



Nuova Rade

Marine - Plastics Technology Experts

**Instruction Manual for
Electric Marine Toilets LT-0E and LT-1E**

Nuova Rade Electric toilets LT-0E and LT-1E, can be supplied as either 12V or 24V and have been designed to make your life on-board easier, because of their self-priming double action pumps. By just pushing the on/off switch, which can be installed anywhere in the toilet cabin, you activate the pump and while fresh water rinses in the bowl, the macerator grinds up and pumps out the waste.

FEATURES:

- White Vitreous Bowl, Available in Two Sizes.
- Flexible Impeller Flush Pump.
- Permanent Magnet Type Motor, Fully Enclosed, with Stainless Steel Shaft.
- High Capacity Macerator.
- Non-return valve
- All Corrosion Resistant Material for Marine Use.

SPECIFICATIONS:

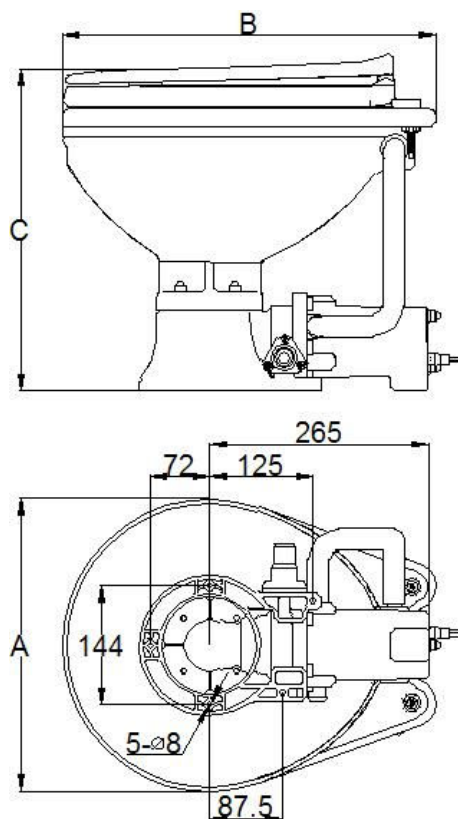
TEXT HERE:

CODE	11874	11875	11876	11877
Product Name	LT-0E with small bowl	LT-0E with small bowl	LT-1E with big bowl	LT-1E with big bowl
Rated voltage	12 volt DC	24 volt DC	12 volt DC	24 volt DC
Load Current	12-15 Amps	6-8 Amps	12-15 Amps	6-8 Amps
Weight	11.5Kg		13.5Kg	
Inlet hose ID	19mm			
Outlet hose ID	25mm			

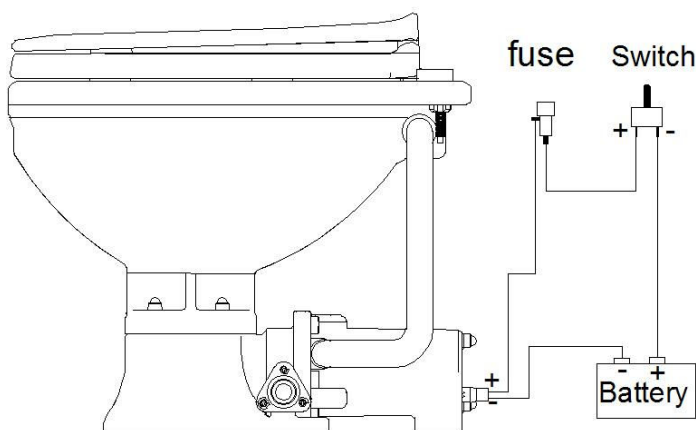
Spare parts:

Code: **11878** spare parts for toilets 11874 & 11876

Code: **11879** spare parts for toilets 11875 & 11877

INSTALLATION DIMENSIONS:


Code	A	B	C
11874 & 11875	325	420	375
11876 & 11877	365	480	385



The **Nuova Rade Electric Marine Toilets** may be easily installed, either above or below the waterline. Flush pump is self-priming with a vertical lift up to 3 feet. Discharge macerator pump can operate against a vertical head up to 3 feet. Inlet and outlet seacock should be easily accessible and be positive shut off valves. If seacock cannot be conveniently operated from toilet location, install suitable shut off valves for inlet and discharge connections.

