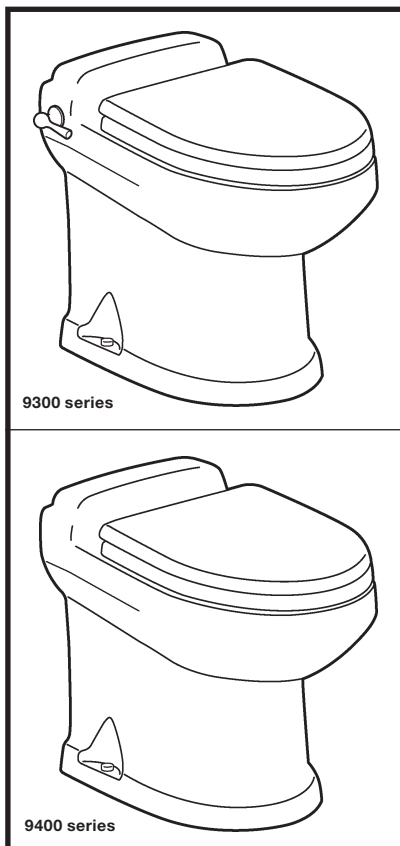




9300-9400 Series
RushFlush™
Toilets
INSTALLATION

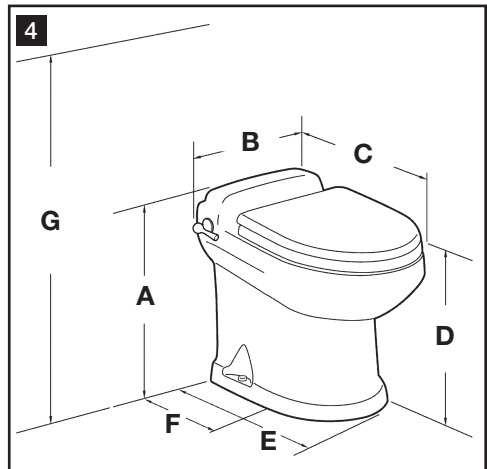
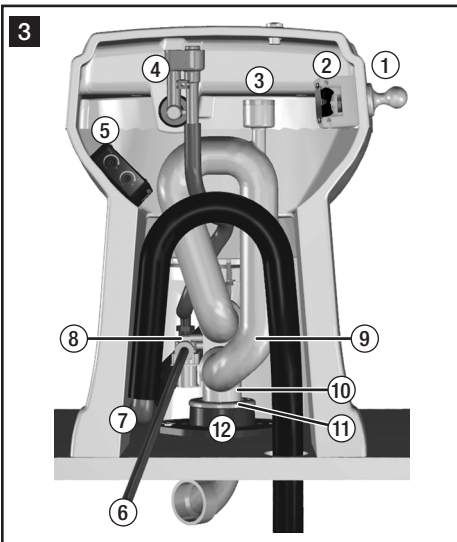
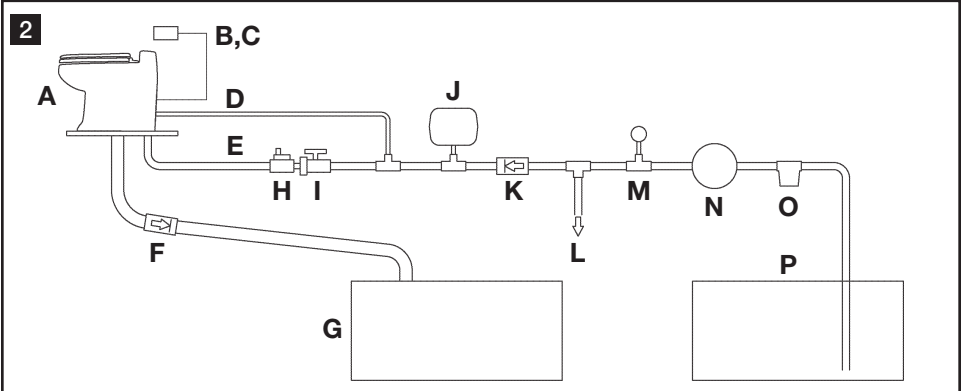
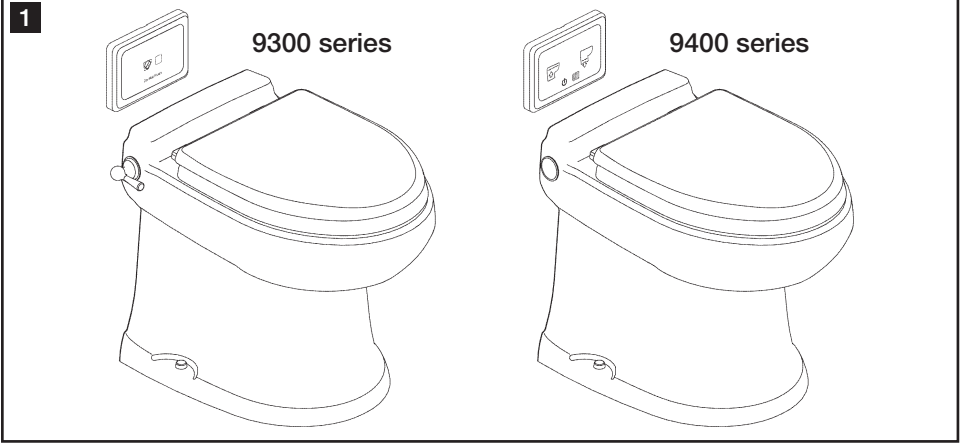


