BE3970 Operating Instructions

(Translation of original)

BRINKMANN - Inline pressure boosting pumps

IH11…IH17

Brinkmann Pumpen
K. H. Brinkmann GmbH & Co. KG
Friedrichstraße 2 D-58791 Werdohl
Tel.: +49-2392 / 5006-0
Fax.: +49-2392 / 5006-180
www.brinkmannpumps.de
sales@brinkmannpumps.de

Subject to change without prior notice.

Order - No.: BE3970 ENGLISH

Brinkmann Inline pressure boosting pumps of the series IH11 ... IH17

Contents

1 Indication to the manual

This operating manual gives basic instructions which are to be observed during installation, operation and maintenance of the pump. It is therefore imperative that this manual be read by the responsible personnel and operator prior to assembly and commissioning. It is always to be kept available at the installation site.

1.1 Identification of safety instructions in the operating manual

Safety instructions given in this manual non-compliance with which would affect **safety** are identified by the following symbol

Safety sign according with ISO 3864 – B.3.1

or where **electrical safety** is involved, with:

Safety sign according with ISO 3864 – B.3.6

Where non-compliance with the safety instructions may cause a risk to the machine and it's function the word

ATTENTION

is inserted.

2 Description of product

2.1 General description of the pump

Inline pressure boosting pumps are multi-stage centrifugal pumps with suction and discharge ports arranged on the same axis (inline).
They operate with closed impellers, achieving optimal hydraulic performance with low motor power.

The pump shaft and the motor shaft are connected by a coupling. The pump shaft is sealed by a rotating mechanical seal. Pump and motor form a compact and space-saving unit

Inline pumps of this design are not self-priming.

Having opposing suction and discharge ports, the pumps can be installed in horizontal pipelines or connected directly to the tank.

They have a connection cover that must be screwed to ensure a secure position of the pump.

2.2 Intended use

The pumps of the series IH have been especially developed to supply internally cooled tools with coolant fluid within the limiting application in accordance with table 1.

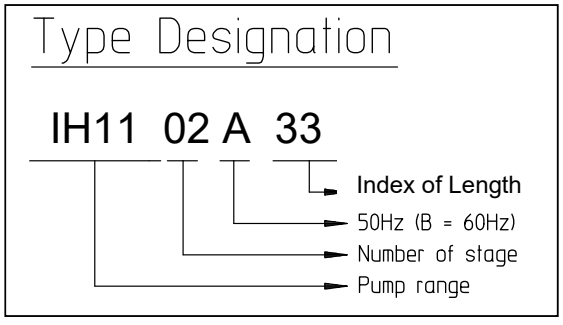
Limit of Application (Table 1)

Type	IH11...17
Mediums	Industry water, cooling emulsions, cooling- and cutting-oils
Kinetic viscosity of the medium	...25 mm^2/s
Temperature of medium	0 ... 80 °C
Particle-size in the medium	1 mm
max. operation pressure	26 bar (including inlet pressure)
min. delivery volume 50 / 60 Hz in l/min	IH11 42 / 50 IH14 67 / 84 IH17 92 / 109 at special execution -Q 1% of Q max.
Dry running	The pumps are not suitable for dry running.
Switching-on frequency per hour	Motors less 3 kW max. 200 from 3 kW to 4.0 kW max. 40 from 5.0 kW to 10.3 kW max. 20 Motors 11 kW and higher max. 15
Ambient temperature	40 °C
Set-up altitude	1000 m

ATTENTION

The pumps are to be operated within their design limits. Applications outside of these limits are not approved. The manufacturer is not responsible for any damages resulting from use of the pumps in such applications.

2.3 Type Designation



2.4 Technical data

50 Hz

Type	Max. del. pressure bar / spec. weight 1	Max. del. volume l/min	Height[1] **H** mm	Weight kg	Power kW	Noise level[2] dBA
IH1102A33	2.1	250	887	52	1.3	63
IH1103A33	3.8	250	887	52	1.5	63
IH1104A33	4.8	250	913	54	1.7	63
IH1105A33	5.9	255	945	57	1.9	63
IH1106A33	7.0	260	945	59	2.6	63
IH1107A33	8.0	265	984	71	3.0	71
IH1108A33	9.2	280	984	71	3.3	71
IH1109A33	10.7	280	984	73	4.0	71
IH1110A52	11.9		1176	79		
IH1111A52	13.0	285	1206	84	5.0	71
IH1112A52	14.0			84		
IH1113A52	15.2	290	1206	85	5.5	71
IH1114A52	16.3			85		
IH1115A52	17.8	295	1286	115	7.5	74
IH1116A72	19.0		1478	120		
IH1117A72	20.0			121		
IH1118A72	21.2			121		
IH1119A72	22.4	295	1478	127	9.0	74
IH1120A72	23.8			128		
IH1121A72	25.0	300		128		

1) Dimensions in accordance with page 10

2) Noise emissions measured in accordance with DIN 45635 at a distance of 1 m .

The motor is surface-cooled and compliant with DIN IEC 34 and EN 60034 (protection degree IP 55).

50 Hz

Type	Max. del. pressure bar / spec. weight 1	Max. del. volume l/min	Height[1] **H** mm	Weight kg	Power kW	Noise level[2] dBA
IH1402A33	2.8	420	913	52	1.7	63
IH1403A33	4.1	425	945	57	2.6	63
IH1404A33	5.9	445	984	69	3.3	71
IH1405A33	7.2	455	984	72	4.0	71
IH1406A33	8.4	465	1014	77	5.0	71
IH1407A52	10.0	475	1206	87	5.5	71
IH1408A52	11.8	475	1286	117	7.5	74
IH1409A52	12.1			118		
IH1410A52	14.3	485	1286	124	9.0	74
IH1411A72	16.0		1478	132		
IH1412A72	17.6	490	1486	155	11.0	74
IH1413A72	19.0			156		
IH1414A72	20.1	500	1486	156	13.0	74
IH1415A86	21.9		1630	164		
IH1416A86	23.2			164		
IH1417A86	24.8	500	1924	184	15.0	78

1) Dimensions in accordance with page 10

2) Noise emissions measured in accordance with DIN 45635 at a distance of 1 m .