Base assembly may be moved 360° to accommodate connections and provide accessibility for servicing. Surface where toilet is mounted should be flat to prevent distortion of toilet base.

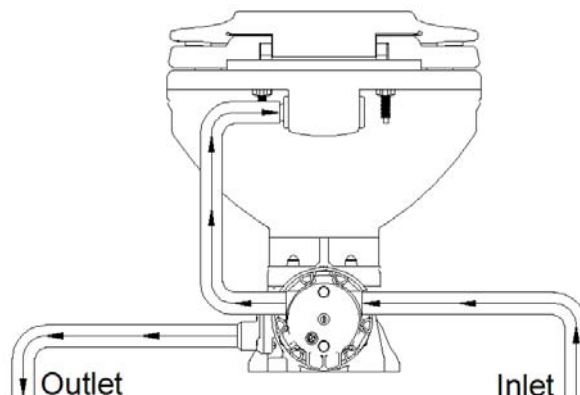
PLUMBING CONNECTIONS:

Connect water inlet hose using 19mm internal diameter hose. Make sure all inlet connections are airtight and free of sharp bends or restrictions.

Connect 25 mm internal diameter hose to discharge and make suitable connection to holding tank or other discharge system. Avoid sharp bends or restrictions.

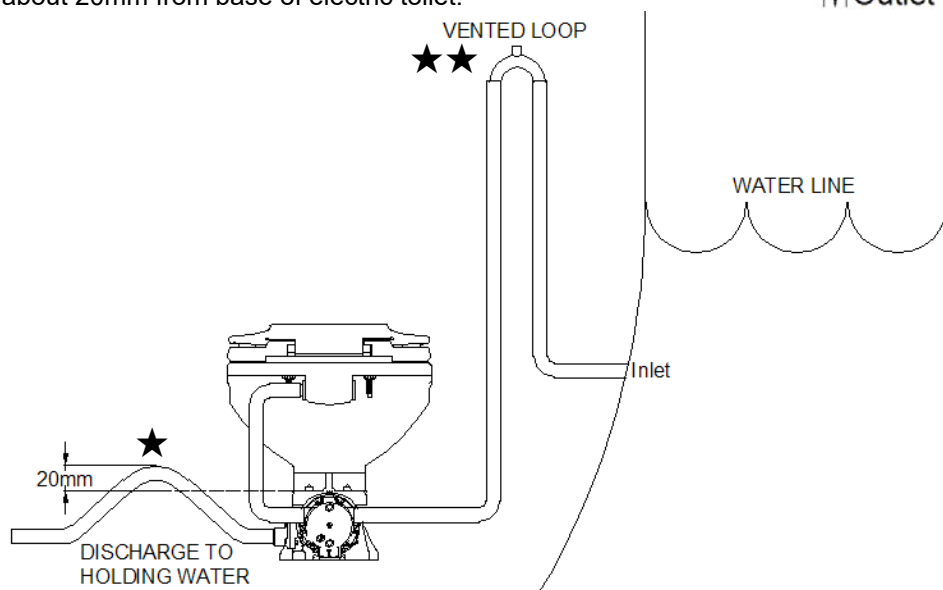
For above waterline installations, a check valve may have to be installed in the flush water intake line to ensure rapid pump priming.

To retain water in bowl, make a loop (★) in the discharge line about 20mm from base of electric toilet.



WARNING: Flood hazard. If toilet is installed below the waterline or may be below the waterline at any angle of heel or trim, it must be installed with properly positioned vented loops(★★). Failure to do so can result in flooding which can cause loss of property and life.