Table of contents		EN
1	Notes on using the manual	3
2	General safety instructions	3 - 4
3	Components	5
4	Specifications	5 - 6
5	Installation	7 - 11
6	Customer service	12

1 Notes on using the manual



Caution!
Safety Instruction: Failure to observe this instruction can cause material damage and impair the function of the device.



Note
Supplementary information for operating the device.

fig. **1** 2, page 2 : This refers to an element in an illustration. In this example, item 2 in figure 1 on page 2.

2 General safety instructions

The manufacturer will not be held liable for claims for damage resulting from the following:

- Faulty installation or connection
- Damage to the unit from mechanical influences, misuse or abuse
- Alterations to the unit without express written permission from the manufacturer
- Use for purposes other than those described in this manual

2.1 Warnings – marine applications

The following statements must be read and understood before installing, servicing and/or operating this product on a boat. Modification of this product may result in property damage. Dometic recommends that a qualified marine technician or electrician install or service this product. Equipment damage, injury to personnel or death could result from improper installation. DOMETIC ACCEPTS NO RESPONSIBILITY OR LIABILITY FOR DAMAGE TO EQUIPMENT, OR INJURY OR DEATH TO PERSONNEL THAT MAY RESULT FROM IMPROPER INSTALLATION, SERVICE OR OPERATION OF THIS PRODUCT.



Caution! NOT INTENDED FOR RAW WATER FLUSH TOILET SYSTEMS
The RushFlush toilet system is not designed to flush with seawater. To assure optimum performance, use only fresh water supply.

**Caution! Hazard of Flooding**

If the toilet is connected to ANY through-the-hull fittings, properly installed seacocks **MUST** be installed in all piping connected to through-the-hull fittings. Seacocks **MUST** be easily accessible to all users of the toilet or secondary valves fitted in hoses where they are easily accessible. All valves **MUST** be full bore valves and of marine quality. Screw-to-close gate valves are not recommended. Failure to do so can result in flooding which can cause loss of property and life.

**Caution! Hazard of Flooding**

If toilet is connected to ANY through-the-hull fittings, **ALL** flexible hoses must be of marine sanitation quality and must be secured to **ANY** fittings (such as those at seacock, vented loop or toilet) with two stainless steel, worm-drive hose band clamps at each connection. Connections **MUST** be checked frequently for integrity. Failure to comply can result in flooding which can cause loss of property and life.

**Caution! Hazard of Flooding**

If toilet rim is below the waterline at **ANY** time (during any conditions of heel, load or trim) and is connected to **ANY** through-the-hull fittings, properly positioned ventilated (vented) loops **MUST** be installed in discharge piping to prevent potential back siphonage of sea-water into the boat. Failure to do so can result in flooding which can cause loss of property and life.