The motor is surface-cooled and compliant with DIN IEC 34 and EN 60034 (protection degree IP 55).

50 Hz

Type	Max. del. pressure bar / spec. weight 1	Max. del. volume l/min	Height[1] **H** mm	Weight kg	Power kW	Noise level[2] dBA
IH1702A33	3.1	500	945	56	2.2	63
IH1703A33	4.3	500	984	69	3.3	71
IH1704A33	6.0	500	1014	76	5.0	71
IH1705A33	7.7	505	1014	76	5.5	71
IH1706A33	9.1	505	1094	107	7.5	74
IH1707A52	10.4		1286	117		
IH1708A52	12.0	510	1286	123	9.0	74
IH1709A52	13.7	520	1294	146	11.0	74
IH1710A52	15.0			146		
IH1711A72	16.4	535	1486	154	13.0	74
IH1712A72	18.0			155		
IH1713A72	19.7	535	1780	175	15.0	78
IH1714A72	21.2	535	1840	190	18.5	78
IH1715A86	22.4	555	1984	199		
IH1716A86	24.0			199		
IH1717A86	25.2			200		

1) Dimensions in accordance with page 10

2) Noise emissions measured in accordance with DIN 45635 at a distance of 1 m .

The motor is surface-cooled and compliant with DIN IEC 34 and EN 60034 (protection degree IP 55).

60 Hz

Type	Max. del. pressure bar / spec. weight 1	Max. del. volume l/min	Height[1] **H** mm	Weight kg	Power kW	Noise level[2] dBA
IH1102B33	3.4	275	887	52	1.49	66
IH1103B33	5.2	285	945	57	2.18	66
IH1104B33	6.8	290	945	58	2.94	66
IH1105B33	8.2	300	984	70	3.8	74
IH1106B33	10.1	310	984	72	4.55	74
IH1107B33	11.9	320	1014	78	5.75	74
IH1108B33	13.8	325		78		
IH1109B33	15.6	330	1014	78	6.3	74
IH1110B52	17.2	330	1286	113	8.6	77
IH1111B52	19.0	335		114		
IH1112B52	20.4	340		114		
IH1113B52	22.1	340	1286	120	10.3	77
IH1114B52	23.8	350		121		

1) Dimensions in accordance with page 10

2) Noise emissions measured in accordance with DIN 45635 at a distance of 1 m .

The motor is surface-cooled and compliant with DIN IEC 34 and EN 60034 (protection degree IP 55).

60 Hz

Type	Max. del. pressure bar / spec. weight 1	Max. del. volume l/min	Height[1] **H** mm	Weight kg	Power kW	Noise level[2] dBA
IH1402B33	4.0	460	945	56	2.94	66
IH1403B33	6.0	475	984	71	4.55	74
IH1404B33	8.1	490	1014	76	6.3	74
IH1405B33	10.2	500	1094	106	8.6	77
IH1406B33	12.2	510		107		
IH1407B52	14.4	520	1286	123	10.3	77
IH1408B52	16.4	530	1294	145	12.6	79
IH1409B52	18.6	545	1294	146	15.0	79
IH1410B52	20.8	550		146		
IH1411B72	22.8	560	1771	173	17.3	81
IH1412B72	25.0	570		174		

1) Dimensions in accordance with page 10

2) Noise emissions measured in accordance with DIN 45635 at a distance of 1 m .

The motor is surface-cooled and compliant with DIN IEC 34 and EN 60034 (protection degree IP 55).

60 Hz

Type	Max. del. pressure bar / spec. weight 1	Max. del. volume l/min	Height[1)] **H** mm	Weight kg	Power kW	Noise level[2)] dBA
IH1702B33	4.1	550	984	68	3.8	74
IH1703B33	6.4	555	1014	75	5.75	74
IH1704B33	8.4	570	1094	106	8.6	77
IH1705B33	10.8	580	1094	112	10.3	77
IH1706B33	13.1	600	1100	135	12.6	79
IH1707B52	15.2	605	1294	145	15.0	79
IH1708B52	17.4	610		145		
IH1709B52	19.7	620	1599	165	17.3	81
IH1710B52	21.8	630	1649	181	21.3	81
IH1711B72	24.0	640	1840	189		

1) Dimensions in accordance with page 10

2) Noise emissions measured in accordance with DIN 45635 at a distance of 1 m .

The motor is surface-cooled and compliant with DIN IEC 34 and EN 60034 (protection degree IP 55).

3 Safety instructions

When operating the pump, the safety instructions contained in this manual, the relevant national accident prevention regulations and any other service and safety instructions issued by the plant operator are to be observed.

3.1 Hazards in the event of non-compliance with the safety instructions

Non-compliance with the safety instructions may produce a risk to the personnel as well as to the environment and the machine and results in a loss of any right to claim damages.

For example, non-compliance may involve the following hazards:

- Failure of important functions of the machines/plant
- Failure of specified procedures of maintenance and repair
- Exposure of people to electrical. mechanical and chemical hazards
- Endangering the environment due to hazardous substances being released

3.2 Unauthorized modes of operation

- Pump may not be used in potentially explosive environments**!**
- Pump and discharge piping are not designed to hold any weight and may not be used as a step ladder.

3.3 Remaining Risk

Risk of Injury!

