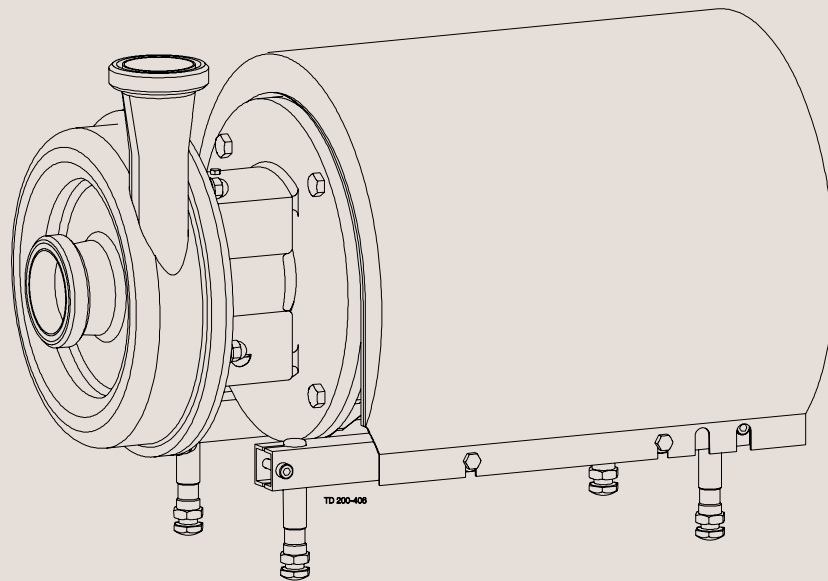




Instruction Manual

LKH Centrifugal Pump



Declaration of Conformity

The designating company

Alfa Laval

Company Name

Albuen 31, DK-6000 Kolding, Denmark

Address

+45 79 32 22 00

Phone No.

hereby declare that

Centrifugal Pump

Denomination

LKH

Type

Year

is in conformity with the following directives with amendments:

- Low Voltage Directive 73/23/EEC
- EMC Directive 89/336/EEC
- Machinery Directive 98/37/EEC

Vice President, R & D

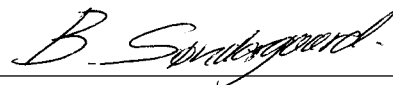
Title

Bjarne Søndergaard

Name

Alfa Laval

Company



Signature

Designation



The information contained herein is correct at the time of issue but may be subject to change without prior notice.

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1.1 Important Information

1.2 Warning Signs

Unsafe practices and other important information are emphasized in this manual.
Warnings are emphasized by means of special signs.

Always read the manual before using the pump!

WARNING!

Indicates that special procedures must be followed to avoid severe personal injury.

CAUTION!

Indicates that special procedures must be followed to avoid damage to the pump.

NOTE!

Indicates important information to simplify or clarify.

General warning.



Dangerous electrical voltage.



Caustic agents.



Recycling information.

- Unpacking
 - Packing material consists of wood, plastics, cardboard boxes and in some cases metal straps.
 - Wood and cardboard boxes can be reused, recycled or used for energy recovery
 - Plastics should be recycled or burnt at a licensed waste incineration plant
 - Metal straps should be sent for material recycling
- Maintenance
 - During maintenance oil and wear parts in the machine are replaced.
 - All metal parts should be sent for material recycling
 - Worn out or defective electronic parts should be sent to a licensed handler for material recycling
 - Oil and all non metal wear parts must be taken care of in agreement with local regulations
- Scrapping
 - At end of use, the equipment shall be recycled according to relevant, local regulations. Beside the equipment itself, any hazardous residues from the process liquid must be considered and dealt with in a proper manner. When in doubt, or in the absence of local regulations, please contact the local Alfa Laval sales company.

All warnings in the manual are summarized on this page.

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

Installation:

Always read the technical data thoroughly. (See chapter 5).

Always use a lifting crane when handling the pump.

Pump without impeller screw:

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

Pump with impeller screw:

- **Never** start in the wrong direction of rotation with liquid in the pump.

Always have the pump electrically connected by authorized personnel. (See the motor instructions).



Operation:

Always read the technical data thoroughly. (See chapter 5).

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 read the technical data thoroughly. (See chapter 5).

- **Never** service the pump when it is hot.
- **Never** service the pump with pump and pipelines under pressure.

Motors with grease nipples:

Remember lubrication according to information plate/label on the motor.

Always disconnect the power supply when servicing the pump.



The instruction manual is part of the delivery. Study the instructions carefully.
 The large pump sizes are very heavy.
 Alfa Laval therefore recommends the use of a lifting crane when handling the pump.

Step 1

Always use a lifting crane when handling the pump (see technical data).



CAUTION!

Alfa Laval cannot be held responsible for incorrect unpacking.

Check the delivery for:

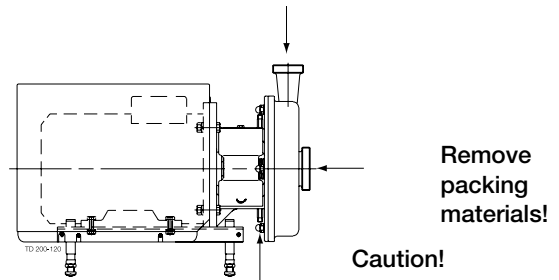
1. Complete pump.
2. Delivery note.
3. Motor instructions.

Step 2

Remove possible packing materials from the inlet and the outlet.

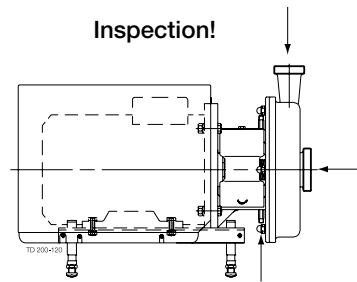
Avoid damaging the inlet and the outlet.

Avoid damaging the connections for flushing liquid, if supplied.



Step 3

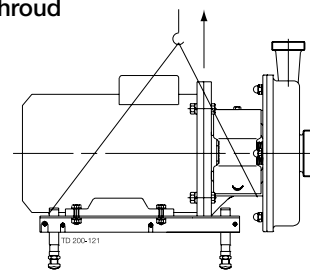
Inspect the pump for visible transport damages.



Step 4

Always remove the shroud, if fitted, before lifting the pump.

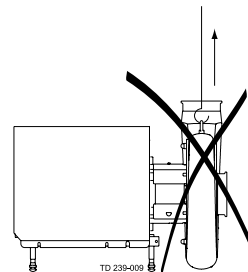
Remove the shroud before lifting!



Step 5

ONLY LKH-90

Do **NOT** use eyebolt in casing to lift the pump. The eyebolt is only for casing removal.



Study the instructions carefully and pay special attention to the warnings! Always check the pump before operation.

- See pre-use check in section 2.3.

The large pump sizes are very heavy.

Alfa Laval therefore recommends the use of a lifting crane when handling the pump.

Step 1



Always read the technical data thoroughly (see chapter 5).



Always use a lifting crane when handling the pump (see technical data).



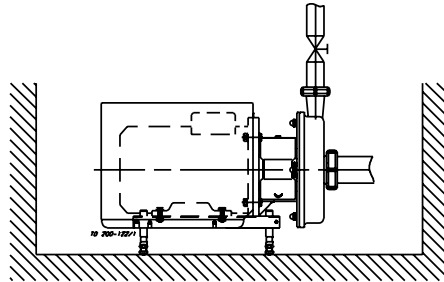
Always have the pump electrically connected by authorized personnel (see the motor instructions).

CAUTION!

Alfa Laval cannot be held responsible for incorrect installation.

Step 2

Ensure that there is sufficient clearance around the pump (min. 0.5 m) (1.6 ft).

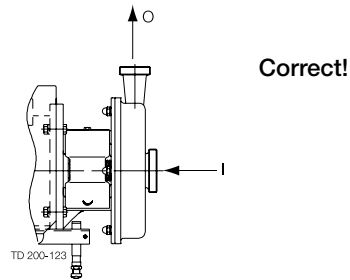


Step 3

Check that the flow direction is correct.

O: Outlet

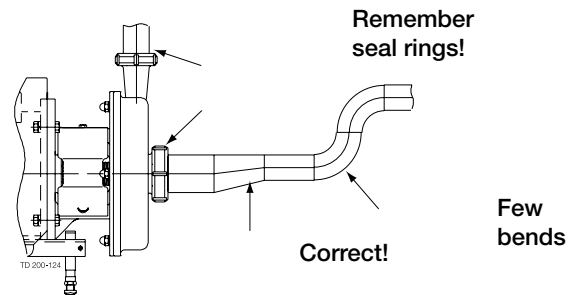
I: Inlet



Step 4

1. Ensure that the pipelines are routed correctly.

2. Ensure that the connections are tight.

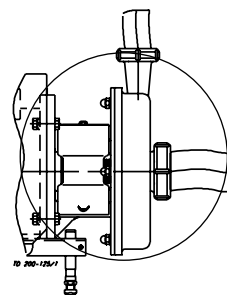


Step 5

Avoid stressing the pump.

Pay special attention to:

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



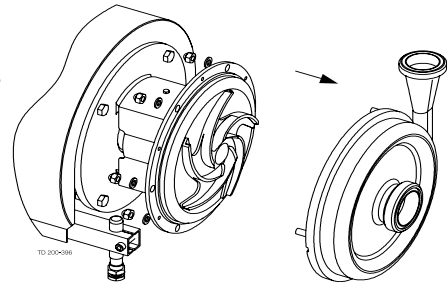
Study the instructions carefully and pay special attention to the warnings!
 LKH-5 to -60 is without impeller screw as standard but can be supplied with one.
 Check the direction of rotation of the impeller before operation.
 - See the indication label on the pump.

Step 1



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

- 1a. LKH-5: Remove screws (56), spring washers (56a), clamps (55+55a) and pump casing (29).
- 1b. LKH-10 to -90: Remove cap nuts (24), washers (24a) and pump casing (29).
2. Remove impeller (27) (see also instruction 4 in section 4.3).

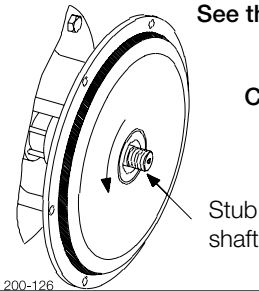


Step 2

1. Start and stop the motor momentarily.
2. Ensure that the direction of rotation of the stub shaft (7) is **anticlockwise** as viewed from the inlet side.

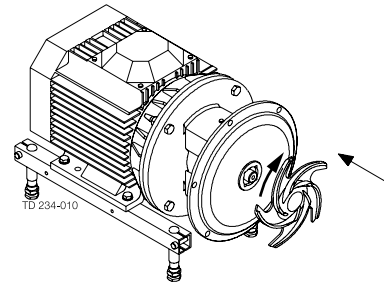
See the indication label!

Correct!



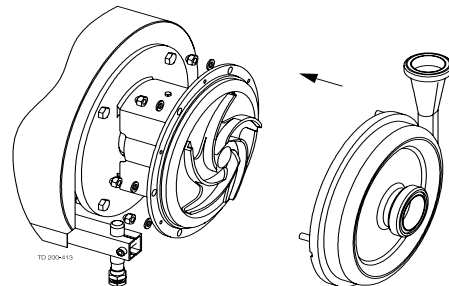
Step 3

Fit and tighten impeller (27).



Step 4

1. Fit pump casing (29).
- 2a. LKH-5: Fit clamps (55+55a), spring washers (56a) and tighten screws (56).
- 2b. LKH-10 to -90: Fit washers (24a) and tighten cap nuts (24).



Pump with impeller screw - Only LKH-5 to -60

Step 1

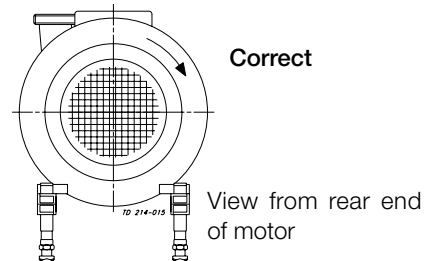


Never start in the wrong direction of rotation with liquid in the pump.

1. Start and stop the motor momentarily.
2. Ensure that the direction of rotation of the motor fan is **clockwise** as viewed from the rear end of the motor.

See the indication label!

Correct



Study the instructions carefully and pay special attention to the warnings!
The pump is fitted with a warning label indicating correct throttling.

Step 1



Always read the technical data thoroughly (see chapter 5).

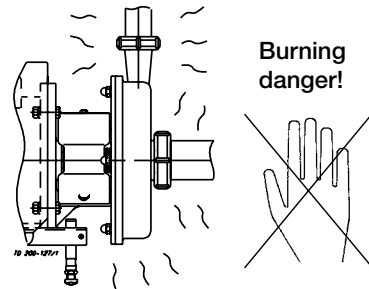
CAUTION!

Alfa Laval cannot be held responsible for incorrect operation/control.

Step 2



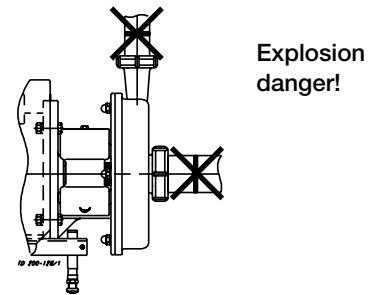
Never touch the pump or the pipelines when pumping hot liquids or when sterilizing.



Step 3



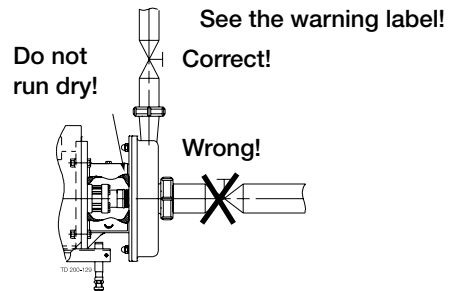
Never run the pump with both the suction side and the pressure side blocked.



Step 4

CAUTION!

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



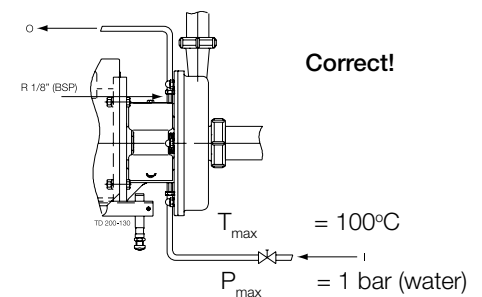
Step 5

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.

O: Free outlet

I: Inlet

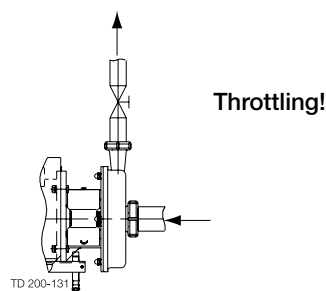


Step 6

Control:

Reduce the capacity and the power consumption by means of:

- Throttling the pressure side of the pump.
- Reducing the impeller diameter.
- Reducing the speed of the motor.



Pay attention to possible faults.
Study the instructions carefully.

NOTE!

Study the maintenance instructions carefully before replacing worn parts. - See section 4.1

Problem	Cause/result	Remedy
Overloaded motor	<ul style="list-style-type: none"> - Pumping of viscous liquids - Pumping of liquids with high density - Low outlet pressure (counter pressure) - Lamination of precipitates from the liquid 	<ul style="list-style-type: none"> - Larger motor or smaller impeller - Higher counter pressure (throttling) - Frequent cleaning
Cavitation: <ul style="list-style-type: none"> - Damage - Pressure reduction (sometimes to zero) - Increasing of the noise level 	<ul style="list-style-type: none"> - Low inlet pressure - High liquid temperature 	<ul style="list-style-type: none"> - Increase the inlet pressure - Reduce the liquid temperature - Reduce the pressure drop before the pump - Reduce speed
Leaking shaft seal	<ul style="list-style-type: none"> - Dry run (See section 3.1) - Incorrect rubber grade - Abrasive particles in the liquid 	Replace: All wearing parts (See section 4.1) If necessary: <ul style="list-style-type: none"> - Select a different rubber grade - Select stationary and rotating seal ring in Silicon Carbide/Silicon Carbide
Leaking seals	Incorrect rubber grade	Replace with seals of a different rubber grade

The pump is designed for cleaning in place (CIP). CIP = Cleaning In Place.
 Study the instructions carefully and pay special attention to the warnings!
 NaOH = Caustic Soda.
 HNO₃ = Nitric acid.

Step 1



Always handle lye and acid with great care.



Always use rubber gloves!

Caustic danger!

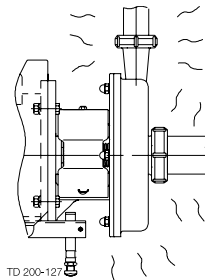


Always use protective goggles!

Step 2

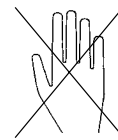


Never touch the pump or the pipelines when sterilizing.



TD 200-127

Burning danger!



Step 3

Examples of cleaning agents:

Use clean water, free from chlorides.

1. 1% by weight NaOH at 70°C (158°F).

1 kg (2.2 lbs) NaOH	+	100 l (26.4 gal) water	= Cleaning agent.
------------------------	---	---------------------------	-------------------

2.2 l (0.6 gal) 33%NaOH	+	100 l (26.4 gal) water	= Cleaning agent.
----------------------------	---	---------------------------	-------------------

2. 0.5% by weight HNO₃ at 70°C (158°F).

0.7 l (0.2 gal) 53% HNO ₃	+	100 l (26.4 gal) water	= Cleaning agent.
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Step 4

- Avoid excessive concentration of the cleaning agent
 ⇒ **Dose gradually!**
- Adjust the cleaning flow to the process
Sterilization of milk/viscous liquids
 ⇒ **Increase the cleaning flow!**

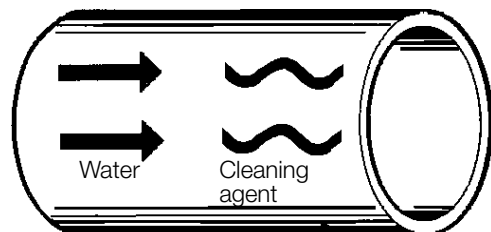
Step 5

Always rinse well with clean water after the cleaning.

NOTE!

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

Always rinse!



Maintain the pump carefully. Study the instructions carefully and pay special attention to the warnings!
 Always keep spare shaft seals and rubber seals in stock.
 See separate motor instructions.

Step 1



Always read the technical data thoroughly (see chapter 5).



Always disconnect the power supply when servicing the pump.

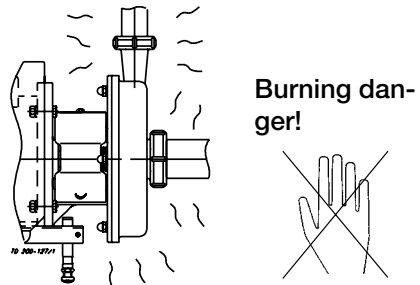
NOTE!

All scrap must be stored/disposed of in accordance with current rules/directives.

Step 2



Never service the pump when it is hot.



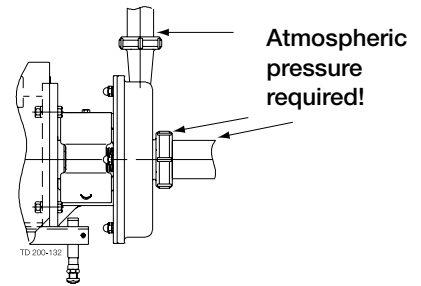
Step 3



Never service the pump with pump and pipelines under pressure.

CAUTION!

Fit the electrical connections correctly if they have been removed from the motor during service (see pre-use check in section 2.3).



Pay special attention to the warnings!

Step 4

Recommended spare parts:

Service kits (see chapter 6).

Order service kits from the service kits list (see chapter 6).

Ordering spare parts:

- Contact the Sales Department.

Maintain the pump carefully. Study the instructions carefully.
 Always keep spare shaft seals and rubber seals in stock.
 See separate motor instructions.
 Check the pump for smooth operation after service.

	Shaft seal	Rubber seals	Motor bearings
Preventive maintenance	Replace after 12 months: (one-shift) Complete shaft seal	Replace when replacing the shaft seal	
Maintenance after leakage (leakage normally starts slowly)	Replace at the end of the day: Complete shaft seal	Replace when replacing the shaft seal	
Planned maintenance	- Regular inspection for leakage and smooth operation - Keep a record of the pump - Use the statistics for planning of inspections Replace after leakage: Complete shaft seal	Replace when replacing the shaft seal	Yearly inspection is recommended - Replace complete bearing if worn - Ensure that the bearing is axially locked (See motor instructions)
Lubrication	Before fitting Lubricate the O-rings with silicone grease or silicone oil	Before fitting Silicone grease or silicone oil	See section 5.2

Pre-use check

CAUTION!

Fit the electrical connections correctly if they have been removed from the motor during service.
 (See pre-use check in section 2.3).

