

Holding Tank Odor Neutralization	SWEETTANK®
Type-I MSDs	THERMOPURE-2®
Type-III MSDs	HOLDING TANK SYSTEMS
Macerator Pumps	155 SERIES
Deluxe Toilet	K-H
Compact Toilet	HF-B
Holding Tank Level Monitor	TLM
Vented Loops	HVL, PVL

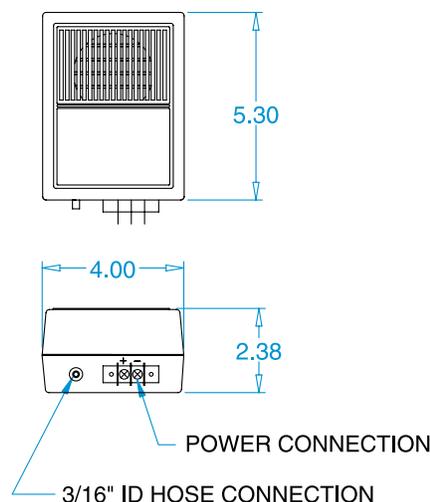
TOILETS & SANITATION

SWEETTANK®



SWEETTANK® ODOR NEUTRALIZATION SYSTEM

U.S. PATENT NO. 670,293,882



THE CONCEPT

The SWEETTANK® concept has been developed to stop odors in yacht and RV holding tanks without the use of chemicals or filters. SWEETTANK® is standard equipment on THERMOPURE-2® Type-I MSD (see Page 47), in GROCO® Type-III MSD (see Page 48), and is offered in several retrofit kits to fit existing holding tanks.

HOW IT WORKS

Aerobic and anaerobic bacteria coexist naturally in raw sewage, but it is the anaerobic bacteria that produce undesirable odors. By inducing a constant flow of air into the holding tank through a submerged aeration tube, SWEETTANK® produces an oxygen-rich environment in which the anaerobic bacteria cannot thrive, thus eliminating unpleasant odors. The heart of the SWEETTANK® system is a compact module that operates continuously to deliver air to the holding tank using less than 3-watts of DC power. For yachts where AC power is always available, an AC powered SWEETTANK® module is offered.

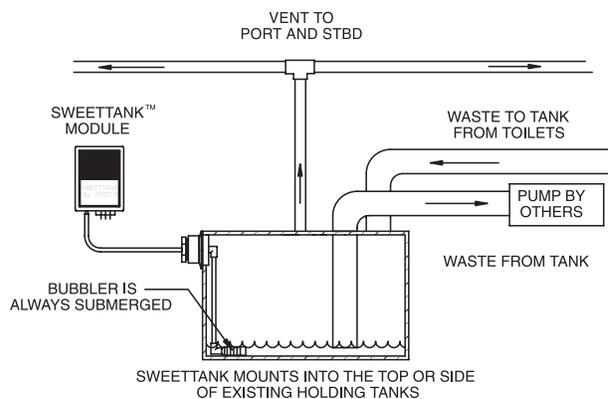
INSTALLATION

- SWEETTANK® screws into a 1-1/2" NPT threaded fitting in the top or side of the tank.
- If the tank has no 1-1/2" NPT opening, aeration equipment is installed into a 2-1/2" hole cut in the tank top or side. All mounting hardware is included.
- STK-18 fits tanks up to 18" deep. Contact GROCO® for installation in tanks deeper than 18".

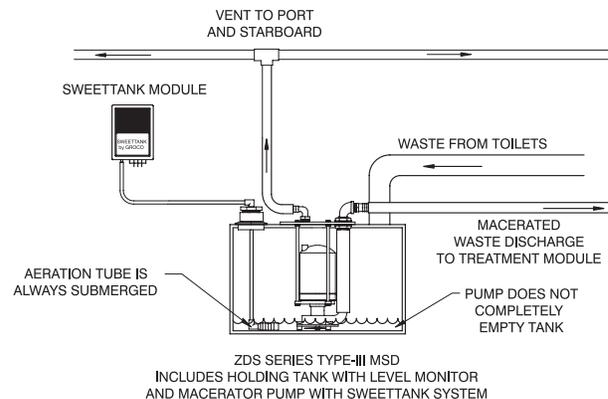
OPTIONS

There are two ways in which to employ the SWEETTANK® concept:

1. Install SWEETTANK® into the top or the side of any rigid holding tank. STK-18 fits tanks up to 18" deep. Models are available for deeper tanks (call GROCO® MSD Technical Service).