Risk of squeezing or crushing body parts when installing or removing the pump exists. Proper and secured lifting tools must be used.

Risk of burns!

The pump must have cooled down sufficiently prior to commencing any repair. maintenance or installation.

3.4 Qualification and training of operating personnel

The personnel responsible for operation, maintenance, inspection and assembly must be adequately qualified. Scope of responsibility and supervision of the personnel must be exactly defined by the plant operator. If the staff does not have the necessary knowledge, they must be trained and instructed. which may be performed by the machine manufacturer or supplier on behalf of the plant operator. Moreover, the plant operator is to make sure that the contents of the operating manual are fully understood by the personnel.

3.5 Safety instructions relevant for operation

- If hot or cold machine components involve hazards. they must be guarded against accidental contact.
- Guards for moving parts (e.g. coupling) must be installed with the machine in operation.
- Any leakage of hazardous (e.g. explosive. toxic. hot) fluids (e.g. from the shaft seal) must be drained away so as to prevent any risk to persons or the environment. Statutory regulations are to be complied with.
- **Warning:** When removing the liquid from the collection point of the housing cover, it may still be hot.
- Appropriate personal protective equipment must be worn (heat-resistant gloves, safety goggles).
- Use a suitable container for disposal. Avoid skin contact and splashing.
- Hazards resulting from electricity are to be prevented (see for example, the VDE Specifica-

tions and the bye-laws of the local power supply utilities).

- The stability of the pumps is guaranteed only if they are permanently mounted.
- The female threads on the motor MUST NOT be used to lift the entire pump and motor assembly.

3.6 Safety instructions relevant for maintenance, inspection and assembly work

Any work on the machine shall only be performed when it is at a standstill, it being imperative that the procedure for shutting down the machine described in this manual be followed.
Pumps and pump units which convey hazardous media must be decontaminated.
On completion of work all safety and protective facilities must be re-installed and made operative again.
Prior to restarting the machine, the instructions listed under “Start up” are to be observed.

3.7 Signs on the pump

It is imperative that signs affixed to the machine, e.g.:

- arrow indicating the direction of rotation
- symbols indicating fluid connections

be observed and kept legible.

3.8 Unauthorized alterations and production of spare parts

Any modification may be made to the machine only after consultation with the manufacturer. Using spare parts and accessories authorized by the manufacturer is in the interest of safety. Use of other parts may exempt the manufacturer from any liability.

4 Transport and storage

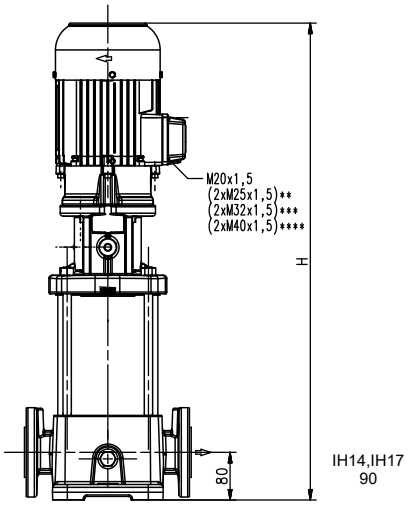
Protect the pump against damage when transporting.
The pumps may only be transported in a horizontal position and hooks or straps must be attached on the motor and pump end.
Do not use the pump shaft for connecting any transportation aids such as hooks or straps.
Pumps must be drained prior to their storage.
Store pump in dry and protected areas and protect it against penetration of foreign bodies.
Always store pump above the freezing point!

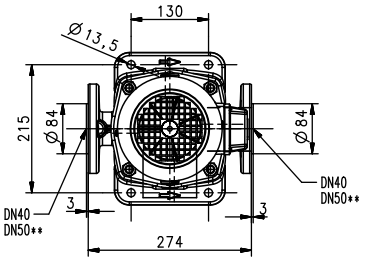
5 Installation and Connection

5.1 Mechanical installation

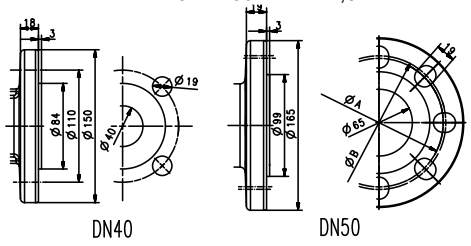
During any assembly or disassembly process the pumps must be secured against tipping trough ropes for example at all times.
The pump must be mounted on a level and solid surface and securely fastened with screws inserted through the holes.
Piping, tank and pumps must be mounted without any tension.
The flow direction is marked by arrows on the connection cover.
When installing the pump horizontally, ensure that the motor is not tilted above the horizontal or pointing downwards. An additional motor bracket must be installed. Do not support the pipes over the connection cover.
Any leakage occurring in the area of the axial face seal is not drained and should be removed manually from the collection point on the housing cover on a regular basis.
To obtain the full flow rate it is recommended to choose for the pipework the nominal bore diameter of the pumps cross section for connection. Therefore pipe bends should be used, not pipe angles!
The pipework must be qualified for occuring hydraulic pressure

IH11...17





**) Dimensions. for 7,5 to 10,3 kW
**) DN50 for IH14 and IH17
***) Dimensions. for 11,0 to 13,0 kW and 15 kW 60 Hz
****) Dimensions. for 15 kW 50 Hz to 21,3 kW



A=Ø125 mm DN50
B=Ø127 mm ANSI
B=Ø130 mm JIS 2“

ATTENTION

When installed the space around the pump must be large enough to provide sufficient cooling of the motor.
Do not prop up the pressure line via the joining socket.

Risk of clamping or crushing body parts when installing the pump!

