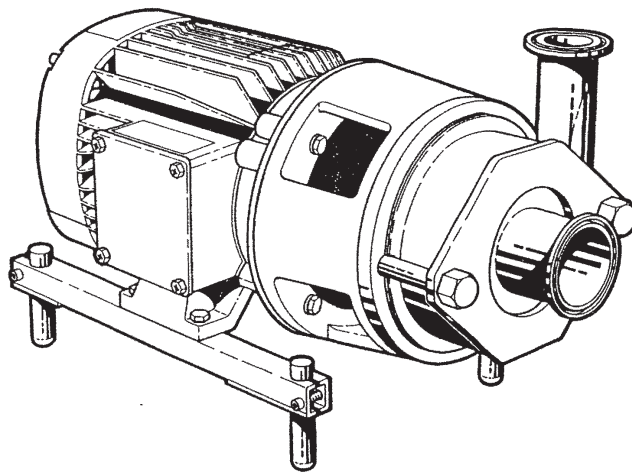


**INSTRUCTION  
MANUAL**

# **GHC-0 CENTRIFUGAL PUMP**



**IM 70344-US3 S  
9709**

G&H RESERVE THE RIGHT TO  
MINOR CHANGES IN DESIGN  
AND FUNCTION

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*This manual is divided into main sections. - See below.*

*Please note that the drawings on page 19-20 can support when reading the manual.*

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All warnings in the manual are summarized on this page.

Pay special attention to the instructions below so that severe personal injury or damage to the pump are avoided.

## 2. Safety Precautions

### Installation:



: **Always** observe the technical data (see page 18).



: The pump **must** be electrically connected by authorized personnel (see the motor instructions).



: - **Always** remove the impeller before checking the direction of rotation.  
- **Never** start the pump if the impeller is fitted and the pump casing removed.

### Operation:



: **Always** observe the technical data (see page 18).



: **Never** touch the pump or the pipelines when pumping hot liquids or when sterilizing.



: **Never** run the pump with both the suction side and the pressure side blocked.



: **Always** handle lye and acid with great care.

### Maintenance:



: **Always** observe the technical data (see page 18).



: **Always** disconnect the power supply when the pump is serviced.



: - The pump must **never** be hot when serviced.  
- The pump and the pipelines must **never** be pressurized when the pump is serviced.




Read the instructions carefully and pay special attention to the warnings!


Always check the pump before operation.  
- See pre-use check on page 6.

**NOTICE:** Please notice that the drawings below only show the principle.

## 2. Installation

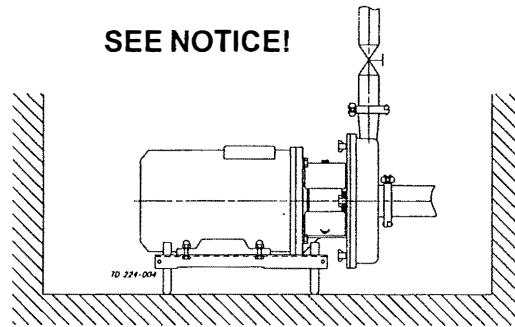
1

 **Always** observe the technical data (see page 18).

 The pump **must** be electrically connected by authorized personnel (see the motor instructions).

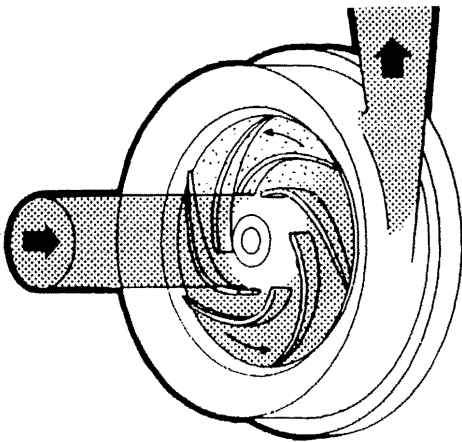
**NOTE!**  
G&H cannot be held responsible for incorrect installation.