CAUTION: Do not connect the toilet to the vessels potable water for its source of supply. To do so can result in contamination of potable water supply. If fresh water is preferred for flushing, provide a separate fresh water tank to supply water to the toilet on.



DO NOT CONNECT INLET HOSE TO A PRESSURIZED WATER SYSTEM.

If the toilet is, or can be, below waterline at any normal (including static) altitude of vessel heel and/or trim, a 19.4mm Vented Loop Fitting must be installed in the length of hose connecting the flushing pump to the inlet seacock. The Vented Loop Fitting must be positioned so it remains slightly (★★) above the waterline at all angles of heel and trim.

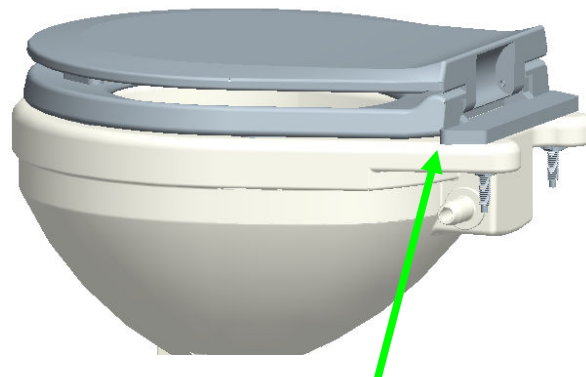
In some installations when a vented loop is installed in the intake hose, the flushing pump prime ability and flow characteristics are reduced and may adversely affect toilet function. To restore pump performance, you may connect a solenoid valve to the airvent inlet, for interrupting the air supply during the flush cycle.

**Recommended minimum height above waterline is 20 cm.*

INSTALLATION:

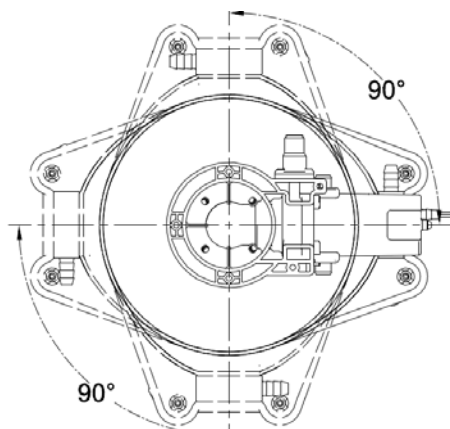
The **Nuova Rade Electric Marine Toilet** pump can pump in either sea or lake water to rinse the toilet bowl when flushing the toilet. This pump is intended to be located remotely from the toilet but will function best distance from the toilet is kept to a minimum. Because it is self-priming, it may be located above the vessel's waterline.

1. Install the toilet seat and lid assembly on the toilet bowl with the fasteners provide and position the toilet in its desired location. When locating the toilet ensure there is adequate clearance above and to the rear of the bowl so the seat and lid assembly can rotate slightly.



Seat and lid assembly

2. If desired, for providing clearance from possible obstructions, you may rotate the waste pump assembly under the china bowl. This can be accomplished by removing the 4 hex head caps from the nuts at the base of the toilet bowl and removing the four screws and nuts that secure the china bowl to the base. The base can then be reattached to the bowl at any position in 90° increments.



3. Once the exact position for the toilet has been determined, mark the location of the four base attachment holes on the toilet-mounting surface. The pump base should be mounted to a solid mounting surface. There are 5-Φ8mm mounting holes, use M6 screws to fix the toilet. Use washers and rubber gaskets to prevent the base body from damaging



4. To connect the inlets use 19mm internal diameter hose. To connect the outlet port use 25mm internal diameter hose. Fasten the pipe firmly with clamps. All plumbing should be done with quality hose that will not collapse or kink. Route the inlet hose from a (19 mm) through hull and seacock fitting located well below the waterline (and well forward of any discharge through hulls, if installed) to the pump inlet port



WARNING: Flood hazard. If toilet is installed below the waterline or may be below the waterline at any angle of heel or trim, it must be installed with properly positioned vented loops. Failure to do so can result in flooding which can cause loss of property and life

If the toilet is installed below the vessel's waterline, in order to prevent a siphon action from filling the toilet, a properly positioned vented loop fitting must be installed. The vented loop fitting must be secured in a location that remains at least (15-20 cm) above the waterline at all angles of heel and trim.