2. Install a complete ZDS Series Type-III MSD. ZDS includes the holding tank, level monitor, macerator/discharge pump and SWEETTANK® (see Page 48).



THE CONCEPT

THERMOPURE-2® is a USCG Certified (Certification #159.015/983/0) Type-I MSD for use aboard non-commercial uninspected vessels less than 65-feet in length. Treatment is accomplished by pumping macerated waste through a chamber where low-level heat is introduced to eliminate bacteria. No chemicals or additives are required, treatment is equally efficient in fresh, brackish or salt-water, and thanks to SWEETTANK® the system is completely odor-free.

THERMOPURE-2® is compact and modular, so installation is simplified. The system works with all toilet systems, with multiple toilets flushing simultaneously, and with remote holding tanks. Treatment capacity is 15-gallons per 8-hour day (45 gallons in 24 hours).

TO CONVERT EXISTING HOLDING TANKS

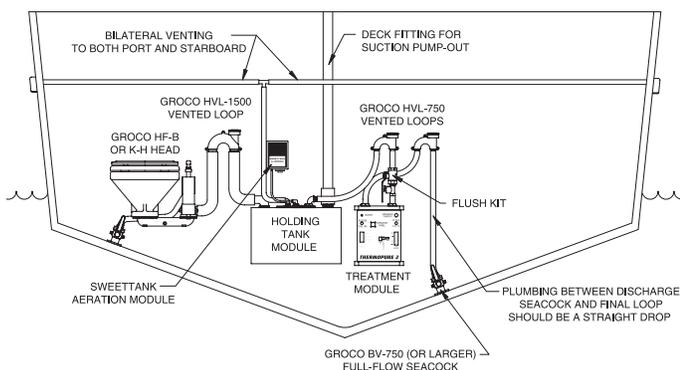
Existing holding tank systems can be upgraded to USCG Certification compliance by adding a THERMOPURE-2® Conversion Kit, which includes the macerator pump, SWEETTANK® Odor Neutralizer, level monitor, and the treatment chamber.

To order a THERMOPURE-2® Conversion Kit, specify the depth (top outside to bottom inside) of your holding tank, plus AC and DC voltages required.

CONVERSION KIT MODELS

MODELS	DESCRIPTION	BREAKERS	
		DC	AC
152-1211-XX*	12VDC and 115VAC	15	15
152-2411-XX*	24VDC and 115VAC	10	15
152-1222-XX*	12VDC and 220VAC	15	10
152-2422-XX*	24VDC and 220VAC	10	10

