



MANUAL

HOUSINGS

Likuid L07-L19-L37-L61-L91



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1. INTRODUCTION

This user manual describes the technical characteristics and the instructions for operation, maintenance, assembling and disassembling of Likuid housings. With the aim of guaranteeing an optimum performance, it is strongly recommended to follow scrupulously the following indications.

The design of the housings has been validated under the corresponding quality control protocols, so that the optimum performance is guaranteed in accordance to technical specifications.

When the product is received and/or unpacked:

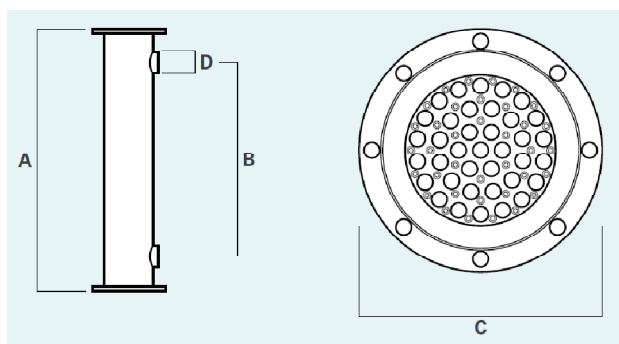
- Ask for assistance of qualified technicians for ensuring that the installation is made correctly.
- Please inform Likuid immediately of any external damage or defect in the packing or in the product itself.
- Follow scrupulously the drawings supplied for housings assembling/disassembling.

2. TECHNICAL SPECIFICATIONS

The main characteristics of Likuid's housings are the following:

Material	Stainless steel (diverse range)
Morphology	Tubular
Range of pH resistance	0-14
Maximum pressure ¹	10 bar
Range of temperature ¹	5-95°C
Fluid ²	Group 2
Standard models	L7, L19, L37, L61, L91

	L07	L19	L37	L61	L91
A	1195mm	1195mm	1195mm	1195mm	1195mm
B	880mm	880mm	880mm	880mm	880mm
C	DN100	DN150	DN200	DN300	DN350
D	Ø53mm	Ø77mm	Ø96mm	Ø110mm	Ø128mm
Q	7 membranes	19 membranes	37 membranes	61 membranes	91 membranes
M	23kg	46kg	73kg	138kg	186kg



¹ According to 97/23/CE Directive, in applicable technical requirements of Article 3-Section 3

² For fluids from the Group II, according to 97/23/CE Directive, in applicable technical requirements of Article 3-Section 3

3. LIST OF COMPONENTS

The standard supply consists on the following components:

- 1 Housing
- Assembling supplements (Double screws – M5 y M6 + Washers M5 + Nuts M5)
- 2 back-plates (with and without hole-reductions)
- 2 flat gaskets for housing/pipes connection
- 2 O-rings for permeate pipes connection
- O-rings for membranes (quantity depends on model)
- Mounting screws M6 (quantity depends on model)
- Ceramic membranes (quantity depends on model)

The unit is delivered as a complete assembled set (with the exception of 2 flat gaskets and assembling supplements).

There is a possibility to include accessories for permeate:

- DIN2576 flange
- Ready to weld
- Clamp
- Blind

Others, consult Likuid.

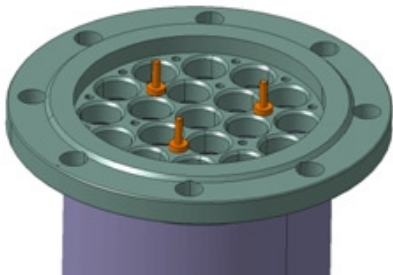
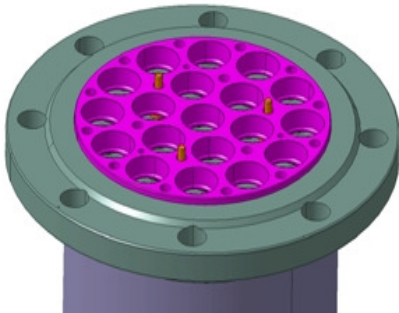
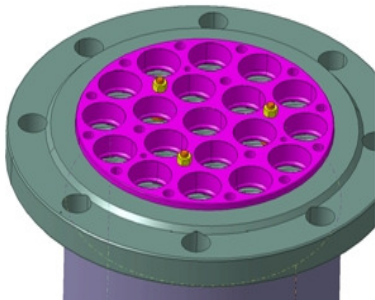
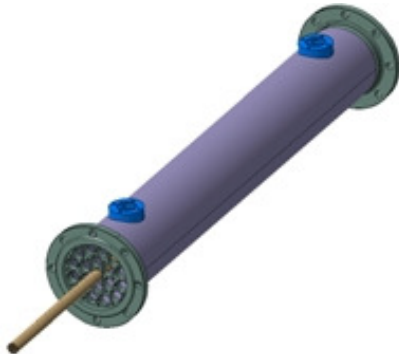
The dimensions of the permeate connections for each housing model are included in the table below:

	Hydraulic diam.	Threads position	Screws
L07	DN12	DN06	M6
L19	DN20	DN10	M8
L37	DN32	DN20	M10
L61	DN40	DN25	M12
L91	DN50	DN32	M14

4. ASSEMBLING INSTRUCTIONS

4.1. ASSEMBLING OF MODULES:

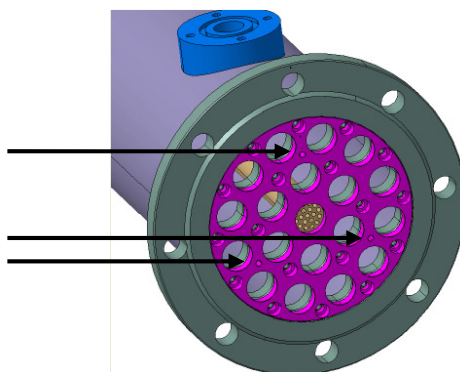
The sequence for the assembling of modules is described below:

STEP	DESCRIPTION	GRAFICAL SCHEME
1	<p>Screw in completely the assembling supplements, by the M6 end, in the upper plate of the module.</p> <p><i>Upper plate of the module: with the module in vertical position, upper part with respect to the identification label</i></p> <p><i>(Orange pieces)</i></p>	
2	<p>Install the back-plate which has the <u>hole-reductions</u>, turned over 180° respecting its permanent position. It must have the hole-reductions next to the plate, fully in contact with the assembling supplements.</p> <p><i>(Pink piece)</i></p>	
3	<p>Fix the assembling supplements with the corresponding M5 washers and nuts.</p> <p><i>(Yellow pieces)</i></p>	
4	<p>In horizontal position of the module, insert carefully the ceramic membranes by the opposite side, until reaching the stop in the back-plate previously installed. Membranes must be inserted from the bottom to the top.</p>	

STEP	DESCRIPTION	GRAFICAL SCHEME
5	<p>After installing the membranes, put the second back-plate (without hole-reductions). Use the O-rings and mounting screws M6. Torque approx. 10 Nm. Membranes must protrude approx. 4 mm from the plate.</p> <p>The screws must be tightened crosswise. Since this operation allows the O-rings to be tightened and provides the water-tightness of the module, it must be done carefully and uniformly.</p> <p><i>NOTE: only one membrane is represented in the picture.</i></p>	
6	<p>Release the initially installed back-plate (with hole-reductions), turn it over 180° and repeat the instruction 5. Membranes are now mounted in the housing.</p>	

4.2. ASSEMBLING OF MODULES:

- After unscrewing the screws in the back-plate of both sides, back-plates must be extracted carefully. Sometimes, back-plate can be stuck to the plate due to the high operating pressure. For these cases, the back-plates have some M5 threaded holes (marked with arrows in the picture below) where screws can be inserted and used as extractors, so that when they are tightened, pressure is applied on the plate and the back-plate is extracted from the housing.



- After removing the back-plates from both sides, remove the O-rings from one side carefully (Don't use Sharp tools).
- Remove the membranes from the side where the O-rings are still present. Be careful: membranes are just hold at the tips of the module.

4.3. OTHERS

It is recommended NOT to reuse the O-rings.

If substantial vibrations are thought to occur, it is recommended to use fixing glue for screws.

Tools for manipulation/elevation of housings must be available for manipulating heavy modules.

5. WARRANTY

Unless there is an explicit contractual specification that modifies the general warranty conditions, Likuid modules are guaranteed against all manufacturing or assembling faults for a period of 12 months from the starting-up, or 15 months from the date of purchase.