**Caution! Hazard of Flooding**

If toilet uses raw water for flushing at **ANY** time, a raw water pump controlled by an automatically operating demand switch **MUST NOT** be installed. If the onboard water valve or any plumbing connections were to leak, the automatically operated pump would start and could flood the boat. Failure to comply can cause loss of property and life.

**Caution! Hazard of Flooding**

Before beginning any work on this product, be sure that all electrical power to the unit has been turned off and that seacocks are in the **CLOSED** or **OFF** position. Failure to do so can result in flooding which can cause loss of property and life.

**Caution! Hazard of Shock or Fire**

Always use recommended fuse, circuit breaker and wire size. Failure to do so can result in fire that can cause the loss of property and life.

**Caution!**

Overfilling the holding tank can create serious damage to the sanitation system, such as rupturing the holding tank and releasing tank contents into the bilge. To prevent this possibility, Dometic recommends using the “full” tank shut-down relay in the toilet’s electronic control module. The “full” signal from the holding tank can be generated by an optional Dometic DTM01C tank monitor or DTM04 four-level tank monitor system.

3 Components

Basic system diagram* (fig. 2 , page 2)

Ref.	Description
A	RushFlush toilet
B	“Full tank” status panel (9300 only)
C	Flush switch and status panel (9400 only)
D	Rim water supply line
E	Lower bowl water supply line
F	Check valve
G	Blackwater holding tank
H	High-flow electric water valve
I	Maintenance valve
J	Potable water pressure tank
K	Check valve
L	Fresh water to other fixtures
M	Pressure gauge
N	High-flow water pump
O	Pump inlet strainer
P	Freshwater holding tank

* Recommended system configuration. Not all components may be used in your RushFlush toilet system.

Toilet diagram ((fig. 3 , page 2)

Ref.	Description
1	Flush handle (9300 series)
2	Flush handle switch
3	Anti-siphon valve
4	Vacuum breaker
5	Water flow control module
6	Upper rim water supply line
7	Lower bowl water supply inlet (attached to supply line, not included)
8	Water valve, upper rim
9	Discharge loop
10	Discharge outlet
11	Sealing grommet
12	Discharge floor flange
Refer to complete parts list (packed separately) for additional information.	

4 Specifications

4.1 Materials

Toilet: vitreous ceramic

Control module housing: ABS

Discharge outlet: high-tech polymer

Discharge floor flange: ABS

Flush switch panel frame: ABS

Flush switch panel: polycarbonate resin

Flush handle: plated brass (on applicable toilet models)

4.2 Approvals

- EMC Directive 2004/108/EC
- CE compliant components

4.3 Minimum System Requirements

Electrical	Power draw	1.2 amps @ 12 V DC 0.6 amps @ 24 V DC
	Circuit breaker/fuse recommended size	2 amps @ 12 V DC 1 amp @ 24 V DC
Water Supply	Upper rim	0.5 in. NPT inlet, water valve
	Lower bowl jet	1 in. NPT inlet, water valve
	Flow rate	15 gpm/57 lpm @ 30-50 PSI / 207-345 kPa
Discharge	Inside diameter	1.5 in./38 mm pipe or 1.875 in./47 mm hose
	Horizontal run	gravity drain *
Required components	Water pump **	15 gpm/57 lpm
	Potable water pressure tank **	150 PSI working pressure rating
	Electric flush switch	Dometic

* Horizontal discharge plumbing must drop a minimum of 0.125 in./3 mm for every 1 ft./30.5 cm of horizontal run.
** Purchased separately. Water pump may be part of vessel's potable water system.
Specifications subject to change without notice.