*XX MEANS HOLDING TANK DEPTH



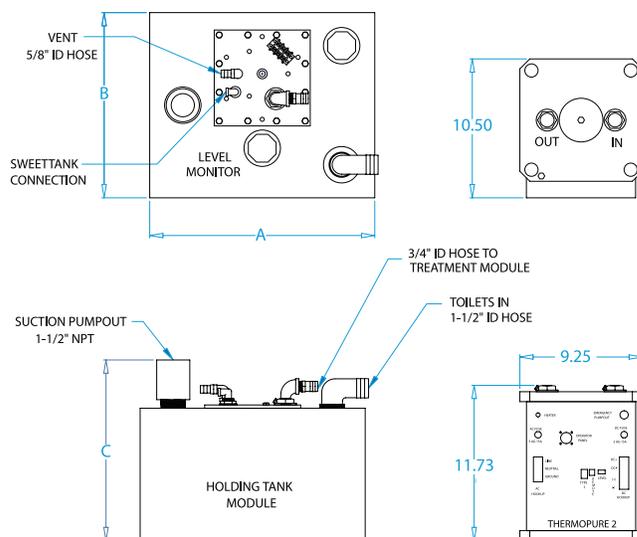
TP-210 SAMPLE INSTALLATION

THERMOPURE® NON-CHEMICAL WASTE TREATMENT SYSTEM



THERMOPURE-2® MODELS

MODELS	HOLDING TANK CAPACITY	BREAKERS		A inch	B inch	C inch
		DC	AC			
TP-210 12V/115V	10	15	15	17.0	14.0	13.7
TP-210 24V/115V	10	10	15	17.0	14.0	13.7
TP-210 12V/230V	10	15	10	17.0	14.0	13.7
TP-210 24V/230V	10	10	10	17.0	14.0	13.7
TP-215 12V/115V	15	15	15	24.0	14.0	13.7
TP-215 24V/115V	15	10	15	24.0	14.0	13.7
TP-215 12V/230V	15	15	10	24.0	14.0	13.7
TP-215 24V/230V	15	10	10	24.0	14.0	13.7
TP-220 12V/115V	20	15	15	28.3	14.0	15.0
TP-220 24V/115V	20	10	15	28.3	14.0	15.0
TP-220 12V/230V	20	15	10	28.3	14.0	15.0
TP-220 24V/230V	20	10	10	28.3	14.0	15.0
TP-230 12V/115V	30	15	15	28.0	23.0	15.0
TP-230 24V/115V	30	10	15	28.0	23.0	15.0
TP-230 12V/230V	30	15	10	28.0	23.0	15.0
TP-230 24V/230V	30	10	10	28.0	23.0	15.0



TP-210 DIMENSIONS

WASTE HOLDING SYSTEM: TYPE-III MSD MODEL ZDS SERIES WITH SWEETTANK®



MODEL ZDS-10 TYPE-III MSD

IMPORTANT NOTE: It is illegal to discharge untreated waste directly overboard in most places. Consult local regulations before doing so. Discharge restrictions change with geographic location.

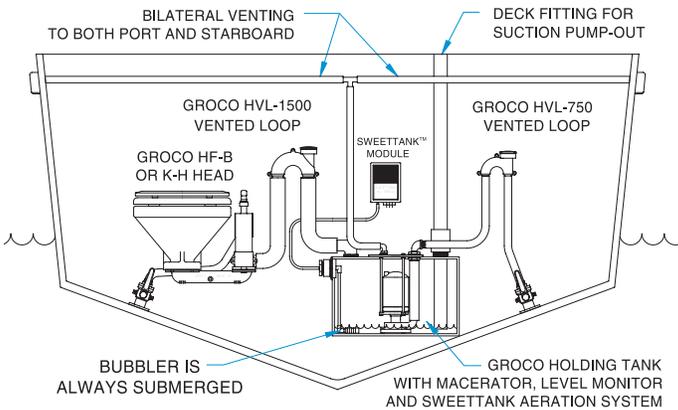
THE CONCEPT

A Type-III MSD may be used aboard any vessel regardless of size or geographic location. The system receives waste from one or more toilets and retains it for disposal at a dockside or marina pump-out facility, or the contents may be pumped directly overboard where legal to do so.

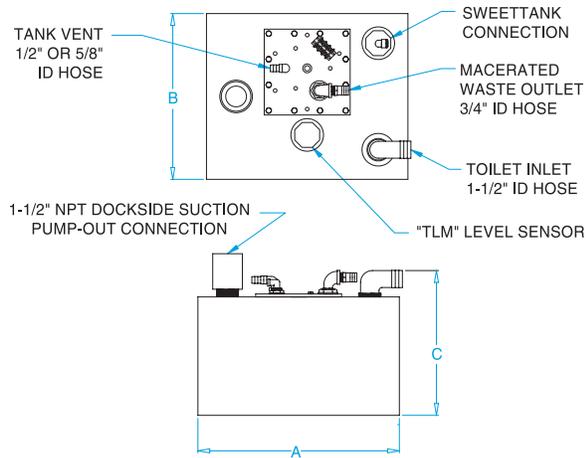
Available in many sizes and shapes, but stocked in four standard sizes, GROCO® Type-III MSD systems come complete with a TLM series level monitor and a powerful (17 GPM) macerator/discharge pump located inside the tank.

ZDS Models include SWEETTANK® which keeps the holding tank odor-free at all times, without the use of chemicals or filters. SWEETTANK® can be added to older ZDS models.

All tanks include an oversized vent to aid with high-capacity dockside pumpout.



SAMPLE INSTALLATION



DIMENSIONS

MODELS	BREAKER	A inch	B inch	C inch	TOILET-IN	PLUMBING PUMP-OUT	VENT
ZDS-10 12V	15	17.0	14.0	13.7	1-1/2" ID hose	3/4" ID hose	1/2" or 5/8" ID hose
ZDS-10 24V	10	17.0	14.0	13.7	1-1/2" ID hose	3/4" ID hose	1/2" or 5/8" ID hose
ZDS-15 12V	15	24.0	14.0	13.7	1-1/2" ID hose	3/4" ID hose	1/2" or 5/8" ID hose
ZDS-15 24V	10	24.0	14.0	13.7	1-1/2" ID hose	3/4" ID hose	1/2" or 5/8" ID hose
ZDS-20 12V	15	28.3	14.5	15.0	1-1/2" ID hose	3/4" ID hose	1/2" or 5/8" ID hose
ZDS-20 24V	10	28.3	14.5	15.0	1-1/2" ID hose	3/4" ID hose	1/2" or 5/8" ID hose
ZDS-30 12V	15	28.0	23.0	15.0	1-1/2" ID hose	3/4" ID hose	1/2" or 5/8" ID hose
ZDS-30 24V	10	28.0	23.0	15.0	1-1/2" ID hose	3/4" ID hose	1/2" or 5/8" ID hose