2



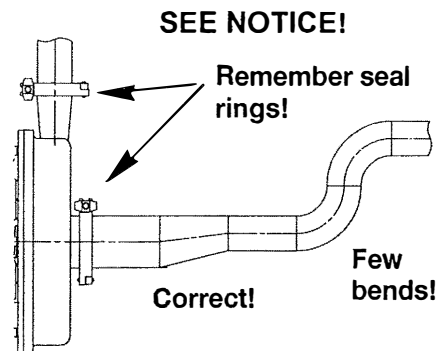
Ensure that there is sufficient clearance around the pump (min. 2 ft).

3



Ensure that the flow direction is correct.

4



1. Ensure that the pipelines are routed correctly.
2. Ensure that the connections are tight.

5

### Risk of damage!

Avoid stressing the pump.  
Pay special attention to:

- Vibrations.
- Thermal expansion of the tubes.
- Excessive welding.
- Overloading of the pipelines.



**CSI**


CONTACT CSI FOR MORE INFORMATION | [CSIDESIGNS.COM](http://CSIDESIGNS.COM) | [SALES@CSIDESIGNS.COM](mailto:SALES@CSIDESIGNS.COM) | 417.831.1411



Read the instructions carefully and pay special attention to the warnings!

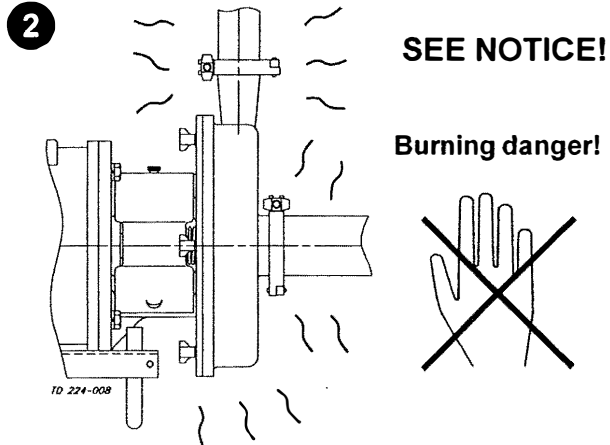
## 1. Operation/Control


**1**

 **Always** observe the technical data (see page 18).

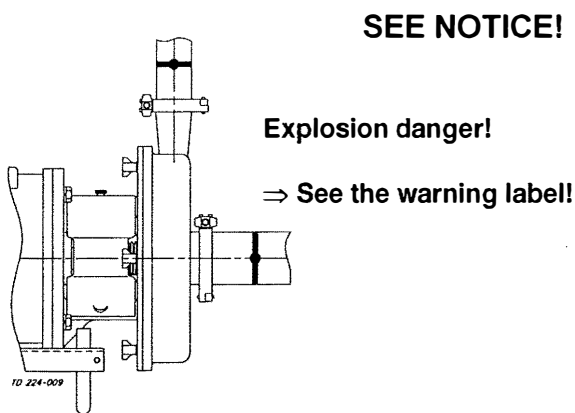
**NOTE!**  
G&H cannot be held responsible for incorrect operation/control.


**2**



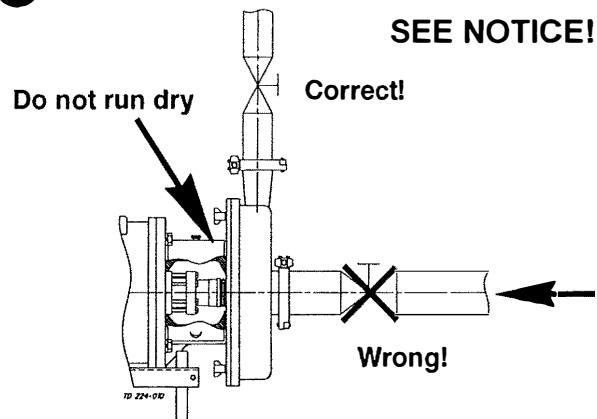
 **Never** touch the pump or the pipelines when pumping hot liquids or when sterilizing.