The toilet discharge port is sized for (25 mm) hose. The discharge hose should be a quality grade reinforced hose suitable for waste applications. Route the discharge hose to the holding tank in the most direct way with as few bends as possible. To retain some water in the bowl, it is best to loop the discharge hose up about (15-20 cm) as close to the toilet. It is best to avoid any dips or low spots in the discharge plumbing that can act as water traps and collect waste. If this occurs, waste can solidify and cause a discharge blockage.

If the toilet is plumbed to an overboard discharge, and is below the vessel's waterline, the discharge plumbing must include a properly positioned vented loop. The vented loop fitting must be secured in a location that remains at least (15-20 cm) above the waterline at all angles of heel and trim. The maximum discharge head without a notable decrease in pump performance is four feet (1.3 m).

ELECTRICAL SPECIFICATIONS

The electrical wiring should be independent of all other accessories. It should be made with marine grade copper stranded wire. Make all wire connections with mechanical locking type connectors (crimp type butt connectors and terminals). Ensure a proper sized fuse protects the circuit or circuit breaker determined from the electrical specification chart. Secure all wires to a solid surface approximately every eighteen inches (1/2 M) along their entire length of run.

CODE	11874	11875	11876	11877	11878	11879
Rated voltage	12 volt DC	24 volt DC	12 volt DC	24 volt DC	12 volt DC	24 volt DC
Load Current	12-15 Amps	6-8 Amps	12-15 Amps	6-8 Amps	12-15 Amps	6-8 Amps
Fuse	25 Amps	25 Amps	25 Amps	25 Amps	25 Amps	25 Amps

NOTICE: Before performing any service, turn off the electrical power to the toilet and rinse water pump. Take precaution to ensure it is not turned on until the service is complete. Also, pump all water from the toilet bowl and if connected to an overboard discharge, close the discharge seacock.

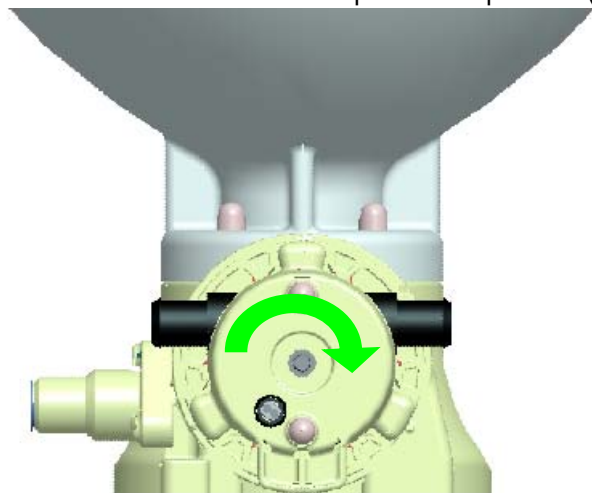
OPERATING AND MAINTENANCE:

Make sure inlet and outlet are all open. For operation push button. Operate until bowl is completely flushed and discharged pump has scavenged water from bottom of bowl.