4.4 Dimensions (fig. 4 , page 2) All dimensions may vary ±3/8 inch (10 mm)

Model 9331, 9341 (with flush handle)

Ref.	Dimension
A	19 in. / 483 mm
B	16.5 in. / 419 mm*
C	21.5 in. / 546 mm
D	17.5 in. / 445 mm - seat height
E	17 in. / 432 mm
F	10.5 in. / 267 mm - centerline rough-in
G	33.5 in. / 851 mm - seat lid up

Model 9431, 9441 (with flush switch)

Ref.	Dimension
A	19 in. / 483 mm
B	14 in. / 356 mm
C	21.5 in. / 546 mm
D	17.5 in. / 445 mm - seat height
E	17 in. / 432 mm
F	10.5 in. / 267 mm - centerline rough-in
G	33.5 in. / 851 mm - seat lid up

* width measurement includes flush handle

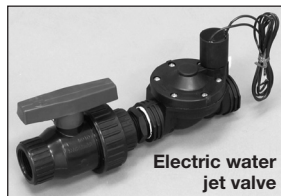
5 Installation

5.1 General guidelines

For optimum toilet system performance, follow these guidelines. Make sure to also follow any governing codes or standards that apply to your installation.

Fresh Water Supply System Plumbing (fig. 2 , page 2) **DO NOT USE RAW WATER SUPPLY**

1. All water supply system plumbing should be 1 in. ID, with working pressure ratings above the maximum water pump pressure. (100 PSI minimum recommended).
2. Water inlet strainer: 1 in. ID, 40 mesh
3. Pressure gauge: 0-100 PSI
4. Water pump: Grundfos® MQ3-35 or equivalent is recommended.
 - 1 in. NPT connections
 - Internal pressure switch: 50 PSI cut-out, 30 PSI cut-in
 - Pump current draw is 8 amps @ 110V, 4 amps @ 220V, other pump manufacturers may vary.
 - 15 GPM needed; pump actually rated at 22 GPM max. flow with no restrictions
 - Depending on pump installation parameters, a pump of adequate suction lift capability should be considered. The MQ3 pump has 25 feet of suction lift capability, but it varies depending on horizontal suction run.
5. Potable water pressure (accumulator) tank: AMTROL® Well-X-Trol® WX-105-PS or equivalent is recommended.
 - 3/4 in. NPT, or larger, connection
 - 5 gallon total volume, 1.8 gallon drawdown @ 30/50 PSI
 - Air pressure charge should be set to 2-4 PSI below pump cut-in pressure.
 - One 5-gal. accumulator tank recommended for up to 6 heads.
6. Pressure relief valve:
 - Installation recommended by accumulator tank manufacturer
 - Should be installed near accumulator tank and pump, and set to open at excessive water system pressures. This protects fresh water system in case of pressure switch malfunction.
7. Check valve: will isolate the toilet system from the rest of the onboard freshwater system; spring check, 1 in.
8. Rim wash valve inside toilet:
 - 1/2 in. NPT connection
 - This water supply line can intersect from main 1 in. distribution line prior to high-flow water jet valve using 1/2 in. plumbing to toilet.
9. **Electric high-flow water jet valve** and maintenance ball valve, supplied with every toilet:
 - 1 in. NPT connections
 - Water jet valve should be closest to toilet. Maintenance ball valve should be farthest from toilet – refer to direction arrow on top of water jet valve inlet port.
 - An in-line strainer is installed into the water jet valve inlet at the factory. The cone shape protrudes out and against the direction of water flow away from the center of the valve, pointing towards the maintenance ball valve.
 - The water jet valve features a small white manual override lever located next to the solenoid. This must be vertical for correct electrical operation. However, it can be turned to the horizontal position to manually test the water system. Be sure to return it back to vertical when testing is finished.