**3**



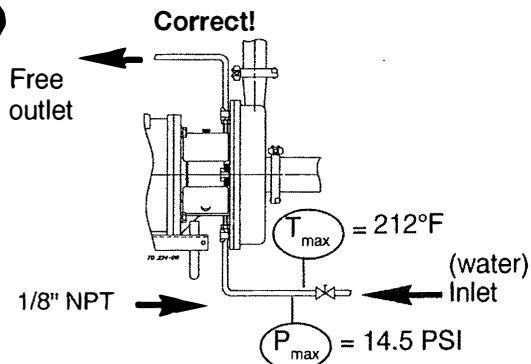
 **Never** run the pump with both the suction side and the pressure side blocked.

**4**



**CAUTION!**  
- The shaft seal must not run dry.  
- Never throttle the inlet side.

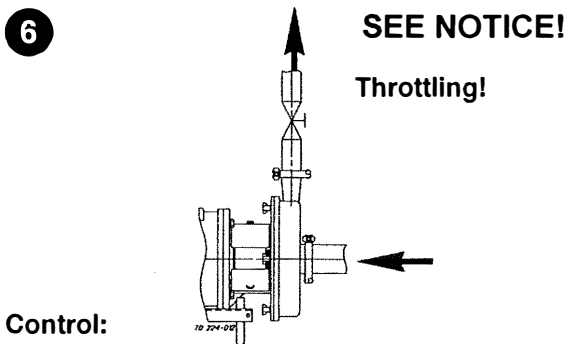
**5**



**Flushed shaft seal:**

1. Connect the inlet of the flushing liquid correctly.
2. Regulate the water and steam supply correctly.
3. Observe the steam data.

**6**



**Control:**  
Reduce the capacity and the power consumption by means of:  
- Throttling the pressure side of the pump.  
- Reducing the impeller diameter.  
- Speed control of the motor.

The pump is designed for cleaning in place (CIP).  
CIP = Cleaning In Place.  
Read the instructions carefully and pay special attention to the warnings!

## 3. Recommended Cleaning

1

Caustic danger!



Always use rubber gloves!



Always use protective goggles!



Always handle lye and acid with great care.

3

### Examples of cleaning agents:

Use clean water, free from chlorides.

1. 1% by weight NaOH at 158°F.

1 kg NaOH	+	100 l water	= Cleaning agent.
--------------	---	----------------	-------------------

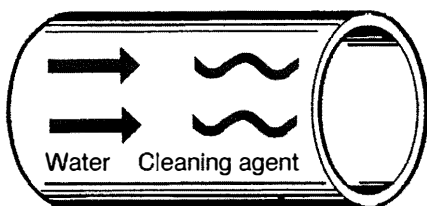
2.2 l 33%NaOH	+	100 l water	= Cleaning agent.
------------------	---	----------------	-------------------

2. 0.5% by weight HNO<sub>3</sub> at 158°F.

0.7 l 53% HNO <sub>3</sub>	+	100 l water	= Cleaning agent.
-------------------------------	---	----------------	-------------------

5

Always rinse!



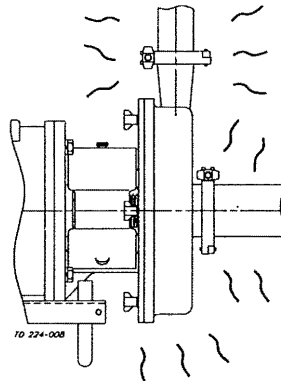
2

NaOH = Caustic Soda.

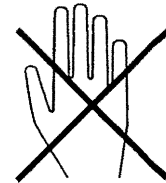
HNO<sub>3</sub> = Nitric acid.

**NOTICE:** Please notice that the drawing below only show the principle.

SEE NOTICE!



Burning danger!



Never touch the pump or the pipelines when sterilizing.

