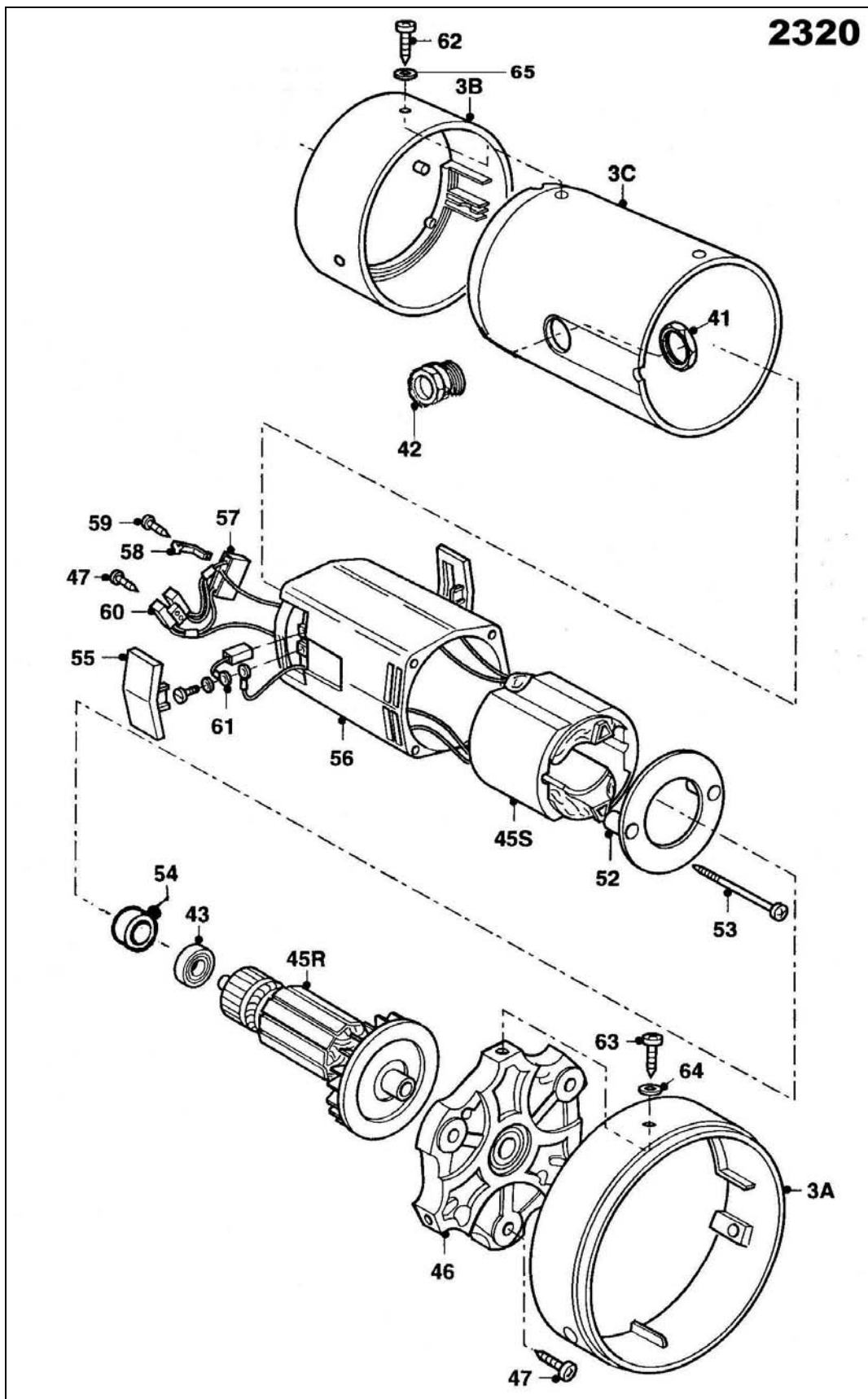


Spare parts drawing HAL E, ER en B frame (only)