- Pump must be secured with appropriate hoist.
- During any assembly or disassembly process the pumps must be secured against tipping trough ropes for example at all times.
- Pumps must be securely mounted in the system.
- The pump must only be operated when it is mounted in the system.

5.2 Electric wiring

All service work must be carried out by qualified service personnel. Pump must be disconnected from the power source and all rotating parts must stand still. Reassure that pump is disconnected from power source and cannot be switched on. Verify that there is no voltage at the terminal board!
According to the European Standard EN809 a motor overload must be installed and properly set to the full load amps stated on the pump name plate.
It is the responsibility of the machine operator to decide whether or not an additional emergency switch must be installed.

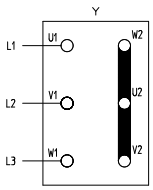
Danger!
Risk of electric shock
Our asynchronous motors can optionally be fitted with temperature sensors in the form of triplet PTC thermistors, which are used for thermal monitoring of the motor windings. Please note that the temperature sensors meet the insulation requirements of basic insulation. The improper connection of the triplet PTC thermistors to evaluation units that do not have a protective function against overvoltage in the event of a fault can lead to voltages dangerous to the touch and electric shock.
Please check whether the evaluation units you intend to use are permissible for the electrical connection of the temperature sensors.

5.2.1 Circuit

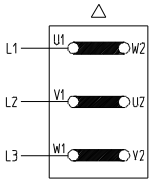
Tension voltage and frequency must correspond with the shown specification on the nameplate.
The pump must be wired so that a solid long term electrical connection is ensured. Establish a solid ground connection.

The electrical wiring must be performed according to the wiring diagram shown inside the terminal box cover. (Please see above sample wiring diagrams)

Wiring diagram e.g.



Star connection
up to 5.5 kW
3 x 400 V. 50 Hz
resp. 380-415 V. 50 Hz



Delta connection
up to 5.5 kW
3 x 230 V. 50 Hz
resp. 220-240 V. 50 Hz

From 7.5 kW and higher
3 x 400 V. 50 Hz
resp. 380-415 V. 50 Hz

There may be no foreign objects such as dirt, particles or humidity inside the terminal board.

Mount terminal board cover to motor tight against dust and humidity and close up all unused wiring ports.

ATTENTION

When Variable Frequency Drives are used interfering signals might occur.
Non-sinus shaped supply voltage from a variable frequency drive might result in elevated motor temperatures.

6 Start up / Shut down

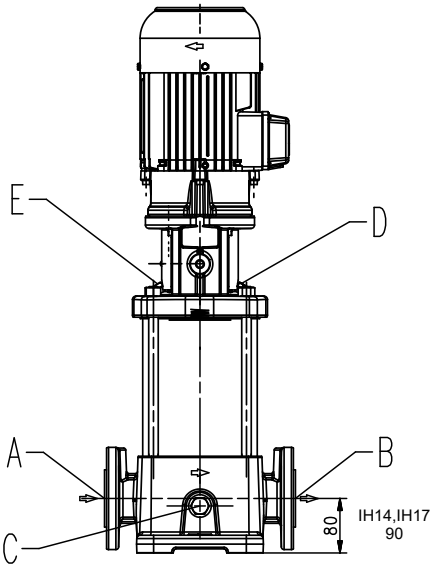
6.1 Start up

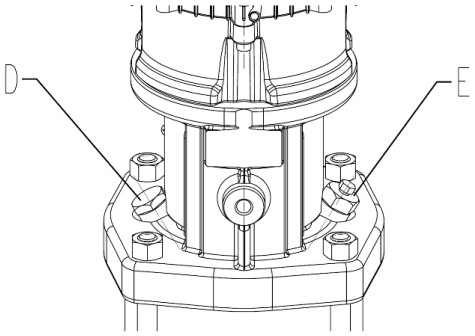
6.1.1 Refilling the pump

ATTENTION

Before switching on, the pump must be filled with liquid and vented. Dry running can damage the pump bearings and shaft seal.

1. Close the shut-off valve on pressure side B and open the shut-off valve on suction side A.
2. Remove the filling screw D.
3. Fill the pump unit slowly.
4. Screw the filling screw D tightly into place.
5. Slightly open the shut-off valve on pressure side B and switch on the pump.
6. If the pump does not pump properly, loosen the vent screw E slightly and bleed the system.
7. Continue bleeding the pump. Continue to open the shut-off valve while doing so.
8. Tighten the bleeding screw as soon as the pumped medium flows continuously. Fully open the shut-off valve on pressure side B.





6.1.2 Check direction of rotation

Switch off at the mains.
After connection the electrical wires, close the terminal box. Briefly start the motor (max. 30 sec.) and check the rotation according to the arrow on the top of the motor.
If the direction is incorrect change over two of the power leads.

6.2 Shut down

All service work must be carried out by qualified service personnel. Pump must be disconnected from the power source and all rotating parts must stand still. Reassure that pump is disconnected from power source and cannot be switched on. Verify that there is no voltage at the terminal board! Open terminal box and disconnect the power leads. Empty out the pump.

7 Operation

The valve on the suction side A of the pump must be opened 1 or 2 seconds before starting up the pump to avoid the damage resulting from low pression.!

CAUTION: avoid hydraulic shocks!

For this, the valve on the pressure side B of the pump must also be opened 1 to 2 seconds before starting up the pump.!
Care has to be taken that the pump station will not run empty.

If the pump should lock up and cease, shut pump down (see 6.2) and disconnect from power supply. Pump must be uninstalled and removed from the system prior to its repair.

Attention! Potential Risk of Burning!

Surface temperatures above 50°C do occur during regular operation, i.e. on the surfaces of the motor and bearing housing.

It must be insured that the pump has cooled down sufficiently prior to performing any repair or maintenance work.