4

1. Avoid excessive concentration of the cleaning agent

⇒ Dose gradually!

2. Adjust the cleaning flow to the process

**Milk sterilization/viscous liquids**

⇒ Increase the cleaning flow!

6

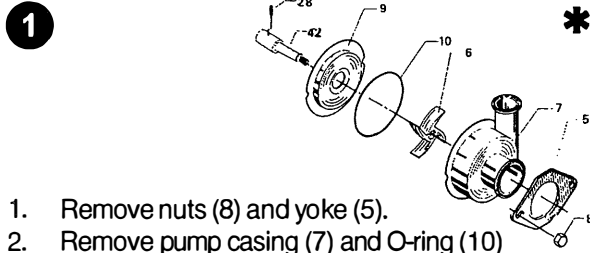
### NOTE!

The cleaning agents must be stored/discharged in accordance with current rules/directives.

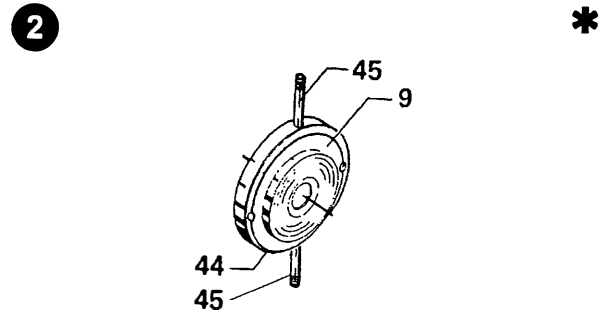
Read the instructions carefully.  
The items refer to the drawings and the parts list on pages 19-24.

Handle scrap correctly.

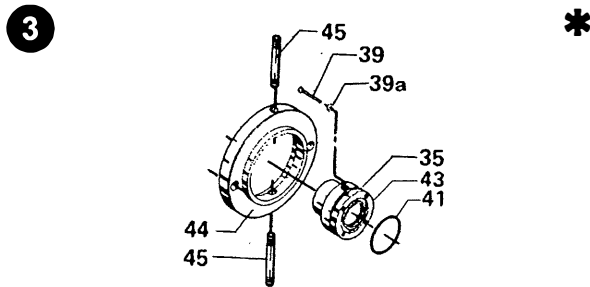
## 3. Disassembly of Pump/Removing the Flushed Shaft Seal (1-7\*)



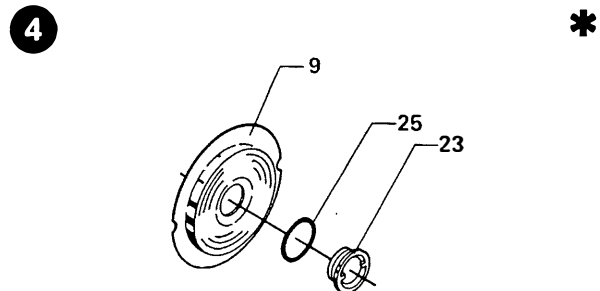
1. Remove nuts (8) and yoke (5).
2. Remove pump casing (7) and O-ring (10) from back plate (9), (use a plastic hammer, if necessary).
3. Turn impeller (6) counterclockwise and remove it from pump shaft (42), (use a plastic hammer, if necessary).



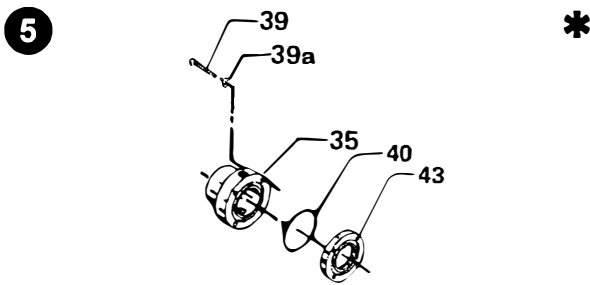
Remove back plate (9) together with the complete shaft seal and intermediate flange (44).