**HAL type E, ER & B frame (only)**

Index	Partnumber	Quantity	Description
1	230010	1	Alum. profile 1.0 m.
	230015	1	” ” 1.5 m.
	230020	1	” ” 2.0 m.
	230025	1	” ” 2.5 m.
3	23003	1	Motor assembly bracket
4	0060	3	Rubber buffer
5	0124	5	Bolt
6	0173	2	Undulated ring
7	0093	3	nut
8	0115	2	Bolt
9	0107	2	Nut
10	0172	2	Retaining ring
11	0156	4	Washer
31	230031	1	Assembly bracker
34	0140	1	Bolt
35	0212	1	Retaining ring
36	23036	1	Grip
37	23037	1	Spacer
49	2348	3	Operating handle
50	2350	1	Pitch control
51	23051	1	Rubber sleeve
53	23053	1	Adjustable strip
54	0131	2	Bolt
56	23056	2	Spacer
58	0203	2	Lock-ring
59	23059	1	Lubricating nipple & cap
60	0133	1	Bolt
61	23061	1	Spacer
63	23063	1	Brass nut
64	0125	1	Bolt
66	23066	1	Plastic clamp
68	23068	1	Locking clip

### HAL type E, ER Drive unit

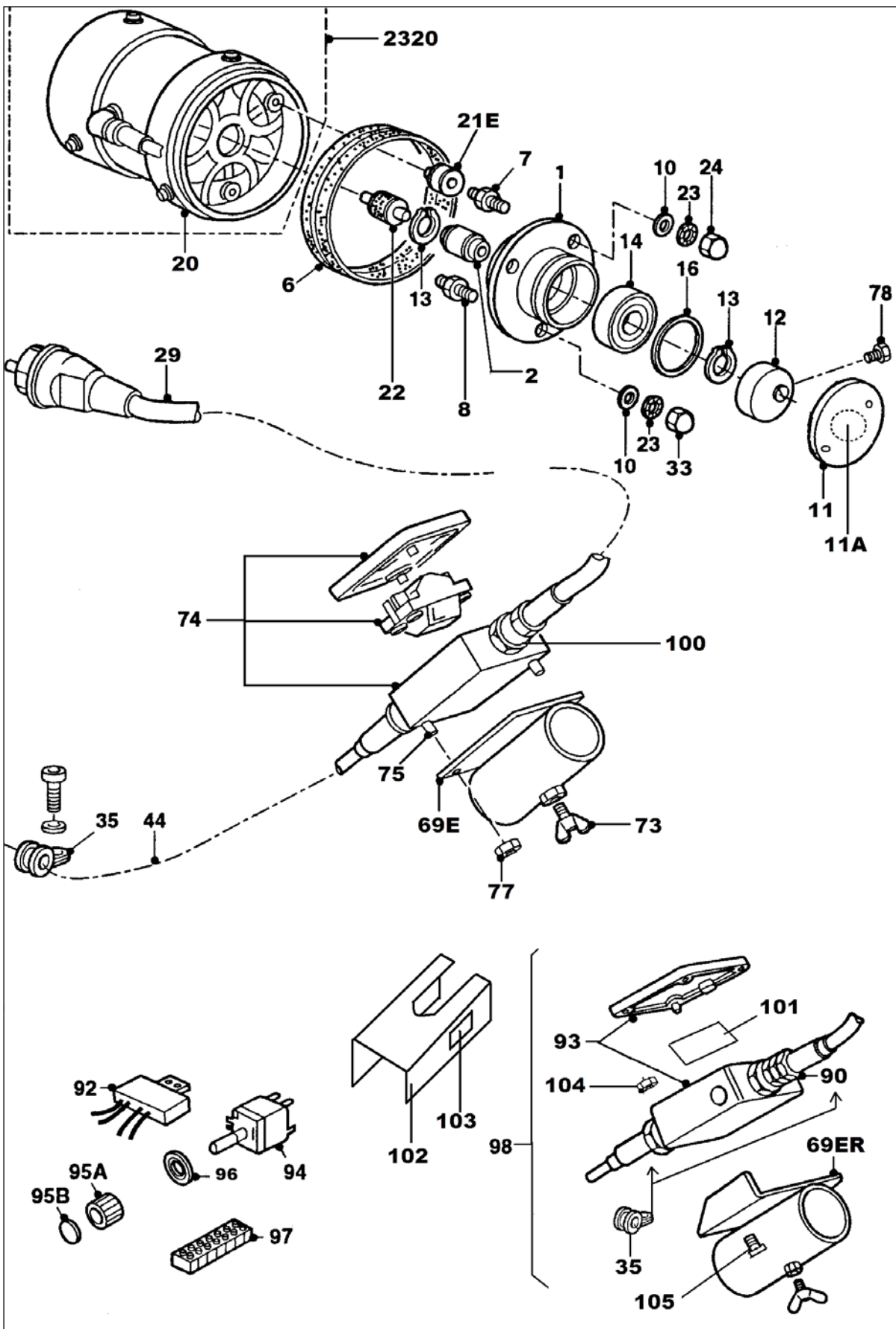


Spare parts drawing HAL E, ER drive unit