Electric water jet valve

Discharge Plumbing

1. 1/8 in. per foot minimum downhill slope in discharge line is required, keeping all lines as short and straight as possible.
2. 1-1/2 in. ID pipe or 1-7/8 in. ID hose may be used
 - If using 1-1/2 in. pipe:
 - Use DWV (drain, waste & vent) pipe fittings that incorporate sweeping changes of direction.
 - Do not use schedule 40 or 80 fittings that have tight turns. They will hinder flow of wastewater to holding tank.
 - Install unions as deemed necessary for service.
 - If using 1-7/8 in. hose:
 - Eliminate hose sags and low spots that may hinder flow of wastewater to holding tank.
3. **Check valve** (flapper style) supplied with every toilet:
 - Install this valve as close to toilet as possible, on the discharge side of the toilet plumbing before the waste line joins with any common discharge line.
 - The valve must be installed with the flapper oriented correctly.
 - When open, the flapper “hinge” must be at the highest possible location.
 - Flapper must open in line with the direction of flow.
 - Use caution when gluing valve into place. Make sure excess glue does not contact flapper.
4. For flushing overboard through seacock:
 - Loop inside toilet must be above waterline.
 - Seacock must be 1-1/2 in. full-flow, located no lower than 12 in. below water line.



Actual model may vary from image being shown.

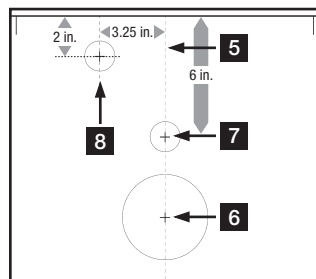
5.2 Toilet with through-the-floor connections



Note

If replacing an existing center-discharge toilet, make sure the center of the existing discharge flange is at least 10-1/2 in. (267 mm) from the back wall, then proceed to Step 5 for proper positioning of water line and electrical wiring access holes.

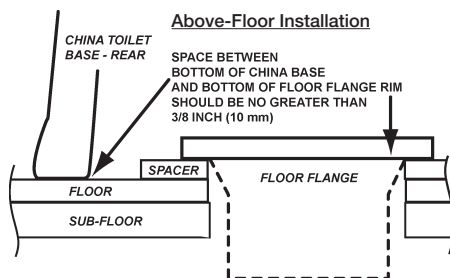
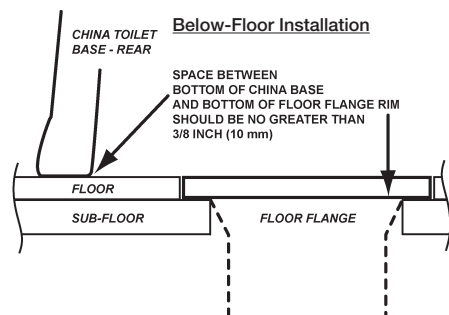
1. Carefully unpack toilet bowl and floor flange adapter.
2. Position ceramic bowl in the space intended. Confirm that adequate clearance is available for opening the seat and lid, and, for model 9310, using the flush handle on the left side of toilet.
3. Mark the floor at the rear corners of the toilet bowl. Measure the distance between the two marks and divide in half to find the toilet centerline. Mark the floor at the rear wall for the **primary** centerline (**5**).
4. Draw a **primary** centerline on the floor at least 14 in. (356 mm) long. Mark the center of the floor flange access hole at 10-1/2 in. (267 mm) from the wall (**6**).
5. For the upper rim water supply line and electrical wires access hole, mark another center spot 6 in. (152 mm) from the back wall (**7**).
6. At the wall, mark a **secondary** centerline 3.25 in. (83 mm) to the left of the primary centerline, and draw the secondary line about 4 in. (102 mm) long from the wall. Mark the center for the lower bowl water supply line access hole 2 in. (51 mm) from the wall (**8**).



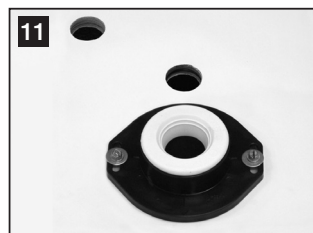
7. Make a 4-1/4 in. (108 mm) diameter hole at the primary centerline intersection furthest from the wall. Make a 1-1/2 in. (38 mm) diameter hole at the mark closer to the wall for the upper rim water line and electrical wires, and at the mark on the secondary centerline for the lower bowl water supply line (fig. 9).
8. (9400 series toilet only) Plan flush switch panel location on a wall so that electrical connections can be made with cables provided. Be sure panel and wires cannot get wet.
9. (9400 series toilet only) Use Dometic wall switch template to mark location of fastener and access holes. Drill 1 in. dia. hole, then fasten panel bracket to wall (fig. 10).