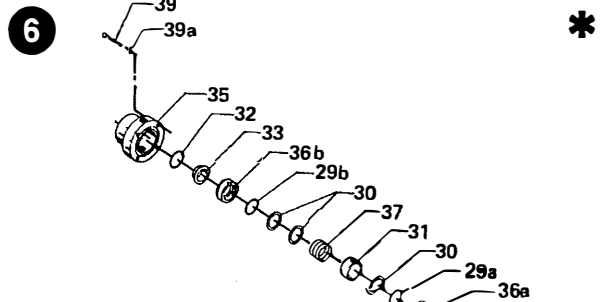
1. Remove flushing tubes (45).
2. Turn seal housing (35) **clockwise** and remove it together with fastening ring (43).
3. Remove O-ring (41) from the fastening ring.



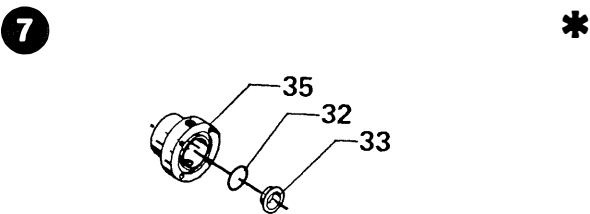
Remove stationary seal ring (23) and seal (25) from back plate (9).



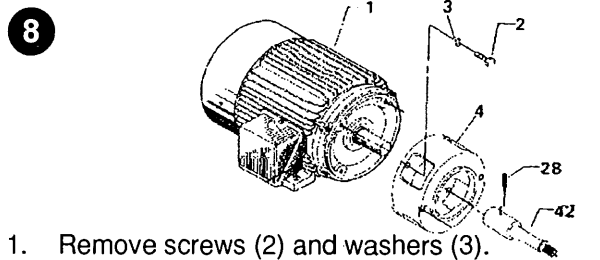
1. Remove screws (39).
2. Remove fastening ring (43) and O-ring (40) from seal housing (35).
3. The shaft seal is now accessible.



Remove rotating seal rings (36), O-rings (29), washers (30), spring (37) and spacer (31) from seal housing (35).



Remove stationary seal ring (33) and O-ring (32) from seal housing (35).



1. Remove screws (2) and washers (3).
2. Remove adaptor (4).
3. Loosen set screws (28).
4. Remove pump shaft (42) from the motor shaft.

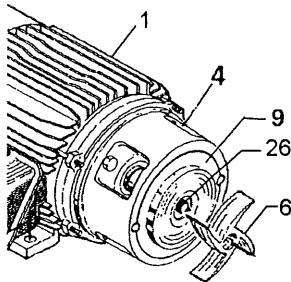
Read the instructions carefully.  
The items refer to the drawings and the parts list on pages 19-24.

Lubricate the rubber seals before fitting them.

## 4. Assembly of Pump/Fitting the Single Shaft Seal (3-9\*)

7

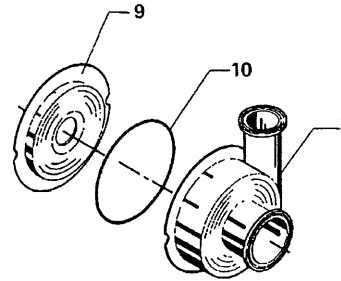
\*



1. Fit the impeller (6) on the pump shaft (26) with the notch inwards and turn it clockwise.
2. Check the clearance between back plate (9) and the impeller (0.031"-0.039").

8

\*

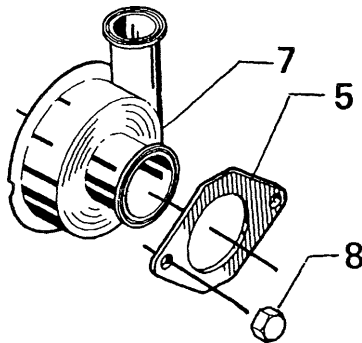


### Fit and tighten correctly!

1. Lubricate O-ring (10) and fit it on back plate (9).
2. Fit pump casing (7).

9

\*



Fit yoke (5) and nuts (8).