Pay special attention to the warnings!

1. Start and stop the motor momentarily.
2. Ensure that the pump operates smoothly.

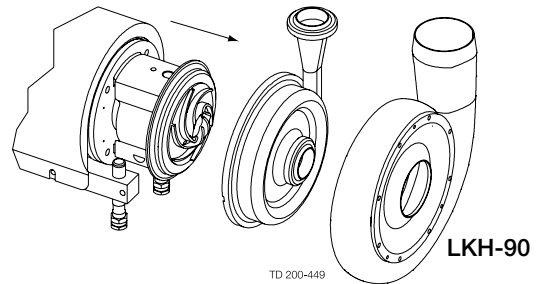
Study the instructions carefully. The items refer to the parts list and service kits section.

Handle scrap correctly.

★ : Relates to the shaft seal.

Step 1

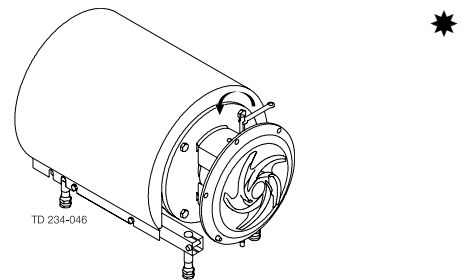
- 1a. LKH-5: Remove screws (56), spring washers (56a), clamps (55+55a) and pump casing (29).
- 1b. LKH-10 to 90: Unscrew cap nuts (24) and remove washers (24a) and pump casing (29).



Step 2

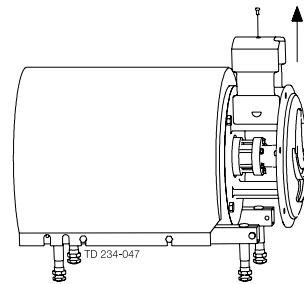
Flushed / Double mechanical shaft seal:

Unscrew tubes (42) using a spanner.



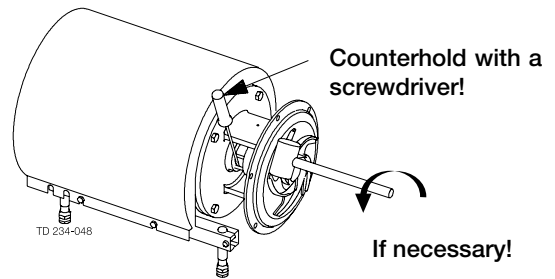
Step 3

Remove screw (23) and safety guard (22).



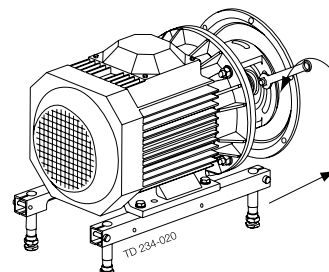
Step 4

- 1. Remove impeller screw (36), if fitted.
- 2. Remove impeller (27). If necessary, loosen the impeller by knocking gently on the impeller vanes.
- 3. Remove the O-ring (38) from the impeller, if fitted.



Step 5

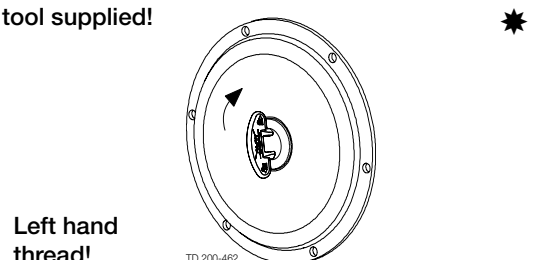
- 1. Pull off the O-ring (26) from back plate (25).
- 2. Unscrew nuts (20) and remove washers (21) and the back plate.



Step 6

- 1. Remove the stationary seal ring (11).
- 2. Remove the O-ring (12) from back plate (25).

Use the tool supplied!



Study the instructions carefully. The items refer to the parts list and service kits section.

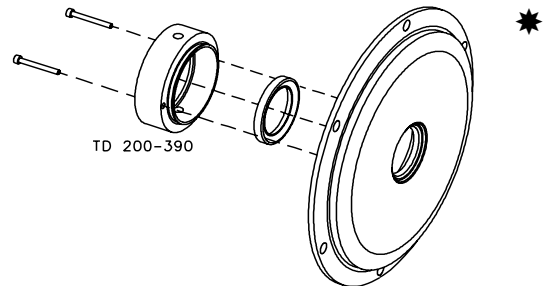
Handle scrap correctly.

★ : Relates to the shaft seal.

Step 7

Flushed shaft seal:

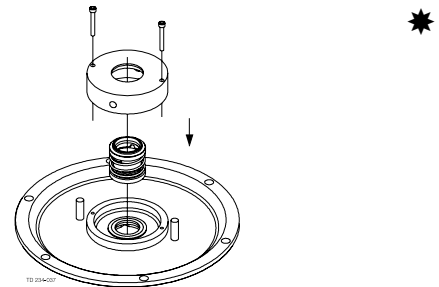
1. Remove screws (41) and seal housing (40).
2. Pull out lip seal (43) from the seal housing.



Step 8

Double mechanical shaft seal:

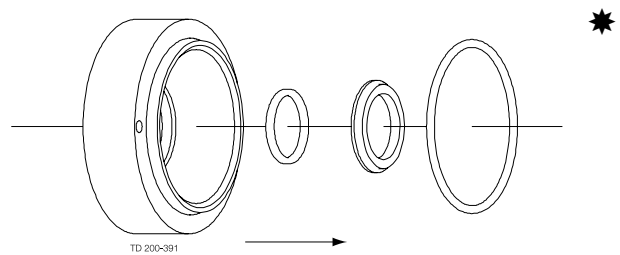
1. Remove screws (41) and seal housing (40a).
2. Remove rotating seal rings (14) and drive ring (52) from spring (13).
3. Remove O-rings (15) from rotating seal rings (14).
4. LKH-70 to 90: Remove cups (54) from rotating seal rings.



Step 9

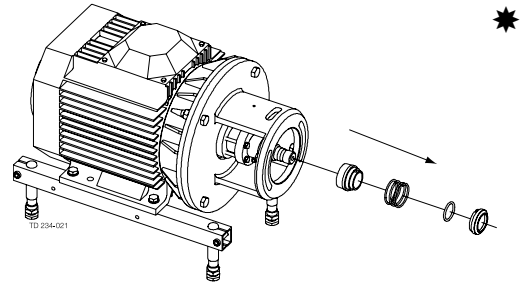
Double mechanical shaft seal:

1. Remove stationary seal ring (51) from seal housing (40a).
2. Remove O-ring (50) from stationary seal ring (51).
3. Remove O-ring (44) from seal housing (40a).



Step 10

1. Remove the complete shaft seal from stub shaft (7).
2. Remove spring (13) and rotating seal ring (14) from the drive ring (10).



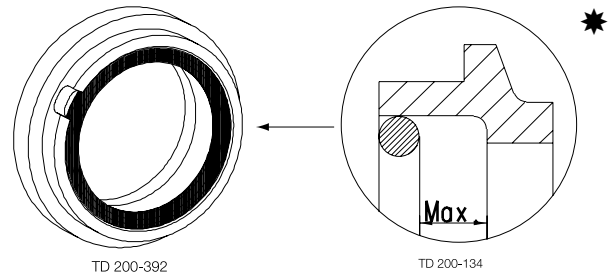
Study the instructions carefully.
 The items refer to the parts list and service kits section.
 Handle scrap correctly.
 * : Relates to the shaft seal.

Step 1

Remove spring (13).

NOTE!

Make sure that O-ring (15) has max. clearance from the sealing surface.

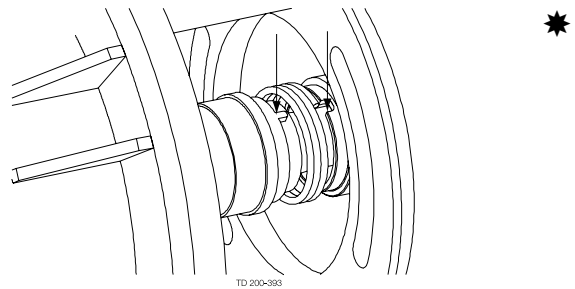


Step 2

1. Refit spring (13) on rotating seal ring (14).
2. Fit the spring and the rotating seal ring on drive ring (10).

CAUTION!

Ensure that the driver on the drive ring enters the notch in the rotating seal ring.

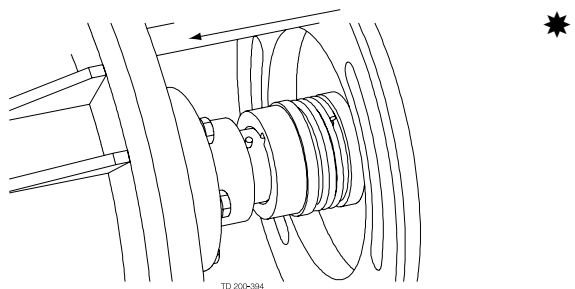


Step 3

Fit the complete shaft seal on stub shaft (7).

NOTE!

Make sure that connex pin (8) on the stub shaft enters the notch in drive ring (10).



Step 4

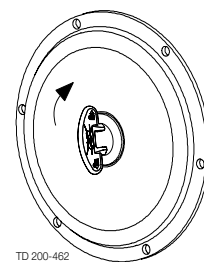
1. Fit O-ring (12) on stationary seal ring (11) and lubricate.
2. Screw the stationary seal ring into back plate (25).

CAUTION!

Only tighten by hand (max.7 Nm/5 lbf-ft) to avoid deforming the stationary seal ring.

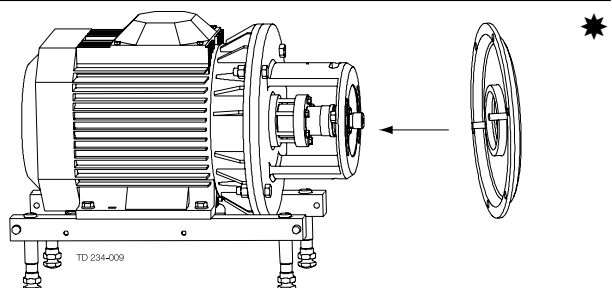
Use the tool supplied!

Left hand thread!



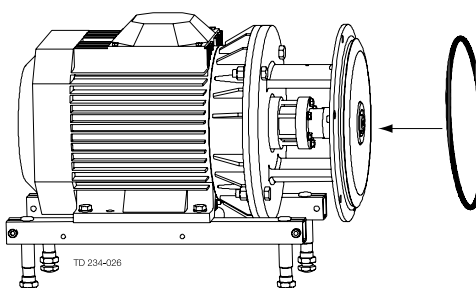
Step 5

1. Clean the sealing surfaces with contact cleaner before fitting back plate (25).
2. Carefully guide the back plate onto adaptor (16).
3. Fit washers (21) and nuts (20).



Step 6

Lubricate O-ring (26) and slide it onto back plate (25).



Study the instructions carefully.

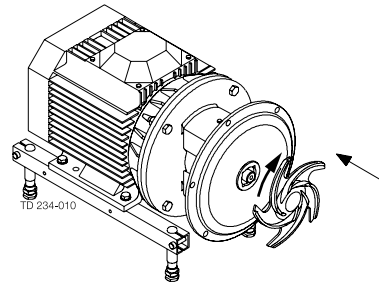
The items refer to the parts list and service kits section.

Handle scrap correctly.

★ : Relates to the shaft seal.

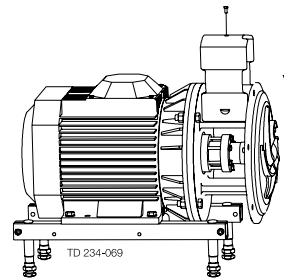
Step 7

1. Lubricate O-ring (38) and fit it in impeller (37), if impeller screw is used.
2. Lubricate the impeller hub with silicone grease or oil.
3. Screw the impeller onto stub shaft (7).
4. Fit impeller screw (36) and tighten, if used.



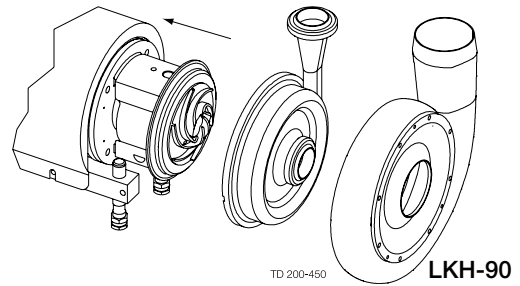
Step 8

Fit safety guard (22) and screw (23) and tighten.



Step 9

- 1a. LKH-5: Fit pump casing (29), clamps (55+55a), spring washers (56a) and screws (56).
- 1b. LKH-10 to -90: Fit pump casing (29), washers (24a) and cap nuts (24).
2. Adjust pump casing to the right position.
- 3a. LKH-5: Tighten nuts (20) for back plate (25) and tighten screws (56).
- 3b. LKH-10 to -90: Tighten nuts (20) for back plate (25) and tighten cap nuts (24).



Study the instructions carefully.
The items refer to the parts list and service kits section.
Lubricate the rubber seals before fitting them.

★ : Relates to the shaft seal.

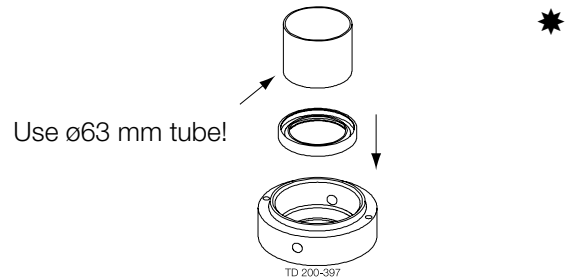
Step 1

Flushed shaft seal :

LKH-5 to -60 use ø63mm tube

LKH-70 to -90 press in lip seal by hand

1. Fit lip seal (43) in seal housing (40).
2. Lubricate O-ring (44) and slide onto the seal housing (40).
3. Fit the seal housing on back plate (25) and tighten screws (41).

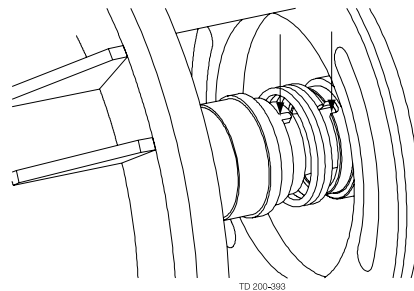


Step 2

1. Lubricate O-ring (45) and fit it in drive ring (10).
2. Fit spring (13) and rotating seal ring (14) on the drive ring.

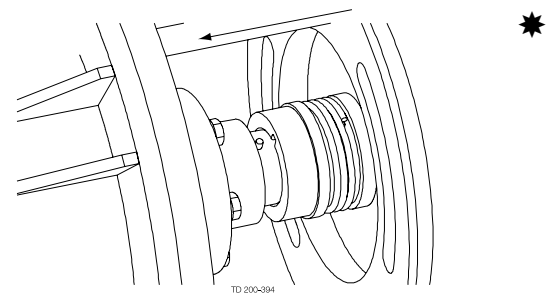
CAUTION!

Make sure that the driver on the drive ring enters the notch in the rotating seal ring.



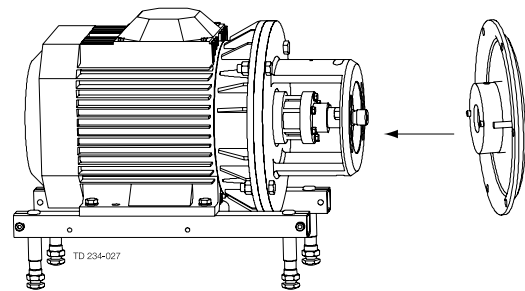
Step 3

Fit complete shaft seal on stub shaft (7) so that connex pin (8) on the stub shaft enters the notch in drive ring (10).



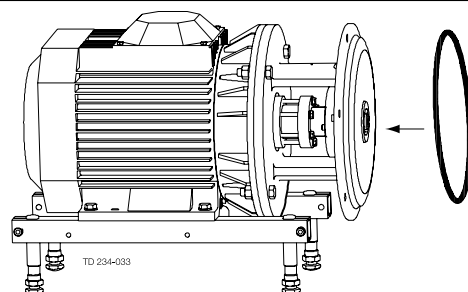
Step 4

1. Carefully guide back plate (25) onto adaptor (16).
2. Fit washers (21) and nuts (20).



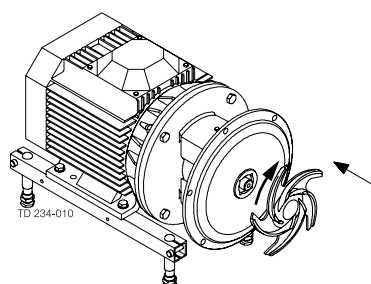
Step 5

Lubricate O-ring (26) and slide it onto back plate (25).



Step 6

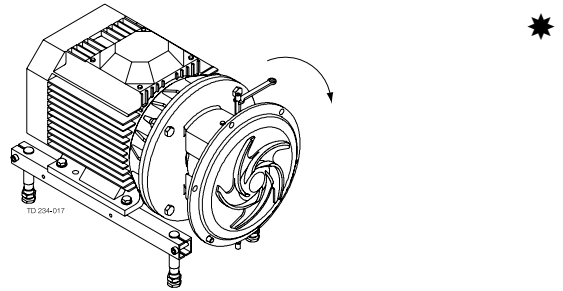
1. Lubricate O-ring (38) and fit it in impeller (37), if impeller screw is used.
2. Lubricate the impeller hub with silicone grease or oil.
3. Screw impeller (27) onto stub shaft (7).
4. Fit impeller screw (36) and tighten, if used.



Study the instructions carefully.
 The items refer to the parts list and service kits section.
 Lubricate the rubber seals before fitting them.
 * : Relates to the shaft seal.

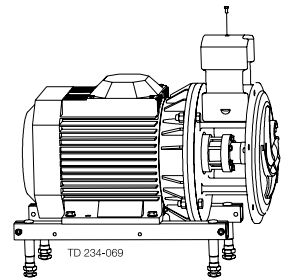
Step 7

1. Screw tubes (42) into seal housing (40).
2. Tighten with a spanner.



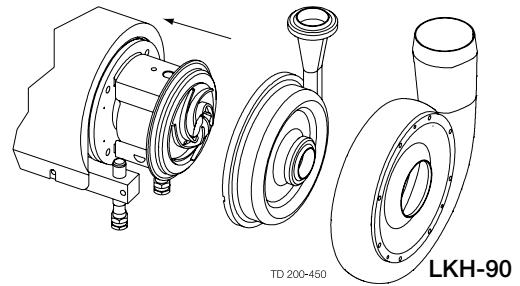
Step 8

Fit safety guard (22) and screw (23) and tighten.



Step 9

- 1a. LKH-5: Fit pump casing (29), clamps (55+55a), spring washers (56a) and screws (56).
- 1b. LKH-10 to -90: Fit pump casing (29).
2. Tighten nuts (20) for back plate (25).
- 3a. LKH-5: Tighten nuts (20) for back plate (25) and tighten screws (56).
- 3b. LKH-10 to -90: Fit washers (24a) and cap nuts (24) and tighten.



Study the instructions carefully.

The items refer to the parts list and service kits section .

Lubricate the rubber seals before fitting them.

★ : Relates to the shaft seal.

Step 1

1. Fit O-rings (15) in rotating seal rings (14).
2. LKH-70 to -90: Fit cups (54) on rotating seal rings (14).
3. Fit spring (13) on one of the rotating seal rings (14) and place the drive ring (52) in between.



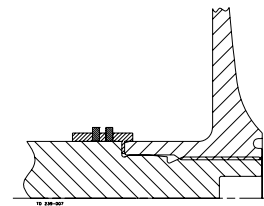
Step 2

1. LKH-70 to -90: Turn the drive ring (52) in order to place it correctly on the pump shaft (7).
2. Fit the second rotating ring (14) on the other end of the spring.
3. Place the parts on the stationary seal ring fitted in back plate (25).

NOTE:

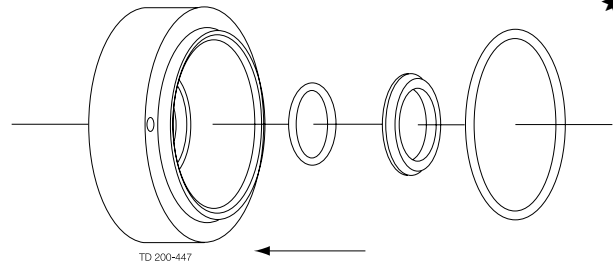
Ensure that both drive pins on the drive ring enters the notches in rotating seal rings.

Only LKH-70-90



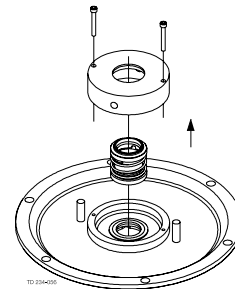
Step 3

1. Lubricate O-ring (44) and slide onto seal housing (40a).
2. Lubricate O-ring (50) and fit on stationary seal ring (51) and fit this in the seal housing.