**Caution**

Preferrably, the discharge floor flange should be installed directly on the finished floor. However, if the bottom of floor flange and bottom of ceramic toilet must be mounted at different heights, the floor flange must be mounted within 3/8 in. (10 mm) of the bottom of the toilet (see illustrations below) or leakage may result.



10. Insert discharge floor flange into largest hole, orient slots front-to-back, and secure to the floor with #14 x 1-1/2 in. screws and washers provided. If desired, allow screws to be slightly loose for front-to-back bowl positioning adjustment. 1/2 in. of front-to-back adjustment is available (fig. 11).
11. Install sealing grommet into top of discharge floor flange (fig. 11) and lubricate inside diameter of sealing grommet hole with dishwashing soap.
12. While keeping toilet level, carefully lower toilet to the floor so that toilet discharge outlet inserts into sealing grommet (fig. 12). Make sure bottom of ceramic toilet sets flat on floor.
13. Slide toilet front-to-back until desired bowl location is achieved (near to or against back wall). Make toilet bowl straight with back wall and mark holes for two mounting bolts (fig. 13).

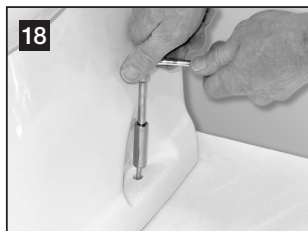
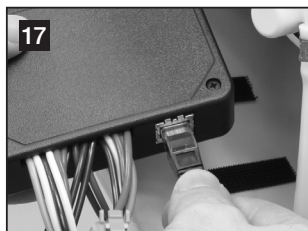


14. Carefully raise toilet up from floor flange and set aside. Tighten floor flange screws (if loose for adjustment). Drill 3/16 in. pilot holes in the floor for the ceramic toilet mounting bolts.
15. Route 1/2 in. ID upper rim water line through the hole on the primary centerline. Provide 1/2 in. NPT connection for upper rim water line (fig. 14).
16. Route 1 in. ID lower bowl water line through the hole on the secondary centerline, leaving about 3 feet of extra hose to create a flexible loop (fig. 14).
17. **WITH ELECTRICAL POWER OFF**, route #18 gauge stranded copper wire from DC power source (positive and ground) through a fuse or circuit breaker. Leave at least 18 in. (457 mm) of wire for connecting to toilet (fig. 14). Also route any other optional wiring according to wiring diagram.
18. **(9400 series toilet only)** Connect Dometic flush switch cable to toilet control module (RJ45 connector) and route cable to access hole at flush switch location. Attach cable to flush switch, then snap the panel cover onto the bracket (fig. 15).
19. Connect discharge plumbing from holding tank to discharge floor flange, using system discharge plumbing recommendations from Section 5.1.
20. With toilet positioned near floor flange, connect upper rim flexible water line to water valve, DC power wires, and lower bowl water line to toilet (looping water line as shown) (fig. 16). Also complete any other wiring connections to control module. Refer to enclosed wiring diagrams.
21. **(9400 series toilet only)** To attach RJ45 connector from flush switch, remove control module from back of toilet (locking fabric strips will come apart), route cable up through toilet plumbing lines to connect to module (fig. 17), then re-attach control module to back of toilet.
22. Set the toilet back in place by inserting discharge outlet into the sealing grommet and aligning fastener holes in floor with holes on sides of ceramic toilet base.

**Caution**

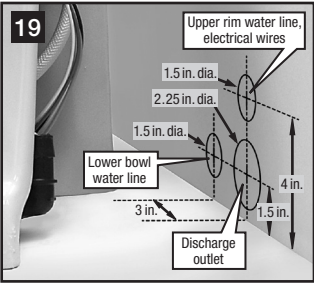
DO NOT ATTEMPT TO SLIDE THE TOILET OVER THE FLANGE ADAPTER. THE TOILET MUST BE SET DOWN OVER THE ADAPTER TO PREVENT POSSIBLE DAMAGE.