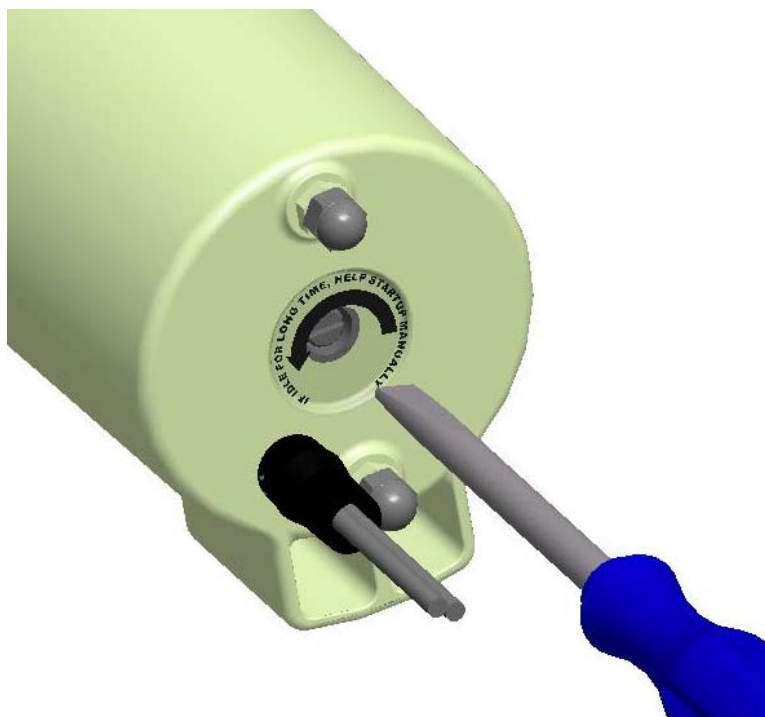
The **Nuova Rade Electric Marine Toilet** will provide years of trouble free service if properly used. It will handle waste and toilet issue. It will NOT handle rags, sanitary napkins or hard solid objects.

TROUBLE SHOOTING

If waste cannot be pump out due to clogging problem, unscrew the motor cover★ ensure the arrow rotate between two ★ spots of base, then pull out complete motor pump from the base. Clean out the clogging materials. After cleaning, install the non return valve and rest plastic components (keys 27,28,29,30,31) .