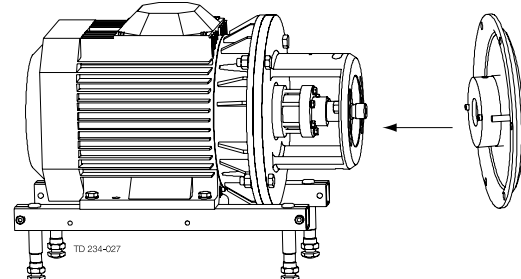
Step 4

1. Clean the sealing surfaces with contact cleaner.
2. Fit seal housing (40a) on the back plate (25) and tighten screws (41).



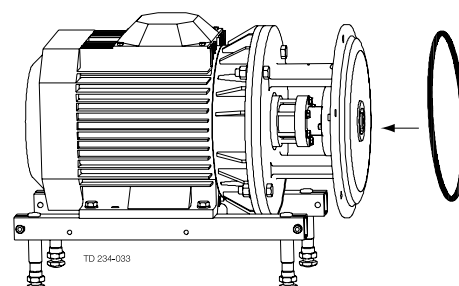
Step 5

1. To enable fitting back plate (25) with the shaft seal remove connex pin (8) from stub shaft (7) (if fitted).
2. Carefully guide the back plate onto adaptor (16).
3. Fit washers (21) and nuts (20).



Step 6

Lubricate O-ring (26) and slide it onto back plate (25).



Study the instructions carefully.

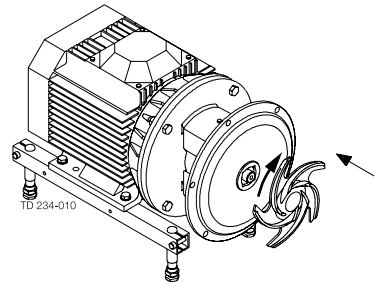
The items refer to the parts list and service kits section .

Lubricate the rubber seals before fitting them.

★ : Relates to the shaft seal.

Step 7

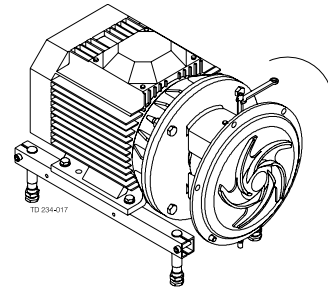
1. Lubricate O-ring (38) and fit it in impeller (37), if impeller screw is used.
2. Lubricate the impeller hub with silicone grease or oil.
3. Screw impeller (27) onto stub shaft (7).
4. Fit impeller screw (36) and tighten, if used.



Step 8

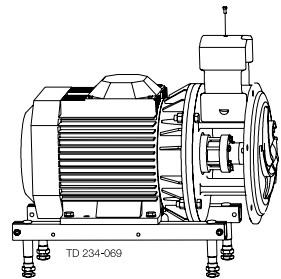
1. Screw tubes (42) into seal housing (40a).
2. Tighten with a spanner.

★



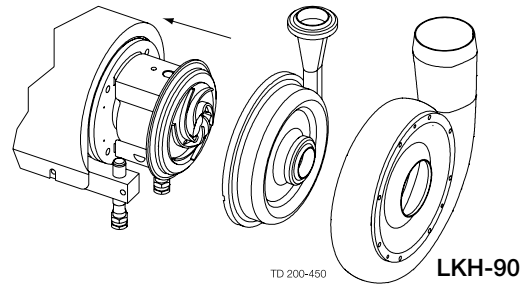
Step 9

Fit safety guard (22) and screw (23) and tighten.



Step 10

1. Fit pump casing (29).
2. Tighten nuts (20) for back plate (25).
- 3a. LKH-5: Fit clamps (55+55a), spring washers (56a) and screws (56) and tighten.
- 3b. LKH-10 to 90: Fit washers (24a) and cap nuts (24) and tighten.



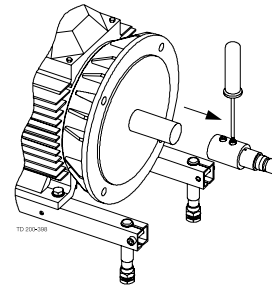
LKH-90

Study the instructions carefully.
 The items refer to the parts list and service kits section.
 Lubricate the rubber seals before fitting them.
 * : Relates to the shaft seal.

Step 1

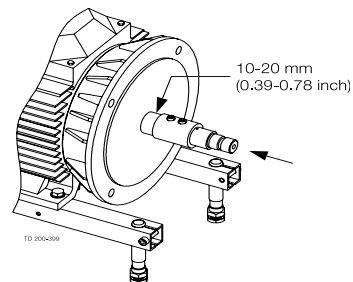
1. Loosen screws (4).
2. Pull off stub shaft (7).

See special cleaning procedure for tapped hole in stub shaft page 26.



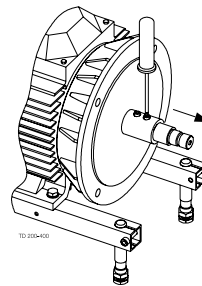
Step 2

1. Push stub shaft (7) onto the motor shaft. Screws (4) must fit in keyway on the motor shaft.
2. Check that the clearance between the end of the stub shaft and the motor flange is 10-20 mm (0.39-0.78 inch).



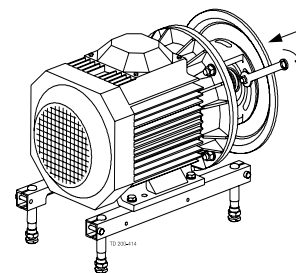
Step 3

1. Tighten screws (4) lightly and evenly.
2. Ensure that stub shaft (7) can be moved on the motor shaft.



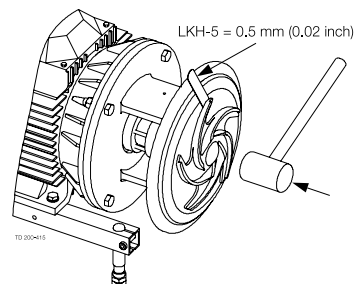
Step 4

1. **For double mechanical shaft seal:** Fit drive ring (52) on stub shaft (7).
2. Fit back plate (25), washers (21) and nuts (20) and tighten.



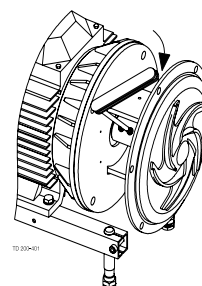
Step 5

1. Fit impeller (27) on stub shaft (7).
2. Ensure that the clearance between the impeller and back plate (25) is correct: 0.5 mm (0.02 inch) for LKH-5.



Step 6

1. Tighten screws (4) evenly to 18 Nm (13 lbf-ft).

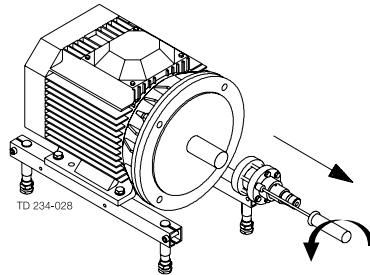


Study the instructions carefully.
 The items refer to the parts list and service kits section .
 Lubricate the rubber seals before fitting them.
 * : Relates to the shaft seal.

Step 1

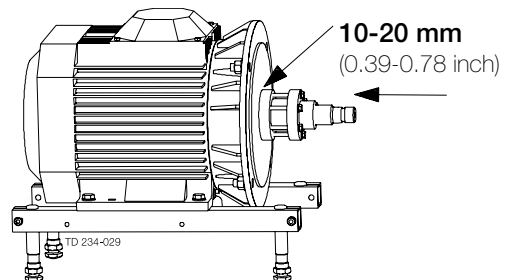
1. Loosen screws (6).
2. Pull off stub shaft (7) together with compression rings (5a, 5b).

See special cleaning procedure for tapped hole in stub shaft page 26.



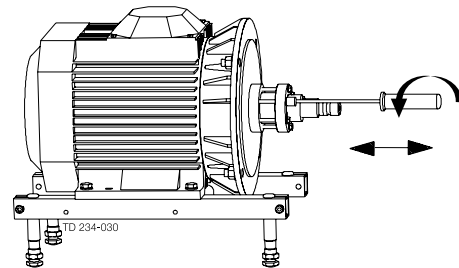
Step 2

1. Push stub shaft (7) together with compression rings (5a, 5b) onto the motor shaft.
2. Check that the clearance between the end of the stub shaft and the motor flange is 10-20mm (0.39-0.78 inch).



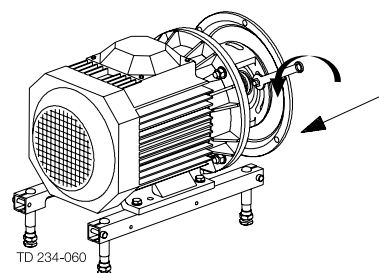
Step 3

1. Tighten screws (6) lightly and evenly.
2. Ensure that stub shaft (7) can be moved on the motor shaft.



Step 4

1. **For double mechanical shaft seal:**
 Fit drive ring (52) on stub shaft (7).
2. Fit back plate (25), washers (21) and nuts (20) and tighten.

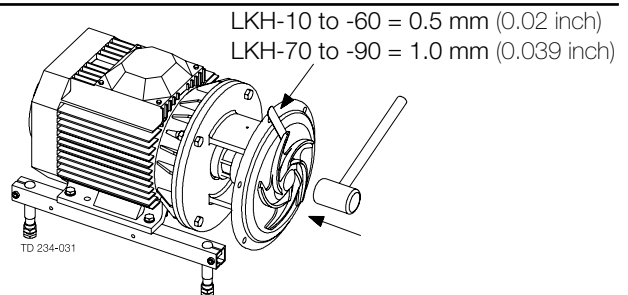


Step 5

1. Fit impeller (27) on stub shaft (7).
2. Ensure that the clearance between the impeller and back plate (25) is correct: 0.5mm (0.02 inch) for LKH-10 to 60 and 1.0 mm (0.039 inch) for LKH-70 to -90.

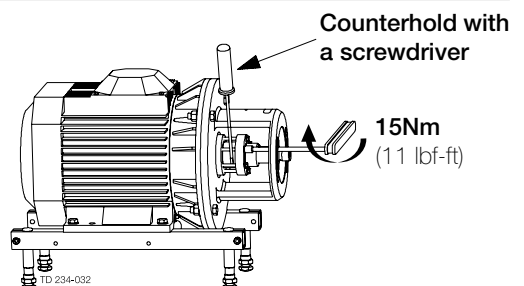
NOTE!

If pump has been ordered with increased clearance between impeller and backplate this additional clearance must be taken into account when adjusting the shaft.



Step 6

1. Remove impeller (27), back plate (25) and drive ring (52).
2. Tighten screws (6) evenly to 15 Nm (11 lbf-ft).



Cleaning Procedure for Soiled Impeller Screw Tapped Hole:

1. Remove stub shaft (7) per section 4 of Service manual.
2. Submerge and soak Stub Shaft for 5 minutes in COP tank with 2% caustic wash
3. Scrub the blind tapped impeller screw hole vigorously by plunging a clean 1/2" diameter sanitary bristle pipe brush in and out of the hole for two minutes while submerged.
4. Soak Stub Shaft (7) in acid sanitizer for 5 minutes, then scrub blind tapped hole as described in step 3 above.
5. Rinse well with clean water and blow-dry blind tapped hole with clean air.
6. Swab test the inside of the tapped hole to determine cleanliness.
7. Should the swab test fail, repeat steps 2 thru 6 above until swab test is passed.

Should swab testing continue to fail, or time is of the essence, install a new (spare) Stub Shaft (7).

It is important to observe the technical data during installation, operation and maintenance.
Inform the personnel about the technical data.

Data	
Max. inlet pressure	LKH-5 : 600 kPa (6 bar) (87 psi) LKH-10 to -80 (50 Hz): 1000 kPa (10 bar) (145 psi) LKH-90 (50 Hz): 500 kPa (5 bar) (72.5 psi) LKH-10 to -60 (60 Hz): 1000 kPa (10 bar) (145 psi) LKH-70 to -90 (60 Hz): 500 kPa (5 bar) (72.5 psi)
Temperature range	-10°C to +140°C (EPDM) (14 to 284°F)
Noise level	60-80 dB (A)
Materials	
Product wetted steel parts	AISI 316L
Other steel parts	AISI 304
Finish	Semi-bright
Product wetted seals	EPDM (standard)
Other O-rings	EPDM
Alternative seals	Nitrile (NBR), Fluorinated rubber (FPM) and FEP
Shaft seal	
Seal types	External single, flushed or double mechanical seal
Max. water pressure (flushed seal)	Normally atmospheric (max. 1 bar) (max. 14.5 psi)
Water consumption (flushed seal)	0.25 - 0.5 l/min. (0.07-0.13 gl)
Max. water pressure LKH-5 to -60 (DMS)	Normally atmospheric (max. 5 bar) (max. 72.5 psi)
Max. water pressure LKH-70 to -90 (DMS)	Normally atmospheric (max. 3 bar) (max. 43.5 psi)
Water consumption (double mechanical seal)	0.25-0.5 l/min. (0.07-0.13 gl)
Material, stationary seal ring	Acid resistant steel with sealing surface of Silicon Carbide
Material, rotating seal ring	Carbon (standard) or Silicon Carbide
Material, O-rings	EPDM (standard)
Alternative material, O-rings	Nitrile (NBR), Fluorinated rubber (FPM) and FEP
Motor	
Foot-flanged motor acc. to IEC metric standard 2 poles = 3000/3600 rpm. at 50/60 Hz IP55 (drain hole with labyrinth plug), insulation class F	
Voltage and frequency (standard)	3~, 50 Hz, 220-240VΔ/380-420VY ≤ 4 kW 3~, 60 Hz, 250-280VΔ/440-480VY ≤ 4.6 kW 3~, 50 Hz, 380-420VΔ/660-690VY ≥ 5.5 kW 3~, 60 Hz, 440-480VΔ ≥ 6.3 kW
Motor sizes (kW), 50 Hz	0.75, 1.1, 1.5, 2.2, 3.0, 4.0, 5.5, 7.5, 11.0, 15.0, 18.5, 22.0, 30.0, 37.0, 45.0, 55.0, 75.0
Motor sizes (kW), 60 Hz	0.9, 1.3, 1.75, 2.5, 3.5, 4.6, 6.3, 8.6, 12.5, 17.0, 21.0, 25.0, 35.0, 43.0, 52.0, 63.0, 86.0
Motor sizes (Hp), 60 Hz	1.5, 2.0, 3.0, 5.0, 7.5, 10.0, 15.0, 20.0, 25.0, 30.0, 40.0, 50.0, 60.0, 75.0, 100.0
For further information - see PD-sheet.	

Relubrication interval 50 Hz (3000 rpm)/Relubrication interval 60 Hz (3600 rpm).

(Vendor) quantity in Drive End/quantity in Non Drive End.

The table is for 100°C internal bearing temperature.

An increase in temperature of 15°C (ambient or internal in bearings), will reduce the greasing interval and bearing lifetime by 50%.

Lubrication interval for vertically mounted pumps is half the value stated in the table.

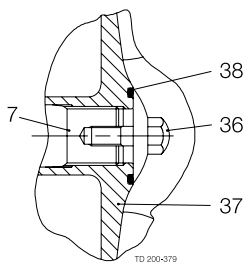
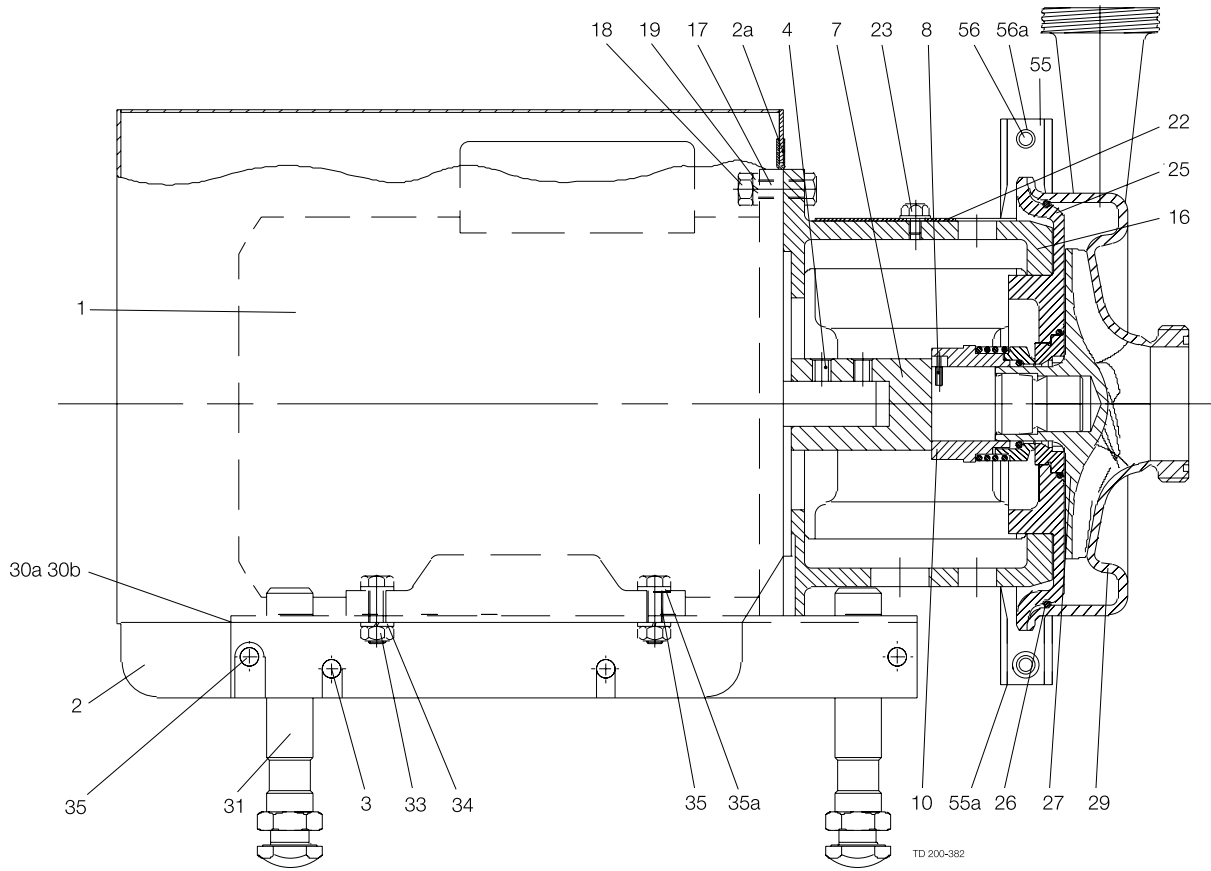
Frame size	Motor power (kW)	LKH-5 - 90 LKHI-10 - 60* LKH-110* LKHSP LKH Ultra Pure 50/60 Hz	LKHP-10 - 60 LKHI-10 - 60 LKH-110 50/60 Hz	LKH-122/P LKH-123/P LKH-124/P 50/60 Hz
80	0.75	Permanently lubricated (ABB)	Not available	Not available
80	1.1	Permanently lubricated (ABB)	Not available	Not available
90	1.5	Permanently lubricated (ABB)	Permanently lubricated (ABB)	Not available
90	2.2	Permanently lubricated (ABB)	Permanently lubricated (ABB)	Not available
100	3.0	Permanently lubricated (ABB)	Not available	Not available
112	4.0	Permanently lubricated (ABB)	4300h/3300h DE/NDE:10g (Brook, ABB)	Not available
132	5.5	Permanently lubricated (ABB)	3600h/3000h DE/NDE:15g (Brook, ABB)	Not available
132	7.5	Permanently lubricated (ABB)	3600h/3000h DE/NDE:15g (Brook, ABB)	Not available
160	11	Permanently lubricated (ABB)	3100h/2300h DE/NDE:25g (Brook, ABB)	Not available
160	15	Permanently lubricated (ABB)	3100h/2300h DE/NDE:25g (Brook, ABB)	Not available
160	18.5	Permanently lubricated (ABB)	3100h/2300h DE/NDE:25g (Brook, ABB)	Not available
180	22	Permanently lubricated (ABB)	2600h/2000h DE/NDE:30g (Brook, ABB)	Not available
200	30	Permanently lubricated (ABB) 4300h/3500h DE/NDE: 23g (Brook)	4000h/2800h DE/NDE:45g (Brook, ABB)	4000h/2800h DE/NDE:45g (Brook, ABB)
200	37	Permanently lubricated (ABB) 4300h/3500h DE/NDE: 23g (Brook)	4000h/2800h DE/NDE:45g (Brook, ABB)	4000h/2800h DE/NDE:45g (Brook, ABB)
200	45	Permanently lubricated (ABB) 4300h/3500h DE/NDE: 23g (Brook)	4000h/2800h DE/NDE:45g (Brook, ABB)	4000h/2800h DE/NDE:45g (Brook, ABB)
250	55	Permanently lubricated (ABB) 3950h/3200h DE/NDE: 26g (Brook)	Not available	3500h/2500h DE/NDE:45g (Brook, ABB)
250	75	Permanently lubricated (ABB) 3950h/3200h DE/NDE: 26g (Brook)	Not available	3500h/2500h DE/NDE:45g (Brook, ABB)

* inlet pressure < 10 bar (145 psi)

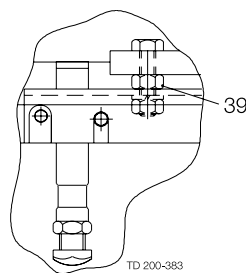
Recommended grease types:

- Mobilgrease HP
- ESSO Unirex N3
- Castrol LMX
- Shell Lipex EP2
- SKF LGHT3

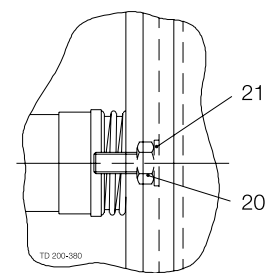
The drawing shows LKH, sanitary version.
The items refer to the parts list in section 6.4.