THE CONCEPT

155 Series waste macerator pumps make fast work (17 GPM) of holding tank pump-out. Sizes are available to fit any rigid holding tank (36" maximum depth, 1" inch increments), and since waste is macerated BEFORE it leaves the tank, smaller hose and overboard seacock (3/4") may be used in the discharge line.

NOTE: New pump installations require GROCO® #MP Hardware (tank hardware kit), ordered separately.

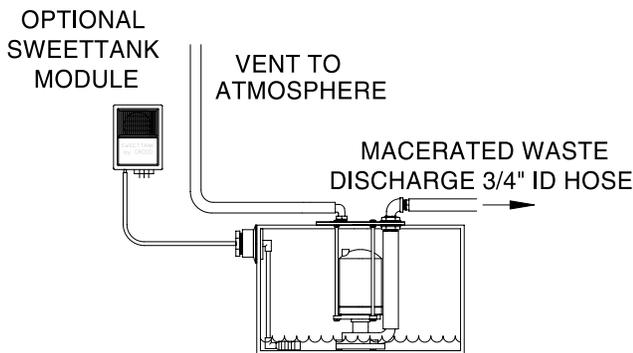
HOW TO ORDER

- Determine tank depth in inches, as measured from the top outside to the bottom inside.
- Order 155-61XX-YY
(XX = tank depth)
(YY = voltage)

SERVICE NOTE: 155 Series will fit the same mounting used for discontinued MPT or MPS series macerator pumps.

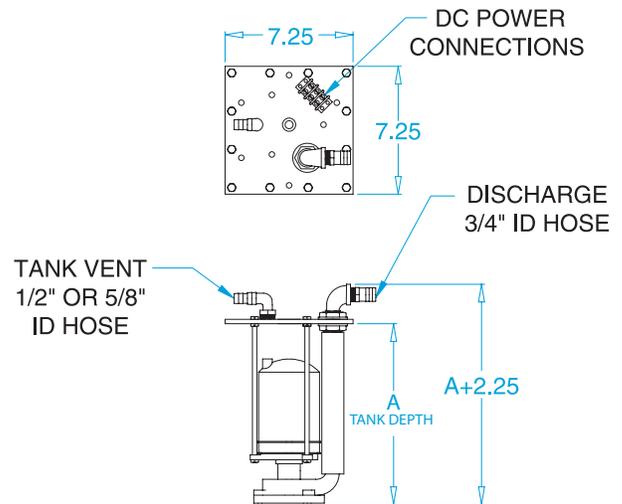


MODEL 155 MACERATOR PUMP



155 SERIES PUMP IS INSTALLED INTO THE TOP OF EXISTING HOLDING TANKS

SAMPLE INSTALLATION



NOTE: FITTINGS ON PUMP FLANGE HAVE BEEN RELOCATED FOR CLARITY

DIMENSIONS

K SERIES - HAND OR ELECTRIC TOILETS

MODEL K-H ELECTRIC

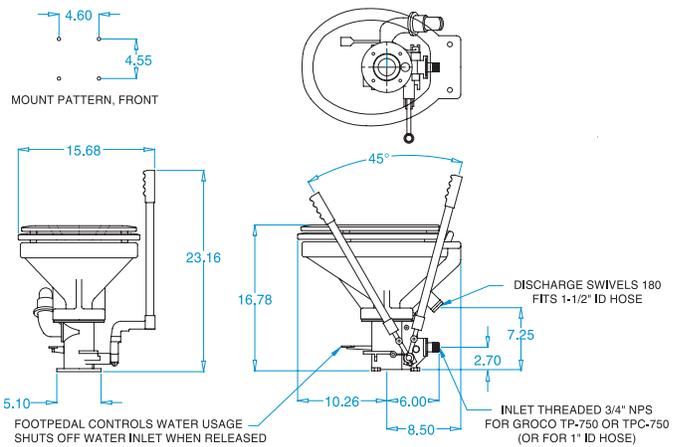


MODEL K-H



- House-size bowl.
- 3" piston pump mechanism.
- Adjustable flow up to 4 GPM.
- All bronze pump.
- Electric or hand operated models are available.
- Electric models operate by touch of a button and are quickly converted to hand operation by removing one easily accessible bolt.
- For installation above or below the waterline; footpedal water control allows the desired amount of flush water to be used and automatically shuts the water inlet off when the foot pedal is released. No valves to close or handwheels to turn.