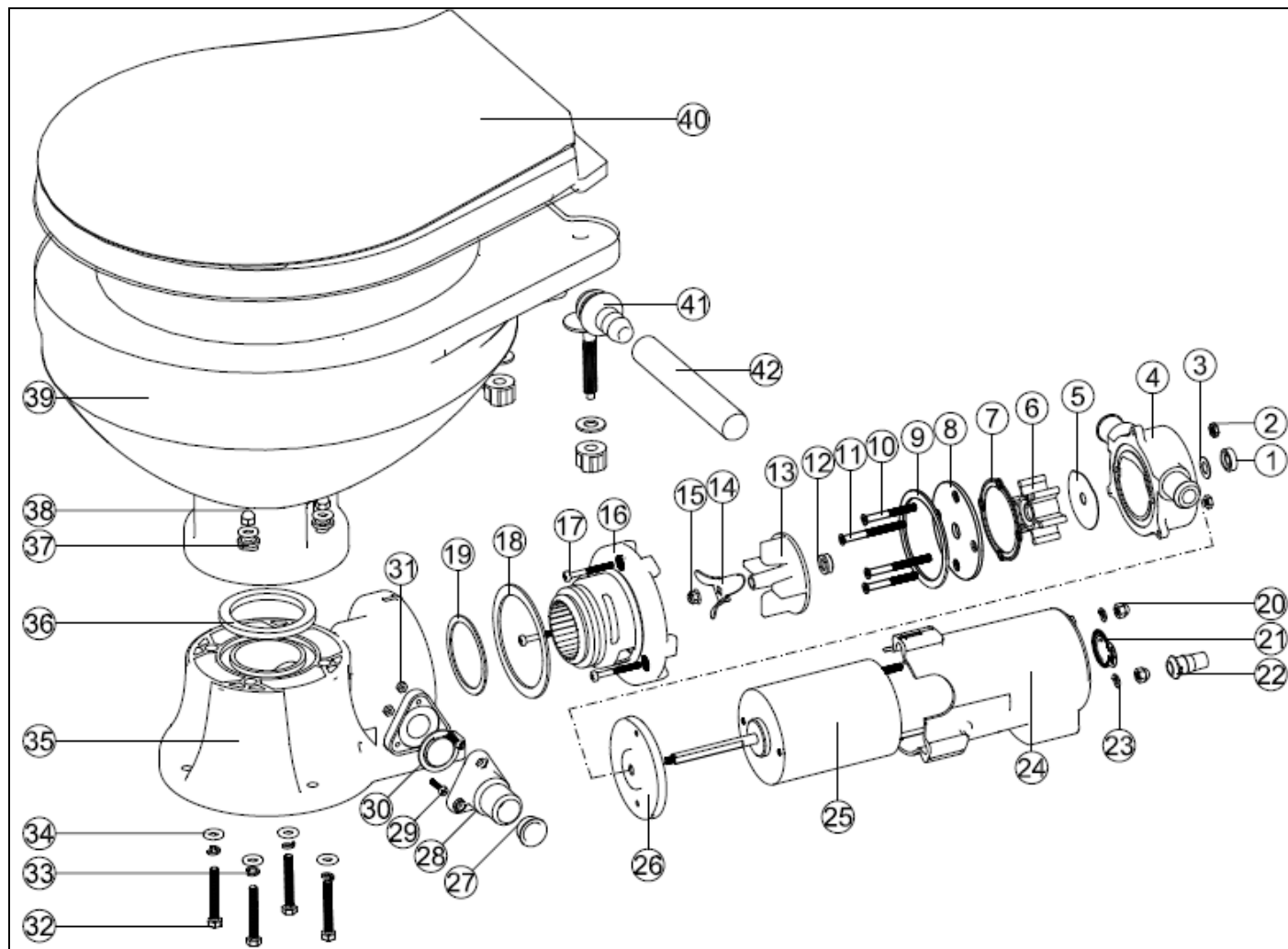


For maximum safety, when toilet is not in use or vessel in unattended, use the outlet plug(key 27) to close the discharge outlets(key 28).



After long periods of non-use, toilet and pump may dry out. Impeller may get stuck inside pump body if the electric pump is idled for a period of time. Follow the indicated direction, marked onto sticker, to rotate the impeller from outside to prevent the electric pump from damage of instant high current in starting operation

NOTICE: Before performing any service, turn off the electrical power to the toilet and rinse water pump. Take precaution to ensure it is not turned on until the service is complete. Also, pump all water from the toilet bowl and if connected to an overboard discharge, close the discharge seacock.

Service parts for Nuova Rade Electric toilets LT-1E and LT-0E:

The material list

KEY	DESCRIPTION	QTY	KEY	DESCRIPTION	QTY	KEY	DESCRIPTION	QTY
1	Rubber-Wrap	1	15	Locked nut	1	29	Bolt M3_20	3
2	Nut M5	2	16	Output valve	1	30	Nonreturn valve	1
3	Teflon gasket	1	17	Bolt M4_30	3	31	Nut M3	3
4	Input vavle	1	18	Output valve Oring	1	32	Bolt M6	4
5	Impeller_3 washer	1	19	Output valve gasket	1	33	Base spring washer	4
6	Impeller_3	1	20	M5 domed cap nut	2	34	Metal washer	8
7	Input valve gasket	1	21	Sticker	1	35	Toilet_base	1
8	Copper_plate	1	22	Cable seal rubber	1	36	Rubber base	4
9	Copper_plate washer	1	23	Spring washer	2	37	Base plastic gasket	4
10	Bolt M5_40	2	24	Motor cover	1	38	M6 domed cap nut	4
11	Bolt M5_50	2	25	Toilet Motor	1	39	Bowl	1
12	Vring	1	26	Motor_gasket	1	40	Toilet cover and lid	1
13	Impeller_2	1	27	Outlet_plug	1	41	Intake Seal	1
14	Metal blade	1	28	Outlet	1	42	Inlet hose	1

The Spare parts

CODE	DESCRIPTION	KEY
11879	Repair kit for the electric toilets 24V,LT-0E<-1E	1-38
11878	Repair kit for the electric toilets 12V,LT-0E<-1E	1-38
74304	Plastic base for electric toilets with spare parts	27-31, 35-36