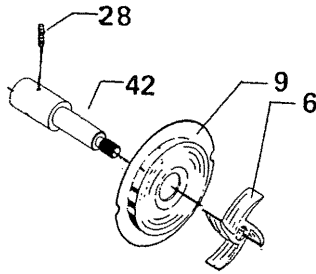
Read the instructions carefully.  
The items refer to the drawings and the parts list on pages 19-24.

Lubricate the rubber seals before fitting them.  
Assembly mandrel: For assembly of flushed shaft seal.

## 5. Assembly of Pump/Fitting the Flushed Shaft Seal (3-9\*)

**7**

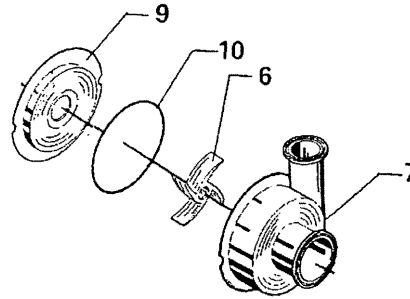
\*



1. Fit the impeller (6) on the pump shaft (42) with the notch inwards and turn it clockwise.
2. Check the clearance between back plate (9) and the impeller (0.031"-0.039").

**8**

\*

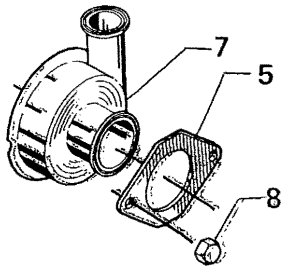


**Fit and tighten correctly!**

1. Lubricate O-ring (10) and fit it on back plate(9).
2. Fit pump casing (7).

**9**

\*

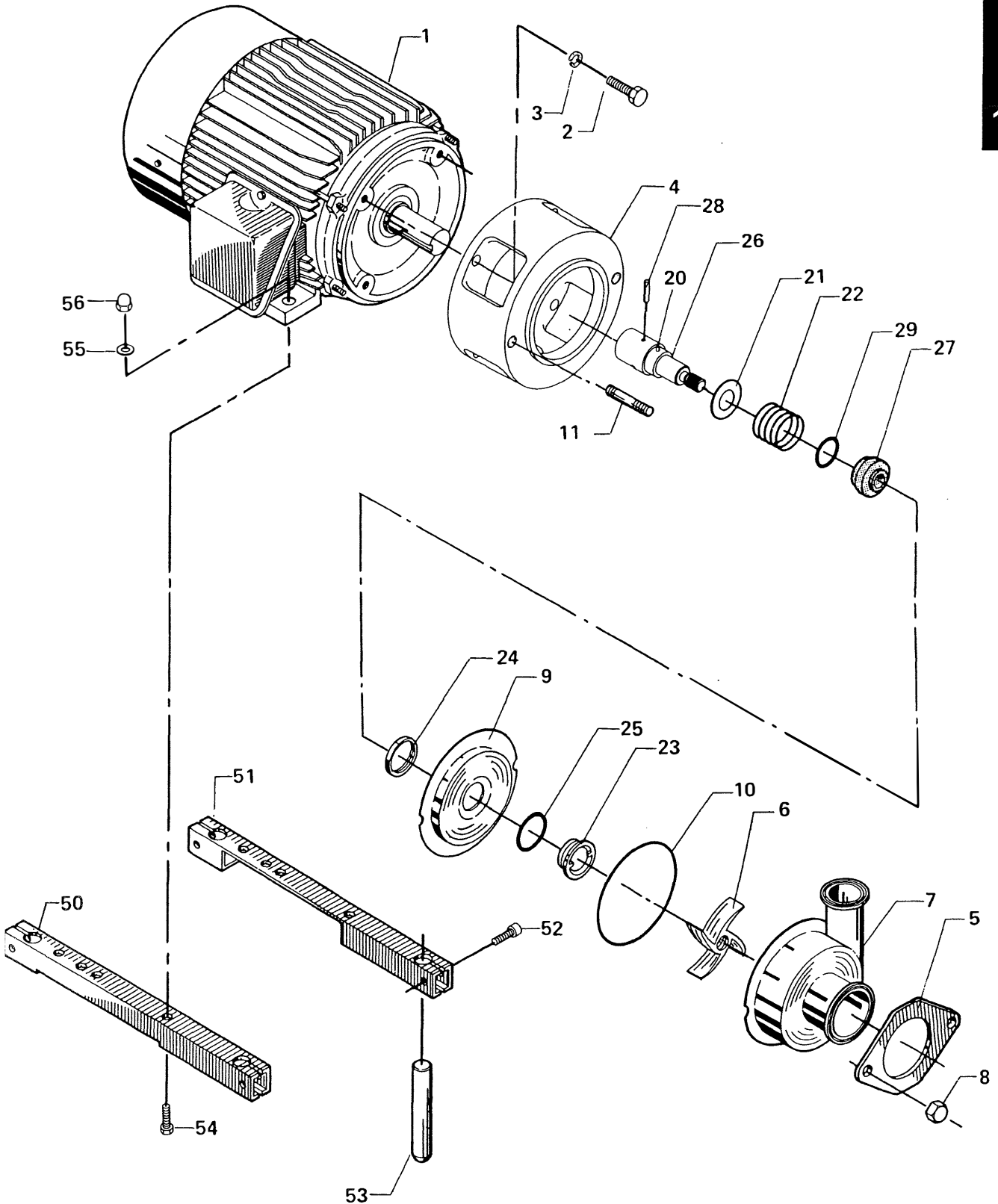


Fit yoke (5) and nuts (8).

This page shows an exploded drawing of GHC-0 with single shaft seal.

The drawing includes all items of the pump. They are identical with the items in the Spare Parts List.

## GHC-0, Single Shaft Seal



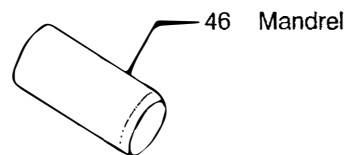
The drawing and the parts list include all items of the pump.