**Hal type E, ER drive-unit**

<b>Index</b>	<b>Partnumber</b>	<b>Quantity</b>	<b>Description</b>
3A	2303A	1	Ventilation ring (small)
3B	2303B	1	Ventilation ring (large)
3C	2303C	1	Ventilation housing
20	2320	1	Drive unit complete
41	0521	1	Plastic nut M20
42	0522	1	Packing box M20
43	1101220240	1	Rear-bearing
45S	2345S	1	Stator
45R	2345R	1	Rotor
46	2346	1	Frontshield
47	0249	5	Self tapping screw
52	1101220170	1	Ventilator-cover
53	1101220200	2	Screw
54	1101220290	1	Rubber bearing support
55	1101220220	2	Brush-cover
56	1101220180	1	Motor-housing
57	2357	1	Capacitor
58	2358	1	Capacitor-clamp
59	0248	3	Self tapping screw
60	2360	1	Terminal-bloc
61	1101220230	1	Set of brushes
62	0230	3	Self tapping screw
63	0231	3	Self tapping screw
64	0154	3	Washer

### HAL type E, ER Drive unit & Switch



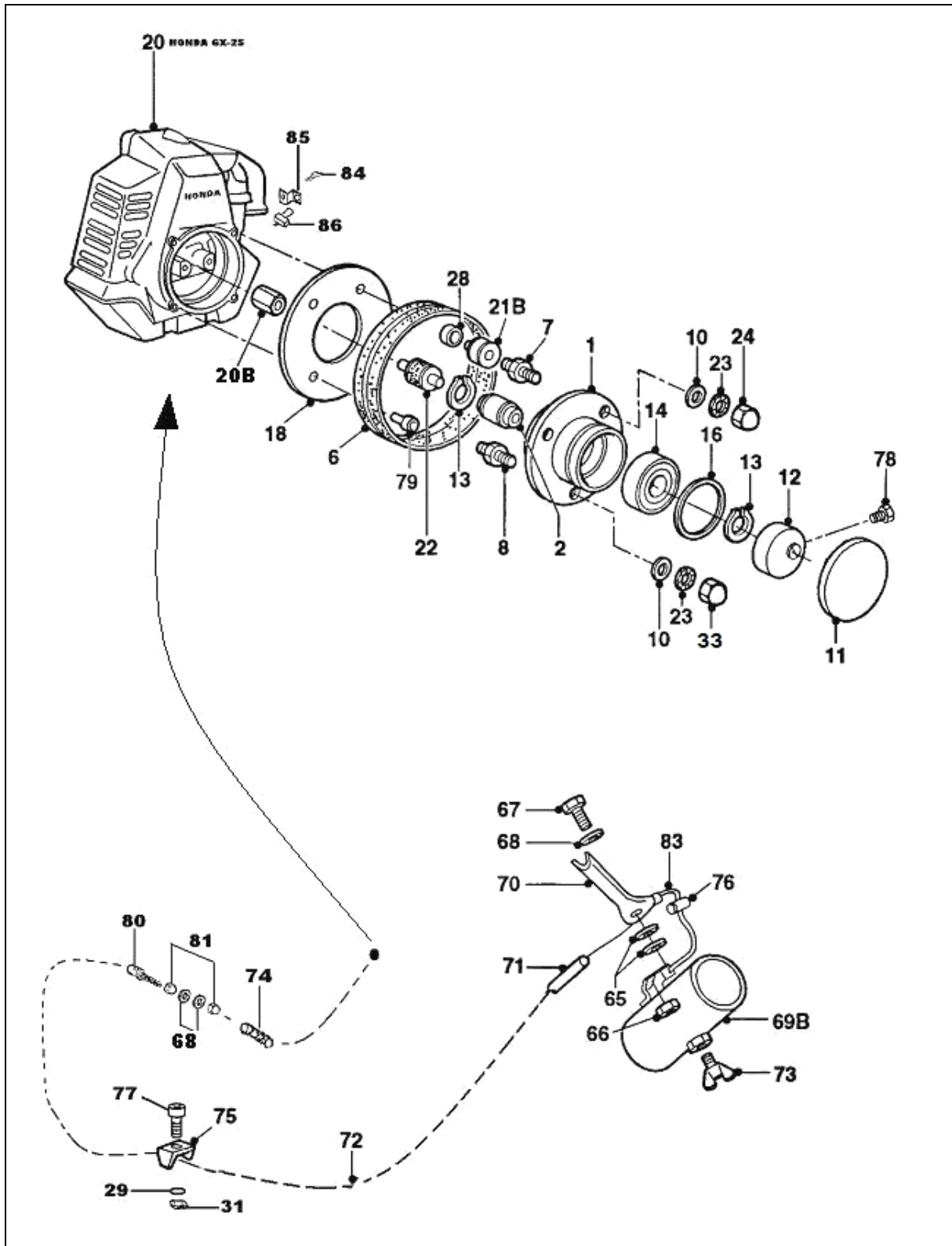
Spare parts drawing HAL E, ER Drive unit & switch