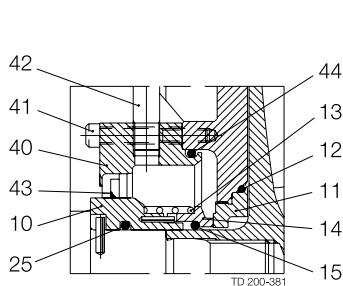
Impeller screw



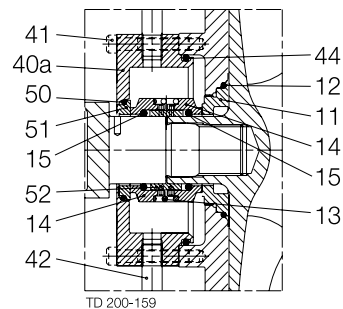
**Fitting of legs
0.75 - 1.1 kW**



Fitting of back plate



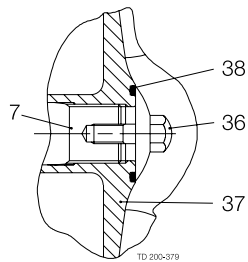
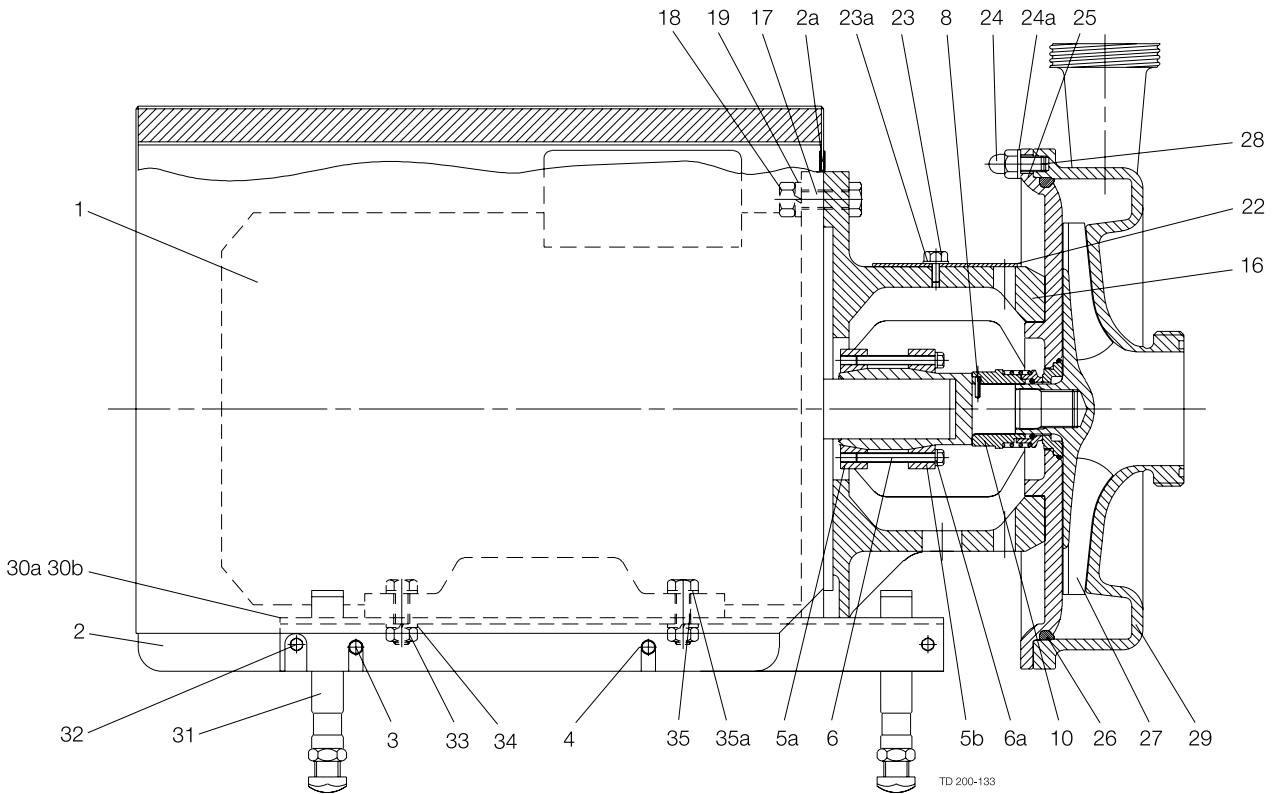
Flushed shaft seal



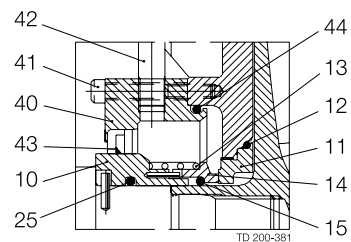
Double mechanical shaft seal

**6.2 Drawing LKH-10, -15, -20, -25, -35, -40, -50, -60
Sanitary Version**

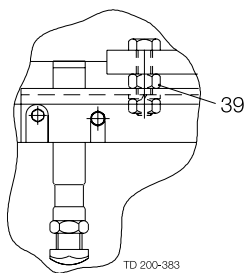
The drawing shows LKH, sanitary version.
The items refer to the parts list in sections 6.5 to 6.11.



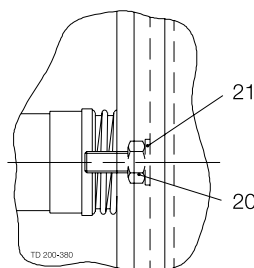
Impeller screw



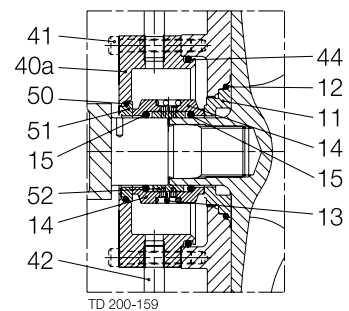
Flushed shaft seal



**Only used for 0.75, 1.1 and 3 kW
Fitting of legs**

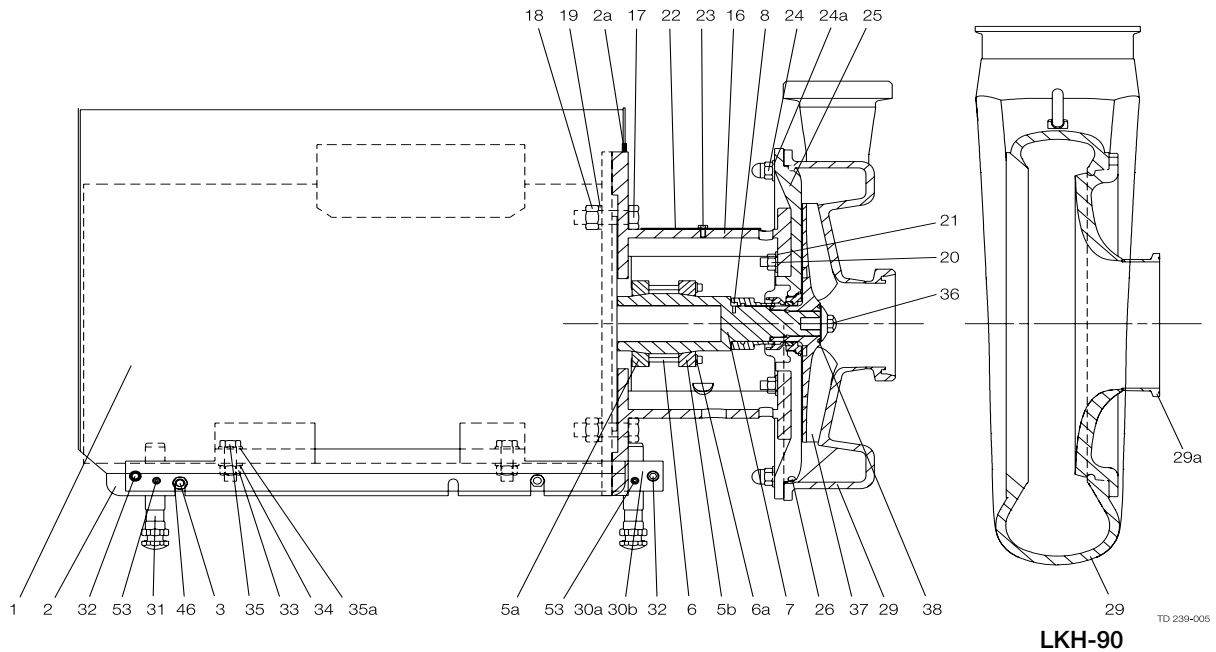


Fitting of back plate

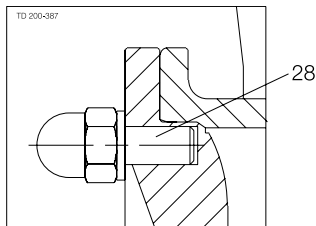


Double mechanical shaft seal

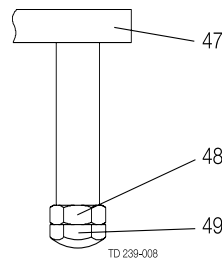
The drawing shows LKH, sanitary version.
The items refer to the parts list in section 6.12.



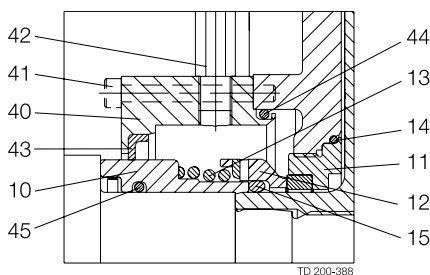
**LKH-75: USA version only,
no shroud, US leg set.**



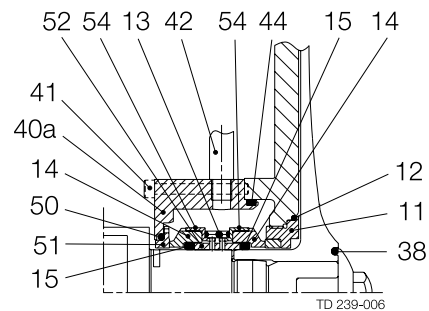
Fitting of back plate



Fitting of legs 55 - 75 kW



Flushed shaft seal



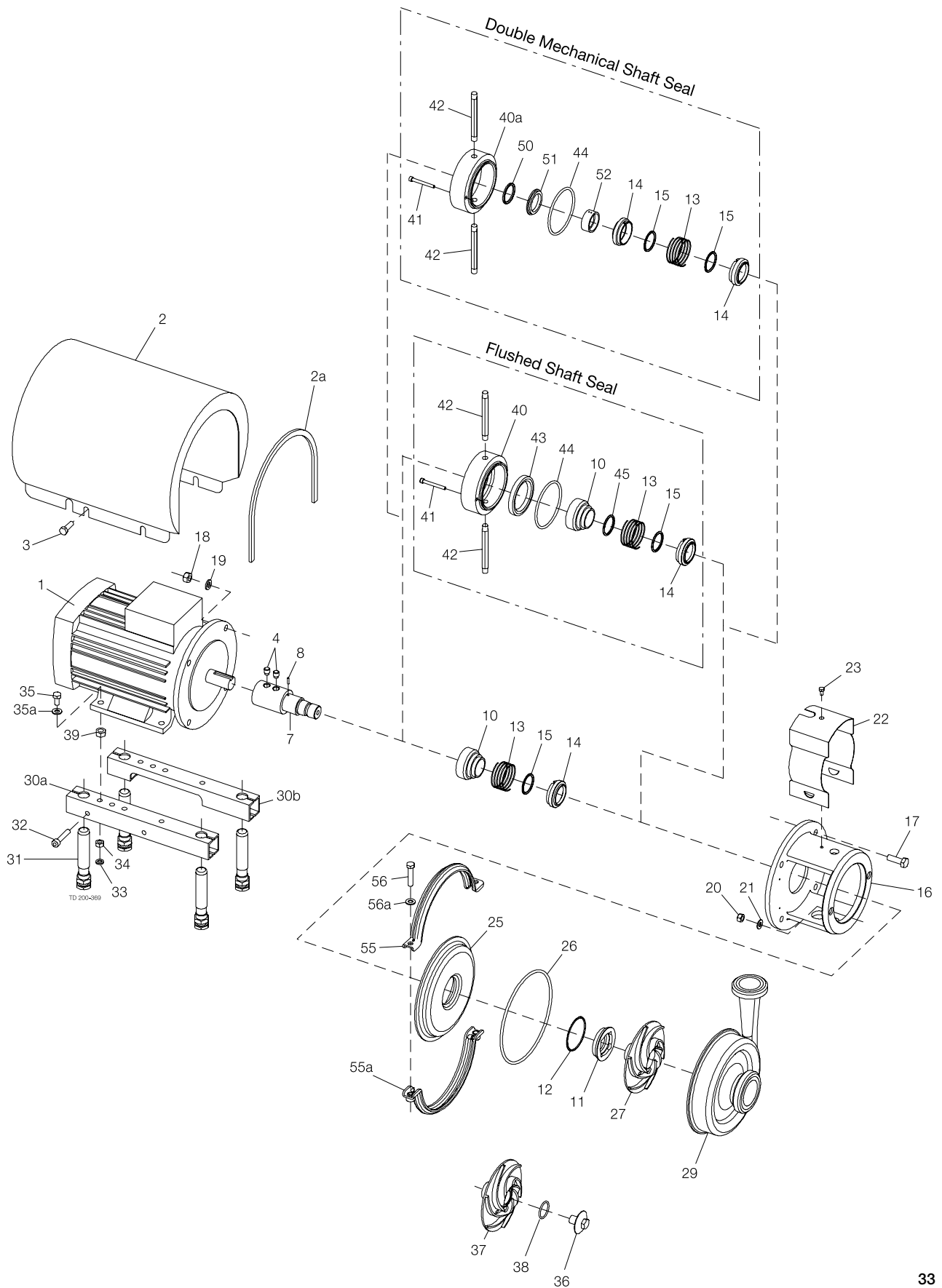
Double mechanical shaft seal

The drawing and the parts list include all items.

Parts List			Service Kits		
Pos.	Qty.	Denomination	Denomination	Item number C/SIC	Item number SIC/SIC
1	1	Motor	Single shaft seal		
2	1	Shroud	Service kit, EPDM (Std).....	9611-92-2302	9611-92-2522
2a	1	Edge list	Service kit, NBR	9611-92-2303	9611-92-2523
3	4	Screw	Service kit, FPM	9611-92-2304	9611-92-2524
4	2	Screw	Service kit, FEP	9611-92-2305	9611-92-2525
7	1	Shaft			
8	1	Connex pin			
10	1	Drive ring	Single shaft seal and impeller screw		
11 □◆○*◇●	1	Stationary seal ring	Service kit, EPDM (Std)	9611-92-2306	9611-99-2526
12 □◆○*◇●	1	O-ring	Service kit, NBR	9611-92-2307	9611-99-2527
13 □◆○*◇●	1	Spring	Service kit, FPM	9611-92-2308	9611-99-2528
14 □◆○*	1	Rotating seal ring	Service kit, FEP	9611-92-2309	9611-99-2529
◇●	2	Rotating seal ring			
15 □◆○*	1	O-ring	Flushed shaft seal		
◇●	2	O-ring	Service kit, EPDM (Std).....	9611-92-2310	9611-99-2530
16	1	Adaptor	Service kit, NBR	9611-92-2311	9611-99-2531
17	4	Screw for adaptor	Service kit, FPM	9611-92-2312	9611-99-2532
18	4	Nut for adaptor	Service kit, FEP	9611-92-2313	9611-99-2533
19	4	Washer for adaptor			
20	2	Nut	Flushed shaft seal and impeller screw		
21	2	Washer	Service kit, EPDM (Std)	9611-92-2314	9611-99-2534
22	1	Safety guard	Service kit, NBR	9611-92-2315	9611-99-2535
23	1	Screw for safety guard	Service kit, FPM	9611-92-2316	9611-99-2536
25	1	Back plate	Service kit, FEP	9611-92-2317	9611-99-2537
26 □◆○*◇●	1	O-ring			
27	1	Impeller	Double mechanical shaft seal		
29	1	Pump casing	Service kit, EPDM (Std).....	9611-92-2318	9611-92-2538
30a	1	Support bar, right	Service kit, NBR	9611-92-2319	9611-92-2539
30b	1	Support bar, left	Service kit, FPM	9611-92-2320	9611-92-2540
31	4	Leg	Service kit, FEP	9611-92-2321	9611-92-2541
32	4	Screw			
33	4	Nut	Double mechanical shaft seal and impeller screw		
34	4	Spring washer	Service kit, EPDM (Std).....	9611-92-2322	9611-92-2542
35	4	Screw	Service kit, NBR	9611-92-2323	9611-92-2543
35a	4	Washer	Service kit, FPM	9611-92-2324	9611-92-2544
36	1	Impeller screw	Service kit, FEP	9611-92-2325	9611-92-2545
37	1	Impeller for impeller screw			
38 ◆*●	1	O-ring ⊗	□: Single shaft seal		
39	4	Nut	◆: Single shaft seal with impeller screw		
40a	1	Seal housing	○: Flushed shaft seal		
40b	1	Seal housing	*: Flushed shaft seal with impeller screw		
41	2	Screw for seal housing	◇: Double mechanical seal		
42	2	Tube	●: Double mechanical sea with impeller screw		
43 ○*	1	Lip seal			
44 ○*◇●	1	O-ring for seal housing	Conversion kit, single to flushed shaft seal EPDM C/SIC		
45 ○*	1	O-ring for drive ring	9611-92-2042 = Pos. 10+40b+41+42+43+44+45		
50 ◇●	1	O-ring	Conversion kit, single to double mechanical shaft seal EPDM C/SIC		
51 ◇●	1	Sec. stationary seal ring	9611-92-2175 = Pos.13+ 14+15+40a+41+42+44+50+51+52		
52 ◇●	1	Drive ring	Conversion kit, flushed to double mechanical shaft seal EPDM C/SIC		
55	1	Upper clamp	9611-92-2176 = Pos.13+ 14+40a+50+51+52		
55a	1	Lower clamp			
56	2	Screw			
56a	2	Spring washer			

⊗ Only for Servicekit with impeller screw.

The drawing shows LKH, sanitary version.
 The drawing includes all items of the pump.