8 Servicing and Maintenance

ATTENTION

The surface of the motor must be kept free of dirt.

The motor shaft is spinning in permanently greased ball bearings (with special grease and increased bearing play) and does not require any special maintenance.

Warning! Risk of injury and burns!

Any leakage occurring in the area of the mechanical seal is not drained and should be manually removed regularly from the collection point of the housing cover.

Before starting maintenance and assembly work, it must be ensured that the pump is shut down and has cooled down.

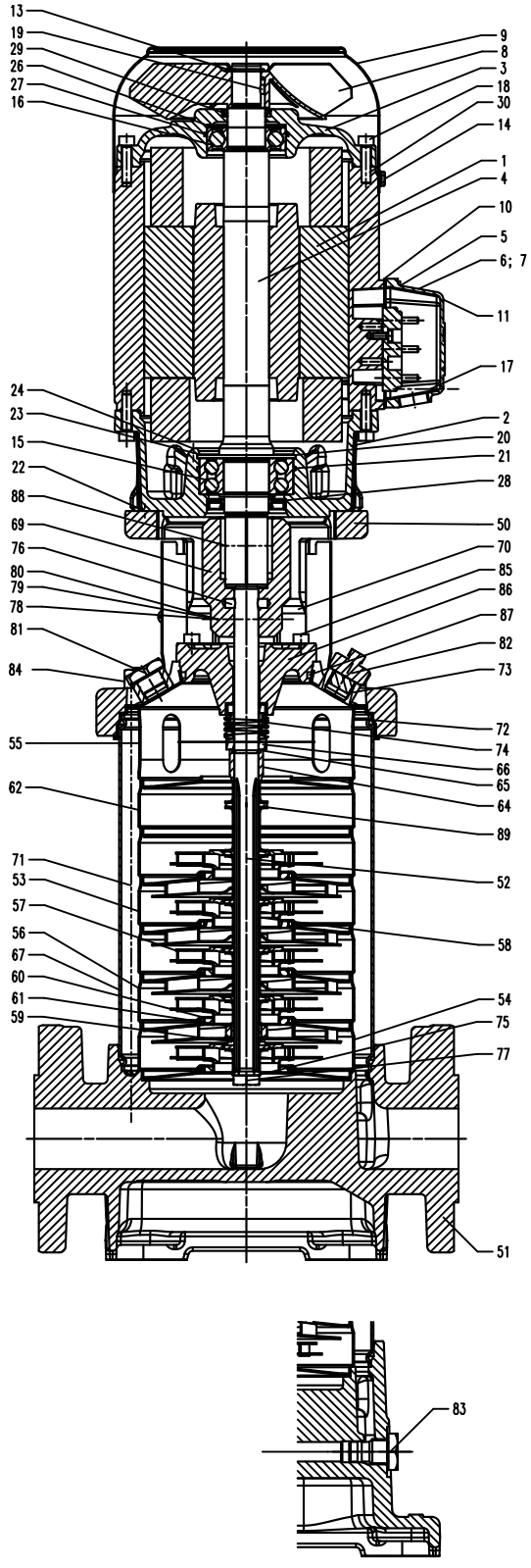
9 Trouble shooter's guide

Fault	Cause	Remedy
Motor does not start, no motor noise	At least two of the power supply leads have failed Overload has tripped	Check fuses, terminals and supply leads. Inspect overload
Motor does not start, humming noise	One of the supply leads has failed Impeller faulty Motor bearing faulty	See above Replace impeller Replace bearing
Overload trips	Pump locked up mechanically High on/of cycling frequency	Inspect pump hydraulics Check application
Power consumption is too high	Wrong direction of rotation of impeller Lime or other deposits mechanical friction	See above Clean pump mechanism repair pump
Motor overheats	High on/off cycling frequency Wrong power supply (voltage or cycles) Insufficient cooling	See above Power supply must correspond with name plate rating Check air flow at motor fan
Pump does not pump	Air in the system Pump mechanism faulty Pipe blocked	Deflate the system replace pump mechanism Clean pipe
Insufficient flow and pressure	Wrong direction of rotation of impeller Pump mechanism silted up Worn pump mechanism	Change over two power supply leads Clean pump mechanism Replace pump mechanism
Incorrect flow or pressure	Wrong power supply (voltage or cycles)	Power supply must correspond with name plate rating
Running noise/Vibration	Foreign objects in pump end Impeller damaged Bearing/Bushing broken	Remove foreign objects Replace impeller Replace bearing/bushing

10 Spare part

10.1 Spare part list for the Inline pressure boosting pumps of the series IH11

IH1402A33...IH1416A86
IH1402B33...IH1410B52



81	Filling screw with venting	
82	Filling screw	
83	Screw plug	
84	Nut	DIN 934
85	Hexagon socket head cap screw	DIN 912
86	Casing cover	
87	O-ring	
88	Woodruff key	DIN 6888
89	Distance plate / impeller	