**Hal type, E, ER drive-unit&switch**

1	2301N	1	Excenter-housing
2	2301N	1	Excenter-shaft
6	2306	1	Rubber seal
7	2307	2	Adaptor-bolt (short)
8	2308	1	Adaptor-bolt(large)
10	0155	3	Washer
11	2311N	1	Cover&bearing (excenter .)
12	231213	1	Excenter 1.0 - 1.5 m.
	231217	1	Excenter 2.0 - 2.5 m.
13	0201	1	Lockring
14	2314	1	Excenter-bearing
16	2316	1	O-ring
20	2320	1	Drive-unit
21E	0051	3	Rubber buffer
22	0052	1	Coupling-rubber
23	0212	3	Retaining ring M8
24	0088	2	Capnut
29	0017	1	10 mtr.Cable 2 x 2,5 mm2 with plug
33	0086	1	Capnut (high)
35	2335	1	Cable-clamp
44	0004	1	Cable
69E	2369E	1	Switch assembly bracket (E)
69ER	2369ER	1	Switch assembly bracket (ER)
70	23070	1	Switch housing
71	23071	1	Rocker-switch (only)
72	23072	1	Switch-cover
73	0325	1	Wing-screw
74	23074	1	Switch complete
75	0261	2	Screw
77	0099	2	Self-locking nut
78	0122	1	Screw
90	0522	2	Packing boxM20
91	0521	2	Nut M20
92	2392	1	Speed-regulator (only)
93	2393	1	Switch-box (speed-regulator)
94	2394	1	Potentiometer & switch
95A	2395A	1	Knob (potentiometer)
95B	2395B	1	Knob-cap
96	2394A	1	Nylon spacer
97	2397	1	Terminal-bloc
98	2398	1	Speed-regulator compl.(incl.bracket)
99	2399	1	Speed-regulator compl. (excl.bracket)
100	0522	2	Packingbox M20
101	2389	1	Isolation plate
102	2391	1	Aluminium protection housing for switch
103	2387	1	Sticker on-off
104	0087	4	Nut M6
105	0210	4	Nylon bolt M6x12