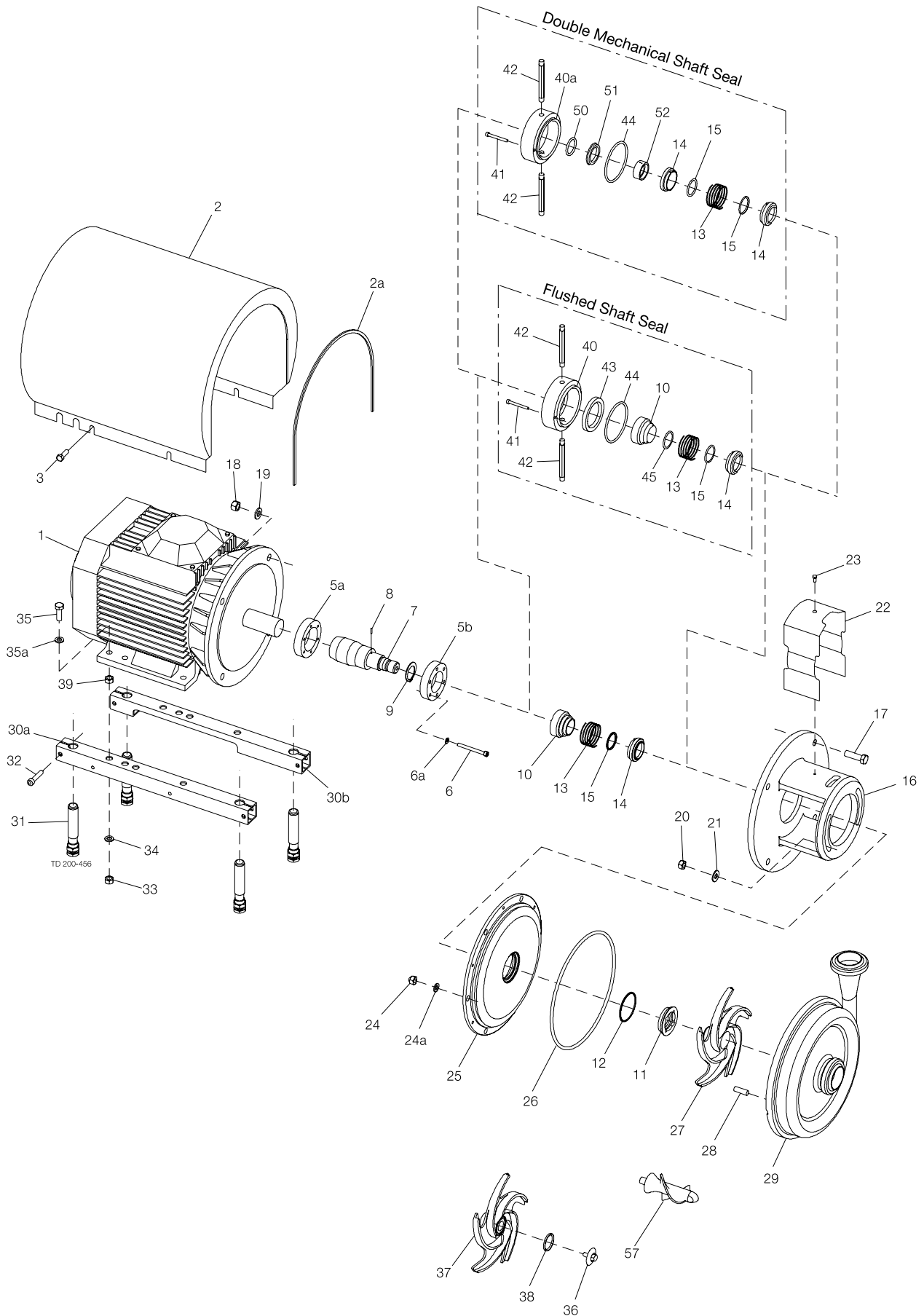


The drawing and the parts list include all items.

Parts List			Service Kits		
Pos.	Qty.	Denomination	Denomination	Item number C/SIC	Item number SIC/SIC
1	1	Motor	Single shaft seal		
2	1	Shroud	Service kit, EPDM (Std).....	9611-92-2072	9611-92-2546
2a	1	Edge list	Service kit, NBR	9611-92-2073	9611-92-2547
3	4	Screw	Service kit, FPM	9611-92-2074	9611-92-2548
5a	1	Compression ring with thread	Service kit, FEP	9611-92-2075	9611-92-2549
5b	1	Compression ring without thread			
6	6	Screw	Single shaft seal and impeller screw		
6a	6	Washer	Service kit, EPDM (Std)	9611-92-2114	9611-92-2550
7	1	Shaft	Service kit, NBR	9611-92-2115	9611-92-2551
8	1	Connex pin	Service kit, FPM	9611-92-2116	9611-92-2552
9	1	Retaining ring (only LKH-10)	Service kit, FEP	9611-92-2117	9611-92-2553
10	1	Drive ring			
11	1	Stationary seal ring	Flushed shaft seal		
12	1	O-ring	Service kit, EPDM (Std).....	9611-92-2076	9611-92-2554
13	1	Spring	Service kit, NBR	9611-92-2077	9611-92-2555
14	1	Rotating seal ring	Service kit, FPM	9611-92-2078	9611-92-2556
	2	Rotating seal ring	Service kit, FEP	9611-92-2079	9611-92-2557
15	1	O-ring			
	2	O-ring	Flushed shaft seal and impeller screw		
16	1	Adaptor	Service kit, EPDM (Std)	9611-92-2118	9611-92-2558
17	4	Screw for adaptor	Service kit, NBR	9611-92-2119	9611-92-2559
18	4	Nut for adaptor	Service kit, FPM	9611-92-2120	9611-92-2560
19	4	Washer for adaptor	Service kit, FEP	9611-92-2121	9611-92-2561
20	2	Nut			
21	2	Washer	Double mechanical shaft seal		
22	1	Safety guard	Service kit, EPDM (Std).....	9611-92-2206	9611-92-2562
23	1	Screw for safety guard	Service kit, NBR	9611-92-2207	9611-92-2563
24	6	Cap nut	Service kit, FPM	9611-92-2208	9611-92-2564
24a	6	Washer	Service kit, FEP	9611-92-2209	9611-92-2565
25	1	Back plate			
26	1	O-ring	Double mechanical shaft seal and impeller screw		
27	1	Impeller	Service kit, EPDM (Std).....	9611-92-2210	9611-92-2566
28	6	Stud bolt	Service kit, NBR	9611-92-2211	9611-92-2567
29	1	Pump casing	Service kit, FPM	9611-92-2212	9611-92-2568
30a	1	Support bar, right	Service kit, FEP	9611-92-2213	9611-92-2569
30b	1	Support bar, left			
31	4	Leg	□: Single shaft seal		
32	4	Screw	◆: Single shaft seal with impeller screw		
33	4	Nut	○: Flushed shaft seal		
34	4	Spring washer	*: Flushed shaft seal with impeller screw		
35	4	Screw	◇: Double mechanical seal		
35a	4	Washer	●: Double mechanical sea with impeller screw		
36	1	Impeller screw			
37	1	Impeller for impeller screw	Conversion kits		
38	1	O-ring ⊗	Single to flushed shaft seal EPDM C/SIC 9611-92-2042 =		
39	4	Nut	Pos. 10+40+41+42+43+44+45		
40	1	Seal housing	Single to double mechanical shaft seal EPDM C/SIC 9611-92-2175 =		
40a	1	Seal housing	Pos.13+ 14+15+40a+41+42+44+50+51+52		
41	2	Screw for seal housing	Single to double mechanical shaft seal EPDM SIC/SIC 9611-92-2326 =		
42	2	Tube	Pos. 13+14+15+40a+41+42+44+50+51+52		
43	1	Lip seal	Flushed to double mechanical shaft seal EPDM C/SIC 9611-92-2176 =		
44	1	O-ring for seal housing	Pos.13+ 14+40a+50+51+52		
45	1	O-ring for drive ring			
50	1	O-ring	Replacement of inducer:		
51	1	Sec. stationary seal ring	Pump with impeller screw: Please order pos. 7+57+38		
52	1	Drive ring	Pump without impeller screw: Please order pos. 7+57+37+38		
57	1	Inducer			

⊗ Only for Servicekit with impeller screw.

The drawing shows LKH, sanitary version.
The drawing includes all items of the pump.



The drawing and the parts list include all items.

Parts List			Service Kits		
Pos.	Qty.	Denomination	Denomination	Item number C/SIC	Item number SIC/SIC
1	1	Motor	Single shaft seal		
2	1	Shroud	Service kit, EPDM (Std).....	9611-92-2080	9611-92-2570
2a	1	Edge list	Service kit, NBR	9611-92-2081	9611-92-2571
3	4	Screw	Service kit, FPM	9611-92-2082	9611-92-2572
5a	1	Compression ring with thread	Service kit, FEP	9611-92-2083	9611-92-2573
5b	1	Compression ring without thread			
6	6	Screw			
6a	6	Washer	Single shaft seal and impeller screw		
7	1	Shaft	Service kit, EPDM (Std)	9611-92-2122	9611-99-2574
8	1	Connex pin	Service kit, NBR	9611-92-2123	9611-99-2575
9	1	Retaining ring	Service kit, FPM	9611-92-2124	9611-99-2576
10	1	Drive ring	Service kit, FEP	9611-92-2125	9611-99-2577
11	1	Stationary seal ring			
12	1	O-ring			
13	1	Spring	Flushed shaft seal		
14	1	Rotating seal ring	Service kit, EPDM (Std).....	9611-92-2084	9611-99-2578
15	2	Rotating seal ring	Service kit, NBR	9611-92-2085	9611-99-2579
16	1	O-ring	Service kit, FPM	9611-92-2086	9611-99-2580
17	2	O-ring	Service kit, FEP	9611-92-2087	9611-99-2581
18	1	Adaptor			
19	4	Screw for adaptor	Flushed shaft seal and impeller screw		
20	4	Nut for adaptor	Service kit, EPDM (Std)	9611-92-2126	9611-99-2582
21	4	Washer for adaptor	Service kit, NBR	9611-92-2127	9611-99-2583
22	2	Nut	Service kit, FPM	9611-92-2128	9611-99-2584
23	2	Washer	Service kit, FEP	9611-92-2129	9611-99-2585
24	1	Safety guard			
25	1	Screw for safety guard			
26	6	Cap nut	Double mechanical shaft seal		
27	6	Washer	Service kit, EPDM (Std).....	9611-92-2214	9611-92-2586
28	1	Back plate	Service kit, NBR	9611-92-2215	9611-92-2587
29	1	O-ring	Service kit, FPM	9611-92-2216	9611-92-2588
30	1	Impeller	Service kit, FEP	9611-92-2217	9611-92-2589
31	6	Stud bolt			
32	1	Pump casing			
33	1	Support bar, right	Double mechanical shaft seal and impeller screw		
34	1	Support bar, left	Service kit, EPDM (Std).....	9611-92-2218	9611-92-2590
35	4	Leg	Service kit, NBR	9611-92-2219	9611-92-2591
36	4	Screw	Service kit, FPM	9611-92-2220	9611-92-2592
37	4	Nut	Service kit, FEP	9611-92-2221	9611-92-2593
38	4	Spring washer			
39	4	Screw			
40	4	Washer			
41	1	Impeller screw	□: Single shaft seal		
42	1	Impeller for impeller screw	◆: Single shaft seal with impeller screw		
43	1	O-ring ⊗	○: Flushed shaft seal		
44	4	Nut	*: Flushed shaft seal with impeller screw		
45	1	Seal housing	◇: Double mechanical seal		
46	1	Seal housing	●: Double mechanical sea with impeller screw		
47	2	Screw for seal housing			
48	2	Tube			
49	1	Lip seal	Conversion kits		
50	1	O-ring for seal housing	Single to flushed shaft seal EPDM C/SIC		
51	1	O-ring for drive ring	9611-92-2042 = Pos. 10+40+41+42+43+44+45		
52	4	Distance sleeve	Single to double mechanical shaft seal EPDM C/SIC		
53	1	O-ring	9611-92-2175 = Pos. 13+14+15+40a+41+42+44+50+51+52		
54	1	Sec. stationary seal ring	Single to double mechanical shaft seal EPDM SIC/SIC		
55	1	Drive ring	9611-92-2326 = Pos.13+ 14+15+40a+41+42+44+50+51+52		
56	1	Inducer	Flushed to double mechanical shaft seal EPDM C/SIC		
			9611-92-2176 = Pos.13+ 14+40a+50+51+52		

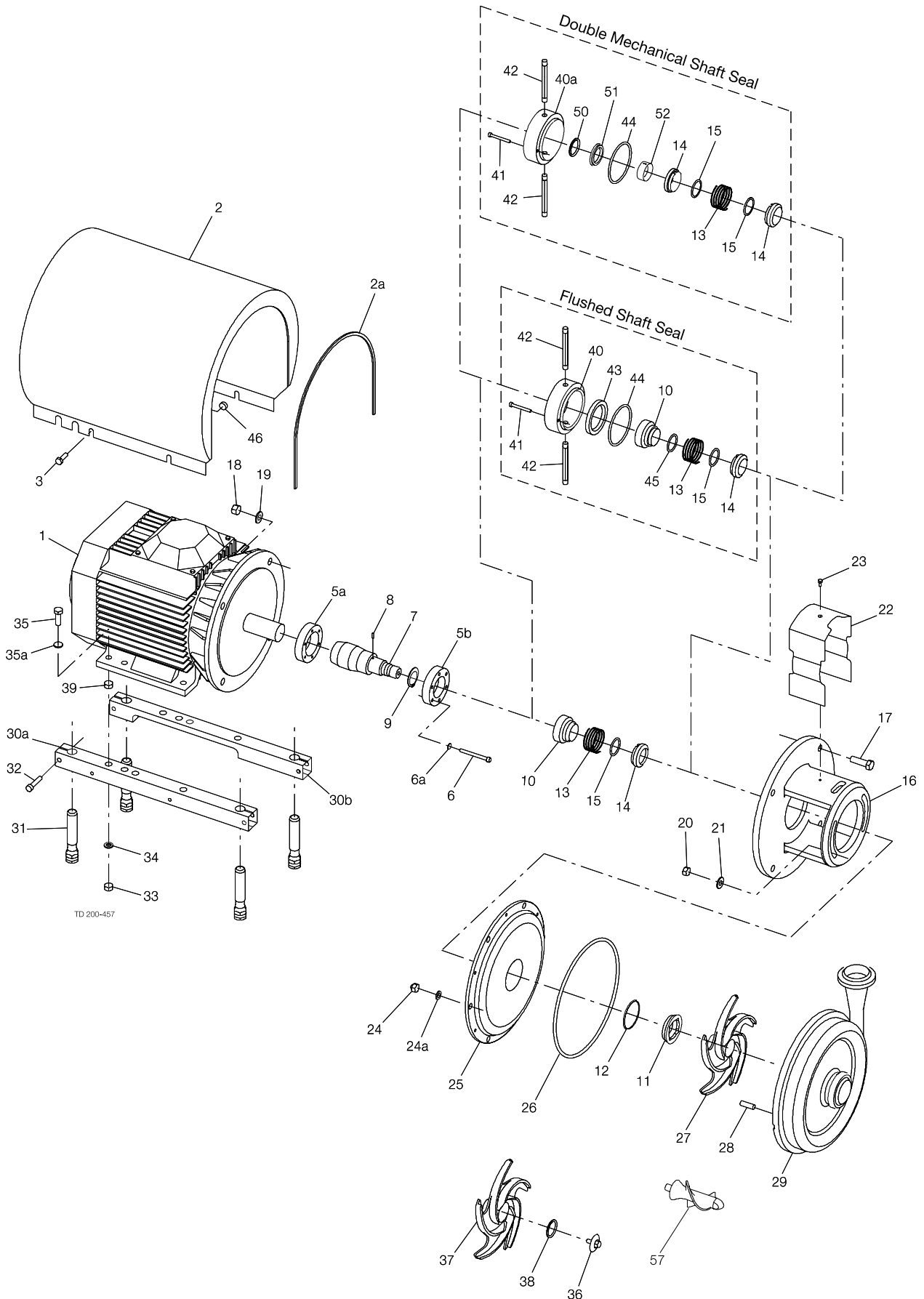
⊗ Only for Servicekit with impeller screw.

Replacement of inducer:

Pump with impeller screw: Please order pos. 7+57+38

Pump without impeller screw: Please order pos. 7+57+37+38

The drawing shows LKH, sanitary version.



TD 200-457

The drawing and the parts list include all items.

Parts List			Service Kits		
Pos.	Qty.	Denomination	Denomination	Item number C/SIC	Item number SIC/SIC
1	1	Motor	Single shaft seal		
2	1	Shroud	Service kit, EPDM (Std).....	9611-92-2178	9611-92-2594
2a	1	Edge list	Service kit, NBR	9611-92-2179	9611-92-2595
3	4	Screw	Service kit, FPM	9611-92-2180	9611-92-2596
5a	1	Compression ring with thread	Service kit, FEP	9611-92-2181	9611-92-2597
5b	1	Compression ring without thread			
6	6	Screw			
6a	6	Washer	Single shaft seal and impeller screw		
7	1	Shaft	Service kit, EPDM (Std)	9611-92-2182	9611-99-2598
8	1	Connex pin	Service kit, NBR	9611-92-2183	9611-99-2599
10	1	Drive ring	Service kit, FPM	9611-92-2184	9611-99-2600
11	1	Stationary seal ring	Service kit, FEP	9611-92-2185	9611-99-2601
12	1	O-ring			
13	1	Spring			
14	1	Rotating seal ring	Flushed shaft seal		
	2	Rotating seal ring	Service kit, EPDM (Std).....	9611-92-2186	9611-99-2602
15	1	O-ring	Service kit, NBR	9611-92-2187	9611-99-2603
	2	O-ring	Service kit, FPM	9611-92-2188	9611-99-2604
16	1	Adaptor	Service kit, FEP	9611-92-2189	9611-99-2605
17	4	Screw for adaptor			
18	4	Nut for adaptor			
19	4	Washer for adaptor	Flushed shaft seal and impeller screw		
20	2	Nut	Service kit, EPDM (Std)	9611-92-2190	9611-99-2606
21	2	Washer	Service kit, NBR	9611-92-2191	9611-99-2607
22	1	Safety guard	Service kit, FPM	9611-92-2192	9611-99-2608
23	1	Screw for safety guard	Service kit, FEP	9611-92-2193	9611-99-2609
24	6	Cap nut			
24a	6	Washer			
25	1	Back plate	Double mechanical shaft seal		
26	1	O-ring	Service kit, EPDM (Std).....	9611-92-2222	9611-92-2610
27	1	Impeller	Service kit, NBR	9611-92-2223	9611-92-2611
28	6	Stud bolt	Service kit, FPM	9611-92-2224	9611-92-2612
29	1	Pump casing	Service kit, FEP	9611-92-2225	9611-92-2613
30a	1	Support bar, right			
30b	1	Support bar, left			
31	4	Leg	Double mechanical shaft seal and impeller screw		
32	4	Screw	Service kit, EPDM (Std).....	9611-92-2226	9611-92-2614
33	4	Nut	Service kit, NBR	9611-92-2227	9611-92-2615
34	4	Spring washer	Service kit, FPM	9611-92-2228	9611-92-2616
35	4	Screw	Service kit, FEP	9611-92-2229	9611-92-2617
35a	4	Washer			
36	1	Impeller screw			
37	1	Impeller for impeller screw			
38	1	O-ring ⊗	□: Single shaft seal		
40	1	Seal housing	◆: Single shaft seal with impeller screw		
40a	1	Seal housing	○: Flushed shaft seal		
41	2	Screw for seal housing	*: Flushed shaft seal with impeller screw		
42	2	Tube	⋄: Double mechanical seal		
43	1	Lip seal	●: Double mechanical sea with impeller screw		
44	1	O-ring for seal housing			
45	1	O-ring for drive ring			
46	4	Distance sleeve			
50	1	O-ring			
51	1	Sec. stationary seal ring			
52	1	Drive ring			
57	1	Inducer			

⊗ Only for Servicekit with impeller screw.