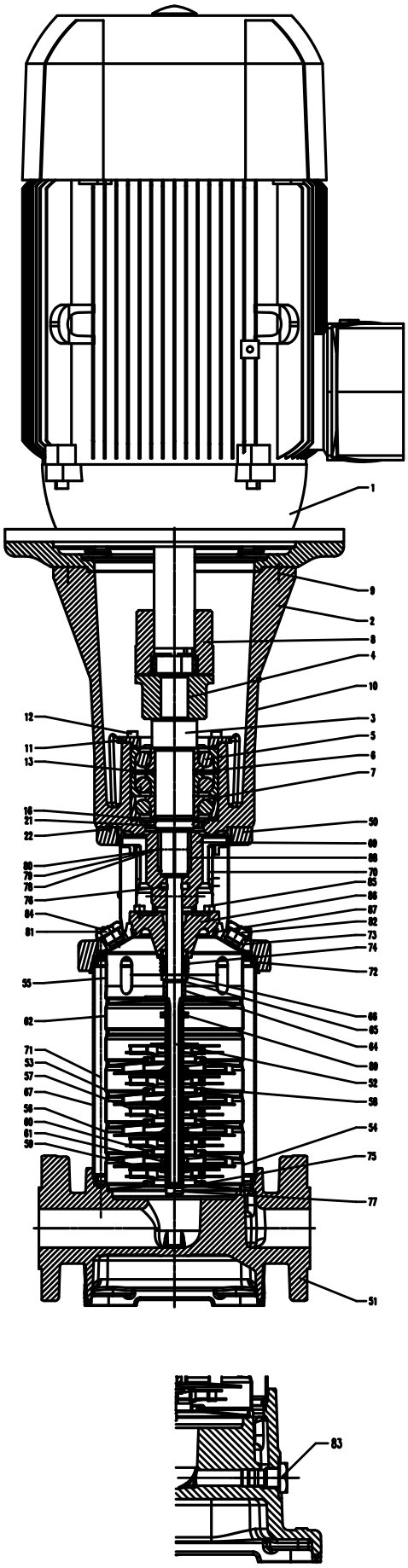
IH1702A33...IH1712A72
IH1702B33...IH708B52

Item	Description	
1	Stator with terminal board	
2	Motor flange	
3	End shield	
4	Motor shaft with rotor	
5	Terminal box up to 5.5 kW	
6	Terminal box frame from 7.5 kW and over	
7	Terminal box cover from 7.5 kW and over	
8	Fan	
9	Fan cover	
10	Gasket	
11	Gasket from 7.5 kW and over	
13	Retaining ring	
13	Retaining ring 1.3…2.6 kW	DIN 471
14	Thread rolling screw	DIN 7500
15	Ball bearing	DIN 625
15	Ball bearing 1.3…2.6. 7.5 kW	DIN 628
16	Ball bearing	DIN 625
17	Slotted cheese head screw	DIN 84
18	Hexagon socket head cap screw	DIN 912
19	Parallel pin	DIN 7
20	Retaining ring up to 5.5 kW	DIN 472
21	Retaining ring up to 5.5 kW	DIN 471
21	O-ring	
22	Hexagon socket head cap screw	DIN 912
23	Bearing cover 7.5 kW and over	
24	Socket head cap screw 7.5 kW	DIN 931
26	Compensation disk	
27	O-ring	
28	Shaft seal	
29	Rotary shaft seal	
30	Nut up 11 kW	DIN 934
50	Pump body	
51	Connection cover	
52	Pump shaft	
53	Diffusor with sliding ring	
54	Entering stage with sliding ring	
55	Outflow stage	
56	Bearing stage with sliding ring	
57	Impeller	
58	Spacer-long 2 x per stage	
59	Spacer-short 1 x per bearing stage	
60	Sliding ring	
61	Shaft sleeve	
62	Empty stage	
64	Mech. Seal stop ring cover	
65	Mech. seal stop half-ring	
66	Mech. seal washer	
67	Pump casing	
69	Clamp coupling	
70	Coupling shield with M4 screw	
71	Stud bolt	
72	O-ring	
73	Insert cover	
74	Rotary shaft seal	
75	Retaining ring	
76	Parallel pin	DIN 7
77	Hexagon head screw with lock	DIN 933
78	Hexagon socket head cap screw	DIN 912
79	Serrated lock washer	DIN 6798
80	Hexagon nut	DIN 934

10.2 Spare part list for the Inline pressure boosting pumps of the series

IH1417A86
IH1411B72...IH1412B72

IH1713A72...IH1717A86
IH1709B52...IH1711B72



Item	Description	
1	Motor	
2	Bearing housing	
3	Bearing shaft	
4	Woodruff key	DIN 6888
5	Ball bearing	DIN 628
6	Distance plate	
7	Ball bearing	DIN 628
8	Coupling	
9	Socket head cap screw	DIN 912
10	Threaded pin	DIN 705
11	Bearing cover	
12	Socket head cap screw	DIN 912
13	Nilos-ring	
16	Nilos-ring	
21	Shaft nut	
22	Socket head cap screw	DIN 912
50	Pump body	
51	Connection cover	
52	Pump shaft	
53	Diffusor with sliding ring	
54	Entering stage with sliding ring	
55	Outflow stage	
56	Bearing stage with sliding ring	
57	Impeller	
58	Spacer-long 2 x per stage	
59	Spacer-short 1 x per bearing stage	
60	Sliding ring	
61	Shaft sleeve	
62	Empty stage	
64	Mech. Seal stop ring cover	
65	Mech. seal stop half-ring	
66	Mech. seal washer	
67	Pump casing	
69	Clamp coupling	
70	Coupling shield with M4 screw	
71	Stud bolt	
72	O-ring	
73	Insert cover	
74	Rotary shaft seal	
75	Retaining ring	
76	Parallel pin	DIN 7
77	Hexagon head screw with lock	DIN 933
78	Hexagon socket head cap screw	DIN 912
79	Serrated lock washer	DIN 6798
80	Hexagon nut	DIN 934
81	Filling screw with venting	
82	Filling screw	
83	Screw plug	
84	Nut	DIN 934
85	Hexagon socket head cap screw	DIN 912
86	Casing cover	
87	O-ring	
88	Woodruff key	DIN 6888
89	Distance plate / impeller	

10.3 Indications to the spare part order

Spare parts are available from the supplier.
Standard commercially available parts are to be purchased in accordance with the model type.
The ordering of spare parts should contain the following details:

1. **Pumptype**
   e.g. IH1407A470
2. **Pump No.**
   e.g. 01263970
   The date of the construction year is a component of the pumps type number.
3. Voltage. Frequency and Power
   Take item 1, 2 and 3 from the nameplate
4. **Spare part with item No.**
   e.g. Impeller item No. 57

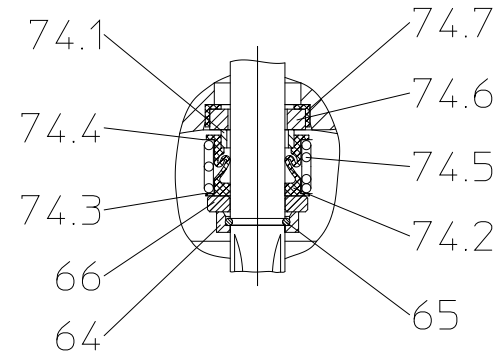
11 Repair

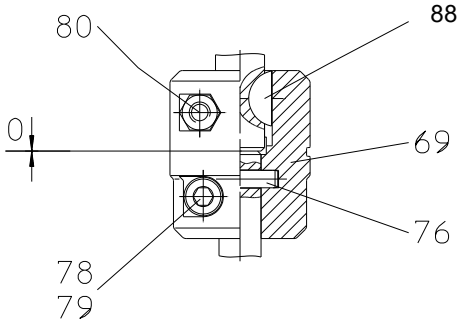
11.1 Exchange the rotary mechanical seal: IH11…IH17

1) Disconnect the pump electrically and mechanically from the mains.
2) Unscrew the M4 screws and remove the coupling guard (70). Loosen the cylindrical screws, washers and nuts (78, 79, 80). Remove the coupling shells (69.1, 69.2) and the cylindrical pin (76).
3) Unscrew the cylindrical screws (22) and remove the motor (1).
   Unscrew the cylindrical screws (85) and remove the housing cover (86) with the stationary axial face seal unit (74.6-74.7).
4) Pull the rotating axial face seal unit (74.1-74.5) with support plate (66) off the pump shaft (52) and clean the pump shaft. Make sure that the hole for the cylindrical pin (76) is free of burrs.
5) Remove stationary axial face seal unit (74.6-74.7) from housing cover (86).
   Clean the seal seats!
6) Fit a new axial face seal:
   The sliding surfaces of the axial face seal must be free of dirt and grease.
   Lightly moisten the collar (74.7) with prill water and press the stationary axial face seal unit into the housing cover (86).
   Slide the rotating axial face seal unit (74.1-74.5) onto the pump shaft (52).
   Caution: The support disc (66) must be installed before inserting the axial face seal unit!
7) Before installing the housing cover (86), lightly moisten the sealing lip of the stationary axial face seal unit with the medium. Insert the housing cover (86) with stationary axial face seal unit and secure with cylindrical screws (85).
8) Insert the motor and secure it with cylindrical screws (22).
9) Place the coupling shell (69.1) with the cylindrical pin (76) onto the shaft. Put the coupling shell (69.2) in place. Tighten the cylindrical screws (78) with lock washers (79) only so tightly that the coupling shells (69.1, 69.2) still have a little clearance. Ensure that the key on the motor shaft (4) matches the groove on the coupling shell (69.1).
   Then press the pump shaft (52) against the motor shaft (4)
   (clearance = 0) and tighten the cylindrical screws (78).
10) Fit the coupling shield (70) and tighten the M4 screws.
11) Reconnect pump to the power supply.
    Check direction of rotation!

Tightening torques for screwed connections

Thread - ∅	**M4**	**M5**	**M6**	**M6**	**M8**
Strength classes	8.8	8.8	8.8	12.9	8.8
Tightening torque (Nm)	2 Nm	**3** Nm	11 Nm, 4,5 Nm (Item 17)	15 Nm	15 Nm
Thread - ∅	**M8**	**M10**	**M14**	**G 3/8**	
Strength classes	12.9	8.8/ A4	8.8	A4	
Tightening torque (Nm)	**30** Nm	**30** Nm	**60** Nm	**25** Nm	





12 Disposal

When disposing of the pump or the packaging materials the local and national regulation for proper disposal must be complied with.
Prior to its disposal, the pump must be completely drained and decontaminated if necessary.

13 Declarations of conformity

13.1 UK declaration of conformity

BRINKMANN PUMPS

UK declaration of conformity

Manufacturer
Brinkmann Pumpen, K. H. Brinkmann GmbH & Co. KG
Friedrichstraße 2
D-58791 Werdohl
Germany

This declaration of conformity is issued under the sole responsibility of Brinkmann Pumps and belongs to the following product.

Product name
Inline Pressure Boosting Pumps
Type IH11 … 17

The named product described above complies with the following statutory requirements of United Kingdom:

UK SI 2008 No. 1597	**The Supply of Machinery (Safety) Regulations 2008**
UK SI 2016 No. 1091	**The Electromagnetic Compatibility Regulations 2016**
UK SI 2020 No. 1647	**The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2020**
	The following exceptions in accordance with table 1, "Table of exempted applications" are claimed: No.12 (6a), No.15 (6b)

The following designated standards and technical specification have been applied:

EN 809:1998+A1:2009+AC:2010	**EN ISO 12100:2010**	**EN 60204-1:2018**
EN IEC 61000-3-2 :2019 +A1 :2021	**EN 61000-3-3 :2013+A1 :2019 +A2 :2021 +A2 :2021/AC :2022**	
EN IEC 61000-6-2 :2019	**EN IEC 61000-6-3 :2021**	**EN IEC 63000 :2018**

Additionally the following standard has been applied:
EN 60034-1 :2010/AC :2010

The instructions contained in the operating manual for installation and start up the pump have to be followed.