23. Route 1 in. ID water line so that it loops inside back of toilet (fig. 3, page 2).
24. Turn on electrical power and water to toilet. Lift flush handle, or push "add water" button, for several seconds. Then flush the toilet a few times and observe operation. Adjust upper rim valve and lower jet valve times as needed to lengthen or shorten flush duration.
25. Wait one hour, then inspect the floor around and under the rear of the toilet for leaks or dampness. If no leaks are present, secure to the floor with #14 x 2-1/2 in. long lag bolts. Install decorative caps by pushing them onto bolt heads (fig. 18). Toilet is ready for use. **END**



5.3 Toilet with through-the-wall connections

1. To install wiring and plumbing connections through the wall, determine the primary centerline location as described in Section 5.2, steps 2 and 3.
2. Mark horizontal primary centerline for plumbing and wiring access holes on wall according to fig. 19. Mark secondary centerline for lower bowl water line 3 in. (76 mm) to left of primary centerline. Mark hole locations as indicated.
3. Drill two 1-1/2 in. (38 mm) dia. holes for water supply lines and wiring, and drill 2.25 in. (57 mm) dia. hole for discharge plumbing (fig. 19).
4. Follow toilet installation instructions beginning at Section 5.2, step 15. For lower bowl water line, install an elbow fitting (not provided) so that 1 in. ID flexible water line can loop upward and back down to inlet at toilet base (fig. 3 7, p. 2).
5. Before securing toilet to floor with lag bolts (step 25), be sure to drill 3/16 in. pilot holes.



5.4 9300 series toilet system status panel (optional accessory)

1. Plan status panel location so that electrical connections can be made between toilet and status panel with wiring cable provided. Be sure cable and connections cannot get wet.
2. Use Dometic wall switch template to mark location of fastener and access holes for status panel. Drill 1 in. (25 mm) wiring access hole, then fasten panel bracket to wall (fig. 20).
3. Attach cable (provided with status panel) to status panel's RJ45 connector, then route other end of cable through wall access hole to floor access hole at toilet base.
4. Snap the status panel cover onto the panel bracket (fig. 20).
5. **WITH ELECTRICAL POWER OFF**, connect cable from the status panel to the toilet control module (fig. 21). To attach RJ45 connector, remove control module from back of toilet (locking fabric strips will come apart), route cable up through toilet plumbing lines to connect to module, then re-attach control module to back of toilet.
6. After all toilet wiring connections are made, turn on electrical power to toilet system. A steady green "Power On" light indicates that electrical power to the toilet is activated.



6 Customer service

There is a strong, worldwide network to assist in servicing and maintaining your sanitation system. For the Authorized Service Center near you, please call from 8:00 a.m. to 5:00 p.m. (ET) Monday through Friday.

You may also contact or have your local dealer contact the Parts Distributor nearest you for quick response to your replacement parts needs. They carry a complete inventory for the Dometic product line.

Telephone:	1-800-321-9886 330-439-5550	U.S.A. and Canada International
Fax:	330-496-3097 330-439-5567	U.S.A. and Canada International
Web site:	http://www.Dometic.com http://www.DometicSanitation.com	

Dometic is a customer-driven, world-leading provider of leisure products for the RV, automotive, truck and marine markets. We supply the industry and aftermarket with a complete range of air conditioners, refrigerators, awnings, cookers, sanitation systems, lighting, mobile power equipment, comfort and safety solutions, windows, doors and other equipment that make life more comfortable away from home.

Dometic supplies a wide range of workshop equipment for service and maintenance of built-in air conditioners. Dometic also provides specially designed refrigerators for hotel rooms, offices, wine storage and transport and storage of medical products.

Our products are sold in almost 100 countries and are produced mainly in wholly-owned production facilities around the world.

Grundfos® is a registered trademark of Grundfos Management A/S
AMTROL® and Well-X-Trol® are registered trademarks of AMTROL, Inc.



Dometic Corporation, Sanitation Division
13128 State Rt. 226, P.O. Box 38
Big Prairie, OH 44611 USA
1-800-321-9886 • Fax: 330-496-3097
www.Dometic.com