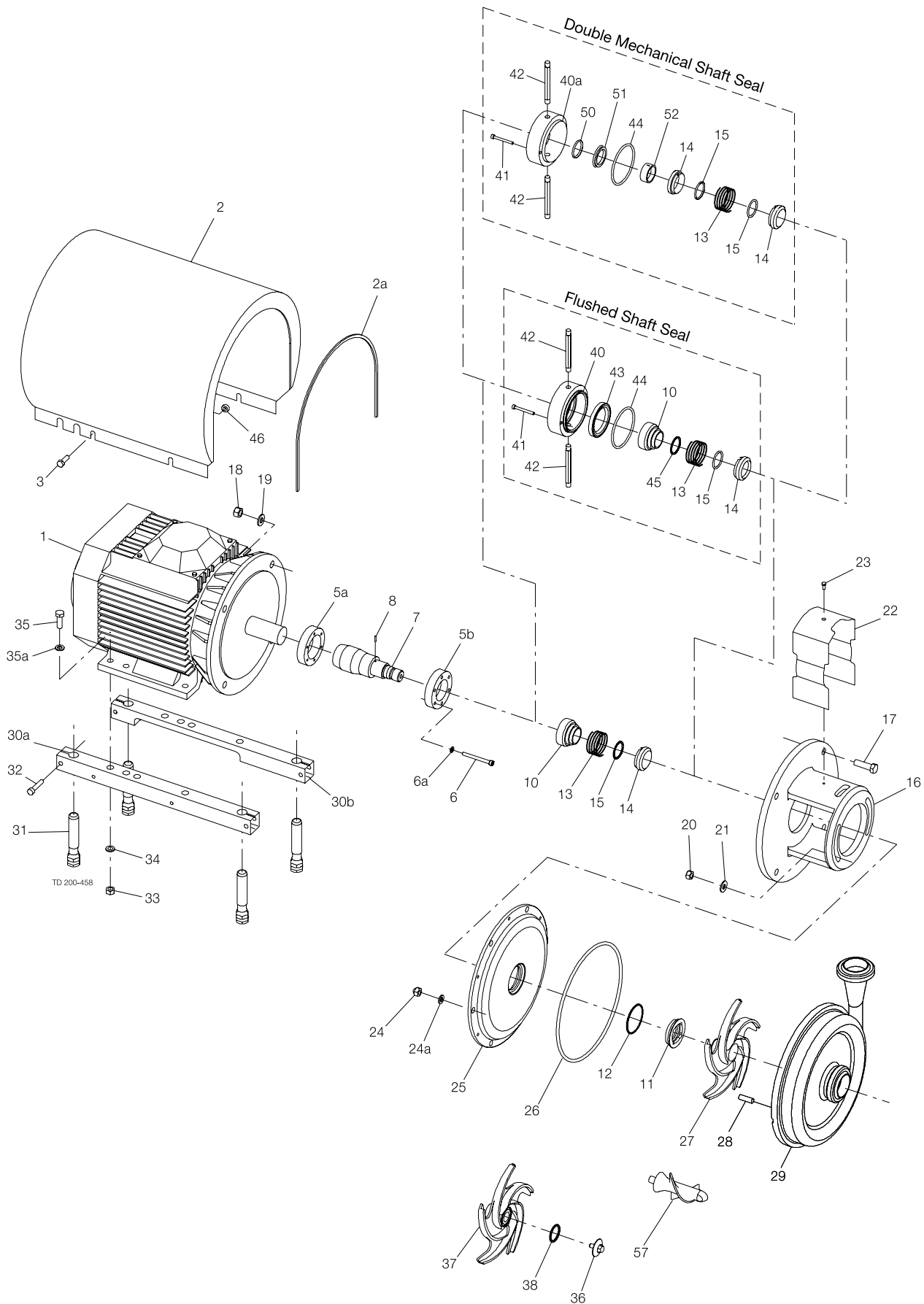
Conversion kits

Single to flushed shaft seal EPDM C/SIC
 9611-92-2891 = Pos. 10+40+41+42+43+44+45
 Single to double mechanical shaft seal EPDM C/SIC
 9611-92-2175 = Pos. 13+14+15+40a+41+42+44+50+51+52
 Single to double mechanical shaft seal EPDM SIC/SIC
 9611-92-2326 = Pos. 13+14+15+40a+41+42+44+50+51+52
 Flushed to double mechanical shaft seal EPDM C/SIC
 9611-92-2176 = Pos.13+ 14+40a+50+51+52

Replacement of inducer:

Pump with impeller screw:Please order pos. 7+57+38
 Pump without impeller screw:Please order pos. 7+57+37+38

The drawing shows LKH, sanitary version.
 The items refer to the parts list on the next page.



The drawing and the parts list include all items.

Not manufactured anymore

Parts List

Pos.	Qty.	Denomination
1	1	Motor
2	1	Shroud
2a	1	Edge list
3	4	Screw
5a	1	Compression ring with thread
5b	1	Compression ring without thread
6	6	Screw
6a	6	Washer
7	1	Shaft
8	1	Connex pin
10	1	Drive ring
11	1	Stationary seal ring
12	1	O-ring
13	1	Spring
14	1	Rotating seal ring
15	1	O-ring
16	1	Adaptor
17	4	Screw for adaptor
18	4	Nut for adaptor
19	4	Washer for adaptor
20	2	Nut
21	2	Washer
22	1	Safety guard
23	1	Screw for safety guard
24	6	Cap nut
24a	6	Washer
25	1	Back plate
26	1	O-ring
27	1	Impeller
28	6	Stud bolt
29	1	Pump casing
30a	1	Support bar, right
30b	1	Support bar, left
31	4	Leg
32	4	Screw
33	4	Nut
34	4	Spring washer
35	4	Screw
35a	4	Washer
36	1	Impeller screw
37	1	Impeller for impeller screw
38	1	O-ring ⊗
40	1	Seal housing
41	2	Screw for seal housing
42	2	Tube
43	1	Lip seal
44	1	O-ring for seal housing
45	1	O-ring for drive ring

Service Kits

Denomination	Item number
Single shaft seal	
Service kit, EPDM (Standard).....	9611-92-2088
Service kit, NBR	9611-92-2089
Service kit, FPM	9611-92-2090
Service kit, FEP	9611-92-2091
Single shaft seal and impeller screw	
Service kit, EPDM (Standard)	9611-92-2130
Service kit, NBR	9611-92-2131
Service kit, FPM	9611-92-2132
Service kit, FEP	9611-92-2133
Flushed shaft seal	
Service kit, EPDM (Standard).....	9611-92-2092
Service kit, NBR	9611-92-2093
Service kit, FPM	9611-92-2094
Service kit, FEP	9611-92-2095
Flushed shaft seal and impeller screw	
Service kit, EPDM (Standard).....	9611-92-2134
Service kit, NBR	9611-92-2135
Service kit, FPM	9611-92-2136
Service kit, FEP	9611-92-2137

Δ: Service kits - single shaft seal

◆: Single shaft seal w/impeller screw

■: Flushed shaft seal

●: Flushed shaft seal w/impeller screw

Conversion kit:

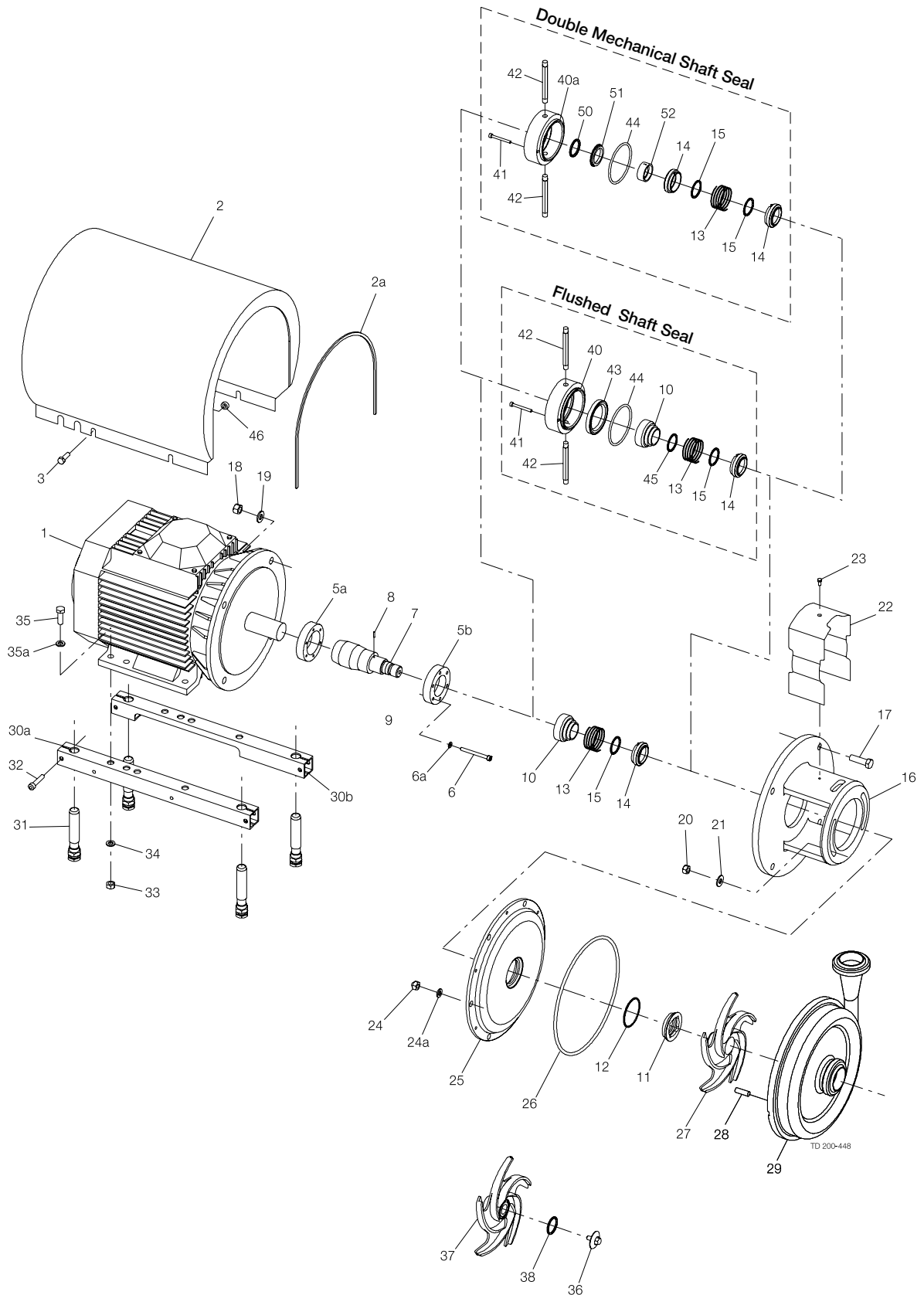
Single to flushed shaft seal:

9611-92-2042 = Pos. 10+40+41+42+43+44+45

⊗ Only for Servicekit with impeller screw.

The drawing shows LKH, sanitary version.

Not manufactured anymore



The drawing and the parts list include all items.

Parts List			Service Kits		
Pos.	Qty.	Denomination	Denomination	Item number C/SIC	Item number SIC/SIC
1	1	Motor	Single shaft seal		
2	1	Shroud	Service kit, EPDM (Standard)	9611-92-2088	9611-92-2619
2a	1	Edge list	Service kit, NBR	9611-92-2089	9611-92-2620
3	4	Screw	Service kit, FPM	9611-92-2090	9611-92-2621
5a	1	Compression ring with thread	Service kit, FEP	9611-92-2091	9611-92-2622
5b	1	Compression ring without thread			
6	6	Screw			
6a	6	Washer	Single shaft seal and impeller screw		
7	1	Shaft	Service kit, EPDM (Standard)	9611-92-2130	9611-99-2623
8	1	Connex pin	Service kit, NBR	9611-92-2131	9611-99-2624
10	1	Drive ring	Service kit, FPM	9611-92-2132	9611-99-2625
11	1	Stationary seal ring	Service kit, FEP	9611-92-2133	9611-99-2626
12	1	O-ring			
13	1	Spring			
14	1	Rotating seal ring	Flushed shaft seal		
	2	Rotating seal ring	Service kit, EPDM (Standard)	9611-92-2092	9611-99-2627
15	1	O-ring	Service kit, NBR	9611-92-2093	9611-99-2628
	2	O-ring	Service kit, FPM	9611-92-2094	9611-99-2629
16	1	Adaptor	Service kit, FEP	9611-92-2095	9611-99-2630
17	4	Screw for adaptor			
18	4	Nut for adaptor			
19	4	Washer for adaptor	Flushed shaft seal and impeller screw		
20	2	Nut	Service kit, EPDM (Standard)	9611-92-2134	9611-99-2631
21	2	Washer	Service kit, NBR	9611-92-2135	9611-99-2632
22	1	Safety guard	Service kit, FPM	9611-92-2136	9611-99-2633
23	1	Screw for safety guard	Service kit, FEP	9611-92-2137	9611-99-2634
24	6	Cap nut			
24a	6	Washer			
25	1	Back plate	Double mechanical shaft seal		
26	1	O-ring	Service kit, EPDM (Standard)	9611-92-2230	9611-92-2635
27	1	Impeller	Service kit, NBR	9611-92-2231	9611-92-2636
28	6	Stud bolt	Service kit, FPM	9611-92-2232	9611-92-2637
29	1	Pump casing	Service kit, FEP	9611-92-2233	9611-92-2638
30a	1	Support bar, right			
30b	1	Support bar, left			
31	4	Leg	Double mechanical shaft seal and impeller screw		
32	4	Screw	Service kit, EPDM (Standard)	9611-92-2234	9611-92-2639
33	4	Nut	Service kit, NBR	9611-92-2235	9611-92-2640
34	4	Spring washer	Service kit, FPM	9611-92-2236	9611-92-2641
35	4	Screw	Service kit, FEP	9611-92-2237	9611-92-2642
35a	4	Washer			
36	1	Impeller screw			
37	1	Impeller for impeller screw	□: Single shaft seal		
38	1	O-ring ⊗	◆: Single shaft seal with impeller screw		
40	1	Seal housing	○: Flushed shaft seal		
40	1	Seal housing	*: Flushed shaft seal with impeller screw		
41	2	Screw for seal housing	⋄: Double mechanical seal		
42	2	Tube	●: Double mechanical sea with impeller screw		
43	1	Lip seal			
44	1	O-ring for seal housing			
45	1	O-ring for drive ring			
46	4	Distance sleeve			
50	1	O-ring			
51	1	Sec. stationary seal ring			
52	1	Drive ring			
57	1	Inducer			

⊗ Only for Servicekit with impeller screw.

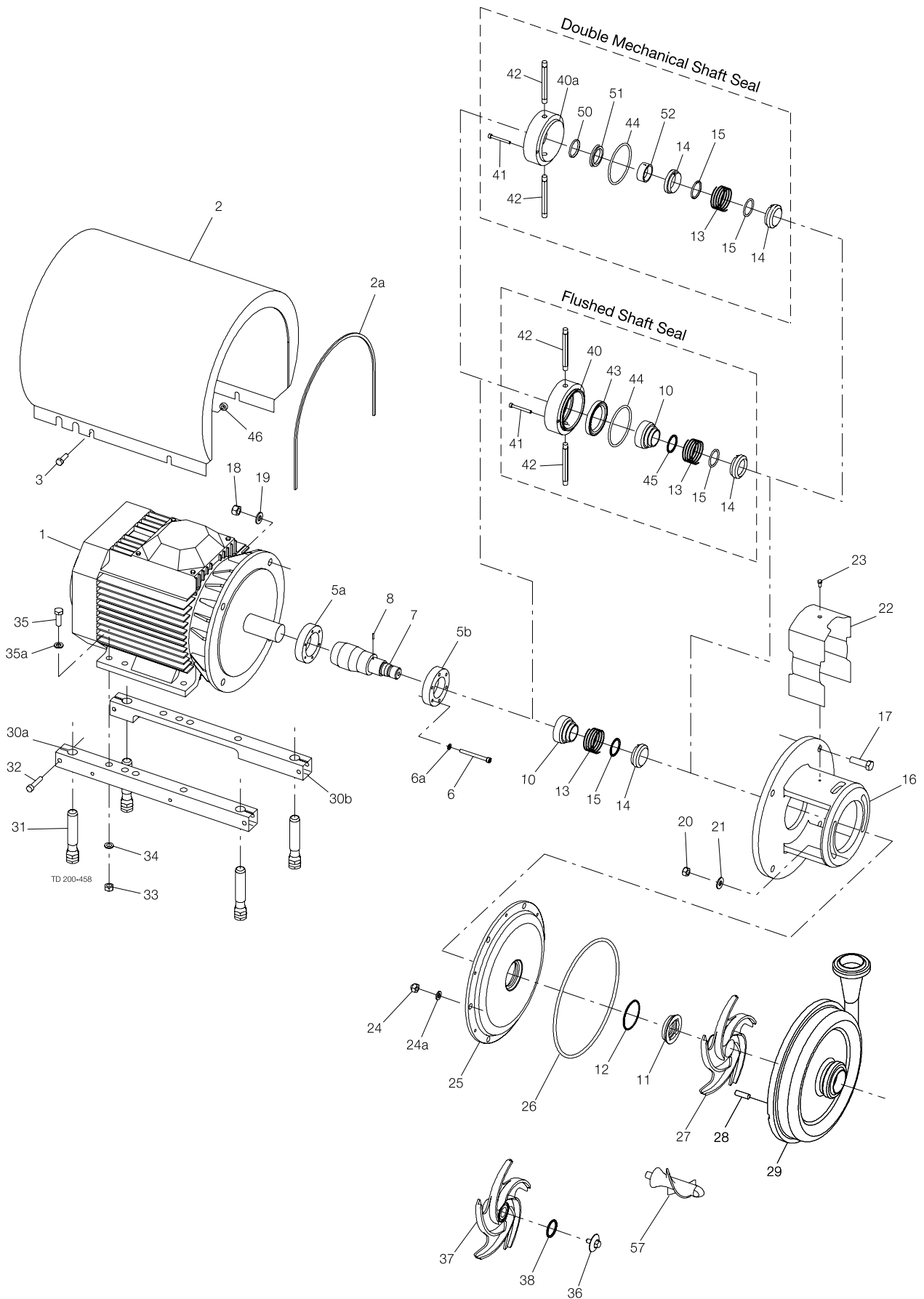
Conversion kits

Single to flushed shaft seal EPDM C/SIC
 9611-92-2891 = Pos. 10+40+41+42+43+44+45
 Single to double mechanical shaft seal EPDM C/SIC
 9611-92-2175 = Pos. 13+14+15+40a+41+42+44+ 50 +51+52
 Single to double mechanical shaft seal EPDM SIC/SIC
 9611-92-2326 = Pos.13+ 14+15+40a+41+42+44+ 50 +51+52
 Flushed to double mechanical shaft seal EPDM C/SIC
 9611-92-2176 = Pos. 13+14+40a+50+51+52

Replacement of inducer:

Pump with impeller screw: Please order pos. 7+57+38
 Pump without impeller screw: Please order pos. 7+57+37+38

The drawing shows LKH, sanitary version.



The drawing and the parts list include all items.

Parts List			Service Kits		
Pos.	Qty.	Denomination	Denomination	Item number C/SIC	Item number SIC/SIC
1	1	Motor	Single shaft seal		
2	1	Shroud	Service kit, EPDM (Standard).....	9611-92-2178	9611-92-2594
2a	1	Edge list	Service kit, NBR	9611-92-2179	9611-92-2595
3	4	Screw	Service kit, FPM	9611-92-2180	9611-92-2596
5a	1	Compression ring with thread	Service kit, FEP	9611-92-2181	9611-92-2597
5b	1	Compression ring without thread			
6	6	Screw			
6a	6	Washer	Single shaft seal and impeller screw		
7	1	Shaft	Service kit, EPDM (Standard)	9611-92-2182	9611-99-2598
8	1	Connex pin	Service kit, NBR	9611-92-2183	9611-99-2599
10	1	Drive ring	Service kit, FPM	9611-92-2184	9611-99-2600
11	1	Stationary seal ring	Service kit, FEP	9611-92-2185	9611-99-2601
12	1	O-ring			
13	1	Spring			
14	1	Rotating seal ring	Flushed shaft seal		
	2	Rotating seal ring	Service kit, EPDM (Standard).....	9611-92-2186	9611-99-2602
15	1	O-ring	Service kit, NBR	9611-92-2187	9611-99-2603
	2	O-ring	Service kit, FPM	9611-92-2188	9611-99-2604
16	1	Adaptor	Service kit, FEP	9611-92-2189	9611-99-2605
17	4	Screw for adaptor			
18	4	Nut for adaptor			
19	4	Washer for adaptor	Flushed shaft seal and impeller screw		
20	2	Nut	Service kit, EPDM (Standard)	9611-92-2190	9611-99-2606
21	2	Washer	Service kit, NBR	9611-92-2191	9611-99-2607
22	1	Safety guard	Service kit, FPM	9611-92-2192	9611-99-2608
23	1	Screw for safety guard	Service kit, FEP	9611-92-2193	9611-99-2609
24	6	Cap nut			
24a	6	Washer			
25	1	Back plate	Double mechanical shaft seal		
26	1	O-ring	Service kit, EPDM (Standard).....	9611-92-2222	9611-92-2610
27	1	Impeller	Service kit, NBR	9611-92-2223	9611-92-2611
28	6	Stud bolt	Service kit, FPM	9611-92-2224	9611-92-2612
29	1	Pump casing	Service kit, FEP	9611-92-2225	9611-92-2613
30a	1	Support bar, right			
30b	1	Support bar, left			
31	4	Leg	Double mechanical shaft seal and impeller screw		
32	4	Screw	Service kit, EPDM (Standard).....	9611-92-2226	9611-92-2614
33	4	Nut	Service kit, NBR	9611-92-2227	9611-92-2615
34	4	Spring washer	Service kit, FPM	9611-92-2228	9611-92-2616
35	4	Screw	Service kit, FEP	9611-92-2229	9611-92-2617
35a	4	Washer			
36	1	Impeller screw			
37	1	Impeller for impeller screw	□: Single shaft seal		
38	1	O-ring ⊗	◆: Single shaft seal with impeller screw		
40	1	Seal housing	○: Flushed shaft seal		
40a	1	Seal housing	*: Flushed shaft seal with impeller screw		
41	2	Screw for seal housing	⋄: Double mechanical seal		
42	2	Tube	●: Double mechanical sea with impeller screw		
43	1	Lip seal			
44	1	O-ring for seal housing			
45	1	O-ring for drive ring			
46	4	Distance sleeve			
50	1	O-ring			
51	1	Sec. stationary seal ring			
52	1	Drive ring			
57	1	Inducer			

⊗ Only for Servicekit with impeller screw.