Brinkmann Pumpen, K. H. Brinkmann GmbH & Co. KG
Werdohl, 28.01.2026

.....
Dr.-Ing. Dirk Wenderott
Head of Engineering

Dr. H. Abou Dayé
K. H. Brinkmann GmbH & Co. KG
Friedrichstraße 2, D-58791 Werdohl
Representative of documentation

13.2 EC declaration of conformity

DEUTSCH / ENGLISH /FRANÇAIS / ESPAÑOL

EG-Konformitätserklärung
EC declaration of conformity / Déclaration de conformité CE / Declaración de conformidad CE

Hersteller / Manufacturer / Constructeur / Fabricante

Brinkmann Pumpen, K. H. Brinkmann GmbH & Co. KG
Friedrichstraße 2, D-58791 Werdohl

Produktbezeichnung / Product name / Désignation du produit / Designación del producto

Druckerhöhungspumpen Inline / Inline Pressure Boosting Pumps / Pompes de surpression en ligne/ Bombas de aumento la presión en línea

Typ / Type / Tipo IH11 … 17

Das bezeichnete Produkt stimmt mit den folgenden Richtlinien des Rates zur Angleichung der Rechtsvorschriften der EG-Mitgliedsstaaten überein:
The named product conforms to the following Council Directives on approximation of laws of the EEC Member States:
Le produit sus-mentionné est conforme aux Directives du Conseil concernant le rapprochement des législations des Etats membres CEE:
El producto designado cumple con las Directivas del Consejo relativas a la aproximación de las legislaciones de los Estados Miembros de la CEE:

2006/42/EG	Richtlinie für Maschinen
2006/42/EC	Council Directive for machinery
2006/42/CE	Directive du Conseil pour les machines
2006/42/CE	Directivas del Consejo para máquinas
2014/30/EU	Richtlinie für elektromagnetische Verträglichkeit
2014/30/EU	Council Directive for Electromagnetic compatibility
2014/30/UE	Directive du Conseil pour Compatibilité électromagnétique
2014/30/UE	Directivas del Consejo para Compatibilidad electromagnética
2011/65/EU und 2015/863/EU	RoHS Richtlinien
2011/65/EU and 2015/863/EU	RoHS Directives
2011/65/UE et 2015/863/UE	Directives RoHS
2011/65/UE y 2015/863/UE	RoHS Directivas

Folgende Ausnahmen gem. Anhang III RoHS (2011/65/EU) werden in Anspruch genommen: 6a, 6b.
The following exceptions in accordance with appendix III RoHS (2011/65/ EU) are claimed: 6a, 6b.
Les exceptions suivantes selon l'annexe III RoHS (2011 / 65 / UE) sont revendiquées : 6a, 6b.
Las siguientes excepciones conforme al apéndice III RoHS (2011/65 / UE) son requeridas: 6a, 6b.

Hinsichtlich der elektrischen Gefahren wurden gemäß Anhang I Nr. 1.5.1 der Maschinenrichtlinie 2006/42/EG die Schutzziele der Niederspannungsrichtlinie 2014/35/EU eingehalten.

With respect to potential electrical hazards as stated in appendix I No. 1.5.1 of the machine guide lines 2006/42/EC all safety protection goals are met according to the low voltage guide lines 2014/35/EU.

Conformément à l'annexe I N° 1.5.1 de la Directive "Machines" (2006/42/CE) les objectifs de sécurité relatifs au matériel électrique de la Directive "Basse Tension" 2014/35/UE ont été respectés.

Con respecto al potencial peligro eléctrico como se indica en el apéndice I No. 1.5.1 del manual de la máquina 2006/42/CE, todos los medios de protección de seguridad se encuentran según la guía de bajo voltaje 2014/35/UE.

Die Übereinstimmung mit den Vorschriften dieser Richtlinien wird nachgewiesen durch die vollständige Einhaltung folgender Normen:

Conformity with the requirements of this Directives is testified by complete adherence to the following standards:

La conformité aux prescriptions de ces Directives est démontrée par la conformité intégrale avec les normes suivantes:

La conformidad con las prescripciones de estas directivas queda justificada por haber cumplido totalmente las siguientes normas:

Harmonisierte Europ. Normen / Harmonised Europ. Standards / Normes europ. harmonisées / Normas europ. Armonizadas

EN 809 :1998+A1 :2009+AC :2010 EN ISO 12100 :2010 EN 60204-1 :2018 EN IEC 61000-3-2 :2019 +A1:2021 EN 61000-3-3 :2013+A1 :2019 +A2:2021 +A2:2021/AC:2022 EN IEC 61000-6-2 :2019 EN IEC 61000-6-3 :2021 EN IEC 63000 :2018

Nationale Normen / National Standards / Normes nationales / Normas nacionales : **EN 60034-1 :2010/AC :2010**

Die Hinweise in der Betriebsanleitung für den Einbau und die Inbetriebnahme der Pumpe sind zu beachten.

The instructions contained in the operating manual for installation and start up the pump have to be followed.

Les indications d'installation / montage et de mise en service de la pompe prévues dans l'instruction d'emploi doivent être suivies.

Tenga en cuenta las instrucciones en el manual para la instalación y puesta en marcha de la bomba.

Brinkmann Pumpen, K. H. Brinkmann GmbH & Co. KG

Werdohl, 28.01.2026

.....

Dr.-Ing. Dirk Wenderott
Head of Engineering

Dr. H. Abou Dayé
K. H. Brinkmann GmbH & Co. KG
Friedrichstraße 2, D-58791 Werdohl
Dokumentationsbevollmächtigter / Representative of documentation/ Mandataire de documentation / Mandatario de documentación