## HAL type B, Drive unit Honda & Throttle



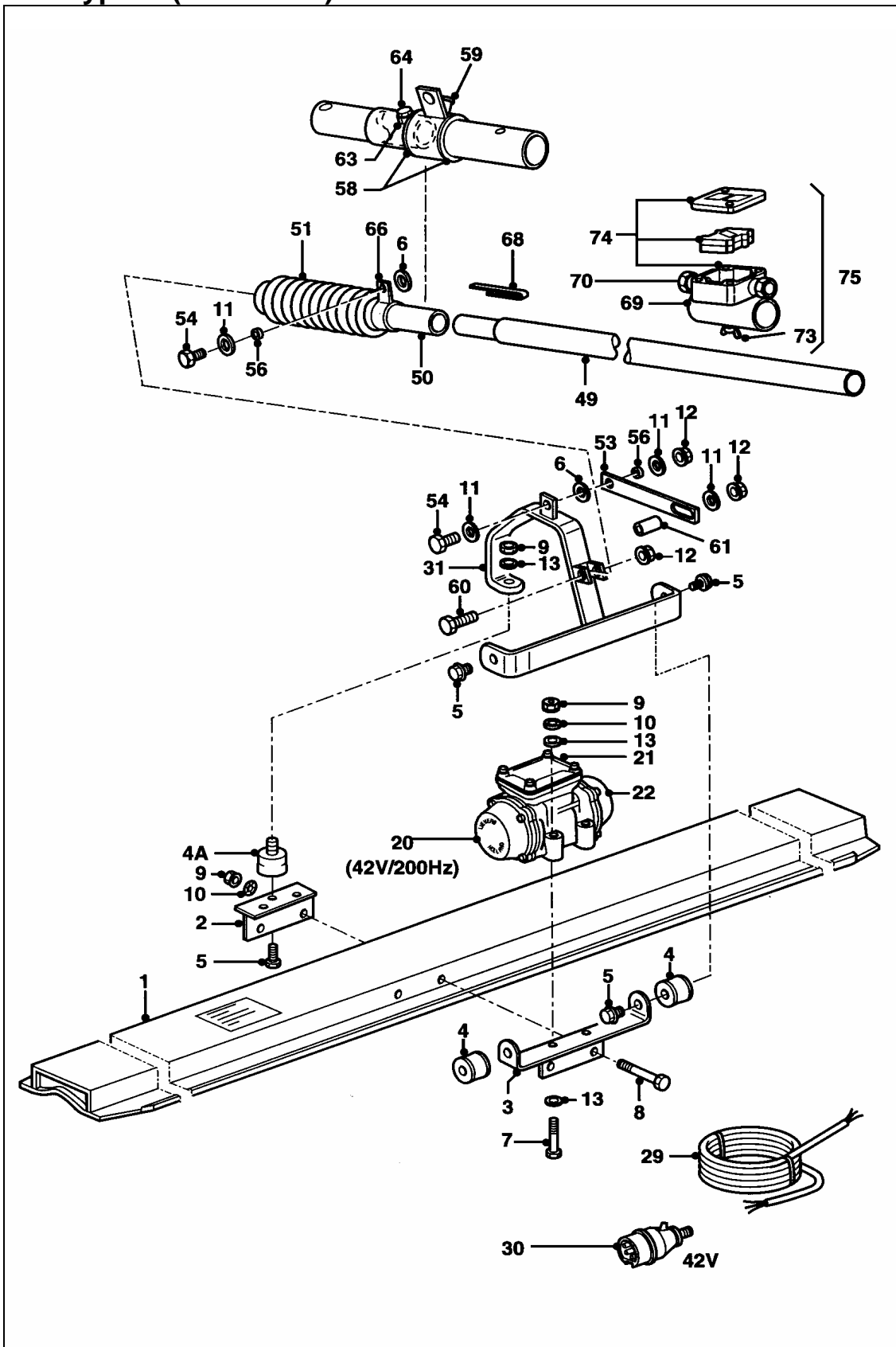
Spare parts drawing HAL B, Drive unit Honda & throttle