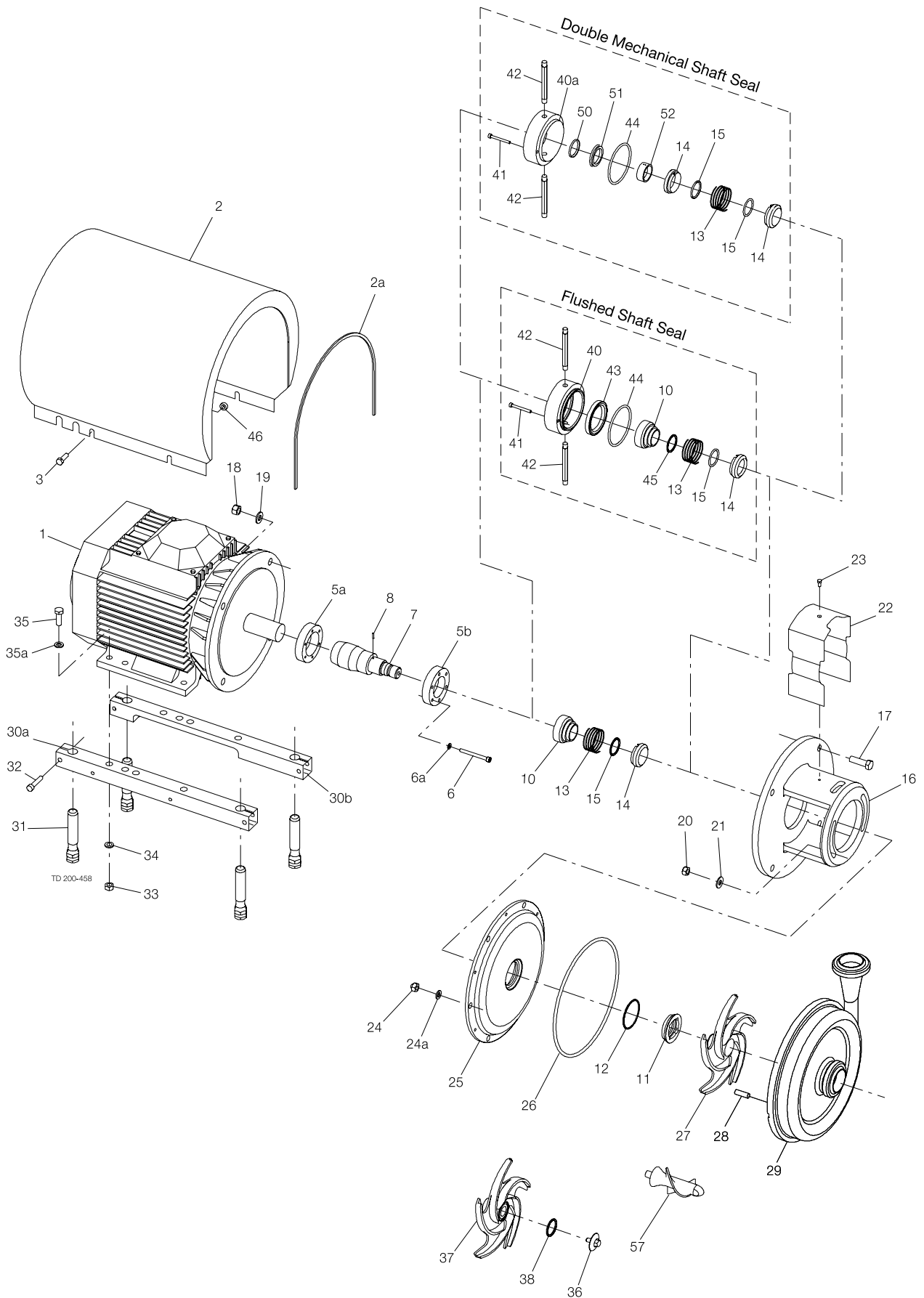
Conversion kits

Single to flushed shaft seal EPDM C/SIC
 9611-92-2891 = Pos. 10+40+41+42+43+44+45
 Single to double mechanical shaft seal EPDM C/SIC
 9611-92-2175 = Pos. 13+ 14+15+40a+41+42+44+50+51+52
 Single to double mechanical shaft seal EPDM SIC/SIC
 9611-92-2326 = Pos. 13+14+15+40a+41+42+44+50+51+52
 Flushed to double mechanical shaft seal EPDM C/SIC
 9611-92-2176 = Pos. 13+14+40a+50+51+52

Replacement of inducer:

Pump with impeller screw: Please order pos. 7+57+38
 Pump without impeller screw: Please order pos. 7+57+37+38

The drawing shows LKH, sanitary version.



The drawing and the parts list include all items.

Parts List			Service Kits		
Pos.	Qty.	Denomination	Denomination	Item number C/SIC	Item number SIC/SIC
1	1	Motor	Single shaft seal		
2	1	Shroud	Service kit, EPDM (Std).....	9611-92-2088	9611-92-2619
2a	1	Edge list	Service kit, NBR	9611-92-2089	9611-92-2620
3	4	Screw	Service kit, FPM	9611-92-2090	9611-92-2621
5a	1	Compression ring with thread	Service kit, FEP	9611-92-2091	9611-92-2622
5b	1	Compression ring without thread			
6	6	Screw			
6a	6	Washer	Single shaft seal and impeller screw		
7	1	Shaft	Service kit, EPDM (Std)	9611-92-2130	9611-99-2623
8	1	Connex pin	Service kit, NBR	9611-92-2131	9611-99-2624
10	1	Drive ring	Service kit, FPM	9611-92-2132	9611-99-2625
11	1	Stationary seal ring	Service kit, FEP	9611-92-2133	9611-99-2626
12	1	O-ring			
13	1	Spring			
14	1	Rotating seal ring	Flushed shaft seal		
	2	Rotating seal ring	Service kit, EPDM (Std).....	9611-92-2092	9611-99-2627
15	1	O-ring	Service kit, NBR	9611-92-2093	9611-99-2628
	2	O-ring	Service kit, FPM	9611-92-2094	9611-99-2629
16	1	Adaptor	Service kit, FEP	9611-92-2095	9611-99-2630
17	4	Screw for adaptor			
18	4	Nut for adaptor			
19	4	Washer for adaptor	Flushed shaft seal and impeller screw		
20	2	Nut	Service kit, EPDM (Std)	9611-92-2134	9611-99-2631
21	2	Washer	Service kit, NBR	9611-92-2135	9611-99-2632
22	1	Safety guard	Service kit, FPM	9611-92-2136	9611-99-2633
23	1	Screw for safety guard	Service kit, FEP	9611-92-2137	9611-99-2634
24	6	Cap nut			
24a	6	Washer			
25	1	Back plate	Double mechanical shaft seal		
26	1	O-ring	Service kit, EPDM (Std).....	9611-92-2230	9611-92-2635
27	1	Impeller	Service kit, NBR	9611-92-2231	9611-92-2636
28	6	Stud bolt	Service kit, FPM	9611-92-2232	9611-92-2637
29	1	Pump casing	Service kit, FEP	9611-92-2233	9611-92-2638
30a	1	Support bar, right			
30b	1	Support bar, left			
31	4	Leg	Double mechanical shaft seal and impeller screw		
32	4	Screw	Service kit, EPDM (Std).....	9611-92-2234	9611-92-2639
33	4	Nut	Service kit, NBR	9611-92-2235	9611-92-2640
34	4	Spring washer	Service kit, FPM	9611-92-2236	9611-92-2641
35	4	Screw	Service kit, FEP	9611-92-2237	9611-92-2642
35a	4	Washer			
36	1	Impeller screw	□: Single shaft seal		
37	1	Impeller for impeller screw	◆: Single shaft seal with impeller screw		
38	1	O-ring ⊗	○: Flushed shaft seal		
40	1	Seal housing	*: Flushed shaft seal with impeller screw		
40a	1	Seal housing	⋄: Double mechanical seal		
41	2	Screw for seal housing	●: Double mechanical sea with impeller screw		
42	2	Tube			
43	1	Lip seal			
44	1	O-ring for seal housing			
45	1	O-ring for drive ring			
46	4	Distance sleeve			
50	1	O-ring			
51	1	Sec. stationary seal ring			
52	1	Drive ring			
53	4	Pivot screw (30 kW only)			
57	1	Inducer (Only LKH-50)			

⊗ Only for Servicekit with impeller screw.

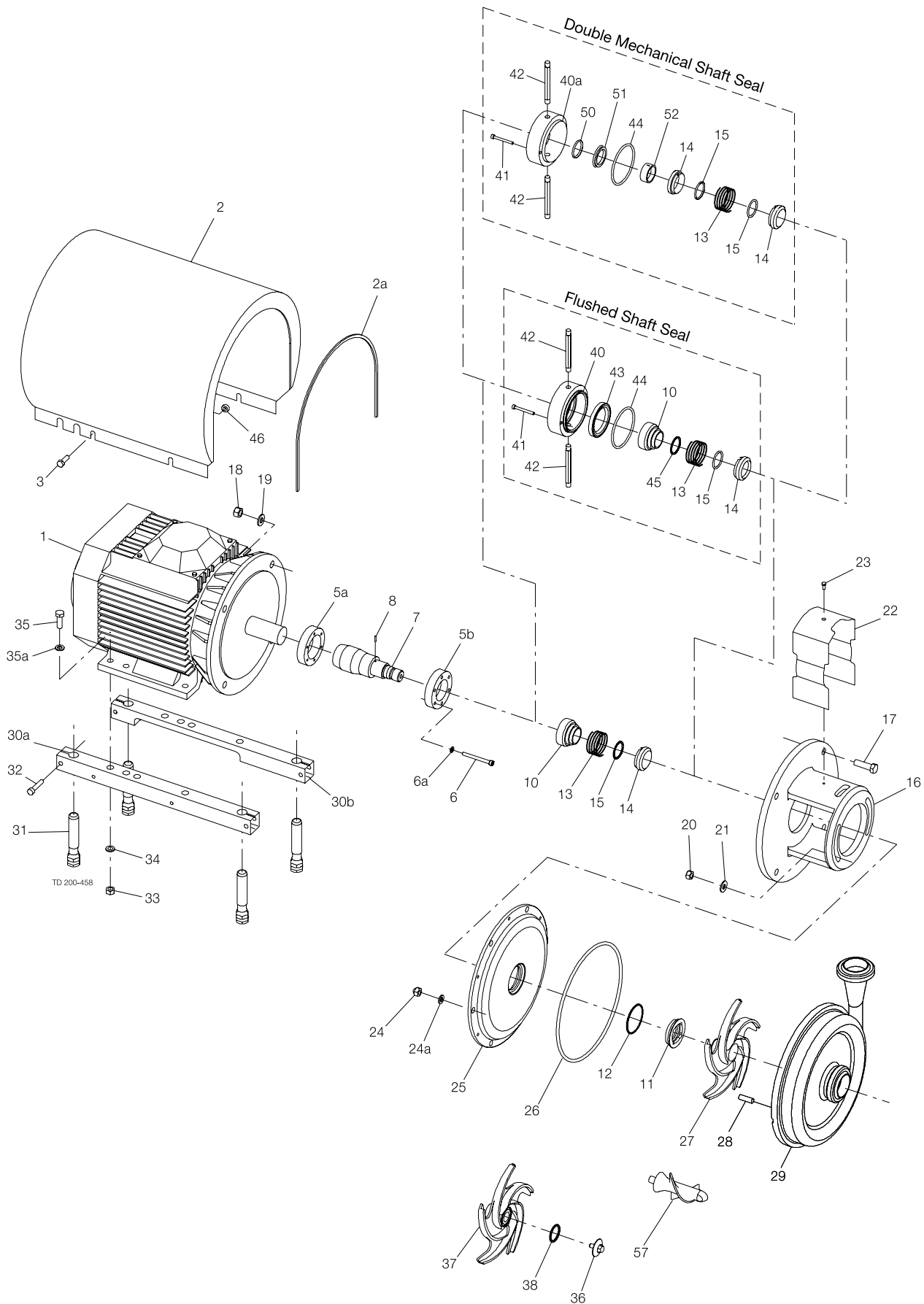
Conversion kits

Single to flushed shaft seal EPDM C/SIC
9611-92-2891 = Pos. 10+40+41+42+43+44+45
Single to double mechanical shaft seal EPDM C/SIC
9611-92-2175 = Pos. 13+14+15+40a+41+42+44+50+51+52
Single to double mechanical shaft seal EPDM SIC/SIC
9611-92-2326 = Pos. 13+14+15+40a+41+42+44+50+51+52
Flushed to double mechanical shaft seal EPDM C/SIC
9611-92-2176 = Pos. 13+14+40a+50+51+52

Replacement of inducer (only LKH-50):

Pump with impeller screw: Please order pos. 7+57+38
Pump without impeller screw: Please order pos. 7+57+37+38

The drawing shows LKH, sanitary version.



The drawing and the parts list include all items.

Parts List			Service Kits		
Pos.	Qty.	Denomination	Denomination	Item number C/SIC	Item number SIC/SIC
1	1	Motor	Single shaft seal		
2	1	Shroud	Service kit, EPDM (Standard)	9611-92-2238	9611-92-2643
2a	1	Edge list	Service kit, NBR	9611-92-2239	9611-92-2644
3	4	Screw	Service kit, FPM	9611-92-2240	9611-92-2645
5a	1	Compression ring with thread	Service kit, FEP	9611-92-2241	9611-92-2646
5b	1	Compression ring without thread			
6	6	Screw	Flushed shaft seal		
6a	6	Washer	Service kit, EPDM (Standard)	9611-92-2242	9611-92-2647
7	1	Shaft	Service kit, NBR	9611-92-2243	9611-92-2648
10	1	Drive ring	Service kit, FPM	9611-92-2244	9611-92-2649
11	□○◇	Stationary seal ring	Service kit, FEP	9611-92-2245	9611-92-2650
12	□○◇	O-ring			
13	□○◇	Spring	Double mechanical shaft seal		
14	□○	Rotating seal ring	Service kit, EPDM (Standard)	9611-92-2416	9611-92-2651
14	◇	Rotating seal ring	Service kit, NBR	9611-92-2417	9611-92-2652
15	□○	O-ring	Service kit, FPM	9611-92-2418	9611-92-2653
15	◇	O-ring	Service kit, FEP	9611-92-2419	9611-92-2654
16	1	Adaptor			
17	4	Screw for adaptor			
18	4	Nut for adaptor			
19	4	Washer for adaptor			
20	4	Nut			
21	4	Washer			
22	1	Safety guard			
23	1	Screw for safety guard			
24	8	Cap nut			
24a	8	Spring washer			
25	1	Back plate			
26	□○◇	O-ring			
28	8	Pin bolt			
29	1	Pump casing			
30a	1	Support bar, right			
30b	1	Support bar, left			
31	4	Leg			
32	4	Screw			
33	4	Nut			
34	4	Spring washer			
35	4	Screw			
35a	4	Washer			
36	1	Impeller screw			
37	1	Impeller			
38	□○◇	O-ring ⊗			
40	1	Seal housing			
40a	1	Seal housing			
41	2	Screw for seal housing			
42	2	Tube			
43	○	Lip seal			
44	○◇	O-ring for seal housing			
45	○	O-ring for drive ring			
46	4	Distance sleeve			
47	2	Leg bracket			
48	4	Nut for leg			
49	4	Screw for leg			
50	◇	O-ring			
51	◇	Sec. stationary seal ring			
52	◇	Drive ring			
53	4	Pivot screw			
54	◇	Cup			

□: Single shaft seal
○: Flushed shaft seal
◇: Double mechanical seal

Conversion kit:

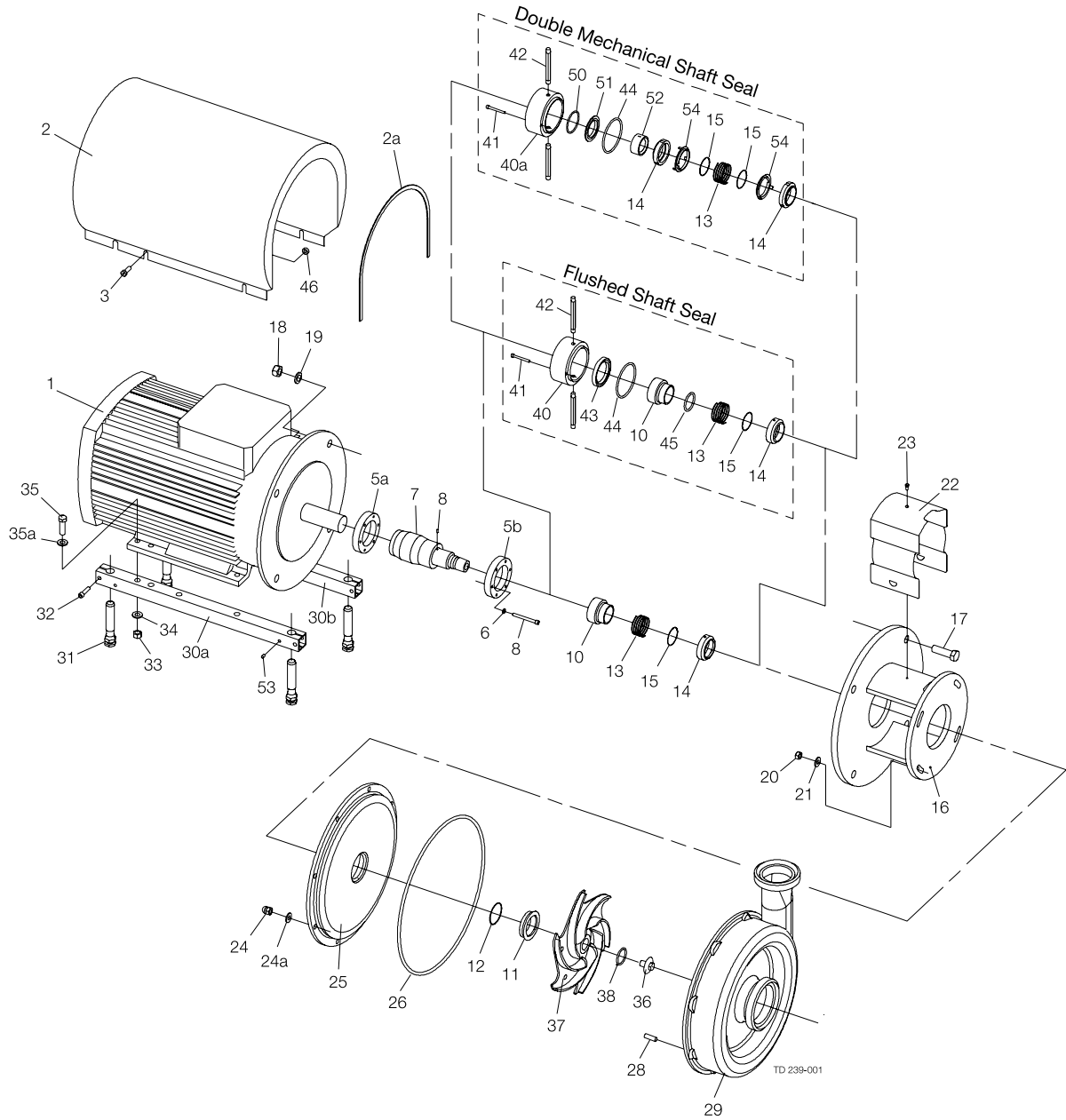
Single to flushed shaft seal EPDM C/SIC 9611-92-2246 =
Pos 40+41+42+43+44+45

Single to double mechanical shaft seal EPDM C/SIC 9611-92-2420 =
Pos.13+14+15+ 40a+41+42+44+50+51+52+54

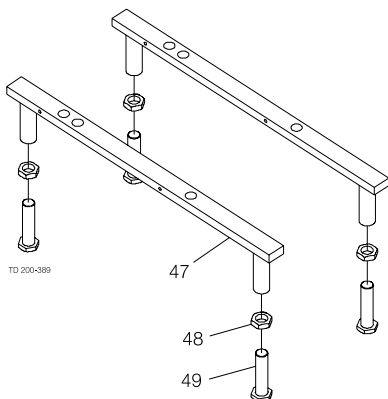
Flushed to double mechanical shaft seal EPDM C/SIC 9611-92-2421 =
Pos.13+14+15+ 40a+41+50+51+52+54

⊗ Only for Servicekit with impeller screw.

The drawing shows LKH, sanitary version.