The items are identical with the items in the Spare Parts List.

When ordering spare parts, please use the Spare Parts List!

## Parts List

Pos.	Qty.	Description
1	1	Motor
2	4	Screw
3	4	Spring washer
4	1	Adaptor
5	1	Yoke
6	1	Impeller
7	1	Pump casing
8	2	Nut
9	1	Black plate
10 Δ	1	O-ring
11	2	Stud bolt
20 ○	1	Connex pin
21 ○	1	Thrower
22 Δ ○	1	Spring
23 Δ	1	Stationary seal ring
24 ○	1	Nut
25 Δ	1	Seal
26 ○	1	Pump shaft
27 Δ ○	1	Rotating seal ring
28	3	Set screws
29 Δ ○	1	O-ring
29a Δ □	1	O-ring, front
29b Δ □	1	O-ring, back
30 Δ □	3	Washer
31 □	1	Spacer
32 Δ □	1	O-ring
33 Δ □	1	Stationary seal ring
35 □	1	Seal housing
36a Δ □	1	Rotating seal ring, front
36b Δ □	1	Rotating seal ring, back
37 Δ □	1	Spring
39 □	4	Srew
39a □	4	Washer
40 Δ □	1	O-ring
41 Δ □	1	O-ring
42 □	1	Pump shaft
43 □	1	Fastening ring
44 □	1	Intermediate flange
45 □	2	Flushing tube
46 □	1	Assembly mandrel
50	1	Support Bar right
51	1	Support Bar left
52	4	Screw
53	4	Leg
54	4	Screw
55	4	Lock washer
56	4	Cap nut



Δ : Service kit - EPDM, NBR, FPM, PTFE  
(See Spare Parts List)

○ : Single shaft seal only

□ : Flushed shaft seal only