**Hal type B petrol-drive & gas throttle**

<b>Index</b>	<b>Part number</b>	<b>Quantity</b>	<b>Description</b>
1	2301N	1	Excenter-housing
2	2301N	1	Excenter-shaft
6	2306B	1	Rubber seal
7	2307	2	Adaptor-bolt (short)
8	2308	1	Adaptor-bolt(large)
10	0155	3	Washer
11	2311N	1	Cover&bearing (excenter hs.)
12	231213	1	Excenter 1.0 - 1.5 m.
	231217	1	Excenter 2.0 - 2.5 m.
13	0201	1	Lock ring
14	2314	1	Excenter-bearing
16	2316	1	O-ring
18	2318N	1	Engine bracket
20	2302666020HON	1	Petrol engine
20A	2320GX25	1	Engine adaptor Honda GX-25
21B	0055	3	Rubber buffer
22	0052	1	Coupling-rubber
23	0172	3	Retaining ring M8
24	0088	2	Capnut
28	2328	3	Spacer
29	0153	2	Washer M5
31	0099	2	Selflocking nut M5
33	0086	1	Capnut (high)
65	2365	2	Fibber-ring
66	0089	1	Nut M6
67	0123	1	Bolt M6x14
68	0154	3	Retaining-ring M6
69B	2369B	1	Gas handle & bracket complete incl. 65, 66, 67, 68, 70, 73
70	2302666700	1	Gas handle complete incl. 65,66,67,68
71	2371	1	Throttle-cable (outer)
72	2372	1	Throttle-cable (inner)
73	0325	1	Wing-screw
74	2383C	1	Spring at carburettor
75	2375	1	Assembly-bracket
76	2376	1	Throttle-cable stopper
77	0270	1	Hex. bolt M5x16
78	0122	1	Screw M6x8
79	0123	4	Bolt M6x14
80	2644	1	Throttle-cable adjustment bolt
81	0091	1	Nut M6
83	2383	1	Retaining-spring gas handle
84	0263	1	Hex-bolt M5x12
85	2321H	1	Switch-bracket
86	2643	1	Kill-switch engine

Spare parts HAL B drive-unit and gas throttle.

### HAL type H (42v/200Hz)



Spare parts drawing HAL-200 type H

HAL type H 42v/200Hz Frame , Vibrator & Switch

Index	Partnumber	Quantity	Description
1	230010	1	Alum. profile 1.0 m
	230015	1	Alum. profile 1.5 m
	230020	1	Alum. profile 2.0 m
	230025	1	Alum. profile 2.5 m
	230030	1	Alum. profile 3.0 m
2	2302422020	1	Motor assembly bracket (small)
3	2302422030	1	Motor assembly bracket (larch)
4	0060	2	Rubber buffer
4A	0061	1	Rubber buffer
5	0124	5	BoltM8x10mm
6	0173	2	Undulated ring
7	0119	4	Bolt M8x55mm
8	0115	2	BoltM8x150mm
9	0107	7	Nut M8
10	0212	7	Retaining ring
11	0156	4	Washer M10
12	0093	3	Nut
13	0155	8	Washer
20	2302422200	1	Vibrator 42V 200Hz
21	2302422210	1	Cover-plate vibrator
22	2302422220	2	Cover- shield vibrator
	2302422250	2	Rotor bearings
29	0019	15	Mtr cable 3x 2,5mm
30	0037	1	CEE plug 42V
31	23031	1	Assembly bracket
49	2348	3	Operating handle150cm
50	2350	1	Pitch control
51	23051	1	Rubber sleeve
52	23052	1	Plastic clamp
53	23053	1	Adjustable strip
54	0131	2	Bolt M10x25
55	0005	2,2	Mtr. cable 3x 2,5mm
56	23056	2	Spacer 4,2 mm
58	0203	2	Lock-ring
59	23059	1	Lubricating nipple & cap
60	0133	1	Bolt M10x 50mm
61	23061	1	Spacer 32mm
63	23063	1	Brass nut M8
64	0125	1	Bolt M8
66	23066	1	Plastic clamp
68	23068	1	Locking clip
69	2369 E	1	Switch assembly bracket
70	0522	2	Packing box M20
73	0325	1	Wing screw M6x12
74	23074	1	Switch complete with packing box
75	23075	1	Switch complete with assembly bracket

Spare parts list HAL 200-H