Motor sizes 55-75 kW

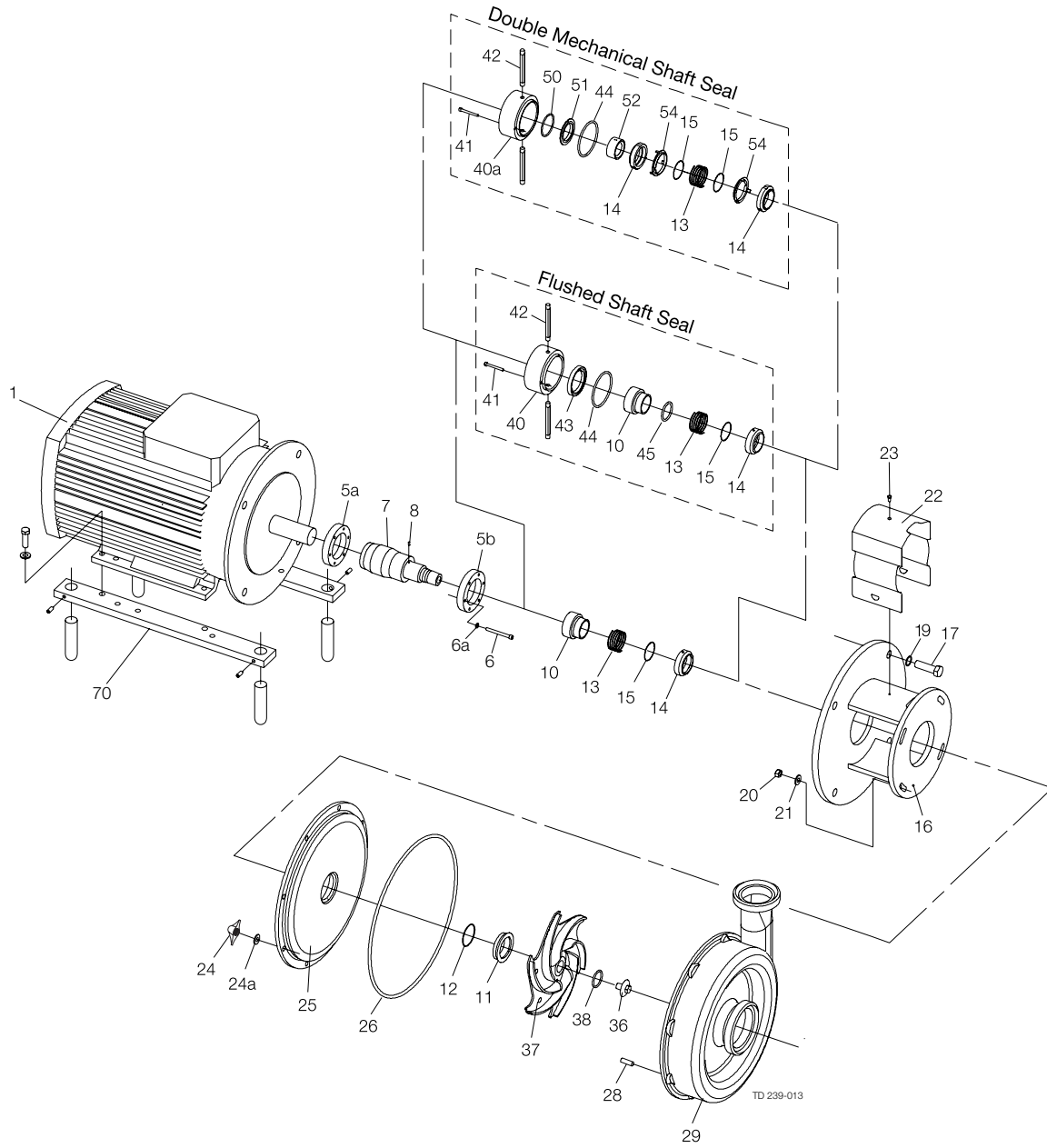


The drawing and the parts list include all items.

Parts List			Service Kits		
Pos.	Qty.	Denomination	Denomination	Item number C/SIC	Item number SIC/SIC
1	1	Motor	Single shaft seal		
5a	1	Compression ring with thread	Service kit, EPDM (Standard).....	9611-92-2976	9611-92-2985
5b	1	Compression ring without thread	Service kit, NBR	9611-92-2977	9611-92-2986
6	6	Screw	Service kit, FPM	9611-92-2978	9611-92-2987
6a	6	Washer			
7	1	Shaft			
10	1	Drive ring	Flushed shaft seal		
11 □○◇	1	Stationary seal ring	Service kit, EPDM (Standard).....	9611-92-2979	9611-92-2988
12 □○◇	1	O-ring	Service kit, NBR	9611-92-2980	9611-92-2989
13 □○◇	1	Spring	Service kit, FPM	9611-92-2981	9611-92-2990
14 □○	1	Rotating seal ring			
14 ◇	2	Rotating seal ring			
15 □○	1	O-ring	Double mechanical shaft seal		
15 ◇	2	O-ring	Service kit, EPDM (Standard).....	9611-92-2982	9611-92-2991
16	1	Adaptor	Service kit, NBR	9611-92-2983	9611-92-2992
17	4	Screw for adaptor	Service kit, FPM	9611-92-2984	9611-92-2993
19	4	Washer for adaptor			
20	4	Nut			
21	4	Washer			
22	1	Safety guard	□: Single shaft seal		
23	1	Screw for safety guard	○: Flushed shaft seal		
24	8	Wing nut	◇: Double mechanical seal		
24a	8	Spring washer			
25	1	Back plate			
26 □○◇	1	O-ring			
28	8	Pin bolt			
29	1	Pump casing			
36	1	Impeller screw	Conversion kit:		
37	1	Impeller	Single to flushed shaft seal EPDM C/SIC		
38 □○◇	1	O-ring ⊗	9611-92-2246 = Pos 40+41+42+43+44+45		
40	1	Seal housing			
41	2	Screw for seal housing	Single to double mechanical shaft seal EPDM C/SIC		
42	2	Tube	9611-92-2420 = Pos.13+14+15+ 40a+41+42+44+50+51+52+54		
43 ○	1	Lip seal			
44 ○◇	1	O-ring for seal housing			
45 ○	1	O-ring for drive ring	Flushed to double mechanical shaft seal EPDM C/SIC		
50 ◇	1	O-ring	9611-92-2421 = Pos.13+14+15+ 40a+41+50+51+52+54		
51 ◇	1	Sec. stationary seal ring			
52 ◇	1	Drive ring			
54 ◇	2	Cup			
70	2	Bracket set			

⊗ Only for Servicekit with impeller screw.

The drawing shows LKH, sanitary version.

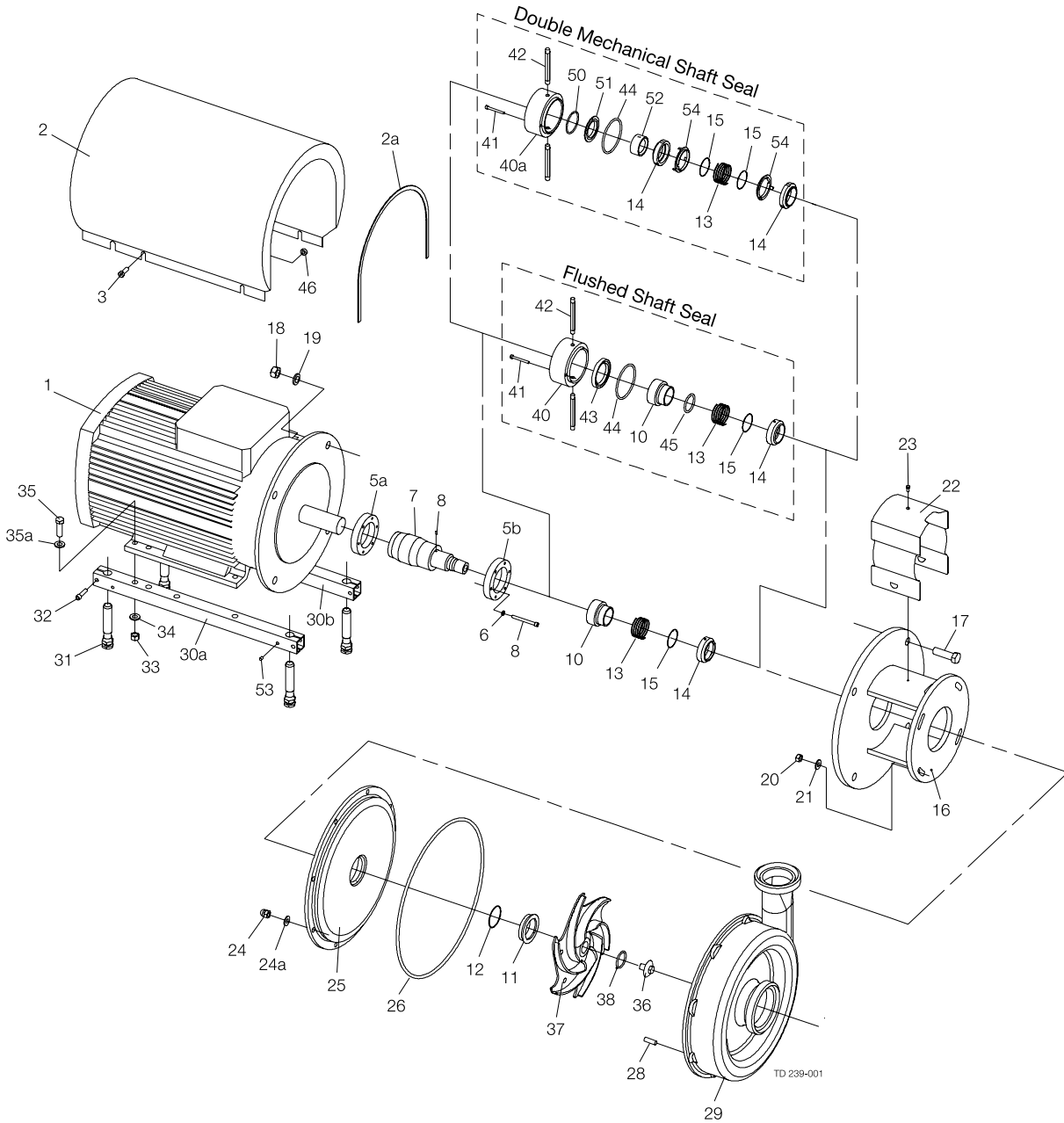


The drawing and the parts list include all items.

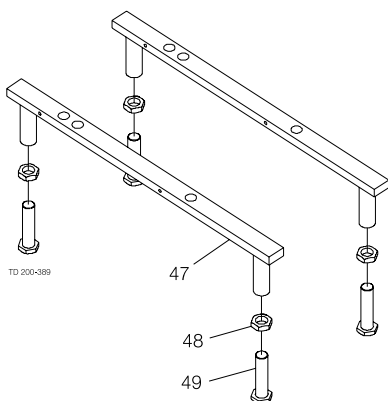
Parts List			Service Kits		
Pos.	Qty.	Denomination	Denomination	Item number C/SIC	Item number SIC/SIC
1	1	Motor	Single shaft seal		
2	1	Shroud	Service kit, EPDM (Standard).....	9611-92-2843	9611-92-2855
2a	1	Edge list	Service kit, NBR	9611-92-2844	9611-92-2856
3	4	Screw	Service kit, FPM	9611-92-2845	9611-92-2857
5a	1	Compression ring with thread	Service kit, FEP	9611-92-2846	9611-92-2858
5b	1	Compression ring without thread			
6	6	Screw	Flushed shaft seal		
6a	6	Washer	Service kit, EPDM (Standard).....	9611-92-2847	9611-92-2859
7	1	Shaft	Service kit, NBR	9611-92-2848	9611-92-2860
10	1	Drive ring	Service kit, FPM	9611-92-2849	9611-92-2861
11 □○◇	1	Stationary seal ring	Service kit, FEP	9611-92-2850	9611-92-2862
12 □○◇	1	O-ring			
13 □○◇	1	Spring	Double mechanical shaft seal		
14 □○	1	Rotating seal ring	Service kit, EPDM (Standard).....	9611-92-2851	9611-92-2863
14 ◇	2	Rotating seal ring	Service kit, NBR	9611-92-2852	9611-92-2864
15 □○	1	O-ring	Service kit, FPM	9611-92-2853	9611-92-2865
15 ◇	2	O-ring	Service kit, FEP	9611-92-2854	9611-92-2866
16	1	Adaptor			
17	4	Screw for adaptor			
18	4	Nut for adaptor			
19	4	Washer for adaptor			
20	4	Nut			
21	4	Washer	□: Single shaft seal		
22	1	Safety guard	○: Flushed shaft seal		
23	1	Screw for safety guard	◇: Double mechanical seal		
24	8	Cap nut			
24a	8	Washer			
25	1	Back plate			
26 □○◇	1	O-ring			
28	8	Stud bolt			
29	1	Pump casing			
30a	1	Support bar, right	Conversion kit:		
30b	1	Support bar, left	Single to flushed shaft seal EPDM C/SIC 9611-92-2246 =		
31	4	Leg	Pos 40+41+42+43+44+45		
32	4	Screw	Single to double mechanical shaft seal EPDM C/SIC 9611-92-2420 =		
33	4	Nut	Pos.13+14+15+ 40a+41+42+44+50+51+52+54		
34	4	Spring washer	Flushed to double mechanical shaft seal EPDM C/SIC 9611-92-2421 =		
35	4	Screw	Pos.13+14+15+ 40a+41+50+51+52+54		
35a	4	Washer			
36	1	Impeller nut			
37	1	Impeller			
38 □○◇	1	O-ring ⊗			
40	1	Seal housing			
40a	1	Seal housing			
41	2	Screw for seal housing			
42	2	Tube			
43 ○	1	Lip seal			
44 ○◇	1	O-ring for seal housing			
45 ○	1	O-ring for drive ring			
46	4	Distance sleeve			
47	2	Leg bracket			
48	4	Nut for leg bracket			
49	4	Screw for leg			
50 ◇	1	O-ring			
51 ◇	1	Sec. stationary seal ring, Sic.			
52 ◇	1	Drive ring			
53	4	Pivot screw (30-45 kW)			
54 ◇	2	Cup			

⊗ Only for Servicekit with impeller screw.

The drawing shows LKH, sanitary version.



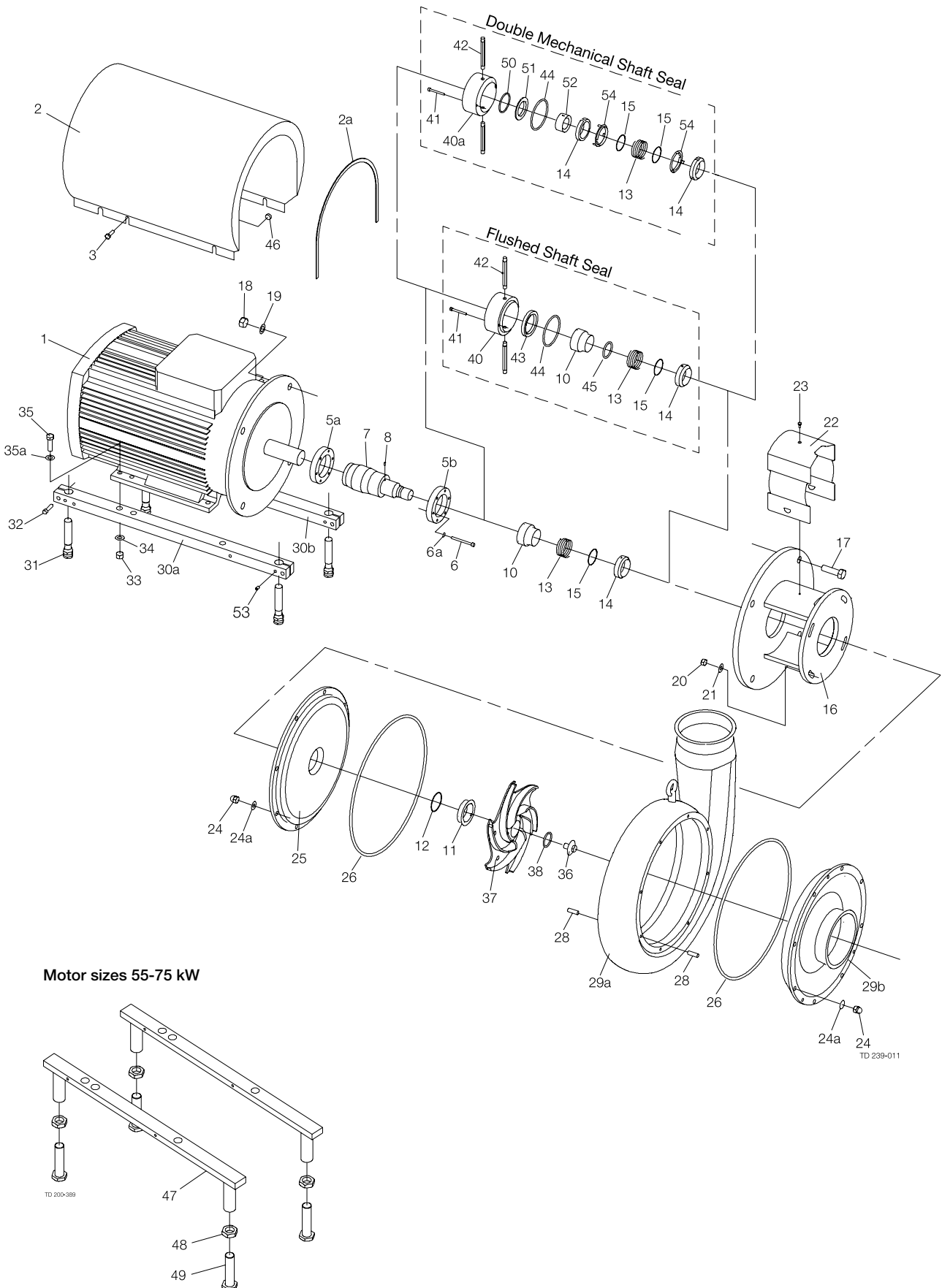
Motor sizes 55-75 kW



The drawing and the parts list include all items.

Parts List			Service Kits		
Pos.	Qty.	Denomination	Denomination	Item number C/SIC	Item number SIC/SIC
1	1	Motor			
2	1	Shroud	Single shaft seal		
2a	1	Edge list (incl. in pos. 2)	Service kit, EPDM (Standard).....	9611-92-2867	9611-92-2879
3	4	Screw	Service kit, NBR	9611-92-2868	9611-92-2880
5a	1	Compression ring with thread	Service kit, FPM	9611-92-2869	9611-92-2881
5b	1	Compression ring without thread	Service kit, FEP	9611-92-2870	9611-92-2882
6	6	Screw (30 - 45 kW)			
6a	6	Washer (30 - 45 kW)	Flushed shaft seal		
6	8	Screw (55 - 75 kW)	Service kit, EPDM (Standard).....	9611-92-2871	9611-92-2883
6a	8	Washer (55 - 75 kW)	Service kit, NBR	9611-92-2872	9611-92-2884
7	1	Shaft with pin (pos.8)	Service kit, FPM	9611-92-2873	9611-92-2885
10	1	Drive ring	Service kit, FEP	9611-92-2874	9611-92-2886
11	1	Stationary seal ring			
12	1	O-ring	Double mechanical shaft seal		
13	1	Spring	Service kit, EPDM (Standard).....	9611-92-2875	9611-92-2887
14	1	Rotating seal ring	Service kit, NBR	9611-92-2876	9611-92-2888
14	2	Rotating seal ring	Service kit, FPM	9611-92-2877	9611-92-2889
15	1	O-ring	Service kit, FEP	9611-92-2878	9611-92-2890
15	2	O-ring			
16	1	Adaptor			
17	4	Screw for adaptor	□: Single shaft seal		
18	4	Nut for adaptor	○: Flushed shaft seal		
19	4	Washer for adaptor	◇: Double mechanical seal		
20	4	Nut			
21	4	Washer			
22	1	Safety guard			
23	1	Screw for safety guard			
24	16	Cap nut			
24a	16	Spring washer			
25	1	Back plate	Conversion kit:		
26	2	O-ring	Single to flushed shaft seal EPDM C/SIC 9611-92-2246 =		
28	16	Pin bolt	Pos 40+41+42+43+44+45		
29a	1	Pump cover	Single to double mechanical shaft seal EPDM C/SIC 9611-92-2420 =		
29	1	Pump casing	Pos.13+14+15+ 40a+41+42+44+50+51+52+54		
30a	1	Support bar	Flushed to double mechanical shaft seal EPDM C/SIC 9611-92-2421 =		
30b	1	Support bar	Pos.13+14+15+ 40a+41+50+51+52+54		
31	4	Leg			
32	4	Screw			
33	4	Nut			
34	4	Spring washer			
35	4	Screw			
35a	4	Washer			
36	1	Impeller screw			
37	1	Impeller			
38	1	O-ring			
40	1	Seal housing			
41	2	Screw for seal housing			
42	2	Tube			
43	1	Lip seal			
44	1	O-ring for seal housing			
45	1	O-ring for drive ring			
46	4	Distance sleeve			
47	2	Leg bracket			
48	4	Nut for leg			
49	4	Screw for leg			
50	1	O-ring			
51	1	Sec. stationary seal ring, Sic.			
52	1	Drive ring			
53	4	Pivot screw			

The drawing shows LKH, sanitary version.



How to contact Alfa Laval

Contact details for all countries are continually updated on our website. Please visit www.alfalaval.com to access the information direct.