NUMBER TO ORDER BY	OPERATION	WEIGHT lb	COLOR
K-H	Hand	44	White
K-H 12V, 24V	Hand/Elec.	53	White



HF SERIES - HAND OPERATED TOILETS

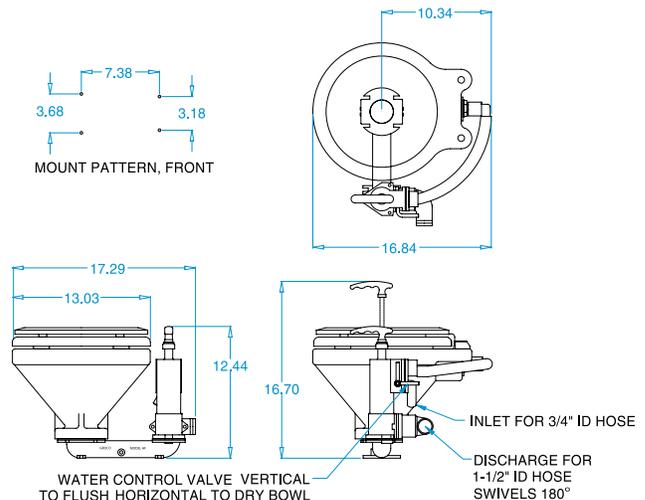
MODEL HF-B

Save money by ordering 100-0001-00, the "SOME ASSEMBLY REQUIRED" version of our popular top-quality compact toilet.

Order HF-B for an already assembled model.



- Sturdy bronze base for rough water use.
- T-Handle for ease of operation.
- High-efficiency valve system uses minimal flush water.
- Weighs 32 pounds.



Assembly takes about ten minutes and requires just a flat-blade screw driver and a 7/16" open-end wrench.

RETAIL PACKAGING FOR 100-0001-00



WASTE HOLDING TANK LEVEL MONITORS

THE CONCEPT

TLM Series uses simple and reliable technology (floats) to indicate tank level in fresh water or waste holding tanks.

FEATURES

- The gasketed indicator panel is suitable for wet locations such as combination shower/head compartments. The sending unit screws into any 1-1/2" NPT threaded tank-top opening.
- If there is no 1-1/2" NPT opening available, TLM can be installed into a 2-1/2" hole cut into the tank top. Installation hardware is included.
- Level indications are 1/4 full and 3/4 full.
- A 20-amp momentary switch is provided to activate a macerator pump.
- Standard model (TLM-10) is for use in tanks 10" to 12" deep. Custom lengths are available.

Specify TLM-XX (XX = tank depth in inches).

For 12V, 24V, or 32V DC systems.



Includes Indicator Panel, Wire Harness and Tank Sender

TLM LEVEL MONITOR

HVL AND PVL SERIES - VENTED LOOPS

THE CONCEPT

- Allows air to enter to break siphon, but does not permit air and odors to escape! Cap is threaded 1/2" NPT to accept a barb fitting if you wish to vent overboard.
- Overboard venting is required if PVL or HVL series is used in an exhaust system.
- HVL and PVL series vented loops assure clog-free anti-siphon protection for sanitation or engine exhaust systems. The oversized vent valve can easily be removed for inspection or cleaning without tools. Mount Hardware is included.



MODEL HVL IS FOR HOSE CONNECTIONS



MODEL PVL IS FOR PIPE CONNECTIONS



HVL-1000 IS SHOWN PACKAGED FOR RETAIL SALE



MODEL	HOSE ID inch	MODEL	THREAD NPT	A inch	B inch	C inch
HVL-500	1/2"	PVL-500	1/2"	4.75	4.3	3.0
HVL-750	3/4"	-	-	4.75	4.3	3.0
HVL-1000	1"	PVL-1000	1"	4.75	4.3	3.0
HVL-1500	1-1/2"	PVL-1500	1-1/2"	6.7	4.8	4.0
HVL-2000	2"	PVL-2000	2"	7.3	5.4	4.5

